



Stimulating private sector
engagement and investment in
building disaster resilience and
climate change adaptation

Recommendations for public finance support

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FINAL REPORT

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Use and interpretation of this report

The report was written by PwC for the Department for International Development (DFID). It sets out the findings from the project ‘**Stimulating Private Sector Engagement in Building Disaster Resilience and Climate Change Adaptation**, REF: DFID/RM353.’

The outputs of this work are intended to support DFID and the Political Champions Group by providing information, analysis, and a set of options for further enhancing public sector support in this area. This document represents the analysis undertaken by PwC and does not represent the views of UK Government or its international affiliations.

Confidentiality

As part of our work, PwC consulted with a number of individuals from various external organisations including multinational corporations, national companies, SMEs, and public sector agencies based in the UK, Bangladesh, Kenya, Mozambique, and Pakistan, many of which operate globally. Information received and comments made by these individuals have been provided solely for the purpose of this project. Where quoted, wording may have been abbreviated or adjusted to support the flow of the report. The cited individuals have had the right to clarify the information presented on their organisation or to revoke comments made. Views of individuals consulted do not necessarily represent the views of the organisations or governments for which they work.

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Glossary of acronyms and key terms

Acronym	Definition
AECF	African Enterprise Challenge Fund
ASAP	Adaptation for Smallholder Agriculture Programme (IFAD)
BIF	Business Innovation Facility
BOP	Bottom of the pyramid
CCA	Climate change adaptation
CDKN	Climate Development & Knowledge Network
CIF	Climate Investment Funds
CSA	Climate smart agriculture
CSR	Corporate social responsibility
DFI	Development finance institution
DFID	Department for International Development, UK
DRM	Disaster risk management
DRR	Disaster risk reduction
FAO	Food and Agricultural Organization
FMCG	Fast moving consumer goods
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFI	International finance institution
PIDG	Private Infrastructure Development Group
MDB	Multilateral development bank
ME	Microenterprise
MFI	Microfinance institution
MNC	Multinational company
NAPA	National Adaptation Programme of Action
NC	National company
PFI	Public finance instrument
PFM	Public finance mechanism
PPCR	Pilot program for climate resilience
PPP	Public private partnership
SME	Small and medium sized enterprise
TA	Technical Assistance
TOC	Theory of change
TOR	Terms of reference
UNDP	United Nations Development Program
USAID	United States Agency for International Development
UNFCCC	United National Framework Convention on Climate Change

Executive summary

The UK Government and the United Nations Development Program (UNDP), acting as co-chairs, launched the Political Champions Group in 2012 to bring greater political focus and investment to building disaster resilience. Part of the Group's interest lies in improving understanding of how to stimulate the private sector's engagement and what course of action can best deliver this.

This study comprehensively explores how public finance can be better used to stimulate private sector engagement in building disaster resilience and preparedness for the risks posed by natural catastrophes and climate change. Through four detailed country case studies (focusing on Bangladesh, Kenya, Mozambique and Pakistan), coupled with global research including public and private consultation, this report explores what the private sector needs in order to overcome constraints to its engagement and investment in building resilience.

As part of this research, the effectiveness of existing resilience focused public-finance programmes that aim to stimulate private sector action has been reviewed. This report also draws out lessons learned on engaging business from wider private sector development focused initiatives. Finally, it assesses the gaps in existing efforts and proposes a framework of action through which public finance can be used to scale up private sector engagement and investment. The recommendations also cover how existing initiatives might be adjusted to improve their effectiveness, and whether a new mechanism is required to stimulate enhanced private sector action.

Full country case studies are appended to the main report and include an assessment of hazards, sector priorities, barriers and opportunities. The main report summarises and contrasts these. There were a number of opportunities that emerged from the country case studies developed through this study (see main report and appendices for more detailed information). Some are already being capitalised on by local companies, others require additional support.

How the private sector is affected by disaster and climate risk

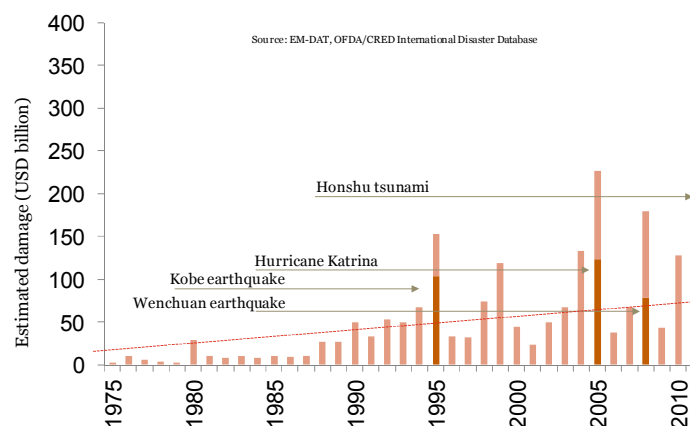
The economic impact of natural hazards has risen from USD 10 billion per annum in 1975 to almost USD 400 billion in 2011 (see Figure 1). We continue to develop our economic activity and societies in many of the world's most vulnerable locations, often in floodplains or in areas that experience extreme weather or geophysical risks.

The impacts of disasters and climate change are felt most acutely in developing countries that often exhibit higher vulnerability to disaster risk and lower capacity to curb or manage them. Loss of life, diminished productivity and asset destruction lead to weakened livelihoods and poverty.

Critically these consequences can limit wider development efforts. In some countries, climate related risks could cost up to 19% of GDP per annum by 2030, setting back years of economic growth¹. As global economic interdependence grows, climate and disaster related impacts in developing countries will be felt far beyond their own borders. This increasing level of exposure prompts us to consider the current plans, preparation and responses of the public and private sectors.

Business is central to the Post 2015 Development Agenda. To 'climate-proof' the Millennium Development Goals (MDGs) in Africa alone would cost an estimated USD 100 billion a year for the next decade.² This represents a 40% uplift on the current estimated level of spending. Public funds alone cannot achieve this and the private sector faces too many investment barriers. Collaborative action is therefore critical.

Figure 1: The rising cost of disasters



¹ Economics of Climate Development, Shaping climate resilient development: a framework for decision making, 2009

² Fankhauser and Schmidt-Traub (2010) 'From adaptation to climate resilient development: the costs of climate proofing the MDGs in Africa'. The cost of meeting the MDGs alone is USD 72 billion.

Global businesses and investors have immediate opportunities to grow in developing and emerging economies, but need to factor in the practical risks and costs of doing business in these countries. They require: a skilled and healthy workforce; license to operate; access to natural resources; adequate and resilient infrastructure; rule of law; and functioning institutions – all of which can be impacted by natural disasters and climate change. An upward trend of financial losses and interruption to local services from natural hazards and climate change will therefore impact on foreign direct investment.

Impacts from natural hazards and climate change can affect a company directly through its own operations or indirectly through its value chain. ‘Direct’ impacts include physical asset damage, reduced operational performance, and staff and workplace disruption. ‘Indirect’ impacts amplify losses beyond individual operations and can often be felt across companies, sectors and countries due to the globalisation of value chains and markets. These include increased commodity or input prices, supply chain or distribution network interruption, changing market demand or reputational issues (see table 1).

Natural hazards and climate change have a greater impact on ‘sensitive’ economic sectors such as agriculture, those with high value fixed assets (e.g. extractives, energy, utilities), and those with extensive supply chains (e.g. retail and consumer products). Those that are exposed to interruption from extreme weather and geophysical events (e.g. utilities, telecoms), or those with commodities that cannot be easily substituted (e.g. specific product lines for major food and retail organisations or technology manufacturers) are most at risk. Financial services providers are also impacted including investors to these sensitive sectors, and those offering disaster and climate risk related financial products including insurance.

Table 1: Examples of business related impacts

<i>Impact type</i>	<i>Examples of impacts to the private sector</i>
Country development: Economic and livelihood impacts	The 2010 floods in Pakistan hit the agriculture, livestock and fisheries sectors hard. They caused total damages in the region of USD 10 billion ³ and significantly affected employment opportunities and the livelihoods of over 800,000 people ⁴ .
Trade: International supply chains	Thailand plays an important role in three global supply chains: consumer electronics, textiles and the automotive industry. Many of these industries are concentrated in flood-prone enterprise zones, which present a significant risk to global supply chains. In 2011, extensive flooding resulted in numerous international corporations having to notify the markets that they would not meet profit expectations.
Key infrastructure: Business interruption	Flooding of the Limpopo River at the start of this year caused significant damage to the electricity transmission line from Mozambique to South Africa. Eskom, South Africa’s primary energy utility and Mozambique’s Hidroelectrica de Cahora Bassa’s faced a 50% reduction in transmission capacity between the two countries as a result. ⁵
Operations: Raw Materials/ business inputs	The agribusiness Bunge reported a USD 56 million quarterly loss in its sugar and bio-energy operations in Brazil resulting from drought conditions affecting its growers ⁶ .
Operations: Workforce health and safety	Employee sickness through waterborne diseases and the inability to reach work following the 2004 Bangladesh floods was estimated to have cost the country’s garment industry USD 3 million per day.
Operations: Storage and logistics	Heavy rains, strong winds and flooding in Guatemala caused quarterly losses to Del Monte of USD 4 million from its banana operations following damage to a vulnerable warehouse storing large quantities of stock ⁷ .

Business size and geography are important determinants of risk exposure. Smaller entities, such as social entrepreneurs and small and medium sized enterprises (SMEs), and typically businesses in developing nations, show greater vulnerability to climate and disaster risks as a result of lower capacity and capability to respond. Larger and more mature companies may experience higher financial losses, but are more likely to have the capacity and resources to prepare, absorb and adapt.

³ IMF Working paper 12/245. Natural Disasters: Mitigating Impact, Managing Risks. 2012

⁴ Pakistan 2011 floods PDNA http://gfdrr.org/sites/gfdrr.org/files/Pakistan_Floods_2011_DNA_Report.pdf

⁵ <http://www.engineeringnews.co.za/article/hcb-eskom-work-on-cahora-bassa-line-refurb-plan-after-disruptions-2013-01-25>

⁶ Bunge Ltd., ‘Q4 2010 Earnings Call Transcript,’ Feb. 10, 2011, <http://www.morningstar.com/earnings/21927995-bunge-ltd-bgq4-2010.aspx?pindex=2>.

⁷ Fresh Del Monte Produce Inc., ‘Q2 2010 Earnings Call Transcript,’ Aug. 3, 2010, <http://seekingalpha.com/article/218349-freshdelmonte-produce-inc-q2-2010-earningscall-transcript>

Climate change will further alter business risk profiles and also insurance availability and affordability. Risk exposures will continue to change from historical norms, with increasing occurrences of unforeseen and spatially and temporally correlated events. Increasing risk and uncertainty may push up insurance premiums or reduce coverage provision. These factors may also create new liabilities within an insurer's own diversified investment portfolio. 75% of insurers have said that they anticipate increased natural hazards and that the affordability and availability of insurance for businesses is likely to decline in the coming decades.⁸

Consequently, there is growing awareness amongst investors of the potentially large financial risks that natural disasters and the impacts of future climate change pose. Disaster and climate change risks and opportunities are starting to be recognised by investor groups such as the IIGC, IIGCC, and INCR⁹. Over time this pressure will lead to revised investment policy, strategy or risk management processes accordingly.

Building societal resilience is a private sector opportunity

Opportunities to scale up public-private collaboration on building resilience are largely untapped. This is partially because resilience is often been viewed as the responsibility of the public sector.

Successful businesses are those which best adapt in a continually changing market; building resilience to direct and indirect risks whilst seizing market opportunities to sell new products and services that build the resilience of others. High profile natural disasters spur businesses to evaluate risk exposures. But to make substantial and long-term changes, businesses need to understand the return on investment of resilience building actions. Businesses may choose or combine approaches to avoid, reduce, share or accept each risk, depending upon their risk appetite. Basic risk mitigation actions include:

- Physical (e.g. infrastructure design improvements or retrofit)
- Social (e.g. behavioural change and education)
- Financial (e.g. use of risk transfer products such as insurance)

Business is already acting to reduce direct operational risk in a number of sectors. Businesses with mature risk management approaches tend to manage their responses through organisation wide business processes that identify and target planned responses to significant business risks (often termed Enterprise Risk Management – ERM - practices). Where a clear and quantified return on investment is evident, action is planned and implemented. However, identification of new risks (e.g. climate change or a historically unprecedented disaster) is often lacking.

Prospects also exist for some businesses and sectors to develop new and innovative products and services targeted at building resilience. This brings economic benefits in the form of growth and jobs, but also reduces vulnerability and risk within their markets. To develop these, businesses need to understand the market opportunity, investment risk, and the return on investment to develop and scale-up these solutions.

There are a number of drivers that encourage businesses to engage in resilience activities. Table 2 sets out some of the key business drivers for entering the resilience marketplace and provides some examples of organisations that are already realising the benefits.

Table 2: Business drivers for adaptation and disaster resilience action

<i>Opportunity type</i>	<i>Benefits</i>	<i>Examples</i>
Development and distribution of new products and services	<ul style="list-style-type: none"> • New revenue streams • Gain competitive advantage • Diversify risk portfolio 	Swiss Re (and partners): The Horn of Africa Risk Transfer for Adaptation (HARITA) and R4 Rural Resilience Initiative allow cash-poor farmers to work for their insurance premiums by engaging in community-identified projects to build climate resilience. The potential to expand beyond Ethiopia to open up new SSA markets for insurers is high.
New, expanded markets for products and services	<ul style="list-style-type: none"> • New revenue streams • Increased market share • Long-term viability or success of business 	Safaricom/GE: A partnership in Kenya, which supports the expansion of low carbon telecoms infrastructure into rural areas in the north. Solar powered mobile station base units resilient to power cuts, allow continued communication for the community, including the provision of drought and weather information to support rural small holders. A real

⁸ Leurig, S., 2011. 'Climate Risk Disclosure by Insurers: Evaluating Insurer Responses to the NAIC Climate Disclosure Survey.' Ceres, Boston.

<i>Opportunity type</i>	<i>Benefits</i>	<i>Examples</i>
Cost savings	<ul style="list-style-type: none"> • Reduced raw material and operational costs • Protects profitability when margins are tight • Improved insurance purchasing and lower residual losses 	triple win for development, resilience and climate change mitigation. Sun International Hotels: The Zambian hotel chain has developed a local food sourcing programme supporting 400 smallholder farmers. This has ensured their security of supply and reduced costs for their hotels, alongside providing livelihood opportunities to smallholders in the region.
Collaboration through supply chain	<ul style="list-style-type: none"> • Competitive advantage gained through a more secure and resilient supply chain • Security of supply protects revenue streams 	A global agribusiness consulted as part of this study: This global producer of tea and cut flowers works with its supplier farmers to help build awareness on climate change issues as well as facilitating a multi-stakeholder approach to build resilience, for example through better catchment management.
Reputation and brand value	<ul style="list-style-type: none"> • Market leadership • Increased investor, consumer and other stakeholders' confidence 	Siemens: Development of a low-cost, simple, portable water purification system that does not require electric power or purification chemicals, which can be distributed to vulnerable communities post-disaster. This, along with other innovations, has secured their reputation as a leader in technologies to address climate change and resilience challenges.

Barriers to scaling up private sector action

A business is likely to respond first to mitigate its own risks. It is much harder to engage businesses on issues that extend beyond their direct operations. For a business to act within its extended supply chain or community it requires better information and an appreciation of the business case for investment. The drivers and barriers that govern action beyond a company's direct operations are more complex, involving wider stakeholders, co-investments and less defined distribution of benefits.

The four countries engaged as part of this work (Bangladesh, Kenya, Mozambique and Pakistan) exhibited a variety of hazard types, population densities, institutional arrangements and levels of private sector development. All have experienced significant disaster losses. Barriers common to all case study countries and sectors included:

- A lack of relevant risk information;
- Low levels of capacity and skills required for the sector;
- Poor levels of access to credit to implement resilience measure and or market opportunity;
- Weak knowledge management structures to share good practice;
- Inadequate policy, regulatory and legal environments; and
- Domestic infrastructure constraints.

Examples of collaborative challenges include investment into a new community flood control system that relies on multiple financiers, community cooperation and local government approval; or a major retailer providing seed, tools and training to farmers to implement climate smart agricultural practices where other buyers could benefit. Risk data to inform investment can also be difficult to attain without collaboration, for example a large brewer may be interested in a water stewardship investment a given region but may not be prepared to invest in a complex and costly water resource model if one is unavailable.

To develop new resilience-related products and services, it was observed that different private sector actors had different needs in terms of the support they required, or the gaps or barriers that were preventing them fulfilling a resilience related opportunity. Barriers exist to develop and commercialise new resilience related products and services in emerging and developing markets. Most significantly, strong access barriers exist that are specific to a local economy further supporting more holistic but sector-focused market intervention. Market barriers include: inadequate import/export and corporate laws; weak incentives; dilapidated or underdeveloped public and financial infrastructure; underlying corruption; and security related constraints. There are also challenges in understanding and stimulating the demand profile of potential markets, for example due to low risk adversity and/or low purchasing power of the local population.

In some circumstances a range of barriers may need to be addressed at the same time to unlock a solution for a sector or country setting. This was the experience of the Pilot Programme for Climate Resilience (PPCR) in

Zambia. For example, in order to support climate resilient agriculture and supply chains for business operating locally a range of different interventions were necessary requiring separate public finance interventions aimed at agribusiness, smallholder farmers and local banks. These included provision concessional loans and/or credit guarantees to local banks to underpin the development of smallholder asset lending products for procurement of necessary equipment and inputs (e.g. drip irrigation), provision of technical assistance to farmers to ensure successful adoption of the system, and off –take agreements with local agro-processors to encourage supply of the recommended crop.

Harnessed in the right way, MNCs can act as drivers and facilitators of change. MNCs act as major buyers of raw materials or processed outputs and are an important export channel for apparel and textiles in Bangladesh, extractives in Mozambique and food commodities in Pakistan. They also bring strong market influence and standards for contract producers. MNCs operating at sector level within countries, sharing knowledge from others and forming exemplar codes of practice, planning and standards. However, MNCs’ buying power and the commercial pressures on their international operations, plus local dilution of transparency and traceability, means that they can be an indirect driver of exploitation and downward pricing. Many MNCs consider managing these risks to be a major challenge in some of these markets.

Private sector appetite for investment is influenced by regulatory controls, financial returns and investment risk. The private sector must be ‘enabled’ through policy, but also gain access to a credible and strong pipeline of bankable and high quality investments. This is a major challenge for emergent resilience projects and initiatives where innovation and transition challenges are added to the investment barriers that hamper the growth of many developing markets. Furthermore, investors are unlikely to make investment decisions without evidence of successful demonstration projects which are often a pre-requisite for investors to make an informed decision on an investment opportunity.

Table 3 below summarises the needs of different types of private sector actor. This analysis is based on linking a wide range of barriers to three critical private sector entry points; operations, value chain and product and service development.

Table 3: Needs assessment by type of private sector actor

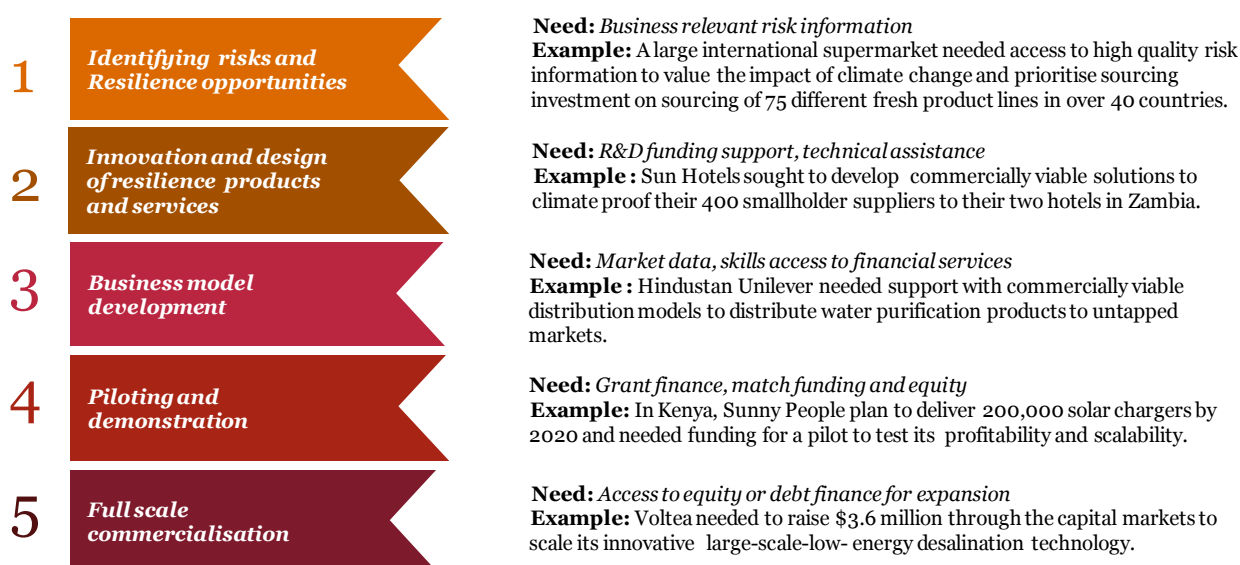
	<i>Direct operations</i>	<i>Value chain cooperation</i>	<i>Development of products & services</i>
<i>Small and Medium Enterprises</i>	<ul style="list-style-type: none"> • Risk information and capacity building for risk management • Technology transfer (e.g. intermediate crop technologies or mobile data) • Access to affordable credit and risk transfer products • Regulatory frameworks for micro finance/ insurance 	<ul style="list-style-type: none"> • Awareness building of vulnerable communities and customers • Collaboration platforms • Methods and tools for risk management 	<ul style="list-style-type: none"> • Market information • Business plan support • Investment support advice • Access to markets
<i>National Companies</i>	<ul style="list-style-type: none"> • Peer collaboration • Sector development support • Technology transfer (e.g. early warning systems and infrastructure solutions) • Risk information and vulnerability data 	<ul style="list-style-type: none"> • Risk information • Capacity building for risk management • Financial de-risking for lenders • Methods and tools for risk management • Collaboration platforms at sector and government levels • Information sharing and management systems 	<ul style="list-style-type: none"> • Innovation incentives • Legal and intellectual property support for innovation and product development • Investment support and readiness
<i>Multi-National Corporations</i>	<ul style="list-style-type: none"> • Risk information • Methods and tools risk management 	<ul style="list-style-type: none"> • Risk information • Knowledge and collaboration platforms to support good practice and sector knowledge 	<ul style="list-style-type: none"> • Improved market entry conditions • Innovation incentives • Financial de- risking
<i>Private investors</i>	<ul style="list-style-type: none"> • Detailed risk information 	<ul style="list-style-type: none"> • Awareness and knowledge • Detailed risk information. • Business case related information • Risk assessment methods and tools 	<ul style="list-style-type: none"> • Detailed risk information • De-risking support to lending and investment. • Policy structures, consistency and incentives

To effect real change, public sector action needs to better understand where to focus its support to the private sector including the needs of small and medium sized enterprises (including Micro-SMEs), national companies, multi-national companies and private investors. For each of these actors, three main intervention points can be identified:

- Protection of direct operations and workforce through risk management
- Sector value chains (or portfolio in the case of investors)
- Development of new products and services that serve resilience goals

In particular, there is a major role that the public sector can play in supporting the development of new products and service that help others to build resilience. Central to achieving this is understanding how market and commercial development processes work for goods and services and what the needs are of individual actors involved in this. This requires a more holistic ‘market -based’ approach. Figure 2 offers a simplified five-stage development pathway for introducing a new resilience action, product or service.

Figure 2: Key intervention points for product and service commercialisation



Private sector organisations experience different needs at each stage depending on the context, their internal capacity and surrounding enabling environment. It is important to understand whether relevant and timely support is currently being provided to businesses across all or just some of these stages. However, if one or some of these needs are not met or there is a lack of continuity between stages, then a business may fail to progress or scale up its initiative.

Review of existing resilience initiatives and lessons learned

A cohort of 10 existing (or emerging) publically financed resilience initiatives have been comprehensively reviewed for their effectiveness at engaging the private sector in building resilience. There are few others to draw from, so this review is supported by wider analysis of a further 30 private sector development funds and programmes from which lessons can be learned and transferred.

Tables 4 and 5 summarises the initiatives reviewed and are followed by a summary of observations, findings and lessons learned.

Table 4: Summary of resilience related funds and programmes critically reviewed by this work

Name	Financial scale (USD)		Scope			Focus				Implementing entity / recipient of support					Instruments			
	Pledged	Disbursed	Global	Regional	National	BOP	Gender	Key hazards	Key economic sectors	Multilateral implementing entity	National implementing entity	National government	Local service provider (NGO, private sector, CBO)	Private sector	Grants	Technical assistance	Loans	Risk reduction and transfer
<i>Adaptation Fund</i>	341m	54m	●			●		●	○	●	●	○	○		●			
<i>The Least Developed Countries Fund</i>	605m	133m	●			●			○	●		○	○		●	●		
<i>The Special Climate Change Fund</i>	295m	111m	●			○		○	○	●		○	○		●	●		
<i>Pilot Programme for Climate Resilience</i>	1.2bn	15m	●			●			○	●		●	○	○	●	●	○	
<i>Global Facility for Disaster Reduction and Recovery</i>	278m	103m	●			○			○	●		○			●	●		
<i>Climate and Development Knowledge Network</i>	72m	44m		●	●	○	○		●			●	●	○	●	●		
<i>Caribbean Catastrophe Risk Insurance Facility</i>	68m	32m		●				●				●		○				●
<i>IFAD's Adaptation for Smallholder Agriculture Programme</i>	250m	5m	●			●	○		●	●		○		○	●	●		
<i>Africa Enterprise Challenge Fund) REACT windows</i>	35m	25m		●	●	○			○					●	●		○	
<i>IADB's PROADAPT Facility</i>	11.9m	-	●			●	○					○	●	●	●	●		

● Major/direct ○ Minor/indirect

Table 5: Summary of private sector development funds reviewed to establish lessons learned

Development challenge	Barriers addressed							Scope				Instruments					Category of actor engaged			Project / product development				
	Commercial risks	Technology and product risk	Policy environment	Capacity and skills	Corporate maturity	Collaboration and partnership	Information and knowledge	Global	Multi-country	Country	Sector	Grant instruments	Debt instruments	Equity instruments	Financial de-risking instruments	Price support instruments	MSMEs	National companies	MNCs	Identifying risks and opportunities	Innovation and design of products and services	Business model development	Piloting and demonstration	Full scale commercialisation
GAVI's Advance Market Commitment	●	●						●							●			●						
Harnessing non-state actors for better health for the poor Health Enterprise Fund	●			○					●	●	●					●	●							
DFID Construction Ideas Fund	●		●	●		●			●	●	●					●	●							
Emerging Africa Infrastructure Fund	●			●			●	●		●	●	●					●	●						
Private Infrastructure Development Group	●		●	●						●	●	●		●			●	●						
Public-Private Sector Infrastructure Advisory Facility			●	○		●	○	●			●	●					○	○						
DFID Food Retail Industry Challenge Fund	●			○		●	●		●		●	●				●		●						
Global Agricultural and Food Security Programme	●	●						●		●	●	●	●	●		●								
Africa Enterprise Challenge Fund	●	○				●		●			●	●				●	●							
Energy and Environment Partnership Programme with Southern and East Africa	●							●		●	●						●	●						
Green Africa Power	●	○	●			●	○	●		●	●		●	●			●	●						
EBRD Sustainable Energy Initiative	●		○	●				●			●	●	●			●	●	●						
DFID Girls Education Challenge	○					●		●			●						●	●						

Development challenge	Barriers addressed							Scope				Instruments					Category of actor engaged			Project / product development				
	Commercial risks	Technology and product risk	Policy environment	Capacity and skills	Corporate maturity	Collaboration and partnership	Information and knowledge	Global	Multi-country	Country	Sector	Grant instruments	Debt instruments	Equity instruments	Financial de-risking instruments	Price support instruments	MSMEs	National companies	MNCs	Identifying risks and opportunities	Innovation and design of products and services	Business model development	Piloting and demonstration	Full scale commercialisation
AfDB African Women in Business Initiative	○		○	●			●	●			●					●	○							
DFID Business Innovation Facility	○	●		●		●	●	●			●					●	●	●						
SIDA Innovations Against Poverty	●	●		○		●	●				●					○	○	●						
UNDP African Facility for Inclusive Markets	○		●	●		●	●			○	●					●								
Fund for Africa Private Sector Assistance	○	●	●	●		●					●					●	●							
Seed Capital Assistance Facility	●									●	●					●								
Business Call to Action				●		○	○	●			●					●	●	●						
Private Sector Investment Programme	●							●			●					●		●						
Grassroots Business Fund	●			●							●	●	●			●								
Business Linkages Challenge Fund	○			○		●					●					●		●						
USAID Development Credit Agency	●	●		●				●						●		●	○							
African Guarantee Fund for SMEs	○	●		●							●			●		●	○							
Financial Deepening Challenge Fund		●	●	●						●	●					●	○							
USAID Development Innovation Ventures	●	●									●					●								

Critical analysis of existing resilience instruments

Very few current resilience initiatives are designed for and effectively target the private sector.

Overall there remains a shortfall in the penetration of Public Private Partnerships (PPPs) and concrete action by business as a result of public intervention. A number of programmes support governments in developing their policy and regulatory frameworks for resilience, but they often lack the critical focus and private sector engagement to ensure these reforms create an enabling environment for business investment and growth. Others are retrospectively adapted to try and involve the private sector in some way.

Resilience programmes have predominantly been focused around physical themes (e.g. coastal development and water management) rather than key sectors to which business can relate.

Businesses are often focused on their operations, peers, sectors and markets. It is therefore necessary to communicate through key economic sector channels, and their specific resilience challenges and opportunities to improve uptake. The agricultural sector is perhaps the only exception. The ICT, financial services and manufacturing sectors may be critical to the economic growth and employment in certain developing countries; however, they have not yet been the focus of resilience initiatives.

The insurance sector is most frequently and successfully engaged by targeted initiatives including pilot projects for micro-insurance, index-insurance schemes, regional or country-based public-private catastrophe risk pools (e.g. Caribbean Catastrophe Risk Insurance Facility (CCRIF), Turkey Catastrophe Insurance Pool (TCIP)), and Alternative Risk Transfer products (e.g. IFC-Swiss Re Global Index Insurance Facility; GFDRR Malawi weather derivatives, Mexico Catastrophe Bond). The agriculture sector receives a valid but disproportional level of support compared to other sectors including the built environment and manufacturing.

Otherwise, projects that have engaged the private sector have arisen on an opportunistic rather than a targeted basis and are unlikely to lead to transformative resilience. The inability to cluster or link these projects, limits learning and impact, and suggests that this approach will not lead to transformational change. Some initiatives, such as the PPCR, are now exploring this issue and learning about how to make progress with the private sector being more involved in its work.

The language and style of outreach and communication is not tailored for a business audience.

Terms used by the public sector (e.g. “adaptation”, “DRM”, “instruments”, and “technical assistance”) are unfamiliar to the private sector. Raising awareness of the business case for action and type of public support available through effective language and communication is critical. Enterprise risk and resilience, which can be measured and valued in relation to the specific operations of a company, are more recognisable.

There is a lack of practical support for the private sector that provides continuous support through the value chain or growth cycle (including innovation, start-up and commercialisation stages). Early stage R&D and innovation support is significantly under resourced, preventing new ideas from reaching the market. There is a lack of support to research, incentivise, incubate and scale new ideas. This means that a pipeline of strong and well-supported innovations is not being generated. For example, DFID’s Business Innovation Facility programme supports SMEs with business model development (stage 3 in figure 2) for climate smart agriculture practices in a range of countries, but following this there is limited support for the next challenge of demonstrating and scaling these business models, or addressing the market level constraints to growth (particularly those relevant to resilience).

Opportunities for support are often limited to MNCs and other large players who have the capacity to engage with the programme and take on sizeable concessional financing arrangements. The demands on initiatives to minimise transaction costs and meet due diligence requirements makes it hard for national companies and MSMEs to be engaged through these channels. The leaning towards the use of concessional loans when a private actor is a potential recipient (e.g. PPCR, AECF) also limits uptake overall and in particular by SMEs. Initiatives targeted at building the resilience of SMEs and smaller national companies as the most vulnerable private sector group are lacking outside of the agriculture sector.

Finally, it was clear through consultation with individual resilience programme designers and managers that the private sector is not usually included in the design and development of new initiatives, policies and regulations. If it is involved, it is often only as an afterthought or in a capacity in which it can observe rather than advise. If engaged, it will help to properly reflect its needs in the design of new supporting initiatives, policies and regulations.

Learning from wider experience of private sector development

The evidence base for which public sector interventions work best in supporting and catalysing private sector engagement and investment is therefore currently limited and few publically funded initiatives exist (or are being designed) that target private sector action on resilience as a core objective. This is a critical issue as many adaptation and resilience responses will need the private sector in order to reach scale. This is the same for broader technology, finance and capacity building programmes.

The table below summarises how gaps in existing or planned resilience initiatives could be filled with models developed for other private sector initiatives.

Table 6: Summary of lessons learned from existing private sector initiatives

<i>Issues in the current resilience initiatives landscape</i>	<i>How can this issue be addressed?</i>	<i>Lessons learned from private sector development initiatives</i>
1 Limited planned or strategic engagement with the private sector	Initiatives are designed to specifically target private sector entities as part of their strategic objectives. Businesses are also engaged in the design process.	<ul style="list-style-type: none"> Nearly all private sector development initiatives directly engage businesses on a project level. Small scale initiatives targeting businesses on specific projects are needed to complement the larger resilience initiatives currently in place. Initiatives need to be specific (whether through focusing on a key issue, sector or instrument).
2 Projects engaging the private sector emerging on an opportunistic and ad hoc basis	Greater focus and targeting of projects at a regional or country level and in key sectors to create a clustering effect which could lead to transformational change	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience at the country or sector level include: <ul style="list-style-type: none"> Country focused programmes such as the Ghana Business Linkages Challenge Fund, HANSHEP Health Enterprise Fund, AECF (Zimbabwe, Tanzania, South Sudan funding windows). Sector focused programmes (e.g. Construction Ideas Fund). In certain instances, resilience could be integrated as a planned objective; for example, in the AECF windows that already include a number of agriculture projects that have resilience co-benefits. Including private sector resilience as an aim within an initiative such as CIF could be effective but conversely could make the initiative perhaps too specific and limiting
3 Limited focus on the different models needed to engage various private sector actors Minimal opportunities available for national companies and SMEs to access support	Targeted initiatives that recognise and address the different barriers and drivers for MSMEs, NCs and MNCs	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience at specific scales of private sector actors, particularly SMEs, include: <ul style="list-style-type: none"> B2B partnership initiatives that create access to markets for SMEs (e.g. FRICH, BLCF). Resilience objectives could be included to ensure that MNCs incorporate capacity building and training on climate smart agriculture techniques as part of their support to smallholders. Guarantee funds that offer credit lines to SMEs e.g. USAID DCA, African Guarantee Fund. Resilience objectives could be included to ensure that a bank reaches a certain portfolio percentage of 'resilient' projects. National companies are the most overlooked scale of private sector actor. They are viewed as having reasonable ability to finance action, however, they require other support in the form of information and opportunities for knowledge sharing and collaboration.
4 Limited focus on key economic sectors with the exception of agriculture	Targeted initiatives that intervene along value chains in key economic sectors to address the bottlenecks and	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience along the value chain, include: <ul style="list-style-type: none"> Sector focused programmes (e.g. Construction Ideas

Issues in the current resilience initiatives landscape	How can this issue be addressed?	Lessons learned from private sector development initiatives
	barriers that private sector actors working in that sector face	Fund). For example, a window focused on resilient building design and construction materials could be incorporated into the initiative. <ul style="list-style-type: none"> – Guarantee funds could provide access to credit for a wider range of SMEs along the value chain in sectors other than agriculture.
5 Direct engagement of the private sector is sporadic and there is a lack of connectivity between these limited number of initiatives	Targeted initiatives that link up to provide support to private sector actors along the product/project development process (i.e. from initial risk/opportunity identification through to full scale commercialisation)	<ul style="list-style-type: none"> • There are currently limited initiatives supporting businesses in the initial risk/opportunity identification process. There is a concern that opportunities and innovations could be overlooked without support at this stage. • Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience along the project/product development process, include: <ul style="list-style-type: none"> – PIDG and its component facilities that address specific barriers along the project development process using a suite of instruments. – The informal relationship between PPIAF and PIDG. This relationship can bring about complementary action at the project level and in the national enabling environment to deliver outcomes. – A BIF style technical assistance facility that could support the development of innovative business models to create a strong pipeline for the AECF REACT windows.
6 Targeting of instruments, selection criteria for projects and marketing of opportunities to the private sector (for initiatives that directly engage businesses) need fine-tuning	Using lessons learned from engaging the private sector in broader development issues to ensure that support is suitably targeted at the private sector actors it is trying to engage	<ul style="list-style-type: none"> • In designing initiatives, it is important to understand whether the engagement model and instruments used are effectively targeting the entities they are aiming to support (e.g. marginalised businesses). • Knowledge hubs and well developed local networks in-country are important to raise awareness amongst businesses of the funding opportunities and support available.

How to support the private sector to build greater resilience

We are presented with an immediate opportunity: to further build understanding and engagement between the public and private sectors, and to make investment in disaster and climate resilience more transparent, attractive and feasible. This will, in turn, unlock new markets and investment. Policy makers would benefit from new evidence on how interventions target and stimulate private sector engagement and investment.

It is clear that unlike the common metric of ‘carbon’ in the field of climate change mitigation; there is no one-size-fits-all approach to enhancing private sector investment in resilience¹⁰. Business will need different types of support depending on their sector, scale, their current level of risk management maturity and whether the intended activity is within or beyond their operations (the latter often needs greater incentive). The design of new approaches should remain sensitive to private sector needs regarding flexibility and non-bureaucratic processes.

Private sector engagement needs to be commercially appropriate including qualification criteria, administrative burden, transaction costs, M&E demands, and timings. Positive engagement with the private sector can be hampered by language, culture and asymmetries of procedure. Public finance solutions will have to be governed by the normal procedures of quality, value for money, safeguards and transparency. However, careful thought should be given to the cost-benefit of private sector actors reaching out for public support.

¹⁰ Clearly climate change mitigation does require other forms of support however the calculation of emissions reductions lends itself to a commoditised and monetised approach which is attractive to business and investors.

Deep engagement at the country level is needed to achieve broad transformational change. Some of the existing initiatives that have had success in building resilience have done so through focusing on priority countries (e.g. mainstreaming climate change into the national policy and planning process).

Table 7 below presents a range of different methods that development partners have used to address public policy and capacity barriers, develop the enabling environment and improve business know-how.

Table 7: Examples of the principal public finance delivery options

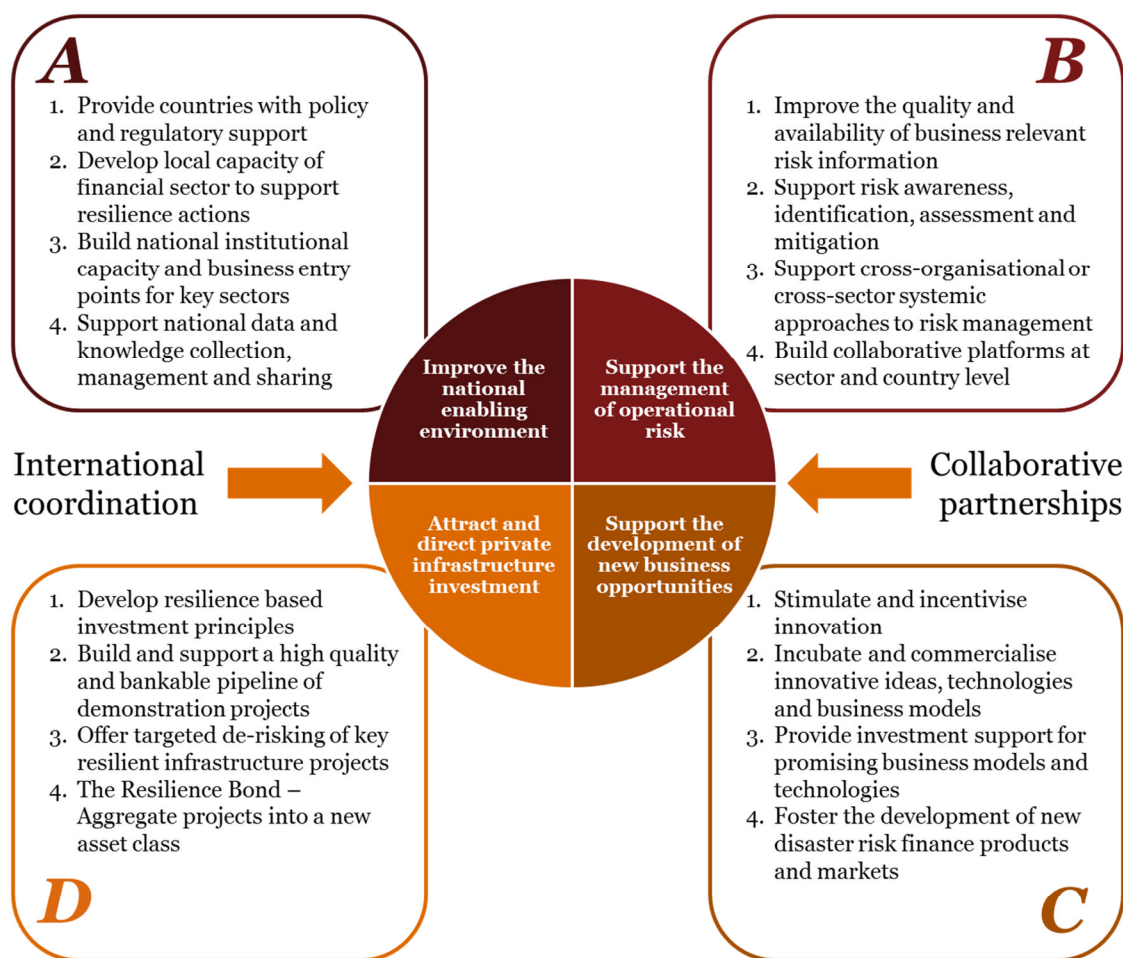
Group	Delivery option	Description	Example(s)
Financial support	Challenge fund	An innovation accelerator offering match or grant funding for new business ideas	Innovations against Poverty (IAP) Africa Enterprise Challenge Fund (AECF) Construction Ideas Fund Food Retail Industry Challenge Fund (FRICH) USAID Development Innovation Ventures (DIV)
	Impact investment fund	Investment funds seeking social outcomes and if necessary accepting lower returns.	Over 250 active funds including: <ul style="list-style-type: none"> • Global Impact Investing Network • The Calvert Foundation • Leapfrog Investments • National Community Investment Fund
	Guarantee facility	Multi country/ sector facility with focused loan or policy guarantee products that reduce credit risk for local financiers.	Multilateral Investment Guarantee Agency (MIGA) ADB's Political Risk Guarantee (PRG) Haiti Post-Disaster Partial Credit Guarantee Program
	Investment funds (Infrastructure/ corporate and project)	Infrastructure investment, private equity and project finance on a direct or public-private co-financing basis.	Private Infrastructure Development Group (PIDG) Climate Public Private Partnership (CP3) Emerging Africa Infrastructure Fund (EAIF) Sustainable Energy initiative (EBRD)
Technical assistance	Multi-donor trust / global fund	An internationally administered fund structure with programme and project activities in a range of locations.	Sudan Multi-Donor Trust Funds Trust Fund for East Timor Technical Assistance Trust Fund Afghanistan Reconstruction Trust Fund
	Knowledge management facility/ platform	A centrally hosted digitally hosted entity with a mandate for acquiring and disseminating knowledge products. Can be embedded.	World Cities Network ADB Climate Change Knowledge Hub Inclusive business Practitioner Hub
	Investment support facility	Commercial and technical assistance directed towards investment readiness for low capacity private sector entities.	Microfinance Investment Support Facility for Afghanistan (MISFA) IFAD Rural Microenterprise Assets Programme
	Private sector/market development facility	Technical assistance approach supporting business model and plan development.	Innovations Against Poverty Business Innovation Facility
Partnership approaches	Public private partnership models	Long-term public-private contracts to provide public services and spread investment and risk. Can be large or small scale.	Public-Private Infrastructure Advisory Facility (PPIAF) Various construction and asset management projects in English speaking countries
	Communities of practice	Informal and voluntary groups of professionals and stakeholders with a common interest linking contact, tools, methods and knowledge.	AfricaAdapt Asian Cities Climate Change Resilience Network Ecosystems and Livelihoods Adaptation Network Argentina's Program for Local Adaptation Climate Community of Practice in the Gulf of Mexico
	Development	Usually short to medium	Unilever sources tea from many hundreds of thousands

Group	Delivery option	Description	Example(s)
	partnerships and sector alliances	term projects involving a private sector company and a local government or donor sponsored implementing entity.	of smallholder farmers. The Lipton brand set up a public–private partnership project in 2006 with the Kenya Tea Development Agency including Rainforest Alliance, Oxfam and others. Unilever and the Sustainable Trade Initiative (IDH) have subsequently agreed to fund a further €4 million over the next two years.

A framework for public-private action

A recommendations framework has been developed to help structure a wide range of options for accelerating action and investment from the private sector on building disaster and climate resilience. They are relevant to all stakeholders that can play a role in supporting action on this issue, including donors, national governments, private sector actors and NGOs. The framework is organised into four operational approaches. This helps to navigate the complex range of challenges and potential public sector supported interventions.

Figure 3: A framework for public-private action – four operational approaches



Operational approach A: Improve the business enabling environment

Recommendation	Description
A1: Provide countries with policy and regulatory support	Government has an important role to play in creating a coherent policy and regulatory context in which private sector resilience solutions can be implemented. Engagement of the private sector should be prioritised, along with key risks and sectors which will impact resilience activities. In practice, policy and regulatory support could include issues like improving the enforcement of building codes in the construction sector, land tenure, water rights, or intellectual property reform, and improving the regulatory environment for small businesses entrepreneurs or foreign investors.
A2: Develop local capacity of financial sector to support resilience actions	Access to finance is a common constraint for SMEs and other small scale businesses to adopt resilience technologies and practices. The bottom of the pyramid is often excluded from financial services, as they are not seen as a viable market. There is a need to support affordable lending and resilience-incentivising financial products. Public finance can offer support to the risk exposure of banks, as well as provide expertise and improved understanding. It may be possible to work through IFIs, national development banks and credit support agencies to deliver support. However, there are also social finance partners including microfinance institutions and businesses already active on this issue, but without the financial depth to reach all of those businesses and smallholders in need.
A3: Build national institutional capacity and business entry points for key sectors	In addition to supporting technical tasks and programmes, there is a need to support government institutions to further develop their capability, skills and resources to engage business in policy making, planning and implementation at both country and sector levels. In particular, engagement with business at sector level (i.e. through line Ministry or regulatory channel) to share information, action and resources needs to become more widespread and of a higher quality. Efforts to increase opportunities for public-private partnership should be increased and specific capabilities of the private sector should be leveraged in order to support disaster risk management and adaptation and preparedness planning.
A4: Support national risk data and knowledge collection, management and sharing	Access to national risk data, tools and knowledge around resilience for business users is currently limited and requires improvement. Market-relevant data includes detailed information on hazards, losses and exposures, and is sometimes subject to access restrictions and excessive pricing limiting uptake by businesses. Public sector support can help create greater access to existing data, improve data availability, quality and packaging, and enable data sharing and dissemination opportunities. Public sector support in the form of investment for data ventures and technical assistance would promote greater access to data and improvements in data collection and quality. Improved national risk data will also support the development of local insurance markets, with the co-benefit of promoting risk-reducing actions.

Operational approach B: Support better business operational risk management

Recommendation	Description
B1: Improved the quality and availability of business relevant risk information	The availability of high quality risk information relevant to businesses remains a major challenge and barrier to action. Businesses require detailed information at a resolution appropriate to them – (e.g. showing potential effects on their assets and supply chains). Tools and platforms are available, which support country level risk data (e.g. UNISDR’s GAR data platform, World Bank Climate Change Knowledge Portal), however, this data is often not in a usable format for business to use (e.g. resolution is too low, inconsistent or patchy reporting/metrics across geographies and hazards, outputs are climate variables rather than risk metrics). Detail should be of a level so that risks can be monetised and decision making informed.
B2: Support risk awareness, identification, assessment and mitigation	<p>Effective management of risks, particularly for developing country national businesses and SMEs must be improved in order to reduce the widespread vulnerability to risk. Support is required for disaster and climate change risks to be meaningfully incorporated into wider financial, operational and strategic risk management processes. Areas of support include:</p> <ul style="list-style-type: none"> • Risk identification and screening • Risk assessment and impact evaluation • Risk mitigation evaluation, planning and implementation • Risk monitoring, reporting and communication <p>Public support needs to raise the awareness of risk management, demonstrate the business case for it and support implementation. This requires technical assistance for individual companies facilitated by knowledge tools. Different scales and types of business will require different formats of support, tailored to be relevant and pragmatic.</p>
B3: Support cross-organisational or	There are opportunities to manage systemic risks at sector or geographical levels. Systemic issues are characterised by multiple barriers, challenges and stakeholders. To do this effectively, more than one

cross-sector approaches to risk management	<p>intervention is required using a 'market systems' approach that addresses multiple barriers. For example, to connect smallholders with new markets you may need:</p> <ul style="list-style-type: none"> • Market analysis to identify the commercial opportunity • Accessibility of a new resilient seed and/or technology in the local market • Short-term affordable credit arrangements to allow the farmer to purchase the new inputs • Agricultural extension services embedded with resilience capacity building • Infrastructure to collect, store and transfer the product to market • A payment model, infrastructure and allocation system that is accessible, reliable, cheap and fair <p>Public support can help to identify and support these systemic approaches with focused intervention) at sector and local levels. These solutions have the potential to set new models for sector development and replicate these to resolve similar issues in multiple countries and sectors. As a result they offer high transformative potential.</p>
B4: Build collaborative platforms for business resilience at sector and country levels	<p>The private sector can be most effectively engaged at sector and country level. Private sector actors are interested in value chain partnerships, public-private partnerships including at the local level and also sector alliances. Coordinated action to tackle common market-wide risks can enable solutions at scale. Relevant examples include the Tropical Forest Alliance and the Better Cotton Initiative. Support for these and similar platforms and initiatives at sector and country level can foster collaborative targets, action, advocacy and engagement on shared systemic resilience challenges.</p>

Operational approach C: Support the development of innovative new business opportunities for resilience

Coherent and continuous support is required to take new products and services from innovative ideas through to commercial products and services available at scale. There is currently very little support offered to commercialise new resilience innovations in developing country markets. Small companies in particular can struggle to access finance to develop new market segments, grow their businesses or identify partners to help bring their innovations to market. There is a need to provide sequenced public support at each of the five commercialisation stages:

1. Identifying risks and resilience opportunities
2. Innovation and design of resilience products and services
3. Business model development
4. Piloting and demonstration
5. Full scale commercialisation and investment

It should be noted that continuity of support through these stages is the ultimate objective of these recommendations and is currently missing, which hampers innovation at scale

Recommendation	Description
C1: Stimulate innovation in new business models, products and services for resilience (stages 1, 2 and 3)	<p>Early stage business development support of new resilience ideas is needed to promote innovation at scale. Public support should seek new ways to incentivise and move on new private sector led R&D and technological resilience solutions.</p> <p>Partnerships, at both local and international levels, have a strong potential to unlock transformative and innovative solutions. Blending different forms of expertise can deliver particular solutions beyond that achievable by the current business model.</p> <p>Innovation funds and prizes offering technical assistance and/or grants are suggested in order to promote and support private sector innovation, leveraging competition to generate R&D efforts.</p>
C2: Incubate business models and support piloting and demonstration projects (stages 3 and 4)	<p>Organisations with promising ideas often need initial support in order to implement pilots and demonstrate a track record and market feasibility, giving them the ability to attract further investment. Key areas of support are business model development, demonstration and testing. While technical assistance plays a central role, financial support in the form of matched grants or concessional loans is also required.</p>
C3: Provide investment support for tested business models, products and services to	<p>Support is needed for scaled-up and longer-term investment, while technical support is maintained on fund-raising and deals structuring as well as financial de-risking instruments. Investor risk is high for new ideas first entering a market; hence support for commercialisation may protect financially vulnerable enterprises from having to sell their ideas when this is not desirable. Businesses may also be helped to explore new forms of investment, including through partnering, micro-franchising and matching to collaborators and investors, as well as less conventional forms of funding such as online</p>

attract longer-term/ scaled up investment (stage 5)	and mobile forms of crowdsourcing. Public intervention may also take the form of joint public-private ventures, or assistance to private enterprises in their dealings and relationships with investors. Technical assistance support around investment readiness, deal structuring and syndication is required, in addition to the provision of other financial interventions, including direct equity or concessional debt support and/or risk guarantees.
C4: Foster the development of new disaster risk finance products and markets	Risk transfer mechanisms (e.g. insurance, reinsurance, insurance pools, catastrophe bonds, micro-insurance and weather derivatives) have an important role to play in reducing economic interruptions to growth due to natural disasters. To scale up the provision of disaster risk finance products, governments and development partners will need to intervene more actively by playing important enabling and facilitating roles to stimulate local markets, including support for: national weather services, infrastructure, data systems and research; creating an enabling legal and regulatory environment; supporting risk pools; providing technical assistance, training, and product development support to the insurance value chain; supporting marketing and distribution channels for insurance particularly in rural areas; educating communities and companies about the use of insurance; partnering with international (re)insurers bringing in the necessary international skills, capital and capacity to kick-start local market activity.

