



Resilience in Action: Lessons from Public-Private Collaborations Around the World



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Executive Summary

As escalating natural disasters thrust climate change into centre stage, global leaders in business and government are increasingly looking to the private sector for the resources and solutions to adapt. New forms of formal and informal partnerships between government and business are emerging which overcome traditional market barriers to deliver resilience-building solutions.

Public-private collaborations offer a strong model that leverages the strengths of both government and business to help meet the growing need for investments in climate and disaster resilience-building. Government policies can help create an enabling environment and foster partnerships which help overcome the barriers that would otherwise inhibit private sector action. Public-private collaborations can thus engage businesses in activities that manage risks and unlock opportunities, providing benefits to the organisation, both internally and externally.

This report discusses nine outstanding cases of collaborations that build resilience, selected from an analysis of over 100 examples of public-private collaborations in developing countries. These case studies show how innovative collaborations can make communities, economies, and businesses more resilient to existing and emerging threats. They demonstrate how a wide array of players are involved in resilience-building activities, including government entities ranging from local authorities to international development organisations, and businesses of all sizes from micro-enterprises to multinationals. The collaborations span the full spectrum of sectors and industries most critical for building resilience: agriculture, housing, information and communication technology, health, fishing and aquaculture, transportation, tourism, water, financial services, waste and energy.

The case studies illustrate a wide range of players, projects and partnerships that exist in public-private collaborations that seek to build resilience. Despite their diversity, the case studies share a number of common themes. **Six success factors were identified as key considerations for policy-makers seeking to drive greater resilience through public-private collaborations:**

1. Build on a foundation of local engagement and trust.
2. Start small and local, but position for scale and replicability.
3. Integrate skill building to maximise community ownership.
4. Build adaptive capacity by strengthening businesses and livelihoods.
5. Create partnerships along—or across—value chains.
6. Find innovative alternatives to traditional infrastructure.

As policy-makers explore their options to address disaster risks and adapt to climate change, they should consider the opportunities for engaging the private sector through mutually beneficial public-private collaborations. With proper design and execution, these collaborations can unlock the vast potential of expertise, resources, and networks that each sector can bring, building partnerships that will create a more resilient future.



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About this Study

Communities, businesses, governments and civil society organisations around the world have begun to feel the impacts of climate change. Along with sustained efforts to mitigate climate change's disastrous effects, these players are increasingly taking actions to reduce their vulnerabilities and exposure. To date, the public sector has been the primary driver of disaster risk management (DRM) and climate change adaptation activities which together help strengthen resilience (henceforward called "resilience-building activities").¹

Effectively building resilience requires participation from all members of society. Public officials are increasingly looking to partner with the private sector in order to rapidly deliver the solutions needed today. **Public-private collaborations (PPCs)**—which include both formal and informal partnerships and initiatives—can result in DRM and adaptation activities that draw from the expertise and resources of both governments and businesses to create resilient economies and communities.

Resilience in Action: Lessons from Public-Private Collaborations around the World aims to demonstrate how innovative collaborations, both formal and informal, with the private sector can make communities, economies, and businesses more resilient to current threats and future impacts. Drawing from a set of case studies (see Appendix A), this analysis serves as a supporting document for decision-makers and international organisations seeking to draw from expertise beyond their organisation. Using the featured case studies, this report provides insights on the lessons learned; analyses the roles, opportunities and barriers to private sector engagement (with a particular focus on micro-businesses and small- and medium-sized enterprises); identifies areas for further innovation; evaluates success factors; and offers recommendations

to policy-makers and decision-makers seeking to promote collaboration on climate adaptation and disaster risk management.

This report is structured in four sections beginning with an overview of the opportunity for private sector participation in DRM and adaptation. Section two discusses emerging models of public-private collaboration, drawing from the case studies. Finally, section three identifies success factors and lessons learned from the case studies and offers recommendations for policy-makers and decision-makers seeking to promote private sector engagement in DRM and adaptation through public-private collaboration. The full case studies can be found in Appendix A.

¹ A resilient organisation or community is better prepared for hazards and climate change impacts, and is able to quickly recover from a disaster. Resilience is an outcome that is reached through disaster risk management and adaptation activities, projects, programmes, initiatives, partnerships, collaborations, etc.



1. The Resilience Opportunity

Between 2010 and 2012 there were more than 700 natural disasters that affected over 450 million people.² The cost of damages from disasters increased five-fold during the last two decades, from an annual average of roughly US\$20 billion (1990s) to US\$100 billion (2000s).³ Unfortunately, scientific research shows that the greatest impacts of climate change will fall on the world's poorest nations, which are the most at risk to future climate vulnerabilities.⁴

Responding to climate change will require a wide range of disaster preparedness investments to avoid costly damages and the creation of new adaptive solutions. The estimated costs of these activities are thought to be in the range of US\$49 billion to US\$171 billion annually over the next 30 to 50 years.⁵ Meeting these funding needs and developing innovative solutions will require support from a wide range of actors. While the main driver of disaster and climate resilience in developing countries to date has been the public sector, public officials are increasingly looking to partner with the private sector in order to rapidly deliver the DRM and adaptation solutions needed today. Public-private collaborations (PPCs)—which include both formal and informal partnerships and initiatives—can leverage the expertise and resources of both governments and businesses to create a more resilient future.

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This section introduces the drivers for businesses to provide resilience-building solutions, factors that have constrained their role to date, and how PPCs can help leverage the necessary knowledge and capital to meet resilience goals.⁶

In Brief

Public-private collaborations offer a strong model that leverages the strengths of both government and business to help meet the growing need for investments in climate and disaster resilience-building. Government policies can work to create an enabling environment and foster partnerships which help overcome the barriers that would otherwise inhibit private sector action. PPCs can thus engage businesses in activities that manage risks and unlock opportunities, providing benefits both internally and externally.

