Enabling private sector adaptation to climate change in sub-Saharan Africa

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Abstract
The private sector is increasingly recognized as having important potential to help society adapt and become more resilient to climate change. Yet there is limited research examining how to promote and facilitate private sector adaptation in developing countries and in particular how governments can create an enabling environment to stimulate and incentivize domestic private sector adaptation. In this paper, we address this gap through a review of the key factors required to provide an enabling environment for the private sector denoted by existing adaptation literatures. We do this with a focus on adaptation by small and medium enterprises (SMEs) in sub-Saharan Africa (SSA). To advance this review, we draw insights from a much larger, yet generally independent, literature on enabling environments for private sector development. This literature disaggregates the private sector and highlights key constraints to the development and growth of SMEs in SSA, including deficient infrastructure and evidence of an African gap in access to and use of finance. Both areas of scholarship are then combined in a framework identifying key “building blocks” constituting enabling conditions for private sector adaptation. The framework could be applied in many ways including to focus strategies to enhance private sector adaptation and to identify trade-offs and interactions between policies or initiatives surrounding private sector development. By combining these literatures, we call for a more holistic approach to develop enabling environments for SME adaptation and climate resilient development that addresses the broader structural deficits that condition vulnerability and barriers that limit adaptive capacity.

This article is categorized under:
Vulnerability and Adaptation to Climate Change > Institutions for Adaptation

1 | INTRODUCTION

Climate change poses increasing risks to economic growth and development efforts across the world and effective adaptation will require the participation and inclusion of all actors in society (Averchenkova, Crick, Kocornik-Mina, Leck, & Surminski, 2016). The role of the private sector in adaptation is gaining increasing policy attention within national (Pauw & Pegels, 2013) and international governance fora, with the United Nations explicitly calling for the private sector to engage in shaping and furthering global climate change adaptation and sustainable development agendas (United Nations Global Compact and UNEP, 2012; United Nations Framework Convention on Climate Change (UNFCCC), 2013; UNISDR, 2013; United Nations Conference on Trade and Development (UNCTD), 2014). Discussion, however, is often focused on what Pauw and Pegels (2013, p. 258) describe as “the private sector for adaptation.” Given the high level of investment required to respond meaningfully to adaptation challenges, coupled with the limited public funds being mobilized, here the focus is on the private sector as a tool for resourcing adaptation and driving innovation to foster wider resilience.
Much less attention has been paid to examining how to promote and facilitate what Pauw and Pegels (2013) label “domestic private sector adaptation”; that is, the processes through which firms institute strategies to manage climate risk within their own operations. Defined by Avenchenkova et al. (2016, p. 520) as “the process of adjustment by companies to actual or expected climate and its effects through changes in business strategies, operations, practices and/or investment decisions,” private sector adaptation is particularly underexplored in developing countries, where climate change adaptation research has primarily focused on households and communities. This is a critical gap in research since, as the pillar of most national economies, the private sector plays a fundamental role in developing countries’ growth and livelihood activities.

Overall, in Africa for example, the private sector generates two-thirds of the continent’s investment, 75% of its economic output and 90% of its formal and informal employment (African Development Bank Group (AfDB), 2013; Pauw & Pegels, 2013). At a disaggregated country level, the picture remains largely the same.

Climate change will affect the private sector in a variety of ways. It may lead to new possibilities for people and businesses in developing countries, with opportunities to create new products and services, develop new markets and access new funding streams and finance mechanisms (Adaptation Sub-Commitee (ASC), 2014; Centre for Climate and Energy Solutions, 2008). However, businesses will also be exposed to different risks, ranging from economy-wide risks to specific sectoral, industry or company-level risks (Agrawala, Carraro, Kingsmill, Lanzi, & Prudent-Richard, 2011). The impacts can be both direct, including damage to infrastructure and disruption to production processes, and indirect through disruption to supply chains, and changes in regulation, product demand, and business reputation (Agrawala et al., 2011; GIZ, 2015).