Operational approach D: Attract and direct private infrastructure investment to build resilience

Recommendation	Description
D1: Develop resilience based infrastructure investment principles	Shared economic and investment principles embedding resilience are needed to underlie capital infrastructure project finance. Government, the private sector and the IFI/DFI community should coordinate to develop these and roll-out these new principles, similar to the adoption of the Equator-Principles. Not only would resilience principles help to ensure that projects with primary or secondary resilience benefits are increasingly attractive, but they would also define minimum project finance standards. The public sector should lead a process to develop these principles, as well as recruiting organisations to sign up to them. In addition to embedding resilience principles and criteria into mainstream project feasibility and due diligence processes, qualifying resilience projects could also generate forms of adaptation or resilience 'credit' (akin to Certified Emissions Reductions or CERs) that improve the project economics and viability acting as an incentive to investors. Although worthy of further research and consideration, the technical challenges in designing and governing such a payment for performance system for resilience are likely to be extremely challenging.
D2: Build and support a high quality and bankable pipeline of demonstration resilient infrastructure projects	<p>Focusing on selected countries and sectors, public support could be administered to develop a portfolio of investment grade infrastructure projects that target resilience outcomes. Current development funds supporting infrastructure investment lack a specific focus on resilience. There is an opportunity to provide support at the country level that leverages local private sector networks to identify potential projects with resilience benefits and then supports their development and investment readiness. Support could be provided to address issues such as:</p> <ul style="list-style-type: none"> • Market assessment • Technical feasibility (including risk and resilience assessment) • Financial structuring • Investor relations and syndication of finance <p>Targeted support of this nature could build a diverse portfolio of potential investments that are fine-tuned to maximise resilience benefits and bankability (possibly in line with the principles set out in recommendation D1). It would support the investment and deals process from the project developer's perspective, and if necessary provide such as forms of limited risk sharing (e.g. risk guarantees, mezzanine debt) to facilitate the deal. A project pipeline of this nature could be financed through existing IFI/DFI channels, bilateral infrastructure initiatives such as PIDG, CP3 and Power Africa, and ultimately through the Green Climate Fund. The aggregated assets could also be suitable for a form of bond issue. These two opportunities are separately addressed in D3 and D4 below.</p>
D3: Offer targeted de-risking of key resilient infrastructure projects	<p>Public sector support can de-risk marginal resilience projects making them more attractive to the capital markets. De-risking investments is possible through financial instruments and public-private partnerships.</p> <p>Major infrastructure projects are increasingly developed as PPPs in which a variable proportion of the investment and risk is carried by the public sector and by private investors. PPPs can be structured to specifically address the management of disaster and climate change risk. Certain perils can be mitigated in design, some are handled by insurance, but others may need to be swapped or transferred as part of the PPP contract. The disaster related layer of risk may, for example, be transferred to government in return for extended performance guarantees construction times or</p>

service levels.

Financial de-risking instruments would involve an intermediary such as an IFI or DFI that would provide a form of risk guarantee to the project lender. This guarantee could take the form of a price guarantee or a local currency guarantee for example. Alternatively an infrastructure development facility would take early stage project risk (i.e. the costs of designing, planning and bringing a project to financial close).

Public support would establish infrastructure development funds and resources to carry out the above functions. The focus on these funds and resources would be resilient infrastructure projects in sensitive sectors (e.g. water, energy and agriculture).

D4: The Resilience Bond - Aggregate projects into new asset class

The bond market is attracting growing interest as a source of debt capital to finance more sustainable infrastructure solutions. Bonds are particularly suited for providing sources of capital to finance long-term infrastructure projects (i.e. 10+ years). The extra upfront investments tend to be balanced by much lower operating costs, notably in the building, energy, industrial and transport sectors. These sectors are targeted because revenue streams are generally predictable and stable.

Climate change bonds, currently valued at over USD 350 billion¹¹ have been issued by corporations, financial institutions, municipalities, state-backed entities and project related special purpose vehicles. The concept of a resilience bond would be an aggregation of projects that meet minimum standards in terms of their contribution to resilience goals. They might include built environment projects, green infrastructure and forestry bonds, water and defensive infrastructure.

Public support would be required to help aggregate and potentially issue the bonds. This aggregation would allow for diversity of investments blending some lower yielding assets with higher yielding projects and income sources. A second function would be for the public sector to provide forms of risk mitigation to increase the attractiveness to investors. It is recommended that the feasibility of resilience bonds be examined in more detail including the role of concessional finance in improving their attractiveness and how project (and possibly corporate) aggregation could work.

Implementation: Options for delivering these recommendations

Recognising that public resources are scarce, there are a range of options available to deliver some or all of the above operational approaches. Each option has benefits and drawbacks which need to be carefully considered in making decisions as to the most appropriate response and use of resources. Ranging from the 'business as usual' (BAU) or counterfactual scenario, to new country or sector programmes, to creating a new global resilience fund, the most appropriate course of action will depend on the ambition of the implementer(s), appetite for coordinated action between existing programmes and the availability of funding and other resources.

Our report findings underscore that the BAU approach is currently ineffective. This report does not recommend pursuing a 'business as usual' approach or creating a new global resilience fund. A new global fund architecture requires significant international coordination and political buy-in and is likely unachievable in the short to medium-term when scaled up action is essential (i.e. at least the next three to five years). The idea of a long-term global fund is also politically questionable in terms of its alignment with the emerging Green Climate Fund (GCF) architecture.

We therefore focus on three potentially viable options for approaches that offer pragmatic, realistic hybrid approaches. These options balance the need to act now with recognition of a realistic assessment of the scale of resources that are available to support this, and the need to support rather than compete with the emerging global architecture of the GCF:

1. **Mainstreaming:** Modify existing programmes/ initiatives (i.e. tailor or embed new initiatives within existing or related programmes).
2. **Piloting and demonstration:** Establish a short-term pilot programme that tests new approaches in targeted countries or sectors with a focus on key 'gap' operational approaches (i.e. B: risk management and C: commercialisation support).
3. **A new, at-scale programme/facility:** Create a multi-country multi-sector private sector resilience support facility ("A Resilient Markets Facility") supporting all recommended operational approaches (i.e. enabling environment, risk management, commercialisation and investment).

These options are not mutually exclusive and have been created to express the range of potential modalities by which public resources could be deployed. For example, existing donor-country partnerships and programmes

¹¹ Climate Bonds Initiative (2013). Bonds and Climate Change – the state of the market 2013.

could seek to mainstream support to private sector resilience building activities, but also run a pilot programme to demonstrate an individual operational approach through a new dedicated instrument.

The establishment of a new multi-country resilience facility represents a scaled approach, recognising the existing gap in the landscape of donor-support mechanisms for the private sector in this space. It could act as a feeder for the GCF, developing a pipeline of investment-ready private sector resilience projects. This will support the GCF's Private Sector Facility, once operational, which will need to engage with intermediaries to develop a pipeline of investment opportunities. Similar readiness-support mechanisms are being established to establish a pipeline of private sector relevant REDD+ projects, which like adaptation is a more nascent area for public-private partnerships and investment than, for example, low carbon infrastructure and technologies.

In the section that follows, each option is presented and evaluated to display its features, benefits and constraints. Each shows a range of trade-offs between investment requirements, value-for money, time-frames, implementation risk and resilience impact.

Implementation options: Summary factsheets

Option 1 – Mainstreaming

Summary

This approach involves the modification of current private sector donor support initiatives in an attempt to integrate and scale up resilience activities and outcomes. A degree of overlap exists between our recommendations and existing and planned resilience and private sector development initiatives. Existing and planned initiatives could theoretically deliver some of the recommendations within each of the operational approaches A, B, C and D.

If existing initiatives - both those targeted at resilience and those delivering on wider development goals - can be tailored, they could achieve at least *some* of the desired resilience outcomes. Some existing private sector development initiatives could be augmented to address our recommendations, in particular for supporting the development of new business opportunities (operational approach C) and attracting private infrastructure investment (operational approach D).

Others would however need considerable adjustment and modification, and substantial gaps would remain. This would involve a certain level of retrofitting and ad-hoc measures across programmes, sectors and geographies. In practice the opportunities to augment existing initiatives may be limited to a handful of programmes and geographical coverage and the targeting of priority issues may be compromised at the expense of core programme objectives and identity.

Key features of the approach

Implementation actions under this approach might include:

- Increased delivery of private sector resilience outcomes such as improved risk management, asset resilience and security of supply. New forms of outreach, instruments, services and funding channelling through existing initiatives (e.g. AECF, BIF, PIDG, PPCR).
- Donors conduct an appraisal and prioritisation process to consider their current portfolio and focus attention and additional financial and technical resources on key initiatives which could feasibly be modified to deliver new and better resilience outcomes whilst ensuring value for money.
- Integrate resilience goals into strategy, objectives and results frameworks for relevant projects and programmes where possible i.e. ‘mainstreaming’.
- Engage with and make adjustments to existing programmes to support one or more operational approaches / recommendations required to stimulate enhanced private sector action on resilience.
- Some sharing and cooperation may take place but no new facility/initiative would be created as a focal point for delivering scaled and coordinated private sector resilience related activities, learning and knowledge.
- Review potential interventions to wider donor supported initiatives/ sectors and encourage collaboration to replicate and scale-up successful modifications (longer-term).
- See full report for a summary of actions that could be taken to embed resilience activities into existing relevant initiatives, including where they can support each of the operational areas identified, and what assumptions or constraints should be addressed.

Structural components	<ul style="list-style-type: none"> • Uses existing infrastructure of programmes and initiatives currently serving the private sector and/or resilience specifically • Likely to be feasible in agriculture, land-use and infrastructure sectors.
Resource and funding needs	<ul style="list-style-type: none"> • Medium cost burden (e.g. £2-5M) per initiative including. <ul style="list-style-type: none"> (a) new and dedicated funding for resilience activities and capacity/ skills. (b) the frictional costs of attempting to shift focus of existing programmes.
Time period	<ul style="list-style-type: none"> • Less than 1 year to design approach and secure funding. • A further 2 years to implement planned approaches and generate results.
Strengths	<ul style="list-style-type: none"> • Lower cost and risk profile than creating something new. • Scales existing networks. • Useful for testing of certain approaches (within the constraints of existing programmes). • Avoids creating new initiatives in an increasingly crowded development landscape (note that there are very few resilience-focused initiatives).
Weaknesses	<ul style="list-style-type: none"> • Limited evidence that this approach will successfully close the necessary gaps identified in this study including structured and continuous support to the development of new products and services. • Lack of impact and visibility for the private sector, including a dilution of messaging. • Piggy-backing of existing programmes masks the private sector resilience goals due to the identity of the existing initiative being conceived for a different purpose. • Scalable solutions will lack the infrastructure and learning mechanisms to support them.
Resilience impact	<ul style="list-style-type: none"> • Incremental change in specific areas is likely to be the best reasonable outcome. • Geographically and sector constrained outcomes as per the remit of the existing initiative (and likely to achieve only partial overlap with vulnerability and resilience needs).
Value for money	<ul style="list-style-type: none"> • Lower cost but with uncertain results. • Frictional issues in adapting existing mechanisms may prove politically and practically challenging.

Option 2 – Piloting and demonstration

Summary

This approach pilots a new ‘Business Resilience Facility’, limited to a select number of resilience challenges, sectors and/ or countries. This programme of support would be highly targeted and could initially focus on two key gaps in existing landscape, namely the commercialisation of new products and services, and operational risk management support (operational approaches B and C).

Depending on the funding and resources available, such a newly established support programme could focus efforts on 3-5 countries with one or more ‘resilience-relevant’ sectors in each (consider relevance from both the business risk and opportunity perspective). The pilot programme would identify and take demonstration projects / innovations through to full commercialisation. Pilot mechanisms for sharing of results, best practice, lessons learned (success and failure) across countries and sectors would incorporate or link to a sector focused knowledge platform.

Key features of the approach

- Focuses on piloting instruments and technical support to projects in a range of sectors and countries over a short-term (e.g. 3-5 year) incubation period prior to scaling up successful mechanisms through a scaled up facility (option 3) or the GCF directly.
- Provides business support in the key ‘gap’ areas identified in this study, notably support for the management of operational risk (operational approach B) and the for development and commercialisation of new business opportunities (operational approach C).
- Offers direct and flexible business development support (i.e. moves beyond the traditional challenge fund approach) to enable and accelerate businesses throughout the full commercialisation and scale-up process.
- Delivers a flexible suite of TA support to help businesses overcome barriers to commercialisation and good risk management, but could also experiment in setting innovation challenges and prizes for focused resilience areas.
- Pilots a knowledge platform to share knowledge, lessons learned, best practice and provide matchmaking services.
- Risk management information, tools and training to the most vulnerable business types and sectors.

Structural components	<p>The programme would fill gaps in the existing landscape of public finance support through its two operational windows targeting operational approaches B and C:</p> <ul style="list-style-type: none"> • Window 1: Operational risk management (technical assistance window for local businesses) • Window 2: Resilience innovation and commercialisation (business development and partnership support, through to investment readiness support and deal facilitation and structuring).
Resource and funding needs	<ul style="list-style-type: none"> • Minimum budget in the range £15-20M. • A programme manager is required for planning, procurement and disbursement of financial and technical support; on-demand business development and partnership support services; management of a regional or sector level knowledge sharing platform for practitioners; and management of a network of in-country technical and industry experts.
Time period	<ul style="list-style-type: none"> • <1 year to design and secure programme funding. • 3-6 months required to establish a pilot (3-5 year) facility and prioritise actions.
Strengths	<ul style="list-style-type: none"> • Clearly defined programme which can champion and progress action by the private sector on resilience. • Can focus on under supported sectors beyond agriculture and insurance e.g. construction, manufacturing, ICT. • Can focus on countries where political will and appetite is high, and where local private sector markets show good growth potential.
Weaknesses	<ul style="list-style-type: none"> • No window which addresses the need to strengthen the business enabling environment or to attract and direct private infrastructure investment. • Smaller scale demonstration projects, and limited geographical scale may not be enough to drive wider uptake from private sector actors and trans-boundary solutions • Limited life-span can interrupt programme performance, profile and external engagement
Resilience impact	<ul style="list-style-type: none"> • Benefits from having a dedicated objective and focused activities. • By focusing projects within a defined geography and/or sector greater in-roads to regional or sector transformation would be expected. • Likely to be operated by staff that have industry expertise, market knowledge and networks, and technical resilience experience. • Transfer of best practice and lessons learned to other resilience building opportunities.
Value for money	<ul style="list-style-type: none"> • Provides a flexible solution addressing a range of needs for private sector actors that should be scalable and replicable in other sectors and countries. • Relatively higher transaction costs expected due to shorter-term pilot mechanism with small scale pilots. • Will provide a template and model through which others can invest and scale support, including learning for the Green Climate Fund’s Private Sector Facility.

Option 3 – Resilient Markets Facility

Summary

Creation of an at-scale £40-100+ million ‘Resilient Markets Facility’ operating in multiple countries and sectors. This more comprehensive market-based approach proposes a new and ambitious mechanism with a core focus on maximising private sector potential to support far-reaching resilience goals. It would take the form of a multi-country (10+) facility championing private sector resilience through a range of operational areas, financial and stakeholder channels.

The facility would act as an international focal point for driving forward private sector resilience activity raising the profile and exposure of resilience as a thematic area to overcome awareness and engagement barriers in the market. It could benefit from endorsement by the Political Champions working group and multi-donor collaboration. It would include operational ‘windows’ that target all four operational approaches including the enabling environment, operational risk management, commercialisation and investment support; thus providing a comprehensive market solution.

Key features of the approach

- Flexible, hybrid (min. 5yr) technical assistance, innovation and financing programme focusing on market development support services.
- Supported by a dedicated learning and outreach programme and platform that enables knowledge sharing between participating countries and businesses.
- Coordination and delivery of operational approaches A, B, C and D through targeted support windows.
- Maximises opportunities to design efficient long term and scaled solutions to engaging the private sector on resilience, and enables engagement with actors over a sustained period to take them through implementation and commercialisation.
- A market development approach targeting specific sectors and their resilience issues, working proactively over a consistent period to provide flexible technical / business development support to stimulate a market system response
- Potential to build a portfolio of investment-ready projects that feed the Green Climate Fund’s Private Sector Facility. Likewise, the Facility can generate national and regional pipelines of investments/deals for IFIs, DFIs and commercial investors to take forward.
- Sharing of results, best practice, lessons learned (success and failure) across countries and sectors through an interactive and high profile global knowledge platform (e.g. knowledge products, tools, workshops, research).

Expected outputs and results

- Country programmes immersed in each local market operate at sector level with coordination and support from a centralised international programme management unit and and learning programme
- **Window 1:** (Optional) Business enabling environment (technical assistance window for governments to work in collaboration with local private sector).
- **Window 2:** Operational risk management (technical assistance window for local businesses).
- **Window 3:** Innovation and Incubation (business development and partnership support technical assistance, grants).
- **Window 4:** Investment readiness (technical assistance and linking with de-risking instruments and equity/debt investors to build a pipeline of large-scale transformational public-private joint ventures/co-financing).

Resource and funding needs

- Large scale, £40-100+ million, greater transactional efficiency and transformation potential.
- A programme manager and internal resources to support and manage contracts.

Time period

- 12-18 months required to develop the facility to launch.
- First operating phase to last at least 5 years.
- Likely operational timeframe 10 years depending on markets and geography covered plus efficacy and reach of related GCF activities.

Strengths

- Potential multi-donor solution with weight and presence to a dedicated focus on business resilience - a common private sector entry point for accessing support and learning.
- Can support Green Climate Fund architecture through pipeline development, readiness and demonstration of an adaptation-relevant operating model for the Private Sector Facility.
- Sufficient attention is given to currently under-supported issues e.g. operational risk management advice, training and tools.
- Structured and long-term engagement through a business-centric lens.
- The facility should result in more efficient, transparent and coherent spending of climate finance for private sector adaptation.

Weaknesses

- Large commitment of finance needed for the set-up of a multi-country facility.
- It may be easier to get buy-in from stakeholders by starting with a lighter touch option e.g. a pilot facility (see option 2).

Resilience impact

- The resilience impact delivered by the creation and running of a large multi-country facility is likely to be the greatest and most transformation by deliver market solutions.
- Will raise the profile and exposure of resilience as a thematic area on the international stage.

Value for money

- A multi-country mechanism will enable transactional efficiencies, cross-border business opportunities and maximise regional and international learning.

Summative comments

If businesses, communities and poor people have improved access to certain markets, their ability to anticipate, absorb, accommodate or recover from the impacts of disasters and climate change would greatly improve. Market failures however, are preventing some of these markets from developing or functioning as well as they might.

This study has evidenced considerable private sector demand for support from a range of private sector actors including SMEs, national companies, MNCs and the investor community. It also shows that a major constraint in engaging the private sector on these challenges has been the lack of a dedicated and comprehensive vehicle/mechanism through which to deliver it. Much attention has been on global corporations working through supply chains. Whilst this is valid, it has masked a clearer underlying demand for in-country support working with national and SME organisations and entrepreneurs, often the value chain partners of larger corporations and where the impacts of disasters and climate change are most acutely experienced.

We are presented with considerable opportunity to work with country governments, private sector operators and investors (large and small) to deliver results through country and sector/market focused activities. For action to work, the interventions cannot be 'bit-part and dilute'. The minimum scale of operation is targeting one sector in one country through a dedicated mechanism. Much more can be achieved in terms of efficiency and impact by targeting multiple sectors in 10 or more countries.

Support for private sector-led activities to improve resilience has stalled for a lengthy period of time (too long) as a result of a poor evidence base and ambiguity regarding the most effective modality for support. Targeted public intervention and finance from the international community can address market failures through business-relevant approaches to bring about 'systemic or transformational change' in business and societal resilience. These include de-risking business innovation and commercialisation processes, working to change national policy and regulatory frameworks, or improving the availability of resilience information, tools and standards. An evidence-based framework of recommendations, and then viable implementation options for these, has been set out.

Of the implementing options presented, each is valid and broadly feasible, with its own value for money and impact profile. But the options also have trade-offs and compromises, and are by no means equal. Those set up with different objectives, geographical focuses and operating models will not easily accommodate and best engage business in investing in the resilience opportunity. Bit-part changes to the limited existing programmes may not fully address the reality that there is no existing initiative that can comprehensively deliver support to the private sector across the four operational approaches identified (i.e. business enabling environment, operational risk management, product and service development support, and resilient infrastructure investment). There may also be further challenges with realignment, networks, skills and flexibility.

A major barrier will be the ability to improve private sector awareness and sector level knowledge that to date has inhibited the uptake of available support. Targeted additional outreach, technical assistance and learning processes are required to foster business awareness of the opportunities that resilience offers and build their demand for support, action and investment.

A valid and strong business case exists to create a new public intervention that can transform the private sector's response in this area, and greatly enhance resilience outcomes for society, the most vulnerable and poorest. There is an opportunity to create an international focal point that is currently lacking for driving forward private sector resilience activity, raising the profile and exposure of resilience as a thematic area to overcome business awareness and engagement barriers. Such a new facility, whether pilot in a handful of countries and sectors, or at scale, can administer and coordinate a range of flexible support interventions and services that help to overcome key market failures and real business barriers to private sector action and investment on resilience.

A new dedicated private sector resilience programme will not only enable a demonstration and learning of how targeted public sector action can be deployed to scale up private sector resilience activities, but the pipeline of "ready" projects and partnerships generated can help to feed the forthcoming Green Climate Fund's Private Sector Facility, in addition to IFIs, DFIs and commercial investors looking to finance such deals but stagnated by a lack of a suitable project pipeline.

A newly established 'Resilient Markets Facility', and/ or a targeted framework of sector interventions, can provide the key missing link between GCF funding and the climate finance readiness of the private sector in a range of countries.

Main report

1. Introduction and approach

1.1 Context

The UK Government's and the United Nations Development Program (UNDP), acting as co-chairs, launched the Political Champions Group in 2012 to apply greater political focus and investment in disaster resilience. Part of the Group's focus is to better understand how to stimulate private sector engagement in disaster risk management (DRM) and climate change adaptation (CCA). Commissioned by DFID, this scoping study explores how public finances can be deployed to stimulate enhanced private sector engagement in building disaster resilience and preparedness for current and future risks posed by our changing climate.¹²

There are a growing number of reasons for private sector engagement in disaster risk management and climate change adaptation. The private sector is the major driver of economic growth and is exposed to climate and other natural shocks through its assets and supply chains. It must protect itself, but also harness new business opportunities arising from the need for communities to adapt to and reduce disaster and future climate risks. It has also been shown that investing in preparedness represents better value for money and better for livelihood development and protection than providing a post-catastrophe humanitarian response alone.

The private sector has demonstrated its powerful and transformative development impact in a range of sectors. Major leaps in development have been made through private enterprise, such as the green revolution and more recently the increasing use of internet and mobile technology. Building resilience to natural hazards is a multi-sector endeavour, and is made more complex by the involvement of many stakeholders and differing country pressures. This report explores the potential for a private sector-led, resilience-building transformation in some of the poorest and most vulnerable countries, and how public finance mechanisms (PFM) can initiate and support this.

Private sector investment in operational, sectoral and community resilience has not reached the desired scale due to a number of barriers, market failures and constraints. These include a lack of awareness of the risks and opportunities, the business case for action, and opportunities to collaborate, as well as the lack of an appropriate enabling environment. There is now an opportunity to build understanding and engagement between the public and private sector, and to make investment in disaster and climate resilience more transparent, attractive and feasible. It is hoped that this in turn will unlock new markets and investment in support of the resilience goals of the companies, markets and societies that support them.

Through four detailed country-based assessments (Bangladesh, Kenya, Mozambique and Pakistan) coupled with global research and consultation, this report explores what the private sector needs in order to overcome the constraints on its engagement and investment in building resilience. It reviews the effectiveness of the current landscape of public-finance programmes and mechanisms that currently support resilience and the lessons that can be learned on engaging the private sector from wider private sector focused development initiatives. Finally it sets out an assessment of the gaps in existing efforts, and a framework of actions through which public finance can be used to facilitate private sector engagement and investment in building disaster resilience and climate change adaptation. The recommendations include both whether and how existing initiatives can be adjusted to improve effectiveness, and whether a new fund or mechanism is required to stimulate private sector engagement.

1.2 Objectives of this work

This report aims to provide insight and recommendations for DFID and the Political Champions Group around mobilising the private sector in building disaster and climate change resilience. It presents the findings that emerged as part of a scoping study commissioned by DFID in 2013 which supported the UK's work stream on private sector engagement. It also supports the UK's work in supporting international progress and action on disaster risk reduction and climate change policy, and the international climate finance architecture.

¹² For clarification on the term 'resilience' and the different types of private sector players that will be discussed throughout the report see Section 1.4.

The ultimate objective of this scoping study and the report is to provide an evidence base that supports DFID’s next course of action in accelerating action and investment from the private sector on building disaster and climate resilience. DFID intends to discuss the findings and recommendations detailed in this report with the Political Champions Group to align on the needs and priorities for the development of a new program and/or the redesign of existing initiatives. To that end, the overall objectives of the scoping study are to:

- Better understand opportunities and constraints for catalysing private sector engagement and investment in building disaster resilience and climate change adaptation.
- Use this evidence to determine what action could be taken by central/local government, donors, the private sector or other stakeholders to remove these constraints and support the better uptake of opportunities by the private sector.
- Assess whether and how existing public finance instruments could be adjusted to improve the uptake of the opportunities or the removal of constraints and/or whether a new fund or mechanism is required to stimulate private sector engagement.

Table 8: Navigating this report

Chapter	Description
Chapter 1: Introduction and approach	Sets out the context, objectives and methodology for the scoping study.
Chapter 2: Impacts, opportunities, and barriers to enhanced action	Contains finding from a synthesis of the literature review and the evidence gathered from the multinational company (MNC) consultations. Evaluates the current ‘state of play’ and highlight any obvious gaps. Builds on this to present the drivers for and barriers to private sector engagement in resilience. Concludes by presenting frameworks to assess private sector needs and entry points for intervention.
Chapter 3: Summary of country findings	Contains a summary of the country case studies including major hazard types, sector sensitivity, barriers and opportunities for public intervention.
Chapter 4: Analysis of existing private sector engagement initiatives	Works through the existing landscape of donor supported programmes, funds and initiatives that target the engagement of the private sector in resilience issues. This includes mapping of 10 international initiatives that specifically target private sector action on resilience and a further 25 initiatives that illustrate the range of private sector engagement models deployed for wider development challenges. Through this review, the effectiveness of current donor support mechanisms is assessed and a gap analysis performed.
Chapter 5: Summary of study findings	Summarises the key needs, gaps and priorities for donor action. Provides analysis of the modalities available through which to address these, including: leveraging existing versus potential new public sector support mechanisms that target these issues.
Chapter 6: Recommendations: Transforming the private sector response	Concludes the report by setting out a framework for action including 4 operational approaches and a clear proposal for a new implementation mechanism.
Country case studies	This separate document contains the detailed country case studies for Bangladesh, Kenya, Mozambique and Pakistan.
Appendices	This separate document includes further information on the methodology, MNC consultation notes, literature review document list and the full list of consultee names.

1.3 Approach and methodology

The scoping study is complex and requires a strong evidence base to determine clear action for government and donor organisations. The analysis has been delivered through three main work streams:

Work stream 1: Mapping the existing landscape

In order to analyse the information needed to inform recommendations on the development of new, or the adjustment of existing, public finance mechanisms, it was important to first understand how existing donor

programmes have catalysed private sector engagement in delivery of development initiatives including those related to CCA and DRM. The following tasks were carried out:

Table 9: Work stream 1 - Tasks and Outputs

Step	Descriptions of tasks and outputs
Step 1: Synthesise the existing evidence base of the core barriers and opportunities for private sector engagement in DRM and CCA	<p>An agreed set of reports were reviewed to identify the latest thinking and progress on private sector engagement and investment in resilience activities. Building on the literature, the key barriers and constraints were identified and categorised. These were subsequently tested and validated through international and country level consultations. Helpful case studies were identified including ‘success stories’ of partnership models, and public finance mechanisms that have been successfully employed to overcome these constraints.</p> <p>Research was also undertaken to evaluate how existing efforts have sought to identify and develop commercial opportunities that tackle disaster and climate risk resilience issues. The list of documents that formed the basis for this literature review can be found in Appendix C.</p>
Step 2: Map current landscape of existing public-private initiatives	<p>To map the current landscape of existing public-private initiatives, 35 relevant donor initiatives were identified and mapped that were designed to engage the private sector in delivery of development objectives. These included ten initiatives that specifically target action on DRM and CCA.</p> <p>Each of the initiatives were assessed against set criteria that included the initiatives’ structure (e.g. instrument type, mechanism type, entity promoting the initiative, institutional dependencies, financial scale), scope (e.g. development area and sectors, geography, type of private sector engagement, and timeframe), barriers addressed, and partnership models employed. A list of initiatives mapped and summary templates capturing their key features, targeted barriers and the public finance instruments used is presented in chapter 5.</p> <p>Where public information was unavailable, the initiatives were relatively new or where evaluation reports were unavailable, direct consultations were undertaken with experts and programme managers to gain better insights into the initiative’s structure, functionality, and effectiveness. A list of people and organisations consulted is included in the country case studies and Appendix D.</p>
Step 3: Evaluate the scope and performance of resilience targeted initiatives	<p>Additional desk based analysis was undertaken on the effectiveness of each of the selected ten DRM/CCA specific initiatives in terms of engaging the private sector. An assessment was made of the coverage of these instruments from a geographical and thematic perspective. Particular attention was given to the ability of these instruments to meet private sector needs and help remove constraints to their engagement.</p> <p>The evaluation concludes with a summary of the main gaps and deficiencies in the existing landscape and some of the reasoning as to why these exist.</p>
Step 4: Review lessons learned from existing private sector initiatives	<p>A valuable component of this study is to try and draw evidence from existing initiatives which have already tackled similar challenges. It is apparent that barriers to private sector action can often be similar at a country and sector level. As a result, programmes targeting engagement of the private sector in other development issues, particularly may offer helpful points of learning that do not need to be reinvented for resilience.</p> <p>This component therefore focused on assessing existing and historical initiatives implemented by DFID and other donor organisations aimed at catalysing private sector activity across a broad spectrum of development challenges. This was done in order to identify trends in terms of which public finance mechanisms have been effectively employed to:</p> <ul style="list-style-type: none"> • Address specific barriers to private sector engagement (i.e. country, market, information etc.) • Engage business from different sectors (i.e. agribusiness, ICT, energy etc.) • Engage different types of private sector organisations (i.e. microenterprises, small and medium sized enterprise, national companies, MNCs).

Work stream 2: Country case studies and broader international business consultation

Specific barriers that limit private sector engagement in DRM and CCA that have been identified are influenced by the country context, the sectors in which businesses operate, and the size and nature of the business. The objective of this component was therefore to:

- Identify disaster and climate risk in the case study countries of Bangladesh, Kenya, Mozambique, and Pakistan.
- Engage with private sector representatives and other relevant stakeholders to better understand how local barriers constrain progress by businesses on resilience related action and investment.
- Explore market opportunities.
- Gain a global perspective of challenges, opportunities and experience through consultations with multinational corporations.

Examples from case study countries and MNC consultations are discussed throughout the report. Findings from these research activities were also used to inform the options analysis and recommendations. The following tasks were carried out:

Table 10: Work stream 2 - Tasks and Outputs

Step	Descriptions of tasks and outputs															
<p>Step 1: Identify key disaster and climate change vulnerabilities in each country and sector</p>	<p>To better understand climate vulnerabilities across the case study countries, natural disaster risks and climate change impacts were reviewed and summarised for each country. These risks were profiled against economic data and planned business activity to identify sectors most exposed to current and future risks. The prioritisation of sectors also allowed for more focused and detailed analysis working with targeted stakeholder groups. The following sectors were selected:</p> <table border="1"> <thead> <tr> <th>Country</th> <th><i>Bangladesh</i></th> <th><i>Kenya</i></th> <th><i>Mozambique</i></th> <th><i>Pakistan</i></th> </tr> </thead> <tbody> <tr> <td>First sector</td> <td>Agriculture (arable/livestock)</td> <td>Agriculture (livestock)</td> <td>Agriculture (arable)</td> <td>Agriculture (arable/livestock)</td> </tr> <tr> <td>Other sector(s)</td> <td>Textiles</td> <td>ICT</td> <td>Extractives + others</td> <td>Construction/ Insurance</td> </tr> </tbody> </table> <p>Once priority sectors were identified across the countries, risks, barriers, and major actors involved for each sector were analysed. Through this, specific risks from different climactic or severe weather events were evaluated at each stage of the value chain. Similarly, the barriers for further engagement for different private sector actors in each part of the value chain were identified.</p>	Country	<i>Bangladesh</i>	<i>Kenya</i>	<i>Mozambique</i>	<i>Pakistan</i>	First sector	Agriculture (arable/livestock)	Agriculture (livestock)	Agriculture (arable)	Agriculture (arable/livestock)	Other sector(s)	Textiles	ICT	Extractives + others	Construction/ Insurance
Country	<i>Bangladesh</i>	<i>Kenya</i>	<i>Mozambique</i>	<i>Pakistan</i>												
First sector	Agriculture (arable/livestock)	Agriculture (livestock)	Agriculture (arable)	Agriculture (arable/livestock)												
Other sector(s)	Textiles	ICT	Extractives + others	Construction/ Insurance												
<p>Step 2: Identify stakeholder groups and conduct one-to-one consultations and in-country missions/ workshops</p>	<p>In each of the case study countries, stakeholder groups were assembled using a network of local partners, DFID country offices and PwC's local firm. From this a series of one to one consultations were organised and carried out with a number of businesses focusing on the prioritised sectors. Interviews were also held with key development partners and appropriate public sector agencies working on private sector engagement and DRM and CCA issues. Businesses were selected to reflect a range in the scale and type of organisation, from small and medium sized enterprises (SME) to national companies to MNCs.</p> <p>Workshops attended by 20-40 representatives were held in Bangladesh, Kenya, Mozambique and Pakistan to better understand the barriers and needs for private sector action in CCA and DRM and the opportunities for more appropriate public sector support. During the workshops participants were broadly grouped by sector and asked to identify and discuss their top three barriers and solutions. This provided insights into the local context of these countries and specific examples of existing DRM and CCA issues or potential new ones.</p> <p>During some of the country missions the team also visited some vulnerable locations where impacts were being observed including the northern agricultural regions of both Kenya and Mozambique. Rural travel in Pakistan was limited due to the sensitive security situation around the elections. Travel in Bangladesh was also limited given the security situation related to the unpredictable hartals.</p>															
<p>Step 3: Consult with selected Multinational Corporations to incorporate the views of international business</p>	<p>In addition to the in-country engagements and consultations, a cohort of MNCs were consulted through phone or in-person interviews to gain insights into:</p> <ul style="list-style-type: none"> • Key opportunities and barriers to increasing action on DRM and CCA • Key partnerships required to the actions and opportunities identified above • The types of PFMs that could most effectively catalyse increased investment and private sector engagement • Experience and knowledge of existing PFMs. <p>MNC consultations were undertaken across a broad range of sectors including agribusiness, extractives, manufacturing, construction and retail.</p>															

Our approach was tailored to facilitate effective engagement with the private sector. An important part of this study was the quality of engagement with the private sector. Significant efforts were made to target a range of international and local organisations to cover relevant sectors and geographies. In addition, every

attempt was made to identify the most appropriate people and teams within those organisations in order to have an insightful discussion around the issues raised.

Our approach to each consultation (for in-country and MNC consultations) was also tailored such that the questionnaire was used as a basis for conversation only and the range and depth of issues addressed depended on the consultees' level of understanding. Some questions were modified to ensure relevance to the different scale of companies being consulted from SMEs to national companies to MNCs.

Work stream 3: Options analysis and development

The final component focused on pulling all of the findings together to conduct a final appraisal of the performance and adequacy of the existing PFMs landscape that addressed the engagement of the private sector in DRM and CCA.

Table 11: Work stream 3 -Descriptions of tasks and outputs

Step	Descriptions of tasks and outputs
Step 1: Identification and appraisal of PFM options	<p>The objective was to identify PFMs that best bridge and satisfy either very specific criteria (technical or targeted interventions i.e. projects) or a broad range of criteria (stimulus based interventions i.e. an incentive that could driver a wide range of technical and behavioural responses). The relative merits of targeted and general or geographical interventions were also tested.</p> <p>Appraisal of PFM options was undertaken by reviewing and analysing the outputs of the mapping activity in light of new findings from MNC consultations and the country-focused analysis and engagement. Specific interventions identified at country level were used as a practical underpinning for entry points for the private sector, particularly those connected to the poor and vulnerable.</p> <p>The PFM options identified were evaluated to determine the suitability and attractiveness to different types of potential private sector recipients and prospective development partners and initiatives.</p>
Step 2: Evaluate PFMs that can coordinate the required interventions and formulate recommendations	<p>Once identified, the PFM options (both new and retrofit/expansion of existing) need evaluation to determine their feasibility, effectiveness and value for money. The analysis will highlight how effectively each option can address the biggest barriers for the private sector and its suitability for different types of businesses.</p> <p>The results of the PFM evaluations then focus the recommendations on a small number of high performing options that target the market barriers known to be constraining engagement and investment in resilience by the private sector. Consideration was then given to how these mechanisms can best be delivered.</p> <p>The overall recommendations are broadly grouped into:</p> <ol style="list-style-type: none"> 1. Recommendations concerning the enabling environment for private sector engagement and investment more broadly (e.g. risk information, policy certainty, skills, capacity) 2. Final recommendations on the PFMs and financial instruments most likely to deliver against DFID's objectives 3. Moving forward (1) – options to develop and invest in existing or emerging initiatives that may be augmented to act as suitable carriers or partners for the mechanism(s) and interventions 4. Moving forward (2) – options for new public finance initiative or fund aimed at scaling up private sector investment and engagement.
Step 3: Confirm country recommendations	<p>Recommendations for specific activities and interventions (that may subsequently sit under and be coordinated by the new PFM framework approach) are also made for the case study countries. These recommendations were developed through the in-country research and consultation process. For completeness these are included here as practical and implementable actions for DFID and other development partners to consider. They also help to scope and test potential private sector engagement models at country level.</p>
Step 4: Testing and refining a Theory of Change (ToC)	<p>To conclude this scoping study, findings and recommendations were used to develop and test a ToC for catalysing private sector engagement and investment in resilience.</p>

1.4 Key resilience and private sector development concepts

This work addresses the concept of building resilience to natural hazards and climate change and what the private sector can be encouraged to do to help protect its operations and markets, but in doing so find opportunities for creating wider societal resilience. This brings together the previously independent but related fields of climate change, disaster risk reduction and private sector development.

Resilience and the private sector definitions and concepts

Disasters are caused by a range of natural, technological and anthropogenic hazards. This study is focused on ‘natural hazards’: climate and disaster risks driven by hydro-meteorological processes (e.g. tropical and extra-tropical cyclones, storm surges, on and off flood-plain flooding, droughts, heat-waves, and cold spells) and geophysical processes (e.g. earthquakes, volcanoes). Climate change will impact the frequency, severity and distribution of hydro-meteorological hazards, in many cases increasing local risk profiles over time. Both natural hazards and future climate change will impact social, economic and environmental systems in acute and chronic patterns, the net effect of which can often hamper development efforts and constrain the ability of developing economies to lift people out of poverty.

For the purpose of this study, resilience is defined as:

‘The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event or the impacts of climate change in a timely and efficient manner’. This applies to different stakeholders including entire sectors, companies’ operations, and society at large, and their ability to cope with and overcome climate or disaster hazards and risks (e.g. through better information, appropriate regulatory frameworks, integrated risk management and planning, access to financial and technical resources). Other definitions related to CCA, DRM and the private sector can be found in Appendix A.

The 2012 Intergovernmental Panel on Climate Change (IPCC) Special Report on disasters and climate change risks was instrumental in bringing disaster and climate risk together.¹³ This study continues this thinking to investigate how wider resilience can be achieved for the poorest and most vulnerable by using the private sector as a valuable source of innovation, technology, finance and knowledge.

Two of the most important concepts of resilience are planned responses to risks posed by natural hazards now - disaster risk management, and in the future, i.e. climate change adaptation. These are important and compatible concepts that cover actions to build country, community, economic and individual resilience. The private sector has important roles to play in both of these domains; though despite some examples of success it has failed to fully engage its resources in this area.

It is important to develop a common understanding of how building resilience, including within and by the private sector, leads to development gains. The diagram below illustrates that the threat posed by natural hazards has the potential to erode development gains, and that resilience to these risks is a function of vulnerability and exposure. These in turn are influenced by a range of factors including risk management and economic growth – factors that have both public and private dimensions.

The diverse and often technical language that surrounds the public policy discourse on climate and disaster resilience can be impenetrable to the private sector. Business thinks and works with the concept of risk management and is driven by the pursuit of revenue growth, costs and market share or opportunities. To a business, risk management refers to supply chain or operational risks that are core to the businesses activities. ‘Security of supply’ or ‘commodity price risk’ are examples of well used terms where the cause of the issue may be the impact of a natural hazard, but the business interprets this risk through its own framing.

Corporations often act through organisational processes such as operational efficiency, supply chain management, enterprise risk management, scenario and continuity planning, insurance purchasing, acquisition and disposals, and risk governance. Without engaging business on the relevance of building resilience through this language, attempts by donors and governments to open effective public-private dialogue will be limited.

Resilience interventions vary widely in nature due to locally specific climate and disaster risks and the nature of the entity affected or engaged– there is no ‘one-size-fits-all’ solution. Responses or actions to reduce risk and exploit new opportunities can be broadly categorised into **‘primary actions’**,

¹³ IPCC, (2012): Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation.

whereby the stated purpose of the action is to reduce risk; or **‘secondary actions’** where the impact of taking an action as a result of other primary drivers results in a resilience co-benefit, such as a wider development impact. The Multilateral Development Banks (MDBs) have jointly developed a multi-criteria appraisal framework to identify ‘primary’ adaptation interventions that have a clear and direct vulnerability reduction purpose. Secondary actions can be optimised for resilience outcomes. This is an important principle to grasp since much of the work required on resilience needs to be integrated and mainstreamed throughout multiple sectors.

Categorisation of private sector actors

The private sector refers to the part of the economy, which is composed of entities that are privately owned and are not under government control. This includes households, local businesses, corporations, and non-profit organisations, which help to allocate resources throughout the economy. Trade associations and consortia that represent the interests of the private sector are also considered.

The private sector actors that will be discussed throughout this report will primarily fall into agriculture, industry or services sectors. The agriculture sector includes agricultural companies or entities (regardless of size) that produce and distribute products that are grown or raised; the industrial sector manufacturers goods, while the services sector sells good and services. The types of private sector actors operating across these sectors consist of the entities listed in the table below. For definitions of private sector actors see Appendix A.

Table 12: Categories of private sector actors

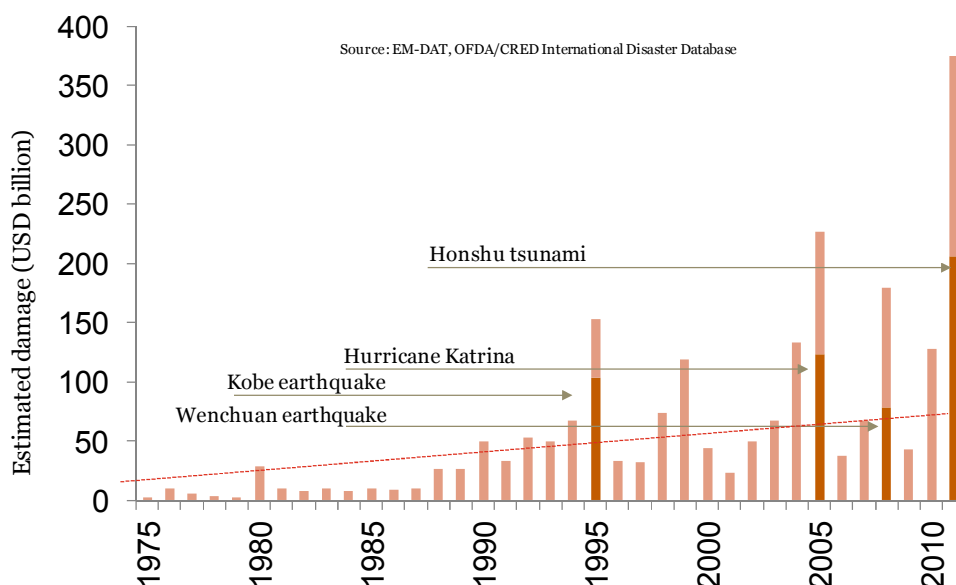
<i>Categories</i>	<i>Sub-categories</i>
Capital providers	<ul style="list-style-type: none"> • Financiers (e.g. national and international banks) • Investors (e.g. impact investors, institutional investors, venture capital investors, pension funds, sovereign wealth funds)
Financial market facilitators	<ul style="list-style-type: none"> • Insurance and reinsurers • Fund managers • Private equity houses • Guarantors • Local credit line providers (e.g. MFIs, local banks)
Implementing entities	<ul style="list-style-type: none"> • Multinational companies • National companies • Small and medium sized enterprises • Microenterprises (including smallholder farmers)

2. Impacts, opportunities and barriers to enhanced action

2.1 How natural disasters and climate change affect business

The economic impact of natural hazards worldwide has risen from USD 10 billion per annum in 1975, to almost USD 400 billion in 2011 (Figure 4). Despite the hazards, there is continued development of economies and societies in many of the world's most vulnerable locations; often in floodplains or in areas that experience extreme weather or tectonic activity.

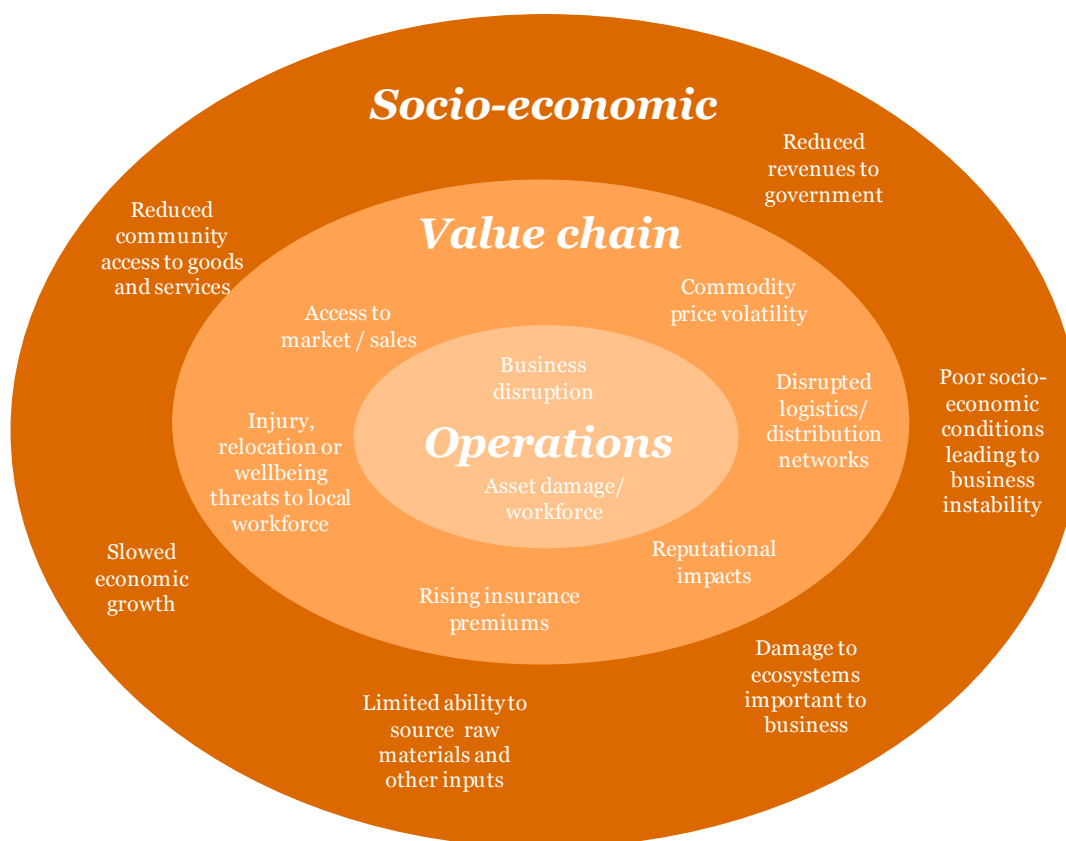
Figure 4: The rising cost of disasters.



The impact of disasters and climate change are felt most acutely by developing countries that exhibit higher vulnerability and lower capacity for building resilience. Extreme events burden these countries disproportionately in terms of loss of life, diminished productivity and asset destruction leading to weakened livelihoods and poverty. Critically these consequences can limit wider development efforts. In some countries climate related impacts could cost up to 19% of GDP per annum by 2030, setting back years of development gains.¹⁴ As global economic interdependence continues to grow, increasing levels of exposure to disasters and warnings of future climate change prompt us to consider current plans, preparation and responses of the public and private sectors.

Impacts from natural hazards and climate change may directly affect a company's operations, or indirectly impact a business through their value chain. Examples of 'direct' impacts include physical asset damage (e.g. agricultural warehouses in Mozambique due to heavy flooding), reduced operational performance, and staff and workplace disruption (e.g. textiles workers in Bangladesh who return to their native homes during flooding). 'Indirect' impacts amplify losses beyond individual operations and can often be felt across companies, sectors and countries due to the global nature of value chains and markets. These include increased commodity or input prices, supply chain or distribution network interruption (e.g. damaged smallholder crops during flooding in Pakistan), changing market demand and reputational issues.

¹⁴ Economics of Climate Development, Shaping climate resilient development: a framework for decision making, 2009

Figure 5: Business impacts from disasters and climate change

Business size and geography is an important determinant of disaster and climate change risk exposure as well as ability to act. From social entrepreneurs and small and medium sized enterprises to developing country domestic corporations and multinational corporations, the size and geography of an entity can impact the scale and type of risks faced. Smaller entities have a reduced exposure due to a lower value of assets at risk, but greater vulnerability to climate and disaster risks as a result of lower capacity and capability to respond. Larger organisations tend to have a greater appreciation of risk and are therefore more likely to take action. As an example, for the construction sector in Pakistan we found that only the largest construction companies take into account disaster risk when designing and planning new structures. Even though there are design codes to ensure more resilient designs, they are poorly utilised outside of the biggest players in the market.

Small and large businesses already tolerate considerable attrition caused by adverse weather conditions. Extensive risk is associated with localised, mainly weather-related hazards with short return periods.¹⁵ These localised yet frequent hazards include surface water and flash flooding, landslides, fires and drought. They are exacerbated by underlying poverty, badly managed urban development, poor land-use and natural resource management. With the prominence of agriculture and/or tourism as major contributors of GDP in developing countries, the economic exposure to these extensive risks is higher than in developed nations (often above 50%). The net impact of many of these recurring hazards is not reported but presents a significant drag on economic development. When flooding occurs in Bangladesh for example, textiles companies are indirectly affected as they experience severe worker attrition when their employees go to their native towns and villages to check on their families and possessions. This causes significant disruption to the business; however, as cited by textiles companies in Dhaka, the businesses know to anticipate regular flooding.

Natural disasters and climate change have the largest impact on sensitive economic sectors such as agriculture, and those with long-lifetime and high value fixed assets (e.g. extractives, energy, utilities). Agricultural impacts often translate through supply chains whilst damage to key economic infrastructure has systemic impact on the local economy. Impact might include power outages and port closures

¹⁵ 'Extensive risk' is a term used in the UN Global Assessment Report 2013 to describe the attrition adverse weather has on business operations.

resulting in suspected production and export of goods. For the latter, those that are exposed to interruption liabilities from extreme weather and geophysical events, or those with commodities that cannot be easily substituted (e.g. specific product lines for major food and retail organisations or technology manufacturers) are most at risk. Financial services providers are also impacted, including those investing or lending in climate sensitive sectors such as agriculture, and those offering disaster and climate risk related financial products.

Geophysical hazards such as earthquakes can also cause significant damage and losses in the built environment and energy and utilities sector. In 2006, in Mozambique for example, an earthquake measuring 7.0 on the Richter Scale killed four people and injured 27 while damaging at least 160 buildings. More broadly, developing or middle-income countries that do not have adequate urban planning, suffer the most from collapsed buildings and fires following an earthquake.¹⁶

Climate change will further alter business risk profiles, as well as insurance availability and affordability. Its influence on the frequency, severity and distribution of climate extremes will impact security of supply, business continuity, asset damage and adverse operating conditions for the private sector. Risk profiles will continue to diverge from historical norms, with increasing occurrences of unforeseen events. Increasing risk and associated uncertainty may push up insurance premiums or reduce coverage provision. These factors may also create new liabilities within an insurer's own diversified investment portfolio. Three quarters of insurers have said that they anticipate increased natural hazards and that the affordability and availability of insurance for businesses is likely to decline in the coming decades.¹⁷

Consequently, there is growing awareness amongst investors of the potentially large financial risks that natural disasters and future climate change pose. Institutional investors are major shareowners and bondholders in businesses, and significant investors in assets including infrastructure, real estate, commodities and private equity. Disaster and climate change risks and opportunities are starting to be recognised by investor groups such as the IIGC, IIGCC, and INCR.¹⁸ Over time this pressure will lead to revised investment policy, strategy or risk management processes accordingly.

Table 13: Examples of business related impacts

<i>Impact type</i>	<i>Example of impacts experienced</i>
Economic development	The 2010 floods in Pakistan hit the agriculture, livestock and fisheries sectors hard. They caused total damages in the region of USD 10 billion, ¹⁹ impacted 20 million people and significantly affected the employment opportunities and the livelihoods of over 800,000 people. ²⁰
International supply chain disruption	Thailand plays an important role in three global supply chains; consumer electronics, textiles, and the automotive industry. Many of these industries are concentrated in flood-prone enterprise zones, which present a significant risk to global supply chains. In 2011, extensive flooding resulted in numerous profit warnings by international corporations.
Business interruption to key infrastructure	Flooding of the Limpopo River at the start of this year caused significant damage to the electricity transmission line from Mozambique to South Africa. Eskom, South Africa's primary energy utility and Mozambique's Hidroelectrica de Cahora Bassa's (HCB) faced a 50% reduction in transmission capacity between the two countries as a result. ²¹
Raw materials/business input constraints	The agribusiness Bunge reported a USD 56 million quarterly loss in its sugar and bio-energy operations in Brazil resulting from drought conditions affecting its growers. ²²
Threats to workforce health and safety	Employee sickness through waterborne disease and the inability to reach work following the 2004 Bangladesh floods was estimated to cost the country's garment industry USD 3 million per day.