WHY BUSINESSES INVEST IN DISASTER RISK MANAGEMENT AND ADAPTATION

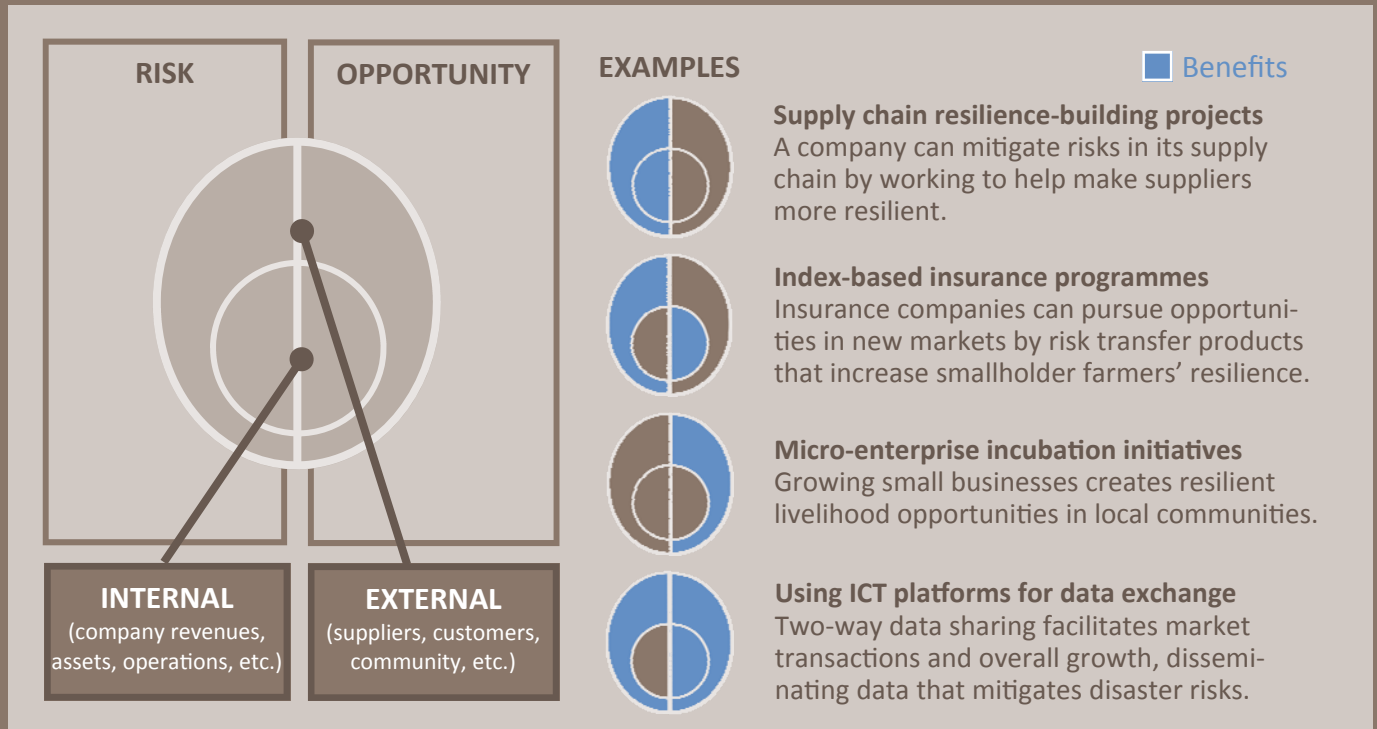
Businesses are beginning to seize the many opportunities to provide solutions that will create a more resilient future. Businesses may choose to provide disaster risk management and adaptation solutions due to internally oriented motivations (such as revenue generation and ensuring business continuity) and externally oriented drivers (corporate citizenship). Risk and opportunity influence these internal and external activities as presented in Box 1.

- **Revenue generation.** Addressing climate risks requires a collection of products and services, both existing and new. The potential to reach new markets, expand product offerings, innovate and strengthen market position are all motivations for businesses to explore possibilities to generate greater revenues. Products and services can reach the target market through a range of channels, including direct sales, public procurement and public private collaborations. New products and services can be applied at multiple levels: from local flood management plans and resilient port infrastructure to regional emergency communication and response networks to national food storage and transportation systems. Products and services that strengthen resilience could include communication systems for disaster warnings and response processes, weather-indexed agricultural insurance, training programmes

Box 1 — Better Business: Mapping the Benefits of Private Sector Resilience-Building Activities

Asking ten CEOs what their business is doing to further resilience will likely result in ten very different conversations. They may talk about their corporate citizenship activities that help vulnerable communities, retrofits of at-risk infrastructure, new product opportunities, or supply chain engagement efforts to ensure a stable supply of raw materials.

As dissimilar as the activities are, they all reflect either a focus on managing *risks* or pursuing *opportunities* and they aim to provide either *internal benefits* (to company revenues, operations and assets) or *external benefits* (to outside stakeholders or the broader community).



These characteristics are important because they help understand firms' motivations and the benefits expected from undertaking activities that strengthen resilience. They also show how versatile PPCs can be in terms of addressing a variety of business and community interests. Applying this framework can also demonstrate how activities that benefit communities often benefit the private sector partners in similar (or different) ways, as shown in the four project models presented above (see Section 2 for further discussion of these models).

- for supply chain resilience, or efficient equipment that requires minimal water and energy inputs (See Case Studies in Appendix A).
- **Business continuity.** Businesses are already affected by climate change and have the opportunity to take proactive steps today to ensure that their organisation is able to operate continuously. Businesses need to protect their most valuable assets (e.g. employees and equipment) and seek to minimise costly disruptions such as productivity losses and supply chain interruptions resulting from disasters. Developing a suitable business resilience plan can also ensure reliable access to key resources (e.g. water and energy).
- **Corporate citizenship.** Sometimes the wider social context beyond a business's internal operations can also be a driver for companies to engage in resilience. Businesses tend to engage in corporate citizenship activities when the activity simultaneously improves revenues or operations and also has positive impacts on the communities where the business operates. Companies can gain a competitive advantage from proactive adaptation and DRM actions in markets where sustainability is highly valued. Improving resilience along the value chain can also demonstrate a company's commitment to its full range of stakeholders, including shareholders, customers, employees and the community.

BARRIERS TO PRIVATE SECTOR INVESTMENT

This report highlights the diverse range of public and private sector players that have been involved in DRM and adaptation activities to date. While these examples illustrate tremendous potential, current actions—by both public and private sectors—are below the level needed to respond to the world’s rising resilience-building needs. A number of barriers have hindered private sector engagement in DRM and adaptation activities. These vary depending on a given business’s products and services, size, goals, location and access to markets but two primary reasons stand out:

First, building resilience requires **high upfront investment costs and long-term planning**, which often compete with short-term business needs. These barriers affect a range of business decisions including whether to make internal resilience-linked investments, develop new products and expand to new markets or target customers. Micro-, small- and medium-sized enterprises are particularly restrained by upfront investment costs and long-term planning challenges because they tend to have less access to affordable financing for investments and stand to lose more if their efforts to expand their market reach are unsuccessful.

Second, it is **difficult to monetise the investments into disaster and climate resilience**, therefore making it challenging for businesses to realise a payback on investments in internal disaster and climate resilience building efforts. Flood management systems and emergency plans, for example, do not have a direct payback and potential financial savings often cannot be measured.

THE PUBLIC PRIVATE COLLABORATION OPPORTUNITY

The public sector plays a critical role in creating an environment that promotes investment in DRM and adaptation. Regulation and policies such as reducing import taxes on adaptation solutions, changing building ordinances and codes, mandating disaster response plans, and developing private sector engagement programmes (See Box 2) can create an enabling environment that strengthens resilience.