To some extent, businesses will respond to these impacts through self-interest and will adopt adaptation measures to reduce costs, manage their exposure to risks and minimize disruption to their operations (Mendelsohn, 2012). Adaptation strategies vary by sector, but examples of private sector adaptation measures commonly documented within the literature include installing flood protection measures, investing in infrastructure to protect assets and processes, investment within supply chains to secure supply availability, integrating climate risk management into business management practices, undertaking vulnerability risk assessments, moving locations and selecting suppliers based on their resilience profiles (Agrawala et al., 2011; Carbon Disclosure Project, 2012; Crawford & Seidel, 2013; Tompkins et al., 2010; UNFCCC, 2013). Yet although awareness of climate risk is often high within the private sector (Agrawala et al., 2011; Carbon Disclosure Project, 2012; Crawford & Seidel, 2013), businesses implementing adaptation strategies remain in the minority (Ipsos MORI, 2010) and tend to be large corporations in developed countries, mainly within the insurance, agriculture, and water sectors (Agrawala et al., 2011; Averchenkova et al., 2016).

Moreover, businesses need to have the incentives, resources, knowledge, and skills to adapt effectively to climate change (Fankhauser, Smith, & Tol, 1999). And thus, while private sector actors in developing countries also adapt to changes in climate, uptake of what has been categorized as sustainable adaptation strategies, that seek to maintain business operations at existing levels, such as weather index crop or livestock insurance, or purchase of drought-resistant seeds, is still fairly low (Crick, Eskander, Fankhauser, & Diop, 2017; Mahul & Stutley, 2010). Instead, firms may be drawn into reactive coping strategies at times of climate stress, such as distress sale of assets and making staff redundancies (Crick et al., 2017; Gannon et al., 2018; Shiferaw et al., 2014). While such strategies may help businesses to cope in the short term, over time reductions in stock and production may prove counter-productive, further reducing the resources that firms have available to help them cope with future climate impacts. A second distinction in SME adaptive behavior in relation to climate change can be made between adaptation to current climate risks (sustainable or reactive) and anticipatory planning for future climate change (Crick et al., 2017). Yet even in developed economies, examples of adaptation based on future projections are rare (Agrawala et al., 2011; IPCC, 2007).

The way in which governments can create an enabling environment to stimulate and incentivize sustainable, proactive domestic private sector adaptation has been particularly overlooked within existing literatures. Adapting to climate change is not simply a technical issue that can be resolved through large-scale investments in infrastructure or technology transfers. Rather it requires enabling policies and an appropriate institutional environment that supports individual participants in the private sector (Bapna, Mcgray, Mock, & Withey, 2009; Biagini & Miller, 2013; Fankhauser, 2016; Pauw, 2015; Trabacchi & Stadelmann, 2013). Emerging literature on private sector adaptation has identified some of the broad methods through which governments can support private sector climate change adaptation, such as the provision of climate information, adoption of sensible regulations, and creation of appropriate economic incentives (Biagini & Miller, 2013; International Finance Corporation (IFC), 2010). However, little work has specifically sought to identify key elements constituting an enabling environment for private sector adaptation and it is this gap that this paper begins to address.

The private sector adaptation literature to date has tended to focus on larger sized companies and those based in developed countries (Averchenkova et al., 2016; Crawford & Seidel, 2013; Pricewaterhouse Coopers (PWC), 2010; Tompkins et al., 2010). This review meanwhile specifically considers factors constituting an enabling environment for small and medium enterprises (SMEs) in sub-Saharan Africa (SSA). The reasons for this are two fold. First, SSA is especially vulnerable to climate shocks for reasons ranging from the region’s challenging climate, to its lower gross domestic product (GDP) per capita and less developed infrastructure, climate services, and market mechanisms. SSA is therefore an adaptation priority. Second, “the private sector” is a wide-ranging term that covers all types of formal and informal businesses, ranging from
microenterprises, such as local entrepreneurs and smallholder farmers, through to multinational companies (MNCs) operating at global scales. Not all businesses possess the same capacity to consider climate change within their operations or require the same type of support, or facilitating environment, to adapt to climate change (Lonsdale et al., 2010; Pulver & Benney, 2013). It is therefore important to disaggregate the private sector, rather than to treat it as a homogenous entity.

SMEs were selected for the review as they are considered highly vulnerable to climate change, to be amongst the most affected by extreme weather events and to typically have low adaptive capacity (AXA and UNEP, 2015; Runyan, 2006; Wedawatta, Ingrigie, & Amaratunga, 2010; Yoshida & Deyle, 2005). On the other hand, SMEs are often seen as being more flexible in their operations than larger companies, and so also present their own potential to respond to climate change. SMEs form a critical part of both developing and developed country economies and are fundamental to more inclusive and equitable development. They contribute to economic growth, provide most employment opportunities and are strongly integrated into communities (Bacchetta, Ekkehard, & Bustamente, 2009; Dalberg, 2011; Dougherty-Choux, Terpstra, Kammila, & Kurukulasuriya, 2015; Edinburgh Group, 2013; IFC, 2004). SMEs also hold the potential to make an important contribution to female employment and the social integration of marginalized groups (AfDB, 2013; Welsh, Melimi, Kaciak, & Ahmed, 2013). Given their role in driving local development, as well as their ability to innovate and to build community resilience, SMEs are important drivers for societal adaptation and for realizing the opportunities of climate change (Dougherty-Choux et al., 2015).