¹⁶ http://www.unisdr.org/files/20108_mediabook.pdf

¹⁷ Leurig, S., 2011. 'Climate Risk Disclosure by Insurers: Evaluating Insurer Responses to the NAIC Climate Disclosure Survey.' Ceres, Boston.

¹⁸ (1) IIGC - International Swaps and Derivatives – (ISDA) Industry Governance Committee <http://www2.isda.org/committees/iigc-committees/> (2) IIGCC Institutional Investors Group on Climate Change <http://www.iigcc.org/> (3) INCR Investor Network on Climate Risk <https://www.ceres.org/investor-network/incr>

¹⁹ IMF Working paper 12/245. Natural Disasters: Mitigating Impact, Managing Risks. 2012

²⁰ Pakistan 2011 floods PDNA http://gfdrr.org/sites/gfdrr.org/files/Pakistan_Floods_2011_DNA_Report.pdf

²¹ <http://www.engineeringnews.co.za/article/hcb-eskom-work-on-cahora-bassa-line-refurb-plan-after-disruptions-2013-01-25>

²² Bunge Ltd., 'Q4 2010 Earnings Call Transcript,' Feb. 10, 2011, <http://www.morningstar.com/earnings/21927995-bunge-ltd-bgq4-2010.aspx?pindex=2>.

<i>Impact type</i>	<i>Example of impacts experienced</i>
Affected storage and logistics	Heavy rains, strong winds and flooding in Guatemala caused quarterly losses to Del Monte of USD 4 million from its banana operations following damage to a warehouse vulnerable to flooding which was storing large quantities of stock. ²³

2.2 The private sector's role in building resilience

Business is central to the Post 2015 Development Agenda, including action on climate and disaster resilience. It is estimated that to achieve 'climate proofed' MDGs in Africa alone, would cost an estimated USD 100 billion a year for the next decade²⁴; a 40% uplift on the current estimated level of spending. Public funds alone will not deliver the scale of finance needed to tackle development challenges such as this.

Two-thirds of global financial flows to developing economies already come from the private sector, and the amount is increasing. Catalysing and steering private capital to help address developing economies' most crucial development needs, including building disaster and climate change resilience presents an untapped opportunity. In addition to monetary investment, businesses can bring technical resources and know-how from across their large networks and extensive supply chains to bear when implementing solutions with the public sector. Given their wide-ranging partnerships and networks, and often their last mile reach, businesses can play a role in building resilience at multiple points across sectors.

Businesses and investors get that global growth prospects will, for the foreseeable future, rely on growth in developing and emerging markets which already house more than 50% of global GDP. It is not just the big emerging economies. China, India and Brazil are projected to contribute around half of global economic growth in 2013, but Sub-Saharan Africa is expected to grow by 6% over the next four years, second only to developing Asia²⁵. High economic growth rates in developing and emerging economies mean that they are presented with immediate opportunities to grow, but need to factor in the practical risks and costs of doing business in these countries.

'Business as usual' is changing for the global private sector; the business development objectives of companies are becoming more implicitly intertwined with country development objectives. Many developing countries have a high exposure to natural hazards which can have a negative impact on foreign direct investment. Local business needs include: a skilled and healthy workforce; license to operate; access to natural resources; adequate and resilient infrastructure; rule of law; and functioning institutions. An upward trend of financial losses and interruption to these local services from natural hazards in these markets therefore a key concern for both international and local businesses and investors.

Investment by the private sector does not guarantee development and wider societal resilience outcomes. Private sector investment often does not serve those at the bottom of the pyramid (BOP) and alone will not address the needs of the poorest and most vulnerable communities²⁶. Public finance remains critical, to fund basic services, community based resilience efforts outside business value chains, and resilient critical infrastructure. Furthermore, a significant proportion of the recent economic growth in regions such as Sub-Saharan Africa and emerging Asia has been fuelled by exporting natural resources. The right social, economic and environmental safeguards, and uptake of inclusive and sustainable business practices, are required to ensure such activities improve local livelihoods and do not exacerbate local vulnerabilities.

Currently the private sector faces too many engagement and investment barriers; collaborative action is therefore critical to realising the private sector's financing potential for resilience and wider development outcomes at scale. Donors and governments have a major role to enable, incentivise and inform their actions. The public sector can help to create the enabling conditions for private investment in developing economies and/or innovative solutions to thrive. Donor and government-led development of targeted private sector support instruments is critical but must be accompanied by enabling policies, regulations, and infrastructure, and a broader process of public-private engagement, knowledge sharing and education, in order for private sector investment in development outcomes to be self-sustaining.

²³ Fresh Del Monte Produce Inc., 'Q2 2010 Earnings Call Transcript,' Aug. 3, 2010, <http://seekingalpha.com/article/218349-freshdelmonte-produce-inc-q2-2010-earningscall-transcript>

²⁴ Fankhauser and Schmidt-Traub (2010) 'From adaptation to climate resilient development: the costs of climate proofing the MDGs in Africa'

²⁵ PwC Global Economy Watch: January and March 2013

²⁶ Investing in Development: A Practical Plan to Achieve the MDGs (UN Millennium Project, 2005)

High profile natural disasters do spur businesses to evaluate risk exposures, but to make substantial and long-term changes businesses need to understand the return on investment of resilience building actions. To manage exposure to their direction operations, businesses may choose to adopt a strategy that avoids, reduces, shares or accepts each risk, depending upon their risk appetite. Basic risk mitigation actions supporting some of these approaches can include:

- I. Physical (e.g. infrastructure design improvements or retrofit)
- II. Social (e.g. behavioural change and education)
- III. Financial (e.g. use of risk transfer products such as insurance).

Businesses with mature risk management approaches tend to manage their responses through Enterprise Risk Management (ERM) systems i.e. organisation-wide business processes that identify and target planned responses to significant business risks. Where a clear and quantified return on investment is evident, action is planned and implemented; however identification of new risks (e.g. climate change or a historically unprecedented disaster) is often lacking.

Collaboration across the business value chain helps to build resilience. It is important to both understand exactly what is going on along value chains as well as trying to effect change within them. Many companies consulted were collaborating with their value chain to gain visibility on the risks to which they are exposed as well as developing supply chain codes of practise to ensure that their activities will meet the necessary standard.

The systemic nature of resilience challenges means that different actors must work together in order to build resilience in areas where they are affected but do not necessarily have direct control over. Local engagement is seen as particularly important. Companies, NGOs and local government have to work together to build effective solutions. The private sector may often take the lead role in resolving issues however a regular dialogue between the public and private sector is necessary for progress to be made.

2.3 Delivering resilience can bring new business opportunities

In a 2010 study, the World Bank estimated that the cost of adapting to climate change by 2050 to be approximately USD 70-100 billion per annum.²⁷ In many countries, 70-85% of total investment is made by the private sector,²⁸ which suggests that the opportunity for greater private sector engagement in building resilience to climate impacts and natural disasters is quite high.

Successful organisations are those which best adapt in a continually changing market; building risk resilience while harnessing opportunities for value creation. Organisations can create value and resilience by better managing their own exposure to direct and indirect risks from disasters and climate change. Some can also create value by seizing market opportunities to sell new products and services that build the resilience of others: governments, other businesses and communities. Harnessing these opportunities brings wider economic benefits in the form of growth and jobs, but also reduces vulnerability and risk to communities and individuals within their markets.

During our consultations, we found that an increasing number of businesses are investing in new resilience related products and services, but most still view resilience as an operational risk management activity. Many businesses do not yet 'join the dots' and see the opportunity that may exist in creating new markets that will help their customers build resilience to natural disasters and climate change. As for investing in risk management, businesses need to understand the market opportunity and return on investment to develop and scale-up these solutions.

BOX 3: Managing business risks and opportunities

Intercontinental Hotels Group: The Hotel Group's "Shelter from the Storm" programme offers refuge for vulnerable community members in tropical cyclone risk zones. The Group's well engineered and high capacity assets (hotels) are ideal places to house people and important services during a major hazard event.

Diageo: The UK beverage firm is integrating small farmers into its Nigerian supply chain and providing training and skills development to assist in their transition to growing drought tolerant sorghum crops and increase their crop yield. This inclusive business model stimulates local economic growth and secures the company's supply chain.

HCC: The Indian construction firm provides training to employees on basic lifesaving skills, in order that they can act as 'first responders' in the event of extreme weather events.

Grameenphone and Teletalk: The Bangladeshi mobile phone operators have set up a system to send disaster early warning text alerts to their customers in the most flood and cyclone-prone regions in Bangladesh.

²⁷ <http://www.worldbank.org/en/news/feature/2011/06/06/economics-adaptation-climate-change>

²⁸ http://www.preventionweb.net/english/hyogo/gar/2013/en/gar-pdf/GAR2013_EN.pdf

There are a number of key drivers that encourage businesses to engage in resilience activities.

Table 14 sets out some of the key business drivers and provides some examples of organisations that are already realising the benefits.

Table 14: Business drivers for adaptation and disaster resilience action

<i>Opportunities</i>	<i>Benefits</i>	<i>Examples</i>
Development and distribution of new products and services	<ul style="list-style-type: none"> • New revenue streams • Gain competitive advantage 	<p>Swiss Re (and partners): The Horn of Africa Risk Transfer for Adaptation (HARITA) and R4 Rural Resilience Initiative (both partnerships) which allow cash-poor farmers to work for their insurance premiums by engaging in community-identified projects to build climate resilience. The potential to expand beyond Ethiopia to open up new SSA markets for insurers is high.</p>
		<p>BASF (chemicals): Developed products that are helping coastal settlements protect local dikes by absorbing the force of breaking waves and slowing down water masses. BASF's researchers are also developing stress-tolerant plants that are more resistant to extreme weather conditions such as drought and super-absorbers are being trialed for a reforestation project in Brazil to increase water storage capacity.</p> <p>Sompo Japan Insurance: Developed a Weather Index Insurance scheme for farmers in north-east Thailand who rely on rain-fed agriculture where compensation is linked to precipitation.</p>
New, expanded markets for products and services	<ul style="list-style-type: none"> • Increased market share • Long-term viability or success of business 	<p>Safaricom/GE: A partnership in Kenya which supports the expansion of low carbon telecoms infrastructure into rural areas in the north of Kenya. Solar powered mobile station base units resilient to power cuts, allow continued communication for the community including the provision of drought and weather information to support rural small holders. A real triple win for development, resilience and climate change mitigation.</p>
		<p>Allianz (insurance): Offers microinsurance products in six countries. With a highly established market in India, Allianz has extended its reach to Indonesia, Egypt, Cameroon, Senegal, and Colombia. Its first flood catastrophe bond is part of a USD 1 billion programme to mitigate the risk of severe, regional floods across a global fund. Allianz's schemes are typically managed in partnership with others.</p> <p>Sun International Hotels: The Zambian hotel chain has developed a local food sourcing programme supporting 400 smallholder farmers. This has ensured their security of supply and reduced costs for their hotels, alongside providing livelihood opportunities to smallholders in the region.</p>
Cost savings	<ul style="list-style-type: none"> • Reduced raw material costs (arising from increased resource efficiency) • Reduced operational costs • Protects profitability especially when margins are already tight 	<p>Cafedirect (fair trade agribusiness): The German Technical Cooperation (GTZ) and Cafedirect are engaged in a three year Public-Private-Partnership with the Kenya Tea Development Agency to strengthen smallholder capacity to cope with climate related risks. The programme helps farmers which supply the Michimikuru tea factory to reduce their vulnerability to climate change through sustainable management of natural resources, use of good quality seeds, and investment in a self-managed nursery.</p>
		<p>A global agribusiness consulted as part of this study: This global producer of tea and cut flowers works with its supplier farmers to help build awareness on climate change issues as well as facilitating a multi-stakeholder approach to build resilience, for example through better catchment management.</p>
Collaboration through supply chain	<ul style="list-style-type: none"> • Competitive advantage can be gained by having a more secure and resilient supply chain. 	<p>British Sugar (food products): Aims to build long-term relationships with its suppliers and so has an interest in the resilience of its suppliers. British Sugar Online is an internet portal system, designed to provide growers, hauliers and advisers with instant access to the latest technical information, selfadministration and support tools. The technical information includes agronomic updates, the impact on crop production and the actions needed to manage them.</p>
		<p>Siemens: Development of a low-cost, simple, portable water purification system that does not require electric power or purification chemicals, which can be distributed to vulnerable communities post-disaster. This, along with other innovations, has secured their reputation as a leader in technologies to address climate change and resilience challenges.</p> <p>NESPAK (National Engineering Services Pakistan Pvt. Ltd.): Prepared national guidelines for disaster resilient housing and oversaw the construction of 600, 000 units to replace those damaged in the Kashmir Earthquake. The effort is on-going but has created a major business opportunity for the company. They won the contract as they were one of the few design firms that had the necessary capacity and skills to deal with DRR.</p>
Reputation and brand value	<ul style="list-style-type: none"> • Improved insurance purchasing and lower residual losses • Market leadership • Increased investor, consumer and other stakeholders' confidence 	

Market potential and cost-benefit analysis of resilience options

Solutions that are good for business and good for society will be central to tackling complex resilience issues and maximising the available gains. Collaborative action can offer direct financial, market share or competitive advantage to a business. Where building resilience to disasters and climate change can be seen to create new value or reduce risk, the business case to collaborate is higher. For example, Safaricom and GE are working in partnership to support solar-powered mobile station base units in Northern Kenya that provide market expansion opportunities, but are also resilient to power cuts allowing for continued communications relating to weather and drought related information.

Substantial market opportunities exist for new products, services and risk mitigation actions that help businesses and communities build resilience. Whether it is developing new seed varieties, insurance products or off-grid energy systems, there is substantial market potential around the world for businesses that are willing and able to invest. The table below sets out some of the high-level opportunities identified through our research and gives some examples of the associated market potential.

Table 15: Examples of market opportunities and potential for resilience actions and related products and services by sector

Sector	Primary activity <i>Actions driven primarily by the need to reduce risk from a climate change impact or disaster risk.</i>	Secondary activity <i>Adapted development projects/ practices</i>	Evidence of market potential
Agriculture	<ul style="list-style-type: none"> • Solar-water pumps (for irrigation) • For-profit extension services focused on climate resilience • Specific risk awareness and planning for climate and disaster resilience • Development of new strains of seeds and crop types for higher yield characteristics • Diversifying crops to include those with greater drought resistance • Drip irrigation systems • Buying crop insurance 	<ul style="list-style-type: none"> • Development of new strains of seeds and crop types primarily for their drought or saline tolerant characteristics • Use of farming practices that retain moisture (e.g. trapping water or snow in stubble, enhanced early moisture infiltration) • Conservation agriculture (reduced tillage/ enhanced soil cover etc.) • Crop rotation to improve soil quality • Diversifying income streams 	<ul style="list-style-type: none"> • World seed markets are USD 45 billion²⁹– if a low estimate of 20% were at risk then there could be a market of USD 9 billion for climate tolerant seed types. • 9 million farmers had weather index insurance in India in 2010-2011, with a total premium value of USD 258 million.
Construction	<ul style="list-style-type: none"> • Planning, design, and location of new facilities • Designing whole buildings to be more resilient to geophysical hazards (e.g. earthquakes) • Building new and improved extreme weather resistant infrastructure investment (e.g. roads) 	<ul style="list-style-type: none"> • Weather-proofing existing equipment and buildings (e.g. water recycling systems, green roofs) • Use of more energy-efficient equipment • Air-conditioning (maladaptation) 	<ul style="list-style-type: none"> • Global market for water recycling and re-use technologies set to reach USD 57 billion by 2015.³⁰
Financial services	<ul style="list-style-type: none"> • New investment products (e.g. Green Bonds) • Risk modelling and data provision 	<ul style="list-style-type: none"> • Increasing the requirements on clients (e.g. asking for third party SFM certificates) 	<ul style="list-style-type: none"> • Existing climate bond market worth USD 346 billion, up from USD 174 billion in 2012.³¹
Insurance	<ul style="list-style-type: none"> • Weather-index based insurance • Creation of a flood catastrophe bond with a global fund • Provision of various forms of micro-insurance to protect assets impacted by climate change or natural disasters directly 	<ul style="list-style-type: none"> • Broader micro-insurance products for vulnerable populations • Green insurance products (e.g. insurance discounts on environmentally certified buildings) 	<ul style="list-style-type: none"> • USD 7.4 trillion assets at risk from 0.5m sea level rise on US coastlines.³²

²⁹ http://www.worldseed.org/cms/medias/file/ResourceCenter/SeedStatistics/Domestic_Market_Value_2012.pdf

³⁰ <http://www.sbireports.com/Global-Water-Recycling-2625060/>

³¹ http://www.climatebonds.net/files/Bonds_Climate_Change_2013_A4.pdf

³² <http://worldwildlife.org/press-releases/climate-change-puts-trillions-of-dollars-in-assets-at-risk-along-u-s-coasts>

	<ul style="list-style-type: none"> • Reassessing coastal underwriting practices • Redesigning pricing to take into account specific characteristics (e.g. building age, construction) 		
Oil and gas/mining/energy	<ul style="list-style-type: none"> • Off grid energy systems (e.g. solar water heaters or PV installations) • Management of power loading and network resilience • Improved planning of energy mix and spatial devolvement 	<ul style="list-style-type: none"> • Integration of climate risk considerations into design criteria or standards for pipelines, rigs • Use of emergency generators • Renewable energy infrastructure 	<ul style="list-style-type: none"> • African base of pyramid energy market estimated at USD 27 billion.³³ • Global improved energy services market for under-served areas estimated at USD 37 billion.³⁴
Retail and consumer	<ul style="list-style-type: none"> • Development of new products (e.g. water purification system that does not require electricity or purification chemicals and is low cost and widely available for post-disaster needs) • Reduced interruption of agricultural supply chains from vertical investment and capacity building • Preserve sales during extreme weather events by continuity planning at store level • Relocation of facilities • Scoping studies to identify climate risk • Raising staff awareness of climate change risks 	<ul style="list-style-type: none"> • Use of innovative distribution networks that increases incomes and improves livelihoods (e.g. Unilever's Project Shakti) • Design and development of more viable hygiene products for low-income and vulnerable populations • Consumer behaviour change driving consumption of new or expanded product lines (e.g. hand washing campaigns leading to greater adoption of soaps or other hygiene products) 	<ul style="list-style-type: none"> • Demand exists for at least 50m solar lights in Sub-Saharan Africa. At a low estimate of USD 5/lamp the market would be worth over USD 250 million.³⁵
Tourism	<ul style="list-style-type: none"> • Marketing/advertising campaigns to downplay increased summer temperatures at leisure resorts • Development of hurricane interruption policies – replacement stays for disrupted holidays 	<ul style="list-style-type: none"> • Upgraded air conditioning in hotels • Installing automated climate control systems 	<ul style="list-style-type: none"> • Tracking energy use in hotel rooms and encouraging guests to switch off lights / re-use towels (reduce energy and water consumption)
Transport	<ul style="list-style-type: none"> • Implementing new shipping routes • Relocation of major land transit routes (road and rail) 	<ul style="list-style-type: none"> • Upgrading equipment (e.g. trucks and tyres) for more robustness and ability to function in difficult weather conditions (i.e. weather proofing) 	<ul style="list-style-type: none"> • Incalculable – need to break down cost of new equipment e.g. de-icers at airports. • Cost of adapting and relocating large-scale infrastructure investment is very large but likely to be addressed through normal asset renewable
Water	<ul style="list-style-type: none"> • Water conservation projects • Development and distribution of emergency water purifiers • Development of new design standards for sewer and water pipelines • Development of more robust technology that improves water management, drainage, and distribution processes 	<ul style="list-style-type: none"> • Improving water efficiency • Integration of improved design criteria to sewer pipeline improvements being made • Improved planning and delivery of water resources and infrastructure • Engagement in water resource planning services • Local privatisation or PPPs for water services 	<ul style="list-style-type: none"> • Water purification/disinfection market worth USD 20 billion and set to grow by up to 25% by 2025.³⁶ • USD 384 billion water infrastructure improvements required in US to deal with water scarcity, climate volatility and ageing infrastructure.³⁷

³³ <http://www.renewableenergyworld.com/rea/news/article/2013/03/building-an-african-market-solar-entrepreneurs-on-the-rise>

³⁴ Ibid.

³⁵ <http://light.lbl.gov/library/la-mkt-synthesis.pdf>

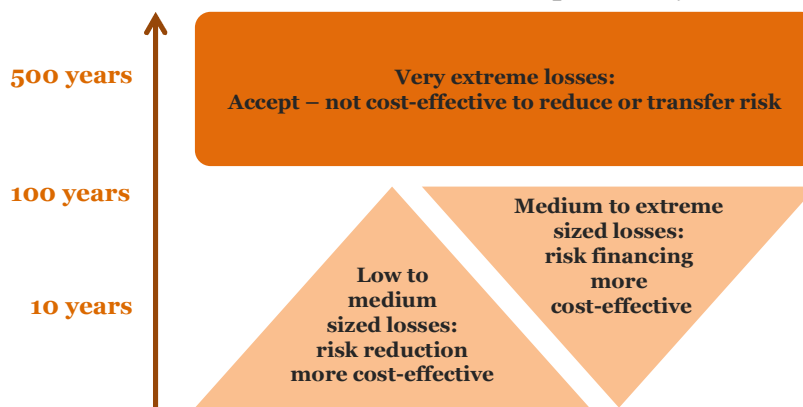
³⁶ <http://www.hkc22.com/waterdisinfection.html>

³⁷ <http://www.environmentalleader.com/2013/06/05/water-infrastructure-improvement-price-tag-384bn/>

In looking at opportunities for integrating climate change adaptation and disaster risk management into their operations, businesses need to analyse the costs versus benefits of particular initiatives. This requires companies to first assess the implications of climate change and natural disasters on a particular system, evaluate the level of risk or the size of the opportunity, analyse the cost-benefits of each and determine the most cost-effective strategy to take forward. As denoted in the diagram below, for risks with low to medium level annual losses, it may be more cost-effective to initiate activities to reduce risk, however, where the losses are greater, using a risk transfer mechanism such as insurance may be more appropriate. In each case the return on investment of a particular risk management strategy will be assessed.

Businesses must also understand the return on investment for each initiative adopted. For primary activities, driven predominantly by the need to reduce risk from climate change and natural disasters, return on investment is often only realised through the avoidance of future costs. For example, when investing in flood defences, the return is only achieved when assets are protected in the instance of a flood. The return will also depend on the likelihood of the risk occurring. For secondary activities, driven chiefly by economic or other motivations but with a co-benefit of climate or disaster risk reduction, the return on investment may be realised through business as usual, with an increasing level of return in the event of a disaster; for example, when investing in improved cooling systems which deliver greater operational efficiency as well as helping to cope when temperatures are high. Crucial to all of this though is understanding the risk in the first place and having a mature risk management process in operation.

Figure 6: Efficiency of risk transfer instruments and occurrence probability³⁸



2.4 Barriers and constraints to private sector action on resilience

Given the important role that the private sector can play in building resilience it is important to recognise the multiple barriers that have so far prevented businesses from further engaging and investing in building resilience. Research, consultation and experience have identified a number of constraints that will subsequently be tested at country level.

Barriers to operational risk management

It is notably harder to engage businesses on issues that extend beyond their direct operations.

For a business to act beyond its operating boundary, it requires an appreciation of the business case for doing so. The drivers and barriers that govern action beyond a company's operations are more complex. In Mozambique for example, there appears to be a general lack of awareness and interest in climate change adaptation and resilience building activities. Businesses there seem to be driven only by profit and are unwilling to take adaptation action unless the commercial benefits are clearly defined and evident. Furthermore, for those businesses that are aware of the climate change and disaster risks posted to their operations, there are limited in-house skills and capacity to assess risks and understand and implement potential actions or solutions.

In fact, an important contrast exists between businesses taking action within their direct operations, and responses that extend to include stakeholders beyond this: a business is likely to first respond to mitigate its own risks. For direct impacts, the main barriers include a lack of internal capacity and leadership that result in under developed corporate risk management approaches. The availability

³⁸ United Nations, 2013: Global Assessment Report on Disaster Risk Reduction

of business-appropriate risk information that can inform a business case to act is a key barrier in all types of private sector actors (see Box 4). All sizes of business need greater support in strengthening risk management, including education regarding the identification and assessment of natural hazard risks. A major challenge involves the sharing and coordination of emerging disaster capabilities of more mature businesses between scales and geographies.

These challenges are often amplified for SMEs and national companies in developing economies who often lack the technical capacity, risk awareness, and financial resources to act. Resolving these barriers and aligning a range of interests usually involves multiple parties, many of which are not contractual and thus harder to influence. In some circumstances a range of barriers may need to be addressed at the same time to unlock a solution for a sector or country setting. This was the experience of the Pilot Programme for Climate Resilience in Zambia where in order to support a climate resilient local food sourcing arrangement for tourism operators, a range of different interventions were necessary, including separate public finance instruments aimed at an agribusiness, smallholder farmers and a local bank.

BOX 4: A deeper look at technical barriers: access to business-relevant information, data and tools on disaster risk and the effects of climate change.

Key issues include:

- **Timescales:** Business tends to have a short-term focus on revenue and profit maximisation which denotes that consideration of risks decades out, such as climate change, are sometimes seen as an unnecessary moral pursuit rather than part of normal business processes. MNCs interviewed here suggested that management decisions around climate risk are often too focused on the short-term, meaning that long-term issues such as climate change fall off their agendas. The exception to the rule is for businesses with expensive long-lifetime fixed assets, and security of supply concerns.
- **Risk mitigation tools:** The tools that do exist, e.g. risk management frameworks, scenario tools, decision trees, costing tools, real options analysis (analyse the impact of significant uncertainty on a decision), focus predominantly on risk assessment and sometimes management. Few evaluate the business opportunities to be gained from adapting to climate change.
- **Alignment of capabilities:** A lack of capacity and skills at all levels of the value chain across sectors in the case study countries appears to hinder integration of disaster and climate risk planning into a company's operations at the management level. Workers and suppliers also often lack the capacity, skills, and knowledge to take more resilient actions. This is often due to inadequate training on relevant issues or new techniques (particularly for smallholders). Where basic training is available or required by companies (e.g. Bangladeshi textile companies may provide some level of disaster training, for instance, for factory fires), there is often lack of appropriate government regulation or enforcement.
- **Knowledge sharing:** While a number of large corporations have launched risk management initiatives most are introspective and lessons learned from positive initiatives and experiences remain largely unshared and undervalued. Cumulative knowledge is not shared, with minimal knowledge platforms or lack of publicly available case studies, lessons learned and tools for business to manage and respond to these risks and opportunities.
- **Following through:** Companies carrying out climate risk assessments do not necessarily then go on to take climate risk management actions. In a recent survey, 90% of the companies asked around the world agree that they faced climate-related impacts in the past three years, but only 30% are actively responding to those threats. In the financial services industry, 80% of firms agree that direct risks, such as credit losses, will grow in the future, but many do not feel "sufficiently informed" to take action. In Bangladesh for instance, awareness of risk is not leading to management or mitigation due to a lack of analytical approaches, tools and relevant data – or where these can be accessed.

Barriers to developing new products and services

A language divide exists between the donor community and the private sector. An easy win in theory, the language and style of communication needs to be relevant to business. Terms used for public sector discourse (e.g. “adaptation”, “DRM”, “instruments”, and “technical assistance”) are often unfamiliar to the private sector. Raising awareness of the business case for action through effective language and messaging, knowledge generation and exchange is critical. Enterprise risk and resilience, which can be measured and valued in relation to the specific operations of a company, are more recognisable terms for example. During the workshop in Dhaka, businesses from across sectors also raised the issue of a lack of better communication channels with the government, which meant that potential partnership opportunities were not being seized.

Innovation is underdeveloped and poorly recognised. With little direct incentives or support for innovation, the private sector has not been investing in research and development (R&D) activities. Innovation is also being targeted at disaster relief and recovery, or climate change mitigation through low carbon technologies, rather than for risk reduction and resilience building. Where innovation does exist, it is not being recognised, shared or developed at scale.

Where businesses are forming innovative new ideas for products and services, they often face barriers to research, develop and commercialise them. Businesses and entrepreneurs often experience poor access to early stage resources for commercialisation of their ideas. There are also challenges in stimulating and understanding the demand profile of potential markets. Improved knowledge sharing also needs to take place within sectors, across supply chains and through partnerships between peers, or between the public and private sectors. In Pakistan for example, it was clear from consultations that there are breakdowns where value chain partners had a shared risk or opportunity. Specifically, a major issue in Pakistan’s agriculture sector was the general reliance on the government to push through new waves of reforms.

Local businesses and private actors are also directly affected by the lack of access to affordable credit and/or financial and to implement resilience building solutions. Adoption of new and/or additional practices and/or business models requires access to affordable capital for inputs, tools, and implementation. This is particularly relevant for smallholder farmers and microenterprises. Risk of failure can also be mitigated through access to affordable financial risk-sharing products such as micro-insurance, weather derivatives, non-recourse loans for angel-stage investments (where collateral can be seized but no further compensation can be sought from the borrower), and payment for performance schemes.

Similarly, there is low private sector capacity, knowledge and skills, particularly at of the BOP. For example, in all of our case study countries there are large numbers of very poor farmers. The training and capacity building available to them is either non-existent or limited (despite many active support programmes to the agricultural sector). As a result, they have very little capacity for change, to understand what techniques, technologies or solutions exist, and how to implement them at site level. In Mozambique, for example, smallholders continue using traditional techniques from elderly family members and are often unwilling to change their practices unless they directly see the benefits of increased yields from demonstration projects. In addition, smallholders in Mozambique, and other case study countries, lack the financial knowledge and awareness of banking and credit given the limited money exchange in rural communities.

There is currently a greater focus on disaster risk (i.e. risks from extreme events) rather than on the gradual changes likely to occur in the future due to climate change. High profile natural disasters have raised the profile of DRM to board level but adaptation to uncertain future climate change, with no obvious associated return on investment, falls lower down the agenda. Companies are better at considering natural hazards and current climate variability but often fail to factor in future climate change and the risks posed from gradual changes over the next 10-20 years. This means that opportunities for competitive positioning and market advantage are not being acknowledged. These might include access to new trade routes, shifting climate zones for cash crops or access to new tourism potential.

In practice, wider barriers as part of the country enabling environment create some of the most important constraints. Although these are common as limitations to other development challenges, country investment risks are telling forces for local and international companies to contend with. Examples include inadequate import/export and corporate laws; weak incentives; dilapidated or underdeveloped public and financial infrastructure; underlying corruption; and security related constraints. In Northern Kenya for instance, land has not been adjudicated and title deeds have not been provided to individuals and groups. The lack of an appropriate enabling environment that could help facilitate such land titles and deeds poses challenges for companies investing in conservations and ranches that require large areas of land.

Table 16: Regularly cited barriers to taking resilience actions and commercialising new opportunities

<i>Barrier type</i>	<i>Specific constraint</i>	<i>Potential barriers to businesses globally</i>	
		<i>Operational risk management</i>	<i>New products and service opportunities</i>
	<ul style="list-style-type: none"> ● Minor barrier ● Major barrier ✓ Critical in-country barrier observed - N/A 		
<i>Risk management capability and maturity</i>	Lack of internal buy-in/leadership	●	●
	Low risk awareness	●	●
	Challenges of decision making under uncertainty	●	●
	Limited sharing of good practice and lessons learned from other business approaches	●	-
	Limited risk management tools available e.g. risk assessment, scenario and opportunity evaluation tools	●	-
<i>Technical</i>	Lack of knowledge, capacity and skills in workforce	●	●
	Poor communication of useable risk information	●	●
	Lack of access to technology	●	●
	Lack of demonstration projects	●	●
	Lack of knowledge sharing / collaboration platforms	●	●
	Weak sector and value chain partnerships	●	●
	Lack of access to early stage capital (risk finance)	-	●
<i>Financial</i>	Technology risk	●	●
	Access to credit	●	●
	Technology cost gaps	●	-
	Lack of access to insurance	●	-
	Lack of incentives	●	●
<i>Local enabling environment</i>	Inadequate policy, regulatory and legal environment	●	●
	Domestic infrastructure constraints	●	●
	Market and financial sector risks/capacity	●	●
	Local political, governance and security risks	●	●

2.5 Public finance levers

Emerging needs

Government action to target the enabling environment for the private sector needs to be more specific. Much of the existing discourse focuses on the need for high-level leadership and engagement with the private sector. Specific solutions are required which target some of the more thorny issues (e.g. ease of doing business, regulatory requirements) holding back business from acting. Detailed changes to the regulatory and legal frameworks will be required to promote the scaling-up of technologies and activities. Details of

incentives for the private sector are required and how the public sector can lower the cost of capital to get projects off the ground. This is the major gap addressed by this report. In Kenya for example, the need for more appropriate regulatory and legal requirements was cited as being critical to promote certainty required for investment, particularly in the areas of land use.

Development and mainstreaming of information hubs for different sectors is needed to better disseminate knowledge and foster collaboration. There should be a central repository that holds risk information in a useable format. For example, collaboration between a public sector entity, donor, sector associations, and businesses could help form an online hub for accessing such information. More specifically, in Pakistan for example, developers and technical advisers should be able to access these at all locations when planning construction projects.

More robust governance structures are required where institutional arrangements are weak. Better governance in these countries could help to ensure greater collaboration between the public and private sectors, appropriate and timely use of funding, and effective implementation, monitoring and evaluation of programmes. In Bangladesh for example, one of the key barriers for seed development and distribution companies was an appropriate governance structure that ensured that the distribution of funds for a particular sector was completed efficiently.

Public finance instruments

A broad suite of financial and non-financial instruments and vehicles are available to support public sector intervention. Currently public finance initiatives focus almost exclusively on the use of grant instruments. As Table 17 shows, there are a number of other instruments available which can support private sector action.

Table 17: The public sector ‘toolkit’ for supporting resilience projects

<i>Grouping</i>	<i>Examples</i>	<i>Application</i>
<i>Grant instruments</i>	<ul style="list-style-type: none"> • Technical assistance (TA) • Matching grant • Partnership support 	Often used to complement other instruments. TA can support policy design, advocacy, feasibility, capacity building activities and analytical study and research. Matching grants can create the incentive for the accelerated development of innovative products and services.
<i>Debt</i>	<ul style="list-style-type: none"> • Concessional loan • Syndicated loans • Green bonds • Mezzanine financing • Export and import loans 	A range of debt instruments can be used to reduce the cost of capital, and can be provided by the public sector through IFIs, DFIs or financial intermediaries such as commercial banks. Standard loan structures can be supported or subsidised by public finance in a number of ways including through guarantees (see below). Making debt more concessional is complemented by efforts to secure co-financing from a range of investors.
<i>Equity instruments (early stage capital)</i>	<ul style="list-style-type: none"> • Seed funding • Venture capital • Private equity 	This involves a direct capital investment in a company, project or fund. Such investments provide substantive upside potential and gains if the project succeeds, but similarly unlimited downside potential if it fails. Equity investment support can be valuable for projects at an earlier stage of development.
<i>Financial de-risking instruments</i>	<ul style="list-style-type: none"> • Partial risk guarantees • Partial credit guarantees • Loan guarantees • Policy guarantees • Insurance products 	Guarantees are a very important set of instruments for private development finance. Guarantees can mitigate a variety of critical sovereign risks and effectively attract long-term commercial financing in a range of sectors and from international markets. Insurance instruments similar to guarantees can be designed to cover risks that markets would otherwise not bear.
<i>Price support instruments</i>	<ul style="list-style-type: none"> • Advanced market commitments (AMC) • Payment for performance agreements • Off-take agreements 	This group of instruments target the market and pricing of a target service or product that will bring development gains. By underwriting the market price for the given intervention, the private sector will respond by expediting investment in production with increased confidence. Price support may apply to a tariff in the case of utilities for example.

At project and programme level, these instruments may be blended in a range of ways depending on the project needs. For example, the Green Bridge Partnership Programme (GBPP) in Central Asia is an international mechanism that aims to provide a stable and long-term basis for green investment, transfer of new technologies and innovations from the developed countries in the developing world. The GBPP may in time choose to apply some or all of these instruments to support project investments through a range of implementation modalities such as Public Private Partnerships, dedicated investment funds and companies that are designed to assume and share early stage project risk.

Public finance delivery vehicles

A range of public finance delivery options exist through which support can be structured. These options must consider the complex needs of the private sector in undertaking action to build resilience, including the scope, service types and instrument deployment. These design considerations are generally governed by the structural modality of vehicle used.

Investment support vehicles can combine financial and technical support to address multiple barriers. Public and private sector actors mobilise instruments through delivery vehicles such as PPPs. These vehicles can target specific barriers faced by different private (and public) sector actors by employing a suite of different instruments, both financial and non-financial. Complementary to the financial risk mitigation is technical assistance to first qualify commercial grade projects, but also to improve the investors' enabling environment. This involves policy, legal and regulatory support, analytical/ technical inputs and capacity building.

In practice, different intervention vehicles and instruments need testing in a range of national and sector contexts. Early pilot initiatives and actions need to be effective in testing ideas, taking some risks and sharing this knowledge. For solutions to be effective they must be grounded within national or local contexts and developed in collaboration with the private sector actors they intend to target, whether local SMEs and domestic corporations or MNCs. This process has been witnessed in the evolution of certain publicly financed broader private sector development initiatives. For example, the Business Linkages Challenge Fund is now being replicated at a country level, for example in Ghana, using lessons learned from the initial global pilot. Similar patterns emerge across the development and evolution of a number of private sector development initiatives. There is still however much to learn about what works most effectively but this broader process needs to be applied to the development of initiatives targeting resilience. A simple framework for thinking about the types of delivery vehicle is presented below in Table 18.

Table 18: Description and examples of the principal public finance delivery options

<i>Group</i>	<i>Delivery option</i>	<i>Description</i>	<i>Example(s)</i>
Financial support	Challenge fund	An innovation accelerator offering match or grant funding for new business ideas that drive resilience outcomes.	Innovations against Poverty (IAP) Africa Enterprise Challenge Fund (AECF) Construction Ideas Fund Food Retail Industry Challenge Fund (FRICH) USAID Development Innovation Ventures (DIV)
	Impact investment fund	Investment funds seeking social (in this case resilience) outcomes and if necessary accepting lower returns.	262 active funds including: Global Impact Investing Network The Calvert Foundation Leapfrog Investments National Community Investment Fund
	Guarantee facility	Multi country/ sector facility with focused loan or policy guarantee products that reduce credit risk for local financiers.	Multilateral Investment Guarantee Agency (MIGA) ADB's Political Risk Guarantee (PRG) Haiti Post-Disaster Partial Credit Guarantee Program
	Investment funds (Infrastructure/ corporate and project)	Infrastructure investment, private equity and project finance on a direct or public-private co-financing basis.	Private Infrastructure Development Group (PIDG) Climate Public Private Partnership (CP3) Emerging Africa Infrastructure Fund (EAIF) Sustainable Energy initiative (EBRD)

Group	Delivery option	Description	Example(s)
Technical assistance	Multi-donor trust / global fund	An internationally administered fund structure with programme and project activities in a range of locations.	Sudan Multi-Donor Trust Funds Trust Fund for East Timor Technical Assistance Trust Fund Afghanistan Reconstruction Trust Fund
	Knowledge management facility/ platform	A centrally hosted digitally hosted entity with a mandate for acquiring and disseminating knowledge products. Can be embedded.	World Cities Network ADB Climate Change Knowledge Hub Inclusive business Practitioner Hub
	Investment support facility	Commercial and technical assistance directed towards investment readiness for low capacity private sector entities.	Microfinance Investment Support Facility for Afghanistan (MISFA) IFAD Rural Microenterprise Assets Programme
	Private sector development facility	Technical assistance approach supporting business model and plan development.	Innovations Against Poverty Business Innovation Facility
Partnership approaches	Public private partnership models	Long-term public-private contracts to provide public services and spread investment and risk. Can be large or small scale.	Public-Private Infrastructure Advisory Facility (PPIAF) Various construction and asset management projects in English speaking countries
	Communities of practice	Informal and voluntary groups of professionals and stakeholders with a common interest linking contact, tools, methods and knowledge.	AfricaAdapt Asian Cities Climate Change Resilience Network Ecosystems and Livelihoods Adaptation Network Argentina's Program for Local Adaptation Climate Community of Practice in the Gulf of Mexico
	Development partnerships and sector alliances	Usually short to medium-term projects involving a private sector company and a local government or donor sponsored implementing entity.	Unilever sources tea from many hundreds of thousands of smallholder farmers. The Lipton brand set up a public-private partnership project in 2006 with the Kenya Tea Development Agency including Rainforest Alliance, Oxfam and others. Unilever and the Sustainable Trade Initiative (IDH) have subsequently agreed to scale a further €4 million over the next two years.

A range of delivery options should be considered for offering financial, non-financial or partnership support. In appraising which delivery vehicles are the most appropriate for this assistance in particular contexts there are certain criteria and characteristics which should be considered. These include the ability of the delivery vehicle to be replicable and flexible, its transactional efficiency, its ability to leverage additional private capital and its impact on delivering sector or market transformation. The importance placed on the different criteria may vary in different contexts depending upon the specific aim or objectives of the proposed initiative and its desired outputs and outcomes.

Appraising these delivery vehicles in a generic manner has limited value. Broad conclusions can be drawn on the merits and pitfalls of the different vehicles but specific context is required to fully appraise the most suitable mechanism. There are certain characteristics of delivery vehicles that are widely recognised. For example, the high transactional efficiency of a challenge fund model and the replicability of a credit guarantee facility model. Attempts to prescribe and appraise the most suitable delivery vehicles without considering the specifics of the context (i.e. country, issue, barrier to address) are impossible. In fact, it perpetuates the problem of generic approaches that is already seen in this area.

The need to be specific and targeted cannot and should not be underestimated. The delivery options need to be appraised in light of the specific barriers, issues and country and sector contexts as well as against the ultimate objectives that the initiative is trying to meet. Through this focused and specific approach the delivery options with the most potential can be effectively selected and prioritised.

2.6 Identification of public-private 'entry points' for support

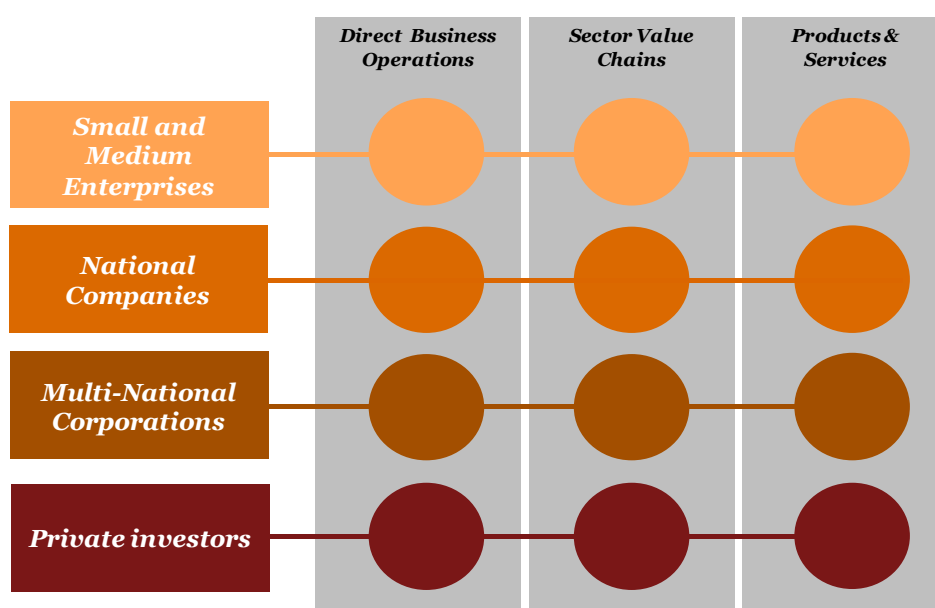
To effect transformational change, public sector action needs to better understand where to focus its support to the private sector. This section presents some key frameworks that are intended to assist with and focus the design of interventions that support private sector action on resilience. These frameworks include the needs of:

- Small and medium sized enterprises (including Micro-SMEs)
- National companies
- Multi-national companies
- Private investors

For each of these actors there are three intervention points considered as shown by the diagram below:

- Protection of direct operations and workforce through risk management
- Sector value chains
- Development of new products and services to serve resilience goals

Figure 7: Resilience intervention points for key private sector actors and activities



Each of the three entry points has different barriers, opportunities and needs. The following frameworks help to navigate the private sector processes that are taking place, including the major considerations or issues that arise, and that public support may be able to address.

The intention is that these frameworks can be referenced as we explore the in-country circumstances and the challenges in the existing architecture of public support.

Framework 1: Direct business operations and risk management

The risk management framework (see Figure 8 below) deals with how businesses can think about risk and its approach to managing different risks and responses. Businesses need to employ risk management approaches that ideally are embedded within an existing risk management system. Too often these issues are not managed on a primary risk register and are seen as specialist environmental interests rather than substantive commercial risks. Recent shocks to global supply chains and manufacturing business in Thailand, Japan and the US have started to change this in some sectors.

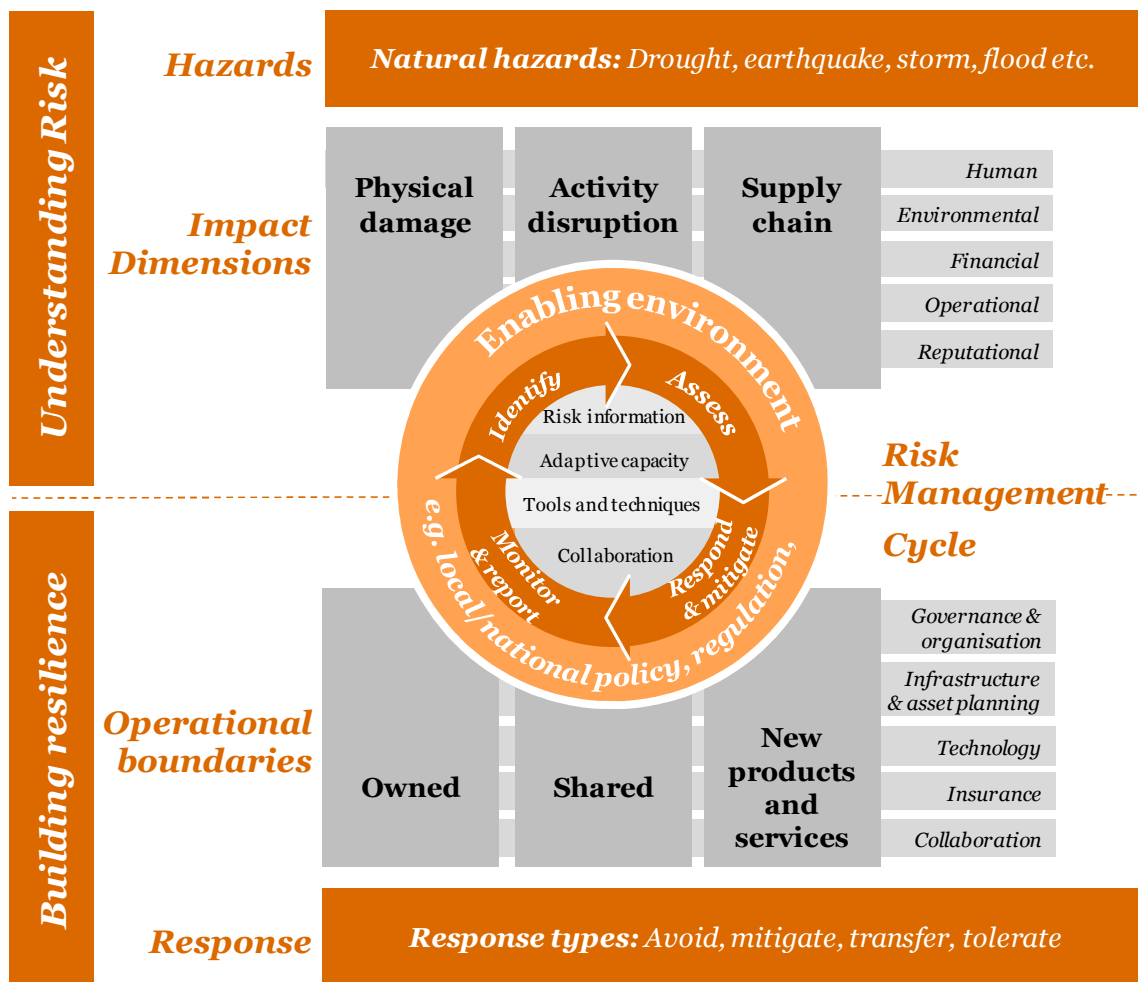
The framework itself is rather simple, but in the absence of a template with which to talk with business, consultation can be challenging due to language constraints and the diverse range of external issues or influences involved. The framework has two components: 'understanding risk' and 'building resilience'. The circular process in the middle is a common risk management system.

Risk understanding comes from understanding the relevant hazards and potential impacts the business. This analysis relates to the 'identify' and 'assess' steps of the risk management cycle. With an understanding of potential impacts and likely risk posed, the organisation can move on to thinking about how to address these. The business can choose to avoid, mitigate, transfer or tolerate the risk i.e. there are a number of strategies that

can be deployed. To deliver these however, it needs to understand the distribution of responsibilities and the delivery models required (e.g. collaboration, technology).

Supporting the framework at its heart is the enabling environment (policy, regulation, governance, security) and the resources that the business needs to act (e.g. information, tools). The diagram tries to summarise all of these issues in one place to provide a tool for risk managers to refer to when planning their organisational response.

Figure 8: Business operations resilience framework³⁹



³⁹ Adapted from PwC’s input to GAR13. For more information and how to apply this framework see UNISDR-PwC joint report “Working together to reduce disaster risk”

BOX 5: Taking an integrated approach towards managing earthquake risk, Japan

Problem

An integrated approach to disaster risk management is critical in minimising the damage and losses from the impact of disasters in the built environment. However, urban developers who often sell their properties after their development do not have as high an incentive to taking an integrated approach compared to developers who own, lease, or manage buildings after their development.

Solution

The latter category of developers has a vested interest in protecting their assets and operations, particularly from risks such as earthquakes. Mori Building, a private Japanese developer, for example, has recognised the need to take pre-emptive action by directly dealing with earthquake risk by addressing it in the construction and maintenance of its buildings and property. One of its major assets for instance is a local power plant, which was constructed to both mitigate earthquake risk and carbon emissions. In ensuring that its disaster response was appropriate, the company constructed the plant such that it was able to sell surplus electricity to areas with power outages after the Great East Japan Earthquake. Mori Building has also trained certain employees in disaster management and coordinating emergency drills.

Framework 2: Sector value chains

Value chain analysis has been used in this study to assess both climate and disaster related risks, but also potential barriers and opportunities for intervention. This approach maps the relevant private sector players at each stage of the supply chain to better understand what the impacts these actors face along with potential barriers to greater engagement in resilience building. This analytical approach was used to explore the sector circumstances in each of the case study countries.

Value chains are typically mapped and engaged to include two distinct elements: upstream and downstream. The selection of these terms is determined by where a particular actor sits in the production of a particular product or commodity. Upstream actors bring materials and products to a manufacturer or retailer as governed by a form of contract. Downstream operations are their customer or client base that makes voluntary purchasing decisions and therefore exert different influences on a business. Value chain interventions can therefore be powerful drivers of change as they can impact a whole industry or sector. They also provide a very different lens to geographical intervention and support which is often to focus on new programmes and initiatives.

Interventions can be made at any stage in a value chain, but the knock on effects should be understood to optimise these interventions and ensure that public support is working in harmony with all actors. The value chain is an important lens through which businesses dealing with commodities, goods, and products view their operations. Public sector actors could use such an analysis to better understand the most important areas for intervention in different sectors based on the impacts, potential barriers for specific types of private sector players, and consequently areas for collaboration or support by the public sector. Figures 9 and 10 show examples of value chain mapping of hazards and barriers for the extractives sector.