In addition to adopting policies that spur investment in resilience-building solutions, governments can also help reduce barriers that the private sector faces through methods beyond regulation. Governments can encourage, foster, and establish PPCs by identifying areas where private sector ideas will yield multiple benefits to partners or by facilitating and organising projects. Governments can also enter directly into PPCs as active participants who lend their knowledge and experience. Public sector collaborations can help lower transaction costs (see Case #8), facilitating the development of new

Box 2 | South African Breweries

South African Breweries (SAB), one of the largest breweries in South Africa, has partnered with the Department of Water Affairs in the South African government to respond to the country’s water challenges through a public-private expert leadership group named the Strategic Water Partners Network (SWPN). In addition to co-chairing and funding the SWPN, SAB is improving its water consumption efficiency and reducing wastewater throughout its value chain with a comprehensive risk-based approach.

businesses, products and services, and access to new markets (see Case #4). Additionally, governments can apply their local and regional knowledge to identify where private sector solutions can be most effective.

In several instances, as highlighted in the case studies in Section 2, public-private collaborations have engaged the private sector and successfully strengthened resilience. Since the experiences of PPCs in resilience have been largely undocumented to date, this analysis draws from a series of case studies (See Appendix A) to illustrate the nature of current and recent activities. It analyses the resilience-building strategies and techniques employed by PPCs, discusses the roles various sectors play in their implementation, and presents lessons that policy-makers can draw from when designing programmes. Together, businesses and governments can pool their knowledge, capital and expertise to deliver innovative and successful adaptation and disaster risk management solutions.

² <http://www.imf.org/external/pubs/ft/wp/2012/wp12245.pdf>

³ <http://www.imf.org/external/pubs/ft/wp/2012/wp12245.pdf>

⁴ See ND-GAIN matrix: www.gain.org;

⁵ UNFCCC projects USD\$49-\$171 billion per year by 2030. The UNFCCC estimates that 35%-60% of this total will be needed in developing countries (UNFCCC (2007): Investment and Financial Flows to Address Climate Change, Table IX-65, p. 177). World Bank estimates \$75-100 billion annually between 2008 and 2050 (siteresources.worldbank.org/EXTCC/Resources/EACC-june2010.pdf)

⁶ Although not a major focus of this report, civil society also plays an important role in tackling disaster and climate adaptation and in implementing a wide range of PPCs. Their role in PPCs will be highlighted in Section 2.



2. Taking Resilience from Concept to Action

Resilience-building activities are extremely diverse. The case studies reveal a range of actors from all sectors collaborating through both formal and informal partnerships on a wide variety of innovative initiatives. The breadth of activity in part reflects the nature of resilience: unlike climate change mitigation, for example, disaster risk management and adaptation needs are highly place-specific. This demands customised activities and tailored partnerships that meet the needs of a specific community, business, or region.

This section discusses innovative resilience-building projects and initiatives around the world and is broken into three parts. The first discusses **the players** currently involved in PPCs (“who’s involved?”). The second analyses **the projects**, identifying common strategies taken to build resilience (“what are they doing?”). The third looks at **the partnerships** underlying those projects to understand the roles different partners play in PPCs (“how are they working together to do it?”). Box 3 describes industry hotspots of activity.

THE PLAYERS

Adaptation and disaster risk management are traditionally thought of as the province of development banks, national governments and international NGOs, supplemented by a smattering of global corporate citizenship initiatives led by multinational companies. However, the

In Brief

PPCs are building greater resilience through a diverse array of projects. These collaborations engage a wide range of entities and actors, from governments and international organisations of all levels to small businesses, local-level community partnerships, entrepreneurs and smallholder farmers. The series of case studies discussed in this report illustrate some common approaches that have increased resilience around the world.

case studies tell a more complete story. They highlight examples involving private sector actors ranging from multinational companies to local entrepreneurs and smallholder farmers (See Figure 1). The case studies showcase the involvement of an array of public partners from international agencies to provincial governments. They also show how often public and private sector entities are involved in multi-sectoral collaborations with local and international civil society entities. In short, the case studies collectively reveal how a diverse range of actors are collaborating for greater resilience.

The same often holds true even within individual PPCs. For example, a PPC may link global companies and international funders with smallholder farmers and local

Figure 1 - The Actors, from Global to Local

	PUBLIC SECTOR	PRIVATE SECTOR		CIVIL SOCIETY
GLOBAL	International Development Agencies	Multinational Companies	Industry Associations	International Non-Profits
REGIONAL	Regional Collaborations			
NATIONAL	National Governments	National Companies		Domestic NGOs
SUB-NATIONAL	Provincial Governments	Small & Medium-Sized Enterprises	Cooperatives	Local & Regional Non-Profits
LOCAL	Local Governments			

AGRICULTURE | TOURISM | HOUSING INFORMATION & COMMUNICATION TECHNOLOGY | HEALTH | FISHING & AQUA- CULTURE | TRANSPORTATION | WATER FINANCIAL SERVICES | WASTE | ENERGY

Box 3— Industry Hotspots

Case study research targeted 11 economic sectors and industries (listed above). Four high-activity sectors stood out as “hotspots” of activity for resilience PPCs.



Agriculture

The private sector has been engaged in a number of initiatives focused on increasing yields, conserving water, adapting to changing local conditions and environmental challenges from drought to erosion and flooding. PPCs have focused on expanding the use of adaptive and sustainable agriculture techniques and technologies (e.g. PepsiCo, Lake Chilwa adaptation programme, Thanksgiving Coffee), increasing access to fertiliser and irrigation (e.g. Africafertilizer.org), and repurposing agricultural by-products (e.g. MRHP).



Information & Communication Technology (ICT)

Rising internet use and rapid proliferation of mobile phone access in developing countries have facilitated a number of new platforms for information exchange. Companies like Esoko and initiatives like AMITSA and AfricaFertilizer.org (Case #2) are using this infrastructure to collect and disseminate agricultural and market data to farmers. ICT infrastructure is also enabling initiatives focused on gathering and sharing weather information to implement early warning systems. For example, the U.S.-based company Earth Networks collects weather data from a network of global weather monitoring stations and has been involved in a number of PPCs, including projects in Brazil and Haiti (Box 4).



Financial Services

A number of initiatives focus on increasing access to financial services among small-holder farmers and pastoralists who face significant risks such as increasing rainfall variability and drought. Weather-based index insurance initiatives have been proliferating in recent years, frequently focusing on addressing risks in the agriculture and livestock segments. Programmes like R4 (see Box 5) aim to take a more comprehensive approach to risk by helping build financial safety nets and promoting prudent risk taking as well as offering insurance. Other programmes focus on micro-lending, access to savings accounts (e.g. Lake Chilwa adaptation programme), and other forms of micro-insurance such as flood insurance. Successful livestock insurance programmes have been implemented in Kenya, Ethiopia, and Mongolia among others.



Water

Companies need reliable sources of clean water for products and production processes. They also benefit from helping ensure that the communities they operate in have access to safe drinking water. Often companies respond to opportunities for providing innovative, low-cost solutions for extending access to clean drinking water to rural communities where vulnerability to water-borne illness is high. This includes manufacturing low-cost filtration technologies, water infrastructure expansion, and other innovative solutions such as water distribution kiosks locally-operated by micro-enterprises (see Case #3).

