Building Resilience with Private Sector Engagement:

Enabling Socially and Environmentally Responsible Investments in Disaster-Prone Communities

Photo Credit PfR

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List of Abbreviations

BwN	Building with Nature
CMS	Coffee Management Services
CSR	Corporate Social Responsibility
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
EIA	Environment Impact Assessment
EMCA	Environment and Management Coordination Act
IPCC	Intergovernmental Panel on Climate Change
GRI	Global Reporting Initiative
GVC	Global Value Chains
HFA	Hyogo Framework For Action
LAPSSET	Lamu Port and Southern Sudan-Ethiopia Corridor
MMAF	Ministry of Marine Affairs and Fisheries
MNE	Multi-National Enterprises
NEMA	National Environmental Management Authority
PESTEL	Political, Economic, Social, Technological, Environmental, Legal
PPP	Public Private Partnership
SEA	Strategic Environmental Assessment for LAPSSET
UNISDR	United Nations International Strategy For Disaster Reduction
WI	Wetlands International

Executive Summary

Partners for Resilience (PfR) commissioned this research conducted by masters students of the International Development Department at the London School of Economics (LSE) for a 6-month consultancy project. The aim of the report is to identify the possibilities of resilience investments that can create a co-benefit for both communities and private sector companies.

As an alliance of more than 50 Civil Society Organisations in the Netherlands, Africa, Asia, and Latin America, PfR functions through these partners with expertise on humanitarian, climate, land use and sustainable development, identifying areas of vulnerability and enhancing community resilience. PfR's programming is operationalised through an integrated-risk management approach (IRM), highlighting the importance of the nexus between climate change, ecosystem management, (mal)development practices, interdisciplinary action, centrality of communities, and the landscape approach. PfR is advancing dialogues with governments, private sector companies, multilateral donors and local CSOs to build resilience. For this research, the focus is on Responsible Investments defined as an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions, to better manage risk and generate sustainable, long-term returns[1].

To aid PfR in its continuous dialogue efforts on resilience focusing on responsible investments, PfR and the consultancy group came to the following research question:

> What key conditions are required to enable a resilience investment and what opportunities can be provided for promoting socially and environmentally responsible investments?

The report identifies three key sub-questions to answer the research question:

1. What are the current practices of private sectors in building resilience, and what contributes to a strong private engagement in increasing resilience?
2. What elements of resilience-building are important to include in the investment cycle and development?

[1] https://www.unpri.org/pri/what-is-responsible-investment

3. What is the role of government in encouraging private sector involvement in resilience?

Overview of Conceptual Framework (s): from literature review

There is limited research examining how investments can purposefully (or directly) improve community resilience, and how stakeholders should work together to facilitate investments to reduce vulnerabilities and improve adaptation capacities. In this report, we address the gap through a review of three concepts: shared value creation in private investment, humanitarian assistance in vulnerability reduction and adaptation, and the enabling environment that is facilitated and supported by government regulation and institutions. The conceptual framework is as follows:

1. The concept of **shared value creation** underpins the current partnership between the private sector and other stakeholders including governments, NGOs and communities. It indicates that integrating a Disaster Risk Management (DRM) strategy into business operations benefits both the communities and the investment itself. This concept is important to understand the motivations and incentives that drive business engagement in adaptation and resilience, and furthermore, provides guidance and information when collaborating with the private sector.
2. The concept of **resilience** is widely accepted by humanitarian and development practitioners as well as policymakers, working to reduce the vulnerabilities of communities highly affected by climate change hazards and climatic disasters. Although the conceptualisation and operationalisation of resilience is not universal, the understanding of resilience in humanitarian and development programming is not only useful but also perceived as crucial. Generally, the concept describes the ability of an individual or community to not only recover from stress and shocks (Adger et al. 2005), associated with natural hazards, but also prepare and manage the changing environment. In other words, resilience activities involve strengthening livelihoods so that communities have the means to lessen the effects of such disturbances. Resilience is affected in many dimensions. For example, physical infrastructure, access to natural resources, as well as government policies and bureaucratic capacities enable or obstruct adaptation opportunities (Oxfam, 2013). Therefore, when analysing investments and their impacts on the community, resilience and resilience-building are important concepts to deploy in order to understand

the myriad of effects investments can have on livelihoods and the possible opportunities that exist for stakeholders to participate.

3. Both public and private institutions often wonder how they can work more effectively together and what conditions are required to enable the transition to systemic resilience. The concept of an **enabling environment** is a varied term in academia. In regard to resilience, the concept underscores the essential pre-conditions required to facilitate or hinder community resilience. Government mechanisms, partnerships, institutional frameworks act as incentive structures for responsible investments that reducing disaster risk and enabling adaptation (UNISDR, n.d.).

Structure and relevant areas of analysis

We begin with our introduction, methodology, theoretical framework and review of literature as related to investments in climate adaptation and DRR. Subsequently, the report presents our analysis of different forms of investments in two disaster-prone countries, Kenya and Indonesia, which are relevant to PfR's current field work on climate adaptation and resilience. The consultancy group mapped the four cases according to the type of investment for closer analysis. With information from desk research and interviews, the report examines the impact of investments on community vulnerability to natural hazards; the current roles of relevant stakeholders in adaptation; and possible opportunities for improvements in resilience. The report concludes with possible challenges for resilience-investments and the consultancy group's opinions on the future of private sector investments in climate adaptation and resilience.

The main argument consists of three sections. Our analyses are presented as the following:

Firstly, the consultancy group investigated the DRM strategies that is adopted by business. These strategies differ according to their size, structure and investment environment. Accordingly, the consultancy group made a comparison between the DRM strategies adopted by Nestle and Sarova Shaba Hotel. We found that through reducing risks and strengthening resilience in the communities, business continuity is ensured and the communities benefit through a more stable livelihoods. The DRM strategy has been developed systematically along Nestlé's supply chain which aims at reducing risks. ON the other hand, the strategy adopted by Sarova Shaba Hotel, a private enterprise, presents a greater dependence on local partnership with community leaders and

government officials. In addition, we found that collaboration of multi-stakeholders can stimulate business participation if the factors that drive their adoption of DRM strategy can be recognised. We argue that adaptation and resilience centre on the wellbeing of the locals, and therefore, require different investments approaches than traditional business models. Our analysis also suggests that standardising an effective practice is necessary to make resilience more measurable and more compatible to business models. Moreover, higher DRM awareness among stakeholders can urge transformation in business strategy with greater risk sensitivity, since business, regardless of size, is subjected to market pressure and stakeholder inspection.

Secondly, investments, both small-scale and large-scale have intended and unintended socio-economic impacts on vulnerable communities. While the concepts of vulnerability and resilience are well understood there lacks a consensus on how to apply the humanitarian concepts and tools for resilience investments. The investments of LAPSSET and BwN have a variety of effects on vulnerability and resilience, and in both cases, investments did not include systematic tools for evaluation. Although the Kenyan government conducted a Strategic Environmental Assessment (SEA) for LAPSSET, and WI is developing resilience indicators for the BwN project, the consultancy group finds that both investment cycles lacked crucial elements of resilience-building in their development plans. For resilience-investments stakeholders must understand not only the climate risks, but also the social, economic and political risks. Therefore, investments require strong community engagement throughout the project cycle. In addition, knowledge-sharing, or information extension services, are imperative for project success and for adaptation.

Thirdly, with increasing recognition of the importance of private sector finance and role in adaptation, governments and researchers have and continue to debate the right conditions to encourage and support private sector adaptation whilst improving community resilience. This section finds that essential elements include general legislature acting as incentives for responsible behaviour. Viewing the case of LAPPSET, although the Kenyan government has stringent legal frameworks, issues of land access and land tenure are main aspects of the project. The need for stronger regulatory mechanisms ensuring private compliance with laws. Furthermore, this report finds that a limitation facing private sector adaptation is the problem of finance. Finally, our findings suggest that due to a lack of political will and coordination amongst both national and

local levels of governments, legal frameworks for DRR and adaptation often falter during implementation. Both LAPSSET and BwN show the importance of coordination and multi-stakeholder participation in creating an enabling environment for adaptation. Our findings show, a main element of BwN's success is grounded in its ability to influence policy dialogue and collaborative coastal protection between the varied ministries.

Conclusion

In conclusion, the report shows the opportunities and challenges of facilitating investments for resilience. Although private sector companies play a crucial role in the global plight of adapting and mitigating the harmful effects of climate change, their investments can be detrimental or greatly advantageous to resilience, especially in the developing world. Ina addition, the evaluation of investments' possible impacts on resilience cannot be accurately assessed without an understanding of the role of the state and institutional capacity to support and facilitate adaptation and resilience. It is therefore crucial to support multi-stakeholder collaboration, finding co-benefits among government leadership and private sector companies in order to increase engagement that is beneficial for both business operations and vulnerable communities.

Source: Dutch Water Sector

Introduction

Context

In December 2015, 195 countries signed the Paris Agreement on climate change, and since COP22 in Marrakech, Morocco, ASEAN member states and over 30 African countries have committed to full implementation of climate resilience activities (Munang, R., & Mgendi, R., 2017; UNFCCC, 2017). The Paris Agreement highlights both ecological and economic importance of climate resilience-building; however socio-economic challenges, such as food insecurity and unemployment, pose a challenge to the promotion and construction of sustainable development in many developing countries. Despite the concerted efforts by governments, to mitigate, respond, and prepare for the adverse effects of climate change, further funding, technology and other forms of assistance are needed to effectively reduce vulnerability and increase both human and environmental resilience.

Since the disastrous 2011 earthquake and tsunami and building upon the commitments made under the Hyogo Framework for Action (HFA), multinational organizations emphasize the importance of collaborative efforts to enhance the capacity of local communities to cope with climate change and recover from natural hazards. Specifically, the HFA, signed by 168 countries at the UN World Conference on Disaster Reduction in 2005, asked for "the full commitment and involvement of all actors concerned including governments, regional, and international organizations, civil society […], the private sector and the scientific community (UNISDR, 2005). Due to globalization, businesses often operate internationally, building factories in some of the most vulnerable communities to natural hazards and disasters. Climate change will lead to higher frequency, intensity and wider geographical distribution of extreme weather events (PricewaterhouseCoopers, 2013); therefore, businesses will become more exposed to climatic risks.

Multinational organizations and consulting groups are investing in research and the development of frameworks within which corporate investments can embed and drive resilience (Izumi & Shaw, 2015). A report by UNISDR and PwC states that the cost of damage from natural hazards and extreme weather is increasing by the decade. The cost of damage to factories, offices, resources, and other assets, cost about 10 billion USD in 1975, increasing to nearly 400 billion USD in 2011

(PricewaterhouseCoopers, 2013). Hence, driven by motivations to protect their operations and assets, businesses are often among the first responders to natural hazards and the first investors in climate risk prevention. 70 to 85% of investment dollars in disaster risk reduction come from the private sector, most commonly engaging in contingency planning for natural hazards, financial mechanisms in disaster preparedness and public-private partnerships for production of sustainable products and services (Johnson & Abe, 2015). However, given the increasing frequency and scale of climate change-related shocks and risks (IPCC, 2012), the international community is planning to further engage the private sector, encouraging plans to enhance human capacity for adaptation and disaster risk management (DRM) in business strategy, investments, and operations.