Figure 9: Example of value chain mapping of impacts for the extractives sector

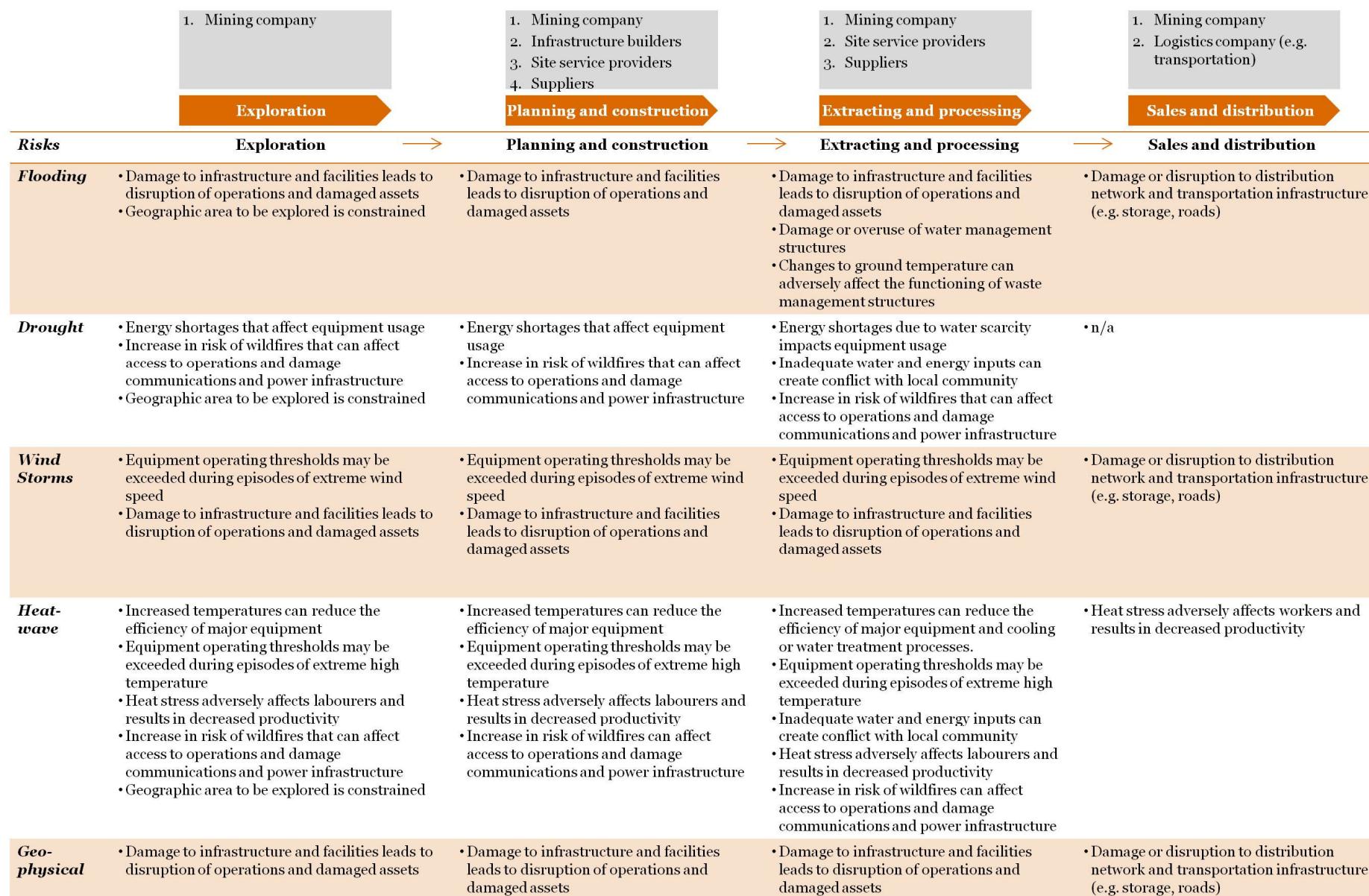
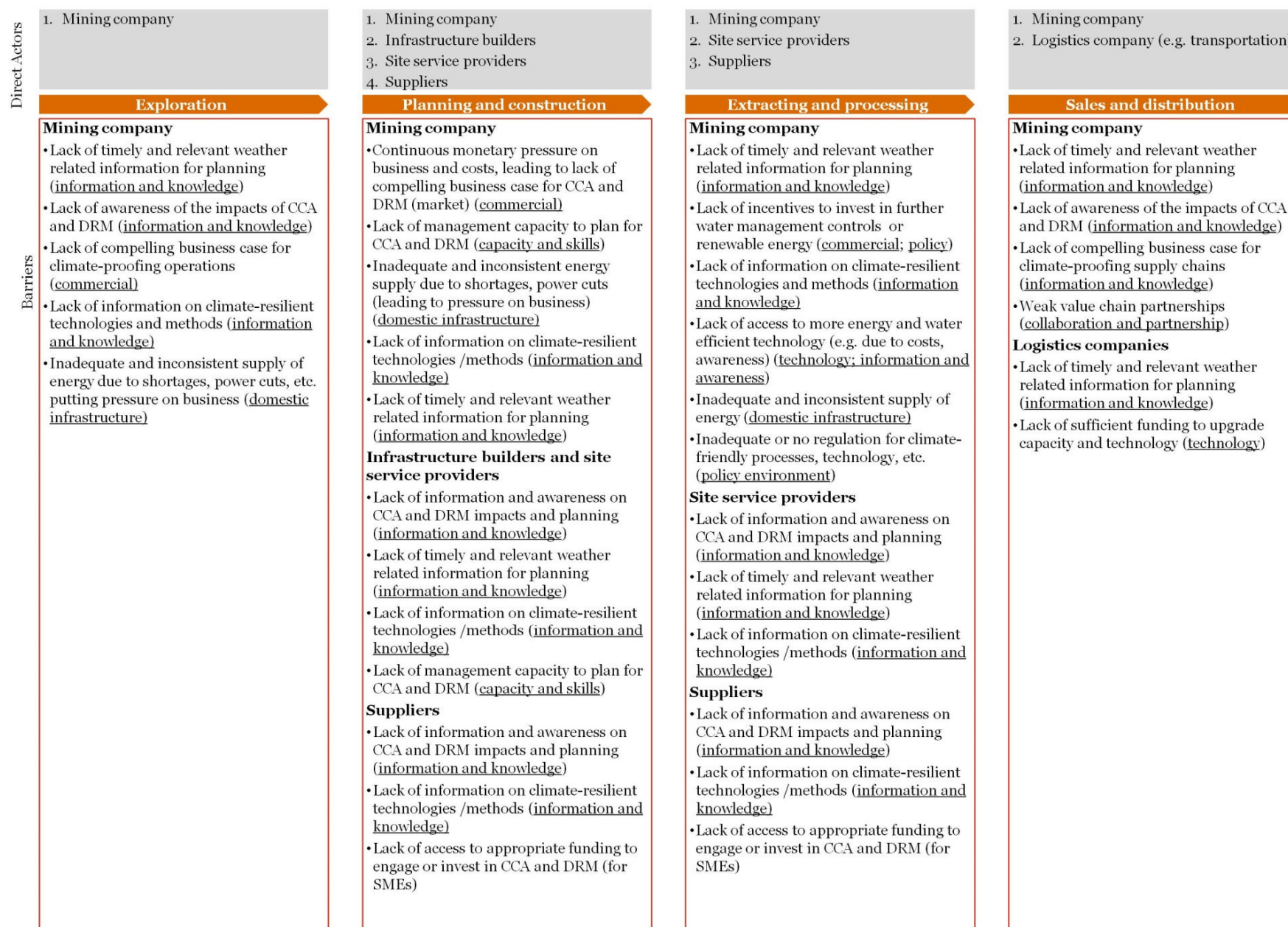


Figure 10: Example of value chain mapping of barriers for the extractives sector



BOX 6: Enhancing climate resilience in smallholder sourcing programmes, Zambia

Since 2004, Sun International Hotels in Zambia has managed a local food sourcing programme through which it procures fresh fruits and vegetables from 400 smallholder farmers. This has resulted in security of supply and reduced costs for their two hotels and provided livelihoods opportunities to smallholders in the region.

Problem

However, over the past few years, the programme has faced challenges. Participating smallholders suffered from increasingly severe and frequent extreme weather including droughts, hail, and ‘black frost’ caused by strong winds and cold snaps. This led to depressed yields and heavy farm losses, which affected the smallholders’ ability to repay their loans, and consequently, to procure inputs to restart and sustain production. From the hotel’s perspective, these natural disasters and climate change impacts posed a significant risk to its security of supply and led to increased costs of alternative procurement sources.

Support

In order to build resilience and reduce vulnerability among smallholders and Sun Hotels, the company leveraged technical assistance from DFID’s Business Innovation Facility (BIF) to help it create a more robust local sourcing programme. Through such support, four interventions that could benefit the company and the smallholders were identified:

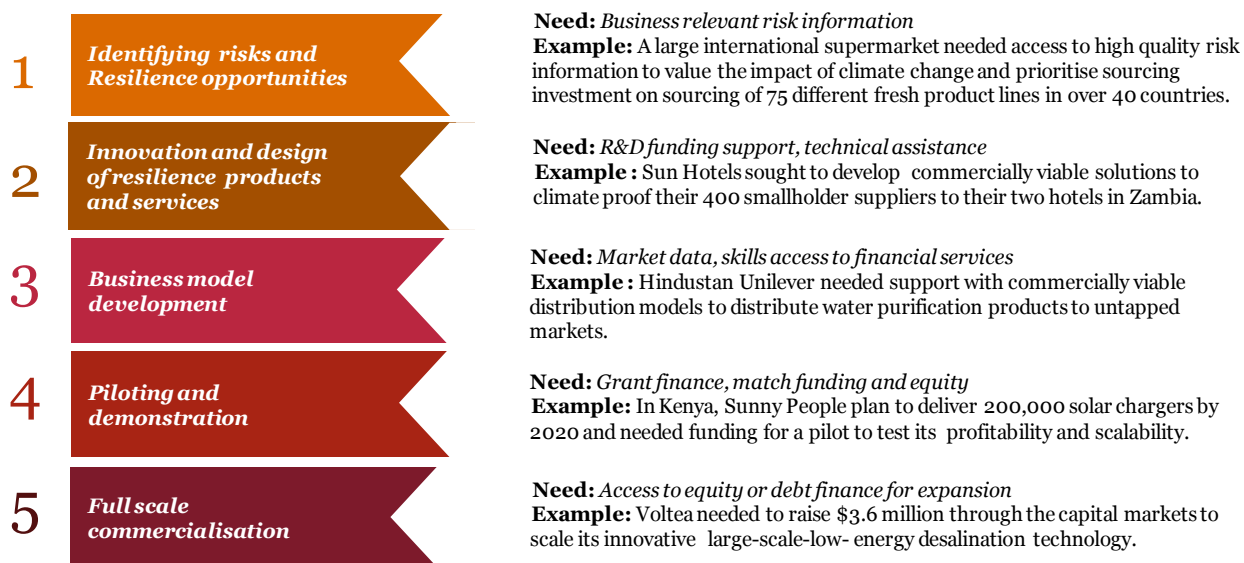
- Promotion of irrigated greenhouse technology among farmers with high technical ability in horticulture production and strong commercial skills. Delivering this technology to such farmers could help prove their effectiveness against disaster and climate risks and serve as potential demonstration sites for other ‘emerging’ smallholders.
- Implementation of an SMS early warning system to alert farmers of upcoming extreme weather events. This would help farmers prepare their fields for such events and minimize the risk of damage or losses.
- Creation of partnership opportunities with microinsurance providers that specifically dealt with crop loss.
- Application of climate-smart agriculture practices such as reduced tillage and use of mulch and compost. Delivered with the help of an agricultural technical assistance provider, such practices could educate farmers in more sustainable practices, help increase productivity and deliver both adaptation and mitigation benefits.

Source: Adapted from Sun International Hotels project profile and a BIF practitioner’s blog (www.businessinnovationfacility.org).

Framework 3: New product and service incubation and commercialisation

The third framework relates to the development and commercialisation of new products and services. Actions to protect direct operations or to commercialise new opportunities largely follow consistent implementation challenges. The framework below outlines how the development and implementation of private sector led resilience actions tend to follow a common maturity process made up of five stages. The schematic is familiar to entrepreneurs and venture capitalists that are identifying and bringing new products to market.

Figure 11: Key intervention points for product and service commercialisation



Private sector organisations experience different needs at each stage depending on the context, their internal capacity and surrounding enabling environment. Different types of private sector organisations face barriers at different stages of product development.

Some larger organisations struggle to identify opportunities in the first place, often because they are not incentivised to do so, or are too large and complex to focus their resources in this area. Sometimes, particularly for western headquartered organisations, local ideas do not flow up to decision makers.

In other circumstances, smaller local organisations have great ideas but cannot build a credible business model around the idea or concept due to a lack of commercial awareness. Others that pass this stage cannot access credit as they are considered too risky, have not collateral to put up or are misunderstood by conservative lenders.

In considering interventions to support innovation and commercialisation it is important to understand whether relevant and timely support is being provided to a market across all of these five stages. If one or some of these needs are not met, or there is a lack of continuity between stages, then a business may not realise an opportunity to grow their business and in turn deny their potential customers an opportunity to reduce risk.

3. Summary of country findings

3.1 Introduction to country validation studies

The country assessments were an important private sector research, validation and engagement exercise that looked much deeper at how risks, barriers and opportunities play out at a local level. The appended country case studies contain considerable detail on the evidence base assembled for each of the four case study countries: Bangladesh, Pakistan, Mozambique and Kenya. The four countries profiled by this work were selected to represent a broad range of political and development challenges. The countries also displayed a variety of hazard types, population densities, institutional arrangements and levels of private sector development. They provided a basis for comparison of geographical, sectoral and development contexts. In this chapter a high level summary of the analysis is provided which includes national overviews and key sector analyses identifying existing activities, barriers to action and opportunities for intervention.

Table 19: Introduction to country economic and hazard context⁴⁰

Country	Development Statistics	Economy	Key Hazards	Climate Change Risks
Bangladesh	GDP= USD 305.5bn Pop'n= 163 million Poverty Rate= 31.5% Area= 143,998 sq km		Tropical Storm Flooding Droughts Extreme temperatures	Increased frequency and intensity of tropical cyclones Unpredictable rainfall 1.4-2.4°C temp rise by 2050 30-100cm sea level rise by 2100
Kenya	GDP= USD 76bn Pop'n= 44 million Poverty Rate= 46% Area= 580,367 sq km		Flooding Droughts Extreme temperatures Earthquake	Increasing irregularity and unpredictability of rainfall Extended drought periods
Mozambique	GDP= USD 305.5bn Pop'n= 163 million Poverty Rate= 55% Area= 143,998 sq km		Flooding Droughts Extreme temperatures	Increasing cyclone intensity Increased rainfall in heavier bursts Longer dry seasons 2.5-3°C temp rise by 2050
Pakistan	GDP= USD 514.6bn Pop'n= 193 million Poverty Rate= 22% Area= 796,095 sq km		Earthquake Flooding Droughts Extreme temperatures	Increased frequency and severity of cyclones Increased variability of monsoon rains 2.5-2.8 °C temp rise by 2050 and 40cm sea level rise by 210

⁴⁰ For references see appended case studies.

The majority of evidence collection took place in-country so that emerging ideas and approaches could be tested with local private sector actors. In Kenya, Bangladesh and Pakistan sector groups were convened in workshops that systematically assessed opportunities and barriers, but also tested appetite for certain types of intervention. In Mozambique, consultations were held in the capital, accompanied by an extensive rural field visit in the north of the country to explore the agricultural sector in depth.

Bangladesh

Natural hazard and climatic conditions, a high poverty rate and a large population density make Bangladesh extremely vulnerable to disaster risk and climate change. The country has a population of 160 million. Over 31% of its population currently live in poverty, most of whom reside in geographically vulnerable areas (e.g. river islands, cyclone-prone coastal belts).

Natural hazards in Bangladesh have had a significant negative impact on the economy and the development of key sectors such as agriculture and infrastructure. A range of hydro-meteorological and geo-physical hazards including cyclones, floods, droughts, and earthquakes pose risks to Bangladesh. Some of these hazards (e.g. monsoon related floods) are seasonal and occur annually, while other hazards such as earthquakes are rare events but potentially highly destructive. Both the 1998 monsoon flood and the 2007 Cyclone Sidr have revealed the vulnerability of Bangladeshi economy to disasters.

In 2008, the Government of Bangladesh prepared the Bangladesh Climate Change Strategy and Action Plan (BCCSAP). As part of its efforts to ensure adequate finance and investment in building resilience and managing disasters, with support from the UK (£60m) and the World Bank, the **Climate Change Trust Fund (CCTF)** was established in 2009. The Government subsequently set up the USD 100m / year domestically financed **Bangladesh Climate Change Resilience Fund (BCCF) in 2010.** Bangladesh's approach to disaster management has seen a shift from relief and response to comprehensive disaster risk management. However, the private sector is not currently an important feature of disaster and climate risk management planning frameworks.

The Bangladesh country case study was developed through consultation with local private sector actors as well as field and desktop research. Significant efforts were made to reach out to public sector bodies, however there were no responses. The work was carried out by PwC with support from Renaissance Consultants, an in-country project partner and consulting company with access to local businesses and NGOs. 13 separate consultations were held with agricultural, insurance/ financial services, textiles, and FMCG companies. Wider engagement took place through a workshop held in Dhaka which 28 people attended. The full list of consultees is appended.

Kenya

Kenya is a low-income country with an economy that depends heavily on agriculture and a poverty rate of 46%, mostly in the rural areas. Climate change is already major threat to Kenya, and particularly to its northern agricultural and nomadic territory, which is already dry and hot. Extreme climate events such as droughts and flash floods afflicting the region are thus only adding to the stress the area is already facing. Marked characteristics of present-day rainfall in Kenya are its irregularity and unpredictability, in both onset and cessation. A particularly worrying trend with regard to rainfall has been the increasing frequency and severity of drought episodes.

Kenya is a chronically food insecure nation; a problem which has been exacerbated by recent droughts. Food insecurity and associated famines have been a critical issue in Kenya in recent years. It is estimated that 10 million people are food insecure with many of them relying on food relief to make up the shortfall⁴¹. This situation can be ascribed to a number of factors, including: frequent droughts; the high cost of domestic food production inputs, such as fertilisers; displaced farmers following the election violence of 2008; high global food prices; and the low purchasing power of the population. The persistent droughts of recent years have been a significant contributor, and in combination with the other factors mentioned, the country's famines have increased from one every 20 years (over the period 1964- 1984) to almost a yearly occurrence (2007/2008/2009).

The conventional approach to handling disasters in the country is emergency response/management. This is often spearheaded by the government and relief agencies and the lessons learnt over the years have now led to the establishment of the **National Drought Management Authority (NDMA), and its proposed National Drought and Disaster Contingency Fund (NDDCF).** The

⁴¹ <http://www.foodsecurityportal.org/kenya/food-security-report-prepared-kenya-agricultural-research-institute>

function of the Authority is to support the national & county governments and communities to prepare for and react to drought and its impacts.

Economic wealth, technology, information and skills, infrastructure, institutions and equity are the key factors in building local adaptive capacity to extreme drought conditions. The government and other actors working in Northern Kenya are however, increasingly realising the importance of addressing sustainable development as a foundation for sustainable and long-term solution to drought related disasters in the region.

Consultations were carried out in Nairobi and also focused on the northern arid lands of the country, led by PwC Kenya. Consultations were conducted via questionnaire, focus groups, interviews and a workshop in Isiolo, 285 kilometres north of Nairobi.

Mozambique

Mozambique is a low-income country with considerable development potential. To date, it has remained heavily dependent upon agriculture for GDP, employment and rural livelihoods; however the country has vast untapped natural resources and lies in a strategically important location on the east coast of southern Africa. Mozambique faces considerable economic and governance challenges to achieving sustainable and long-term development outcomes, not least because it has a largely undeveloped private sector.

Mozambique is recognised as one of the most climate vulnerable countries in Africa, especially along its coastline. A range of hydro-meteorological hazards including tropical cyclones, droughts and floods pose risks to the country. These natural hazards have already had a significant detrimental impact on the development of key economic sectors, particularly agriculture, infrastructure and housing.

The major flood events of 2000 and 2013 highlight the vulnerability of Mozambique's population and economy to natural disasters. The Government responded to the floods by the coordination and mobilisation of resources at its disposal; however these were not sufficient to meet the needs of the post-disaster situation. Mozambique has a relatively low institutional capacity and a lack of appropriate skills and financial resources, which limit the effectiveness of disaster risk management activities.

The government of Mozambique has showed increasing commitment in recent years to the issues of climate change adaptation and disaster risk management. The country's NAPA was approved in December 2007 and outlined four priority actions: the strengthening of early warning systems, strengthening of adaptation capacity of farmers, reduction of impacts in coastal areas and water management in relation to climate change.

The **National Disaster Management Institute (*Instituto Nacional de Gestão de Calamidades, INGC*)**, established in 1999 is the lead agency at the national level to deal with the full spectrum of disaster management activities. The Ministry of Cultural and Environmental Affairs (*MICOA*) has recently developed the **National Climate Change Strategy (*Estratégia Nacional de Adaptação e Mitigação de Mudanças Climáticas, ENAMMC*)**. A key objective is to make Mozambique resilient to the impacts of climate change, while minimising climate risks to people and property and restoring and ensuring the rational use and protection of natural and built capital.

The Mozambique country case study was developed through consultation with local private sector actors, site visits and field and desktop research. The work was carried out by PwC with support from PwC Mozambique who provided access to local stakeholders. 15 direct consultations were held with agricultural, forestry, construction, extractives and financial services companies. There was also consultation with important public sector and NGO players. Wider engagement with smallholder farmers was gained through a site visit to Cleanstar Mozambique's operations and smallholder cassava growers.

Pakistan

Pakistan is a lower middle income country with considerable natural assets and a large, reasonably well-educated population. However, Pakistan faces significant economic, governance and security challenges to achieving durable development outcomes. The persistence of conflict in the border areas and security challenges throughout the country is something which affects all aspects of life in Pakistan and impedes development. The country also faces significant economic challenges, caused by factors such as the sharp rise in international oil and food prices, and recurring natural disasters such as the 2005 Kashmir earthquake and the 2010-11 floods

Agriculture is the single largest sector of Pakistan's economy and an overwhelming majority of the population depends directly or indirectly on the income it generates. The construction and manufacturing sectors are other key contributors to the Pakistani economy.

Public policy for both disaster risk and climate change has gained considerable strength following the 2005 Kashmir Earthquake and the catastrophic flooding of the Indus river basin in 2010. This shift in momentum found its first expression in the 2006 National Disaster Management Ordinance (NDMO), replaced in 2010 by the current National Disaster Management Act (NDM), and subsequently followed by the National Disaster Risk Management Framework (NDRMF) (2007-2012) that outlined the national DRR agenda.

Overall, it is clear that the private sector is not a major feature of disaster and climate risk management planning frameworks. Nor are there specific initiatives targeting the involvement of private sector within key economic sectors, or at provincial or local levels.

The National Disaster Management Authority (NDMA) is the lead Federal agency dealing with the whole spectrum of Disaster Management Activities. Pakistan’s **National Disaster Risk Reduction Policy (2013)** recognises that “The involvement of the private sector in DRR is as of yet negligible.” Again, **the Climate Change Policy (2012)** also contains reference to the private sector as one of its 11 policy objectives. Both the NDMA and the Ministry of Climate Change confirmed through this study’s interviews that it has not yet engaged the private sector directly in a planned or coordinated manner on disaster risk or climate change.

The Pakistan country case study was developed through consultation with local private sector actors, field and desktop research and selected relevant government bodies. The work was carried out by PwC with support from LEAD Pakistan, a local project partner and development NGO with excellent access to local stakeholders. 12 separate consultations were held with agricultural, construction and insurance/financial services companies. There was also consultation with important public sector players. Wider engagement took place through a workshop held in Islamabad which attracted an attendance of 42 people.

3.2 Evidence of impacts and vulnerability

All of the case study countries have experienced significant losses as a result of natural disasters. Flooding has been the most frequent and most costly hazard in all cases. Pakistan incurred a loss of US USD 10 billion as result of the 2010 floods alone, equivalent to 5.8% of GDP, and Bangladesh saw over 4.8% of its GDP wiped out after the 1998 floods inundated two thirds of the country.

Table 20: Hazard distribution of top 10 disasters since 1900

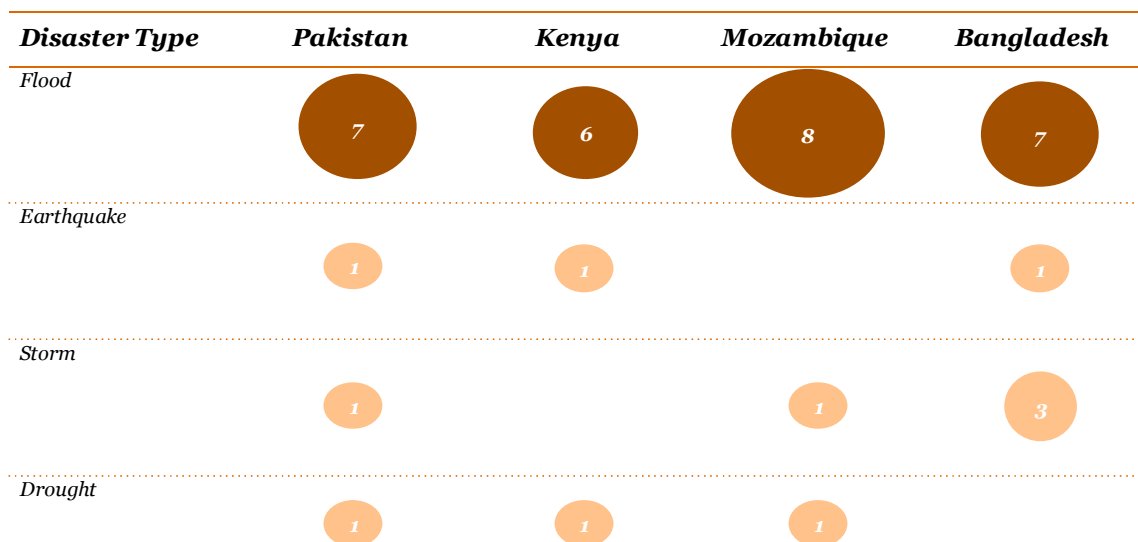


Table 21: Economic impacts of the top 5 disasters by country

Bangladesh			Kenya		
Disaster	Year	Damage (ooo USD)	Disaster	Year	Damage (ooo USD)
Flood	1998	4,300,000	Flood	2012	130,000
Storm	2007	2,300,000	Earthquake	2004	100,000
Flood	2004	2,200,000	Flood	1997	11,800
Flood	1988	2,137,000	Flood	1977	10,000
Storm	1991	1,780,000	Drought	1971	1,500
TOTAL (top 5) = USD 12.72bn			TOTAL (top 5) = USD 253.3m		

Mozambique			Pakistan		
Disaster	Year	Damage (ooo USD)	Disaster	Year	Damage (ooo USD)
Flood	2000	419,200	Flood	2010	9,500,000
Flood	1967	180,000	Earthquake	2005	5,200,000
Flood	2007	100,000	Flood	2012	2,640,000
Storm	1984	75,000	Flood	2011	2,500,000
Flood	2007	71,000	Storm	2007	1,620,000
TOTAL (top 5) = USD 845.2m			TOTAL (top 5) = USD 21.46bn		

A sector sensitivity analysis was carried out in each country to focus the analysis where the private sector is particularly exposed or has a substantial influence on resilience. This assessment included a broad review covering the identification of economic trends, each sector's employment, GDP contribution and also the mapping of the major hazards against each sector. The combination of physical risks and economic importance resulted in a prioritised list of sectors. Detailed analysis and results are contained in the Appendices.

The agricultural sector is highly vulnerable in all countries and has experience of widespread climate-related impacts. The sector suffers from multiple threats including flooding, drought, heat, hail and frost which lead to reduced yields, propagation of disease and ruined harvests. In each of the case study countries we closely examined the agricultural sector to analyse the impact, existing resilience activities, the opportunities and barriers to private sector engagement, and what the public sector might do to intervene. A common sector across countries enabled us to identify which experiences, challenges and opportunities are consistent, and which are context dependent.

Table 22: Sector - hazard sensitivity assessment⁴²

	Agriculture (crops)	Agriculture (livestock)	Manufacturing	ICT (and transport)	Tourism	Construction	Finance and insurance	Mining and quarrying	Utilities
Pakistan	●	●	●	●	●	●	●	●	●
Kenya	●	●	●	●	●	●	●	●	●
Mozambique	●	●	●	●	●	●	●	●	●
Bangladesh	●	●	●	●	●	●	●	●	●

● Severe ● High ● Medium ● Low

3.3 Comparability of country level barriers

The barriers for each country are analysed in more detail in the case study documents including at sector resolution.

Table 23: Common barriers mapped against case study countries

Barrier type	Specific constraint	Potential barriers to businesses globally		Observed barriers to businesses in case study countries			
		Operational risk management	New products and services	Bangladesh	Kenya	Mozambique	Pakistan
Risk management capability and maturity	Lack of internal buy-in / leadership	●	●	✓		✓	
	Low risk awareness	●	●	✓			
	Challenges of decision making under uncertainty	●	●			✓	
	Limited sharing of good practice and lessons learned from other business approaches	●	-	✓		✓	✓
	Limited risk management tools available e.g. risk assessment, scenario and opportunity evaluation tools	●	-	✓	✓	✓	✓

● Minor barrier ● Major barrier ✓ Critical in-country barrier observed

⁴² Source: PwC analysis

<i>Technical</i>	Lack of knowledge, capacity and skills in workforce	●	●	✓	✓	✓	✓
	Poor communication of useable risk information	●	●	✓	✓	✓	✓
	Lack of access to technology	●	●	✓		✓	
	Lack of demonstration projects	●	●			✓	✓
	Lack of knowledge sharing / collaboration platforms	●	●	✓	✓	✓	✓
	Weak sector and value chain partnerships	●	●	✓		✓	
	Lack of access to early stage capital (risk finance)	-	●			✓	
<i>Financial</i>	Technology risk	●	●				✓
	Access to credit	●	●	✓	✓	✓	✓
	Technology cost gaps	●	-			✓	
	Lack of access to insurance	●	-	✓		✓	✓
	Lack of incentives	●	●	✓			✓
<i>Local enabling environment</i>	Inadequate policy, regulatory and legal environment	●	●	✓	✓	✓	
	Domestic infrastructure constraints	●	●	✓	✓	✓	✓
	Market and financial sector risks/capacity	●	●			✓	
	Local political, governance and security risks	●	●		✓		

Consistent barriers across the case study countries include:

- Lack of relevant risk information
- Low levels of capacity and skills
- Access to credit
- Weak knowledge management structures
- Inadequate policy, regulatory and legal environments
- Domestic infrastructure constraints

3.4 Opportunities for intervention in the study countries

Evidence was found in all of the case study countries of businesses that are adapting their operations to be more resilient to natural disasters. In the agricultural sector this was seen both at the individual farmer level and also having been driven by larger companies. The activity going on at smallholder level, for example changing cultivation schedules or not planting on land prone to flooding, was generally carried out in isolation and there was little opportunity for the sharing of best practice. Adaptation activities carried out by larger organisations often took the form of capacity building, such as through the education of farmers, both to increase awareness to the effects of climate change and the possibilities of using new techniques and crop types.

A wide range of opportunities were observed during the in-country consultations. Some of these opportunities are already being capitalised on by local companies but some require some additional support. Full details of the opportunities in each country can be found in the full country case studies appended to the report. There were a number of fairly common opportunities that emerged suggesting that there were some replicable interventions available. There are summarised in Table 24 below.

Table 24: Common opportunities presented by the case study countries

Sector	Opportunity	Description
<i>Agriculture</i>	Irrigation	There is a significant opportunity in all of the case study countries to develop the market for irrigation technologies. In countries such as Mozambique and Kenya, the market potential is huge as a relatively small proportion of farm land is already irrigated. The key issue to scale up appears to be affordability, so there is an opportunity for public sector/donor support to help poor farmers gain access to credit.
	Seed technology	Some companies are already investing in the research and development of new seed varieties that are more resilient to a changing climate. A number of the farmers that were consulted in the case study countries were already using new seed types, however there still exist a huge potential for widening their use. Capacity building needs to go hand in hand with the development and roll out new crop varieties as awareness levels amongst farmers is generally very low and trust building exercising will be required before changes will be implemented.
	Privatisation of extension services	The privatisation of agricultural services, in Pakistan in particular, could help provide more efficient models of support to farmers with built in incentives to help the poor and vulnerable. There is an element of 'moral hazard' to extension services where they are packaged with a particular product (such as seeds, fertilizer etc), however there are resilience benefits gained for both from the interaction.
<i>Construction</i>	Share best practice	There is an opportunity to disseminate best practice between companies in the construction sector in Pakistan on earthquake and disaster resistant design. Some innovative technologies exist but have yet to be mainstreamed.
	Replicable design for resilient housing	Pakistan needs a common, cost-effective, resilient construction model, technique or design feature, such as pre-fabricated modular buildings. After the last earthquake, over 600,000 new homes had to be built. With a growing population and greater risk of natural disasters going forward, there is an opportunity to create a resilient new housing stock.
<i>ICT</i>	Mobile technology	There is huge opportunity in all regions to either develop or scale up mobile technologies and applications which support resilience. In Kenya, for example, there are already some mobile technology systems in place which help facilitate payments on disaster insurance claims. There is an opportunity to expand mobile technologies to include early warning systems, meteorological information and business to business communication.
<i>Insurance/ alternative risk transfer</i>	Weather and catastrophe risk-insurance	In Pakistan, for example, there is already a well-developed financial system; however the insurance industry does not currently enjoy a very high penetration rate. In prior disasters, a very small proportion of the cost of reconstruction/lost assets has been claimed. This represents an opportunity for the insurance industry to expand into new markets. Affordability is an issue; therefore some public-sector backed risk-transfer would be required. There have been many pilot insurance programme across the case study countries and there is now an opportunity to scale them up into country-wide programmes. In some countries, such as Mozambique, the financial systems are still very weak, and therefore an adequate banking system is required to be put in place first.

3.5 Summary of country and sector opportunities

The summaries below highlight the potential public sector support opportunities, specific interventions and implementation options for each sector and country. These opportunities represent the types of support that the proposed facility might be able to support as part of its country portfolios.

Bangladesh

Agriculture

As a labour-intensive agrarian economy, agriculture is an important sector in Bangladesh, contributing to 24% of GDP and accounting for 45% of the total labour force and 32% of its exports. The case study evidence suggests that there is considerable need and demand for risk reducing products and services. To implement these products and services, Bangladesh will require appropriate partnerships and awareness building of different interventions and opportunities.

There is some consistency between interventions relating to the need for a public-private 'matchmaker' that supported aspects of market development and public services in support of individual projects. It should also be noted that recommendations will need to be considered in context of a 'market systems approach' (addressing regulatory, market, government and business value chain issues together), and ensuring that the poor and most vulnerable are not excluded from the solutions.

Table 25: Public finance interventions required to support Bangladesh’s agricultural sector

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
<p>Knowledge and capacity: Systematically embed and improve agricultural extension services through capacity building of extension service providers.</p>	<ul style="list-style-type: none"> Targeted training of service providers on hazard awareness and responses Establish a knowledge hub and distribution channels to make planned additions to existing agricultural communication and engagement systems Capacity building among small-holders on stress-resilient crops and planting and harvesting techniques Awareness building of information and options available for value chain partnerships and coordination 	<ul style="list-style-type: none"> Leverage existing extension services infrastructure operating at provincial government levels Support and coordinate between existing NGO programmes Collaborate with other donor activities (e.g. World Bank, DFID) to prepare coordinated approach and a separate dedicated knowledge and capacity support facility Aim to implement a programme through the government’s climate change funds (CCTF or the BCCF)
<p>Technology innovation and deployment: Stimulate private sector innovation and maturation of technologies.</p>	<ul style="list-style-type: none"> Conduct market analysis and potential for key technologies including efficient irrigation products, crop types and agricultural techniques Incubate key technologies - provide R&D and/ or business model support for new market entrants Facilitate implementation through credit support and market solutions that work with the value chain and regulators Knowledge dissemination and awareness building around key technologies that could help develop stress-resilient seeds, better irrigation methods, and better transport technology (e.g. cold chains) Provide TA to smallholders and farmers to assist them with technology adoption 	<ul style="list-style-type: none"> New innovation support fund/ programme required
<p>Access to insurance and financial services: Microinsurance solutions development for weather risk along with access to credit.</p>	<ul style="list-style-type: none"> Support the development or implementation of a regulatory framework for weather or micro weather risk insurance Support (directly or through a facility) technical development needs including risk information, data analysis and pricing Develop a knowledge hub to help insurers understand how to use existing climate data Embed support into a national crop insurance scheme to improve the relationship of this with developing private sector solutions Develop an awareness raising programme on new insurance options for farmers Develop better funding facility for smallholders for working capital / credit 	<ul style="list-style-type: none"> Build upon existing efforts of microfinance institutions or insurance companies Leverage existing initiatives for crop insurance (e.g. ADB & Japan Fund for Poverty Reduction) Create a technical and financial support facility to facilitate development of the sector and maximise access to the poor
<p>Offer incentives: provide financial incentives for feasible private sector investment.</p>	<ul style="list-style-type: none"> Develop specific financial products to promote new technology development, research, etc. These could include grants, no-interest loans, or soft loans Develop initiative that helps earmark government funding for certain types of agricultural companies 	<ul style="list-style-type: none"> Develop new fund for agriculture for a specific purpose (e.g. research and dissemination of stress-resilient seeds or crops)
<p>Facilitate better regulatory environment and dialogue: help initiate better engagement between farmers, companies, and the government.</p>	<ul style="list-style-type: none"> Targeted initiative for facilitating dialogue between private and public sector Support to public sector to help develop progressive policies on new crop varieties Targeted intervention on better 	<ul style="list-style-type: none"> Create a new dialogue support facility for private sector to have stronger voice on policy issues

governance for public sector

Facilitate market based

solutions: Combine multiple interventions to support sustainable private markets for agricultural resilience. Provide market facilitation support to concurrently address a range of sector constraints including technology, access to finance and knowledge transfer.

- Design and implement an intervention framework to address complex constraints
- Offer technical assistance and investment support to build better business models and underwrite investment risk

- Create a new and integrated facility that identifies and supports solutions at market scale working with multiple actors

Textiles

In aspiring to become a middle-income country, Bangladesh will rely on the continued growth of its manufacturing industries, particularly its textiles (garment) sector. There is a considerable need and demand for risk reducing design, capacity building and knowledge dissemination, and technology adoption.

Table 26: Public finance interventions required to support to Bangladesh's textile sector

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
<p>Support technological innovation: Stimulate private sector innovation of low cost energy and water efficient equipment and more resilient buildings.</p>	<ul style="list-style-type: none"> • Support technology demonstration sites to improve company confidence in new techniques • Provide grants or low-interest loans for companies to adopt new technologies and provide requisite training in parallel • Establish a design competition to discover resilient designs for more energy and water efficient technology 	<ul style="list-style-type: none"> • Develop a technology window within a new program that provides TA and funding • Partner with existing initiatives i.e. the IFC's PaCT program
<p>Stimulate market demand: Offer financial or other incentives to support increased commitment to employing resilience equipment and structures.</p>	<ul style="list-style-type: none"> • Develop a lifecycle business case for adoption of climate-resilient equipment and buildings. • Raise awareness of the financial and legal consequences of inaction and poor preparation by private sector clients 	<ul style="list-style-type: none"> • Implement in parallel to a knowledge hub through donors • Leverage existing knowledge hubs and trainings carried out by development agencies and the BGMEA
<p>Risk information: Improve quality of and access to data on major hazard types and its impact on companies in the textiles value chain.</p>	<ul style="list-style-type: none"> • Fund the design and hosting of a risk information portal containing all information pertaining to natural hazards and climate change impacts on the textiles sector in Bangladesh. Link with any other existing portals globally 	<ul style="list-style-type: none"> • Develop stand –alone hub or knowledge sharing platform where such information can be accessed • Leverage industry groups (e.g. BGMEA) and garment manufacturers associations to disseminate information on risk assessment
<p>Sector skills and capacity: Build sector capacity in risk assessment and resilient design.</p>	<ul style="list-style-type: none"> • Targeted training of managers and middle managers on hazard awareness and design responses to different types of hazards • Improve public sector skill base in regards to regulatory enforcement. • Develop capacity of low-skilled workers through more appropriate and frequent training on how to protect themselves in the face of a disaster 	<ul style="list-style-type: none"> • Leverage existing industry networks to provide the training (e.g. BGMEA) • Build the existing training capacity of industry associations directly to increase outreach programmes • Implement programmes in partnership with MNCs conducting CSR campaigns • Implement donor programs such as the UPPR
<p>Enhance regulatory capacity: Support the needs of government to more effectively engage with and regulate the private sector.</p>	<ul style="list-style-type: none"> • Support the revision of regional multi hazard/ climate change resilient design codes for the Bangladesh textiles sector • Financially support private sector led (e.g. retailers) accredited inspection and validation of building and infrastructure design and completion 	<ul style="list-style-type: none"> • Financially support regulatory expansion through the private sector • Work with the BGMEA, which supports new regulation and policy in the sector
<p>Support improved sector collaboration: The sector has appetite to work together more effectively to driver a private sector</p>	<ul style="list-style-type: none"> • Support established partnerships and consortiums to input new information and capacity building 	<ul style="list-style-type: none"> • Work directly through existing industry associations • Encourage new associations through a new challenge fund structure

led solutions.

- Offer finance support to industry led collaborations
 - Identify existing private sector alliances that are working on disaster management (e.g. Interstoff's work with Gazipur garment factories) to implement additional interventions
-
- Develop a partnership with insurance companies to research and develop most appropriate insurance products for low-income labourers
 - Provide grants or low-cost funding that would enable insurance companies to assess the risks and better understand the implications
 - Leverage any existing insurance schemes such as BGMEA's life insurance scheme
 - Work with BGMEA to identify labourers to pilot and scale-up such an initiative
-

Kenya

Agriculture - Livestock

The following actions and opportunities were identified as necessary measures to respond to respond to drought in the livestock sector.

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
Actions to respond to drought	<ul style="list-style-type: none"> • Multi-year food and cash mechanisms based on early warning and food security data • Emergency water supply • Early responses in the livestock sector: Destocking – or purchase of animals by the government for a fixed price, with animals slaughtered and meat distributed among needy families; animal health campaigns; and animal feeding 	<ul style="list-style-type: none"> • Co-ordinate response between existing NGO programmes • Collaborate with existing donor activities
Actions to recover from drought	<ul style="list-style-type: none"> • Reconstruction of destroyed assets with improved, climate-resilient standards • Establishing resilient community-based water and sanitation systems • Rehabilitation of the resource-base in rangelands through reseeding and water development • For agriculture, the provision of seeds for drought tolerant crops, fertilizer subsidies, water harvesting, and the construction of water pans, among others 	<ul style="list-style-type: none"> • Build upon existing microfinance initiative to provide credit to farmers for climate resilient crops • Expand existing insurance penetration • Provide technical assistance to government to improve standards
Actions to build resilience to drought	<ul style="list-style-type: none"> • Monitoring systems – Quality, credible early warning and food security monitoring systems that make effective use of advances in meteorological monitoring information technology • Livestock –developing and expanding livestock markets, improving animal health, smaller healthier herds, livestock insurance schemes (where feasible), livestock diversification, establishment of comprehensive animal health care facilities • Education – Expanding the provision of schools and teachers in the ASALs to meet the national average • On-going peace-building and conflict resolution work • Climate proofed infrastructure development – Investing in roads, ICT infrastructure, multipurpose dams and renewable energy capabilities 	<ul style="list-style-type: none"> • Support technology innovation through a new fund a new fund • Embed resilience windows into existing initiatives • Subsidise access to IT for farmers

- Livelihoods diversification- Moving to livelihoods that are more adaptive to climate change: investment in community-based livestock systems, crop farming (both irrigated and rain fed), dryland forestry and forest products, fisheries and other alternative livelihoods
- Water management – Developing effective and environmentally appropriate systems of water harvesting, management and irrigation

Knowledge and capacity	<ul style="list-style-type: none"> • Integrate local knowledge with scientific information • Improve access to weather stations • Improve access to technology that supports resilience building initiatives 	<ul style="list-style-type: none"> • Support and co-ordinate between existing NGO programmes • Support technology innovation through a new fund
Access to insurance and financial services	<ul style="list-style-type: none"> • Raise awareness of insurance – education is required to help people understand the role of insurance • Financial support needs to be extended to small traders and individuals looking to expand and build resilience 	<ul style="list-style-type: none"> • Scale-up existing insurance and microfinance pilots

Other enabling actions in proposed in Kenya

Local knowledge could be integrated with scientific information to provide better weather prediction services. Currently, private sector actors in Northern Kenya (pastoralists, livestock traders, associations and companies) rely on weather information whose source is not very well defined. Some big ranches such as the Northern Rangelands Trust and its members alluded to using scientific information (e.g., from the Kenya Meteorological Department (KMD)) for its planning, but at the same time, acknowledged that it wasn't sure of the source of its weather information. Many people rely on indigenous knowledge in weather prediction (e.g. the expectation that drought hits after every 4 years, and so if there drought fails to occur in the 3rd year, it is expected that it would occur on the 4th year). There is need to integrate indigenous knowledge with modern/scientific knowledge. In addition, there is need to improve weather information dissemination through increasing number of weather stations in the region.

Livestock market information is needed to enhance livestock trade. There is a popular opinion in Kenya that pastoralists keep livestock for cultural prestige, even during times of drought. This myth is as a result of farmers being unable to access markets and refusing to sell through middle-men who do not offer sufficiently high prices. For example, they may only offer as low as Ksh. 1000 (USD 13) for a bull that would normally fetch around Ksh. 50,000 or more (USD 600) during droughts. Farmers would be willing to sell, but with such demoralising prices, pastoralists would rather have their livestock die than “sell them for nothing”. Linking pastoralists with markets where they can fetch better prices would help them to sell when they need to rather than let their assets go to waste.

M-Shamba, an online market information platform mainly applied in the crops sector was mentioned as local innovation that could be used for disseminating livestock market information. It was also understood that there were several such initiatives. DFID may support these. For instance, to access M-Shamba information, one must have Ksh. 5, which is the required fee, in their mobile account. Subsidising this fee for those who may not be able to afford it could be an avenue for support.

Awareness raising and education of how insurance works is required. Several microinsurance products have been launched in the region, although their uptake has been quite low, making insurance investment less attractive for private sector players to venture into. The low uptake is due to several factors, but the two main ones that were pointed out were low understanding of how insurance works, and government's (politicians') involvement in popularising insurance through messages that are often politically inclined. Currently, many people in Northern Kenya understand insurance to be some form of guaranteed payment irrespective of the outcome of the risk which insurance is taken. In other words, whether drought hits or not, those who have insured their livestock against it expect a payment to be made to them in spite of having incurred no losses. In addition, a one-time involvement of the government (or politicians) in popularising insurance created an impression that this was a government initiative and that pastoralists would be paid large amounts of money after a certain period of time.

These misunderstandings need to be rectified. Equity Bank, for instance, emphasised that under-writing is not the main challenge to the bank. The challenge is creating an environment that is conducive and would enhance uptake of insurance products, which revolves around awareness and education among the target group. Other elements of awareness could include methods of valuation of livestock to determine premiums and therefore expected pay-outs. This is currently a grey area.

Financial support to small-scale traders, groups and individual pastoralists is needed. Financial support is expectedly, the main impediment to climate change adaptation and disaster risk reduction in the livestock sector. Several small traders would like to venture into livestock trade, which would probably create healthy competition and reduce the exploitation by the few middle-men. They are constrained by finance and the stringent conditions placed by several local banks for loans. The other challenge is that land, which would traditionally be used for collateral, has generally not been adjudicated in Northern Kenya. Therefore, many people do not have title deeds. Financial support is also needed for organisations and individuals whose supports the livestock sector in various ways such as fostering skills in value addition to livestock and livestock products, and livelihood diversification programmes.

Mozambique

Agriculture

Table 27: Public finance interventions required to support to Mozambique's agricultural sector

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
<p>Information and knowledge sharing within the sector: Improve and embed knowledge on more resilient agricultural practices at smallholder level</p> <p>Improve knowledge sharing of lessons learned and best practice between commercial farms</p>	<ul style="list-style-type: none"> • Ensure that all outgrower model commercial farms are aware of more resilient techniques and they share these with smallholders through demonstration plots and education • Use of radio broadcasting to reach remote areas on more resilient techniques e.g. local rainwater harvesting and methods of planting • Provide incentives for 'lead' farmers with demo plots to teach and share knowledge with local farmers • Establish a knowledge hub for commercial farms to share lessons learned and best practice on technologies and techniques and create the network for potential collaboration 	<ul style="list-style-type: none"> • Work with the new CAADP programme and its proposed private sector portfolio to ensure that this knowledge sharing approach is streamlined into all new outgrower model projects • Work with the Instituto de Investigação Agrária de Moçambique (IIAM), Ministry of Agriculture and the INGC to develop radio programme alerts of key messages for smallholder farmers • Collaborate with other donor activities to prepare a coordinated and local knowledge hub for climate smart/resilient techniques and approaches that are relevant to Mozambique
<p>Sector skills and capacity: Build sector capacity in climate resilient agricultural techniques and practices.</p>	<ul style="list-style-type: none"> • Targeted training of the local farmer champions on improved agricultural techniques (conservation agriculture, agroforestry, CSA) and higher quality training on issues and new techniques at local agronomy schools • Targeted training on financial and business skills 	<ul style="list-style-type: none"> • Build resources of local agriculture colleges in rural provinces • Strengthen the capacity of the IIAM to offer internships to local farmer champions and students
<p>Specific interventions to develop key projects along the value chain: Focus on incentivising seed suppliers and agro-processors</p>	<ul style="list-style-type: none"> • Reform of government seed policies and legislation to create an attractive environment for international seed companies to enter • Incentivise agro-processors into cluster growth areas 	<ul style="list-style-type: none"> • Work with IIAM and the Ministry of Agriculture to strengthen current legislation and seed policies • Work with BAGC and other growth corridor initiatives to build agro-processing projects
<p>Support agricultural innovation: Stimulate private sector innovation for use of more resilient agricultural commodities and de-incentivise charcoal production</p>	<ul style="list-style-type: none"> • Establish a design competition to discover new business models and companies that can use more resilient commodities (e.g. cassava) in their value chain 	<ul style="list-style-type: none"> • More focused/specific objectives could be set for an existing fund such as the AECF in the aim of stimulating innovation in the use of more resilient crops

Support irrigation at large scale for corridor projects: Patient capital for irrigation in growth corridor clustering investments	<ul style="list-style-type: none"> • Patient capital for irrigation to run alongside investments in clustered projects 	<ul style="list-style-type: none"> • Coordination with AgDevCo and other agricultural developers and irrigation specialists (e.g. Jain Irrigation)
Access to insurance and financial services: Microinsurance solutions development for weather risk.	<ul style="list-style-type: none"> • Support R&D into development of new microinsurance and weather index insurance products to develop lower cost alternatives to those currently available 	<ul style="list-style-type: none"> • Create a technical and financial support facility to facilitate development of the insurance sector and maximise access to the poor
Encourage collaboration along the value chain and cross-sector: Collaboration and partnerships for cross-sector collaboration	<ul style="list-style-type: none"> • Build local level platforms for collaboration between sectors and actors e.g. mining, commercial agriculture, agro-processors, to develop multi-use infrastructure (e.g. dams, transport) 	<ul style="list-style-type: none"> • Work with local level government actors to develop locally focused collaboration space for MNCs, national companies and SMEs in multiple sectors to work together on multiple uses for local infrastructure

Other sectors

Table 28: Public finance interventions required to support private sector actors in Mozambique

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
Awareness raising: Support national and local programmes to highlight disaster and climate risk and potential solutions to business and civil society	<ul style="list-style-type: none"> • Sector focused workshops targeted directly at the private sector to convey the business case for action i.e. the financial impact of reducing risk and capitalising on opportunities • B2B and sector networking and knowledge sharing opportunities • Offer finance support to industry led collaborations e.g. the CTA chamber of commerce, to also build awareness through focus programmes 	<ul style="list-style-type: none"> • Sector focused workshop series implemented by MICOA or the soon to be established Climate Change Unit (CCU) • Implementation at provincial/district level with additional outreach in cities and towns outside of Maputo • Build links between the INGC, MICOA, CCU and business association (CTA)
Access to information: Improve access to data on major hazard types and hazard mapping already undertaken	<ul style="list-style-type: none"> • Fund the design of a disaster and climate change information portal containing all information pertaining to natural hazards and climate change impacts in Mozambique e.g. including much of the work and research conducted by the INGC to date • Create appropriate communication channels with appropriate formats of simplified data (e.g. printed) • Develop training courses for business representatives to learn how to effectively use these information resources 	<ul style="list-style-type: none"> • INGC, MICOA or the soon to be established Climate Change Unit could host an information portal and distribute printed risk information
Enabling environment: Develop the capacity of government institutions to enable reform of building codes and improved enforcement	<ul style="list-style-type: none"> • Support the updating of Mozambique's building codes to be better adapted to low cost (currently informal) housing construction, promote the use of local materials and synthesise/simplify the current codes • Build human and technical capacity in the necessary ministries to increase the likelihood of improved enforcement of codes 	<ul style="list-style-type: none"> • Reform and simplify existing standards and codes. • Increase technical and human capacity at the Ministry of Planning and Development
Support the dissemination of low cost technologies: Encourage the development of SMEs and entrepreneurs with the agricultural sector	<ul style="list-style-type: none"> • Build access to credit for MSMEs in non-agricultural sectors • To build market demand, support pilot demonstration projects in rural provinces to build awareness of new products and services 	<ul style="list-style-type: none"> • Broaden the scope/objectives of current credit guarantee facilities to ensure that non agricultural MSMEs can access credit

Pakistan

Agriculture

Agriculture is Pakistan's largest economic sector and is responsible for 70% of Pakistan's total exports. Pakistan's agriculture policy recognises that climate change is likely to have a significant impact on the sector however action on private sector engagement is in its infancy. There is in fact substantial private sector demand and opportunity for risk reducing products and services in Pakistan's agricultural sector.

Furthermore, Pakistan's economy has developed to the point whereby the local private sector can offer many of these solutions alone or in partnership with the public sector. Intervention is however needed by local or international support to make this happen. Some interventions address specific constraints whilst some are targeted at multiple private sector development issues.