Box 4 | Earth Networks

Earth Networks (EN), an American operator of the largest weather, lightning and climate observation networks, is deploying US\$1.5 million in state-of-the-art weather alerting infrastructure and tracking technology for Haiti in 2013 through the Clinton Global Initiative (CGI)'s Commitment to Action initiative. EN aims to partner with CGI and the Government of Haiti to provide easy-to-use weather visualisation and alerting tools to address the need for extreme weather monitoring and early warning throughout Haiti.

SMEs. In other words, global organisations are not collaborating merely with other global organisations; SMEs are not exclusively partnering with regional or local governments and non-profits; and many smallholder farmers and community members are participating

“Innovative partnerships need not be constrained or segregated by participant size or location.”

programmes driven by national or international initiatives. In short, the case studies illustrate how innovative partnerships need not be constrained or segregated by participant size or location.

PPCs not only unite individual actors but also often involve collaboration among existing networks, programmes, and collaborations. This includes international or regional industry associations, local and regional cooperatives, regional inter-governmental entities, and other collaborations that may themselves have many layers. For example, AfricaFertilizer.org (Case #2) collaborates with another agricultural data-sharing initiative, AMITSA. AMITSA, in turn, is a partnership that involves regional public sector collaborations like the East Africa Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) together under the STAR (Strengthening Trade at the Regional Level) project. This shows how often a complex network of organisations and initiatives may underlie an individual PPC.

THE PROJECTS

Resilience is highly place-specific and is subject to varying local conditions and contexts. Most projects analysed for this report focus on specific climate or disaster-related vulnerabilities in a particular community or region (See Figure 2). As a result, the projects are highly diverse and demonstrate a wide variety of approaches. Box 3 shows the industry hotspots for PPCs that build resilience.

Yet many patterns emerge in the execution of PPCs. Common **strategies** illustrated in the case studies are

discussed below, along with one or more **techniques** that can be used to implement each strategy:

STRATEGY 1: Start small and keep it local. Resilience-building PPCs tend to focus on implementing small-scale (but potentially scalable and replicable) measures that benefit local communities.

- **TECHNIQUE: Engage stakeholders in the local community.** Small scale PPCs tend to focus on engaging smallholder farmers, micro- small- and medium-sized businesses, cooperatives, community leaders, and local community organisations. In comparison, large-scale initiatives such as infrastructure projects are typically implemented through public procurement contracts, PPPs, and other formal, fee-for-service type arrangements. Large infrastructure projects also tend to be built through public procurement processes and are less likely to be conceptualised as DRM or adaptation activities. Instead, they usually focus on more traditional development goals and the provision of basic services.

STRATEGY 2: Focus on sharing knowledge and building skills. Nearly all of the case studies involve some form of knowledge sharing, education, training, or capacity building. In general, the emphasis is on providing skills and knowledge needed to generate local resilience that is sustainable and not dependent on permanent outside support.

- **TECHNIQUE: Link infrastructure and skills.** Capacity building is often coupled with the provision of physical infrastructure or equipment. For example, the Zambia water kiosks programme (Case #3) provides physical kiosks as well as training in their operation and general business skills. PepsiCo (Case #7) also couples farmer access to DirectSeeding machinery and training in its operation.

Box 5 | R4

Swiss Re, a multinational insurance company, partnered with Oxfam America and WFP to develop an innovative business model called R4 that integrates financial risk management tools and index insurance for farmers in Ethiopia and Senegal who face increasing threats from climate change. Building upon the highly successful 'the Horn of Africa Risk Transfer for Adaptation (HARITA)' project, R4 uses a holistic approach to risk management, including risk reduction, prudent risk-taking, risk transfer, and risk reserves. Through R4, farmers are able to pay for their insurance premiums through labor, by food-and-cash-for-work programmes.

- **TECHNIQUE: Provide structured education in disaster preparedness.** Educational tools and training programmes have been a popular mechanism for building local capacity to reduce disaster risks. For example, Deutsche Post DHL helped initiate the GARD programme (Case #1) which trains airport personnel in disaster-prone regions. In Indonesia, tsunami awareness and emergency preparedness planning (see Box 6) is supported with a toolkit that is distributed to hotels through a tourism industry association.

STRATEGY 3: Strengthen livelihoods to build adaptive capacity. While directly addressing climate and disaster risks is front and centre in every case, building alternative and resilient livelihoods is a close second—if not equally important—goal. This reflects an understanding that a key part of building local-level resilience is to make sure individuals can make a living even in the face of unpredictable disasters and changing climates. Building resilient livelihoods is thus more than a convenient by-product of PPCs—it is a core part of the mechanism for addressing climate and disaster risks (See Box 4).

- **TECHNIQUE: Foster the development of micro-enterprises.** A number of initiatives help develop locally owned and operated micro-enterprises. These provide significant alternative sources of income, strengthening the community’s resilience to future climate and disaster impacts. For example, MRHP (Case #6) created a private social enterprise to help develop brick-making micro-enterprises that enable more widespread use of stronger, flood-resilient building materials. In Sri Lanka (Case #8), micro-hydropower systems provided power that enabled new businesses to develop. And commercial utilities in Zambia used a network of entrepreneurial kiosk operators to sell bottled water in areas not yet served by water infrastructure (Case #3).

STRATEGY 4: Leverage existing relationships. Existing partnerships, programmes, and business relationships can make an ideal foundation for a PPC. This reduces the transaction costs associated with finding partners and it

“Building resilient livelihoods is more than a convenient by-product of PPCs – it is a core part of the mechanism for addressing climate and disaster risks.”

allows the PPC to benefit from the trust and rapport of existing relationships. Focusing on shared interests also helps identify opportunities for PPCs to create mutual benefits.

Box 6 | Getting Indonesia’s Tourism Industry “Tsunami Ready”

The Bali Hotels Association (BHA) and the Indonesian Ministry of Culture and Tourism (BUDPAR) have developed and disseminated a ‘Tsunami Ready Toolkit’, to help hotels prepare for tsunamis. BHA provided expertise and staff resources to develop the toolkit, and is using the toolkit to train its 90 member hotels on tsunami preparedness, while the BUDPAR is promoting its use in the tourism industry across the country with funding from the German Centrum für Migration und Entwicklung (CIM). The toolkit includes guidance on natural early warning signs, sources for early warning data, evacuation planning, among others, and is available free of charge.