While little attention has been given to the question of how to provide an enabling environment for private sector adaptation, there is a more extensive literature on providing an enabling environment for private sector development more generally, which, as described by Byiers and Rosengren (2012), is “focused on developing country domestic economies and helping governments to design and implement policies to encourage economic transformation through investment, productivity growth, business expansion and employment” (p. 5). To date, this literature has remained largely disconnected from the private sector adaptation literature. Yet, as argued by Ackerman, Kozul-Wright, and Vos (2012), adaptive capacity is “closely interconnected with other risks and vulnerabilities that accompany development and will be heavily constrained by local institutional and technological conditions” (p. 77). Thus, echoing Trabacchi and Stadelmann (2013), this paper assumes that an enabling environment for private sector adaptation requires general social and economic constraints and uncertainties experienced by SMEs to be addressed. We therefore anticipate key insights from the private sector development literature can inform research on private sector adaptation. By combining both areas of scholarship, this paper pursues a novel approach to reviewing the factors required to provide an enabling environment for private sector adaptation.

In its design, this review followed many of the processes that are expected of a systematic literature review. Sources of literature were identified through key word searches of electronic bibliographic databases, including Web of Science and Google Scholar. Abstracts and summaries were read, to preserve only the literature salient to our research. Papers were then read in more detail and appraised for their contribution to the research questions, before relevant data were extracted and summarized. Unlike a systematic review, however, in order to incorporate a wider range of practitioner perspectives, alongside these searches of bibliographic databases, we also extended our review to grey literatures, including reports, websites, and policy documents. We did this through a snowballing technique, where we identified additional literatures from our existing corpus, and through other online search engines. Some additional documents were obtained through email or face-to-face contact with actors and institutions working in the field. Initially, we explored the private sector adaptation and private sector development literatures more generally. This focus was then narrowed down to literature considering Africa and then SMEs specifically.

The review is structured as follows. First the literature on private sector development is reviewed with a particular focus on identifying the structural barriers that SMEs in SSA face to their business development. Second, we review existing literatures on private sector adaptation to identify factors most relevant to SME adaptation. These areas of scholarship are then combined within an organizing framework that attempts to integrate and represent the “building blocks” of an enabling environment for climate resilient development and private sector adaptation. We close by suggesting that this framework could serve as an assessment tool to evaluate enabling environments for private sector adaptation within and across countries, as well as to support developing country governments, international agencies, and donors in the identification of structural deficits and the definition of policy and intervention priorities.

2 PROVIDING AN ENABLING ENVIRONMENT FOR SME ADAPTATION IN SSA—WHAT CAN WE LEARN FROM THE PRIVATE SECTOR DEVELOPMENT LITERATURE?

2.1 Characteristics of SMEs in SSA

Within the literature, definitions of SMEs vary widely. Although the majority of definitions focus on the number of employees and/or annual turnover of a business, they are not consistent across the literature and can vary significantly.
between countries (Kushnir, Mirmulstein, & Ramalho, 2010). The World Bank’s definition of “small” (5–19 employees), “medium” (20–99 employees), and “large” businesses (>99 employees), utilized in the World Enterprise Survey, is perhaps the most widely employed for developing countries, with microenterprises accounting for those with fewer than five employees (World Bank, 2009).

The private sector in SSA is generally characterized by a large number of micro and small enterprises, and a small number of medium and large enterprises. In Kenya, for example, conservative estimates suggest that there are 2.3 million SMEs (including microenterprises), of which only 1% are of medium size (Intellecap, 2015) and, across SSA, micro and small enterprises are estimated to represent around 80% of total employment (Dougherty-Choux et al., 2015). This situation is termed the “missing middle.” It arises because overall, the private sector in SSA suffers from several structural deficits including widespread and rising informality, lack of upward mobility of enterprises, weak interfirm linkages, low levels of export competitiveness, and a lack of innovation capabilities (United Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008). As a result, very few micro or small enterprises manage to make the transition to medium-sized or large companies. The “missing middle” creates an important disadvantage for the region, because medium or large firms tend to create the majority of higher quality and higher wage jobs and are considered key sources of innovation and economic diversification (Collier, 2016; Hampel-Milagrosa, Loewe, & Reeg, 2015).