Table 29: Public finance interventions required to support to Pakistan's agricultural sector

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
<p>Knowledge and capacity: Systematically embed and improve agricultural extension services through capacity building of extension service providers.</p>	<ul style="list-style-type: none"> Targeted training of service providers on hazard awareness and responses. Use of radio broadcasting to scale quick wins and reach remote areas Establish a knowledge hub and distribution channels to make planned additions to existing agricultural communication and engagement systems Support the development of regulated but privatised extension service provider models (a form of subsidy may still be required) 	<ul style="list-style-type: none"> Leverage existing extension services infrastructure operating at provincial government levels Support and coordinate between existing NGO programmes Collaborate with other donor activities (e.g. USAID and GFDRR) to prepare coordinated approach and a separate dedicated knowledge and capacity support facility
<p>Technology risk: Support technology demonstration sites to improve investor confidence.</p>	<ul style="list-style-type: none"> Identify and prioritise top technologies that have market potential in Pakistan. Identify relevant sites for demonstration projects to be showcased Connect buyers and technology providers and provide basic investment support 	<ul style="list-style-type: none"> New project/ programme required Engage Pakistan Agricultural Research Council (PARC) on the possibility of embedding the programme within their current operations
<p>Technology innovation and deployment: Stimulate private sector innovation and maturation of technologies.</p>	<ul style="list-style-type: none"> Conduct market analysis and potential for key technologies including efficient irrigation products, crop types and agricultural techniques Incubate key technologies - provide R&D and/ or business model support for new market entrants Facilitate implementation through credit support and market solutions that work with the value chain and regulators 	<ul style="list-style-type: none"> New innovation support fund/ programme require Embed a resilience window into USAID's newly announced Agriculture Innovation Programme
<p>Access to insurance and financial services: Microinsurance solutions development for weather risk.</p>	<ul style="list-style-type: none"> Support the development or implementation of a regulatory framework for micro weather risk insurance Support (directly or through a facility) technical development needs including risk information, data analysis and pricing Provide financial support to expand existing microinsurance programmes for crops and livestock Embed support into national crop insurance scheme to improve the relationship of this with emerging private sector solutions 	<ul style="list-style-type: none"> Build upon existing efforts of Micro finance/ insurance institutions Create a technical and financial support facility to facilitate development of the sector and maximise access to the poor
<p>Facilitate market based solutions: Combine multiple interventions to support sustainable private markets for agricultural resilience. Provide market</p>	<ul style="list-style-type: none"> Design and implement an intervention framework to address complex constraints Offer technical assistance and investment support to build better 	<ul style="list-style-type: none"> Create a new and integrated facility that identifies and supports solutions at market scale working with multiple actors

facilitation support to concurrently address a range of sector constraints including technology, access to finance and knowledge transfer.

business models, underwrite investment risk

Construction

There is a considerable need and demand for risk reducing design, technology adoption and supporting products and services. However the needs are just as great in the enabling environment. Despite high levels of risk awareness, Pakistan's construction sector does not have the skills, knowledge and financial appetite to adopt new practices.

Table 30: Public finance interventions required to support to Pakistan's construction sector

<i>Opportunity</i>	<i>Interventions</i>	<i>Implementation options</i>
Support technological innovation: Stimulate private sector innovation of low cost resilience products.	<ul style="list-style-type: none"> Establish a design competition to discover resilient designs for very low cost materials, housing and other building types for specific regions of Pakistan (e.g. mass produced prefabricated buildings) Support technology demonstration sites to improve investor confidence in new techniques Support outreach to developed markets (e.g. Japan) to support technology transfer 	<ul style="list-style-type: none"> Set up a new innovation challenge fund to tackle this and other resilience issues in Pakistan Run the competition through the NDMA
Stimulate market demand: Offer financial or other incentives to support increased client commitment to specifying resilience structures and projects.	<ul style="list-style-type: none"> Develop a lifecycle business case for resilient building design Address market failures through forms of guarantee, market subsidy or price guarantee for resilient products or designs Offer a 'free' resilience design review to commissioning clients to outline the risks and opportunities of an enduring project design Facilitate the development of a form of independent certification to approve certain designs as 'safe' 	<ul style="list-style-type: none"> Likely to be implemented through an independent programme, in conjunction with an industry association or through NDMA/EERA
Risk information: Improve quality of and access to data on major hazard types.	<ul style="list-style-type: none"> Fund the design and hosting of a risk information portal containing all information pertaining to natural hazards and climate change impacts in Pakistan Create provincial communication channels with appropriate formats of simplified data (e.g. printed) to inform local building trades 	<ul style="list-style-type: none"> Integrate support to existing World Bank project to conduct a national risk assessment NDMA or provincial satellites likely to be the appropriate host
Sector skills and capacity: Build sector capacity in risk assessment and resilient design.	<ul style="list-style-type: none"> Targeted training of service providers on hazard awareness and design responses. Improve public sector skill base within building control authorities Raise awareness of the financial and legal consequences of inaction and poor design by private sector clients 	<ul style="list-style-type: none"> Increase resources of construction sector associations in setting up specific programme on resilient design Build the existing training capacity of the EERA or NDMA to increase outreach programmes
Enhance regulatory capacity: Support the needs of government to more effectively engage with and regulate the private sector.	<ul style="list-style-type: none"> Support the revision of regional multi hazard/ climate change resilient design codes for Pakistan. A major overhaul would coordinate the synthesis all national and regional codes Financially support private sector led accredited inspection and validation of building and infrastructure design and 	<ul style="list-style-type: none"> Build on existing standards and codes that exist at national and regional levels Financially support regulatory expansion through the private sector

- completion
- Review forms of market incentives available and test economic feasibility of implementation

Support improved sector

collaboration: The sector has appetite to work together more effectively to driver a private sector led solutions.

- Establish forms of partnership programme of collaboration platforms with sector associations
 - Use these platforms to bring value chain linkages together from other industries.
 - Offer finance support to industry led collaborations
 - Work directly through existing industry associations
 - Encourage new associations through a new challenge fund structure
-

Two projects were identified in Pakistan that were ‘investment ready’

Option 1: Expansion of PPAF’s micro insurance product range and reach.

Pakistan Poverty Alleviation Fund (PPAF) is an impressive organisation with good capacity, knowledge and experience. They are chiefly funded by the World Bank, KfW and IFAD.

IFAD and PPAF, through a strategic partnership with the Securities and Exchange Commission of Pakistan (SECP), had been working to design index-based crop insurance and livestock insurance products. Prepared in collaboration with the Meteorological Department and the Livestock Research Institute, the insurance product is based on the needs of small and marginal income farmers. These are the first-ever indexed and hybrid weather micro-insurance products that facilitate and compensate small farmers in Pakistan. The product is being piloted and rolled-out as a market based commercially viable model. It is focused on a rainfall (drought) trigger and will be tested on rain-fed wheat and groundnut crops.

Early results: There are three stages to the insurance cycle (sow, growth, harvest) and the first harvest was just completing at the time of writing. Demand for the products was a little lower than PPAF hoped for but on the positive side the claims were low which demonstrated to the private sector that it would not need to be a loss making enterprise (clearly the gains and losses are diversified over multiple products, locations and years).

For the livestock product, it has already proved to be popular given the tangible nature of the loss and clear pay out system. However, the scheme could be subject to issues of ‘moral hazard’ as per many insurance products, whereby the risk of false claims leads to expensive and overbearing loss adjustment by the insurance provider.

Public finance need identified: Despite encouraging early results the funding channels that supported this pilot phase are coming to an end and a highly credible development and trial period risks not being supported in its next phase of development. PPAF confirmed that further testing and expansion of the scheme and its benefits will need additional funding. They also promoted the establishment of a technical facility or similar to support enabling actions across the micro insurance sector.

Option 2: Improving agricultural extension services for the poor.

Engro Corporation is one of Pakistan’s largest conglomerates. Currently its portfolio consists of seven businesses which include chemical fertilisers, PVC resin, a bulk liquid chemical terminal, industrial automation, foods, power generation and commodity trading. The company sent three members of staff from its Headquarters in Karachi to the workshop in Islamabad. Engro was very keen to engage with this project and its outcomes as it takes great interest in the success and productivity of agriculture in Pakistan. This is driven by its exposure to natural hazards through its agribusiness and smallholder customer base as well as its energy and commodity business lines.

Engro was keen to discuss how donors can support improved agricultural resilience through existing relationships with their customers. Skilled company representatives advise individual smallholders on their farming techniques, crops, soil and inputs. Acknowledging that there is a sound business reason to advise on fertiliser use, Engro was keen to explore what else could be done to leverage its existing outreach programmes to improve farmers’ resilience. It is in their interest to do this because continued and improved agricultural operations are good for business but they noted that the whole cost of providing this support should not necessarily come down to them.

Models of cooperation: Two basic models were discussed during the workshop: (a) direct funding to support more comprehensive extension services (e.g. making more of their mobile soil and water testing laboratories, moving from region to region help farmer's fine tune their usage of fertilisers based on the results of their soil analysis (plus the use of meta data which can be drawn from this)); and (b) support reform and wider commercialisation of integrated extension services that indirectly provide companies like Engro opportunity to grow its revenue.

This latter option could take many forms involving both government and the private sector. A range of companies such as Syngenta, Nestle, Hala, Pioneer Pakistan (seeds), Fauji Fertilizers and Lakson Tobacco for example are all using their outreach services to both sell product and increase productivity and resilience. If they do not, customers will not continue to buy from them. Could a private sector initiative transform these services to help reach more small-holding farmers, reduce the burden on government and help develop their businesses at the same time? USAID was also meeting with Engro during their visit to Islamabad raising the prospect of donor collaboration.

4. Analysis of existing private sector engagement initiatives

4.1 Public-private resilience initiatives: A review of current activity

Context

Climate change adaptation and disaster risk management have traditionally been viewed as the public sector's responsibility. Investment to protect and build resilience in vulnerable communities is often considered a public good. The international architecture of resilience financing to date has therefore been designed with this in mind. National governments, public institutions and multilateral development banks have been the implementing agencies to deliver programmes and projects to reduce vulnerability and build adaptive capacity among bottom of the pyramid communities.

There is a serious shortfall of funding, between the finance needed by developing countries for disaster resilience and adaptation and the amount available from national and international donors. Additional finance for building resilience is required, and the potential of private finance must be harnessed, both in the short-term through existing and emerging donor and government backed initiatives, and moving forwards, through the new Private Sector Facility of the Green Climate Fund.

Bilateral donors and International Finance Institutions (IFIs) are scaling efforts to fund resilience building activities. Bilateral donors continue to commit funds through the UNFCCC Adaptation Fund, GFDRR, Climate Investment Funds, UNDP and programmes that build capacity and target individual pilot projects mostly at community level. Many development banks such as the European Investment Bank (EIB), European Bank for Reconstruction and Development (EBRD), KfW Development Bank and the International Finance Corporation are also making investments in climate resilient projects. The main focus to date for private sector partnerships for many institutions has been on mitigation projects which offer some resilience benefits (i.e. renewable energy and energy efficiency projects). Meanwhile, public finance contributions to disaster risk management efforts primarily remain focused on financing post-disaster relief and humanitarian responses. Comparably little aid is allocated to risk assessment, preparedness and planning.

Efforts are being made to start a dialogue with the private sector on resilience. Some public initiatives are attempting to engage private sector actors on resilience. A number of information sharing and collaboration platforms have been created. Examples include the Private Sector Initiative (PSI) under the UNFCCC's Nairobi Work Programme and the UNISDR's Private Sector Partnership.⁴³ However, business engagement to date has been limited. Even for large international companies, with their wealth of financial and technical capacity, few are advanced in their approach to building resilience to disaster and climate risk.

There is no entity at the international level that has taken ownership for championing resilience issues with the private sector. There are few international organisations with the mandate and capacity to act as a central reference point for the private sector on resilience issues. There is increasing dialogue with the private sector through the UNFCCC and UNISDR. However there is no single institution that acts as a knowledge management and international collaboration platform for the private sector.

There is now a gradual shift towards initiatives targeting the private sector on resilience. These are all relatively new and a number are not yet fully operational. Direct private sector engagement on resilience is still underdeveloped. It is therefore too early to draw conclusions on the effectiveness of such initiatives.

A range of publicly-funded resilience initiatives have been reviewed. The aim has been to understand the level of involvement of the private sector, the current methods of engagement and the effectiveness of each in stimulating private sector investment and engagement in disaster and climate risk. The following section provides a high-level overview of each of the reviewed funds and an analysis on the current state of play.

⁴³ http://unfccc.int/adaptation/workstreams/nairobi_work_programme/items/4623.php

4.2 Overview of funds reviewed and mapping of activity in case study countries

Table 31: Summary description of funds reviewed

<i>Initiative</i>	<i>Overview</i>	<i>Current portfolio / status</i>
Adaptation Fund (AF)	Multi-donor fund under the UNFCCC established to provide adaptation finance for the most vulnerable developing countries that are parties to the Kyoto Protocol. Funding is provided from donor governments and part of the proceeds from the Clean Development Mechanism (CDM). Grants of between USD 2.9 million and USD 9.9 million have been disbursed to date for programmes delivered by multilateral implementing entities and more recently national implementing entities (NIEs). ⁴⁴ There is a focus for sub-national programmes at vulnerable communities and regions for smaller scale projects including direct funding to NGOs.	The capitalisation of the Adaptation Fund is USD 341 million (Jan 2013) with more than 60% of this funding resulting from CDM revenue. ⁴⁵ USD 179 million has been approved for 27 projects and programmes with an average project size of USD 6.7 million and a relatively even spread across Asia, Latin America and the Caribbean and Sub-Saharan Africa. ⁴⁶ Over half of this funding supports efforts to improve agricultural practices. The other primary focus is on infrastructure to support flood control and improve hydraulic management. Most funded programmes include a provision for activities to build the enabling environment ⁴⁷ .
Least Developed Country Fund (LDCF)	Multi-donor fund administered by the Global Environment Facility (GEF) offering both grants and technical assistance. Finances the preparation and implementation of National Adaptation Programmes of Action (NAPA). Based upon findings of country NAPAs the LDCF can also fund the design, development and implementation of certain projects on the ground, focused particularly on reducing vulnerability of sectors that are central to development such as water, agriculture, health and infrastructure. ⁴⁸	As of June 2012, 48 NAPAs funded and USD 346 million approved for projects and enabling activities. Supports 74 projects and one programme in 44 countries, with over 50% of funding directed at Africa and approximately 25% at the Small Island Developing States (SIDS). Projects are designed, implemented and managed by one of the 10 GEF Agencies ⁴⁹ but must be fully endorsed by the country in which it will be implemented. Current portfolio is heavily weighted towards coastal vulnerability reduction and is predominantly implemented by UN agencies.
Special Climate Change Fund (SCCF)	Multi-donor fund administered by GEF offering both grants and technical assistance. Finances incremental adaptation costs of interventions relative to a development baseline for developing countries under the UNFCCC. Adaptation is the top priority although the fund also supports technology transfer and capacity building activities. ⁵⁰ Projects and programmes are designed and implemented by one of the 10 GEF Agencies in line with the recipient country's national development and poverty reduction strategies and NAPA, particularly around water and land management, agriculture, health, infrastructure and integrated coastal zone management.	As of June 2012, USD 162 million mobilised. Thirty-nine projects and three programmes approved for funding, leveraging USD 1.25 billion in co-financing. The portfolio is evenly spread globally. It is currently heavily weighted towards reducing the vulnerability of agricultural production systems, water resources and coastal communities (through integrated coastal zone management). There are however also examples of projects focusing on specific hazards, for example, reducing disaster risks from wildfire hazards in South Africa. ⁵¹
Pilot Programme for Climate Resilience (PPCR)	Multi-donor fund administered by the World Bank, which sits within the Strategic Climate Fund (SCF) as part of the Climate Investment Funds (CIF). Aims to pilot and demonstrate how climate risk and resilience can be integrated into country policies, planning and implementation to scale up climate resilient investment.	USD 1.2 billion has been pledged to date but only USD 15 million has been disbursed. ⁵² A project pipeline of 26 projects has been approved for a total amount of proposed PPCR funding of USD 399 million (and USD 512 million of co-financing). ⁵³ The indicative allocation of funds of the PPCR portfolio shows a focus on improving agricultural and

⁴⁴ <http://www.climatefundupdate.org/listing/adaptation-fund>

⁴⁵ ODI, The effectiveness of climate finance: A review of the adaptation fund, 2013

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ <http://www.thegef.org/gef/>

⁴⁹ GEF Agencies are: UNDP, UNEP, World Bank, IFAD, FAO, ADB, AfDB, EBRD, IADB, UNIDO.

⁵⁰ <http://www.thegef.org/gef/SCCF> and <http://www.climatefundupdate.org/listing/special-climate-change-fund>

⁵¹ GEF, Progress report on the Least Developed Countries Fund and Special Climate Change Fund, 2011

⁵² <http://www.climatefundupdate.org/listing/pilot-program-for-climate-resilience>

⁵³ <http://www.climateinvestmentfunds.org/cif/ppcr>

<i>Initiative</i>	<i>Overview</i>	<i>Current portfolio / status</i>
	Also builds capacity at the national level and facilitates knowledge sharing. Focuses on 20 countries and is implemented by the World Bank and regional development banks. Funding is split between two phases: grant finance and technical assistance for Phase 1, to develop a Strategic Program for Climate Resilience (SPCR) (USD 1.5 million); and Phase 2 for detailed preparation of activities in the SPCR (USD 1.5 million).	landscape management, water resources management, climate resilient infrastructure and development of climate information and DRM systems. ⁵⁴
PPCR Competitive Private Sector Set Aside”	Under the PPCR USD 70 million of concessional finance has been set aside to contribute to financing programmes and projects that engage the private sector in climate risk reduction activities. Funding will be available for the same 20 priority countries as the broader PPCR and programmes and projects will be implemented through the World Bank or one of the regional development banks.	The first round of funding is due to be agreed in November 2013. ⁵⁵
Global Facility for Disaster Reduction and Recovery (GFDRR)	A partnership of 41 countries and eight international organisations managed by the World Bank. Supports implementation of the Hyogo Framework for Action (HFA). Focuses on: advocacy implemented through UNISDR (Track 1); grants and 3-year technical assistance programmes to mainstream DRR into low and middle income country strategies and enhance investments in risk reduction and risk transfer mechanisms (Track 2); and a disaster recovery fund to support disaster recovery and ensure future risk reduction measures are incorporated into post disaster recovery plans and programmes (Track 3). ⁵⁶ Designed to build national institutional capacity for DRR, develop new tools and methodologies for disaster reduction and recovery and share knowledge and good practice on mainstreaming DRR.	GFDRR has grown rapidly since 2006 with annual disbursements increasing from USD 5.2 million in 2008 to USD 35.3 million in 2012. GFDRR’s portfolio is dominated by country level capacity building efforts (81% of project commitments; USD 65.9 million for the period 2007-2012) with the largest proportion of this assistance focused on institutional and human capacity development. ⁵⁷ Development of new tools and methodologies and knowledge sharing has been somewhat limited in comparison. Sub-Saharan Africa, Latin America and the Caribbean, and East Asia and the Pacific have been the largest recipients of support. The target of 80% of Track 2 country-level disbursements being directed to the 31 priority core countries has not been met, however, with only 51% being directed to date. ⁵⁸
Climate and Development Knowledge Network (CDKN)	A DFID and Dutch government funded 5-year pilot initiative seeking to enhance developing country access to high quality, reliable and policy-relevant information on climate change and development. Uses grant finance and technical assistance to support public policy making and practice on adaptation and climate resilient development. CDKN focuses on three key regions (Latin America and the Caribbean, Africa and Asia), within which there are priority developing country governments where ‘deep engagement’ exists. The initiative is demand-led and focuses on a number of broad themes and key sectors.	Within the CDKN project portfolio the best progress has been seen where there has been strategic regional and country engagement supported by a suitable country engagement leader (e.g. in Colombia). ⁵⁹ With the majority of funds for the 5-year pilot already committed (leaving relatively little money available) there may be a knock on effect on the project pipeline and demands for assistance unless the initiative is extended beyond its current 5-year timeline ⁶⁰ .
Caribbean Catastrophe Risk Insurance Facility (CCRIF)	A risk pooling facility designed to provide the Caribbean national governments with access to affordable and effective coverage to limit the financial impact of natural disasters. Functions as a mutual insurance company controlled by the participating governments to which the participating members pay an annual premium. Developed through funding from the Japanese government and capitalised through contributions from a multi-donor trust fund and the participating member governments. CCRIF provides coverage to countries at a significantly lower cost if they had to maintain their own reserves or if they were to independently purchase insurance in the open market. ⁶¹ The CCRIF transfers	Sixteen Caribbean countries have joined CCRIF and have renewed their policies each year. Seven national pay-outs have been made to date totalling USD 32.05 million. ⁶³ Compensation is paid nationally to the governments to finance post-disaster recovery broadly rather than to sectors, businesses or communities but work is underway to develop insurance products specifically targeted at the utilities and agriculture sectors.

⁵⁴ <https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Status%20of%20the%20PPCR%20-%20PPCR%20Pilot%20Country%20Meeting%20May%202013.pdf>

⁵⁵ <https://www.climateinvestmentfunds.org/cif/set-aside/ppcr>

⁵⁶ <http://www.climatefinanceoptions.org/cfo/node/207>

⁵⁷ Independent Evaluation Group and The World Bank, Global programme review: The Global Facility for Disaster Reduction and Recovery, 2012

⁵⁸ Ibid

⁵⁹ CDKN, Annual review, 2013

⁶⁰ CDKN, Annual review, 2013

⁶¹ GFDRR, Caribbean Catastrophe Risk Insurance Facility: Disaster risk financing and insurance case study, 2011

<i>Initiative</i>	<i>Overview</i>	<i>Current portfolio / status</i>
	the risks it cannot retain by purchasing reinsurance and catastrophe swaps on traditional global markets. ⁶²	
International Fund for Agricultural Development (IFAD)'s Adaptation for Smallholder Agriculture Programme (ASAP)	Multi-donor financing window to improve the climate resilience of IFAD's large scale rural development programmes and build the capacity of at least eight million smallholder farmers. Offers fully blended co-financing alongside new and existing IFAD investments plus stand-alone ASAP grants in exceptional cases. Focus on improving land, water and climate risk management for agriculture. ⁶⁴ ASAP will also develop a knowledge management programme to share and develop lessons and tools across IFAD's programmes. ⁶⁵	To date one project, the Pro-Poor Value Chain Development Project in the Maputo and Limpopo Corridors (PROSUL), in Mozambique has been approved. A pipeline of resilience-oriented projects are expected to be approved in late 2013.
Africa Enterprise Challenge Fund (AECF) Renewable Energies and Adaptation Climate Technologies (REACT) windows	Special funding window to support innovation in renewable energy and climate adaptation technologies. Managed by KPMG, Rounds 1 and 2 were funded by DFID, DANIDA and SIDA. The more recent Mozambique window is funded by the Dutch government. Offers grants and repayable grants (zero interest rate loans repayable over the life of the project) between USD 250,000 and USD 1.5 million directly to businesses with an innovative business plan during initial high risk market testing. Successful applicants must provide matching funds equal to or greater than 50% of the total cost of the project. The fund targets private sector innovation in energy, adaptation and finance. ⁶⁶	REACT windows 1 and 2 have already awarded USD 25 million grants and loans to 33 businesses in the East African Community (Burundi, Kenya, Rwanda, Tanzania, Uganda). ⁶⁷ The portfolio is heavily dominated by private sector energy providers with a more limited number of projects engaged in developing solutions to help rural communities adapt to climate change. REACT Mozambique has recently closed its call for proposals and has yet to allocate funding to projects in Mozambique.
Inter-American Development Bank's (IADB) PROADAPT Facility	Regional programme designed to directly support MSMEs in Latin America and the Caribbean to build climate resilience and capitalise upon climate resilient business opportunities. Financed by the Multilateral Investment Fund (MIF) and the Nordic Development Fund (NDF). It will work with an estimated 2,000 MSMEs delivering technical assistance to develop new tools, identify business models and access knowledge that will increase their climate resilience. Will also work with MSME related institutions to improve awareness as well as creating a climate adaptation knowledge online platform. ⁶⁸	The Facility is yet to be fully operational and certain characteristics of the facility remain unknown. For example, whether certain economic sectors will be targeted or prioritised beyond the initial stated focus of women-owned and operated MSMEs and enterprises run by other traditionally excluded groups. ⁶⁹

⁶³ GFDRR, Caribbean Catastrophe Risk Insurance Facility: Disaster risk financing and insurance case study, 2011

⁶² <http://en.fininnov.org/img/pdf/27%20-CCRIF.pdf> and http://www.climate-insurance.org/upload/pdf/20130411__MCII-GIZ_Workshop_EIyahan.pdf

⁶⁴ <http://www.ifad.org/climate/asap/asap.pdf>

⁶⁵ Ibid

⁶⁶ http://react.aecf africa.org/r/index.php?option=com_content&view=article&id=47&Itemid=53

⁶⁷ http://www.kpmg.com/eastafrica/en/services/Advisory/Development-Advisory-Services/Thought_Leadership_at_DAS/Documents/Development%20in%20Practice%2011%20-%20the%20REACT%20experience.pdf

⁶⁸ <http://www5.iadb.org/mif/HOME/News/PressReleases/tabid/467/ArtMID/3819/ArticleID/73/language/en-US/Default.aspx>

⁶⁹ <http://climate-l.iisd.org/news/mif-ndf-launch-%E2%80%99Cproadap%E2%80%9D-to-build-climate-resilience-in-lac/>

Table 32: Overview of funds reviewed

Name	Financial scale (USD)		Scope			Focus				Implementing entity / recipient of support					Instruments			
	Pledged	Disbursed	Global	Regional	National	BOP	Gender	Key hazards	Key economic sectors	Multilateral implementing entity	National implementing entity	National government	Local service provider (NGO, private sector, CBO)	Private sector	Grants	Technical assistance	Loans	Risk reduction and transfer
<i>Adaptation Fund</i>	341m	54m	●			●		●	○	●	●	○	○		●			
<i>The Least Developed Countries Fund</i>	605m	133m	●			●			○	●		○	○		●	●		
<i>The Special Climate Change Fund</i>	295m	111m	●			○		○	○	●		○	○		●	●		
<i>Pilot Programme for Climate Resilience</i>	1.2bn	15m	●			●			○	●		●	○	○	●	●	○	
<i>Global Facility for Disaster Reduction and Recovery</i>	278m	103m	●			○			○	●		○			●	●		
<i>Climate and Development Knowledge Network</i>	72m	44m		●	●	○	○		●			●	●	○	●	●		
<i>Caribbean Catastrophe Risk Insurance Facility</i>	68m	32m		●				●				●		○				●
<i>IFAD's Adaptation for Smallholder Agriculture Programme</i>	250m	5m	●			●	○		●	●		○		○	●	●		
<i>Africa Enterprise Challenge Fund) REACT windows</i>	35m	25m		●	●	○			○					●	●		○	
<i>IADB's PROADAPT Facility</i>	11.9m	-		●		●	○						○	●	●	●		

Key

● Major/direct ○ Minor/indirect

Table 33: Map of resilience projects funded in case study countries

<i>Fund</i>	<i>Bangladesh</i>	<i>Kenya</i>	<i>Mozambique</i>	<i>Pakistan</i>
<i>Adaptation Fund</i>		<ul style="list-style-type: none"> Accredited NIE - National Environment Management Authority (NEMA) 		<ul style="list-style-type: none"> Reducing Risks and Vulnerabilities from Glacier Lake Outburst Floods in Northern Pakistan (USD 3.9 million; 2010)
<i>The Least Developed Countries Fund</i>	<ul style="list-style-type: none"> NAPA (2005) Community Based Adaptation to Climate Change through Coastal Afforestation (USD 10.9 million) 		<ul style="list-style-type: none"> NAPA (2008) Adaptation in the coastal zones of Mozambique (USD 14.0 million) 	
<i>The Special Climate Change Fund</i>				<ul style="list-style-type: none"> Rural Livelihoods Climate Change Adaptation Support Programme (USD 16.5 million)
<i>Pilot Programme for Climate Resilience</i>	<ul style="list-style-type: none"> Specific investments in the coastal zone: Climate Change Capacity Building and Knowledge Management Promoting Climate Resilient Agriculture and Food Security Coastal Embankments Improvement and Afforestation Coastal Climate Resilient Water Supply, Sanitation and Infrastructure Development Feasibility Study for a Pilot Program of Climate Resilient Housing in the Coastal Region 		<ul style="list-style-type: none"> Climate-resilient Water-enabled Growth: Transforming the Hydro-meteorological Services (IBRD) Sustainable Land & Water Resources Management (AfDB) Private Sector Investment to Build Climate Resilience (IFC) Baixo Limpopo Irrigation and Climate Resilience Project (AfDB) Climate Change Technical Assistance (IBRD) Introducing Climate-resilience into the Design and Management of Mozambique's Un-paved Roads (WB) Coastal Cities and Climate Change (WB) Enhancing Climate Resilient Agricultural Production and Food Security (AfDB) Program Management and Technical Assistance (WB) 	
<i>Global Facility for Disaster Reduction and Recovery</i>	<ul style="list-style-type: none"> International Conference on Climate Change, Natural Disasters and Cyclone Sidr Agricultural Risk Insurance Feasibility Study Capacity Building in Damage and Loss Assessment 	<ul style="list-style-type: none"> Post Disaster Needs Assessment (PDNA) and training 	<ul style="list-style-type: none"> Mainstreaming Disaster Reduction for Sustainable Poverty Reduction: Mozambique <ul style="list-style-type: none"> Strategy, Policy and Institutional Coordination Studies for National Program of Disaster Risk Management and 	<ul style="list-style-type: none"> Building capacity to effectively deliver Safety Nets in post-disaster situations in Pakistan Phase 1 of an Activity to Support National Red Cross and Red Crescent Societies Documentation and Dissemination

<i>Fund</i>	<i>Bangladesh</i>	<i>Kenya</i>	<i>Mozambique</i>	<i>Pakistan</i>
	<ul style="list-style-type: none"> • Comprehensive Assessment of Socioeconomic Impact and Recovery and Reconstruction Needs • Support Rehabilitation in Cyclone Sidr affected areas through UP Block Grant System • Climate Change and Future Flood Risks: hydrological study (2009; USD 75,000) • Improving Bangladesh's Response and Recovery Activities 		<ul style="list-style-type: none"> Adaptation to Climate Change ○ Strengthened Sector Capacity in Disaster Risk Management ○ Risk Mapping for Vulnerable Assets ○ Participatory Urban Mapping ○ Early Warning System Radar Applications ○ Review of Hazard Norms ○ Pilot Demonstration Projects Applying New Norms ○ Flood Protection for Vulnerable Communities (pilot) ○ Water Management in Arid Areas (pilot) ○ Risk Transfer Mechanisms ○ Specialised Training 	<ul style="list-style-type: none"> of Results and Lessons Learned in the Rural Housing Reconstruction Response to the 2005 Pakistan Earthquake
<i>Climate and Development Knowledge Network</i>	<ul style="list-style-type: none"> • Adaptation policy options and interventions for climate change induced displaced people of Bangladesh • Building a community of practice on CBA • Loss and Damage in Vulnerable Countries Initiative • REDD+: Dialogue with governments and civil society organisations in Asia and the Pacific • Advancing climate compatible development for food security through the implementation of national climate change strategies • Improving access to knowledge on climate and development 	<ul style="list-style-type: none"> • Communicating climate compatible development to the Kenyan private sector • Developing a carbon reduction, resources and opportunities toolkit for Kenya's flower sector • iCoast: Understanding the fiscal regulatory mechanisms necessary to achieve climate compatible development in the coastal zone • ESMAP 2: The Lighting Africa Programme • Kenya's National Climate Change Response Strategy (NCCRS): Finance, Priority NAMAs, Adaptation Plan, Policy Framework, Coordination • Improving low carbon energy access and development benefits in LDCs • Envisioning the mainstreaming of climate change mitigation and adaptation in Lake Victoria Local Authorities development planning • Monitoring impacts of urban and peri-urban agriculture and forestry on climate change adaptation and mitigation 	<ul style="list-style-type: none"> • Africa Climate Change resilience Alliance • Climate change counts: Strengthening SADC universities' contribution to climate compatible development • Climate change and health in Mozambique • Climate change and upstream development impacts on new hydropower projects in the Zambezi • Risk and vulnerability mapping for the Zambezi River Basin • Assessing institutional and governance partnerships for climate-compatible development in sub-Saharan Africa • Supporting Mozambique's climate change and development country programme • A 'Public Private People Partnership' for climate compatible development in Maputo • Strengthening water security and climate resilience in Africa 	<ul style="list-style-type: none"> • Disaster Risk Insurance for Vulnerable Communities in Pakistan • Sheltering from a gathering storm • Supporting climate resilient construction in vulnerable areas in the Punjab • Scoping a combined programme on climate compatible development for Pakistan • Improving access to knowledge on climate and development

<i>Fund</i>	<i>Bangladesh</i>	<i>Kenya</i>	<i>Mozambique</i>	<i>Pakistan</i>
		<ul style="list-style-type: none"> • Achieving triple wins: identifying climate smart investment strategies for the coastal zone • Kenya Climate Change Action Planning: a flagship model for Africa • Advancing climate compatible development for food security through the implementation of national climate change strategies 		
<i>Caribbean Catastrophe Risk Insurance Facility</i>				
<i>IFAD's Adaptation for Smallholder Agriculture Programme</i>	<ul style="list-style-type: none"> • Potential 2013 commitment: Improved community infrastructure to prevent flood damage; integrated and diversified food production systems (fisheries, floating gardens, submersible rice varieties); capacity building on climate risk management (USD 15 million) 		<ul style="list-style-type: none"> • Pro-Poor Value Chain Development Project in the Maputo and Limpopo Corridors (PROSUL) (2012;) • Potential 2013 commitment: Improved water management infrastructure, strengthening of the weather station network, sustainable agriculture and community based natural resource management plans (USD 5 million) 	
<i>Africa Enterprise Challenge Fund REACT windows</i>		<ul style="list-style-type: none"> • M-KOPA: mobile payment and distribution technology helping low income consumers to purchase solar power systems • Teita Estate: power production project using biomass waste from commercial agriculture estate • La Terre: manufacture of gasifiers and briquettes made from biomass as a charcoal alternative • KGN Biofuels and Global Supply Solutions: manufacture of biomass fuel briquettes from large-scale agriculture waste to serve industrial clients 	<ul style="list-style-type: none"> • Project proposals awaiting review for funding decisions 	

Pipeline of new initiatives

Beyond the ten initiatives reviewed above there are a number of emerging resilience initiatives which are due to start shortly. This list reinforces the gradual shift in focus by donors and donor supported initiatives to targeting the private sector, not only in delivering disaster and climate resilience in developing countries but also to meet development goals more broadly.

Table 34: Pipeline of new and/or planned initiatives

<i>Initiative</i>	<i>Summary</i>
<i>The Climate Business Development Network (CBDN)</i>	CDKN is currently considering the establishment of a new facility within the network that engages the private sector directly and will provide funding for business partnerships on climate and development. The Climate Business Development Network (CBDN) will seek to engage a range of businesses from MNCs to national companies to SMEs and look to foster business to business partnerships for the delivery of climate compatible goods and services.
<i>Trade and Global Value Chains Initiative</i>	DFID's Trade and Global Value Chains Initiative (TGVCi) is a GBP 3 million programme that will take place over three years starting in 2013. This project aims to improve the lives and working conditions of those working in value chains. This will lead to poverty reduction and development outcomes. It will also ensure that better skilled, young workers enter the sector and work more productively, thereby ensuring the long-term profitability of supply chains for companies. The pilot phase will focus on horticulture and the garment sector value chains in Kenya, South Africa and Bangladesh.
<i>CP3 (Climate Public-Private Partnership)</i>	CP3 aims to demonstrate that climate friendly investments in developing countries, including in renewable energy, water, energy efficiency and forestry are not only ethically right but also commercially viable. It aims to attract new forms of finance such as pension funds and sovereign wealth funds into these areas. By creating two commercial private equity funds of funds, which will invest in sub-funds and projects in developing countries, it aims to create a track record of investment performance. This should in turn encourage further investments.
<i>UNISDR Private Sector Initiative</i>	The UNISDR is working on a new private sector initiative to develop greater links with businesses on disaster risk management. The existing private sector advisory group and initiative collaborators PwC have explored the potential for establishing a knowledge base and forum through which private sector actors could meaningfully engage and draw sector level resources, case studies and contacts.

4.3 Critical analysis

Engagement and partnership models

To date very few donor-supported resilience initiatives have specifically targeted private sector action. Donor supported initiatives aimed at building resilience have been designed to engage and support public institutions on a large-scale programmatic basis. The UNFCCC and GEF mechanisms do not engage or mobilise the private sector directly. It is not the direct recipient, implementing entity or planned beneficiary of support. The design of existing initiatives lends itself to the delivery of national programmes designed to benefit local developing country regions and communities. The private sector is effectively bypassed and excluded.

Some indirect engagement or partnering has occurred, but only on an ad-hoc and sporadic basis. Private sectors actors have delivered certain projects and programmes as implementation partners. For example, the Adaptation Fund has supported infrastructure projects in Senegal where infrastructure upgrades

are delivered by a private company through expedited contracting.⁷⁰ Businesses have also, to various degrees, been engaged as stakeholders in the development of national climate change and adaptation strategies and programmes, including NAPAs). The Adaptation Fund has supported programmes seeking to build resilience in coastal regions where tourism is a key sector. Recognition that businesses are a key stakeholder in the implementation of such programmes has led to substantial outreach by governments. For example, in Mauritius, the government and the UNDP have helped businesses engaged in coastal restoration projects to share knowledge.

Evidence of successful delivery models is limited. The projects involving private sector outreach are still in the early stages of implementation. This limits the understanding of how successful these models may be.⁷¹ Engagement with the private sector by programme implementers is also limited. For them, engagement has focused in the public sphere and resilience funding, projects and outcomes are mostly aimed at governments and communities rather than the private sector. Systematic segregation of public and private sector actors has led to limited or weak relationships between the two. In a few cases, engagement has been passive through designated private sector “observer” roles. Likewise, a few examples have highlighted opportunities for the development of strategic alliances, joint ventures or public private partnerships (PPPs). However, these opportunities have often been limited to large multinational companies (MNCs).

There is recognition of the need to engage the private sector but multiple barriers exist. The PPCR has made attempts to engage the private sector; for example, through the newly established Private Sector Set Aside. However, a review of the PPCR portfolio to date reveals that only 9.2% of all PPCR financing involves private sector actors. This includes projects to promote the use of climate-resilient seeds and building materials and weather index-linked insurance.⁷² There has also been no leveraging of additional finance from private sector entities for any of the projects. The PPCR has cited challenges in identifying a pipeline of adaptation projects that are relevant for private sector engagement and investment. Other barriers include difficulties in identifying appropriate counterparts and unfavourable investment climates.⁷³

New private sector engagement models are needed. A gradual shift is now being seen. Initiatives are emerging that engage the private sector in new ways. For example, the IFAD Adaptation for Smallholder Agriculture Programme (ASAP), the AECF Renewable Energies and Adaptation Climate Technologies (REACT) windows and the IADB PROADAPT facility. These models are being tested, are all currently at a small scale and have developed in a relatively opportunistic manner. Many of these new initiatives have yet to be fully operationalised. It is therefore too early to draw conclusions as to their success, ability to scale up and to lead to market transformation. The current models can be broadly divided into three categories:

- **Initiatives aiming to mainstream resilience into traditional investment programmes targeting the private sector.** IFAD’s ASAP programme aims to build the resilience of eight million smallholder household members by 2020.⁷⁴ This is achieved through the provision of additional or ‘paired’ resilience financing alongside regular IFAD rural programme delivery investment. For example, in Mozambique an ASAP Trust Fund grant (USD 4.91 million) will be provided alongside a traditional investment (loan) from IFAD for the Pro-poor Value Chain Development Project.⁷⁵ Although not directly engaging agribusinesses and smallholder farmers, the initiative has a planned objective to increase the resilience of private sector actors along the agricultural value chain.
- **Engagement and support for private sector actors through direct access funding windows.** Although representing a small proportion (6%) of total PPCR financing, the ‘Private Sector Set Aside’ window has set aside USD 70 million for concessional financing. Funds will be allocated through a competitive process to programmes and projects in PPCR pilot countries. The first round of proposals will be evaluated in September 2013. Early indications suggest uptake may be limited and mostly from larger organisations. Factors cited include insufficient marketing and outreach particularly at local levels, lack of support during the applications process, and disinterest in accessing loans rather than grants. Each of these factors inhibits responses from MSMEs. Opportunities for MSMEs through such an engagement model may therefore be limited to working with primary beneficiaries.

⁷⁰ ODI, The effectiveness of climate finance: A review of the adaptation fund, 2013

⁷¹ Ibid

⁷² www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR_SC.12_presentation.1_Semi_Annual_report.pdf

⁷³ Ibid

⁷⁴ <http://www.ifad.org/climate/asap/>

⁷⁵ <http://www.ifad.org/media/press/2012/56.htm>

While the PPCR model targets private sector actors through regional development banks, new models have emerged that support businesses directly. For example, the AECF REACT windows target those seeking to develop new products and services. These special funding windows directly support innovative private sector ideas for renewable energy and adaptation technologies. However, experience to date has suggested limited uptake by the private sector on adaptation versus renewable energies. Feedback suggests this may be due to adaptation being a less understood area for business, and therefore there is a need for a more targeted outreach, awareness raising and innovation support programme. This is currently not part of AECF's operational model, which is a traditional challenge fund model.

- **Targeted, direct action for micro, small and medium-sized enterprises.** IADB's PROADAPT Facility is the most recent of the initiatives reviewed, is not yet operational but is potentially the only initiative to fill the gap of targeting smaller enterprises. It recognises that existing initiatives overlook these actors and the specific barriers they face. PROADAPT will finance stand-alone market studies and consultancies to fill knowledge gaps. Pilot projects with SME framework institutions, such as chambers of commerce, producers' associations, training institutes and local public authorities will also be funded. PROADAPT is not confined to a particular sector, country or sub-region within the Latin America and Caribbean region, however the agriculture/agro-industry and food sectors are priority areas for financing.⁷⁶

Partnerships with the private sector in fund management and delivery are becoming more common. Private sector companies are increasingly being sought to deliver fund management and knowledge management expertise in managing donor supported resilience initiatives. CDKN, for example, is managed through an alliance of private sector actors and NGOs. Governments and international agencies are also increasingly engaging with private sector consultancies to support in the design and implementation of projects and programmes. For example, the IFC sought support from an international consultancy in scoping potential private sector led resilience activities in Zambia. These types of partnership can often enhance access to in-country private sector stakeholders. This allows them to assess the economic viability of potential interventions, PPP operational arrangements and potential resilience benefits.

Scope – countries, sectors, value chains

In addition to targeting the enabling environment, further interventions are required to overcome barriers to private sector action. In their current state, the Adaptation Fund, GEF Funds, GFDRR and PPCR deliver finance for large-scale programmatic work. These initiatives operate globally and across a wide range of sectors and themes. Grant financing is used to design and shape public policy, build resilience of regions or communities and deliver major infrastructure projects. This has helped to finance the 'additional' adaptation costs of implementing a developing country's NAPA or climate change/adaptation strategy. Indirect benefits have been delivered to the private sector through strengthening of the enabling environment in which businesses operate. This targeting of national policy level barriers that hamper or prevent private sector action on building resilience is important and needs to continue. However, further action and deeper engagement of the private sector is needed within countries and sectors to build upon this work.

Deeper engagement at the country or regional level has had positive results. Out of the large programmatic initiatives, PPCR appears to have made the greatest in-roads to engaging the private sector. Its approach of focusing support in priority countries has helped this to happen. However, its engagement with the private sector has remained relatively opportunistic in nature. CDKN, whilst not working directly with the private sector, has achieved some success. This has also tended to be where deeper engagement at country level has occurred (e.g. in Kenya). Although CDKN's overarching aim is similar to the larger global initiatives (mainstreaming climate change into national policy and planning processes) its model of demand-led projects has built significant local capacity and networks. This has gone some way to achieving broader transformational change. The ability to get projects and initiatives off the ground, such as Kenya's Climate Innovation Centre, would have been limited without initial deep engagement at national policy level.

Current initiatives have a tendency to target similar themes, which do not necessarily align with country's key economic growth sectors. The Adaptation Fund, GEF Funds and PPCR have funded projects and programmes that target vulnerable coastal regions, agriculture, water resources and infrastructure. The focus has been on benefiting the rural BOP and vulnerable communities with respect to hazards and climate change more broadly. A limited number of programmes are focused on reducing vulnerability to

⁷⁶ Private models for agricultural Climate Adaptation in Honduras and Nicaragua, request for proposal available at <http://www.ndf.fi/fileadmin/resources/documents/PROADAPT-RFP.pdf>

certain hazards (e.g. Glacier Lake Outburst Floods flooding and drought). Some initiatives such as CDKN are now widening their focus to themes such as gender and urban vulnerabilities. To date, there has been little recognition of the vulnerability of key economic sectors. The one exception is the agricultural sector, due in part to its high sensitivity to natural hazards. Projects and programmes are generally not designed to prioritise the sectors that are critical for national economic growth. For example, more could be done to target ICT in Kenya or the textiles industry in Bangladesh. The focus has been on mainstreaming resilience issues into development and poverty reduction strategies rather than into industry or business growth strategies.

Some emerging initiatives are targeting resilience in specific sectors through a value chain approach. IFAD's Adaptation for Smallholder Agriculture Programme is the first initiative to focus on one sector. It focuses on value chain creation by offering a resilience grant that runs alongside a traditional rural development programme. The AECF may also have the potential to build climate resilience within the agricultural sector through its regular agribusiness funding window. Although climate resilience is currently not a selection criteria, a number of agricultural projects already have adaptation and resilience benefits at their core. If it were to be integrated into the selection criteria, then there exists the potential to achieve broader sector resilience if projects can be linked up.

Private sector resilience projects are not competing for funding on a level playing field. In the AECF REACT windows, there has been a bias towards renewable energy projects. Only a limited number of climate resilience projects have been funded. AECF's selection criteria together with the relative immaturity of resilience as a theme, has made it hard for projects with an adaptation element to compete. Renewable energy projects are often favoured as the companies involved are generally more mature and able to deliver greater development impacts. For example, they may deliver increased income at the household level and reach more people than resilience projects.

Targeting of actors and instruments

Large-scale grant financing and technical assistance works at the public institution level but is not easily transferable to the private sector. Minimum funding disbursement volumes for the Adaptation Fund and GEF Funds (LDCF and SCCF) are all large due to the need to minimise transaction costs. The majority of projects and programs financed under the LDCF and the SCCF combine technical assistance and investment with capacity building. This is done to improve the efficacy of adaptation actions. This large scale investment works well in delivering programmatic support to public institutions but is not designed for the national company or SME level. Large grants from these funds could theoretically be channelled to individual or collaboratively developed MNC programmes or projects. However, disbursement to smaller scale business is not feasible due to high transaction costs. The PPCR, which aims to target more private sector actors is unlikely to engage with small scale businesses due to the increased due diligence requirements. The IFC focuses on identifying a limited number of private sector entities with the capacity to take on relatively large concessional financing arrangements of several million USD. This restricts opportunities for SMEs to benefit directly through the programme. Another example is the Adaptation Fund, which has a country cap on financing. This is set to USD 10 million which would limit the private sector to access finance alongside current investments in national programmes.

Direct support to private sector actors needs to be well targeted and offer appropriate instruments to overcome key barriers. The AECF REACT windows offer relatively large financing grants and loans (minimum USD 250,000) for individual private sector projects. These are aimed at overcoming the financial barriers to piloting innovations and technologies. The large size of the loans and the requirement for matched co-financing means that companies seeking support already have to be relatively mature. This applies both to their project concept and capacity to deliver. In effect, the initiative targets companies that are already relatively well placed to deliver a project. It is therefore limited in its ability to support higher risk, smaller companies with initial concepts. Such businesses may find the large loans difficult to repay in the necessary timeframes and require greater technical assistance. Whilst AECF fund managers and advisors work with selected companies in the submission of their business plan, and can offer ad hoc technical assistance during project visits, these opportunities are relatively limited. Offering technical assistance as part of the AECF model could dilute the efficiencies and low transaction costs of the challenge fund model. A solution could be to offer separate technical assistance alongside a challenge fund such as the AECF. This could provide support around critical barriers identified across multiple projects (e.g. building rural distribution networks).

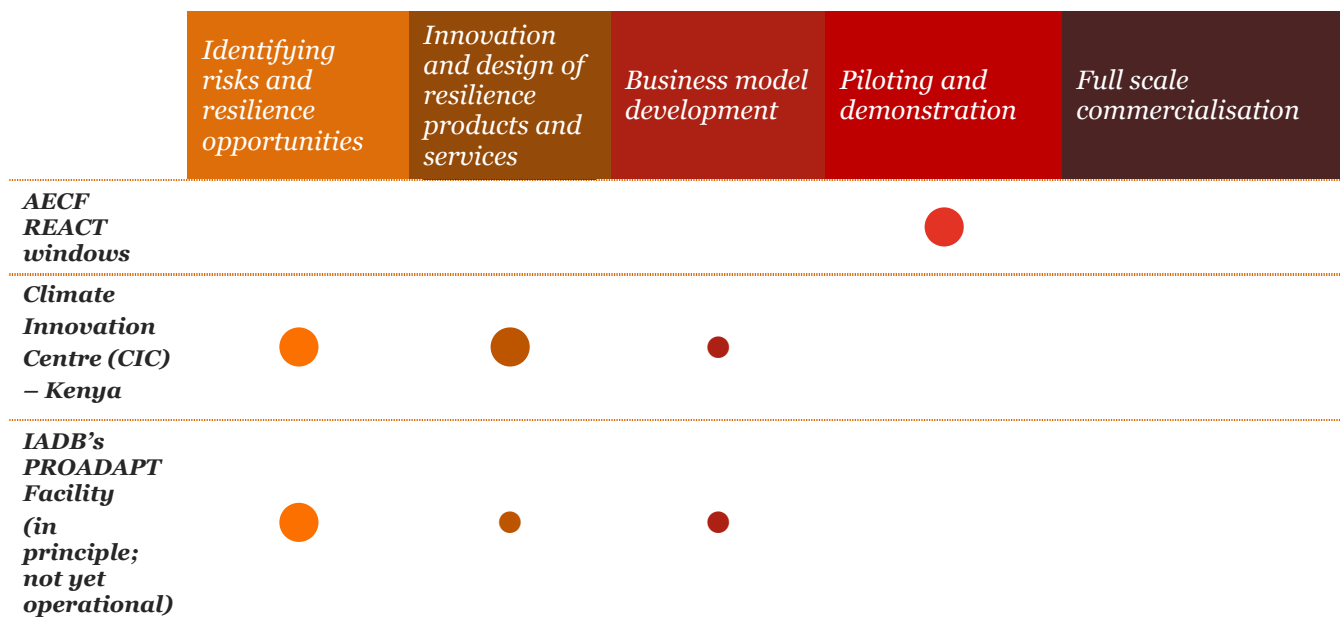
The correct marketing of initiatives to target private sector action is critical. The approach and delivery channels through which funding is marketed to the private sector is critical to their consequent engagement and application for support. The AECF REACT Window 1 received a weak response for climate

resilient projects. This was because businesses, particularly those in developing countries, have a relatively poor understanding of what constitutes an ‘adaptation’ project, and so did not apply. Later REACT windows (REACT 2 and Mozambique) are marketed for companies to address a specific problem statement (e.g. to reduce vulnerability to flooding or improve water efficiency). As a result, a greater number of applications have been received in these subsequent rounds.

A lack of understanding of business drivers and barriers makes it difficult to motivate the private sector. There is often a lack of understanding of the fundamental business drivers and barriers to engaging and investing in resilience. Businesses will act when they have an incentive to do so. At present, some initiatives appear to lack an understanding of how businesses work and how they are motivated. The need for a strong business case to demonstrate the benefits for the private sector, including return on investment, is critical. This is an important factor in moving from engagement to investment.

Businesses require support from the initial opportunity identification to full-scale commercialisation. Current initiatives only provide interventions at certain points in the development process of a project or product. They do not offer support throughout. This is due to the need for targeted instruments to overcome the different barriers that exist at different stages of the process. The resilience initiatives that directly engage private sector actors in the development of projects or products are identified against the intervention points for product and service commercialisation identified in chapter 2.

Figure 12: Existing private sector innovation-related resilience initiatives mapped to the product commercialisation model



AECF REACT is relatively risk-averse initiative and is focused on funding ideas that are employing proven technologies with relatively low risk profiles. Before a company can feasibly consider applying to REACT there is a need for them to identify a potential opportunity, mature the concept, test its commercial feasibility and develop a clear business model. A lack of early project support (stages 1-3) can lead to poor-quality submissions for funding and the overlooking of new opportunities for innovative business models in the market. Initiatives such as an incubator hub can overcome this risk by supporting companies in maturing concepts and trialling high-risk technologies and innovative ideas. Such an initiative is in place in Kenya in the form of the Climate Innovation Centre, which supports projects before they are ready to move to full test piloting.

The initial designs of the IADB PROADAPT Facility suggest that it will target the early phases of the project/product development process. It will start by helping MSMEs to identify new, climate resilient, business models and access knowledge resources.

Currently coverage across stages 1-5 is sporadic and variable by country and region. The only geographical locations covered by early stage support are Kenya (and east Africa) and the Caribbean. Greater coverage by regional incubation hubs will likely be required to ensure that opportunities and innovations are not missed. Connectivity between initiatives targeting the different stages within one region/country will also be important. This 'conveyor belt' approach can lead a company from initial opportunity identification through to full scale commercialisation.

Results, indicators and measures for success

The majority of donor supported resilience initiatives do not currently consider private sector resilience benefits and impacts within their results frameworks. Building the climate resilience of the private sector is not a stated or planned objective for the majority of the current resilience initiatives. Nor is the delivery of resilience benefits through private sector activity. Indicators for this activity are therefore not measured and the size of current impacts is unknown.

Goals and objectives for resilience impacts delivered by or to the private sector are only now appearing in new initiatives. The IFAD ASAP and the AECF REACT windows have goals such as the number of smallholder farmers to be targeted. However, it is still too early to be able to draw any significant conclusions around impacts delivered. Out of the large global initiatives, the PPCR has seen some success beyond its peers, although less than 10% of all PPCR financing currently involves private sector actors.

There is high expectation for the new initiatives but limited results have been seen to date. In the case of AECF REACT, projects from the initial funding rounds have taken longer than expected to reach contracting stage. This is due in part to the low levels of pre-existing capacity in businesses themselves. The fund management team has had to work directly with them to get to a stage where they are able to receive the funding. It is evident that there are a number of lessons to be learned from these new initiatives that should be shared.

Summary of key elements of good practice from the funds reviewed

Deep engagement at the country level has been effective at achieving broader transformational change. CDKN and the PPCR have had success in building resilience through focusing on priority countries. Both programmes have an overarching aim of mainstreaming climate change into the national policy and planning process, and have used deep engagement at country level to achieve this. CDKN has used its demand-led model to build the local capacity and networks required to get specific projects and initiatives off the ground. Both programmes have gone some way towards achieving broad transformation change through targeted engagement in specific countries.