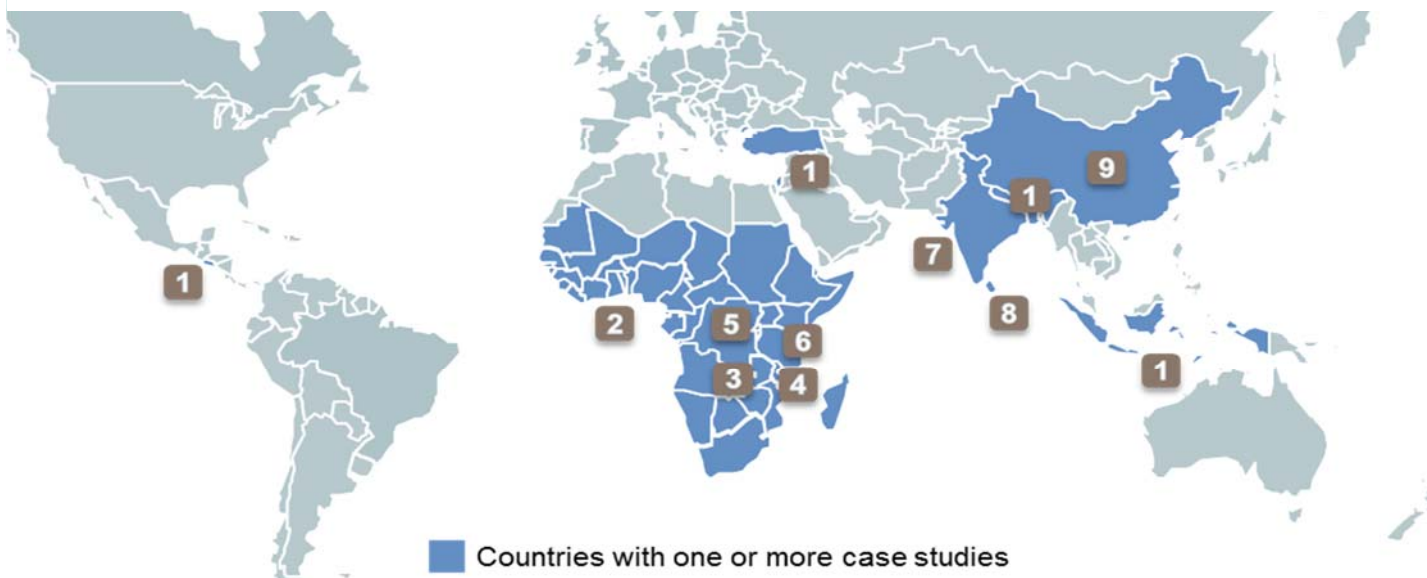
- **TECHNIQUE: Create partnerships along the value chain.** Companies are increasingly focusing on the risks in their supply chains, particularly for agricultur-

“Working with existing initiatives reduces the transaction costs associated with finding partners and allows a PPC to benefit from the trust and rapport of existing relationships.”

al products. Working with suppliers helps avoid supply shortages or a costly shift to new suppliers. In many cases, a multinational company initiates supply chain resilience-building projects by launching a formal programme to work with their smallholder farmers or other suppliers. However, a notable exception is Thanksgiving Coffee (Case #5), a California-based SME that responded to requests for support initiated by a smallholder cooperative in its supply chain. This example shows how supply chain resilience is not just for MNCs – some SMEs are also recognising and responding to their suppliers’ needs to become more resilient. PepsiCo (Case #7), Lipton, Coca Cola, Café Direct, and Green Mountain Coffee have also undertaken supply chain initiatives focused on building agricultural resilience.

Not all strategies and techniques are evident in all cases, nor is this list intended to be comprehensive. However, these observations lay the foundation for understanding what lessons can be learned from each example and what best practices future PPCs and PPC-focused policies should be kept in mind. These issues are discussed further in Section 3.

Figure 2 — Case Study Short Summaries



1	<p>GARD (Nepal, Bangladesh, Indonesia, Lebanon, Turkey, and El Salvador) - DPDHL, UNDP, and humanitarian relief agencies together prepare airport personnel to manage disasters with training from the “Get Airports Ready for Disasters” (GARD) programme.</p>
2	<p>AfricaFertilizer.Org (Sub-Saharan Africa) - The International Fertilizer Development Center partners with international food and fertiliser organisations to improve farmers’ productivity through access to fertiliser markets and policy information by using information technology.</p>
3	<p>Water Distribution Kiosks Programme (Zambia) - The Zambian “Devolution Trust Fund” Water Kiosk programme works with commercial water utilities and village level entrepreneurs to create decentralised water kiosks throughout Zambia.</p>
4	<p>Lake Chilwa Basin Climate Change Adaptation Programme (Malawi) - The programme partners with wholesalers, NGOs, and government agencies to strengthen micro-enterprises and advance climate-resilient livelihoods.</p>
5	<p>Thanksgiving Coffee Supply Chain Partnership (Rwanda) - Thanksgiving Coffee Company and Dukunde Kawa Farmers’ Cooperative co-developed climate-resilient farming strategies and trainings with support from NGOs and governments.</p>
6	<p>Mwanza Rural Housing Programme (Tanzania) - The programme addresses flooding challenges by training local villagers to use agricultural waste as kiln fuel for brick production, creating brick-making enterprises.</p>
7	<p>PepsiCo Direct Seeding Programme (India) - In collaboration with government-supported scientific research institutes, PepsiCo launched a less water-intensive technology for climate-resilient rice farming in India.</p>
8	<p>Micro-Hydropower for Rural Electrification (Sri Lanka) - Two community-driven long-term partnerships that have enhanced rural livelihoods by improving access to electricity with low-cost, climate-resilient micro-hydro projects.</p>
9	<p>Biomass Business to Combat Desertification (China) - The Maowusu Biomass Thermoelectric Company developed a sustainable business model that produces electricity and food using desert shrubs and sequestered CO₂ emissions.</p>

THE PARTNERSHIPS

Public, private, and civil society entities partner when they each have something valuable to offer and something valuable to gain. Partners may offer funding or financing, implementation capacity or expertise, innovative products or access to a network. Their motivations may be to increase profits, gain recognition, acquire information on new markets, or explore opportunities to scale or replicate a high-potential DRM or adaptation solution. Whatever the contributions and benefits of participating, successful PPCs recognise the value each partner brings and the importance of ensuring their strengths are leveraged and their needs are met.

Generalising about each sector's role can be surprisingly difficult. Past studies on PPPs have emphasised the profit-maximising, innovative nature of the private sector, the enabling and monitoring role of the public partner, and civil society's ability to facilitate project implementation.⁷ However, the case studies show a wider variety of roles and responsibilities in PPCs and less consistency from project to project (see summary of roles in Figure 3).

One reason for this may be that PPCs include a wider range of types of arrangements than PPPs. PPPs are usually formalised arrangements in which private entities bid through a public procurement process to deliver services under the oversight of a public entity, sometimes in conjunction with public and civil society partners. In contrast, PPCs include both formal contractual arrangements as well as more informal and ad hoc partnerships.