In light of the efforts and goals of the U.N. and its operating multinational bodies, our partner, PfR, is focusing its efforts on spreading awareness of resilience-building, and communicating the importance of community empowerment for risk and vulnerability reduction to stakeholders in different sectors. Therefore, the report examines factors which strengthen multi-stakeholder engagement in increasing resilience, and the conditions under which investments will be environmentally and socially responsible.

Defining Key concepts

Partners for Resilience works to help those who are the most vulnerable to disaster risks. In order to help individuals and communities lead their own disaster risk reduction and adaptive strategies to the changing environment, a holistic understanding of vulnerability and resilience is required.

The report will discuss the level of "vulnerability" of the community in disaster-prone areas.

> Vulnerability is defined in HFA (2007) as:
>
> "The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards."

It is important to note that the term vulnerability is often not adopted by local communities to describe their current situation or position in facing the effects of the changing environment; however, this report uses the term as a general concept that indicates community's current relative status when facing climate-related stresses.

Although there are many working definitions for the concept of resilience; however, all definitions include elements of flexibility and adaptability in order to prepare, mitigate, and recover natural disasters.

> Resilience used in this report is defined by UNISDR (2009) as:
>
> "The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner [...]"

The consultancy group understands that the community is not homogenous and that the communities investigated are diverse in terms of ethnicity, income-level, and gender. However, given the scope of our research, the report will refer to "the community", as a single entity.

In addition, this report conceptualizes investments as the deployment of capital with the expectation of earning a return on the capital deployed.

Our research was conducted with a general conceptualization of both investments and climate issues because investments of all types and sizes can have various impacts on communities, depending on their initial level of vulnerability.

Structure of the Report

The remainder of the report is structured as follows. Firstly, we will review theoretical concepts related to climate adaptation and DRR. Secondly, we will present the methods used to examine investments in two case countries. Subsequently, the report will analyse three components of the research question: private sector incentives to invest in adaptation, addressing resilience in investments and the enabling environment. Lastly, we will conclude the report with overall recommendations and possible challenges for PfR in its second phase. Overall, the objective of the report is to inform PfR's IRM approach and in dialogue and diplomacy. The research shows that a multi-stakeholder approach—creating a foundation for public and private collaboration for disaster and climate change resilience—is viewed as crucial for vulnerability reduction by multinational organisations, humanitarian organisations like PfR, and academics.

Literature Review

Context of Resilience and Adaptation

In the context of today's globally interconnected economy, private company and public-private investments are gaining increasing attention within national and international governance (Crick et al, 2017). Climate change threatens global value chains, economic growth and development initiatives; simultaneously, investments may exacerbate the effects of climate change and natural hazards, exposing vulnerable communities to climatic, but also social and economic risks (Izumi & Shaw, 2015). Policymakers, academics, and humanitarian-development practitioners explicitly call on the private sector to engage in the generation of adaptation strategies and sustainable development that foster resilience-building (Crick et al, 2017).

Spearheaded by the United Nations (United Nations Global Compact and UNEP, 2012; UNFCCC, 2013; UNCTD, 2014), the international community advocates for the promoting adaptation and sustainable development by all actors, and investors, in society (Crick, et al, 2017). For instance, unlike previous reports, the IPCC's Working Group II report of AR5 (2014) focuses on co-benefit generation in adaptation investments for both the investors and the community. The AR5 report refers to such efforts as "climate resilient pathways;" in other words, investments in adaptation that do not exacerbate or cause "dangerous interference with the climate system" (UNFCCC).

However, climate-related disasters are increasing in severity and intensity, making the efficacy of sustainable development projects more difficult (AR5, IPCC). Studies show that the most vulnerable to climate change-related hazards are those that do not have the capacity to prepare, mitigate, and recover from natural threats. Recognising that adaptation is a key issue for the success of sustainable development, the Sendai Framework for Action (2015-2030) further highlights both adaptation capacity and risk management at the community-level. Evidently, practitioners and policymakers have expanded the discourse of climate change and disaster risk reduction beyond analysis of geographical features of vulnerable communities to address adaptation systematically (Djalante & Thomalla, 2010; Smit & Wandel, 2006; Brooks, 2005). To equip communities to face changes in their environment, UNISDR promotes the use of resilience as a tool to be adopted into investment and development planning.

Similarly, academic literature explains that in light of climate change and climate change-related risks, investments in disaster-prone areas should be recognized as impactful on individual and community adaptation in a plethora of facets (Ayers & Huq, 2009). Investments, both large-scale (bridges, dams, roads) and smaller-scale (seeds, fertilizer, education programs), affect the level of vulnerability and the capacity to be resilient to climate change and natural hazards. The concept of vulnerability, is used analytically to explain risk reduction and resilience-building as contextual and requiring personal dimensions (Cannon, 2008). The concept shows that individuals, households, communities are exposed to risk due to political, economic, and social processes (ibid). Given the contextually-specific nature of vulnerability, development that separates vulnerability and resilience-building from investments may leave communities unprepared and unprotected from ecological as well as other social and economic changes (Wechselgartner & Kelman, 2015). Therefore, the private sector needs to understand the drivers of vulnerability to climate change and related natural hazards in order for investments to be resilience-sensitive (Crick et al., 2017; Ayers, 2010).

UNISDR and UNFCCC have taken steps to encourage climate resilient pathways within government development agendas and private sector investment plans. For instance, the Nairobi Work Programme, assists governments and corporate enterprises in developing countries to assess vulnerability and the initial adaptation level of the community. The Nairobi Work Programme Private Sector Initiatives (NWP PSI) publishes good practices on climate change adaptation activities, presenting them as both necessary and profitable. However, as stated in the literature and as found by the consultancy group, the information on how firms should institute adaptation strategies and promote resilience-building into investments is limited (Crick et al., 2017; Douxchamps et al., 2017).

For practical purposes, resilience is often conceptualized as “capabilities” , and is associated with human, social, physical, as well as financial characteristics (Twigg, 2009). In other words, health, social networks, financial resources etc. affect the ability of individuals and communities to manage natural hazards and disruptive changes to their environment (Brown, 2014). The concept is multi-disciplinary, exploring social, economic and political aspects of society (Brown, 2013). The literature agrees that resilience is a complex process that contains many components, making the choice of indicators for monitoring and evaluation difficult (Douxchamps, 2017). There lacks

a consensus on how to best move the theoretical concept of resilience to practical operation (Crick et al., 2017).

For both resilience and vulnerability, researchers bring their own conceptual models to study how communities can better adapt to climate change and natural hazards (Appendix I). For example, the DFID/Twigg "resilient community framework", explains that resilience can be understood by assessing five thematic areas: governance, risk assessment, knowledge and education, risk management and vulnerability reduction, disaster preparedness and response. Also, within the thematic areas, there are many components to be evaluated such as human (knowledge and skills), social (community networks), political (local government DRR policies, strategies, and implementation plans), physical (infrastructure and transportation), financial, and natural capital. Appendix I shows the variety of working frameworks for vulnerability and resilience evaluations that differentiate in the conceptualisation of resilience as well as in methodology (Douxchamps, Debevec & Barron, 2017). As shown in Appendix I, humanitarian and development professionals deploy different tools and attempt to avoid using predetermined indicators to study the root causes of vulnerability. Furthermore, the understanding of resilience may differentiate from community to community due to large variances in socioeconomic conditions and cultures (The Rockefeller Foundation, 2014).

On the other hand, the literature also explains the issues of crafting frameworks on a case-by-case basis, as resilience-building becomes a learning-by-doing project: it is difficult to find best-case strategies for resilience-building and vulnerability reduction (Douxchamps, Debevec & Barron, 2017). The critique of current resilience projects is that they focus on inputs and outputs rather than outcomes and impact (ibid). Similar to Appendix I, Appendix II shows the guidelines that private enterprises abide by but also presents the absence of an actionable framework and methodology for protecting and enhancing community capacity to adapt and reduce vulnerability.

Overall, the literature highlights the importance of understanding the root cause of vulnerability beyond concepts and theory and suggests that resilience should be operationalised by all actors; however, there remains a dearth of information on how to use it in planning and practice. In addition, evaluating resilience often requires frequent assessments to capture variable changes in the community through household-level and community-level data.

In the following chapter, the consultancy group will investigate under what conditions the private sector is more likely to incorporate adaptation strategies and resilience thinking in their investments.

Private Sector Engagement

As is shown above, building resilience is the responsibility of all stakeholders. Businesses can provide necessary services and required technologies for resilience, including infrastructure construction, dissemination of adaptation products and provision of financial resource (Biagini & Miller, 2013). Additionally, business operations are also affected by climate change but also by mismanagement of natural resources. Under rapid globalization, many companies outsource their production to low income countries that are often vulnerable to climate hazards. Climate change and associated natural hazards can lead to losses in reputational capital, private properties, and financial returns, and disrupt main supply chains (Principles for Responsible Investment [PRI], 2017). Certain risks will be discussed in the case studies in the following chapter.

Biagini and Miller (2013) indicate that successful engagement of the private sector will increase investments in vulnerability reduction, and will lower the costs of replication of technologies resilient to climate change. The following shows how private sector can participate in tackling social and environmental problems.

Corporate Social Responsibility (CSR) currently underpins private sector engagement in humanitarian issues. Since the 1990s, the CSR argument and its frameworks, which address social and environmental issues, are viewed as business obligations (Bowen, 1953). But the practices were mainly carried out in the form donations, which had limited effect to tackle the root causes of vulnerability.

In 2000, CSR practices shifted from philanthropy towards **shared value creation.** Reciprocity became the most salient feature in the new corporate partnership of solving social and environmental problems (Dolan & Rajak, 2016). In this case, positive social impact and economic incentives are both created which act as the momentum of keeping the partnership. As a result, studies of CSR started to focus on performance-related analysis and to examine how CSR can

generate profit to business while tackling social problems. Scholars and management researchers have made efforts to connect CSR to companies' internal performance, for instance, how CSR creates competitive advantages and new market expansion for the company (Lee, 2008). Thus, through shared value, business can create economic value by optimising their impact to the society (Porter & Kramer, 2011).

Shared value implies managing risks to reduce losses while also creating value for communities. Natural risks that arise from climate change affect both communities and business. In response to climate change, businesses need to adapt production to ensure the stability of its raw materials and protection of farmers' livelihoods. So, it is important for the private sector to both understand potential climate risks in their operations and build capabilities to respond to natural hazards (Chen et al., 2013). Also, communities in the region where business productions are located may benefit from a more climate resilient livelihood by reducing threats to their resources.

Even though shared value creation can generate great benefits for both sides, there remains a lack of guidance and information regarding business integration of social impact into operations. In order to fill this gap, a number of guidelines were created in global initiatives to promote incorporation of climate concerns into business practices, such as OECD Guidelines, United Nation Global Compact (UNGC), and Global Reporting Initiative (GRI). For example, UNGC encourages businesses of all sizes to comply with ten universal principles, engage in partnerships or initiate activities that are aligned with the UN goals (Reed et al., 2012). UNGC is also a network for learning and knowledge-sharing across private, public and civil units at different level. Additionally, efforts of standardization and regulation have been made to establish benchmarks and targets that businesses can act upon. In this area, the GRI is a widely accepted set of standards for voluntary non-financial reporting, so that civil society, government units and investors can have access to comparable, standardised and unitary information on a corporation's environmental impact (Reed et al., 2012). The GRI standards are one of the key channels accepted to integrate public agenda of increasing resilience into business models. Appendix II presents the most commonly used resources that businesses utilise to report their sustainability performance achievements.