Targeting specific actors through a value-chain approach has the potential to build sector-wide resilience. Several of the programmes reviewed have specifically targeted the agricultural sector. Through focusing on value-chain creation, different actors can be brought together to build resilience across a sector. IFAD's ASAP has done this by offering a resilience grant that runs in parallel with traditional rural development programmes. The AECF's agribusiness funding window has a number of projects with adaptation and resilience benefits at their core despite it not actually being part of the project selection criteria. Greater coordination between projects across the value chain and more integration of resilience into project selection criteria could help achieve broader sector resilience.

Early stage project support can help build a quality project-pipeline for scaling up resilience activity. A number of programmes such as REACT require an opportunity for building resilience to have been tested, matured and developed into a clear business model before they will consider providing funding. This can be an issue as many opportunities will require support at an early stage of concept development. There is an associated knock-on effect as project pipelines for scalable initiatives do not evolve. The Climate Innovation Centre in Kenya helps projects to overcome these early stage barriers so that they are ready to move to full test piloting.

Summary of gaps in existing public support for private sector resilience

- Very few of the current resilience initiatives have a planned focus to engage with the private sector in a systematic or strategic manner.** The majority of resilience initiatives are designed to provide programme level support to public and third sector institutions. Support often targets the barriers within the wider business enabling environment and needs to continue, but is not sufficient alone. Some

initiatives, for example the PPCR, are attempting to make in-roads with the private sector through these traditional support structures. However, there has been relatively limited success to date. These initiatives are fundamentally not designed for the purpose of engaging private sector entities.

- 2 **Public and private focused initiatives are mostly segregated; there is little experience on what works for the private sector.** To date there has been little attempt to mainstream the private sector into the main adaptation and disaster risk management funding channels and mechanisms. Some actions have been taken to create separate private sector windows across the main funding channels. Efforts to engage business more broadly have yet to emerge. The evidence base for the public sector interventions that work best to support private sector engagement in resilience is therefore limited. This is a critical issue as many adaptation and resilience responses will need the private sector in order to reach scale. This is the same for broader technology, finance and capacity building programmes.
- 3 **Projects that do engage the private sector have arisen on an opportunistic basis and are unlikely to lead to transformative resilience.** Projects that have been successful in engaging the private sector are scattered geographically and across sectors. They often only come about as an offshoot of another programme or initiative. The inability to cluster or link these projects, limits learning and impact, and suggests that this approach will not lead to transformational change.
- 4 **Where existing initiatives could engage the private sector, opportunities are often limited to MNCs and other large players who have the capacity to take on sizeable concessional financing arrangements.** The demands on the bigger initiatives to minimise transaction costs and limit due diligence requirements makes it hard for national companies and MSMEs to be engaged through these channels. The leaning towards the use of concessional loans when a private actor is a potential recipient (e.g. PPCR, AECF) also limits uptake overall and often particularly by MSMEs. Unless working with primary beneficiaries (MNCs) there is little opportunity for engagement.
- 5 **Resilience projects have predominantly been focused around common themes rather than on key economic sectors.** There has been a lack of focus to date on key economic sectors and their vulnerability to natural hazards and climate change. Resilience projects generally focus on themes such as land and water management rather than on specific sectors in which business does business. The agricultural sector is perhaps the only exception. The ICT, financial services and manufacturing sectors may be critical to the economic growth and employment in certain developing countries; however, they have not yet been the focus of resilience initiatives.
- 6 **There is a gradual shift towards engaging the private sector directly but these initiatives are sporadic and lack the connectivity required to support businesses through the product or project development and commercialisation process.** Initiatives are now emerging that directly engage private sector entities. Support is usually delivered through interventions at a particular stage of the development process, oftentimes at innovation and incubation stage. However, businesses require support throughout the full development and commercialisation process from initial risk or opportunity identification through to full-scale commercialisation and scale up. The limited nature of these initiatives and the lack of connectivity is holding back progress.
- 7 **Initiatives designed specifically for engaging the private sector may still require tweaking.** The instruments that an initiative has at its disposal need to target the specific barriers that the private sector entities are facing. In addition, the selection criteria and marketing of funding opportunities need to be appropriate to draw in the private sector. Lessons learned from these new initiatives should be shared and fed into the design of future ones. Based on early results, it seems unlikely that the current initiatives will achieve market transformation on their own.

4.4 Review of existing private sector development initiatives

The analysis of the current landscape of public finance resilience initiatives has highlighted significant issues in the engagement of the private sector on resilience. Broader private sector development initiatives may, in some cases, be able to address a number of these identified issues. This may be through direct application (i.e. adjusting certain existing initiatives to include resilience objectives) or through the replication of successful private sector engagement models and the application of lessons learned from these initiatives to resilience focused initiatives.

To understand how the private sector has most effectively been engaged to date, a selection of broader private sector development initiatives have been reviewed and evaluated. These initiatives have focused on wider development issues and goals such as inclusive business, health, infrastructure, gender and female economic empowerment. The lessons learned and successful private sector engagement models employed by these initiatives need to be considered and potentially factored into the design of new resilience initiatives or the adjustment of existing ones.

These initiatives have been selected as they all directly engage private sector actors as part of their planned objectives. They all target key issues or sectors or use specific instruments to target and overcome barriers faced by the private sector. A number facilitate and drive innovation and some support high-risk projects being undertaken by private sector actors. In this sense, they are very different to the existing landscape of public sector initiatives targeting resilience.

Overview of wider private sector development initiatives researched

Initiative	Description of key features
Health	
GAVI and its Advance Market Commitment (AMC)	The pneumococcal AMC accelerates the delivery of pneumococcal vaccines for children in developing countries. Donor commitments guarantee the price of vaccines once they are developed, and incentivise vaccine makers to invest in R&D and expand manufacturing capacity. In turn, companies sign a legally-binding 10 year commitment to provide the vaccines at an affordable price (no more than USD 3.50 per dose) to developing countries in the long-term (paid for by GAVI with co-financing from recipient country governments).
Harnessing non-state actors for better health for the poor (HANSHEP) Health Enterprise Fund	The Health Enterprise Fund is a challenge fund offering both grants and technical assistance. Funding is provided to enterprises that demonstrate the potential to create the biggest impact in uncovering innovative and replicable solutions that address critical health priorities in Sub-Saharan Africa. Key focus areas are: high rates of maternal and child mortality, unmet need for modern family planning methods, and lack of access to HIV/AIDS testing, care and treatment services.
Infrastructure	
DFID Construction Ideas Fund	The Construction Ideas Fund is a funding mechanism which shares the financial risk of innovative projects within the construction and real estate sector in Nigeria. The fund aims to increase income and employment opportunities within this sector for low-income groups in Nigeria. There are five funding windows which focus on: women's economic empowerment, skills development for construction, recruitment for construction, membership services and construction materials supply chain 'input supplies'.
Emerging Africa Infrastructure Fund	EAIF was established in 2002 and is now a USD 753.2 million debt fund, which aims to address the lack of available long-term foreign currency debt finance for infrastructure projects in Sub-Saharan Africa. EAIF lends to companies to develop new projects or upgrade and expand existing facilities through subordinated debt provided by development finance institutions (DFIs) and senior debt (provided by private sector lenders). Through its investments, EAIF intends to stimulate economic growth and contribute to the alleviation of poverty in Sub-Saharan Africa.
Private Infrastructure Development Group	The Private Infrastructure Development Group (PIDG) mobilises private sector investment to assist developing countries in providing infrastructure vital to boosting their economic growth, and combating poverty. PIDG has founded a range of specialised financing and project development companies designed to overcome the obstacles to generating private sector investment in infrastructure projects in poor countries by providing various types of financial, practical and strategic support.
Public-Private Sector Infrastructure Advisory Facility	The Public-Private Infrastructure Advisory Facility (PPIAF) is a multi-donor trust fund that provides technical assistance to governments in developing countries in support of the enabling environment conducive to private investment, including the necessary policies, laws, regulations, institutions, and government capacity. It also supports governments to develop specific infrastructure projects with private sector participation.
Agriculture	
DFID Food Retail Industry Challenge Fund (FRICH)	The FRICH challenge fund is aimed at the European food sector and finds innovative ways to bring more African foods to the continent. The competitive fund supports new ideas that connect African farmers with global retailers through innovative business partnerships. FRICH achieves results by removing blockages to market access and making sure that European shoppers know that their purchases make a difference to poor farmers.
Global Agricultural and Food Security Programme	The GAFSP is a multilateral mechanism to assist in the implementation of pledges made by G20 countries in Pittsburgh in September 2009. It aims to better coordinate donor support for strategic, country-led, agricultural and food security plans that produce results on the ground. Finance is available to the public and the private sector.
Africa Enterprise Challenge Fund (AECF)	The Africa Enterprise Challenge Fund (AECF) is a USD 205 million private sector fund, hosted by the Alliance for a Green Revolution in Africa (AGRA). Its aim is to encourage private sector companies to compete for investment support for their new and innovative business ideas.

Energy

Energy and Environment Partnership Programme with Southern and East Africa	A challenge fund which promotes renewable energy (RE), energy efficiency (EE), and clean technology investment through the fast tracking of renewable energy project demonstration and deployment, including through technology learning, donor co-ordination and private sector investment.
Green Africa Power	Green Africa Power is a GBP 98 million fund run by PIDG to stimulate private investment in renewable energy by providing early stage finance to private sector renewable energy generation projects in Sub-Saharan Africa.
EBRD Sustainable Energy Initiative	Created in 2006 to address the challenges of climate change and energy efficiency, the EBRD's Sustainable Energy Initiative aims to scale up the bank's sustainable energy investments, improve the business environment for sustainable investments and to address key barriers by working closely with donors.

Education and female economic empowerment

DFID Girls Education Challenge (GEC)	The Girls' Education Challenge is a GBP 300 million challenge fund that aims to help up to one million of the world's poorest girls across 21 countries to have an opportunity to improve their lives through education. GEC awards grants to organisations and projects that are able to demonstrate new and effective ways to expand education opportunities to marginalised girls that can be robustly evaluated to widen their impact.
AfDB African Women in Business Initiative (AWIB)	AWIB emphasises the role of women in business and aims to empower women entrepreneurs, in particular SMEs, through better access to finance. Its three key objectives are to: a) raise awareness among stakeholders and mobilise key players in the field of AWIB promotion; b) reinforce the Business Support Provision; and c) develop concrete forms of support to enterprise education and entrepreneurship development.

Private sector development and inclusive business models

DFID Business Innovation Facility (BIF)	BIF offers advice and technical assistance, at any stage of a business venture to develop or scale up inclusive business models. It draws on a global network to find technical experts who can assess routes to market, develop supply chains or test and collaboratively develop and improve business models.
SIDA Innovations Against Poverty (IAP)	Innovations Against Poverty functions as a risk sharing mechanism for sustainable business ventures (commercial companies or market-oriented organisations) which have a strong potential to reduce poverty. The initiative focuses on smaller organisations that have ideas with great potential but need support to penetrate new markets. It also seeks to work with larger companies to help support the development of 'inclusive business' models. The Fund challenges the private sector to develop products, services and business models that can contribute to poverty reduction and combat climate change.
UNDP African Facility for Inclusive Markets (AFIM)	AFIM builds on the work of existing pro-poor national and regional initiatives and serves as a platform for coordinating inclusive growth activities between the UN, governments, regional economic communities, and the private sector. Through workshops and grants, AFIM facilitates knowledge sharing, access to finance, and the dissemination of best practices in inclusive market development. It places emphasis on creating opportunities for low-income and marginalised groups and promoting the development and expansion of regional value chains in job-creating sectors. AFIM Catalytic Funding is a sub-component fund that focuses on initiatives in the agribusiness/agro-industries sectors (grains, horticulture and dairy/livestock).
Fund for Africa Private Sector Assistance (FAPA)	FAPA provides technical assistance and capacity building to complement the bank's financing operations, designed to strengthen the private sector in Africa and enhance the development impact of the bank's private sector loans and investments.
Seed Capital Assistance Facility (SCAF)	SCAF supports a number of cooperating investment funds to overcome early stage challenges in providing seed capital financing to clean energy projects and businesses in Africa and Asia.
Business Call to Action (BCTA)	BCTA is a global leadership platform that challenges companies to accelerate progress towards the MDGs. It works by creating commercially viable business ventures that engage low-income people as consumers, producers, suppliers and distributors of goods and services.
Private Sector Investment Programme (PSI)	PSI, formerly known as PSOM, is a subsidy programme supporting innovative investment projects in developing countries. The objectives of PSI are to stimulate financial growth, create employment opportunities and generate income.
Grassroots Business Fund (GBF)	GBF partners with businesses in emerging markets and provides them with both the long-term investment capital and the business advisory services they need to scale, become sustainable and attract other investment partners.
Business Linkages Challenge Fund	A challenge fund aimed at improving business competitiveness and ability to access markets, enabling benefits of globalisation to be secured for and by the poor. The fund aims, through its projects, to facilitate linkages between MNCs and SMEs and also between SMEs within a country or between countries.

Finance

USAID Development Credit Agency (DCA)	DCA uses risk-sharing agreements to mobilise local private capital. Partial credit guarantees encourage private lenders to extend financing to borrowers in new sectors and regions that they would not otherwise lend to. It seeks to prove the commercial viability of undeserved markets so that lending and investment can continue after USAID leaves.
African Guarantee Fund for SMEs (AGF)	AGF, designed and funded by the AfDB in partnership with the governments of Denmark and Spain, provides guarantees to financial institutions to stimulate financing to African SMEs and unlock their potential to deliver inclusive growth in the region. The provision of partial guarantees for financial institutions in African countries incentivises them to increase debt and equity investments into SMEs.
Financial Deepening	FDCF was designed in the late 1990s to encourage formal financial sector organisations in selected developing

Challenge Fund (FDCF) countries in Africa and South Asia to design and deliver a range of innovative, pro-poor financial services, products and delivery mechanisms to poor and previously excluded groups and to enterprises that employ poor people.

Other

USAID Development Innovation Ventures (DIV) Through DIV, USAID seeks to identify and test new projects with the potential to significantly improve development outcomes and then helps replicate and scale those that are successful. Projects are chosen through a quarterly competition for innovative ideas.

Table 35: Overview of existing private sector development initiatives

Development challenge	Barriers addressed							Scope				Instruments					Category of actor engaged			Project / product development				
	Commercial risks	Technology and product risk	Policy environment	Capacity and skills	Corporate maturity	Collaboration and partnership	Information and knowledge	Global	Multi-country	Country	Sector	Grant instruments	Debt instruments	Equity instruments	Financial de-risking instruments	Price support instruments	MSMEs	National companies	MNCs	Identifying risks and opportunities	Innovation and design of products and services	Business model development	Piloting and demonstration	Full scale commercialisation
GAVI's Advance Market Commitment	●	●						●								●			●					
Harnessing non-state actors for better health for the poor Health Enterprise Fund	●			○						●	●	●					●	●						
DFID Construction Ideas Fund	●		●	●		●				●	●	●					●	●						
Emerging Africa Infrastructure Fund	●			●			●		●		●	●	●					●	●					
Private Infrastructure Development Group	●		●	●						●	●	●		●				●	●					
Public-Private Sector Infrastructure Advisory Facility			●	○		●	○	●			●	●						○	○					
DFID Food Retail Industry Challenge Fund	●			○		●	●		●		●	●					●		●					
Global Agricultural and Food Security Programme	●	●							●		●	●	●	●			●							
Africa Enterprise Challenge Fund	●	○				●			●		●	●					●	●						
Energy and Environment Partnership Programme with Southern and East Africa	●								●		●	●						●	●					
Green Africa Power	●	○	●			●	○		●		●		●	●				●	●					
EBRD Sustainable Energy Initiative	●		○	●					●		●	●	●				●	●	●					
DFID Girls Education Challenge	○					●			●		●							●	●					
AfDB African Women in Business Initiative	○		○	●			●		●		●						●	○						

Development challenge	Barriers addressed							Scope				Instruments					Category of actor engaged			Project / product development				
	Commercial risks	Technology and product risk	Policy environment	Capacity and skills	Corporate maturity	Collaboration and partnership	Information and knowledge	Global	Multi-country	Country	Sector	Grant instruments	Debt instruments	Equity instruments	Financial de-risking instruments	Price support instruments	MSMEs	National companies	MNCs	Identifying risks and opportunities	Innovation and design of products and services	Business model development	Piloting and demonstration	Full scale commercialisation
DFID Business Innovation Facility	○	●		●		●	●		●			●				●	●	●						
SIDA Innovations Against Poverty	●	●		○		●		●				●				○	○	●						
UNDP African Facility for Inclusive Markets	○		●	●		●	●	●		○	●					●								
Fund for Africa Private Sector Assistance	○	●	●	●		●		●			●					●	●							
Seed Capital Assistance Facility	●							●		●	●					●								
Business Call to Action				●		○	○	●			●					●	●	●						
Private Sector Investment Programme	●							●			●					●		●						
Grassroots Business Fund	●			●					●		●	●	●			●								
Business Linkages Challenge Fund	○			○		●			●		●					●		●						
USAID Development Credit Agency	●	●		●				●						●		●	○							
African Guarantee Fund for SMEs	○	●		●					●		●			●		●	○							
Financial Deepening Challenge Fund		●	●	●					●		●					●	○							
USAID Development Innovation Ventures	●	●							●		●					●								

Key

● Major/direct

○ Minor/indirect

Lessons learned from existing private sector development initiatives

Focus of support

Private sector development initiatives target their support through key issues, key sectors or the use of a specific instrument. The initiatives, in most cases, do not attempt to work globally across multiple sectors. Rather they target a range of private sector actors along value chains through a more focused approach. These initiatives are defined by their specificity and focus on key areas or methods of support.

Key issue focus, for example inclusive business, gender and female economic empowerment.

The Business Innovation Facility, Innovations Against Poverty, African Women in Business and Girls' Education Challenge are some of the multi-country and multi-sector (with the exception of the GEC) programmes which focus on a key development challenge.

The multi-country and multi-sector approach can potentially prevent a clear awareness and understanding of specific local barriers in the national and local level enabling environment. In targeting projects in an opportunistic manner across sectors and countries there is low potential to build linkages and collaboration or share knowledge and lessons learned in order to effect transformational change at sector or country level.

BIF and IAP have attempted to overcome this obstacle through the development of the Practitioner Hub. The Hub provides a space for practitioners to connect, share experiences and gain new insights to help their inclusive business ventures grow. It is designed to act as a knowledge and networking tool that provides resources on best practice and lessons learned to inclusive business practitioners globally. BIF has been recognised as achieving good results on private sector engagement and development to date. It has scaled up rapidly since its inception with multiple donors now interested in funding the initiative.

Key economic sector focus, for example construction, infrastructure and agriculture. The Construction Ideas Fund, Private Infrastructure Development Group, Food Retail Industry Challenge Fund and Global Agricultural and Food Security Programme are global or multi-country sector initiatives that target interventions either along a sector value chain or at various points along the project development process (e.g. development of large infrastructure projects).

The FRICH facilitates partnerships along the agriculture and food products value chain, connecting multinational and national EU-based food retailers with initial producers of agricultural commodities in Sub-Saharan Africa. Grants are provided to European food sector and retail businesses with innovative business model ideas that create partnerships with African farmers. The aim is to improve market access for African products and provide poverty reduction benefits for smallholder farmers. The CIF is part of a wider project known as Growth and Employment in States (GEMS2). It targets interventions along the supply chain of the construction sector in Nigeria (e.g. facilitating the provision of training to informal workers (including women) through private sector training providers). GEMS2 appears to have had success with engaging private sector entities in Nigeria. To date, 15,000 informal firms or artisans have increased capacity and 120 formal companies have increased sales in the construction and real estate sectors.⁷⁷ This reinforces the importance of targeting a key sector and understanding the issues it faces within a country context.

The PIDG is comprised of a number of facilities that are designed to target specific interventions at key points in the development process of a large infrastructure project. The Technical Assistance funding pool assists PIDG companies to build capacity and scope out potential investment opportunities. GuarantCo provides guarantees to lenders to support local currency finance for infrastructure projects, promoting domestic infrastructure financing and capital market development. InfraCo Africa and Asia are designed to assume the risks and costs of early stage project development. The EAIF provides long-term debt or mezzanine finance on commercial terms to finance the construction of infrastructure. Together these facilities target different barriers in the project development process through the use of multiple instruments. The development of these facilities within the PIDG evolved on an ad hoc basis through the gradual identification of bottlenecks and barriers in the project development process and gaps where support was previously limited. For example, the limited number of good projects applying to the EAIF and the limited pipeline encouraged the setting up of InfraCo to support early stage project development.

Use of a specific instrument (e.g. credit guarantees). The USAID Development Credit Agency and the African Guarantee Fund for SMEs operate similar models. They offer partial credit guarantees to financial institutions to stimulate funding to SMEs in new sectors and regions that they would otherwise not lend to. This

⁷⁷ <http://gems2-nigeria.com/gems2-impact/>

helps to prove the commercial viability of these new markets and leads to self-sustaining financing post-intervention. These models target financial institutions to build investment in SMEs in multiple countries and across multiple sectors. The DCA projected that 39,000 loans would be disbursed in 2012, improving the lives of 1.35 million people. In practice, these initiatives appear to have focused predominantly on the agricultural and food processing sector with relatively limited focus on wider sectors.

There is also a tendency to focus on low risk investments and avoid higher risk ‘marginal’ SMEs. For example, in Mozambique, financial institutions working with the DCA offer credit lines to SMEs particularly in the agro-processing and food product sector. However, they can be unwilling to support companies that operate in high risk zones which are vulnerable to flooding and future climate change impacts. Other examples beyond the financial sector include the Advance Market Commitment that the GAVI alliance uses to incentivise pharmaceutical companies to provide pneumococcal vaccines to developing countries at an affordable price.

Although not engaging the private sector in resilience specifically, these initiatives engage business on development issues along similar channels to those discussed earlier: in direct operations and value chains, delivering new products and services and de-risking investment. This appears to validate the analysis presented in chapter 2 that introduced the most appropriate ways in which to engage private sector entities. Some examples of the current private sector development initiatives acting through these methods are illustrated in Table 36.

Table 36: Examples of initiatives that are targeting similar themes from a development perspective rather than resilience focus

<i>Direct operations and value chains</i>	<i>New products and services</i>	<i>Capital providers considering investing in development projects</i>
<ul style="list-style-type: none"> • Business Linkages Challenge Fund 	<ul style="list-style-type: none"> • Business Innovation Facility 	<ul style="list-style-type: none"> • Private Infrastructure Development Group
<ul style="list-style-type: none"> • Food Retail Industry Challenge Fund 	<ul style="list-style-type: none"> • Innovations Against Poverty 	<ul style="list-style-type: none"> • African Guarantee Fund for SMEs
<ul style="list-style-type: none"> • Construction Ideas Fund 	<ul style="list-style-type: none"> • Grassroots Business Fund 	<ul style="list-style-type: none"> • USAID Development Credit Agency
<ul style="list-style-type: none"> • Business Innovation Facility 		<ul style="list-style-type: none"> • Financial Deepening Challenge Fund
<ul style="list-style-type: none"> • Business Call to Action 		

Collaboration and partnerships along the value chain appear to be most effectively facilitated through initiatives that target a key sector. There are some initiatives that specifically target business-to-business partnerships as a key objective. For example, FRICH and BLCF appear to have performed well in developing partnerships. Through FRICH, seven new food product trade links to the UK have been established. Taylors of Harrogate, for example, now sells Rwandan tea in UK supermarkets. The Girls Education Challenge has a ‘Strategic Partnerships’ window. Despite being in the early stages of mobilisation, it appears to have successfully engaged a number of larger private sector partners from different sectors. A high proportion of these are new companies that have not previously worked with donors such as DFID.

Moving a new product, service or project through to full-scale commercialisation requires a range of instruments to target different barriers and is most effectively facilitated when there is connectivity between initiatives. The package of support that a business or project needs to move from initial risk/opportunity identification through to full-scale commercialisation will vary. The only initiative that has the capacity to offer this support is the PIDG. Through its various facilities, it can take large infrastructure projects from inception to implementation.

The PPIAF also plays an important role alongside PIDG. Although there are no firm ties between the two initiatives, the informal dialogue between them can help to overcome bottlenecks. For example PPIAF’s work on particular legislative reform allows PIDG facilities to function more easily and move projects through to full-scale commercialisation.

The AECF REACT initiative noted that the businesses applying for support can lack pre-existing capacity. There is therefore a case for the development of a BIF style technical assistance facility focused in east Africa. Such a facility could offer hands-on project-specific technical assistance (e.g. development of a business plan, support in writing applications for attracting co-financing and building KPI and M&E reporting capacity). If such a facility could run alongside the AECF it could prevent delays in the contracting and finance disbursement process, thereby enhancing the efficiencies of the challenge fund model and ensuring that a strong pipeline of projects is available.

Initiatives using the same instrument in a variety of contexts are perhaps the most easily replicable models. The USAID DCA and African Guarantee Fund can roll out the same credit risk guarantee model across multiple sectors and countries with relative ease. There is the risk, however, that these initiatives are not supporting the marginal businesses they are designed to. The USAID DCA's average default rates are approximately 2% (on a par with commercial lenders),⁷⁸ which reinforces some of our in-country findings that credit risk guarantees may not always be supporting high risk marginal businesses. Understanding around these issues is vital when considering the potential replicability of the model for use in a resilience context. Businesses that are located in climate vulnerable regions and operating in climate sensitive sectors will likely be considered high-risk. If they are looking to build the resilience of their operations or develop new products they may not therefore be able to gain access to credit. Initiatives looking to support these types of business ventures will need to be prepared to take on this additional risk. They will need to ensure that their model actually allows them to target those private sector entities in greatest need of support.

Structure and design

A large proportion of private sector development initiatives are managed and implemented by private sector actors or alliances. International financial institutions predominantly manage the resilience-focused initiatives. The broader development initiatives are often implemented by business-led management alliances with international development consultancies, foundations and NGOs. These alliances have specific capacity, knowledge and skills and can provide support and technical assistance to projects and programmes. For example, BIF is implemented by an alliance led by PwC but with the support of a number of alliance partners (International Business Leaders Forum, Accenture Development Partnerships, Imani Development, Intellectap, Renaissance Consulting Limited, The Convention on Business Integrity and Challenges Consulting). These include not-for-profit organisations and private sector consultancies located in both the North and South who bring in-country presence and expertise.

Outsourcing programme management can make room for new cross sector alliances to form and allow a range of implementing partners to play to their strengths. The more recent approach of a private sector entity acting as programme or fund manager can add value to the delivery of these initiatives. This allows partner organisations, such as NGOs and international agencies, to focus on and play to their strengths and specialist expertise in cooperative roles.

Alliances can deliver innovative solutions through the strengths and expertise of various alliance partners. The R4 Rural Resilience partnership of Oxfam, WFP and Swiss Re leverages the respective strengths of the different partners: Oxfam's capacity to build innovative partnerships; the WFP's global reach and extensive capacity to support government-led safety nets for the most vulnerable people; and Swiss Re's technical leadership in the field of insurance and reinsurance. Other examples of alliances implementing initiatives to meet development goals include the GAVI Alliance and AGRA.

Initiatives are increasingly focused at country level after initial piloting at a global or multi-country scale. Similar patterns emerge upon the completion of a pilot initiative. There is a tendency towards moving from a broad approach, testing where the greatest innovations and opportunities lie, to a specific country focus. For example, the Business Linkages Challenge Fund aims to facilitate linkages between MNCs and SMEs and also between SMEs within a country or between countries. Companies in less developed countries found it difficult to compete and the quality of applications from them was relatively poor (e.g. those from Malawi and Rwanda). On the back of this initiative, the Ghana Business Linkages Challenge Fund has been developed. The initiative is a response to the recognition that business linkages can be better organised at the country level through regional programmes and offices. Based on the successful Financial Deepening Challenge Fund implemented in Sub-Saharan Africa, India and Pakistan, DFID Mozambique is now developing a similar country-level Access to Finance Programme (MAFiP).

⁷⁸ <https://www.devex.com/en/news/how-crisis-refugees-can-improve-usaid-financing/81257>

In-country consultations highlighted the importance of local resources for on-the-ground presence and locally specific knowledge and insights. Locally specific knowledge and expertise at the fund management level is critical. The BIF goes some way to addressing this need through the presence of country managers in each priority country. They are able to assist businesses in developing applications and offer local ad-hoc support to those businesses already in the BIF portfolio. There is a growing recognition of the importance of building local capacity knowledge hubs. As a result, the in-country presence of fund managers is increasing. The AECF country windows, for example, are predominantly managed from regional hubs in Kenya and Zimbabwe.

Resilience impact

Broad private sector development initiatives are still delivering resilience results as co-benefits. Initiatives such as the BIF, IAP and AECF have a number of supported projects within their portfolio that are resulting in increased resilience to those at the bottom of the pyramid. Although not selected on the specific basis of their resilience impacts, these projects are often in the agriculture sector. Often, meeting broader development goals in this sector has a positive effect on the resilience of vulnerable rural communities.

There is evidence that the BOP benefits when businesses build resilience through their own operations, value chains or new products. BIF has nine projects (27% of the total portfolio) which are specifically relevant to ‘climate smart solutions’. Through BIF, Sun Hotels is developing commercially viable solutions to climate proof their 400 smallholder suppliers to their two hotels in Zambia (e.g. irrigation technologies, simple SMS early warning systems, micro-insurance providers and promoting of ‘climate-smart’ agricultural (CSA) practices).⁷⁹ In India, Tata Consultancy Services has developed the new mKrishi business model. This software platform allows partners to provide integrated services and products to farmers in local languages on their mobile phones. Farmers in rural areas can connect to their stakeholders, access higher quality agricultural inputs, find advice on farming practices and get information on market prices and weather.⁸⁰

There is also evidence of capital investors considering the merits of resilience projects and infrastructure. The Private Infrastructure Development Group has four projects across the agriculture and construction sectors which have been classified as ‘tier 2 adaptation’. This means that although adaptation is not a specific objective for these projects they are nonetheless likely to lead to significant climate change adaptation co-benefits.⁸¹ The Punjab Silos project in India is addressing the lack of modern storage facilities for wheat in the Punjab province through the design and implementation of a scientific silos project which will reduce the storage losses of wheat and deterioration in the quality of food grains.

Resilience as a co-benefit of wider projects will not deliver market transformation and systemic resilience on its own. Despite supporting a number of projects that deliver co-benefits, these initiatives are not strategically aiming to support projects that target resilience. The uptake of these projects is more coincidental than planned. Examples where resilience co-benefits have been seen to date lie predominantly within the agricultural and telecoms sectors. By following the current approach there is a high risk that a number of other sectors are being overlooked in terms of potential resilience building opportunities. These projects go some way to getting businesses to build resilience in certain parts of their operations or value chain. However, it does not mean that the wider business has fully grasped the importance of building resilience. These projects may only build resilience at local project level rather than companywide. There remain wider issues of building awareness and embedding resilient thinking amongst business which still need to be addressed.

How learning from wider private sector support can be applied to resilience

The table below summarises how gaps in existing or planned resilience initiatives could be filled with models developed for other private sector initiatives.

⁷⁹ <http://businessinnovationfacility.org/profiles/blogs/enhancing-climate-resilience-in-smallholder-sourcing-programmes>

⁸⁰ <http://businessinnovationfacility.org/page/project-profile-mkrishi-mobile-technology-for-farmers-in-india>

⁸¹ <http://www.pidg.org/resource-library/results-monitoring/pidg-climate-change-classification-results.pdf>

Table 37: Summary of lessons learned from existing private sector initiatives

Issues in the current resilience initiatives landscape	How can this issue be addressed?	Lessons learned from private sector development initiatives
7 Limited planned or strategic engagement with the private sector	Initiatives designed to specifically target private sector entities as part of their strategic objectives	<ul style="list-style-type: none"> Nearly all private sector development initiatives directly engage businesses on a project level. Small scale initiatives targeting businesses on specific projects are needed to complement the larger resilience initiatives currently in place. Initiatives need to be specific (whether through focusing on a key issue, sector or instrument).
8 Projects engaging the private sector emerging on an opportunistic and ad hoc basis	Greater focus and targeting of projects at a regional or country level and in key sectors to create a clustering effect which could lead to transformational change	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience at the country or sector level include: <ul style="list-style-type: none"> Country focused programmes such as the Ghana Business Linkages Challenge Fund, HANSHEP Health Enterprise Fund, AECF (Zimbabwe, Tanzania, South Sudan funding windows). Sector focused programmes (e.g. Construction Ideas Fund). In certain instances, resilience could be integrated as a planned objective; for example, in the AECF windows that already include a number of agriculture projects that have resilience co-benefits. Including private sector resilience as an aim within an initiative such as CIF could be effective but conversely could make the initiative perhaps too specific and limiting
9 Limited focus on the different models needed to engage various private sector actors Minimal opportunities available for national companies and SMEs to access support	Targeted initiatives that recognise and address the different barriers and drivers for MSMEs, NCs and MNCs	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience at specific scales of private sector actors, particularly SMEs, include: <ul style="list-style-type: none"> B2B partnership initiatives that create access to markets for SMEs (e.g. FRICH, BLCF). Resilience objectives could be included to ensure that MNCs incorporate capacity building and training on climate smart agriculture techniques as part of their support to smallholders. Guarantee funds that offer credit lines to SMEs e.g. USAID DCA, African Guarantee Fund. Resilience objectives could be included to ensure that a bank reaches a certain portfolio percentage of 'resilient' projects. National companies are the most overlooked scale of private sector actor. They are viewed as having reasonable ability to finance action, however, they require other support in the form of information and opportunities for knowledge sharing and collaboration.
10 Limited focus on key economic sectors with the exception of agriculture	Targeted initiatives that intervene along value chains in key economic sectors to address the bottlenecks and barriers that private sector actors working in that sector face	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience along the value chain, include: <ul style="list-style-type: none"> Sector focused programmes (e.g. Construction Ideas Fund). For example, a window focused on resilient building design and construction materials could be incorporated into the initiative. Guarantee funds could provide access to credit for a wider range of SMEs along the value chain in sectors other than agriculture.
11 Direct engagement of the private sector is sporadic and there is a lack of connectivity between these limited	Targeted initiatives that link up to provide support to private sector actors along the product/project development process (i.e. from initial risk/opportunity	<ul style="list-style-type: none"> Examples used in the private sector development landscape that could be replicated or adapted for targeting resilience along the project/product development process, include: <ul style="list-style-type: none"> PIDG and its component facilities that address specific

number of initiatives	identification through to full scale commercialisation)	<p>barriers along the project development process using a suite of instruments.</p> <ul style="list-style-type: none"> - The informal relationship between PPIAF and PIDG. This relationship can bring about complementary action at the project level and in the national enabling environment to deliver outcomes. - A BIF style technical assistance facility that could support the development of innovative business models to create a strong pipeline for the AECF REACT windows. • There are currently limited initiatives supporting businesses in the initial risk/opportunity identification process. There is a concern that opportunities and innovations could be overlooked without support at this stage.
12 Targeting of instruments, selection criteria for projects and marketing of opportunities to the private sector (for initiatives that directly engage businesses) need fine-tuning	Using lessons learned from engaging the private sector in broader development issues to ensure that support is suitably targeted at the private sector actors it is trying to engage	<ul style="list-style-type: none"> • In designing initiatives, it is important to understand whether the engagement model and instruments used are effectively targeting the entities they are aiming to support (e.g. marginalised businesses). • Knowledge hubs and well developed local networks in-country are important to raise awareness amongst businesses of the funding opportunities and support available.

5. Consolidated findings

5.1 Summary of major themes and priorities for action

FINDINGS I: Overview of current private sector actions and needs

With the right enabling environment, the private sector is well placed to deliver services, products and solutions in support of resilience building activities that benefit the world's poorest people. Awareness of disaster and climate change impacts is increasing, however many companies are not equipped to assess and respond to these risks. Only a small proportion of private sector organisations are taking planned and independent action to mitigate risks and develop new resilience building opportunities.

There are examples where private sector can be effective at taking risk reducing actions to protect its assets and operations. This is particularly true in larger international companies that operate fixed assets in hazard prone locations. As a result, these businesses have developed the awareness, capacity, skills and finance to take action. These companies realise that action on adaptation must be tailored to the geography, stakeholders and specific threats associated with each. They understand that competitive advantage can be gained from building resilience in the exposed parts of their business and are beginning to take action.

The country evidence confirms that a diverse range of barriers are preventing other actors, particularly smaller companies to take action on risk reduction. This is true of actions along their value chains, and in exploiting new market opportunities for risk reducing products and services. Resilience efforts are hampered by information, technology, capacity, partnership and financial deficiencies. These can be summarised to include:

- Political, security and regulatory risks
- Low private sector awareness and prioritisation of the risks or opportunities encountered
- A lack of widely available, robust and detailed risk information
- Weak innovation support and capacity
- Capacity gaps in the resources, skills, tools and methods required
- Weak commercial structures, incentives and revenue streams that engage private sector investment
- Limited access to finance to support and commercialise resilience actions

There is greater overall provision of support to the private sector on climate change risks and opportunities than disaster risk management efforts. Climate finance commitments and dialogue in international negotiations have led to a greater focus on climate change adaptation. Although disbursement volumes are currently low this is intended to be a growing pool of financial support over the next decade. Existing public finance contributions to disaster risk management efforts are primarily financing disaster relief. Very little aid is allocated to risk assessment, preparedness and planning. The post 2015 Hyogo Framework for Action will increase its focus on the private sector which may divert increasing amounts of funding, however this policy shift is likely to take 3-5 years to penetrate donor strategies.

There is little focus on exploiting the opportunities for poverty reduction through resilience and adaption measures. Much of the existing resilience activity does not explicitly target the BOP. Generally the focus is on how larger companies, MNCs in particular, can mitigate risks in vulnerable areas, secure supply and keep costs down. Beyond some encouraging examples such as Unilever's sustainable tea initiative, MNCs need to be encouraged to identify ways to better work with local communities to understand local issues and how best to respond to them.

While the private sector often has the reach to help access isolated individuals and communities, their investment does not often include the poorest and most vulnerable. The private sector will naturally be attracted to where it can get the best price for its goods or services. This means that the intensity of public support will increase as affordability and market access become greater challenges. Public support for resilience therefore needs to shape and direct private actions to maximise the realisation of opportunities that offer benefits for both the company and for development.

Early stage R&D and business innovation support is significantly under resourced, preventing new ideas from reaching the market. Much public support is focused on governments and national infrastructure including financing and programme delivery. There is a lack of support to improve the understanding of research themes focused on sector issues, incentivising and rewarding new ideas and academic or incubation support to develop these. This means that a pipeline of strong and well considered ideas is not being generated within sectors to feed the latter stages of commercialisation.

The connectivity of knowledge and information also represents a common gap at international and local levels. Whilst larger companies and MNCs have the capacity to identify and respond to site based risks, SMEs and some smaller national companies are not accessing and benefiting from this knowledge and experience. With action on resilience being nascent, this is currently one of the most pressing issues to address. Current actions and projects are taking place through a range of initiatives that have no common connection or apex point. A global resilience fund may not be required to support action; however a central resource hub for the private sector could be of considerable benefit to bridge knowledge gaps between programmes and projects.

Much could be done to help improve the enabling environment for private sector action. Many companies still wait for regulation to catalyse action. Strong government institutions which are able to design and enforce well-informed regulation would help drive the private sector in the right direction. Infrastructure and special planning improvements could also help create the necessary backdrop to support increased action from the private sector.

FINDINGS II: Gaps in the current public finance initiative landscape

There are very few international public sector initiatives designed to target private sector engagement. The current landscape of public finance initiatives is subject to wholesale gaps and deficiencies in the scale and format of private sector engagement. Assessing the performance and experience of these as resilience programmes for the private sector therefore has limited application. There are examples of projects that have been set up to engage, work with or attract private sector finance on resilience issues, however these have arisen sporadically and their distribution is isolated geographically. They can therefore only be evaluated from an impact perspective on a case-by-case basis.

Existing resilience projects are diluted and opportunistic. There is a need for public sector leadership including programming and aggregation of interventions at country and sector levels. Maintaining flexibility when working with the private sector is important but most interventions are project focused and isolated. Planned spatial, sector or country solutions to resilience challenges are limited. Actions do not take into account the specifics of different industries, sectors or countries. Better understanding of value chains and the actors within them is needed to target adaptation activities where they will be most effective.

The net impact of individual projects scattered across many countries is unlikely to result in national or sector transformation. Local and specific support is essential and the aggregation or clustering and momentum of these within a sector is more likely to drive transformation than parachuted ideas. An exception to this would be the rare examples where an individual innovation itself represents a major breakthrough (i.e. M-PESA in Kenya).

There is no identifiable bias between different peril types. Hazard type is not generally considered as a relevant factor in the design of existing private sector engagement models. There is some association of support with flood and drought as these affect the agricultural sector; however they are not a determining factor in project selection. Development status, the number of people impacted and economic losses are more likely to drive allocation plans for major donors. It should be noted however that climate change and disaster risk management interventions tend to group interventions around extreme weather and geophysical hazard types respectively.

There is little understanding of the need for targeting different size and scale of private sector entities in current initiatives. Larger resilience initiatives attempting to engage the private sector are, and will likely continue, to focus on MNCs to minimise transaction costs. There is limited but growing awareness of the need to also target support for SMEs and smaller national companies on resilience.

Agriculture, rural livelihoods and insurance sectors are however well served by public sector programmes that embed resilience goals. Rural issues tend to receive strong focus due to their strategic importance to those at the bottom of the pyramid. Support most often targets multiple issues including resilience to natural hazards. A number of programmes are designed to promote inclusive business models and access to markets / M4P approaches. IFAD's work, particularly with the new ASAP programme, is a positive

example where proactive and embedded resilience goals and actions are weaved into its wider agricultural development remit. It should however be noted that resilience opportunities and messages have the potential to be lost and overshadowed by these other priorities in some cases.

AECF and BIF are two examples that are achieving good results on private sector engagement and development. Their efforts to support resilience actions have however been challenged by low uptake and competition from more 'attractive' opportunities such as renewable energy. Private sector actors in the renewable energy field benefit from clearer background policy contexts, incentives and commercial structures. They often have superior internal skills and capacity when compared to, for example, small agribusinesses.

Whether or not an embedded approach can be replicated and successful beyond agriculture is less clear. For example, the drivers in the construction sector are not structured to achieve common goals and there are split incentives to invest in resilience actions between designers, contractors and occupiers.

Insurance is another sector where the private sector has been engaged over a longer period on resilience issues. There has been extensive trialling of index based weather insurance schemes and large insurance companies have run and invested in catastrophe risk pools. Risk transfer to the private insurance markets was a primary motivation for governments and MDBs in establishing these schemes while new insurance products offer expanded markets for insurance and reinsurance providers.

This demonstrates that where aligned objectives exist within a sector, the public-private collaboration can be effective. This is evident in current examples such as the R4 Rural Resilience, a public-private partnership of Oxfam, WFP and Swiss Re. This initiative will enable poor farmers and other food insecure households to manage weather vulnerability through an affordable, comprehensive risk management program that builds long-term resilience. Taking these pilot projects to commercial maturity is now a major challenge and requires further support.

Other sectors currently receive limited support from resilience and broader private sector development initiatives. Much of the literature, existing programmes and evidence base is focused on agriculture and insurance. This is partially because of the climate sensitivity of agriculture and its direct connection with development impacts, especially for the BOP. This focus is at the expense of early action in other sectors. Without intervention, economic development of other sectors will increase country and sector exposure to natural hazards over time. It is significantly more difficult to find meaningful and repeatable examples from other sectors which is a major gap that needs to be addressed.

An important caveat to this is that agriculture is by no means saturated with private sector support on resilience activities. Huge vulnerabilities and opportunities still exist and as a result the expansion of current agricultural support plus the introduction of new and resilience targeted initiatives should be considered.

FINDINGS III: The needs of specific private sector actors

The types of public sector intervention discussed during consultations focused on practical rather than policy issues. Public interventions must identify specific private sector entry points to address the diverse range of needs. These interventions must be focused on key countries, sectors, market systems, value chains and products and services. Below we consider the needs of each of the major groups of private sector actors.

Small and medium sized enterprises

SMEs are the most vulnerable private sector group. The impact of natural hazards can be devastating for SMEs as seen from examples in all four case study countries. These businesses are often livelihoods, particularly in the case of agriculture where farmers are often self-sustaining and also sell surplus produce when they have a good crop. Unfortunately the opposite is also true: a bad harvest means no food and no income. For this reason, many development programmes direct support to agriculture, especially when they focus on SMEs. There still remains considerable opportunity to support farmers and small agribusinesses to improve the resilience of their livelihoods both through rural development and private sector support.

The most consistent needs expressed across the SME group are information, knowledge, technology transfer and access to finance. The focus was primarily on the availability of information and technical assistance rather than finance. However it is foreseeable that even when the feasibility of a new technology has been demonstrated, accessing finance will still prove a formidable barrier to many as SMEs have limited collateral to offer banks.

SMEs also spoke about the influence of input providers and their customer base. Some worked with large MNCs on a contract basis and felt that this relationship could be more productive and supportive. Two SME farmers supplying milk to an MNC could see the opportunity to work more closely on these issues with the buyer. Collaborative action would secure the milk supply during difficult times for the buyer and also protect the farmer's herd. There are opportunities around farmer extension and support for contract related insurance provision whereby both organisations could receive pay-outs in the event of adverse operating conditions.

Value chain analysis highlights a need for support to agricultural input providers who have good relationships and access with the rural poor. They already offer packages of extension services to customers that support demand for their products. However, incentives could be offered for these services to be expanded to include more marginal farmers and more advice, technology and services, including demonstration projects for more resilient techniques that reduce farmers' risk.

In Pakistan, there has been limited change in the SME private sector construction market since the 2005 Earthquake despite a huge reconstruction effort. The largest designers and contractors can now deliver on updated design specifications and infrastructure. Government is driving this by specifying and paying for the difference in cost of over 800,000 replacement homes. But should this investment not have driven broader change in the residential construction sector?

SME construction labour is provided by highly vulnerable individuals with a very low skill base. The sector is highly localised and price sensitive and small construction companies that employ these staff have no capacity to train or bring the designs up to specification in terms of earthquake and flood resistance. Planning and zoning has been historically weak in Pakistan, there is little adoption or enforcement of design codes, quality remains poor and price is paramount. Equally, there is no awareness from buyers as to what they need to specify and the currently technologies that they have access to are prohibitively expensive. This is a market failure which, during events such as the Kashmir earthquake in 2005, can have devastating effects.

Frustratingly, there are new and cheap technologies available (such as base isolation techniques – the 'seatbelt' for buildings - or the use of prefabricated modular buildings). There is also a potentially larger market for simple retrofits (e.g. bracing and pinning of existing properties). However there is no advocate, channel or sponsor for these designs.

Technology penetration rates and cost gaps need tackling with some support to help prime the market for these disaster resilient products. They can be locally designed and manufactured. In addition, due to their simple nature, they can be used and installed with the existing skill base. This could be a big opportunity in Pakistan with its growing population and high risk exposures.

The value chain analysis in Mozambique highlighted a need for support to businesses delivering new products in identifying and collaborating with local distributors. SMEs looking to deliver products that support risk reduction face challenges in working with rural distributors and building a resilient distribution chain, particularly in remote rural areas. Medium sized companies also noted similar challenges in identifying and building relationships with appropriate distribution partners when attempting to enter new markets within the country.

For agriculture and other sectors, the interventions likely to have impact from a private sector perspective are those working down through the value chain. This maximises the awareness of actors within that sector and harnesses the existing skills, capacity and resources of larger companies and local knowledge.

National Companies

National Companies have considerable potential to support national resilience efforts. This tends to hold true for countries with more developed private sector markets such as Bangladesh, Kenya and Pakistan. These national companies are often characterised by high growth and expanding investment profiles. This means two things for their possible contributions to resilience. Firstly, their increasing wealth gives them great capacity to act and make discretionary investments in national infrastructure and markets. Secondly, the very fact that they are entering new localities and markets means that there are repeatable opportunities to 'do things differently'. This could simply be how a new factory is designed or how they set up a local sourcing model. Some beverage companies are expanding and localising their supply chains in Africa, for example. Lessons learned from these examples could be transferable to other countries such as Mozambique as they expand their private sector and investment profiles.

Representatives of national companies were keenly interested in this project and how their businesses could be part of the solution. They were partly driven by a true understanding of the impact of natural hazards in their countries, the potential donor support available and also the commercial opportunities in the markets. They have observed how the scale of public investment, post disaster investment and reconstruction can also lead to large engagement and revenue opportunities. One firm has managed the design and construction on some 600,000 new homes in Pakistan since 2006. The Safaricom joint venture between Vodafone UK and the Kenyan government (M-PESA) is a well-used example of how successful collaborative action with national companies can be transformative and profitable with limited donor finance invested.

National companies represent a good value for money intervention; however working models must be adapted to meet their needs. As active components of sector value chains with national interests and growing capacity for change, national companies could be an important driver of country and sector solutions. Donors and government support needs to work more closely with these companies to understand their needs and operating priorities. They do not have large CSR departments or flexible capacity for special projects and lengthy policy dialogue. But, they are operationally focused with good potential for practical action.

Many of these companies fully appreciate the opportunities presented - more so than many MNCs and developed country companies - but they face limited government funding to support them and the high cost of commercial finance. Feedback, for example, from national seed companies and textile manufacturers in Bangladesh, suggested that they are in need of marginal interventions rather than end-to-end support. Zero interest loans for example would help to unlock action by these companies. Alternatively, guarantees could be provided to banks to lower the cost of lending, particularly to those companies in other sectors beyond agriculture. There is great potential sitting within these companies. DFID does not currently issue loans; however, it is possible that in circumstances such as these it would support its targeted outcomes best by doing so.

To increase their impact, national companies need access to useful information, tools and methods to help them adapt their processes or build resilience into their business models. They are less likely to need NGO driven support to their own operations. At a site level, while they encountered risks, they were comfortable with their ability to identify and manage these. Their main markets, however, presented greatest risk and opportunity to them, and this is where an intervention would be best placed. The final area of support that could yield positive results would be in getting these companies working more effectively within sectors and with government. Industry representation and platforms to collaborate need to be stronger and more applied. For example, an effective place to hold information and provide support to the construction sector would be the Contractors Association of Pakistan and the Pakistan Engineering Council or the equivalent in other countries. These organisations need help and resources to transform them into credible and transformative institutions.

Multinational Corporations

Harnessed in the right way, MNCs can act as powerful drivers and facilitators of change. MNCs operating at sector level within countries, sharing knowledge from others and forming exemplar codes of practice, planning and standards. However, MNCs' buying power and the commercial pressures on their international operations, plus local dilution of transparency and traceability, means that they can be an indirect driver for exploitation and downward pricing. Many MNCs consider managing these risks to be a major challenge in some of these markets.

Each country has a certain amount of influence and presence from MNCs. MNCs act as major buyers of raw materials or processed outputs and are an important export channel for apparel and textiles in Bangladesh, extractives in Mozambique and food commodities in Pakistan. They also bring strong market distortions and standards for contract producers.

Some businesses are forming innovative ideas for new products and services but often face barriers to develop and commercialise them. Most significantly, major access barriers exist that are specific to a local economy. These include inadequate import, export and corporate laws, weak incentives, dilapidated or underdeveloped public and financial infrastructure, and underlying corruption or security related constraints. There are also challenges in stimulating and understanding the demand profile of potential markets and building resilient distribution networks, particularly in remote rural areas.

At an MNC level, the returns from activities to improve resilience which require capital investment are often too low or too risky for those projects to be bankable (i.e. they are unable to obtain finance from banks). In

addition, it is not necessarily commercially viable for an MNC to invest in, for example, new equipment or technology for use by its suppliers. However, individual suppliers may not have the access to credit or long-term supply contracts to make those investments themselves.

Climate change and disaster risk awareness is by no means uniform across the MNCs consulted. At one end of the spectrum, industry leaders are acutely aware of the threat that climate change and natural disasters pose to their organisations and they are taking steps to reduce risk. Industries such as extractives, which are dependent on fixed assets, are considering longer-term resilience building actions. At the other end, companies have little or no appreciation of the associated risks and take a purely reactive response to isolated events. Inconsistencies in awareness exist not only across and within sectors but also between different departments and regions of the same company.

Collaboration across value chains and engaging big business is an important part of the solution. All but one of the MNCs involved in the consultation were interested or already involved in collaborating to deliver resilience projects, which could help government or development partners better understand business drivers. Whether it is working with the local government, the donor community, NGOs or the communities in which they operate, MNCs saw that partnering was critical to achieving greater resilience for their business. One organisation noted that MNCs were perhaps not considered as part of the solution often enough by governments when in fact they have a key and often lead role that they can play.

MNC consultations confirmed the importance of the role that business can play in leading a multi-stakeholder approach. Resilience challenges are multifaceted and affect a number of communities and organisations within a particular region. MNCs can lead a process which brings together different actors to collaborate in managing natural resources and building resilience, for example within a particular river's catchment area. The private sector can disseminate information to the wider community in order that they are able to engage as well in adaptation activities.

The local enabling environment is not robust enough to enforce resilience building action; a challenge for all private sector actors but most evident at the MNC level. Many companies still wait for regulation to act as the catalyst for a change in practice. In developing countries, there is the additional challenge that there may not be the relevant government institutions in place to develop and enforce the necessary regulation. An oil and gas MNC that was interviewed also discussed the inadequacy of surrounding infrastructure as a deterrent to significant company investment. The MNC felt that no project can be truly resilient in isolation. However, MNCs do not necessarily have the ability or capacity to make the necessary improvements to local infrastructure in addition to their own.

Domestic infrastructure constraints in developing countries tend to be a big challenge across sectors. When infrastructure is damaged during a disaster, businesses are at severe risk of disrupted distribution routes and communications networks, delays in receiving or sending products, and reduced worker attendance. This in turn leads to higher costs of doing business as well as other negative outcomes. For example, in Kenya, the poor state of infrastructure is blamed for the high level of insecurity in the region because of the inaccessibility of the region to security personnel. In Mozambique, rural infrastructure constraints appeared repeatedly as a major constraint. Businesses outlined the high costs associated with storage and transportation of goods due to the poor transport and power infrastructure in rural regions.