It can also be challenging to generalise about roles and responsibilities because they are sometimes poorly defined or subject to change throughout the evolution of a given PPC. It can be difficult to disentangle the many layers of partners, funders, public sector agencies, and other initiatives to identify what specific actions are being taken. This is particularly true for PPCs that are loose collaborations of other projects and initiatives (see e.g. discussion on page 9). Roles may also change as projects mature. In many cases the public sector helps initiate a PPC by providing funding and facilitate connections between partners but then scales back their role as the project reaches implementation or a later stage of development. For example, in MRHP (Case #6), the government helped facilitate initial brick-maker trainings but later spun off the programme into an independent social enterprise.

Public sector. Funding projects and programmes remains a central function of the public sector. However, this does not mean that PPCs are dependent on public money or incapable of being self-sustaining. Often public sector partners step in to fund start-up costs, training and capacity building, micro-enterprise incubation and other early-stage activities but then take more of a

backseat role once the initiative reaches a more mature stage of development. This is sometimes by design—for example when the Rwandan government and USAID helped develop a coffee farmer co-op (see Case #5). In other cases spin-off enterprises grow out of publicly funded programmes, such as the social enterprise Nyumba Bora Brick Company, which grew out of work conducted by the public entity MRHP (see Case #6).

“Often public sector partners fund start-up costs, training and capacity building, micro-enterprise incubation and other early-stage activities but then take a backseat role once the initiative reaches a more mature stage of development.”

The public sector also contributes expertise and services, although they are usually not as central in the implementation of projects as the private sector and civil society partners. Often government agencies will participate in PPCs as advisors, facilitators, or evaluators. For example, in the PepsiCo Direct Seeding project, the quasi-public Indian Agricultural Research Institute helped by evaluating the impacts of Direct Seeding methods. Similarly public sector partners provided consultation and information in the AfricaFertilizer.org (Case #2) and MRHP (Case #6) projects.

Finally, the public sector often brings access to a global or in-country network which can help connect and align partners. For example, UNDP facilitates GARD trainings (Case #1) through its connections to various authorities and stakeholders in the countries where trainings are offered. Like funding, network facilitation can be an early-stage role that declines as the programme develops.

Private Sector. The case studies suggest that private sector partners are usually more likely to make in-kind contributions than write a check. Where the private sector acted as a direct funder, the amounts were often small (IFA's funding of AfricaFertilizer.org – Case #2), coupled with in-kind contributions (PepsiCo – Case #7), and/or made through an affiliated foundation (for example, MRHP's brick-making initiative was funded by the ERM Foundation – see Case #6).

Typically the primary value the private sector brings is providing products and services. Not surprisingly these are usually related to the business' core activities: for example, financial institutions provide loans and banking services (see Cases #4 and #8). Likewise in the Lake Chilwa adaptation programme, wholesalers help get

Figure 3 — Partner Roles in PPCs

Role	Public Sector	Private Sector	Civil Society
FINANCING / FUNDING	<p>Zambia Water Kiosks (Case #3)– KfW provides funding</p> <p>MBTC (Case #9) - China’s Forestry Administration and the NDRC provide funding and subsidise electricity</p> <p>MRHP (Case #6) – MRHP provided seed funding to establish Nyumba Bora Brick Company (NBBC)</p> <p>Sri Lanka micro-hydro (Case #8)– WB, GEF, and Sri Lankan Gov. were funders</p> <p>AfricaFertilizer.org (Case #2) – IFDC is a funder and leads implementation</p> <p>Thanksgiving Coffee (Case #5) – Rwandan government and USAID funded creation of the coffee grower’s cooperative</p> <p>Lake Chilwa adaptation programme (Case #4) – Government of Norway provided funding</p>	<p>PepsiCo direct seeding (Case #7) – Funded and developed the machine</p> <p>MRHP (Case #6) – ERM Foundation provided start-up capital to create NBBC</p> <p>AfricaFertilizer.org (Case #2) – IFA provides funding</p>	<p>Thanksgiving Coffee (Case #5) – Dutch NGO Progreso provided funding for training programme</p> <p>MRHP (Case #6) – Ashden provided funding and technical assistance to develop a business plan</p>
EXPERTISE & SERVICES	<p>PepsiCo direct seeding (Case #7) – Indian Ag. Research Inst. provides technical assistance</p> <p>AfricaFertilizer.org (Case #2) – Policy data from NEPAD</p> <p>Zambian DTF Water Kiosks (Case #3)– Zambian National Water Supply and Sanitation Council support the water kiosk procurement process</p> <p>Lake Chilwa adaptation programme (Case #4) –MBC Radio 1 broadcasts climate change news</p> <p>MRHP (Case #6) – Dept. of Community Development provides consultancy</p> <p>Sri Lanka micro-hydro (Case #8)– Provincial Councils channelled subsidies to village co-ops</p> <p>Lake Chilwa (Case #4) – Dept. of Trade and Dept. of Fisheries promote new income generating activities</p>	<p>GARD (Case #1) –DP DHL conducted trainings</p> <p>Lake Chilwa adaptation programme (Case #4) –Malawi Savings Bank provides onsite banking service. Wholesalers and retailers purchase goods from micro-enterprises</p> <p>MRHP (Case #6) – NBBC provides business incubation and training through a fee-for-service model</p> <p>Sri Lanka micro-hydro (Case #8)– Credit institutions provide loans</p> <p>Thanksgiving Coffee (Case #5) – Facilitated co-op engagement and developed strategic framework</p>	<p>PepsiCo direct seeding (Case #7) – Technical assistance from the International Rice Institute</p> <p>Sri Lanka micro-hydro (Case #8)– ITDG developed a community model (donation) and training; ECS groups lead project implementation</p> <p>Thanksgiving Coffee (Case #5) – Dukunde Kawa Co-op developed and implemented trainings and REDI developed curriculum and administrated the programme</p> <p>Lake Chilwa adaptation programme (Case #4) – LEAD SEA and World Fish Centre implement and lead the programme</p>
PRODUCTS		<p>PepsiCo direct seeding (Case #7) – Technology transfer of DirectSeeding machinery</p> <p>MBTC (Case 9) – Maowusu (Company) generates biomass power and produces spirulina</p> <p>Zambia Water Kiosks (Case #3)– Kiosk operators sell water; utility establishes kiosks</p> <p>MRHP (Case #6) – Brick-making enterprises produce and sell clay bricks to customers</p>	
NETWORKS	<p>GARD (Case #1) - UNDP and UNWF provide a professional networking ground for disaster response experts at a country level</p>	<p>Thanksgiving Coffee (Case #5) – Brought in NGO partners to the project through its business network</p>	<p>Sri Lanka micro-hydro (Case #8)– Energy Forum supports community engagement</p> <p>Lake Chilwa adaptation programme (Case #4) - Emmanuel International provides market connection</p>

community enterprise groups' products to market (see Case #4). In other cases, the link is a little more indirect. PepsiCo and Thanksgiving Coffee are in the business of buying agricultural products but saw an opportunity to build capacity for resilience in their supply chains. This led to non-core activities, such as the development of agricultural machinery (PepsiCo) and the development of frameworks for climate adaptation (Thanksgiving Coffee).