The informal sector is often conceptualized as small and unorganized producers on the fringe of the formal economy. However, across SSA, it is estimated that only 10% of SMEs, excluding microenterprises, are formal (International Labour Organisation, 2015a). The informal sector is especially dominant in rural areas and in the key economic sectors of agriculture, livestock, and trade. There are disadvantages to operating informally, such as restricted access to finance, new market opportunities, and public sector services (Fjose, Grünfeld, & Green, 2010; USAID, 2015). Yet businesses often face significant barriers to transitioning to formalization (Auriol, 2014; Benjamin & Mbaye, 2012; International Labour Organisation, 2009, 2015a, 2015b; Sandada, 2014). As a result, while this situation varies across the region, in Senegal, for example, some larger enterprises operate with a capital exceeding millions of West African CFA franc, but remain in the informal sector because of a poor business climate, which includes high taxes, high compliance costs, and burdensome business regulations and reporting requirements (Benjamin & Mbaye, 2012).

### 2.2 Characteristics of an enabling environment for private sector development in SSA

The accepted characteristics of an enabling environment for private sector growth and development have changed over time. Earlier research on private sector development typically recommended regulatory reform and reduced government intervention, focusing primarily on deregulation, property rights, and the effective functioning of markets. Yet such approaches have proven insufficient (Altenburg & Von Drachenfels, 2006; Arrufaða, 2007; Durand-Lasserve & Selod, 2007; Otto, 2009; Lyons, Brown, & Msoka, 2013; United Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008; von Braun & Keyzer, 2006), with over emphasis on the importance of regulatory reform, leading to public intervention being neglected and other constraints in the business environment being overlooked (Lyons et al., 2013; United Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008).

In more recent development literature, Bowen, Cochrane, and Fankhauser (2012) identify nine features that are associated with sustainable, private sector-led growth and that are present in dynamic and fast-growing economies. These include: Natural capital, infrastructure, human capital, macroeconomic stability, institutional and regulatory frameworks, access to markets, access to capital, competitive markets, and high-firm performance. More specific factors identified in the development literature as key components of a business enabling environment include low levels of bureaucracy, simplified business registration procedures, labor regulation reforms, business development services, access to market information, access to investment capital and property titling (Altenburg & Von Drachenfels, 2006; Hampel-Milagrosa et al., 2015; OECD, 2004, 2007; United Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008).

The growing literature that is developing around the barriers that SMEs in SSA face to their operation and business development affords particular attention to evidence of an African gap in access to and use of finance, which is argued to present a major bottleneck for the emergence and growth of enterprise (Beck & Cull, 2014; OECD, 2007; Quartey, Turkson, Abor, & Iddrisu, 2017; Stein, Pinar Ardic, & Hommes, 2013). Using data from the World Bank’s Enterprise Survey, Beck and Cull (2014) found that more than 25% of firms in Africa rate the availability and cost of finance as their most important constraint. This is nearly twice the rate seen in firms elsewhere. Beck and Cull (2014) additionally highlight lower use of financial services by companies inside Africa, as well as by smaller and younger companies. There is also evidence of the “missing middle” when it comes to accessing finance for businesses in Africa. While microenterprises can often access
finance through microfinance (Anane, Cobbinah, & Manu, 2013) and personal loans, these types of credit sources are more limited for the more established, but yet still vulnerable, enterprises that fall outside of microindustry and within the larger, ‘small,’ and ‘medium’ enterprise classifications (Fjose et al., 2010). Large enterprises, on the other hand, particularly those within the formal sector, find it easier to access more formal bank loans.

Deficient infrastructure, including power, transportation, water, and telecommunications, is generally understood to be another key constraint to the development and growth of formal and informal SMEs in Africa (AfDB, 2013; All-Party Parliamentary Group (APPG) on Agriculture and Food for Development, 2015; Page & Söderbom, 2015). This applies to SMEs in all areas, but is particularly salient for those in rural and remote regions, where the quality of service tends to be low and disruptions frequent and unpredictable (Page & Söderbom, 2015). Other key gaps in the business environment in SSA, which again particularly impact rural and remote regions, and which present particular challenges for SMEs involved in agribusiness, surround the lack of access to technology, knowledge, and local, national, and international markets (All-Party Parliamentary Group (APPG) on Agriculture and Food for Development, 2015).