Partnerships with the government are also essential for increasing resilience. Given that the root causes of vulnerability often lie in economic, social, and institutional dimensions (Chen et al., 2013), vulnerability needs to be addressed by government systematically, and our interview with Deltares supports this argument. Thus, though private initiatives can mobilise resources for adaptation, it still cannot replace the role of government in reforming the institutions and implementing policies to strengthen resilience (Biagini & Miller, 2013).

Further examination of whether these new practices of shared value creation are effective is needed. The investigation of shared value as a new approach of CSR is important for identifying the driving factors in private engagement. Informed by these discussions, our research aims to examine conditions that enable a more resilience-sensitive investment.

Creating an Enabling Environment

In the previous sections, our report has drawn from fairly disparate literature to identify key characteristics of business involvement in adaptation and DRR. As the previous sections suggest resilience entails a multifaceted process in which all stakeholders require an understanding and contribution in ensuring its success. The involvement of private investment and its successful engagement is crucial to reducing vulnerability and has shown considerable success when implemented. However, there are limitations in encouraging private sector involvement in adaptation. For instance, although awareness of climate risk is high in the private sector, businesses implementing adaptation strategies remain in the minority and tend to focus on specific sectors such insurance (Crick et al 2017). Therefore, to encourage risk-sensitive investments, scholars cite the need for governments to create an enabling environment, which creates incentives for innovation and positive impact and disincentives negative behaviour. For instance, Phong et al (2015) suggests that the private sector is unlikely to participate in necessitating climate change investments unless incentivised by government. Yet the role of government in enabling private sector adaptation has often been overlooked in the literature.

Examining the role of governments is important. Although adapting to climate change is often limited to technological transfers and technocratic approaches, adaptation requires enabling policies, as well as dynamic institutional frameworks (Phong et al,2015; Crick et al, 2017;

Trabacchi et al, 2015).

Furthermore, governance has a role of strengthening the capacities of business and community actors to understand and use information to enable better decisions. For instance, although the Sendai Framework for DRR presents a foundation for shared-value collaboration among all stakeholders, including the community, private sector and non-governmental organisations, the Framework identifies the state as the primary authority to reduce disaster risks. In addition, adaptation literature identifies, the government as responsible for defining, organizing and allocating different responsibilities of DRR to different actors.

With this in mind, this report conceptualizes an enabling environment for private sector engagement as a policy environment that encourages incentives for business activities and minimises environmental and social costs. According to Fox et al (2015) this can be ensured through the following:

1. Mandating legal and regulatory frameworks
2. Facilitating efficient institutional frameworks
3. Partnering with relevant stakeholders

The subsequent sections apply his approach to adaptation and resilience literature in order to identify main elements of an enabling environment for private sector adaptation:

Mandating through Legal and regulatory frameworks

Fox et al (2002) cites the role of the government is to set minimum standards for business performance through legal frameworks; a common example is establishing emission limits or enforcing company directors to pay for emissions (ibid). For adaptation, Trabacchi et al. (2015) argues that that legislature and regulatory frameworks should encourage private investment but promote the importance of resilience measures. Phong et al (2015) explains that policies promoting resilience measures are enacted through various means, including national DRR legislation and the integration of DRR into sector-specific policies (i.e. infrastructural development and coastal protection policies). Effective legal frameworks include policies that

promote a people-centred approach for land tenure reform, protecting and improving livelihoods. Averchenkova et al (2015) highlights the use of legal and regulatory frameworks as business incentives can be seen in Western European countries. Studies show that compliance with national or European regulations drove companies to incorporate climate change in water supply investments for 25-year plans (ibid). On the other hand, whereas well-designed frameworks are suggested to trigger private engagement, non-existent or deficient frameworks were viewed as inhibiting incentives by failing to put a price on inactivity.

Secondly, Fox et al (2002) suggests the need for public sector agencies to support responsible investments and participation through dynamic networks and institutions. Resilience and adaptation are relatively new concerns for the private sector, and therefore, networks help to jumpstart private sector participation (Stenek et al 2013). Also, low institutional capacity may constrain private sector's ability to undertake risk-sensitive investments and dissuade private sector involvement in adaptation (Crick et al., 2016).

Networks encourage businesses to work alongside specialised institutions, which understand the relevance and materiality of climate change. In addition, networks are also important for disseminating data and information required to aid businesses in adaptation. However, this requires stringent institutional arrangements. Effective institutional networks also consist of strong institutions together with inter-governance coordination and local knowledge (Djalante, 2012). This intergovernmental partnership should emphasise both horizontal and vertical policy coordination, relying on timely and effective implementation measures (ibid).

Lastly, the literature emphasises partnerships as a main element of an enabling environment for encouraging responsible investments. Strategic partnerships contribute complementary skills and inputs of the different sectors. Surmise et al (2016) defines multi-stakeholder partnerships, as a mix of partners from public and private and civil society organisations, partnerships which cooperate collaborate, network or alliance, through “voluntary but enforceable commitments between partners from different sectors” (Surmise et al 2016). Multi-stakeholder partnerships are required to meet the multifaceted challenges of adaptation and potential tools for coordinating actions across multiple scales, developing more integrated and holistic approaches (Crick et al.,

2016). Multi-stakeholder partnerships are argued to aid participation and increase accountability of measures (Twiggs, 2009). For instance, the city of Rotterdam's ministerial agencies often collaborate with DMCR Environmental Protection Agency Rijnmond and private sector businesses through Deltalinqs, a forum of seventy companies working on the port of Rotterdam (Surminski et al, 2016). Whereas, the previous national government's Delta Programme identified knowledge and governance gaps, including unknown flood risk levels in dikes due to weak oversight of the project, the Deltalinqs collaboration was more successful, developing stress testing instruments to consider different types of flood (ibid).

Methodology

The consultancy group agreed with the client to investigate four cases in two programme sites of adaptation and resilience-building, Kenya and Indonesia. PfR projects in both countries have entered the second phase of programming, which focus on dialogues in regards to policies and investments.

Sub-Saharan Africa and Southeast Asia are highly vulnerable zones to natural hazards induced by climate change:

Indonesia is an archipelago where low-lying areas are often threatened by extreme climate events such as floods and droughts, due to the rising sea-levels. It has the fourth largest population in the world. However, despite rapid economic growth, more than 10% of the population is still living under the poverty line. Moreover, the poorest populations in Indonesia reside in high climate risk-prompt areas. Exacerbated by the shortage of infrastructure and basic services (e.g. health and education), the majority of the population is highly vulnerable with low adaptive capacity to prevent and recover from a disaster (Indonesia INDC, 2015).

Similarly, the economy of Kenya highly relies on natural resources that are sensitive to a changing climate. Around 80% of land in Kenya is arid or semi-arid with poor agricultural infrastructure. The country faces major development challenges as more than 42% of its population live under the poverty line, with limited access to basic infrastructure and the highest inequality rate in the region according to UNICEF. Significant economic losses from floods and droughts further threaten livelihoods and hamper national development (Kenya INDC, 2015).

Meanwhile, Indonesia and Kenya are both experiencing rapid economic growth with an increasing variety of private investments. In addition, large-scale PPP projects have become the main form of infrastructure development in these two countries. Thus, a long-term disaster risk management strategy against the impacts of climate change is necessary for the protection of these investments and to sustain economic growth.

In order to closely examine the impact of climate change to investment and explore the role of private sector in strengthening resilience against climate change, we map our cases according to the form of investment and key stakeholders involved (see Table 1). These cases are all in climate-

relevant sectors, such as infrastructure, food and beverage, and tourism, subjected to high environmental risks. In addition, multi-stakeholder involvement is a common characteristic among these cases. The consultancy group intends to use the case studies to demonstrate how collaboration between multiple agents can engender optimal impact for vulnerable communities.

Table 1: Mapping of Cases

	PUBLIC INCENTIVE-DRIVEN		**PRIVATE INCENTIVE-DRIVEN**	
TYPE OF THE CASE	Contractual PPP	Multi-stakeholder Initiative	Publicly traded Multinational Enterprises	Private Enterprise
CASE	LAPSSET	BwN	Nestlé Kenya Limited	Sarova Shaba Game Lodge
LOCATION OF OBSERVATION	Isiolo, Kenya	Demak, Indonesia	Kenya	Samburu, Kenya
SECTOR	Infrastructure	Infrastructure	Food and Beverage	Tourism
STAKEHOLDER HIGHLIGHTED	Governments Private Sectors	Governments, NGOs, research institutes, private sectors, communities	Investors, consumers	Private sector, guests

Cases in brief

LAPSSET Corridor Program is a regional infrastructure project aiming to facilitate economic growth between the Eastern African countries Kenya, Ethiopia and South Sudan (LAPSSET, 2016). The program is funded under the PPP framework—an agreed upon concession or other form of contractual arrangements (PPP Act, 2013). PPP Act 2013 articulates an important role of the government in undertaking feasibility studies, which includes environmental and social impact assessments. One major concern about the LAPSSET project stems from its impact on the communities in the region. Some argue that the project is likely to intensify land and resource competition particularly in Isiolo County (Sharamo, 2014).

Building with Nature (BwN) in Demak is a coastal zone management project headed by EcoShape, a consortium of knowledge institutes, government agencies and private sector firms that actions both environment restoration and designed engineering (Ecoshape, n.d.). The project's objective is to both mitigate further coastline degradation by restoring the existing mangrove ecosystem and facilitate adaptation to rising sea-levels and land erosion. The project is funded through partnership between government, private sector, NGOs and research institutions. Thus far, the project has been successful in its third phase of implementation, tripling shrimp yield and restoring semi-permeable barriers by 20km

Sarova Shaba Game Lodge (Sarova Shaba) is one of the branches under Sarova Hotels, Resorts & Game Lodges, and a leading hotel chain in Kenya. It is a private enterprise and has integrated social and environmental concerns into its business operations through a plethora of partnerships with communities and NGOs in its various locations. Floods and drought in the area affect business, which also intensify tensions between communities.

Nestlé is a publicly traded multinational enterprise, and therefore, must comply with stringent regulation and inspection from investors and shareholders. The changing climate threatens the supply of its raw materials. In response, the company undertakes a variety of shared value projects in the communities in which it operates, including the *Nescafé* Plan. Starting in 2010 to promote responsible farming, Nestlé maintains the quality of its products through investment in high yield disease resistant coffee trees. This has been successful with the farmer increasing food security in its first few years.

Data collection

Our arguments and suggestions are supported by both primary and secondary data. The three key components of the report, which relate to private incentives, resilience assessments and enabling environment, are all informed by academic literature and tertiary case examples. The consultancy group conducted desk research in each case, which includes government reports, business reports, legal documents, project brochures and workshop materials. Also, the groups conducted interviews with key stakeholders in each case, including a local officer of PfR in Kenya, researchers from Deltares, a hotel manager from Sarova Shaba hotel, and a survey from the Nestlé Kenya's regional officer. The interviews provided us with insights for each case and strong support for the key recommendations in this report.

Limitations

As in any research, some limitations can be raised.

- The group realises that in addition to changes in temperature, climate change is also associated extreme weather events, and thus, require specific mechanisms for risk management apart from general adaptation framework. The topic of climate adaptation is broad, and there is often a lack of clarity on what differentiates a DRR from CA intervention. We use both of the terms together in our report.
- As private sector involvement in CCA and DRR measures is still relatively new, there is a shortage of research on this topic.

- The analysis in this research is largely informed by previously published materials. We utilised interviews as additional support, rather than as main sources of evidence.