Businesses can also make significant contributions through PPCs simply by sharing their expertise. Training and knowledge transfer have significant value in areas like disaster preparedness and micro-enterprise incubation. This is the central idea behind the GARD programme, which leverages Deutsche Post DHL's expertise in logistics to train airport staff (see Case #1). It is also a central part of the role the Nyumba Bora Brick Company plays in incubating brick-making micro-enterprises (see Case #6).

Civil Society. Civil society partners often bring critical local knowledge, implementation capacity, and strong working relationships in local communities. They can be effective connectors and implementation partners, making public and private resources more effective by linking them with existing initiatives to avoid duplication and streamline implementation. Their presence in—and relationships with—the communities is also a vital success factor, as discussed more in Section 3. For

“Civil society partners often bring critical local knowledge, implementation capacity, and strong working relationships in local communities.”

example, LEAD's relationship with the local communities made them a trusted implementation partner for many of the initiatives implemented in the Lake Chilwa adaptation programme. For this reason, civil society organisations can also play an effective role using their networks to engage stakeholders and communities (see e.g. Case #8). Civil society partners, such as foundations, may also provide programme funding, but often focused on specific aspects or early-stage activities. For example, start-up capital for the Nyumba Bora Brick Company (Case #6) was provided by the private company ERM (through its foundation) after the foundation Ashden funded development of a business plan .

⁷ Roeth, Helen (17 April 2009) Final Report: Consultancy Project on the Development of a Public Private Partnership Framework and Action Plan for Disaster Risk Reduction (DRR) in East Asia. United Nations International Strategy for Disaster Reduction (UNISDR). Retrieved from: http://www.unisdr.org/files/10840_UNISDR.pdf



3. What's been learned?

As the case studies discussed in Section 2 illustrate, the players, projects and partnerships vary widely. The array of goals, scale, partners and longevity makes it difficult to create a definitive list of best practices that all PPCs should follow. However, policy-makers can apply these six lessons learned from these cases as they explore the possibility of using PPCs to address resilience challenges.

1. Build on a foundation of local engagement and trust.

Local level resilience-building programmes require active participation and support from residents and the community. Building trust and developing relationships with community leaders are critical success factors that require a deliberate and long-term investment and a commitment to supporting the community's needs in ways that may sometimes extend beyond the specific mission of the programme. For example, staff managing the Lake Chilwa adaptation programme (Case #4) remained attentive to the community's needs and maintained flexibility in their mission so that they could support the community when it faced imminent threats, such as an infectious disease outbreak. Not only did this

“Building trust and developing relationships with community leaders are critical success factors that require a deliberate and long-term investment and a commitment to supporting the community's needs in ways that may sometimes extend beyond the specific mission of the programme.”

help build trust but it also addressed an essential prerequisite for the adaptation programme's success. This example shows how addressing the community's near-term problems is often necessary before they can turn their attention to longer-term resilience challenges.

Policy-maker considerations:

- **Policy-makers should leverage existing relationships.** Existing partnerships, programmes, and business relationships can make an ideal foundation for a PPC. This approach reduces transaction costs, builds on existing trust, and efficiently uses existing capacity.

In Brief

The experiences featured in these case studies provide many insights for policy-makers wishing to foster greater public-private collaboration around resilience-building. Successful projects often draw from the skills of multiple partners and many are able to engage a wider range of partners by offering flexible levels of involvement. Many leading cases are structured to ensure repeat exposure, continuity, and institutionalisation where they are implemented, while being easily scaled and replicated elsewhere, or spun off into profitable and self-sustaining businesses. This requires a balance of clear and deliberate structure while maintaining the flexibility needed for projects to be tailored to local circumstances. Finally, the cases demonstrate the importance of early engagement of local community leaders, which often involves working with trusted local partners.

- **Provide information and build trust before rolling out new programmes independently.** When working with a local partner is not the best option, start by providing information and resources to build a foundation of trust and awareness. Consider holding meetings and workshops with a wide range of community members and leaders (district leaders/political leaders, faith leaders, etc.) prior to starting technical interventions and taking other steps to solicit input, develop relations and build trust with community members.
- **Take a broad view of adaptation and addressing community needs as they arise.** Maintain sufficient flexibility in the resilience-building programme's mission to help the community address near-term challenges when they arise. Flexibility not only builds trust but also recognises that addressing near-term problems is often necessary before the community can begin to cope with comparatively long-term resilience challenges.

2. Start small and local, but position for scale and replicability.

Highly replicable resilience-building PPCs tend to have simple structures; do not involve proprietary technology; have broad applicability in different climates and cultural, political, and institutional contexts; and include innovative ideas, strategies, or processes. Process-oriented PPCs, such as the Lake Chilwa adaptation programme (Case #4) or Thanksgiving Coffee's supply chain partnership (Case #5) can be easily replicated by different entities. Scalable PPCs benefit from a strong champion and a self-sustaining source of revenue (in the case of commercial activities). GARD (Case #1), for example, developed a standard training that could be scaled up to be applied at different airports regardless of geographical location. In this case, scaling up was possible because DPDHL could utilise its expertise in different countries as a logistics champion.

Policymaker consideration:

- **Design for replicability and scalability.** Consider scaling and replication goals early on to design the PPC with long-term programme development in mind. Develop a plan for financial sustainability so that programmes can be scaled without permanent reliance on external support.

3. Integrate skill building to maximise community ownership.

Many PPCs focus on sharing knowledge and developing skills with the aim of creating programmes that are sustainable and not permanently dependent on external support. Several of the successful PPCs featured in the case studies recognise that learning is continual and that on-going training processes are necessary for sustained success. The GARD PPC (Case #1), for example, has a follow-up programme called GARD Plus and has also embedded their methodology into facility- and country-level policies and processes. This example shows how DRM practices can be integrated in ways that extend

“PPCs must be flexible and adaptive, responding to market changes and the evolving needs of programme constituents.”

beyond the individual or group that directly receives the knowledge transfer. When turnover or political change occurs, loss of a champion can end an initiative if it has not been institutionalised. Indonesia's tsunami readiness PPC (see Box 6) ensures the continuity and institutionalisation of disaster preparedness knowledge by developing a continuing, living action plan with the hotel industry.

PPCs must also be flexible and adaptive, responding to market changes and the evolving needs of programme constituents. The Mwanza Rural Housing Programme (MRHP) (Case #6), for example, successfully adapted its training programme as the needs of its entrepreneurs evolved from creating products to managing and scaling a business. The programme has been adapted to include trainings targeting women-owned businesses, tree planting initiatives to provide necessary shade cover for the bricks, and business skill building workshops.

Policymaker considerations:

- **Design education and training programmes for continuity and institutionalisation.** PPCs that have a strong education or training element should be designed to ensure repeat exposure, continuity, and integration into policies and procedures. Repetition and integration help ensure that principles are retained and ingrained and that they outlast staff turnover.
- **Make sure collaborations evolve as their beneficiaries do.** The needs of programme constituents will change as the PPC develops. This requires PPCs to be flexible and adaptive.