Recognizing these challenges in the business environment, value chain analysis and improving access to service providers and input and output markets, has been increasingly recognized as a means of building climate resilience in SSA, particularly, in agricultural sectors. In the East African livestock sector, for example, investment to support commercialization of livestock production, vertical transformation, and development of interfirm linkages has been shown to have great potential to leverage a range of socioeconomic development benefits, at the same time as reducing the vulnerability of pastoralists to climate change (Carabine, Lwasa, Buyinza, & Nabasa, 2017; Neely, Bunning, & Wilkes, 2009). Fattening lots, breeding businesses, and processing facilities, for example, can improve the quality of livestock production and provide opportunities for a larger proportion of livestock to reach national and international markets, including during times of climatic stress. These forms of adaptation largely depend on market mechanisms and the establishment of interfirm linkages among SMEs. Incentives are needed for private sector actors to enter the necessary markets to provide these goods and services. Again, these incentives need to be coupled with supporting services such as financial and extension services, product marketing tools, transport and communication networks, and appropriate market regulation (e.g., of feed quality) (Carabine et al., 2017).

Alongside uneven performance in access to quality secondary education in SSA (United Nations Educational Scientific and Cultural Organisation (UNESCO), 2015), SMEs in SSA also suffer from a lack of skilled labor, as well as low managerial, entrepreneurial, and technical capacity (Nkakleu et al., 2013; Robertson, 2003). This is a crucial constraint since firm characteristics play a key role in driving SME growth and development. In their recent research, Hampel-Milagrosa et al. (2015) found that critical factors in the upgrading potential of micro and small firms to medium- and large-sized enterprises included not only the overall quality of the business environment, but also specific entrepreneur and enterprise characteristics, including the gender, education, experience, social capital, ambition, and risk readiness of enterprise owners.

Bardasi, Blackden, and Guzman (2007), suggest that male and female-owned enterprises face very similar constraints in their business environment, but that some constraints, including crime, corruption, education levels, and access to finance, affect female-owned enterprises more severely (Bardasi et al., 2007; Brindley, 2005; Singh & Belwal, 2008; Sow-Sar, 2010; Welsh et al., 2013). In addition, traditional gender roles and associated discrimination that limit access to factors such as finance and land ownership can present significant additional barriers to entry into entrepreneurship for women (Dejardins & St-Onge, 2009; Mori, 2014; Mugabi, 2014). As a result, female-owned enterprises tend to be confined to the informal sector, to microenterprises with limited growth potential, and to economic sectors that typically require less capital (e.g., agriculture, processing) (Bardasi et al., 2007; International Labour Organisation, 2009, 2015a; Nkakleu et al., 2013; OIT (Organisation International du Travail), 2016). In the face of this structural exclusion, female entrepreneurs in SSA often rely on informal support groups and social networks, including table banking groups, to support business development (Atela, 2012; Atela & Gannon, 2018). And these groups may also undertake a range of other activities with potential to increase the resilience of SMEs, such as the group purchase of inputs (e.g., drought-resilient seeds), initiating cooperatives, and other common pool resource management initiatives, such as reforestation/afforestation and greenhouse farming (Atela & Gannon, 2018).

Table 1 summarizes the key factors influencing SME development identified in this review. Many of these factors, such as improved infrastructure, access to markets, financial and advisory services and training and research, echo factors identified to shape an enabling environment for the private sector more generally. In order to exploit the full economic and social potential of the SME sector and to realize climate resilient development ambitions in rural and remote areas, action to strengthen business enabling environments in these areas needs to identify ways to reach female-owned and informal SMEs.
Agrawala et al., 2011; Carbon Disclosure Project, 2012; PWC, 2010). This is seen in the heart of Senegal for example, where dwindling harvests resulting from reduced rainfall, soil salinization, and land degradation have pushed some former farmers to abandon their agricultural activities, and to gather in small businesses, to pursue salt extraction and businesses may respond to changing demand, diversify their activities, develop new products and services, upgrade their resilient development?

production, for export to other African countries (Faye & Sambe, 2012; République du Sénégal, 2014).

As private sector adaptation gains increasing policy interest, a key question from a decision-making perspective is, “how can such adaptation be facilitated?” Indeed crucially, reflecting wider national and development objectives, the question is moreover, “how can climate change adaptation be facilitated to enhance equitable private sector growth and to promote climate resilient development?” Understanding what might drive and motivate the private sector to adapt to climate change is critical to beginning to empower policymakers to provide and support a favorable enabling environment for private sector adaptation.