The private investment community

The private sector must play a major role in reaching scale and sustainability of investment in resilience. The scale of capital required to support a more resilient economy at large, far exceeds the financial capacity of the public sector. The global investment industry for example manages over USD 100 trillion in the form of pension funds, mutual funds, insurance funds, private equity, hedge and sovereign wealth funds. Contrary to popular belief, Governments have far less purchasing power than the private sector.

Investors do not receive a return directly from 'resilience' but it does affect their investment risk profile. Capital providers may be interested in the robustness or asset risk associated with their investment but deals will be delivered on a functional and transactional basis. A specific investment may have a primary purpose or product that plays a role in building resilience, however, the investment will primarily consider the prospect of repayment, or in the case of equity, the potential for growth. That said, a resilient project, or one that supports resilience outcomes should be a better, lower risk prospect.

Table 38: A simple typology of private sector investors

Source	Description⁸²
Institutional investors	Institutional investors such as pension funds, insurance companies, hedge funds and mutual funds are major shareowners and bondholders in many of the world's companies and significant investors in other assets such as infrastructure, real estate and private equity. They have a long-term outlook and tend to be risk adverse.
Commercial lenders	Companies or projects can be partially financed with debt, provided that the debt can be secured against a strong balance sheet or future cash flows. In return for lending the money, the individuals or institutions become creditors and receive a promise that the principal and interest on the debt will be repaid. Providers of debt to projects are mainly concerned with the risk that project sponsors default on their obligations. Debt investors conduct detailed assessments of project risks, modelling scenarios in which the borrower may default and likelihood of such a scenario. Debt investors typically target returns of 7-12%. ⁸³
Corporate investors	Companies tend to invest into a project derived from equity on their balance sheet or debt leveraged at this level. A company will evaluate a project against its cost of capital.
Private equity and quasi-equity investors	Provide equity for project finance. Typically invest equity and leverage debt to achieve higher returns. Equity investors bear most of the risks in project finance arrangements. Tend to look for returns of 15% or more. Provide a hybrid of debt and equity typically as debt capital that can be converted into equity if the loan is not repaid. It is generally subordinated to senior debt. Mezzanine investors typically target returns of 10-30%.
Venture capital	Venture capital investors make speculative assessments of a company's potential to generate returns. They take significant risk, but expect higher returns, typically greater than 25%.
Private foundations	Private foundations are un-associated entities often establishing as non-profit organisations by wealthy individuals. They tend to focus on particular development challenges in specific geographies and can act as important market facilitators. They are usually willing to accept results rather than profits and can therefore act in similar ways to public institutions. Their benefit is that they are free from political constraints and can be more agile.
Impact investors	Impact investors actively seek to place capital in businesses, organisations and funds with the intention to generate measurable social and/or environmental impact alongside a financial return.

Private sector appetite for investment is influenced by regulatory controls, financial returns and investment risk. The private sector must be 'enabled' through policy, but also gain access to a credible and strong pipeline of bankable and high quality investments. This is a major challenge for emergent resilience projects and initiatives where innovation and transition challenges are added to the investment barriers that hamper the growth of many developing markets.

To an investor, there are country level risks that apply to all activities in a given location. These include risks associated with the trading environment such as legal, regulatory and market development issues. Donor support already focuses on removing these barriers to development. A second group of barriers includes technology and project related risks. This second set of risks is what resilience related interventions might target using one of a range of investment support tools. Investors are unlikely to make investment decisions without evidence of successful demonstration projects. Demonstration and results from initial pilot projects are often a pre-requisite for investors to make an informed decision on an investment opportunity.

Improved investor awareness of resilience benefits can help drive investment. Disaster and climate change risks and opportunities are starting to be recognised by investor groups such as the IIGC, IIGCC, and INCR.⁸⁴ Investors in some locations (e.g. the European Investment Bank and the European Bank for Reconstruction and Development) are increasingly recognising and planning more resilience capital infrastructure projects. Over time this pressure should lead to revised investment policy, strategy or risk management processes. Signs of this movement in the broader responsible investment context are already emerging through the championing of the issue by initiatives such as the UN Principles for Responsible Investment (UNPRI). The UN PRI is a globally recognised platform formalising and focusing responsible

⁸² Partially sourced from: S. Gray (2012) Climate Change Capital – Engaging the private sector in project finance

⁸³ These typical targeted returns need to be contextualised in the particular country of operation and may therefore vary by country, sector and project type.

⁸⁴ (1) IIGC - International Swaps and Derivatives – (ISDA) Industry Governance Committee <http://www2.isda.org/committees/iigc-committees/> (2) IIGCC Institutional Investors Group on Climate Change <http://www.iigcc.org/> (3) INCR Investor Network on Climate Risk <https://www.ceres.org/investor-network/incr>

investment efforts, raising awareness amongst investors and providing a common language for all stakeholders.⁸⁵

The concept of Impact Investing could be engaged to drive forward investment in resilience and resilient projects; however increased investor awareness and education is still needed. Impact investors are looking to generate measurable social and/or environmental impact alongside a financial return. The increasing trend towards impact investing could be capitalised on to drive forward investment in resilient projects. Our consultations suggested that even with impact investors there is a need for further education and awareness of the social and environmental benefits and the understanding that commercial returns may not be seen until the longer-term. Part of the issue lies in being able to clearly demonstrate to investors the shorter-term positive social and environmental benefits of their investment (e.g. through social return on investment measurement techniques). Clear and quantifiable metrics are needed to demonstrate the non-financial benefits of an investment to an investor.

Summary of private sector needs and intervention points

The table below summarises the needs of each group of private sector actors across the primary domains in which they can act.

Table 39: Needs assessment by scale of private sector actor including validation of country feedback

<i>Business scale</i>	<i>Direct operations</i>	<i>Value chain cooperation</i>	<i>Development of products and services</i>
<i>Small and Medium Sized Enterprises</i>	<ul style="list-style-type: none"> • Risk information • Capacity building • Technology transfer • Access to affordable credit and risk transfer products • Regulatory frameworks for micro finance/ insurance 	<ul style="list-style-type: none"> • Awareness building of vulnerable communities and customers • Collaboration platforms • Methods and tools 	<ul style="list-style-type: none"> • Market information • Business plan support • Investment support advice • Access to markets
<i>National Companies</i>	<ul style="list-style-type: none"> • Peer collaboration • Sector development support • Technology transfer • Risk information 	<ul style="list-style-type: none"> • Risk information • Capacity build • Financial de-risking for lenders • Methods and tools • Collaboration platforms at sector and government levels • Information sharing and management systems 	<ul style="list-style-type: none"> • Innovation incentives • Legal and intellectual property support • Investment support
<i>Multi-National Corporations</i>	<ul style="list-style-type: none"> • Risk information • Methods and tools 	<ul style="list-style-type: none"> • Risk information • Knowledge platforms 	<ul style="list-style-type: none"> • Improved market entry conditions • Innovation incentives • Financial de- risking
<i>Private investors</i>	<ul style="list-style-type: none"> • None (limited) 	<ul style="list-style-type: none"> • Awareness and knowledge • Detailed risk information. • Business case related information. • Risk assessment methods and tools. 	<ul style="list-style-type: none"> • Detailed risk information. • De-risking support to lending and investment. • Policy structures, consistency and incentives.

5.2 Conclusions – what this means for future initiatives

Critical to success of efforts to engage the private sector will be the coordinated design and application of new initiatives. There is no single or commoditised solution that can meet all of these private sector needs. In fact a range of different forms of intervention is required to address barriers and opportunities at country, sector, project and market levels.

⁸⁵ <http://www.unpri.org/>

Collectively these efforts need to address the different stages of maturity for individual actions, projects or new products. But must also address the geographical and sector context, plus the type and scale of actor targeted. The following design considerations need to be accounted for in the design of public interventions:

- **Resilience needs to be a visible and logical imperative both to the private sector and the development marketplace.** Presently, disaster risk management and climate change adaptation have little identity and profile relative to other issues such as inclusive business and M4P. Resilience initiatives and actions need more space and presence within corporate and development circles. Businesses must be motivated to seek and invest in actions that reduce their risk and capitalise on market opportunities. In addition, development partners and countries should want to include and embed resilience into their programmes across all sectors. To achieve the goals there needs to be a forum or focal point for engagement which, for the private sector, does not yet exist.
- **Interventions need to be targeted both at country and sector level.** Support must be focused and legible to private sector partners and recipients. One of the clearest findings of the country research was that a global or regional mechanism was not going to have the depth of contextual knowledge required to be successful in supporting the needs of individual private sector actors. Consistent feedback from consultees indicated that support needs to understand and be designed to address the specific issues faced within a country and sector. Both country and sector contexts have a strong identity for the businesses with which we engaged and most had a strong sector or value chain bias. Spreading resources too thinly across countries could therefore result in weak penetration and engagement within the market and ad hoc selection of isolated projects. This will not lead to sector or market transformation. This implication is also important for the resourcing of programme support. Support for private sector action also needs to be accessible at a local level and with appropriate networks, language, skills and knowledge. This is also an important function of capacity building activity. This suggests that more value could be derived from a smaller number of targeted sectors and geographical areas, encouraging others to partner, adopt and support replication into other territories.
- **Support should have the capacity to drive ‘systemic’ approaches addressing multiple barriers within or between sectors.** There is no one size fits all solution, instead solutions need to involve multiple actors and be tailored to individual circumstances using a range of instruments, models and with considerable flexibility. The specific instruments deployed by the public sector must be accommodating to the operational context and barriers posed.
- **Private sector engagement needs to be commercially appropriate including qualification criteria, administrative burden, transaction costs, M&E demands and timings.** Positive engagement with the private sector can be hampered by language, culture and asymmetries of procedure. Public finance solutions will have to be governed by the normal procedures of quality, value for money and transparency. However, careful thought should be given to the cost-benefit of private sector actors reaching out for public support. Flexibility in procedural and temporal considerations are likely to be important facets in getting the tone of engagement right.
- **Selected approaches should focus initial support where the appetite and feasibility is highest.** Resilience actions are diverse and should be prioritised by impact potential and viability. Where the private sector is already weak, it may be difficult to raise the profile of resilience related actions unless there is a compelling case to do so. This is not to say that these opportunities should be ignored. Rather, a different model of intervention is required. Scoping of support should therefore use these basic criteria to limit efforts to the issues and locations where the greatest need exists, but also where the potential for results is highest. This will be important to developing credibility, track record and learning.

6. How to transform the private sector response

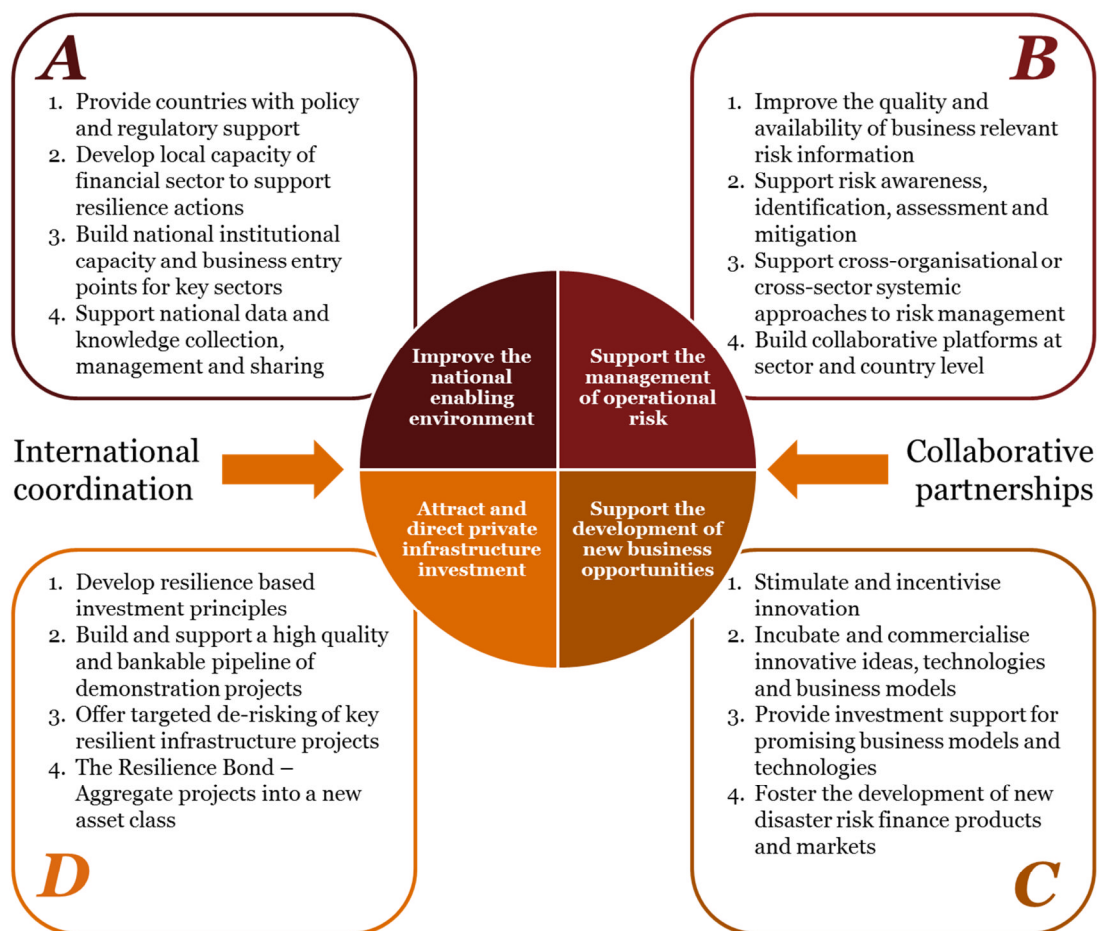
6.1 A framework for public-private action

This chapter sets our final recommendations for augmenting the existing landscape of public finance mechanisms and, if appropriate, creating a new and transformational resilience support mechanism. The recommendations are relevant to all stakeholders that can play a role in supporting action on this issue. This includes donors, national governments, private sector actors and NGOs. As the sponsor of this work, DFID may want to take a role in supporting some recommendations in line with its strategy and operations including working with other development actors.

The recommendations are organised into a framework for public-private sector action (see Figure 13 below). This helps to navigate the complex range of challenges and opportunities, and potential public sector supported interventions.

The recommendations address all aspects of our analytical framework and theory of change including the entry points and groups of private sector actors referenced throughout. They are supported by two overarching principles – international cooperation, and collaborative partnerships – both critical to successful implementation of the recommendations.

Figure 13: A framework for public-private action



6.2 Operational approach A: Improve the business enabling environment

A supportive local business enabling environment for action on resilience-building is central to the proposed transformative approach. Specific interventions are required at international, national, sub-national (where relevant) and sector levels.

Table 40: Summary of recommendations: improving the enabling environment

Recommendation	Description
A1: Provide countries with policy and regulatory support	<p>In all countries, the private sector recognised the important role of government in creating a sound policy and regulatory environment for resilient economies.</p> <p>There is a need to prepare or update national (or sub-national where relevant) policies and regulations relevant to resilience activities implemented by the private sector. This should focus on key risks and sectors that are heavily impacted or critical to the resilience-building solutions. Engagement of the private sector as a whole - business and investors – is often lacking in these processes but critical to success. Policy should frame the roles and responsibilities of the public and private sector clearly setting out forms of public-private partnership that extend beyond emergency response to risk management planning and driving national stability and competitive advantage through improved resilience.</p> <p>In practice, policy and regulatory support could range from improving the enforcement of building codes in the construction sector, to land tenure or intellectual property reform, to improving the regulatory environment for small businesses entrepreneurs or foreign investors.</p> <p>Policy and regulation issues relevant to business often arise at sector level. For example, for insurance, enabling regulatory support might include regulating micro-insurance products to support weather risk transfer solutions, the introduction of compulsory classes of business to increase insurance penetration and expansion in the non-life sector, setting up of licensing conditions to oblige insurers to source business from certain product lines or social sectors, allowing banks to represent multiple insurers to enable bank assurance models and removal of regulated insurance rates to enable risk based pricing.</p> <p>The Climate and Development Knowledge Network and the Pilot Programme for Climate Resilience are examples of existing programmes that have a specific mandate and capability in this area. However, experience on specifically bringing in the private sector to date has been limited. There are other forms of technical assistance programmes that could support the policy environment including those implemented by MDBs who already work extensively with the private sector.</p>
A2: Develop local capacity of financial sector to support resilience actions	<p>Access to finance was one of the commonly referenced barriers to local private sector action on resilience. SMEs, microenterprises and smallholder farmers often need credit for short-term working capital and to adopt new practices that improve resilience (e.g. to purchase new seed varieties or irrigation technologies that bring greater yields and increase climate resilience). There is a multi-country/ sector need to support affordable lending and resilience-incentivising financial product development by local financial services institutions. Local financial institutions are rarely able to offer services and products to the poorest and most vulnerable people and businesses, many not viewing them as a viable market segment.</p> <p>While a conservative credit strategy is generally considered good practice, often this behaviour is driven by the unfamiliarity with project/practice, technology or business types. A public finance backed intervention is required to support the banks' credit risk exposure, help them understand the commercial market opportunity, undertake product design and development, develop partners for outreach and distribution and gain track record on these new market segments. Confidence can be built through donor backed guarantees, credit lines, and financial intermediary training, for example. This intervention should help to expand lending and increase the affordability of loans.</p> <p>It may be possible to work through MDBs, national development banks and credit support agencies to deliver support. However, there are also social finance partners including microfinance institutions and large businesses already active on this issue but without the financial depth to reach all of those businesses and smallholders in need. The PPCR programme in Zambia, for example, is already assessing how to implement such an intervention, but on the whole support in this area is very limited and un-focused.</p>
A3: Build national institutional capacity and business entry points for key sectors	<p>There is substantial headroom for public finance to support improved institutional capabilities at country and sector level including a particular gap regarding the presence of and quality of engagement with business.</p> <p>Acknowledging the range of existing actions by public initiatives that are working to support national governments with resilience planning, support to date has only made marginal inroads to developing sustained institutional capacity to work with the private sector.</p> <p>In addition to supporting technical tasks and programmes, there is need to support government institutions to further develop their capability, skills and resources to engage</p>

business in policy making, planning and implementation. Where it already exists, current capacity tends to be linked to major sectors or hazard exposures (e.g. an earthquake rehabilitation agency or the Ministry of Agriculture for example). This can create an effective but narrow window for private sector engagement.

Institutional capacity and effectiveness could be improved by:

- Mapping the skills and capabilities of the private sector to support disaster risk management and climate change adaptation actions
- Engaging business in national disaster risk and climate change planning efforts including preparedness and emergency planning processes
- Providing clearer access points for the private sector to engage with government agencies
- The creation of public-private policy development and implementation groups at sector level

Other sectors need institutions that provide them with access to information and opportunities for public-private collaboration. This could be a climate change or national disaster management authority, which do exist in many countries.

A4: Support national data and knowledge collection, management and sharing

Supporting improved national risk data, tools and knowledge management around resilience aimed at local business users. This could include the creation of a national risk and resilience portal for businesses. Currently when business recognises a business risk or new opportunity, it is very difficult to access useful information on how to assess and respond to these risks and opportunities.

Robust national risk and resilience assessments need to rely on a sound data infrastructure to collect, organise and disseminate detailed data on losses, vulnerabilities and exposures. The availability, quality and cost of obtaining this data are fundamental to the development of sustainable market-based risk financing products. Without adequate data and knowledge resources businesses are unable to adequately identify, price and manage climate and disaster risks.

Most governments have reasonably good systems for collecting weather data but they are missing the quality systems for archiving and sharing analysis and trends. A robust market needs a sound system to collect, organise and make available detailed data on hazards, losses and exposures. Protectionist attitudes to data and excessive pricing are also observed, which can hinder business uptake particularly for smaller organisations. There is potential for fairly governed commercialisation of data and related services though accessibility and uptake by different private sector groups need to be considered.

International public sector support can help create greater access to existing data, improve data quality and packaging, and enable data sharing and dissemination opportunities. Interventions might include:

- Technical assistance at a country-level to prepare an inventory profiling the quality, coverage and data handling and storage procedure adopted, and the existing providers of, and market for, risk information
- Investment (debt/equity based) interventions to support private or public-sector analytical and data processing ventures
- Technical assistance to develop tools and models to support risk management activities by businesses
- Technical assistance to develop a national or regional risk and resilience knowledge portal for businesses. This might include: links to key geospatial hazard and exposure data, peer to peer learning and mentoring, a market place and matchmaker services for goods and services, a “how to” guide or tool assess risk and business impacts including supply chain risks, emergency and contingency planning guides and contacts, advice on IT, communications and systems recovery, how to plan for and respond to risks including a tool for assessing risk mitigation options, governance and risk management procedures and business case studies.

The Pacific Risk Information System (PRIS) is a multi-country example of a knowledge sharing programme that has been developed under the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI). The initiative aims to provide Pacific Island Countries (PICs) with disaster risk modelling information and assessment tools for improved disaster risk management. GFDRR has also supported national data management portals, for example, Saint Lucia Integrated National Geocode (SLING). However, nearly all of these initiatives tend to be focused on public sector users.

6.3 Operational approach B: Support better business operational risk management

Table 41: Summary of recommendations: Operational risk management

Recommendation	Description
B1: Improved the quality and availability of business relevant risk information	<p>Create and publish detailed risk information for business. The availability of high quality information relevant to businesses remains a major challenge and barrier to action.</p> <p>Businesses want to be able to access information at a resolution that affects their assets and supply chains. This information needs to be detailed enough that they can monetise risk and make informed investment and tactical decisions. Accurate risk data can support business investment decisions but also facilitate the development of local insurance markets with appropriate pricing that encourages risk-reducing actions.</p> <p>This is a considerable undertaking for any one organisation. Businesses need to be able to access information on hazards, impacts and exposures in a wide range of countries, but also in detail at site level.</p> <p>Business needs access to better tools which they can use to assess and respond to risks. This is a more achievable short-term goal. Information on hazards, exposure and vulnerability will take longer to develop.</p> <p>Tools and platforms are currently available, which support country level risk data (e.g. UNISDR's GAR data platform, World Bank Climate Change Knowledge Portal); however, this data is often not in a usable format for business to use (e.g. resolution is too low, inconsistent or patchy reporting/metrics across geographies and hazards, outputs are climate variables rather than risk metrics).</p>
B2: Support risk awareness, identification, assessment and mitigation	<p>Support effective management of risks, particularly for domestic developing country national businesses and SMEs. The lack of risk governance and effective risk management systems in many private sector organisations increases their vulnerability to risk, and also exposes local communities, suppliers and customers to increased risks. Risk management therefore needs to be effective to mitigate internal and external threats.</p> <p>Natural disasters and climate change risks should be meaningfully incorporated into wider financial, operational and strategic risk management processes. The key steps for organisations to be supported with are:</p> <ul style="list-style-type: none"> • Risk identification and screening • Risk assessment and impact evaluation • Risk mitigation evaluation, planning and implementation • Risk monitoring, reporting and communication <p>Public support needs to raise the awareness of risk management, demonstrate the business case for it and support its implementation. This requires technical assistance to be made available to individual companies and facilitated by knowledge tools. Different scales and types of business will require different formats of support, tailored to be relevant and pragmatic. A farming cooperative may work with extension service providers to facilitate training, whereas a national company may require capacity building of key staff or access to tools and models for risk assessment and the economic evaluation of mitigation options.</p> <p>National governments are increasingly being supported to develop their national risk assessments (e.g. Caribbean, Kenya, Pakistan, Ethiopia), including by international public finance programmes (GFDRR, PPCR, MDB and UN programmes, CDKN, GGGI), however much of this information is unavailable or not tailored to business recipients. There remains a clear gap in risk assessment support for private sector actors at the sectoral, organisational and value chain level.</p>
B3: Support cross-organisational or cross-sector systemic approaches to risk management	<p>Invest in transformational solutions that address shared risks at sector and spatial scales. Beyond the consideration of external risk factors and impacts that are the responsibility of organisations, there are more transformation opportunities to manage systemic risks at sector or geographical levels. The systemic issues are characterised by multiple barriers, challenges and stakeholders. Solutions are not always immediately obvious and commonly more than one intervention is required.</p> <p>Examples include agricultural value chains developing access to markets or multi-stakeholder approaches in exposed urban environments. As an example, to connect smallholders with new markets you may need:</p> <ul style="list-style-type: none"> • Market analysis to identify the commercial opportunity

- Accessibility of a new resilient seed and/or technology in the local market
- Short-term affordable credit arrangements to allow the farmer to purchase the new inputs
- Agricultural extension services embedded with resilience capacity building
- Infrastructure to collect, store and transfer the product to market
- A payment model, infrastructure and allocation system that is accessible, reliable, cheap and fair

Similarly, in an urban environment there would be challenges in getting businesses, residents, utilities and municipalities to form common goals, objectives and plans to build resilient infrastructure and behaviours. There is likely to be technical, financial and facilitation support required to assist the development of solutions that are feasible, equitable and commercially viable. To date, Rockefeller Foundation supported Asian Cities Climate Change Resilience Network (ACCRN) and the proposed multi-donor backed Urban Climate Change Resilience Partnership (UCCRP) are operating in select Asian countries in this space with a focus on business engagement.

Public support can help to identify and support these systemic approaches with focused intervention (using a range of instruments including technical assistance, grants and loans) at sector and local levels. These solutions have the potential to set new models for sector development and replicate these to resolve similar issues in multiple countries and sectors. As a result they offer high transformative potential.

B4: Build collaborative platforms at sector and country level

Encourage collaborative partnerships through country and sector focal points. As with the knowledge platform, the private sector can be most effectively engaged at sector and country level. Private sector actors are interested in value chain partnerships, public-private partnerships including at the local level and also sector alliances.

This facilitative intervention is intended to reflect the multi-stakeholder responses that have been demonstrated to be effective in building resilience. The platforms could stand alone but would more likely be integrated as part of an appropriate institution or country programme.

Partnerships could be formed at global level too, however, it is thought that the main focus of these would be in-country and/or regional and between companies operating as part of a value chain.

6.4 Operational approach C: Support the development of innovative new business opportunities for resilience

Coherent and continuous support is required to take new products and services from innovative ideas through to commercial products and services available at scale. The evidence collected for this report notes examples from insurance and agricultural services where credible and even successfully piloted ideas have been stalled as a result of a lack of continuity of financial support.

There is in fact very little support offered to commercialise new innovations in developing country markets. Small companies in particular can struggle to access finance to develop new market segments, grow their businesses or identify partners to help bring their innovations to market.

There is a need to provide sequenced public support at each of the five commercialisation stages outlined by this report.

1. Identifying risks and resilience opportunities
2. Innovation and design of resilience products and services
3. Business model development
4. Piloting and demonstration
5. Full scale commercialisation and investment

It should be noted that continuity of support through these stages is the ultimate objective of these recommendations and is currently missing, which hampers innovation at scale. While today a number of programmes exist that support resilience opportunities through stages 1-2 (e.g. AECF, BIF), this only occurs at a small and patchy scale. The existence of a mechanism, which could deploy a combination of instruments to support progression through the commercialisation process, up to and beyond large scale investment structuring and monitoring is missing. There are similar donor-backed mechanisms that are currently under development or early implementation at country and multi-country scale to facilitate the commercialisation process for other thematic areas, including Forestry/REDD+ (e.g. UK's REDD+ Facility), and renewables and energy access (e.g. US' Power Africa Initiative).

Also missing is a linking, coordination and partnership-building role between any relevant initiatives that support any one of the commercialisation stages within a country or region.

There is a need to facilitate collaboration with existing private sector development programmes and innovation centres, and with financiers from development finance institutions, mainstream and impact investors, and philanthropic organisations. More effective linking up and hand-over between existing and new initiatives along the commercialisation process enable a strong pipeline of investable new resilience opportunities to build up. In some cases this may result in different initiatives providing shared services within a given sector or country.

Table 42: Summary of recommendations: supporting innovative new business opportunities for resilience

Recommendation	Description
C1: Stimulate innovation in new business models, products and services for resilience (stages 1, 2 and 3)	<p>A lack of early stage business development support to new resilience ideas is hampering innovation at scale. Public support needs to find new ways to incentivise and bring forward new private sector led R&D, business models and technological solutions for resilience.</p> <p>In addition, local and international partnerships are powerful means of unlocking transformative new solutions. Partners can bring resources, investment, technical skills or sometimes a different interest that is not currently being served by the business model. It is possible, for example, to blend social and commercial investors to deliver a particular solution.</p> <div style="border: 1px solid black; padding: 5px;"> <p>A good example of facilitating new partnerships for innovation is a BIF project that supported AfriNut, an inclusive pro-poor peanut processing business, which aims to process Malawian groundnuts for sale in domestic and regional markets. It will be financed and co-owned by shareholders from the commercial and development sectors including the National Association of Smallholder Farmers of Malawi (NASFAM), TWIN, Ex-Agris (a commercial agricultural company with interests in Malawi), Cordaid (a Dutch donor organisation) and Waterloo Foundation (based in Wales).</p> <p>The business will deliver a new commercial model but to make it viable, social investors are buying the projects' co-benefits, which include improved food safety, treatment of malnutrition and as an input to HIV Anti-retro Viral programmes. The social investment received helps the project become commercially viable. A willingness to invest in risk reduction, averted losses and co-benefits of resilience actions may support business models in a similar way.</p> </div> <p>How? Private sector innovation can be best supported through the use of challenge / innovation funds and prizes. For both mechanisms innovation is driven by the market, competition raises the quality of ideas, the process develops a pipeline of diverse (sector, geography, recipient, solution) innovative and commercially viable examples of private sector resilience solutions, and can raise awareness of the business case for resilience through effective marketing, knowledge exchange and knowledge generation.</p> <p>Challenge / Innovation funds or facilities: Innovation facilities or 'challenge funds' are proven mechanisms for stimulating private sector innovation and have increasingly been used by DFID and other donors over the past 5-10 years to deliver efficient results with the private sector. Their comparative advantage is their ability to be powerful, light-touch mechanisms that stimulate the private sector to test new ways of working where the solutions, risks and returns are unknown. Some 'challenges' may focus on the development of technology, some test the advances of new business models and some may seek to identify the partnership models and supply chains of the future.</p> <p>Challenge funds are different from prizes and price support mechanisms (e.g. advanced market commitments) as they can share upfront risks with the private sector in early stage development and private finance is directly leveraged to co-finance new ideas. In addition, unlike prize processes, challenge funds can provide businesses with technical and business development support to develop new resilient business models and partnerships upfront rather than awarding demonstrated success. This makes them more accessible and relevant and powerful for SMEs and developing country entrepreneurs.</p> <p>To date, several challenge funds have experimented with supporting resilience related innovations including the Africa Enterprise Challenge Fund REACT Window (e.g. focused on smallholder farmers and microfinance solutions), the 2009 Development Marketplace competition on adaptation (including projects on water technologies, resilience infrastructure and sustainable agriculture) and the Business Innovation Facility (including projects on resilient supply chains and water technologies). However, in each case the programmes have only generated a handful of resilience projects with feedback that the outreach and awareness raising around what represented a 'resilience' or 'adaptation' solution was minimal, therefore impeding response rates.</p>

There are existing challenge fund vehicles that DFID and others have access to; however, it has been evidenced that DRM and CCA challenges need increased visibility, profile and focus. It is therefore recommended that to tackle this particular need, a new private sector development mechanism is designed targeting innovation in resilience solutions that can work with others to spur innovation in multiple countries and sectors including Pakistan, Bangladesh, Mozambique and possibly Kenya.

Innovation prizes are another interesting vehicle that can be used to bring forward innovative ideas and approaches and to increase outreach and awareness of solutions. Much like a challenge fund, prizes are a mechanism for awarding financial contributions to third parties on a competitive transparent basis for an innovative resilience related business model, technology and / or product or service that meets set criteria.

‘Grand’ prizes with single high value awards are more likely to be applicable to the international context with smaller and more dispersed awards more appropriate for country and sector activity. The design of these prize structures need to account for the pros and cons of issuing prizes for these purposes. In particular, the prizes need to be sufficiently targeted to focus efforts on solving a particular problem; however, not so narrow as to exclude a wide range of participants.

Alongside business innovation mechanisms such as challenge funds and prizes, the correct business enabling environment must be supported in parallel. This will be critical to the implementation of any preferred solutions.

C2: Incubate business models and support piloting and demonstration projects (stages 3 and 4)

This recommendation focuses support to organisations that have good ideas with potential but need the support initial support to pilot their product/service to demonstrate a track record, market feasibility and ‘investment readiness’. At this stage businesses need technical assistance, partnerships and finance to help them realise their potential.

Business model development: Businesses, particularly SMEs, need practical support with development of their business plan, operating models and investment plan to grow their business. Finding the right production, pricing and distribution model that fits the particular context at the base of the pyramid is difficult for SMEs to do alone. This support needs to help projects understand their market, competition, supply chains and customer behaviour. They need to be sure they can sustain business inputs, distribution and if possible exports.

Demonstration and testing: Investors will place greater trust and offer cheaper finance to a venture that is likely to work. Demonstration, proof of concept or piloting (as appropriate), are a means to test technologies, learn more about the business model, identify pitfalls and optimise the product. Businesses need financial and technical support at this phase to demonstrate their worth to investors.

Technical assistance is central to this but capital grants and / or concessional or non-recourse loans also play a role to pay for new prototyping or demonstration models. There may also be marketing materials or advertising required to promote the business. Often these small capital constraints can really deter a small business or entrepreneur from progressing a product or idea, or being successful in finding investment partners. Both of these stages could be delivered through a hybrid challenge fund and/or market systems development TA facility as described in C1.

C3: Provide investment support for tested business models, products and services to attract longer-term/ scaled up investment (stage 5)

Support scaled up / longer-term investment with technical support on fund-raising and deals structuring, to financial de-risking instruments.

New ideas that are being tested in a market for the first time carry significant risk for investors. Even with support to business models and funding to assist with piloting and demonstration phases, investors will ask searching questions before committing funds to a new idea in a developing country. In fact, most technology innovations fail to make it from concept through to full commercialisation stage as a result of failing to secure investment.

The risks to investors are high. Demand may be nascent, products or technologies do not match current standards and are subject to a volatile local policy environment that may undermine product attractiveness. More fundamentally, small businesses are vulnerable and start up risks such as input costs or enforced shut-down may cause early financial shocks that a business is not yet able to withstand.

Support to commercialisation may help protect some ideas from having to be sold to private equity investors or larger corporate entities (though in some cases this may be desirable). Unfortunately, when acting in isolation many domestic financial institutions do not have finance of the right type for inclusive business models. Public support that helps to secure local investment may help preserve increased profits within the local economy and distribute benefits closer to the base of the pyramid. This can be delivered through a local financial intermediary, or directly.

Help businesses explore new forms of investment. Public support can help provide a matchmaking service to potential partners, micro-franchisers, collaborators or investors. It might do this through investment workshops. This might include exploring the relevance of impact investment, which is a growing market that is often unfamiliar to many entrepreneurs. Impact investors will often balance social gain by expecting a slightly lower commercial return. These investors could be an ideal match for businesses developing risk reducing and adaptation

products and services. Crowd funding (e.g. see www.crowdcube.com) is an exciting development in online small business start-up funding in the UK. Could mobile technology support micro investment via SMS for example?

Public finance support can help to de-risk investment they are making off balance sheet, or assist a business' creditor position with potential investors. Supporting instruments might include a policy or technology guarantee for the products to be supplied with all sales, or a loan default guarantee provided to a local financial institution considering the loan. For example, Innovations Against Poverty can link companies and their financiers to the Swedish Development Cooperation Agency's Guarantee programme, which offers guarantees for reducing the risks of ventures with a strong developmental dimension. A complementary measure would be to intervene in the emerging market to provide a forward-looking price support mechanism which could act as a temporary but effective measure to set a clear market price and therefore assist internal and external investors.

In addition, joint public-private ventures could be established in which the public-sector investor (e.g. an IFI or DFI) provides mezzanine debt or first loss equity alongside technical support on business strategy and governance.

A further public intervention would be to assist a private enterprise by helping them to attract, syndicate, structure and negotiate financial transactions with investors. This might include hosting an investor day, structuring a deal including financial modelling or advising the entity on its negotiations with the finance provider. Successful companies would also have future requirements to seek equity or raise debt. Having the confidence and skills available to support these actions, and structure the deals, would help more ideas reach greater scale.

C4: Foster the development of new disaster risk finance products and markets

Risk transfer mechanisms (e.g. insurance, reinsurance, insurance pools, catastrophe bonds, micro-insurance and weather derivatives) have an important role to play in reducing economic interruptions to growth due to natural disasters.

Whilst climate change can impact insurability itself, by using innovative products that address single or linked peril covers and that reward risk mitigation practices and using underwriting practices that incorporate forward looking dynamic risk modelling, insurance can be an important tool for climate change adaptation.

To scale up the provision of disaster risk finance products governments and development partners will need to intervene more actively by playing important enabling and facilitating roles to stimulate local markets, including support for: developing national weather services, infrastructure, data systems and research; creating an enabling legal and regulatory environment; supporting risk pools if the local insurance market is not adequately covering a peril; providing technical assistance, training, and product development support to the insurance value chain; supporting marketing and distribution channels for insurance so that they can reach a wider customer base, particularly in rural areas; educating communities and companies about the use of insurance; partnering with international (re)insurers bringing in the necessary international skills, capital and capacity to kick-start local market activity.

6.5 Operational approach D: Attract and direct private infrastructure investment to build resilience

Table 43: Summary of recommendations: improving the enabling environment

Recommendation	Description
D1: Develop resilience based infrastructure investment principles	<p>Investment in resilience needs some shared principles to support successful, high quality and sustainable capital infrastructure projects. New principles directed towards resilience issues should be co-owned between government, the private sector and the IFI/ DFI community. The principles would seek to increase the attractiveness of projects and deals that have primary or secondary resilience benefits. They would also set the minimum standards to be achieved in designing new infrastructure projects in disaster prone or climate change affected areas.</p> <p>The Capital Markets Climate Initiative, Principles for Responsible investment and the Equator Principles are all examples of similar principles that address sustainable and responsible investment and low carbon development. There is a gap around the resilience agenda, which has often been viewed as the sole remit of the public sector. The objective would be for these standards to be subsequently adopted as part of internal pre-investment due diligence processes, by development finance institutions, and (ideally) commercial infrastructure financiers.</p> <p>Recognising that there are genuine business and infrastructure investment opportunities to be gained, it is proposed that the public sector leads a process to develop, publish and recruit organisations to sign up to the new principles for resilient investment.</p>

D2: Build and support a high quality and bankable pipeline of demonstration resilient infrastructure projects

Focusing on selected countries and sectors, public support should be administered to develop a portfolio of investment grade infrastructure projects that target resilience outcomes. A form of country programme is required in which networks within the local private sector community identify potential projects that have resilience benefits and then supports their development and investment readiness. Support would be provided to address issues such as:

- Market assessment
- Technical feasibility (including risk and resilience assessment)
- Financial structuring
- Investor relations and syndication of finance

The goal of the programme would be to build a diverse portfolio of potential investments that are fine-tuned until they are investment ready (possibly in line with the principles set out in recommendation D1). The programme would support the investment and deals process from the project developer's perspective, and if necessary provide marginal financial interventions such as forms of limited risk sharing to facilitate the deal. The aggregated assets could also be suitable for a form of bond issue. These two opportunities are separately addressed in D3 and D4 below.

D3: Offer targeted de-risking of key resilient infrastructure projects

Public sector support can de-risk marginal resilience projects making them more attractive to the capital markets. De-risking investments is possible through financial instruments and through public-private partnerships.

Major infrastructure projects are increasingly developed as PPPs in which a variable proportion of the investment and risk is carried by the public sector and by private investors. PPPs can be structured to specifically address the management of disaster and climate change risk. Certain perils can be mitigated in design, some are handled by insurance, but others may need to be swapped or transferred as part of the PPP contract. The disaster related layer of risk may, for example, be transferred to government in return for extended performance guarantees construction times or service levels.

Financial de-risking instruments would involve an intermediary such as an IFI or DFI that would provide a form of risk guarantee to the project lender. This guarantee could take the form of a price guarantee or a local currency guarantee for example. Alternatively an infrastructure development facility would take early stage project risk (i.e. the costs of designing, planning and bringing a project to financial close).

Public support would establish infrastructure development funds and resources to carry out the above functions. The focus on these funds and resources would be resilient infrastructure projects in sensitive sectors (e.g. water, energy and agriculture).

D4: The Resilience Bond - Aggregate projects into new asset class

The bond market is attracting growing interest as a source of debt capital to finance more sustainable infrastructure solutions. Bonds are particularly suited for providing sources of capital to finance long-term infrastructure projects (i.e. 10+ years). The extra upfront investments tend to be balanced by much lower operating costs, notably in the building, energy, industrial and transport sectors. These sectors are targeted because revenue streams are generally predictable and stable.

Climate change bonds, currently valued at over USD 350 billion⁸⁶ have been issued by corporations, financial institutions, municipalities, state-backed entities and project related special purpose vehicles. The concept of a resilience bond would be an aggregation of projects that meet minimum standards in terms of their contribution to resilience goals. They might include built environment projects, green infrastructure and forestry bonds, water and defensive infrastructure.

Public support would be required to help aggregate and potentially issue the bonds. This aggregation would allow for diversity of investments blending some lower yielding assets with higher yielding projects and income sources. A second function would be for the public sector to provide forms of risk mitigation to increase the attractiveness to investors. It is recommended that the feasibility of resilience bonds be examined in more detail including the role of concessional finance in improving their attractiveness and how project (and possibly corporate) aggregation could work.

Principles to embed across the operational approaches

International cooperation: The international discourse on climate change adaptation is dominated by the ongoing UNFCCC process and negotiations. Disaster risk management is currently addressed through the Hyogo Framework for Action, which is due to be updated in 2015. These processes are generally slow and highly political. As a result, these environments are not conducive to practical outcomes that address private sector needs in the short-term.

⁸⁶ Climate Bonds Initiative (2013). Bonds and Climate Change – the state of the market 2013.

There is a need to support a range of activities through international cooperation including for example: knowledge sharing including practical case studies, the harmonisation of existing public support efforts, transparency and sharing of tools, case studies, evaluations, results and learning and synergised approaches to technology transfer. Without a natural international focal point to address these issues, there is a risk that the recent momentum built around these issues will be lost. Some existing options for coordination include:

- The UNFCCC process does provide a regular engagement platform though it is not designed to engage business directly. Mitigation tends to dominate the agenda though there is the Nairobi Work Programme, which is set up mostly as a knowledge sharing hub for the private sector.
- The Green Climate Fund's Private Sector Facility is a recent outcome of the UNFCCC process but is not yet fully designed and operational. This facility is likely to play an important role in private sector investment into infrastructure in particular, but will more widely look to establish channels to leverage private finance into all areas of climate finance, including adaptation.
- Following a heavy focus in the UN Global Assessment Report on the private sector, the UNISDR and its private sector advisory group is another entry point. This group/ UNISDR would need to form a more concrete platform to engage a greater variety of private sector actors.
- As a process, the Hyogo Framework for Action is planning to do more to engage the private sector. It remains to be seen what is negotiated in the post-2015 framework.

Collaborative partnerships: The need for improved partnerships and collaborative approaches has been a consistent theme throughout this study. The private sector is looking to governments for more direction and planning but the same governments are looking to the private sector for support in disaster risk management, particularly where budgets are limited and their capability is weakest.

The public sector can build on the experience and vested interests of businesses with large fixed assets to more effectively manage disaster risk, particularly where those businesses are linked to communities through its workforce, supply chains or geography. Private sector partnerships with public planning bodies should play an important role in reducing vulnerability and exposure to physical hazards. Communities of interest also have an informal but powerful role to play in governance at the local level.

This reports emphasises the opportunities to reduce risk through the discovery new collaborative partnerships within sectors, value chains, between public and private entities and in turn with impacted people and communities.

7. Implementation options

7.1 Public finance support - options appraisal

This report has illustrated that current donor-led private sector resilience support activities have taken place on an opportunistic and geographically limited basis. Private sector awareness of, engagement with, and investment into resilience outcomes is limited as a result. As a select group of nascent initiatives mature (e.g. the IADB's PROADAPT Facility and IFAD's ASAP smallholder agricultural support programme), new and improved resilience outcomes may be achieved in focused sectors and geographies. However, our analysis suggests that real potential and demand exists to achieve more transformational private sector engagement and investment, and that a more ambitious, innovative and coordinated effort is required.

Recognising that public resources are scarce, there are a range of options available to deliver some or all of the operational approaches set out in chapter 6. This section highlights the range of options that are available to enhance engagement of the private sector to deliver resilience benefits. Each option has benefits and drawbacks which need to be carefully considered in making decisions as to the most appropriate response and use of resources.

The framework of recommendations is an invitation to development actors to find ways to meet common goals through their differentiated geographical and operational interests. This final section considers the range of mechanisms through which these recommendations *could* be implemented with public resources. The three main options considered are all potentially viable solutions either implemented alone or in combination. It is not intended that any one donor or institution would work alone in implementing these recommendations. A combination of options may be selected, depending on the ambition of the implementer(s), appetite for coordinated action between existing programmes and the availability of funding and other resources. A collaborative or at least coordinated approach is preferable to maintain overall coherence in an increasingly busy and complex portfolio of action on climate change and disaster risk.

7.2 Identifying public finance modalities to support enhanced private sector engagement and investment

This section presents a spectrum of approaches for which the public sector could support enhanced private sector engagement and investment into resilience. For ease, we have grouped the wide range of potential options into five possible approaches:

- 1) Business as usual (BAU):** This is a reference scenario - or counterfactual - in which no intervention is made to the current landscape of initiatives targeting private sector resilience action. The challenges and barriers and ad-hoc and opportunistic nature of current projects summarised earlier in this report are therefore expected to continue. Some progress with the implementation of nascent initiatives such as IFAD ASAP and PROADAPT is expected but this progress will be limited in geographical scope and sector focus.
- 2) Modify existing and planned initiatives.** This approach represents a range of flexible interventions to modify existing and under-development resilience and private sector development initiatives. The feasibility of embedding resilience as part of a wider approach of a current initiative will vary by specific initiative. Major reconstructions of existing operating initiatives will not be possible; the changes recommended must be fit-for-purpose for the existing operating model, results framework and funding modality of the initiative concerned. The level of coordination and connectivity between different initiatives, and the gaps in our recommendations framework which are likely to remain, are also considered as part of this option.
- 3) Demonstrate a new approach through a short-term pilot resilience focused private sector-support programme.** This approach presents a pilot "Business Resilience Facility" that would demonstrate new coordinated approaches to scale up private sector engagement and investment in resilience, in a time bound (2-3 year) and resource-bound setting. The opportunity is to incubate a visible new facility that champions business resilience, acts as a focal point and knowledge hub for coordination and collaboration on resilience in the private sector and can deliver priority operational approaches lacking in the existing landscape (namely, support around approaches: B. operational risk

management, and C. innovation and investment readiness). The pilot would focus on delivering a pipeline of demonstration projects and would provide the opportunity to incubate and test the facility approach in a handful of priority countries or sectors. An evaluation of the pilot programme would enable lesson learning around areas of support in greatest demand.

- 4) Create a new large-scale multi-country resilience focused private sector-support programme.** This approach would create a longer-term (5-10 years) multi-country (e.g. “Business Resilience Facility” or “Resilient Markets Facility) operating in multiple countries and sectors with the ability to coherently coordinate and implement support across all four operational approaches outlined in 6.1. The facility would champion private sector resilience acting as an international focal point and run country programmes across a selection of countries. A number of innovative financing mechanisms could be deployed through funding “windows”, targeted at key private sector resilience barriers. Design options for this new Facility are presented in this report. A new large-scale facility would offer the opportunity for multiple donor agencies to collaborate; therefore aligning international appetite and efforts to scale up action around resilience. It could be set up to be complementary (and a feeder) to the Green Climate Fund.
- 5) Create a new Global Resilience Fund:** A final option which is possible but not set out in detail within this report is the creation of a global resilience fund. This model is evidenced by current examples of large global funds such as the Global Fund for AIDS, Malaria and TB, GAVI, and the nascent Green Climate Fund (GCF). Our consultation and analysis has illustrated the need for action to be focused, specific and targeted at country or sector level with dedicated knowledge sharing and ownership at country level but this could act as a fund of funds structured to support this more focused action.

This report does not recommend pursuing the ‘business as usual’ or (at least in the short-term) a ‘global fund’ type approach. Our report findings underscore that the BAU approach is likely to be ineffective, and that a change in thinking and ambition is required. Equally, the idea of a fully-fledged and new global fund architecture requires significant international coordination and political buy-in and is likely unachievable in the short to medium term during which scaled up action is essential (i.e. the next three to five years). The idea of a long-term global fund is also politically questionable in terms of its alignment with the emerging GCF private sector facility architecture. Instead, piloting a new multi-country facility and/or approaches could act as a welcome feeder for the GCF, developing a pipeline of investment-ready private sector resilience projects.

From these five approaches we now focus **on the three potentially viable options** that are subject to detailed appraisal:

1. **Mainstreaming:** Modify existing programmes/ initiatives (i.e. tailor or embed new initiatives within existing or related programmes).
2. **Piloting and demonstration:** Establish a short-term pilot programme that tests new approaches in targeted countries or sectors with a focus on key ‘gap’ operational approaches (i.e. B: risk management and C: commercialisation support).
3. **A new, at-scale programme/facility:** Create a multi-country multi-sector private sector resilience support facility (e.g. “A Resilient Markets Facility”) supporting all recommended operational approaches (i.e. enabling environment, risk management, commercialisation and investment).

These options are not mutually exclusive and have been created to express the range of potential modalities by which public resources could be deployed. For example, existing donor-country partnerships and programmes could seek to mainstream support to private sector resilience building activities, but also run a pilot programme to demonstrate an individual operational approach through a new dedicated instrument.

The establishment of a new multi-country resilience facility represents a scaled approach, recognising the existing gap in the landscape of donor-support mechanisms for the private sector in this space. It could act as a feeder for the GCF, developing a pipeline of investment-ready private sector resilience projects. This will support the GCF’s Private Sector Facility, once operational, which will need to engage with intermediaries to develop a pipeline of investment opportunities. Similar readiness-support mechanisms are being established to establish a pipeline of private sector relevant REDD+ projects, which like adaptation is a more nascent are for public-private partnerships and investment than, for example, low carbon infrastructure and technologies.


	Number of sectors	Number of countries	Approximate funding requirements	Time period	Operational approaches addressed			
					A	B	C	D
Option 1: <i>Modification of existing initiatives</i>	Pre-determined/selected under a resilience window	As per existing programmes	GBP 2-10 million	1 year	○	○	○	○
Option 2: <i>Pilot facility</i>	Limited number	Approx. 3 countries	GBP 10-20 million	3 years	○	●	●	○
Option 3: <i>Comprehensive multi-country facility</i>	Multiple	Min 8-10+ countries	GBP 40-100+ million	5-10+ years	●	●	●	●

In the section that follows, each option is presented and evaluated to display its features, benefits and constraints. The profile of each option includes a consistent outline of the following characteristics / parameters so that cross comparisons can be made:

- Key features
- Governance arrangements
- Operational arrangements
- Action plan for operation
- Recommendations
- Resilience impact
- Value for money
- Strengths / opportunities including risks posed in achieving planned outcomes
- Resource and funding needs

Each of the options show a range of trade-offs between investment sum, time-frames, implementation risk and impact. Key considerations for development actors to weigh up when selecting which approach to pursue, include:

- To what extent is now the right time to make a strategic and ambitious investment in resilience and build up a pipeline of experience and investment-ready solutions?
- What is needed to ensure business engagement, uptake and activity? Is a change needed in terms of how we have approached this previously? How key is focus, profile and communications?
- How can we use innovative approaches, finance mechanisms and partnerships to unlock private sector action, and what is the appetite for this?
- How can economies of scale and maximum value for money be achieved whilst also learning and reducing implementation risk?
- How can collaborations, co-investments and partnerships help deliver a better, more aligned, ambitious and efficient outcomes?

Table 44: Summary of the features and outputs associated with each of the three options


Option	BAU (counterfactual)	Option 1 – Embedded approach	Option 2 – Piloting approach	Option 3 – Direct action programme
Features	<ul style="list-style-type: none"> • Current trend of ad-hoc resilience projects/ programmes that rarely target or engage business • Current barriers and challenges to private sector engagement and investment remain although some are targeted by existing (non-resilience) PSD initiatives • Multiple disconnected geographical/ market approaches exist • There is no continuity of support to companies and investors targeting resilient business models, products and investments. • Limited and ad-hoc private sector engagement and investment in resilience 	<ul style="list-style-type: none"> • Resilience goals are integrated into strategy, objectives and results frameworks for relevant projects and programmes where possible i.e. ‘mainstreaming’ • Would seek to engage with and augment select existing programmes to support some of the operational approaches and recommendations required to stimulate enhanced private sector action • Some sharing and cooperation may take place but no facility/initiative would be created as a focal point for delivering resilience related activities, learning and knowledge. 	<ul style="list-style-type: none"> • Pilot of new facility focused on enhanced private sector action on resilience with a focus on two key gaps in existing landscape: commercialisation of new products and services, and operational risk management support • Dependent on funding and resources available, focus efforts on 3-5 countries and priority 2-3 sectors in each country • Identify and take demonstration projects / innovations through to full commercialisation • Knowledge hub to facilitate information and knowledge sharing, tools hosting, lessons learned, and best practice approaches • Pilot mechanisms for sharing of results, best practice, lessons learned (success and failure) across countries and sectors. 	<ul style="list-style-type: none"> • Multi-country (8-10 min) facility championing private sector resilience through a range of operational, financial and stakeholder channels • Country hubs operate at sector level with coordination and support from a centralised programme management unit • Windows to target all four operational approaches including the enabling environment, operational risk management, commercialisation and investment support • Sharing of results, best practice, lessons learned (success and failure) across countries and sectors through an interactive and high profile global knowledge platform.
Potential outputs	<ul style="list-style-type: none"> • Individual opportunistic projects in isolated geographical locations and multiple sectors with minimal cooperation and connectivity • Resilience policies strengthened, but often with little focus on business enabling environment 	<ul style="list-style-type: none"> • Resilience goals are integrated into existing private sector initiatives • New opportunities for some initiatives, but constrained by existing operating models • Increased delivery of private sector resilience outcomes, but ad-hoc across programmes, sectors and geographies 	<ul style="list-style-type: none"> • Targeted support to forms of private sector innovation including business models and product/ service innovations • Pilot knowledge platform to share, exchange knowledge, lessons learned, best practice and provide matchmaking services • Risk management information and guidance to the most vulnerable business types and sectors 	<ul style="list-style-type: none"> • Government support to improve the business enabling environment • Business development, innovation, partnerships and deals support to develop a pipeline of investable resilience projects • Risk management support to targeted sectors and actors • Investor support for institutional and infrastructure investors
Time and funding implications	<ul style="list-style-type: none"> • No funding costs or timing implications. 	<ul style="list-style-type: none"> • Within a year, assuming 2-3 progs • Medium cost burden (e.g. £2-5M) (a) new funding, plus (b) the frictional costs of attempting to shift focus of existing programmes. 	<ul style="list-style-type: none"> • 6-9 months required to establish a pilot (3-5 year) facility and prioritise actions • £5-20M – possibility for VfM by leveraging existing programme infrastructure. 	<ul style="list-style-type: none"> • 6-18 months required to develop the facility to launch • £40-100M+ but greater transactional efficiency and transformational outcomes.