Despite these limitations, the consultancy group suggests that the findings and recommendations in this report are valuable in facilitating dialogues among multi-stakeholders.

Case Analysis and Findings

Addressing Resilience in Investments

In this section, a comparison of DRM strategies will be presented between two types of private investments, private enterprises and MNEs. Sarova Shaba and Nestlé differ in terms of business structure and the level of market pressure. In comparison to private enterprises, publicly listed companies have fragmented and complex structures, in addition to a higher-level of inspection from investors, regulators, civil entities and consumers. The report will to identify factors that determine the current practices of these two types of private sectors, and discuss our findings of what can be done to strengthen private engagement in increasing resilience.

Risk Identification and Opportunity Generation

In regard to climate change, the primary concern of business is the risks and threats it poses to its assets and supply chain. Climate change can impose risks on business in both direct and indirect ways. Natural hazards, including floods and droughts, can result in business risks such as major disruption in supply chain and significant lost in assets, which is shown in the following case of Nestlé. In addition, climate change can also exacerbate social tensions that in return affect negatively on private investment. These social tensions are often defined as social risks along with the development project which exaggerates existing social risks or imposes future threats on individuals (Graetz & Franks, 2016, p. 8). As climate change threatens local livelihoods and properties, conflicts between communities, and between communities and business, arise when resources become scarce, which is found in the case of Sarova Shaba Moreover, irrespective of business size, increasingly stringent regulations, market pressures and public scrutiny on optimising investment impact are changes that companies cannot afford to ignore (Biagini & Miller, 2013). Therefore, including DRM in business strategies that secure communities' livelihood against climate change benefits both the locals and private investments.

Business Strategies of Disaster Risk Management

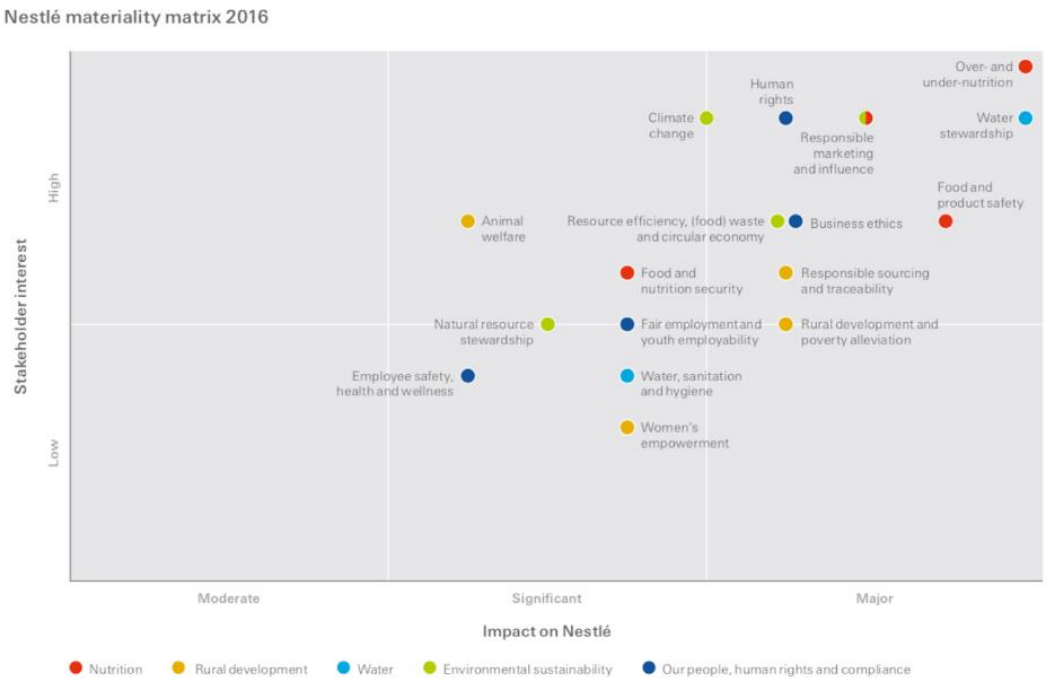
In analysing the cases of Nestlé and Sarova Shaba, the consultancy group found that various level of stakeholder inspection and business structure (public-traded MNEs and private-owned enterprises) have led to different strategy adoption in DRM. The main comparison can be seen below in Table 3.

- **Nestlé** adopts a company-wide DRM strategy based on the concept of shared value creation (Nestlé, 2016), which puts emphasis on preventive disaster reduction. The Management Board is directly held responsible for adapting to possible climate change-related risks. Climate change risks and opportunities are identified under a comprehensive risk identification and assessment framework at both company and asset level (Table 3). These kinds of risks and opportunities may come from the impact of regulations, costs of reputation, and expectations from the society (CDP, 2016).

  The identification and assessment framework evaluates potential physical climate impact within operations. Physical climate change impact mainly influences financial return through major supply chain disruption, increases in operational cost, and loss of property. Nestlé recognises that unstable weather conditions related to climate change threatens their supply chain, especially those in key coffee-growing areas in Kenya (Nestlé, 2016). Additionally, rising sea-level, together with floods and droughts, severely affect access to water resources, which business operations, suppliers, and local livelihoods depend on. In response, Nestlé designs management policies and business continuity plans to reduce the risks by increasing resilience (CDP, 2016). Two exemplary projects are the *Nescafé* Plan and *Nespresso* AAA Program. In partnership with CMS, Nestlé provides training for coffee farmers on how to cope with a changing climate, including picking the right cherry, changing the seeds, and improving planting technology. The goal of creating shared value underpins these activities by both addressing the challenges to farmers' livelihoods and reducing the threats to their supply chain (Nestlé, 2016).

Furthermore, a Materiality Analysis (Table 2) evaluates the degree of stakeholder concerns and prioritises each social concern. As a publicly traded company, Nestlé is under stringent investor scrutiny, subjected to standards and financial oversight (NAEM, 2014). The materiality matrix positions the issues based on level of stakeholder concerns and potential impact on business. According to its materiality assessment, climate change, especially climate mitigation, is highlighted as one of the main concerns to their stakeholders. The company will lose reputational capital, and consumer demand will be affected if it fails to meet stakeholder expectations (CDP, 2016). However, estimated reputational loss is CHF 50 million, while natural hazards like floods can lead to estimated CHF 1451 million in revenue reduction (CDP, 2016). It is evident that loss from reputational capital is much smaller than those from physical climate impact, suggesting that stakeholders, particularly the investors, can leverage more of their influence on business to increase risk awareness. Therefore, it indicates that increasing concerns and awareness of disaster risks among stakeholders can effectively facilitate business to integrate DRM strategy in response to climate change.

Table 2: Nestlé Materiality Matrix 2016



Source: Nestlé, 2016

The consultancy group notices that the majority of Nestlé's current climate change strategy is related to mitigation targets, such as percentage of carbon emission reduction and energy conservation. We find that since business management decision-making is based on confidence-levels (Izumi & Shaw, 2015), business tends to create cost-effective models for climate mitigation than adaptation, which is more challenging to quantify and report on for stakeholders. According to Nestlé's CDP report (2016), business opportunities are generated through both monetary and recognition awards, gained by reaching target benchmarks, receiving certifications and improving supply chain management (based on stringent sourcing principles and codes). Specific examples include third party reviewed non-financial annual report, GRI standards reporting, Fairtrade mark, Dow Jones sustainability ranking, etc. In contrast to climate mitigation, rather than adaptation, and resilience interventions entail a more integrated DRM approach together with thorough assessments at the community-level. As the group presented in the following chapter, adaptation and resilience enhancements are centred on the improvement of livelihoods and human well-being, not namely mitigation targets. Thus, non-traditional business matrix has to be developed in order to facilitate knowledge transfer of potential risks at in order to prevent and reduce negative impact to both locals and business. Simultaneously, innovation and technology management create competitive advantage for the company (Izumi & Shaw, 2015). As stakeholders' interests in climate adaptation are rising, tools are currently being developed in order to assess Nestlé's impacts on farmers' livelihoods, as well as sustain the supply of raw materials in coordination with global sourcing teams in Kenya (Nestlé, 2016).

Also, since 2015, there is an evident shift in the focus of Nestlé activities and investments (CDP, 2016). Instead of focusing on the inputs (number of farmers trained), we have seen more attention paid to outcomes and impacts on yields and livelihoods. Therefore, the consultancy group finds that adaptation facilitates transformation in traditional business model towards a more integrative strategy that takes livelihoods into account while generating profit. We suggest more standardizations and regulations to establish adaptation targets which can be adopted into business model and implemented in commercial practices.

- On the contrary, **Sarova Shaba** has a more uniform and centralized business structure and strategy towards disaster is more reactionary. Currently, there is a lack of guidelines for standardised DRM procedures and processes in the hospitality industry (UNSDR, 2015). With a small business structure and high dependence on natural resource and communities, they become more vulnerable in natural hazards. Sarova Shaba is located in the Shaba National Reserve of the Isiolo County which includes three communities including the Samburu people. Source of income mainly relies on both the scenic beauty of the Ewaso Nyiro River, and the rich cultural heritage of the Samburu village.Their core business is closely intertwined with the ecosystem and the surrounding communities; direct natural hazards in the area threaten the survival of Sarova Shaba. For instance, floods resulting from heavy rains in the highlands submerged part of the property and another branch of Sarova Chain was washed away. A concentrated business structure and heavy reliance on natural resources increase the Hotel's vulnerability to the changing climate.

  Besides direct natural hazards, risks from stakeholder concerns mainly derive from community conflicts over resources. The relationship is complex since the risks precipitated by the company might trigger social conflicts in the community, transferring risks back to the business. Sarova Shaba benefits from wildlife in the national park, but at the same time, people are reliant on the land's resources in order to survive droughts. Communities move their livestock to the national park for water and grasses, but these activities also displace the wildlife that tourism relies on. Furthermore, when business tries to protect its assets by limiting access to the park, conflicts and disputes between community members over resources, and conflicts between the community and the private ranchers arise. According to our interview with a Programme Manager in PfR, these threaten the hotel business (February 2, 2018).

  Sarova Shaba has adopted the PESTEL Tool of Analysis to assess risks from external business environment. A team is especially in charge of weekly review in regard to internal and external environmental concerns (KAMICA, 2015). According to an interview with Sarova Shaba's Lodge Manager, the strategies for environmental risks include providing the local community with grass to sustain their herds when droughts come and developing an early warning system to reduce loss in floods (February 24, 2018). Sarova Shaba also

> relies on traditional CSR activities to tackle social risks, such as providing skill training to local people, building schools for education, creating an artefact market for villagers to trade with tourists and tree planting. The provision of "CSR activities" that are "enough to benefit the community" is important to the business, the Lodge Manager said, as they help the hotel gain reputational capital, reduce tensions and create shared value for both community and the business (February 24, 2018).

The consultancy group finds that a responsive strategy to addressing climatic, social, and economic risks requires a strong reliance on local partnership and traditional CSR projects in comparison to a well-developed risk reduction strategy (e.g. one adopted by Nestlé). Cooperation with the local actors can lead to better understandings of the concerns, as well as knowledge for a business strategy with positive social impact. Partnerships among county government, local NGOs, and community leaders are also key to ensuring sustainable engagement with Sarova Shaba. "Communities know their environment much better than you", the Lodge Manager said. Moreover, the local communities treasure their religious sites and cultural heritages and have the local knowledge that helps to understand the environment (Memorandum, n.d.). Collaboration and leadership among these actors can transform the relationship between business and local communities from being hostile against each other to benefit mutually from a more resilient ecosystem. Therefore, the consultancy group suggests that for local enterprises, knowledge sharing and building a formalised and close relationship between communities and business are the key.