General motives for private sector adaptation to climate change include keeping costs down, minimizing disruption to production and services, maintaining or increasing value and profitability, and improving capacity to do business (Agrawala et al., 2011; Averchenkova et al., 2016; Stenek, Amado, & Greenall, 2013). As described by Fankhauser (2016), the underlying paradigm of such private sector adaptation “is of economic agents that maximize their profits or welfare in the light of climatic risk” (p. 10, see also Mendelsohn (2012)). Market drivers therefore play a key role in private sector adaptation, as businesses may respond to changing demand, diversify their activities, develop new products and services, upgrade their business, adopt new technologies, access new markets, and seize new business opportunities arising from climate change (Agrawala et al., 2011; Carbon Disclosure Project, 2012; PWC, 2010). This is seen in the heart of Senegal’s “peanut-basin,” for example, where dwindling harvests resulting from reduced rainfall, soil salinization, and land degradation have pushed some former farmers to abandon their agricultural activities, and to gather in small businesses, to pursue salt extraction and production, for export to other African countries (Faye & Sambe, 2012; République du Sénégal, 2014).

Other examples of SMEs adapting to changing climates and introducing new, more climate resilient products into local and national markets exist. Street vendors, restaurants, and even breweries in West Africa have been documented incorporating more drought-resistant cassava into their food and beverage production (Sanni et al., 2009). Similarly, a brewery in Zimbabwe has developed new beer products that use more resilient red sorghum grains. And a sanitation company in Ghana has now redesigned pit latrines to position them above ground in flood-prone areas (Dougherty-Choux et al., 2015). Nevertheless, adaptation is influenced and inhibited by a range of other internal and external factors (Di Falco, Veronesi, & Yesuf, 2011; Fankhauser, 2016). In this section, we provide only a brief overview of these factors and focus on those most relevant to SMEs, since a recent and more extensive review of drivers and barriers to private sector adaptation can be found in Averchenkova et al. (2016). Key factors identified in this review to help enable effective adaptation among SMEs are summarized in Table 2.

Limited access to financial products and services, as outlined above, means SMEs often struggle to cover the high upfront capital costs of investing in both short- and long-term adaptation measures (Trabacchi & Stadelmann, 2013).

### Table 1

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<tr>
<th>Key factors</th>
<th>Enterprise characteristics</th>
<th>Entrepreneur characteristics</th>
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<tr>
<td><strong>Internal factors</strong></td>
<td>Presence of skilled labor</td>
<td>Age</td>
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<td></td>
<td>Managerial and technical capacity and skills</td>
<td>Gender</td>
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<td></td>
<td>Access to finance, as well as access to appropriate financial instruments for enterprises of different sizes</td>
<td>Education level</td>
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<td></td>
<td>Access to technology, knowledge, and training</td>
<td>Experience</td>
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<td>Access to markets, especially beyond local markets and market information</td>
<td>Social capital</td>
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<td></td>
<td><strong>Entrepreneur characteristics</strong></td>
<td>Motivation</td>
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<td></td>
<td><strong>External factors</strong></td>
<td>Risk-taking ability of enterprise owner</td>
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<td></td>
<td>High-quality infrastructure with reliable transportation, telecommunication, power, and water supply services</td>
<td>Location</td>
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<td>Business development services and support systems</td>
<td>Institutional and regulatory frameworks</td>
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<td></td>
<td><strong>Regulatory environment</strong></td>
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<td>Institutional and regulatory frameworks</td>
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### 3 Drivers and Barriers to Private Sector and SME Adaptation—What Do We Know From the Adaptation Literature?

As private sector adaptation gains increasing policy interest, a key question from a decision-making perspective is, “how can such adaptation be facilitated?” Indeed crucially, reflecting wider national and development objectives, the question is moreover, “how can climate change adaptation be facilitated to enhance equitable private sector growth and to promote climate resilient development?” Understanding what might drive and motivate the private sector to adapt to climate change is critical to beginning to empower policymakers to provide and support a favorable enabling environment for private sector adaptation.