“PPCs create and reinforce economic opportunities—from fostering spin-off businesses to reducing up-front investment costs—making communities more resilient to climate change.”

4. Build adaptive capacity by strengthening business and livelihoods.

Addressing climate and disaster risks head-on is essential. However, building resilient livelihoods is more than a parallel goal or a convenient by-product: it is a core mechanism for addressing climate and disaster risks because it increases the ability of communities to adapt and prepare. The case studies reveal the many ways in which PPCs create and reinforce economic opportunities—from fostering spin-off businesses to reducing up-front investment costs—making communities more resilient to climate change.

Policymaker considerations:

- **Implement strategies that support the growth of self-sustaining small businesses.** PPCs can help micro-enterprises and small businesses develop by implementing key growth-oriented strategies. These include (1) identifying alternative income sources (e.g. Zambia water kiosks programme) using waste products to create secondary revenue streams (e.g. MBTC); (2) forming spin-off businesses from

profitable projects (MRHP); and (3) finding ways to add value to existing products (Lake Chilwa adaptation programme). Self-sustaining micro-enterprises contribute to greater economic stability and build resilience in their local communities.

- **Link infrastructure access with skill building.** Policy-makers can consider ways to link infrastructure or equipment access with skill building programmes, so that beneficiaries have the tools they need and the ability to use them effectively.
- **Eliminate up-front costs through unconventional models and partnerships.** High first costs are a persistent barrier for start-ups. PPCs can eliminate up-front costs through contract-based models, removing a major upfront cost of launching a retail micro-enterprise.
- **Address up-front costs by facilitating access to finance.** Affordable access to finance is a challenge for many businesses, small and large. PPCs can also help overcome high start-up costs by helping secure access to financing or by engaging a network of financing institutions to increase access to credit.

5. Create partnerships along—or across—value chains.

Companies are increasingly focusing on risks in their supply chains, particularly in the agriculture sector. Working with suppliers helps avoid supply shortages or a costly shift to new vendors. Section 2 demonstrates how supply chain partnerships are not exclusively the domain of multinational corporations—smallholder farmers are becoming more aware of the opportunities to request assistance from end buyers. Thanksgiving Coffee (Case #5) is an example of a SME that launched a supplier-focused climate adaptation programme after receiving a request for support from its Rwanda-based supplier. Building partnerships across industries can also enable creative and profitable new solutions. For example, MRHP (Case #6) identified opportunities to link rice growers with brick-makers to use rice husks as a kiln fuel, reducing costs for brick-makers while creating an additional revenue stream for farmers.

Policymaker considerations:

- **Encourage SMEs to initiate partnerships along their supply chains.** Supply chain partnerships are not only for multinational corporations and are not always initiated by large retailers. Public-private collaborations should create opportunities for SMEs to engage with their supply chain to build resilience and for suppliers to be able to have a leadership role in implementing resilience-building activities.
- **Create synergistic relationships between micro-enterprises.** Build new markets by connecting sectors that do not ordinarily interact. Look for opportunities to connect suppliers and buyers in unconventional ways. In particular, help foster

business relationships that use a low-value or traditionally wasted product to address needs in another sector or industry.

- **Involve trade associations and industry groups.** Industry associations can provide valuable information and support and often have an interest in fostering the development of new markets. Participating in PPCs can also be valuable to them as a cost-effective way to gain market intelligence in emerging markets.

6. Find innovative alternatives to traditional infrastructure.

Traditional models for providing essential services tend to involve extensive infrastructure with high up-front costs. Developing countries often require more efficient and creative solutions, but offer unique opportunities to leverage emerging 21st century solutions. For example, the business model used by the Zambia water kiosk programme (Case #3) extends many of the benefits of water infrastructure while avoiding the barriers of high capital costs. While it does not offer a fully comparable level of service, water kiosks provide other benefits such as long-term job creation and entrepreneurial opportunities.

“The proliferation of internet and mobile phone access is creating new markets and opportunities in developing countries. These tools can often be leveraged by PPCs in ways that build greater resilience.”

Policymaker considerations:

- **Where conventional infrastructure is impractical, find efficient solutions to deliver key benefits.** Encourage unconventional thinking and innovative approaches to delivering basic services in areas where traditional infrastructure is inefficient or cost-prohibitive.
- **Creatively leverage emerging technologies and platforms.** The proliferation of internet and mobile phone access is creating new markets and opportunities in developing countries. These tools can often be leveraged by PPCs in ways that build greater resilience.
- **(Em)power small businesses using off-grid and micro-grid energy sources.** Using micro-grids in rural communities to facilitate energy access can enable communities to independently manage their electricity supply. This can benefit the local economy by enabling small business development. It also allows for greater control over power supply management, making economies more resilient.



Appendix A — The Case Studies

Nine projects and programmes are presented in this report in the form of 2-page case studies. These include:

1. Deutsche Post DHL: Getting Airports Ready for Disaster
2. AfricaFertilizer.Org: Using IT to Share Fertiliser Market Intelligence
3. Clean Drinking Water Distribution through Water Kiosks
4. Building Resilient Communities through Multi-Sectoral Partnerships
5. Creating Supply Chain Partnerships to Safeguard Smallholder Livelihoods
6. Mwanza Rural Housing Programme: Building Flood Resilience in Tanzania
7. PepsiCo: Direct Seeding Methods in Indian Rice Paddies
8. Micro-Hydropower for Community-Based Rural Electrification in Sri Lanka
9. Building a Sustainable Biomass Business while Combating Desertification in China

Each case study includes the following sections:

- Summary
- Key messages
- Icons indicating type of resilience-building activity and activity sectors (see Box 7)
- Introduction
- Project Activities
- Project Partners
- Project Structure Diagram
- Outcomes and Impacts
- Lessons Learned




Box 7 — Guide to case study icons

Icons are used to indicate three aspects of the project’s purpose and focus: the type of resilience-building activity (climate adaptation, disaster risk management, etc.), the economic sector (agriculture, energy, etc.), and the social sector (public, private, civil society).

Type of Resilience Activity

		
Disaster Risk Management	Climate Change Adaptation	Alternative & Resilient Livelihoods

Social Sector

		
Private Sector	Public Sector	Civil Society

Economic/Activity Sector

			
Transportation & Logistics	Energy	Waste	Tourism
			
Water	Financial Services	Housing	Information & Communication Technology (ICT)
			
Health	Agriculture	Fishing / Aquaculture	

About MCG

Meister Consultants Group, Inc. (MCG) is an international consulting firm specialising in climate and disaster resilience, renewable energy, international dialogue, and corporate sustainability. Our services include strategy and policy development, market analysis, research programme planning and management, as well as new governance tools such as stakeholder and citizen participation, dialogue and mediation, multi-sectoral cooperation and the development and management of various multi-stakeholder initiatives.

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About CDKN

The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channelling the best available knowledge on climate change and development to support policy processes at the country level.



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