Conclusion

Overall, the consultancy group found that through reducing risks and strengthening resilience in the communities, business continuity is ensured and the communities benefit with a more stable livelihood. Incentives for the private sector to incorporate a resilience-sensitive strategy derive from both risk identification and opportunity generation.

Partnering with Public-Listed Firms

As it is demonstrated in the case of Nestlé, MNEs are more likely to adopt a systematic DRM strategy along their supply chains which aims at reducing risks. For these public listed firms, a fragmented supply chain based in areas vulnerable to climate change has significant financial implication to their operations. Meanwhile, given that stakeholder pressure is high, they have to respond to stringent inspection of investors, public authorities, civil entities as well as comply to standards and regulations. However, these can also generate incentives for the company where they can create competitive advantages by strengthening their brands, reduce both financial and reputational costs and manage their supply chain more efficiently.

Our findings indicate that mitigation targeting is well-established than adaptation. With more standardised practices and quantifiable regulations, mitigation targets are easier for business to act upon. Thus, the consultancy group suggests that multiple stakeholders should work on facilitating the compatibility of resilience-building to business models. However, different investment and implementation approaches are expected because unlike mitigation, adaptation is centred on the wellbeing of individuals and communities, instead of quantitative targets. Traditional business practices emphasising output and mitigation targets will need to be transformed accordingly, so as to realise the goal of strengthening livelihoods against climate change.

To facilitate this transformation, the consultancy group suggests that partnering with MNEs might result in positive examples of DRM adoption for other companies to follow. Our research also shows that higher DRM awareness among stakeholders can urge this transformation in business strategy with greater risk sensitivity since business, regardless of size, are subjected to market pressure and stakeholder inspection.

Partnering with Private-Owned Enterprises

In contrast, strategy adopted by private-owned enterprises, such as Sarova Shaba Hotel, is relatively more reactive to risks and presents a greater dependence on local partnership with community leaders and government officials. Its relatively small business scale increases the vulnerability to external changes. Therefore, the lack of a systematic DRM strategy makes it

depend more on local partnerships, including community leadership, NGOs collaboration and government regulation. Such partnerships enable better understandings of the concerns, provide knowledge for a proper DRM strategy and benefit the stakeholders. The amount and quality of shared value creation from this partnership are therefore key to engage the private sector and enable resilient investments. Therefore, the consultancy group suggests that formalising and strengthening the local partnership with multi-stakeholders can sustain such engagement with private enterprises in building resilience.

Table 3: List of DRM Practices in Nestlé and Sarova Shaba

Company	Type of Business Structure	DRM Strategy	Stakeholder concerns
Nestlé	Publicly traded MNEs	Business Strategy: - *Creating Shared Value (CSV) Strategy* - *Corporate Business Principle in line with SDGs and UNGC* - *Integrated, company-wide DRM processes* Identification and assessment: - *Nestlé Group Enterprise Risk Management Framework (ERM)* - *Materiality Analysis: SustainAbility* - *Stakeholder partnership* Implementation: - *Nestle Environmental Management System (NEMS)* - *CSR Programs*	Main stakeholders: - *Employees, consumers, suppliers and communities* - *Governments, NGOs, academia* - *Shareholders, industry and trade associations* Examples: - *Non-financial disclosure* - *Standards and certifications: GRI, CDP Climate Change Report, ISO14001, etc.* - *Domestic laws and regulations* - *Ranking and awards: FTSE4Good Index, Dow Jones Sustainability Indices, etc.*
Sarova Shaba	Private enterprise	Business Strategy: - *Responsive management strategy to external changes* Identification and assessment: - *PESTEL Tool Analysis** - *A team of environmental analyst* - *Local partnership* Implementation; - *CSR Programs* - *Local partnership*	Main stakeholders: - *Employees, guests and communities* - *Governments, NGOs* - *Owners* Examples: - *Multi-stakeholder dialogue* - *National, county laws and regulations* - *Rankings (TripAdvisor, World Luxury Hotel Awards, etc.)*

*PESTEL Tool includes analysis of political, economic, social, technological, environmental and legal factors.

Source: CDP (2016). CDP 2016 Climate Change Information Request Nestlé.

KAMICA, R. (2015). STRATEGIES ADOPTED BY SAROVA GROUP OF HOTELS IN KENYA IN RESPONSE TO CHANGES IN THE EXTERNAL BUSINESS ENVIRONMENT. UNIVERSITY OF NAIROBI.

Nestlé (2016). Creating Shared Value and Meeting Our Commitments.

Addressing Resilience in Investments

In this section, the report will demonstrate that resilience-building is a key element of development and investment planning that can be best conducted through participatory and dynamic vulnerability and capability analysis. Through investigation of two PPP investments, the comparison of Lamu Port and Lamu-Southern Sudan-Ethiopia Transport Corridor (LAPSSET) and Building with Nature (BwN) presents models of development that differ in the degree to which they incorporate and adopt resilience. Although the investments are similar in that they are large-scale infrastructure projects, the case of BwN demonstrates superior conditions for improving adaptation capacity and resilience-building. This section will underscore key characteristics of resilience interventions, supported by interviews with different stakeholders connected to both LAPSSET and BwN, and analysis of reports on completed humanitarian resilience-building projects.

Vulnerability

Through trade, GVCs, PPP investments, and CSR initiatives, investments and business operations affect individual and community vulnerability as well as the ability to cope with natural hazards. As explained previously, investments in community adaptation and resilience are on the margins because firms are incentivised to invest according to the level of risk, but also where projects result in quantifiable evidence of a return on investment. Although governments, private enterprises, NGOs, and community leaders are aware that investments such as dams, bridges, roads etc. will affect individual and community adaptability, investment plans currently do not embed strategies to empower and protect communities from climate change and climate-related hazards (Ayers, 2010). Although businesses invest according to global standards for sustainable practices and investments (Appendix II), often in the forms of contingency plans and impact assessments, assurance of accountability appears to be weak. Specifically, for investments in community adaptation, impact assessment projects require thorough research on social and economic indicators in order to establish a solid baseline. Community vulnerability impact assessment toolboxes exist; however, few invest in the project because of cost implications or insufficient methodological knowledge and guidance.

As illustrated in the methodology section, the investments of LAPSSET and BwN are motivated by public incentives and interests, such as coastline protection and economic development; therefore, the commitment to adaptation and vulnerability reduction differ to that of a humanitarian and humanitarian-development initiatives. The consultancy group finds that large-scale investments, most commonly in the form of PPP, often do not *systematically* evaluate and monitor vulnerability, nor do they embed resilience activities into the investment cycle, resulting in projects that do not effectively address the root causes of community vulnerability.

- As part of Kenya's Vision 2030 development plan, LAPSSET is intended to bring new economic opportunities to the pastoral northern regions of Kenya, including new job opportunities and higher agricultural productivity through the development of new irrigation systems and hydro-electric dams (Enns, 2017). While economic improvements in livelihoods of communities in northern Kenya are important factors for improving adaptation capacity to natural risks, such as floods and droughts (Twigg, 2009), it appears that the economic development priorities may complicate vulnerability reduction and resilience building.

  Scientific research suggests that the proposed Isiolo Dam will reduce streamflow for downstream communities, especially those who live by the entry point of the Isiolo River are dependent on the water supply of the Ewaso Ng'iro River (Vilela & Bruner, 2017). Prior to the proposal of the dam, the community was concerned with high-levels of water abstraction and storage for government-led investments (SEA). The Memorandum, written by several communities on the construction of the Isiolo Dam, demonstrates concern for the absence of adaptation strategizing built into the development plans that are needed to be resilient to the socio-ecological changes connected to the construction of the dam. The Memorandum includes a request that the government pegs development to the pace of water conservation efforts as currently it is projected that the current development plans do not properly address issues of water distribution (Takai, 2013). Although construction of the Isiolo Dam will meet the water demand for some users, the available water for the downstream communities is projected to decrease significantly (Vilela & Bruner, 2017).

It is evident in the case of LAPSSET, the community's perception of vulnerability differs to that of the government, which currently prioritizes economic improvements over other factors that contribute to the level of resilience such as DRM skills and knowledge.

Implications

The negative consequences and perceptions of LAPSSET suggest a similar model to what Blaikie et al (1994) refers to as the 'disaster pressure model': unsafe conditions and increases in vulnerability follow project development due to unequal power relations. Under this model, investors and developers do not adequately measure or evaluate vulnerability and the adaptive capacity of all communities. As a result, the absence of resilience in investments is the root cause of community vulnerability. The usual coping and adaptation strategies to climatic risks become insufficient because they are no longer effective for the resulting changes and additional stresses from the investment.

- In recognition of the both environmental and economic importance of the mangrove ecosystem in Demak, BwN aims to both mitigate further erosion and improve the coastline through sustainable development—including engineered water infrastructure solutions—and humanitarian assistance to the local community. Previous investments along the coast have caused significant harm to the environment and have increased community vulnerability due severe flooding and loss of key economic resources. For decades private business and investors used the resources provided by the mangrove area, such as timber, fuel wood, non-timber forest products, the supply of fresh water for domestic developments and economic activity in the city of Semarang (Tonneijck et al., 2015). However, rising sea-levels, land erosion, and flooding has had adverse effects on infrastructure, like irrigation canals, and has diminished farming productivity (ibid). With weak government oversight, investments did not assess environmental impacts or understand the community's level of vulnerability to land erosion and water pollution. Although the development of irrigation canals and ponds have benefited industry, it has also contributed to the rural community's vulnerability to climate change.

BwN has a two-pronged approach for addressing the economic and biophysical vulnerabilities of the community: it assists communities adapt and manage coastline erosion, as well as cope with the decline in farm and fishing productivity. Unlike other coastline erosion prevention investments that fund the construction of seawalls or dikes (Tonneijck et al., 2015, p.20), BwN is an investment in the existing environment, aiming to improve the landscape surface, minimize intrusion of seawater, and revitalize the aquaculture that the economy is dependent upon. In the interview with the Coastal Safety Manager of Wetlands International (WI), he explained that understanding the importance of mangrove reconstruction among farmers and private business is beneficial to both community adaptation and vulnerability reduction. He further suggests that the project will assist the formation of linkages between rural farmers and fisherman with the private sector (January 18, 2018).

> "In the context of Demak, we define 'socio-economic prosperity' as a level of welfare for the local communities that enables them to have a satisfactory livelihood as well as to sustain the mangrove greenbelt so that it continues to provide the safety that the local economy depends on. In other words, it is our goal to support the development of resilient and sustainable livelihoods in the destroyed or threatened coastal zone of Demak district, such that these livelihoods benefit from mangroves, and that the depending populations consider mangrove maintenance as a condition for the survival of themselves and future generations." *Building with Nature Indonesia Securing eroding delta coastlines* (Tonneijck et al., 2015 p.27).

Implications

A major component of the BwN project is to address the co-benefit to investing in coastal adaptation. Particularly in Demak, protection of the coastline is a profitable endeavour for both the state and business as fish farming is the dominant form of employment and business in the area. Hence, BwN allocates a significant proportion of time and money to conducting research and developing businesses cases to present adaptation as a potential growth market for both government and private companies. The research shows that the 'Business as Usual' scenario in Demak would result in fully flooded farming areas and villages: it is projected that 30 million people will be affected by coastline erosion. According to a Resource Economist at Deltares,

despite the figures and the sense of urgency among the community for change, the public sector often does not allocate sizable funding for coastline protection due to scarce resources, demands on ministry budgets for other affairs, as well as the high risk of negative trade-offs of investment. For example, as a result of construction, often individuals and families must be relocated for the benefit of the majority (February 1, 2018). It is evident that government budgets for coastline protection are not sufficient, especially in Indonesia, and therefore, private finance is necessary for coastal adaptation.