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Furthermore, the differences in time horizons between climate change impacts and business investment planning, alongside the need for quick returns and short-term growth, also present key challenges (Trabacchi & Stadelmann, 2013). Indeed, businesses of all sizes face trade-offs between actions to optimize short-term growth and actions to reduce climate risk (Surminski, 2013); while businesses’ short-term investment horizons can impact their willingness to invest in longer-term adaptation measures and to develop products and services to reduce climate impacts (Trabacchi & Stadelmann, 2013). This may be especially the case among businesses not currently experiencing high exposure to climate risk, for which the business case for investing in adaptation measures to protect themselves against future climate risk may be less apparent (Agrawala et al., 2011; Averchenkova et al., 2016; Crawford & Seidel, 2013). Anticipatory adaptation planning also requires the ability to make long-term decisions under conditions of uncertainty, which many businesses find difficult even in their core operations (Ballard et al., 2013).

Just as firm and entrepreneur characteristics are critical in influencing the growth, development, and upgrade potential of SMEs, internal factors, and capabilities within a company will also influence its willingness and ability to adapt to climate change (Agrawala et al., 2011; Ballard et al., 2013; Berkhout, 2012; Galbreath, 2011; Hertin, Berkhout, Gann, & Barlow, 2003; Linnenluecke et al., 2013; Lonsdale et al., 2010; PWC, 2013; Trabacchi & Stadelmann, 2013; United Nations Global Compact, UNEP, Oxfam, World Resources Institute, 2011). For example, key decision makers, such as business owners, or internal champions have important roles to play in identifying and communicating climate risks and opportunities, and in supporting adaptation decision making (Linnenluecke et al., 2013; United Nations Global Compact, UNEP, Oxfam, World Resources Institute, 2011). Such champions are key, for example, in ensuring that business continuity or emergency preparedness plans and vulnerability assessment frameworks are put in place, to understand and manage long-term risks and opportunities from climate change. Yet adequate expertise for risk assessment and management is less likely to be found within micro, SMEs, compared to larger companies (Agrawala et al., 2011; ASC, 2014; Ballard et al., 2013; Crawford & Seidel, 2013; Lonsdale et al., 2010; PWC, 2010).

There is therefore a key role for government in supporting SME adaptation through business capacity building and information services. Governments and development partners could, for example, support adaptation by domestic private businesses through providing credible and easily accessible scientific information, through weather and climate services, through guidelines, models, and tools and through cofinancing research and developing new products and services (Agrawala et al., 2011; Biagini & Miller, 2013; Crawford & Seidel, 2013; OECD, 2015; Steneck et al., 2013; United Nations Global Compact and UNEP, 2012). Surveys of SMEs in Gaborone, Lusaka and Nairobi, following the 2015–2016 El Niño, for example, illustrate the value of climate services, wherein 28% of SMEs surveyed noted that forecasts and other early warning systems helped their business to plan for El Niño associated water supply disruption, hydroelectric load shedding, and flooding (Gannon et al., 2018). In this study, business managers described attempting to limit disruption through ex ante changes to their business inventory, investment decisions, supply chains, and savings behavior; although notably other SMEs reported that other barriers to action limited the value of early warnings.

Policies and regulatory and legal frameworks represent further critical external drivers that can stimulate or constrain private sector engagement (Ackerman et al., 2012; Agrawala et al., 2011; Ampaire et al., 2017; Averchenkova et al., 2016; Kivuitu, Yambayamba, & Fox, 2005; OECD, 2015; Surminski, 2013). Low institutional capacity, poor business environments, and policies and incentive structures that distort price signals (e.g., subsidies on certain seeds, fertilizers, or irrigation water) can constrain the private sector’s ability to respond to climate change risks (Agrawala et al., 2011; OECD, 2015; Trabacchi & Stadelmann, 2013). Indeed, many businesses are unable to overcome these types of structural barriers to adaptation (Ballard et al., 2013); especially those in developing countries that already suffer from poor business enabling environments. By comparison, economic incentives may encourage SMEs to invest in climate resilience (Agrawala et al., 2011; Begum & Pereira, 2015; Steneck et al., 2013; Trabacchi & Stadelmann, 2013) and subsidies and tax breaks can be employed by governments to encourage SMEs to adopt strategic adaptation responses. In 2015, the Zambian Energy Regulation Board, for example, removed duty and fees on solar power products, following extensive national drought-induced hydroelectric load shedding, in an effort to increase private sector electricity production (Phiri, 2015).