7.3 Detailed appraisal of the three options

Option 1: Pursue an embedded approach

Key features

A number of overlaps exist between our recommendations and existing and planned resilience and private sector development initiatives. Existing and planned initiatives could theoretically deliver some of the recommendations within each operational approach. They would however need considerable adjustment and modification, and substantial gaps would remain.

Some existing private sector development initiatives could be augmented to address our recommendations, in particular for supporting the development of new business opportunities (operational approach C) and attracting private infrastructure investment (operational approach D).

In practice these opportunities may be limited to a handful of initiatives and geographical coverage and targeting of priority issues could be poor or compromised at best. If existing initiatives, both those targeted at resilience and those delivering on wider development goals can be tailored, they could achieve at least some of the desired resilience outcomes. Actions might include:

- Modification of existing initiatives in an attempt to integrate and scale up resilience activities and outcomes.
- Creation of a working group to appraise and prioritise process to consider their current portfolios and focus attention and additional financial and technical resources on key initiatives which could feasibly be modified to deliver new and better resilience outcomes whilst ensuring value for money.
- A review of potential interventions across wider donor supported initiatives and programmes, potentially covering a wider range of sectors and activities (longer term, broader scale change).

Resilience impact

- High likelihood that modification of initiatives produces a minimal increase in resilience outcomes and is similar to following a BAU approach.
- Resilience outcomes may be constrained to current countries, sectors and remaining lifetimes of operation of existing initiatives.
- Resilience outcomes could potentially be enhanced in the agricultural and food sector considering the relative attention and support provided to these sectors through initiatives as they currently stand.
- Building sufficient engagement with other economic sectors may likely take longer and resilience outcomes may be achieved less quickly.
- Adapting multiple initiatives will lead to resilience outcomes being isolated geographically and is unlikely to lead to wider transformation. This is reinforced by the lack of a key institution/focal point to drive forward and champion business resilience and act as a platform for collaboration and partnerships.
- Resilience outcomes are likely only in certain operational approaches e.g. there are no existing initiatives which seek to support businesses operating in vulnerable locations to look at building resilience in their own operations and value chain; limited support to commercialisation of new products and services and a lack of targeted investor

Value for money

- Overall this option is lower overall cost (relative to other options) but the value for money case is uncertain, in addition to scalability and longevity of change.
- It is difficult to predict the ease of modifying current initiatives and how effectively theoretical changes can translate into practical integration and action.
- Additional resourcing and training costs likely to be relatively high – multiple resourcing costs will be experienced across multiple fund management teams.
- Potential lower efficiency across modified initiatives as resources adapt to (or resist) different ways of working. Current efficiencies in initiatives may be eroded as fund management and on-the-ground teams are distracted from their core operations.

<p>support.</p>	
<p>Strengths/opportunities</p> <ul style="list-style-type: none"> • Capitalise on strong networks already developed by current initiatives and make best use of resources on the ground in these countries. • This option tests the feasibility of a pilot or multi country resilience facility - though in the constraints of an existing fund's operating model. BIF and AECF are examples of existing private sector support programme candidates for a resilience focus/extension which could help deliver more outcomes under Recommendation area C (see below for further analysis of each initiative). • If resilience can be incorporated into a number of private sector development programmes simultaneously, this could increase visibility and engagement across the donor and private sector community on this issue. Otherwise, scale of change will be limited. 	<p>Concerns and limitations</p> <ul style="list-style-type: none"> • There remains an absence of a dedicated focus on business resilience to DRR and CCA, enabling a common entry point for accessing support and for learning from sharing experiences, knowledge and tools. The long-term diversification of approaches, with limited connectivity for learning and scaling of successful approaches continues. • Whilst certain existing private sector development initiatives (incl. existing challenge funds) could be tailored to focus on resilience, there remains absence of initiatives that provide structured and continuous support through the commercialisation process (Recommendation C) for resilience related solutions; support from innovation, business development and partnerships to demonstration, deal structuring, commercialisation and scale. • Continuation of the geographically isolated approaches seen in the BAU scenario, with a continued focus on certain countries and sectors at the expense of others e.g. dominance of support to the agricultural sector and renewable energy projects. • Business resilience messages and championing are diluted by wider objectives targeted by existing initiatives. Likewise introduction of resilience focus could disrupt deliver of initiative's existing objectives. • Limited potential initiatives that can address certain challenges not covered by existing programmes e.g. lack of initiatives for addressing resilient low cost housing and water and sanitation projects and other sectors beyond food and agriculture. • A continued void in terms of addressing Recommendation B – private sector support on operational risk management advice, training and tools.
<p>Resource needs</p> <p>Internal human and financial resources and capabilities to provide coordination and support to various initiatives.</p> <p>Potentially a programme manager to coordinate and negotiate the design and implementation of the measures.</p>	<p>Funding needs</p> <p>This is dependent on number of initiatives modified and the scale of this modification. Running a pilot initiative through an existing private sector development programme in selected countries could require £2-5 million of public investment assuming 2-3 targeted programmes.</p>

Table 45: Summary of potential embedding options across other initiatives

Programme	Recommendations they could support	Assumptions and constraints
Adaptation Fund (AF)	A1. National policy and regulatory support A3: Build national institutional capacity and business entry point for key sectors	Not yet private sector focused. Would need a specific new mandate and potential re-design (or new window) to enable effective private sector focus and leverage.
Africa Enterprise Challenge Fund (AECF)	C1: Stimulate innovation in new business models, products and services for resilience B2: Support risk awareness, identification, assessment and mitigation	AECF could likely have success at integrating resilience within its current remit of providing large scale funding to businesses with a well-developed business models that are seeking to pilot and demonstrate a new service or technology. AECF is currently refocusing efforts on its core mandate of supporting pan-African agribusiness and limiting the creation of new funding windows.
Business Innovation Facility (BIF)	A1. National policy and regulatory support B2: Support risk awareness, identification, assessment and mitigation C1: Stimulate innovation in new business models, products and services for resilience C2: Incubate and commercialise innovative ideas, technologies and business models	BIF 2 model (market systems approaches) are relevant to the enabling and policy environments too. Already supports a range of climate change mitigation projects, some with co-benefits.
The Least Developed Countries Fund (LDCF)	A1. National policy and regulatory support	Not yet private sector focused. As above.
The Special Climate Change Fund (SCCF)	A1. National policy and regulatory support	Not yet private sector focused. As above.
Pilot Programme for Climate Resilience (PPCR)	A1. National policy and regulatory support A2: Develop local capacity of financial sector to support resilience actions A3: Build national institutional capacity and business entry point for key sectors C1: Stimulate innovation in new business models, products and services for resilience	PPCR needs to increase its focus on strengthening the business enabling environment and engaging business more directly. The first round of Private Sector Set Aside in 2013 should inform some valuable lessons on private sector uptake, and how to make the process more effective going forward. A re-design of the operating model of Private Sector Set Aside is strongly encouraged. A more facilitated and marketed process is needed, and the use of grants should also be considered. Only focuses on named PPCR countries.
Global Facility for Disaster Reduction and Recovery (GFDRR)	A3: Build national institutional capacity and business entry point for key sectors A4: Support national data and knowledge collection, management and sharing	Would support governments with disaster risk financing primarily. Should consider investing in a private sector risks and resilience data platform as part of the GAR data platform with tools and data directly aimed at business users.
Climate and Development	A1. National policy and regulatory	CDKN has already allocated its full

<i>Knowledge Network (CDKN)</i>	<p>support</p> <p>A3: Build national institutional capacity and business entry point for key sectors</p> <p>A4: Support national data and knowledge collection, management and sharing</p> <p>C1: Stimulate innovation in new business models, products and services for resilience</p>	<p>complement of funding from its current 5 year programme budget. The CBDN holds potential to engage the private sector in a unique way on resilience, however it will be more illustrative in impact as funding and therefore scale is limited.</p>
<i>IFAD's Adaptation for Smallholder Agriculture Programme (ASAP)</i>	<p>B2: Support risk awareness, identification, assessment and mitigation</p> <p>B1: Improved the quality and availability of business relevant risk information</p>	<p>Constrained by sector and existing IFAD projects.</p>
<i>IADB's PROADAPT Facility</i>	<p>C1: Stimulate and incentivise innovation</p> <p>C2: Incubate and commercialise innovative ideas, technologies and business models</p>	<p>Only Latin American countries are covered and it focuses on climate change adaptation only. Traditional challenge fund model only; lacks business development, partnership support, and investment readiness services.</p>
<i>DFID Construction Ideas Fund</i>	<p>B2: Support risk awareness, identification, assessment and mitigation</p> <p>B3: Support cross-organisational or cross-sector systemic approaches to risk management</p> <p>C1: Stimulate and incentivise innovation</p>	<p>Not yet resilience focused but already focusing on construction materials supply chain and skills and capacity in the construction sector. Innovation for new resilient building design and development of appropriate skills could be included.</p>
<i>Emerging Africa Infrastructure Fund</i>	<p>D3: Offer targeted de-risking of key resilient infrastructure projects</p>	<p>Not yet resilience focused.</p>
<i>Public-Private Sector Infrastructure Advisory Facility</i>	<p>A1. National policy and regulatory support</p> <p>A3: Build national institutional capacity and business entry point for key sectors</p>	<p>Not yet resilience focused but resilience issues could be raised by PPIAF with national governments to lead to regulatory reform and PPPs for resilient infrastructure.</p>
<i>DFID Food Retail Industry Challenge Fund (FRICH)</i>	<p>B3: Support cross-organisational or cross-sector systemic approaches to risk management</p>	<p>Not yet explicitly resilience focused.</p>
<i>Global Agricultural and Food Security Programme</i>	<p>B2: Support risk awareness, identification, assessment and mitigation</p> <p>B3: Support cross-organisational or cross-sector systemic approaches to risk management</p>	<p>Although not explicitly resilience focused the initiative is already financing and providing technical assistance to agribusiness firms along the value chain and aiming to reduce risks (e.g. through the use of products such as first loss cover and weather insurance).</p>
<i>Energy and Environment Partnership Programme with Southern and East Africa</i>	<p>D2: Build and support a high quality and bankable pipeline of demonstration projects</p>	<p>Not yet resilience focused and limited to clean energy projects only.</p>
<i>Green Africa Power</i>	<p>A1. National policy and regulatory support</p> <p>D2: Build and support a high quality and bankable pipeline of demonstration projects</p> <p>D3: Offer targeted de-risking of key resilient infrastructure projects</p>	<p>Not resilience focused and limited to clean energy projects only.</p>
<i>EBRD Sustainable Energy Initiative</i>	<p>D2: Build and support a high quality and bankable pipeline of demonstration projects</p> <p>D3: Offer targeted de-risking of key resilient infrastructure projects</p>	<p>Does not operate outside the EBRD region including in any LDCs</p> <p>Does not yet have a strong resilience focus embedded</p>
<i>SIDA Innovations Against Poverty (IAP)</i>	<p>C1: Stimulate and incentivise innovation</p> <p>C2: Incubate and commercialise innovative ideas, technologies and</p>	<p>Not yet explicitly resilience focused although a number of current projects have resilience co-benefits.</p>

	business models	Limited to a few countries of operation. Funding awards are relatively small.
UNDP African Facility for Inclusive Markets	A4: Support national data and knowledge collection, management and sharing B4: Build collaborative platform at sector and country level	Not yet resilience focused; this initiative champions 'inclusive business' through knowledge sharing and dissemination of best practices. To include resilience as a separate goal would likely dilute its ability to champion both.
Seed Capital Assistance Facility	D2: Build and support a high quality and bankable pipeline of demonstration projects D3: Offer targeted de-risking of key resilient infrastructure projects	Not resilience focused and limited to clean energy projects only. The initiative is also designed to operate across multiple countries, potentially limiting its ability to deliver a strong pipeline of demonstration projects within key countries or regions.
Business Call to Action	A4: Support national data and knowledge collection, management and sharing B4: Build collaborative platform at sector and country level	Not resilience focused but there is some overlap with the broader development goals the initiative champions (e.g. sustainable farming and agricultural techniques). The initiative currently operates at a global level – country focus groups could sit within this structure but the resilience message and championing may be diluted by wider development messages also being shared.
Private Sector Investment Programme	C2: Incubate and commercialise innovative ideas, technologies and business models	Not yet resilience focused.
USAID Development Credit Agency	A2: Develop local capacity of financial sector to support resilience actions C3: Provide investment support for promising business models and technologies	Not resilience focused and limited mainly to agriculture and food sectors to date. This model may have limited application for business operating in high risk areas that are looking to build resilience of their own operations and value chain due to their 'high risk investment' status. This model may more easily support SMEs in delivering promising new technologies.
African Guarantee Fund for SMEs	A2: Develop local capacity of financial sector to support resilience actions C3: Provide investment support for promising business models and technologies	Not resilience focused and limited mainly to agriculture and food sectors to date. This model may have limited application for business operating in high risk areas that are looking to build resilience of their own operations and value chain due to their 'high risk investment' status. This model may more easily support SMEs in delivering promising new technologies.
Private Infrastructure Development Group (PIDG)	D2: Build and support a high quality and bankable pipeline of demonstration resilient infrastructure projects D3: Offer targeted de-risking of key resilient infrastructure projects	Possible constraint around the current investment attractiveness of resilience investments under the current PIDG funds management structure.
USAID Development Innovation Ventures	C1: Stimulate and incentivise innovation C2: Incubate and commercialise innovative ideas, technologies and business models	Not yet explicitly resilience focused. DIV does however run specific initiatives over a set period of time to encourage submissions for projects in a particular development area, for example on innovation in the humanitarian sector. DIV could therefore focus on resilience as a key area.

Option 2: Piloting a scalable facility

Key features

- Pilot a new “**Business Resilience Facility**”, limited to a select an individual or number of resilience challenges, sectors and/ or countries.
- Focus on piloting instruments and technical support to projects in a range of sectors and countries over a short-term (e.g. 3 year) incubation period prior to scaling up successful mechanisms.
- Provide business support in the key ‘gap’ areas identified in this study, notably support for the management of operational risk (operational approach B) and the for development and commercialisation of new business opportunities (operational approach C).
- Direct flexible business development support (i.e. moves beyond the traditional challenge fund approach) to enable and accelerate businesses throughout the full commercialisation and scale-up process.
- To be set up in a combination of 3-5 countries with one or more ‘resilience-relevant’ sectors in each (consider relevance from both the business risk and opportunity perspective).
- Deliver a flexible suite of TA support to help businesses overcome barriers to commercialisation and good risk management, but could also experiment in setting innovation challenges and prizes for focused resilience areas where a demonstration effect is more valuable.
- A facility manager role is required for: planning, procurement and disbursement of financial support; on-demand business development and partnership support services; management of a regional or sector level knowledge sharing platform for practitioners; and management of a network of in-country technical and industry experts.

Resilience impact

- Dependent on the nature and focus of the pilot but benefits from having a dedicated objective and focused activities.
- Likely to be operated by staff that have industry expertise, market knowledge and networks, and technical resilience experience.
- By focusing projects within a defined geography and/or sector greater in-roads to regional or sector transformation would be expected (relative to Option 1 of modifying the current landscape).
- The transfer of best practice and lessons learned to other projects (and associated resilience outcomes) highly dependent on the effectiveness of a knowledge and information sharing platform.

Value for money

- Relatively higher transaction costs expected from a shorter-term pilot mechanism with small scale pilots, than from a longer-term larger facility where economies of scale can be realised.
- The longer-term value is in shaping the necessary format of scaled up funding based on real experience of applying approaches and of market demand for interventions.
- Will provide a template and model through which others can invest and scale support, including learning for the Green Climate Fund’s Private Sector Facility.

Strengths/opportunities

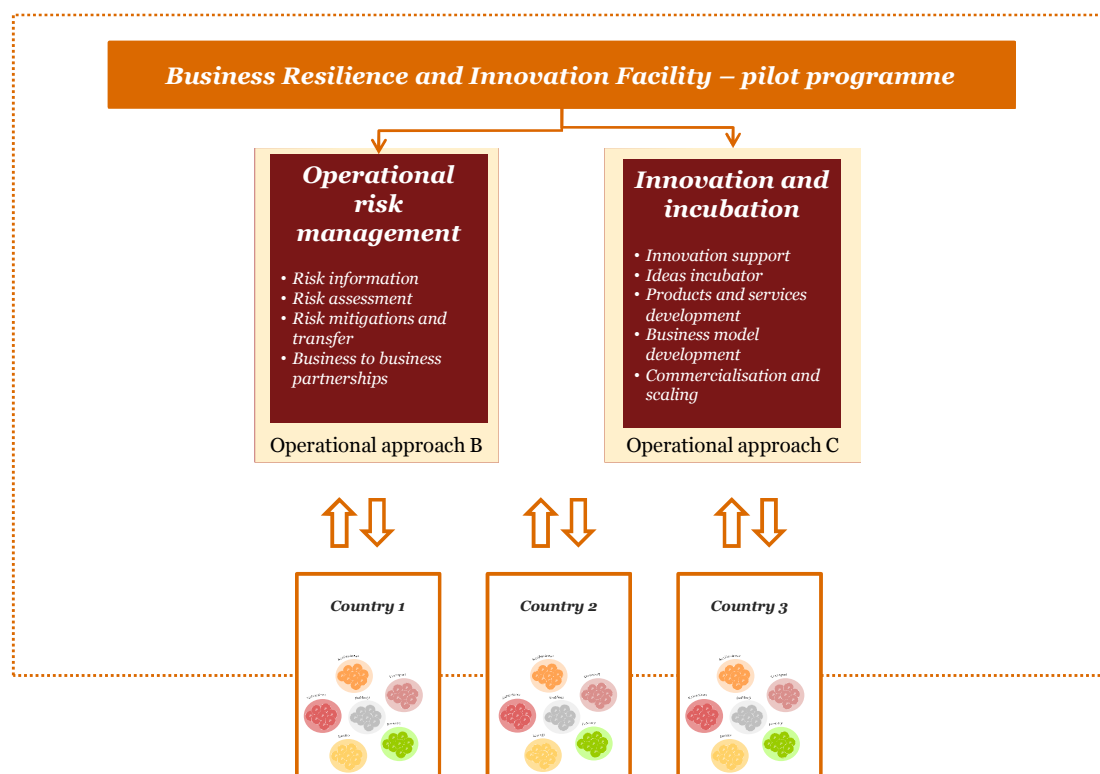
- Focus on under supported sectors beyond food and agriculture e.g. construction, manufacturing.
- Focus on countries where political will and appetite is high, and where local private sector markets show good growth.
- Tests the feasibility of a new flexible facility and provides lessons learned that can inform the development and design of a larger and more long-term multi donor mechanism
- Provides a flexible, value for money solution addressing a range of needs for private sector actors (both for operational risk management and development of new products and services to support resilience) throughout the

Concerns and limitations

- No window which addresses the need to strengthen the business enabling environment.
- No support to attract and direct private infrastructure investment.
- Demonstration projects are useful to provide best practice guidance and lessons learned but other support is required e.g. finance, partnerships support. Wider uptake from other private sector actors may therefore remain somewhat limited.
- Dependence on the effectiveness of a knowledge hub or platform to share lessons learned.
- Limited life-span can interrupt programme performance, profile and external engagement potential particularly during the latter stages of the

<p>commercialisation process</p> <ul style="list-style-type: none"> Clearly defined facility which can champion and progress action on private sector resilience. 	<p>programme.</p> <ul style="list-style-type: none"> Ability to scale support is limited by size, location and lifetime of programme.
<p>Resource needs</p> <ul style="list-style-type: none"> Internal resource and procurement capacity to tender and consequently coordinate with programme management teams. A programme management team with the geographical coverage and skills/ expertise in business model development, growth, risk assessment, resilience and sector insight. 	<p>Funding needs</p> <ul style="list-style-type: none"> Depending on scale and structure, this estimate is based on comparable figures for establishing similar programmes and potential additional set up costs. £15-20 million (for 3-5 countries).
<p>Description of the pilot facility</p>	
<p>A pilot business resilience support facility would be more flexible than a traditional challenge fund and instead would provide flexible business development and technical support services to private sector actors operating in developing countries. Country programmes with a sector focus would sit at the heart of the programme, with a competitive but supportive process leading to business and partnership development support services accompanied by a learning and outreach programme. The facility would fill gaps in the existing landscape of public finance support through its two operational windows targeting operational approaches B and C:</p> <ul style="list-style-type: none"> Window 1: Operational risk management (technical assistance window for local businesses) Window 2: Resilience innovation and commercialisation (business development and partnership support, through to investment readiness support and deal structuring) <p>Support for wider market development through strengthening the business enabling environment (operational approach A) is not included in the pilot facility, but created through option 3. Based on the evidence of gaps, needs and priorities for support, a proposed pilot facility might be structured as follows:</p> <ul style="list-style-type: none"> To foster new and innovative resilience business models, products and services, business development support services would be targeted at country or sector level. Unlike a traditional challenge fund, hands on support would be provided throughout the innovation and commercialisation process, from business development support, to partnership support, to latterly structuring and syndicating investment transactions, including identifying where parallel public finance mechanisms (e.g. risk guarantees) are required and enabling matchmaking with development finance institutions (delivers operational approach C). The facility could have access to flexible finance approaches; for example, a range of sizes of technical assistance packages and grants (matched funding, seed funding or capital grants), and potentially even a prize mechanism to reward innovation. It would also act as an intermediary to help broker partnerships with investors, IFIs and DFIs for financial de-risking instruments, and larger scale equity and debt investment. To improve operational resilience for local businesses, a parallel or integrated support window could provide access to tailored technical assistance support, training and tools. (delivers operational approach B) The pilot facility would evaluate through its activities whether it needed to act on needs in the enabling environment, or otherwise evaluate how these constraints could be targeted by other initiatives. The facility would have funds allocated for an associated country or sector level resilience learning programme (including knowledge products, research, knowledge management, knowledge exchange workshops). (facilitates operational approach B and C). 	

Figure 14: Pilot business resilience support facility



Detailed design considerations

Dependent on funding available and level of appetite, a limited number of demonstration projects and sector programmes could be supported by a pilot facility that has specific windows providing support to businesses in a focused number of countries and sectors. A flexible model of business development support services will be available that can take businesses/projects through the full commercialisation process (e.g. hands on technical assistance, business development support, and facilitation and partnerships support). There may be a natural progression and up-scaling from the running of demonstration projects to a larger and more comprehensive programme, following a year 2 evaluation. The pilot facility would:

- Use demonstration projects to prove and improve implementation models for working at sector, value chain and investor level (i.e. systems approach). These projects will also help to engage and develop stakeholder relationships including with government.
- Identify and deliver operational risk management support (operational approach B) and also the innovation and investment process in new resilience related opportunities (operational approach C).
- A streamlined, competitive, yet supportive and transparent process would be adopted to select innovative and transformative resilience projects at sector and/or country level. Examples include:
 - Individual companies looking to exploit a new business opportunity that has been recognised (operational approach C).
 - A proposed value chain partnership seeking to exploit a new business opportunity (operational approach C).
 - Individual companies recognising high risk in their operations and proposing innovative or collaborative solutions (operational approach B).
 - A group of businesses that has identified a systemic risk affecting a particular geographical region or sector (and consequently their operations) and proposing a collaborative solution (operational approach B). These solutions (value chain partnerships, public-private partnerships, sector alliances etc.) have the potential to set new models for sector and regional development and could be replicated to resolve similar issues in multiple countries and sectors.

- Project and pipeline development will also be proactive and targeted including working with industry associations, government and other development stakeholders.
- Projects supporting varying scales of business i.e. MNCs, national companies and SMEs. Demonstration projects working with MNCs should be limited to collaboration or partnership opportunities within a region or sector.
- Throughout the support of these demonstration projects lessons learned and best practice needs to be extracted and shared more widely. Considerable thought needs to be given to the design of a suitable and effective knowledge management system through which these lessons learned and tools/frameworks can be disseminated to a broad range of businesses in other sectors and countries.
- To help address market failures, the pilot facility should capture key lessons and look for entry points to work in collaboration with existing initiatives that provide support to governments on the local enabling environment, such as PPCR, CDKN, Adaptation Fund, World Bank, and UNDP for example.
- Dedicated country hubs would operate local outreach at sector level, develop networks, manage projects and the pipeline plus provide and coordinate local technical assistance activities.

Country selection - Countries chosen based on:

- High and medium exposures to any type of natural hazard and climate change. Either take a regional focus to maximise the potential for cross learning from countries with similar risk profiles and capacity (leaving out Latin America and the Caribbean due to the nascent ProADAPT program) or select of variety countries which can act as demonstration pilots for other countries in a larger full scale facility (see option 3)
- Existing initiatives present. Some level of pre-existing capacity may be useful when selecting priority countries. Linking in with the PPCR and CDKN priority countries may provide useful cross initiative learning on market development support services that could potentially lead to more transformational resilience outcomes. Linking in to more specific initiatives such as the AECF and BIF may also be useful. The focus would then be on filling the country-specific gaps, in each case, for example taking an early concept developed through the relatively small-sized TA support by BIF Bangladesh to scale by supporting the actors through to, for example, investment readiness, syndication and structuring.
- Of the case study countries, Pakistan and Bangladesh seem to be strong options due to their large vulnerable populations, diversified economies and considerable flood, drought and (for Bangladesh and Pakistan) earthquake risk. Each of these countries could make balanced use of the hybrid elements of the fund.
- Least developed countries may be less useful as a pilot country for the facility due to their needs around the business enabling environment being higher. The business enabling environment is not addressed in this pilot which tests the broader concept of the windows for operational risk and innovation and incubation.

Sector selection

- Sectors would be targeted based on their level of risk and their potential for creating new business opportunities. Two to three sectors could be targeted in each country to begin with.
- Evaluation of the priority sector based on level of business risk exposure to key natural hazards and future climate change and its potential for creating new business opportunities and innovations and developing value chain and sector partnerships.
- The pilot could be targeted at a priority sector(s) which have been under represented in attracting support to date. This report has identified a number of high risk sectors within the case study countries where there are potentially large untapped business opportunities, for example the construction sector in Pakistan and Bangladesh. In each of these countries the construction sector is an important sector either for economic contribution or employment or will play an important future role in the country's economic growth. A pilot facility focused on the construction sector in a selection of priority countries with knowledge sharing between the projects could achieve significant results which could be replicated in other countries and other sectors.

Programme instruments and services

- A flexible combination of instruments is required to support private sector needs. The hybrid and flexible facility structure allows for technical assistance to be provided alongside direct financial support using structure competitive but supportive structure. There are potentially a range of instrument types that could be implemented through each of the windows.

These types of financial support are generally similar to administer, however, there are potentially more attractive and tailored to the needs of individual businesses. Their use will help with marketing of the facility, but also reach a greater range of organisations and ideas. Some examples of how instruments might be applied are provided in the table below.

Table 46: Option 2 - Application of specific instrument types

<i>Instrument type*</i>	<i>Operational risk management window</i>	<i>Innovation and Incubation window</i>
Technical assistance	Risk governance, risk and resilience identification and assessment; technical and economic feasibility planning	Product and business model/ plan development, partnerships development support and structuring
Innovation prizes	-	Reward, recognise and promote demonstrated innovations
Seed capital	-	Early stage finance for developing innovative ideas into demonstration concepts
Capital grants	-	Prototype development
Matching grants	-	Private sector co-financing of project development or business expansion

* Note that there are no direct equity or debt investments, or risk guarantee instruments proposed. However, these investor groups would be key relationships for the programme as potential financiers for investment ready products and projects.

Potential action plan for operation

Governance and operational arrangements

- A programme steering group comprised of representatives from private sector, adaptation and disaster risk management teams. The steering group would be responsible for approving the terms of reference of the fund manager and overall objectives of the facility.
- Independent performance reviews of progress and activities would be commissioned on an annual and/ or interim basis.
- Facility management to be delivered by an outsourced service provider through public procurement. In addition to country presence and local market and sector knowledge, relevant expertise is required in risk management and resilience issues, investment support and project finance, private sector development programme management, stakeholder engagement and coordination, knowledge management and M&E.

Option 3: Comprehensive multi-country resilience market development support programme

Key features

- A new and ambitious mechanism with a core focus on private sector responses to building resilience. The facility will act as an international focal point for driving forward private sector resilience activity raising the profile and exposure of resilience as a thematic area to overcome awareness and engagement barriers in the market.
- Creation of a full scale £40-100+ million ‘**Business Resilience and Innovation Facility**’ (or “**Resilient Markets Facility**”) operating in multiple countries (min. 8-10+ countries).
- Endorsement by the Political Champions working group and potential for multi-donor financing.
- Flexible and hybrid technical assistance and innovation facility which focuses on market development support services. Supported by a dedicated learning and outreach programme and platform that enables sharing knowledge and experiences between participating countries and businesses.
- Central coordination and funds administration, with country programmes led by dedicated country hubs immersed in each local market.
- Coordination and delivery of operational approaches A, B, C and D through specified facility windows.
- A minimum programme period of 5 years with annual reviews and the option of extension following a mid-term review. This option maximises opportunities to design efficient long term solutions to engaging the private sector on resilience, and enables engagement with actors over a sustained period to take them through implementation and commercialisation.
- Higher up-front costs are expected in setting up the facility, however economies of scale will be realised in comparison to Options 1 and 2, with relatively lower transaction costs.
- Potential to build a portfolio of investment ready projects that the Green Climate Fund’s Private Sector Facility could finance once operational. Likewise, the Facility can generate a pipeline of investments/deals for IFIs, DFIs and commercial investors to take forward.

Resilience impact

- Acting as a dedicated international focal point for private sector resilience, the facility will raise the profile and exposure of resilience as a thematic area on the international stage. This will build awareness with the private sector more widely than in specific countries of operation and provide broader access to relevant information on resilience opportunities for businesses in other countries.
- A dedicated regional or global level resilience learning programme would share information (including knowledge products, research, knowledge management, knowledge exchange workshops) with interested private sector actors.
- Targeted support at country and sector level will likely lead to clustering of resilience projects and has the potential to achieve transformative change, particularly through sharing of knowledge and collaboration and partnership opportunities between clustered projects within a country.
- A market development approach in which the Facility is targeted on specific sectors and resilience related issues in those, and then works proactively and over a consistent period providing flexible technical and business development support services will better stimulate a 'market system response'.
- The 'business enabling environment' window will

Value for money

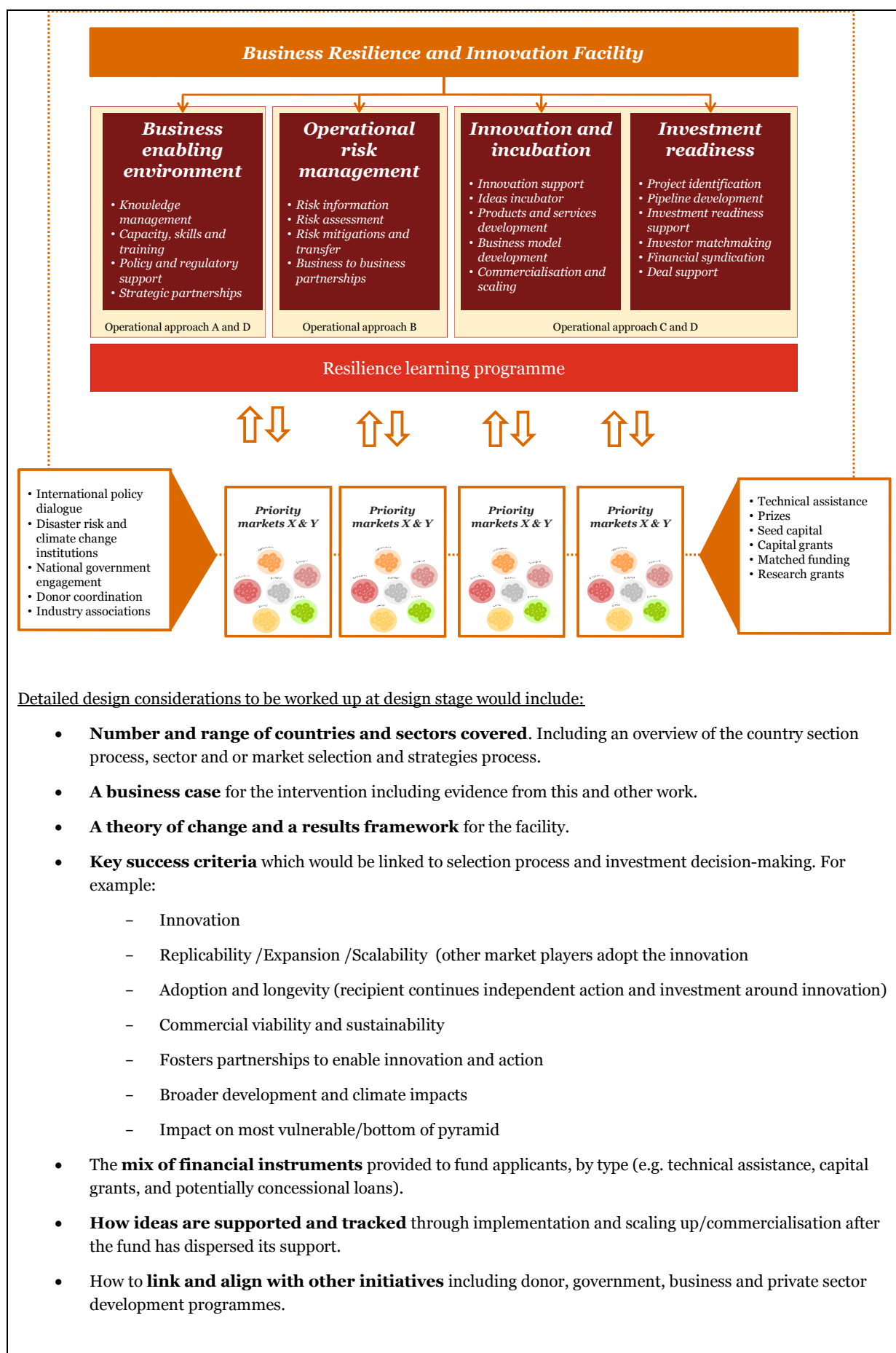
- This option requires the largest overall investment, and may require funds pledged by multiple donors for its delivery at scale.
- The resilience impact delivered by the creation and running of a large multi country facility is likely to be the greatest (out of the various proposed options) but this needs to be considered in light of the higher costs associated with:
 - the set-up of the facility
 - on-going fund management costs for multiple regional or country hubs (however a larger programme will deliver economies of scale)
 - the transaction costs associated with the use of multiple instruments targeted at specific businesses and projects e.g. hands-on business development technical support at the individual business level is transaction cost heavy.
- A multi-country mechanism will enable transactional efficiencies, cross-border business opportunities and maximise regional and international learning.

<p>provide TA to support improvements in key policy and regulatory constraints in the market, where identified.</p> <ul style="list-style-type: none"> • A learning platform will enable sharing of best practice across countries and tap into impactful insights and networks in the different countries of operation which could be replicated or scaled up across different countries or regions. • Businesses supported throughout all stages of the commercialisation process with multiple targeted instruments, including partnership building and hands-on business development technical support and investment readiness support. These arrangements could provide a platform to build a pipeline of large-scale transformational public-private joint ventures/co-financing. 	
<p>Strengths/opportunities</p> <ul style="list-style-type: none"> • Business resilience gets the focus it needs. Presence of a dedicated focus on business resilience, enabling a common entry point for accessing support and for learning from sharing experiences, knowledge and tools. • Creates an international framework so that results can be across country and sector programmes • Sufficient attention is given to currently under-supported issues e.g. operational risk management advice, training and tools. • Structured and long-term engagement through a business-centric lens – i.e. through sector approaches and key resilience relevant issues within these (e.g. value chain risk management, asset and operational performance risks, infrastructure investment, new products/services/markets). • Focused, targeted, structured and specific support targeted at private sector actors on a continuous basis through the commercialisation process for resilience related solutions. • The facility should result in more efficient, transparent and coherent spending of climate finance for private sector adaptation. 	<p>Limitations and concerns/risks posed in achieving planned outcomes</p> <ul style="list-style-type: none"> • Level of finance needed for the set-up and operationalisation of a multi country facility. Interested donor countries may only have allocation for Options 1 or 2. • Large time and resource commitment • It may be easier to get buy-in from stakeholders by starting with a lighter touch option e.g. a pilot facility (see option 2) and building up to a full facility when sufficient interest and initial results have been witnessed.
<p>Resource needs</p> <p>Representatives from supporting donor agencies to sit on the facility’s management oversight board/committee.</p> <p>Support staff with clearly defined roles and appropriate experience to assist the oversight board.</p> <p>Sufficient human resource capacity at the fund management level, both at the global level (Facility headquarters) and within dedicated country hubs to manage the funding processes, outreach, information and</p>	<p>Funding needs</p> <p>The full facility benefits from efficiencies of scale relative to the pilot facility option, and whilst the cost for the full facility is higher, the investment will be able to programme and deliver a much wider range of activities over a consistent period.</p> <p>It is likely that £40-100+ million will be required to set up and run a multi country facility (exact figure to be dependent on the number of countries involved and the</p>

<p>knowledge management, and regional and country networks of technical specialists. Country or regional programme managers and supporting teams will likely be required for the facility to be effectively managed at country level. Expertise in risk management and resilience, project finance, investment planning, business development support, sectors, M&E, and programme management are critical, in addition to local market experience.</p>	<p>number of dedicated country hubs necessary). Facility management and operation costs are likely to be in the range of 15-30% of total fund costs depending on the relative use of different delivery models and instruments e.g. if the Facility manager also provides TA “in-house” for time-sensitive support services, and runs the learning platform (e.g. BIF).</p>
<p><i>Governance and operational arrangements</i></p> <ul style="list-style-type: none"> • A formal management oversight group (board) made up of representatives from the donor countries inputting finance to the facility. If multi-donor, a rotating chair chosen from one of the main donor country representatives. • Formal audit and evaluation of programme/facility activities would take place on an independent and scheduled basis. • Facility management delivered by a tendered service provider; private sector experience and local market knowledge is critical. • Facility manager would manage programmed core and regional support including planning and developing funding and investment plans and overseeing and coordinating disbursements and investments by the facility. • Regional focal points and dedicated country hubs in countries of operation. These dedicated country hubs would operate local outreach at sector level, develop networks, manage projects and the pipeline plus provide and coordinate local technical assistance activities. 	
<p><i>Description of the Facility</i></p>	
<p>A multi-country and flexible technical assistance and innovation facility which focuses on market development support services is recommended, supported by a dedicated learning and outreach programme. The facility would fill gaps in the existing landscape of public finance support through its four operational windows and a global resilience learning programme:</p> <ul style="list-style-type: none"> • Window 1: (Optional) Business enabling environment (technical assistance window for governments) • Window 2: Operational risk management (technical assistance window for local businesses) • Window 3: Innovation and Incubation (business development and partnership support technical assistance, grants) • Window 4: Investment readiness (technical assistance and linking with de-risking instruments and equity/debt investors) • Resilience learning programme: country and global knowledge sharing platforms. <p>Based on the evidence of gaps, needs and priorities for support, a proposed facility might be structured as follows:</p> <ul style="list-style-type: none"> • Technical assistance window focused on governments for demand-led policy and regulatory advice to improve the local business enabling environment. This is optional as it could be delivered through existing programmes, however, a dedicated platform would enable shared learning on best practice across countries, and tap into impactful insights and networks from engaging with business clients through the parallel window. It is recommended that for each Facility country, a market assessment is undertaken in the priority sectors identified to determine if there is a key policy/regulatory constraint in a specific market that is inhibiting private sector action on resilience. (delivers operational approach A) • To foster enhanced (internal) operational resilience for local businesses, a parallel window would provide access to tailored technical assistance support, training and tools. Applicants would be vetted based on selection criteria, and frameworks and tools created through the provision of support would be made available for wider market uptake. (delivers operational approach B) • To support business innovation and commercialization around resilience a flexible through the flexible provision of technical assistance and finance. Rather than a traditional challenge fund model, a hybrid approach that targets market systems development is recommended. Each country would undertake a market assessment to identify key resilience relevant markets, market constraints, how the market 	

could be improved, key innovations, key beneficiaries and key private sector actors. The Facility could then deploy a combination of competitive market calls to identify leaders in innovation, in addition to deploying targeted, flexible and hands on support to identified selected leading private sector actors throughout the innovation process. In both cases (competitive vs. targeted) support would include business development services, partnership support, and project finance support for structuring and syndicating investment transactions.

- In special circumstances, the Facility could complement the TA with cost-sharing finance support (e.g. matched grant). Caps and protocols would be set for the use of different financial instruments. (delivers operational approach C)
- **The facility would have funds allocated for a regional or global level resilience learning programme** (including knowledge products, research, knowledge management, knowledge exchange workshops). (facilitates operational approach B and C)
- Rather than creating a separate window to support infrastructure projects solely, support for scaling investment into broader range of resilience opportunities could be delivered through the **investment readiness window**. Within this window the facility would also act as an intermediary to help broker partnerships with IFIs and DFIs for financial de-risking instruments and investment. (delivers operational approach C and D)
- The programme windows would be flexible and integrated to coordinate tailored packages of support as required at project and country level. In addition having a portfolio of country and market investments, the Facility should leave un-badged resources for key additional markets/interventions which may emerge as the programme progresses.
- The facility would provide regional focal points for private sector resilience in Africa, Asia and possibly Latin America and the Caribbean (Note: for the latter, overlap with IADB's potential PROADAPT Facility would need to be considered)
- It would operate as a multi-country mechanism with dedicated country programmes and market strategies within, developed to identify key resilience related markets, actors and interventions. Dedicated country hubs would operate local outreach at sector level, develop networks, manage projects and the pipeline plus provide and coordinate local technical assistance activities. A multi-country mechanism will enable transactional efficiencies, cross-border business opportunities and maximise regional and international learning.



Countries

The facility's structural flexibility means that it can adapt its focus as necessary to meet local and business needs. It is designed to work in countries that have high and medium exposures to any type of natural hazard and climate change impacts. In Small Island Developing States it might operate better at a regional level in the Caribbean, Indian Ocean or the South Pacific, for example.

Low competitiveness and institutional capacity will present greater opportunities for the business enabling environment and operational risk management windows but potentially less for the innovation and investment support services.

Equally, countries in emerging Asia, Latin America and the faster growing African economies with more attractive local investment climates will provide the programme with new opportunities to support a growing number of sectors, particularly in the incubation and investment support windows.

Of the case study countries, Pakistan, Bangladesh and Kenya seem to be strong options due to their large vulnerable populations, diversified economies and considerable flood, drought and (for Bangladesh and Pakistan) earthquake risks. Each of these countries could make balanced use of the hybrid elements of the fund. While infrastructure development and commercialisation of new products and services is possible in Mozambique, the needs around the business enabling environment are initially stronger. From a sectoral perspective, Mozambique and the northern arid lands of Kenya also share the challenge of a missing 'middle market' of private sector actors within their agricultural sectors that connect framers to markets and financial services.

More widely, **in Sub-Saharan Africa** it is observed that there are many resilience related programmes active in the agricultural sectors of these countries; however, it is not clear that any are effective in delivering private sector results beyond smallholder support. A private sector resilience mechanism would therefore provide an important complementary role to existing efforts in the agriculture, but acknowledging existing efforts supporting smallholders, the focus on the innovation and enabling components may be targeted on agribusiness, markets and supply chains. The wider economy, in countries like Kenya, could however present further opportunities including through the power, tourism, financial services and telecoms sectors for example.

With a focus on coordination, linking and partnership building, a new facility could operate effectively in countries in which broader resilience (e.g. GFDRR country programme, Adaptation Fund) **or private sector development** (e.g. BIF, AECF) **mechanisms exist.** The focus would be on filling the country-specific gaps, in each case, for example taking an early concept developed through the relatively small-sized TA support by BIF Bangladesh to scale by supporting the actors through to, for example, investment readiness, syndication and structuring.

Sectors/markets

Despite considerable existing activity in the sector, agriculture must remain a priority for support in countries where it plays a major role in employment and economic activity. Agriculture would therefore be a highly relevant sector to consider in all four case study countries. Other sectors considered as priorities in each country studied are as follows:

- **Bangladesh:** Agriculture, textiles, manufacturing, construction/ built environment,
- **Pakistan:** Agriculture, construction/ built environment, power, water, manufacturing
- **Kenya:** Agriculture, energy, telecoms, tourism
- **Mozambique:** Agriculture, built environment, extractives

More widely, sectors and markets should be selected on the basis of business risk exposure and potential for resilience related opportunities/innovations. In some cases focusing on market systems at the more granular level may be useful (e.g. water, infrastructure); however business is often easier to engage at the sector level. In addition, elevating strategic focus from individual commodity markets (e.g. cocoa or tea) to a broader sector like agriculture, can help to address resilience constraints and opportunities that cut across multiple commodity markets.

Recipients

How should the facility determine priority recipients and what eligibility criteria should be adopted? All private sector groups (micro, small, national and multinational businesses) have the potential to realise benefits for the poor and most vulnerable. Each recipient should be considered on a case by case basis, with the scale, conditions and form of support (i.e. instruments) tailored appropriately. For the innovation and investment support windows, leading firms/entities should be identified and targeted who are driving a resilience related innovation in a market.

For the most part, the Facility's engagement will be with private sector entities, and in the case of the Innovation and Investment support windows, leading and innovating firms. There may be circumstances where, in order to further

private sector innovation, the Facility needs to work with other types of market players such as Business Associations, NGOs playing a market facilitation and/or value chain role, and governmental agencies). Partnerships with private sector entities should be demonstrated, however.

Programme instruments and services

A flexible combination of instruments is required to support private sector needs. The hybrid facility structure allows for technical assistance to be provided alongside direct financial support. These types of financial support are generally similar to administrative, however, there are potentially more attractive and tailored to the needs of individual businesses. Their use will help with marketing of the facility, but also reach a greater range of organisations and ideas. Some examples of how instruments might be applied are provided in the table below.

Table 47: Application of specific instrument types to programme windows under the hybrid structure

<i>Instrument type*</i>	<i>Business enabling environment window</i>	<i>Operational risk management window</i>	<i>Innovation and Incubation window</i>	<i>Investment readiness window</i>
Technical assistance (market calls and targeted awards)	Policy, regulatory, capacity and partnerships support	Risk governance, risk and resilience identification and assessment; technical and economic feasibility planning	Product and business model/ plan development, partnerships development support and structuring	Investment syndication support Financial model development and transaction advisory
Innovation prizes (optional)	-	-	Reward, recognise and promote demonstrated innovations	-
Seed capital	-	-	Early stage finance for developing innovative ideas into demonstration concepts	-
Capital grants	Supporting goods web hosting, computing equipment and small technical devices (e.g. weather equipment, software and data storage)	-	-	-
Matching grants	-	-	Private sector co-financing of project development or business expansion	-

* Note that there are no direct equity or debt investments, or risk guarantee instruments proposed. However, these investor groups would be key relationships for the programme as potential financiers for investment ready products and projects.

Key performance indicators (KPIs)

The final KPIs would need to be determined at the facility design stage however the following metrics for the programme should be considered:

- Total revenue of new resilience products and services
- Leverage ratio (revenue achieved per unit of investment)
- Cumulative numbers of supported products and services at each stage of the commercialisation process
- Financial value of technical assistance provided (by window)
- Number of total recipients engaged (business/ government)
- Number of government staff trained

Integration with existing international public support

The facility proposed in this chapter would complement rather than overlap with the upcoming activities of the **Green Climate Fund's Private Sector Facility (PSF)**, for example. It would offer powerful synergies in building a portfolio of investment ready projects that the PSF could finance. This is currently lacking, comparatively, in the area of resilience/adaptation. It would also enable early demonstration of the types of public finance support that work best in scaling up private sector action and investment in adaptation; an area which to-date is also lacking in experience.

We would recommend an adjustment at a regional and in some cases country level to accommodate and optimise the fit with existing initiatives. In particular:

- **IADB's ProADAPT**, which will become operational in Latin and Central America has some similarities, so it may be that countries in Africa/Asia are better placed for receiving support from the programme. PROADAPT could be linked as a strategic partner for knowledge sharing purposes and the co-development of techniques and operational approaches.
- **The PPCR Private Sector Reserve** is currently undergoing its first round of support, looking to support adaptation-related innovation in PPCR countries. The PPCR approach is centralised, not heavily marketed within the private sector locally and internationally, and is more hands-off in terms of supporting the stages of the innovation process (i.e. lacks business development to partnership support process). Importantly the proposed facility would provide awareness-raising, and hands-on innovation and partnership building support which will help build a reliable pipeline of projects. The facility also differs in that it would see through the innovation process to commercialisation and scale up, providing investment readiness and structuring, in addition to operational risk management support, both of which are not targeted for the PPCR set-aside. Consultation with the CIF Admin Unit and PPCR sub-committee will help to ascertain whether the facility should: a) operate in PPCR countries and b) operate only through windows not delivered through PPCR support (e.g. operational risk window, and investment readiness window).
- **The PIDG** has developed four projects across the agriculture and construction sectors which have been classified as 'tier 2 adaptation'. This means that although adaptation is not a specific objective for these projects they are nonetheless likely to lead to significant climate change adaptation co-benefits⁸⁷. An ambitious target could be created for the PIDG to reach a certain number of tier 2 infrastructure projects i.e. these projects will have considered disaster and climate risk in their design and construction. To achieve a greater number of projects integrating adaptation measures, the TAF (Technical Assistance Facility) could be modified within the PIDG to offer support related to assessing disaster and climate risk and integrating resilient elements to the design and construction of infrastructure. Additional funding for resilient infrastructure development projects could be delivered through the country 'investment readiness' window of this new resilience facility.

⁸⁷ <http://www.pidg.org/resource-library/results-monitoring/pidg-climate-change-classification-results.pdf>

7.4 Summative comments and final recommendation

If businesses, communities and poor people have improved access to certain markets, their ability to anticipate, absorb, accommodate or recover from the impacts of disasters and climate change would greatly improve. Market failures however, are preventing some of these markets from developing or functioning as well as they might.

This study has evidenced considerable private sector demand for support from a range of private sector actors including SMEs, national companies MNCs and the investor community. It also shows that a major constraint in engaging the private sector on these challenges has been the lack of a dedicated and comprehensive vehicle/ mechanism through which to deliver it. Much attention has been on global corporations working through supply chains. Whilst this is valid, it has masked a clearer underlying demand for in-country support working with national and SME organisations and entrepreneurs, often the value chain partners of larger corporations and where the impacts of disasters and climate change are most acutely experienced.

We are presented with considerable opportunity to work with country governments, private sector operators and investors (large and small) to deliver results through country and sector/market focused activities. For action to work, the interventions cannot be 'bit-part and dilute'. The minimum scale of operation is targeting one sector in one country through a dedicated mechanism. Much more can be achieved in terms of efficiency and impact by targeting multiple sectors in 10 or more countries.

Support for private sector-led activities to improve resilience has stalled for a lengthy period of time (too long) as a result of a poor evidence base and ambiguity regarding the most effective modality for support. Targeted public intervention and finance from the international community can address market failures through business-relevant approaches to bring about 'systemic or transformational change' in business and societal resilience. These include de-risking business innovation and commercialisation processes, working to change national policy and regulatory frameworks or improving the availability of information, tools and standards. An evidence-based framework of recommendations, and then viable implementation options for these, has been set out.

Of the implementing options presented, each is valid and broadly feasible, with its own value for money and impact profile. But the options also have trade-offs and compromise, and are by no means equal. Those set up with different objectives, geographical focuses and operating models will not easily accommodate and best engage business in investing in the resilience opportunity. Bit-part changes to the limited existing programmes may not fully address the reality that there is no existing initiative that can comprehensively deliver support across the four operational approaches identified (i.e. business enabling environment, operational risk management, product and service development support, and resilient infrastructure investment). There may also be further challenges with realignment, networks, skills and flexibility.

A major barrier will be the ability to improve awareness and sector level knowledge that that to date has inhibited the uptake of available support. Targeted additional outreach, technical assistance and learning processes are required to foster business awareness of the opportunities that resilience offers and build their demand for support.

Business as usual or minor ad-hoc adjustments to existing approaches will not lead to a transformative shift in private sector resilience action and investment. New public-private approaches are needed, and a variety of approaches can be progressed in tandem. In the short-to-medium term, a newly established 'Resilient Markets Facility', and/ or a targeted framework of sector interventions, could provide a channel and focal point to scale up and demonstrate public-private partnerships to build resilience. This could also build the readiness of the private sector and their partners to accessing GCF funding, and a viable pipeline of investments for the Fund itself.

Contacts

Dr Celine Herweijer

Partner, Climate Change and International Development

PwC (UK)

+44 (0) 20 7213 5703

celine.herweijer@uk.pwc.com

Dan Dowling

Assistant Director, Climate Change and International Development

PwC (UK)

+44 (0) 20 7212 1289

daniel.s.dowling@uk.pwc.com

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