However, although adaptation is a key feature of the project, vulnerability and resilience have yet to be mainstreamed into the investment cycle. According to a Resource Economist at Deltares, there is no existing mechanism to ensure that private companies invest in coastal resilience and adaptation; it is not directly a lucrative investment, but rather an investment to mitigate risk and reduce future damages. Furthermore, interviews revealed that the investors of BwN perceive adaptation as a public responsibility, not a private initiative. In other words, business will invest in development, but it is the responsibility of the government and NGOs to establish adaptation strategies and implement resilience-building programs (February 1, 2018).

The Conditions: Participation & Knowledge

Businesses and governments tend to rely on national data, such as household income for assessments of vulnerability and resilience in investments. However, as shown throughout the report, resilience is both an outcome and a process, both multi-disciplinary, multi-faceted, and complex that needs to align to contextually specific community concerns (Djalante & Thomalla, 2010). As processes, adaptation and resilience require iterative evaluations for comprehensive data collection. Furthermore, it is nearly impossible to evaluate change in vulnerability and resilience without a clear qualitative and quantitative baseline (The Rockefeller Foundation, 2014). Consequently, local participation throughout the planning and implementation process is crucial (Heijman, 2001).

LAPSSET and BwN also differentiate on the basis of community engagement in planning and implementation.

- In the case of LAPSSET, the degree of community involvement is disputable. The SEA document, which states that pastoralists were consulted for the evaluation, commits to recognizing the livelihoods of pastoralists by planning and implementing "a mitigation strategy" with the purpose of incorporating social and environmental factors into land-use planning and development strategies (Enns, 2017). However, the Memorandum (March 30, 2017), submitted to NEMA on behalf of the Isiolo, Laikipia, and Samburu Communities on the Isiolo Dam, states that the claims of community involvement and consultation are erroneous (Takai, 2013). The Memorandum expresses that the community is concerned with the current level of knowledge about ecosystem management and requests further investments in capability building given the potential consequences of the dam on their livelihood (ibid).

Implication

Studies show that information sharing through networks and cooperation on CCA strategies, and resilience will improve adaptability and improve livelihoods (Di Falco et al., 2011; Ayers, 2010). For instance, a study conducted in Ethiopia on small-scale farmers found that private sector investments in climate adaptation strategies—changing crop varieties, adoption of soil and water conservation strategies, and tree planting—would not only improve resilience but also would result in financial returns for the farmers and the investors (Di Falco et al., 2011). However, changing farming practices and adaptation strategies requires access to credit, as well as information. According to the study, information extension services led to changes in farm household adaptation and adaptation increased food productivity. In the case of LAPSSET, the consultancy group suggest that investments in adaptation training and social networks by the government, and facilitated by NGOs and CSOs, would reduce vulnerabilities and improve the resilience of the affected populations.

- BwN investors recognize the importance of capacity building and education on adaptation strategies. According to the interview with Resource Economists at Deltares, low

awareness of coastline protection still remains an issue in Demak (February 1, 2018). Often coastline protection is viewed as a disruption to tourism and other economic activities. A lack of support and awareness of the benefits of coastline adaptation among community members can halt a project. Thus, WI plays the important role of information extension among the local fishing communities, building awareness and support through formal schooling and local workshops on coastal zone management and to involve them in mangrove the project itself (Tonneijck et al., 2015). WI also conducts consultations with different villages, both for government officials and community-members, to ensure that they understand the adaptation strategies and are informed of the progress of the project. According to the Coastal Safety Manager of WI, changing village norms is not simple or immediate, but as stated in the interview, he has noticed improvements in resilience among the villages that have adopted the adaptation strategy (January 18, 2018).

Implication

The case of BwN shows that engagement with the community has resulted in greater success of the project and improvements in livelihoods. However, in the interview with the Coastal Safety Manager of WI, the program for information extension on adaptation is inefficient and slow-moving, resulting in "contradictory" adaptation strategies (January 18, 2018). For example, WI is primarily responsible for spreading awareness about adaptation, which can only include about 30 people in each workshop at a time. In addition, WI still does not have tools to monitor the success of information extension or resilience: the indicators "are still in development." In the interview with the Resource Economists at Deltares, it was also explained that benchmarking coastline adaptation investments would be beneficial (February 1, 2018). The Sendai Framework is a flexible framework and encourages transparency in regard to the different investments in adaptation and the resources used by countries for the development. However, more documents on adaptation findings in developing countries would be useful for community to community, as well as country to country comparisons.

In both cases, more participation and local engagement would benefit all stakeholders. If resources are allocated to knowledge sharing and capacity building, the community will be better equipped to not only accept adaptation and resilience strategies but also provide feedback and voice concerns

on socio-ecological impacts of the project. The cases suggest that money and time spent on developing adaptation strategies and participatory vulnerability assessments by investors would benefit both business and the affected community.

Conclusion

The consultancy group finds that the model of LAPSSET is not sufficient to address the root causes of vulnerability, whereas the BwN project presents an improved resilience pathway in due to its collaborative multi-stakeholder approach and investment in community engagement initiatives.

In the case of LAPSSET, the government's actions and prioritization of economic development over addressing community vulnerabilities led to both mistrust between the community and the government, and continued insecurity and weak ecological management. Although many argue that states are the key stakeholders in disaster risk management and risk reduction, governments are often caught between the cross-hairs of achieving development goals and reducing vulnerability (Hewitt, 2013). Development without addressing resilience, demonstrates short-term thinking and lacks long-term strategy (Wechselgartner & Kelman, 2015).

In addition, the consultancy group identifies a need for coordination among government bodies, private investors, and NGOs to develop vulnerability assessments and adaptation strategies. Top-down approaches to DRR and DRM runs the risk of confound sustainable livelihoods project with political and business agendas. Therefore, guidelines, regulatory frameworks, and tools that can be adopted by the private sector and policymakers are imperative (Djalante & Thomalla, 2010).

The Role of Government and Regulation

This section analyses the wider environments of Kenya and Indonesia. Using the elements of the enabling environment identified in the review of literature, this section assesses the impacts of legislative and regulatory frameworks, multi-stakeholder cooperation and institutional arrangements on both the success of private sector investments and their impact on community resilience in disaster-prone communities

As previously discussed, governments can provide incentives for resilient-sensitive investments through legislative and regulatory frameworks. Both Kenya and Indonesia have stringent Disaster Risk Reduction and Climate Change Adaptation laws. Table 4 shows that both countries have introduced laws that recognise the importance of DRR and climate change adaptation. In Kenya, the introduction of Climate Change Act 2016 mainstreams climate change responses into development planning and implementation. The Act further emphasises the development of resilience and adaptive capacity to impacts of climate change. Regarding DRR, the Draft DRM law of 2009 emphases the roles of all stakeholders in DRR coordination and importance of DRR to the Kenyan government. Similarly, Indonesia enacted the DM law of No 2007, which allocates roles and responsibilities to each stakeholder in DRR, including the community, private sector and government. The Indonesian government has passed meaningful legislature on climate change, but this has often been passed as decrees by individual ministries (Nachmany et al., 2015).

Table 4: Overview of DRR and Adaptation Legislation and Institutional Arrangements

COUNTRY	KENYA	INDONESIA
Relevant legislation	**Climate Adaptation:** Climate Change Act 2016 County Governments Act 2012 N.17 of 2012 Environmental Management and Coordination Act 1999 **DRR:** National Disaster Management Draft (2009)	**DRR:** Disaster Management law no 24/2007 **Sector specific**: Law no 27/2007 management of coastal areas; Law no 32/2009; Village Law 6/2014; Mangrove Law no 32/ 1990
Climate Adaptation and DRR Plans	**Climate Adaptation:** National Climate Change Action Plan (NCCAP 2013) **DRR:** National Disaster Response Plan 2009 (Draft)	**Climate Adaptation:** National Action Plan 2010-2012 **DRR:** Disaster Risk Management plan RENAS PB 2010-2014
Institutional Arrangements	**DRR**: Coordination with eight main agencies including Kenyan Red Cross, National Drought Management Authority and National Disaster management Agency (NADIMA) (not yet created) **CCA:** Minister of State for Special Programmes; National Climate Change Coordinating Committees; National Environment Management Authority; County governments	**Inter-ministerial coordination:** Ministry of Environment; Ministry of Marine Affairs and Fisheries; Bappenas **CCA:** National Climate Change Committee (NCCC) to coordinate responses **DRR:** BPBD, also has regional agencies BNBD

Although, adaptation and disaster management literature have emphasised the need for general DRR and adaptation laws, our cases and interviews identified the need of more specific enabling policies such as land rights. For example, in our interview with the program MID-P Kenya, she explained that although there is a need for general climate change and disaster risk reduction laws, more pertinent issues involve the promotion of community awareness and protection of land access (February 2, 2018). Thus, this report demonstrates the importance of specific policies, such as land rights, in ensuring that projects improve community resilience to climate change and natural hazards. Duncan and Kloos (2018) suggest that lack of tenure security increases additional obstacles to adaptation and increases vulnerability. Furthermore, lack of land rights and transparency facilitate land grabbing, where large areas of arable land shift ownership to the private sector, adversely affecting developmental effects on communities' vulnerability.

- LAPSSET has had considerable effects on pastoralist resilience strategies by challenging land tenure arrangements, which provides pastoralist communities access to pasture and water during drought periods. For instance, the Crocodile Jaw Dam is suggested to potentially eliminate the Lorian Swamp, which herders use in times of drought for access to water. This may threaten both their survival and that of their livestock during droughts (Vilela & Bruner, 2017). Without effective laws to protect land rights, it is hard to ensure the investment projects will benefit the communities and can actually negatively affect communities. Historically, land grabbing in Kenya was typical because communities lacked ownership rights and the means to legally protest land displacements and land dispossession. The more recent Community Act 2016 provides basic land rights to pastoralist communities by providing registered communities with ownership rights. However, the efficiency of Community Act 2016 is hindered by the national government's control of unregistered land where many pastoralists presently live and livestock graze (Boone et al., 2016). The government's control of unregistered land allows the government to displace pastoralist communities based on their developmental objectives. Secondly, the act also reignites issues around the provision and privatisation of land. In our interview with the Programme Director, it became evident that privatisation of communal land enacts problems, as resources are cross-boundary and communities rely on each other for such resources (February 2, 2018).

The Kenyan government's lack of integration of climate change adaptation and DRR in government regulatory mechanisms, permits climate and social risk insensitive investments. Although Kenya's Environmental Impact Assessment Act (EMCA) requires EIAs to be conducted before construction, it does

not include identification of adaptation risks or disaster risks into its requirements (Kamaru et al., 2015). This is evident in the case of LAPSSET. The feasibility study for the construction of Lamu-Port provides insufficient attention the effects of climate change on communities, as well as adaptation measures for the communities affected (Nduki, 2015). Furthermore, no EIA was conducted before construction of the Lamu Port (SaveLamu, n.d.).

- In comparison, an effective legislative framework aids the success of **BwN** and improves community resilience. According to the interview with the Coastal Safety Manager of WI, the project is supported by the Mangrove Law No 32 of 1990, which cites mangrove settlement as a protected area, legally preserving the mangrove for restoration efforts (January 18, 2018). Similarly, the Village Law 6/2014 on land management improves community resilience by granting communities the right to use the mangroves for economic means-while protecting the mangrove (Muawanah et al., 2017, p.155).

  Previously, Indonesia lacked policy and institutional practices to correct coastline degradation, and as a result, private sector companies often partook in unsustainable aquaculture practices like short-term intensive aqua-culture. These practices negatively affected community resilience through increasing community's vulnerability to water pollution and land erosion (Tonnejick et al 2015, p.21). Since, the government has enacted the Management Law 32/2009 and the Presidential Decree 73 (2012) on Mangrove Ecosystem Management Strategy (SPEM), requiring the maintenance of the mangrove system. Although progress has been achieved, further policy integration and government collaboration is needed; more specifically, coastal zone management policies for specific sectors is currently weak (ibid).

Additionally, in Indonesia, regulation of coastal zone management is under the responsibility of the several ministries including the MOE MMAF and regulated through the Act no.27/2007, which grants the MMAF the authority of managing and preserving the coastal areas. (Muawanah et al., 2017). BwN coordinates closely with MMAF, which reviews the project and ensures that projects are conducted in accordance with regulatory frameworks. The project's guidelines emphasise the need for compliance with existing regulation, as well as coordination with government regulatory institutions to ensure the success of its approach (Deltares, n.d.).

Institutional Arrangements:

As explained in the previous chapter, the implementation of policies and the incentive for private sector responsible investments often depend on institutional networks. Lack of effective institutional coordination leads to ineffective policy implementation (Djalante, 2017). In both Kenya and Indonesia, there appears to be an incongruence between implementation at the lower level and frameworks at the national level. Evident in the cases, government motivations and concerns for DRR and CCA may differentiate at the national and local level.

- **LAPSSET**: Similarly, Kenya has a decentralized governance framework presenting complications in communication and coordination among both the national and county governments (Gallgao, 2015). Similar to the Indonesia case, there is a lack of inter-governance coordination among county and national government. Although, the government communicates that the project will positively impact resilience by diversifying livelihoods of community members (SEA, 2017), the lack of effective coordination mechanisms has affected success of LAPSSET and threatens its viability. For instance, the SEA document conducted on LAPSSET suggests the project lacks a clear mechanism for engaging with county governments who hold legal mandate for agricultural land management (SEA, 2017). Therefore, lack of effective engagement of LAPSSET with county governments could potentially limit its effects. Recently, the project's approach is changing with county governments proceeding to make plans on partnerships with national government (SEA, 2017).

- **BWN**: In Indonesia, although legislative structures are in place, complexities that arise from rapid decentralisation have led to limited intergovernmental coordination. As local and district governments are not obliged to implement central ministries policies, the implementation of national policies often depend on the political interests in DRR or climate change adaptation (Rahayu & Richard, 2016). Differences in political motivations have impeded attempts to improve community resilience at different governmental levels. The interview with WI's Coastal Safety Manager showed that although national frameworks in DRR exist, the rate of progress in the reconstruction of the mangrove has been affected by disharmonious political interests in the project (January 18, 2018). Efforts to restore the mangrove were sometimes frustrated by political interests of elites at the district level. According to the interview with Coastal Safety Manager of WI, implementation also diverged due to managerial concerns, such as the lack of administrative and financial capacity (ibid).

Multi-stakeholders Partnerships

Multi-stakeholder approaches are an important element of an enabling environment as they present a mode of combining expertise of different sectors and can lead to more innovative and integrated approaches to ensuring resilience (Becker-Birck et al., 2013). Essential elements in MSPs are common-objectives, cooperation, mutual trust, decision making and interdependence (Surminski et al 2016). The government plays a crucial role in initiating and managing these partnerships.

- **LAPSSET** lacks an effective multi-stakeholder approach. At its inception, the project lacked participation from community and civil society members. The national government provided little information and consultation with members of community, county governments and civil society actors (SEA, 2017). The project both led to a variety of protests, preventing the progress of the many sub-projects, and negatively impacting community resilience as uncertainties around the project increased conflicts (Cormack, 2016). For instance, the project seemingly reignited historical anxieties and conflicts among communities along the Isiolo-Meru border (Elliot, 2017). However, recently, the project has facilitated more engagement through workshops and discussions with pastoralist groups (Enns, 2017).

- Initiated by the government, **BwN** relies on a multi-stakeholder partnership between government, businesses, academic institutions, NGOs and communities. Focusing on the common objective of mangrove restoration, each stakeholder has different roles based on expertise (Ecoshape, n.d.). According to the Coastal Safety Manager of WI, cooperation is maintained through use of an "adaptive management" approach: a-learning-by-doing approach where changes are made in accordance to the context and application of feedback from the community, government, and investors (January 18, 2018). In addition, the project is dependent on local participation. In monthly meetings, the government, WI, and community members engage in policy discussions and these influence policy dialogue.

Conclusion

This section assessed the legal and regulatory frameworks of Kenya and Indonesia, and their impacts on both LAPSSET and BwN. This section found that although both have stringent frameworks for DRR and adaptation, in the case of Kenyan, policies do not adequately address the complexities and vulnerability of the community, such as issues of land tenure and land-grabbing of shared land among pastoralists. The consultancy group identifies the need for suitable

governance arrangements enabling land ownership without subsequently disadvantaging other communities.

In the case of Indonesia, the introduction of policies granting community land ownership and sector-specific policies protecting the mangrove have had positive effects on coastal management and protection.

This section also found that legal and regulatory frameworks emphasizing the importance of DRR and CCA exist on a national level, these fail to translate in practice. This section suggests ineffective policy implementation is due to an incongruence between at national and lower levels. Often there is discord between local and national levels, resulting in issues during the implementation phase among local government bodies. For instance, in Kenya, the government lacks a clear mechanism for engaging with county governments, and therefore, county officials are often not included in project planning (SEA, 2017). Similarly, in Indonesia, affecting BwN's progress is highly affected by an absence of political will among local government. (Interview with Coastal Manager January 2018). Furthermore, local governments were also suggested to sideline both DRR and adaptation in favour of traditional development (January 18, 2018). Finally, the consultancy group finds that it is crucial for government to facilitate multi-stakeholder approaches for adaptation and DRR. It was found that whereas multi-stakeholder approach was an important element in the success of BwN, it appears weak in the case of LAPSSET, and thus, posing a challenge to the success of the project and vulnerability reduction of the community.

Conclusion

In line with the recent turn to the private sector for climate change initiatives, this report has demonstrated that private business has a substantial role in ensuring adaptation to climate change and disaster risk reduction. The report suggests that currently there exists a gap between the action required for climate adaptation and the ability of governments to single-handedly address these issues. Using the cases of Kenya and Indonesia, the report has further shown that private investments have important effects on communities and can strengthen or weaken individuals and communities in disaster-prone areas.

The report found however, that although the international community seeks to create platforms for collaboration through PPP and/or CSR activities, the exact role that the private sector should play in disaster risk reduction and climate adaptation has yet to be spelled out. However, by investigating different types of investments in vulnerable communities in Kenya and Indonesia, we find that collaboration among stakeholders (government, NGOs, and the private sector) is essential to resilient interventions. Collaboration and coordination among stakeholders reconcile different incentives and motivations, and thus, leads to investments that are more environmentally and socially responsible.

The analysis suggests that three components are essential in understanding the conditions for investments that are socially and environmentally responsible:

1. Compatibility of climate adaptation and resilience to business incentives
2. Knowledge sharing and community participation
3. Legislative and regulatory frameworks to facilitate investments and protect community interests.

Risk identification and opportunity generation

In the comparison of Nestlé and Sarova Shaba, the research demonstrates that business incentive to incorporate DRM strategy derives from identifying risk and opportunities. Natural hazards

associated with climate change result in direct economic losses and transfer social tensions to business risk. Furthermore, increased droughts have fuelled resource competition and conflict between both communities and private ranchers, directly threatening the viability of the business.

These cases further demonstrate that by extending knowledge of climate adaptation, business functions can create incentives and encourage investments in resilience strategies. For instance, Nestlé, due to threats of supply chain distortion, introduced Nescafe AAA program. This report finds that Nestlé adopts a company-wide DRM strategy which cites extreme weather conditions as threats to the quality and availability of coffee and the livelihoods of farmers in key coffee-growing areas in Kenya. Through partnership with CMS, the program actions to improve resilience of farmers through providing instruction on improved coffee techniques, and teaching farmers how to cope with the changing climate.

The report finds that shareholder concern is another determinant in encouraging business to incorporate social and environmental concerns into operation. This report found that Nestlé prioritised reputational capital and prioritises social concerns according to its popularity amongst shareholders. Whereas reputational loss appears to be a main focus, this report found that costs from these are vastly limited in comparison to the possible costs of physical climate impacts.

Finally, the report found that the majority of private sector engagement remains focused on mitigation as opposed to adaptation. For example, Nestlé meets mitigation targets such as carbon emission reduction as opposed to a more integrated DRM approach with thorough community level assessments.

Understanding Vulnerability and Community Engagement

In examining the multi-stakeholder infrastructure projects of LAPSSET and BwN, the research shows that in order for investments to adequately reduce vulnerabilities and improve resilience, locals need to have a voice throughout the investment planning, implementation and evaluation. This report finds a divergence between the community's and external perception of vulnerability; in the case of LAPSSET, the government communicated economic development achievements,

and the communities expressed concerns for adaptation to environment and livelihood changes.

In addition, it appears that given the nature of PPP investments, the relationship among investors remains contractual and collaboration is weak. According to the official LAPSSET website, CSR activities are to be conducted during implementation; however, as demonstrated by interviews, the investment does not adequately address community concerns.

BWN on the other hand, made sustainable efforts to include community members into the implementation and planning of the projects. WI for instance conducts consultations across villages and builds awareness and knowledge through local workshops and formal schooling on coastal zone management. This report however finds limitations in their capacity to effectively monitor the impact made by awareness measures nor spread awareness effectively due to physical limitations of workshops and their lack of measurement tools or indicators.

Generally, in both cases, this report has identified a need for greater resource allocation to knowledge sharing, capacity-building and community engagement spent on developing adaptation strategies to benefit both business and community.

An Enabling Environment for Investments in Resilience

By analysing effects of the overall context of Kenya and Indonesia, this section suggested both have stringent DRR and Climate Adaptation national frameworks. However, in regard to our Kenyan case, our research identifies a need for improvements in the enabling environment, including land tenure. Furthermore, this section suggested that whereas often legal and regulatory frameworks exist, its impact is limited due to inefficient policy implementation from inter-governance inefficiency and discord.

Finally, the section shows that investments are most beneficial to affected communities when different levels of government have platforms of collaboration. The case of LAPSSET shows that non-collaboration among government bodies has had negative consequences on both the community vulnerability and the investments. Policies and coherent regulatory frameworks

throughout all levels of government are imperative in encouraging responsible behaviour. The case of BwN shows the advantages of multi-stakeholder partnerships in that investments are more likely to be successful and benefit the community.

Challenges

In identifying the conditions for resilience-sensitive investments, there are challenges that should be addressed.

1. Business demonstrates value to shareholders through cost-effective models, including input and output data. Although resilience is not an output of adaptation, it is an interactive and adaptable process that changes overtime. Businesses tend to focus on mitigation, as adaptation entails a long and costly process with mostly future and uncertain benefits. This makes it difficult to demonstrate its value through cost-effective models. Therefore, private sector investments in resilience and adaptation are on the margins.

2. Long-term effects of investments on climate adaptation and resilience are difficult to calculate and measure. Adaptation and resilience interventions often lack comprehensive data that can be used to project long-term effects. There is a need for research on climate adaptation and resilience frameworks, and how to scale them up.

3. Private sector resilience interventions require multi-stakeholder collaboration in order to understand the local context and the factors that contribute to vulnerability. However, Multi stakeholder participation are not always possible due to a lack of common interests, connectivity, etc.

4. Information sharing, and viable knowledge networks are difficult to foster, especially in disaster-prone areas where socio-economic levels of vulnerability are high, as there is often information asymmetry.

Towards Better Investments

Both the private and public sector need to incorporate CCA and DRM into mainstream operations and development. Private sector investments can be effective if the finance is used towards

problem-solving for climate adaptation and disaster risk reduction. This would occur if investments are strategically placed, combining technical knowledge and iterative learning, for capacity building.

Investments must go hand in hand with risk reduction and climate adaptation development so that they are consistent components of the investment cycle. Resilience-sensitive investments would involve making progress against resilience indicators (political, social, and economic) to improve the livelihood of individuals, households and communities, increasing their ability to engage in adaptive action and better manage environmental risks.

Overall Recommendations

1. Based off of interviews with field staff, the consultancy group finds that there is a need for stronger empirical evidence in order to construct context-specific indicators for resilience monitoring and evaluation. Creating a framework within which characteristics of resilience can be analysed will help stakeholders identify changes in the level of resilience and adaptive capacity growth or decline. The evidence can be used for both program planning and assessments, as well as for advocacy and dialogues with government. The creation of a resilience monitoring tool may help to identify gaps in current programming. In addition, this would require a testing phase of the resilience dimensions within existing PfR programmes.
2. Considering the contextuality of vulnerability, including the communal and familial aspects of adaptation capacity, external humanitarian intervention will need to emphasise efforts at the local level when engaging in humanitarian diplomacy and investment planning with the private sector. It would be valuable to research examples of community-based adaptation (CBAs) for dialogues with relevant stakeholders in PfR's second phase. In thinking long-term, the consultancy suggests that stakeholders enable communities to assess their own vulnerabilities to natural hazards, rather than relying on pre-determined indicators.
3. The consultancy group suggests that multiple stakeholders should facilitate to make resilience-building compatible into business models, including standardising an effective practice, establishing actionable targets and creating business cases for resilience. These efforts are necessary to make it more measurable and adaptable for business to act upon. At the same time, adaptation and resilience centre on wellbeing of the locals which require different investigation and implementation approach. Therefore, traditional business practices need to be transformed accordingly in order to realise the goal of strengthening livelihoods against climate change. Our research also shows that higher DRM awareness among stakeholders can urge this transformation in business strategy with greater risk sensitivity since business, regardless of size, is subjected to market pressure and stakeholder inspection.

4. The consultancy group finds that in comparison to private enterprises, MNEs adopt a more systematic framework for reducing risks along their supply chains. Thus, partnering with MNEs might generate greater effect on risk prevention and form the positive examples for other companies to follow. In comparison, small private enterprises present a greater dependence on local partnership with community leaders, NGOs and government officials. Hence, formalising and strengthening the local partnership with multi-stakeholders can sustain a more effective private engagement in building resilience.
5. As cases show, project progress is hampered by the need for greater inter-coordination amongst government levels. Collaboration among levels of governance can be facilitated through lobbying national and local level officials. For example, in Kenya, it appears that civic engagement and collective action for environmental and social resilience is in its early stages. NGOs, CSOs, as well as local businesses can facilitate political activities among individuals and communities by outlining best practices and discussing policies for regional, local, and national government. This recommendation is closely tied to the latter.
6. In order for government and private sector companies to effectively work together, there needs to be a clearly defined enabling environment, including appropriate legislation and policies to encourage business innovation in DRM and adaptation. The private sector may resort to 'business as usual' unless DRR and adaptation projects are broken down into deliverables—differentiating across industry sectors, the size and structure of business and according to environment risks. Evidently, collaborative investment planning requires research and methodological experience. NGOs can provide important knowledge and appropriate tools for gathering community-level information for investment planning.

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Appendix I: Overview of Tools and Frameworks for Resilience Measurement

	Organization (year of project)	Acronym of tool and theory (year published)	Tool	Data collection and analyses	Level of measurement
International Organization	FAO (2010)	RIMA + Alinovi et al. (2010)	Resilience Index-Measurement and Analysis model Community Based Resilience	"Factor analysis": indicators into an index	Household
	UNDP/ EU (2012)	CoBRA + Alinovi et al. (2010)	Community based resilience	key informants interviews; focus group discussions and household surveys	District; household
	FAO (2013)	SHARP + Cabell and Oelofse (2012)	self-evaluation + holistic assessment of climate resilience of farmers and pastoralists	Participant survey (through tablet app) + rapid assessment at local level + in-depth regional assessments	Household
	UNU-IAS/ UNDP/ Biodiversity (2014)		Indicators of resilience	series of participatory assessments	Community, small
Development	GIZ (German Development Organization-commissioned by German Fed Ministry) (2014)		climate resilience assessment tools	set of indicators and catalogue of questions for surveys	National
NGOs	IUCN/ IISD/ SEI/Helvetas (2006)	CRiSTAL + Sustainable Livelihood Framework	community-based risk screening tool	series of nested "checklists" and criteria for assessment via desktop application	Community
	Care international (2009)	CVCA + DFID approach and Bahadur et al (2010)	Climate vulnerability and capacity analysis	series of participatory assessments	Household, community; local and national
	ACCRA (2010)	LAC + jones et al (2010)	local adaptive capacity framework	question guide for community assessment	Community
	Tearfund (2011)	CEDRA + Pasteur (2011)	climate change and degradation risk and adaptation assessment	mapping, stakeholder analysis, participatory assessments	Community
	Oxfam GB (2013)	------ + Oxfam (2013)- Oxfam has own concept	Resilience Index	multidimensional index	Household
	IISD/ ACF/ ISET (2014)	CRiSTAL v2.0 Food security	community-based risk screening tool, adaptation and livelihood	checklists and criteria for assessment- desktop app like CRiSTAL	House
Research organization	IIED	TAMD Framework; Brooks and Fisher (2013)	Tracking adaptation and measuring	2 pronged framework: experts assessments, interview, and focus groups	National to community
	Feinstein international/ Tufts University- Vaitla et al. (2012)	LCOT	Livelihood change over time	panel survey 2 times a year	Households
	University of FLorence	---; Ciani and Romano (2013)	Agricultural Resilience Index	multidimensional index- based on FAO index	Household
	CSIRO	RATALF	Resilience, adaptation, and transformation assessment framework	system analysis & multi-stakeholder engagement; step-by-step procedure with to-do list	Multilayers of agroecosystem

Figure 1 Douxchamps, Debevec, Giordano, & Barron. (2017). Monitoring and evaluation of climate resilience for agricultural development – A review of currently available tools. World Development Perspectives, 5, 10-23.

Appendix II: Global Guideline for Responsible Investment

Organization	Document	Key standards
United Nation	UN Global Compact (UNGC)	- Human Rights Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2: make sure that they are not complicit in human rights abuses. - Labour Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4: the elimination of all forms of forced and compulsory labour; Principle 5: the effective abolition of child labour; and Principle 6: the elimination of discrimination in respect of employment and occupation. - Environment Principle 7: Businesses should support a precautionary approach to environmental challenges; Principle 8: undertake initiatives to promote greater environmental responsibility; and Principle 9: encourage the development and diffusion of environmentally friendly technologies. - Anti-Corruption Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.
	SDGs	Goal 1. End poverty in all its forms everywhere Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture Goal 3. Ensure healthy lives and promote well-being for all at all ages Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all Goal 5. Achieve gender equality and empower all women and girls Goal 6. Ensure availability and sustainable management of water and sanitation for all Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
		Goal 10. Reduce inequality within and among countries Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable Goal 12. Ensure sustainable consumption and production patterns Goal 13. Take urgent action to combat climate change and its impacts Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development
OECD	OECD Guidelines for Multinational Enterprises, 2011	Category: Environment 1. Establish and maintain a system of environmental management appropriate to the enterprise 2. Taking into account concerns about cost, business confidentiality, and the protection of intellectual property rights 3. Assess, and address in decision-making, the foreseeable environmental, health, and safety-related impacts associated with the processes, goods and services of the enterprise over their full life cycle with a view to avoiding or, when unavoidable, mitigating them. Where these proposed activities may have significant environmental, health, or safety impacts, and where they are subject to a decision of a competent authority, prepare an appropriate environmental impact assessment. 4. Consistent with the scientific and technical understanding of the risks, where there are threats of serious damage to the environment, taking also into account human health and safety, not use the lack of full scientific certainty as a reason for postponing cost-effective measures to prevent or minimise such damage. 5. Maintain contingency plans for preventing, mitigating, and controlling serious environmental and health damage from their operations, including accidents and emergencies; and mechanisms for immediate reporting to the competent authorities. 6. Continually seek to improve corporate environmental performance, at the level of the enterprise and, where appropriate, of its supply chain, by encouraging such activities 7. Provide adequate education and training to workers in environmental health and safety matters, including the handling of hazardous materials and the prevention of environmental accidents, as well as
		more general environmental management areas, such as environmental impact assessment procedures, public relations, and environmental technologies. 8. Contribute to the development of environmentally meaningful and economically efficient public policy, for example, by means of partnerships or initiatives that will enhance environmental awareness and protection

World Bank	IFC Performance Standards	Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts Performance Standard 2: Labour and Working Conditions Performance Standard 3: Resource Efficiency and Pollution Prevention Performance Standard 4: Community Health, Safety, and Security Performance Standard 5: Land Acquisition and Involuntary Resettlement Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources Performance Standard 7: Indigenous Peoples Performance Standard 8: Cultural Heritage
	Climate and Disaster Risk Screening Tool	

Appendix III

Terms of Reference: Submission from the London School of Economics

Organisation
Partners for Resilience (PfR)

Project Title
Project Title: Building Resilience with Private Sector Engagement: enabling socially and environmentally responsible investments in disaster-prone communities

Primary question
What are the key conditions to enable a resilience-sensitive investment and what opportunities can be provided for promoting more socially and environmentally responsible investment?

Objective
The client requested research on investments that may have social and environmental effects to understand the various consequences on communities in the areas in which they work. Furthermore, the client expressed an interest in evidence on how the private sector engages communities during investments, as well as the repercussions of investments that lack community engagement. Lastly, the client explained that examples of success cases to add to their evidence base would be helpful for advocacy and lobbying.

Methodology
After client consultation, the consultancy group decided to undertake mostly desk research, literature review, and informal interviews with field partners and business representatives involved in adaptation in Kenya and Indonesia.

Case selection criteria:
Cases were chosen according to our client's request. Cases are located in the client's partner countries to inform their approach as they begin the next phase of their program. Cases are also highly vulnerable zones subject to high amounts of disasters.

Background
Partners for Resilience is an alliance of five NGOs namely the Netherlands Red Cross (lead agency), CARE Netherlands, Cordaid, The Red Cross/Red Crescent Climate Centre and Wetlands International. The client is currently approaching the second phase of their programme, focused on policy and private sector engagement to encourage more risk-sensitive inv