As our examples above illustrate, market drivers also play a role, as businesses can respond to changing demand, develop new products and services, access new markets, and seize new business opportunities from climate change (Agrawala et al., 2011; GIZ, 2015; PWC, 2010). This is particularly true for large companies, where there is evidence in several sectors, including agriculture, water, insurance, and consulting sectors, that companies have recognized that adaptation represents a new business opportunity. For SMEs, such drivers may remain more limited if they do not have the right supporting environment to enable them to take advantage of opportunities, new markets, and changing demand.
This review suggests that SME adaptation requires multiple factors of enabling environments to be addressed in combination, in areas that are often lacking in SSA and that require the involvement of a diverse range of actors. Pathways to overcoming these multiple barriers in enabling environments and to implementing action to support SME adaptation are very sparsely treated within the literature, both practically and conceptually; signaling a priority area for future research (Shackleton, for enabling adaptation among SMEs.

Varying formality (Selsky & Parker, 2005; Surminski & Leck, 2016). The language of ever, is frequently related to partnerships bringing together actors from the three main social sectors—government, the private sector, and civil society—often with a public policy objective, such as climate change and/or development (Pinkse & Kolk, 2012). This is reflected in the definition of partnerships offered by Van Huijstee, Francken, and Leroy (2007), who describe partnerships as “collaborative arrangements in which actors from two or more spheres of society (state, market and civil society) are involved in a non-hierarchical process, and through which these actors strive for a sustainability goal” (p. 77).

MSPs present their own challenges as a model for structuring action to enable adaptation. Actors from different sectors—and indeed within sectors—have different agendas, priorities, and ways of doing business, which may be difficult to reconcile (Averchenkova et al., 2016). Setting up and maintaining effective partnerships can be very time costly (McAllister & Taylor, 2015). And key concerns have been raised around equity and power inequalities within partnerships, as well as around transparency and accountability (Bulkeley & Newell, 2010; Selsky & Parker, 2005). More broadly, the overall effectiveness of partnerships has also been called into question (McAllister & Taylor, 2015; Surminski & Leck, 2016).

Nevertheless, the role that MSPs can play in supporting adaptation and climate resilient development represents an understudied area that warrants further exploration. This research gap is particularly salient to enabling environments for SME adaptation, since, as seen in this review, the factors required to enable SME adaptation are cross cutting, spilling over the traditional remits and capabilities of any single sector, institution, or actor. MSPs, meanwhile, appear to be a potential tool for coordinating action at multiple scales, and for developing more integrated and holistic approaches to addressing barriers within enabling environments. They offer the opportunity to bring stakeholders together, for the strengths of each sector to be harnessed, for knowledge, expertise, and resources to be cross leveraged and for regulatory, participatory, resource, and learning gaps to be identified and addressed (Dyer et al., 2013; Pinkse & Kolk, 2012). In this way, rhetorically at least, MSPs also fit in with broader trends toward consultation (McAllister & Taylor, 2015; Surminski & Leck, 2016), based on the recognition, that “increasing collaboration between different stakeholders will contribute significantly to a more resilient future” (Adaptation Futures, 2018).

There are a growing number of partnerships engaging in adaptation activities across SSA. The Planning for Resilience in East Africa through Policy, Adaptation, Research, and Economic Development (PREPARED) Project, is an example of such an MSP, that includes USAID, Jubilee Insurance, Kenya Meteorological Department (KMD), Rabobank, and the United Nations Food and Agriculture Organisation (UNFAO). One of PREPARED’s activities involves piloting weather index insurance among SMEs who may otherwise lack a safety net in the event of climate shock (Syroka & Reinecke, 2015). The PREPARED partnership served as a forum to identify and articulate user needs, allowing partners in PREPARED to identify

### Table 2

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<th>Key factors</th>
<th>Example literature</th>
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### 3.1 A role for multistakeholder partnerships

This review suggests that SME adaptation requires multiple factors of enabling environments to be addressed in combination, in areas that are often lacking in SSA and that require the involvement of a diverse range of actors. Pathways to overcoming these multiple barriers in enabling environments and to implementing action to support SME adaptation are very sparsely treated within the literature, both practically and conceptually; signaling a priority area for future research (Shackleton, Ziervogel, Sallu, Gill, & Tschakert, 2015). Nevertheless, emerging interest surrounds the model of multistakeholder partnerships (MSPs) for meeting the multifaceted challenges of adaptation (Pinkse & Kolk, 2012), and this warrants consideration for enabling adaptation among SMEs.

Described under various labels, MSPs can operate at diverse scales, through different combinations of actors, and with varying formality (Selsky & Parker, 2005; Surminski & Leck, 2016). The language of “multistakeholder partnerships,” however, is frequently related to partnerships bringing together actors from the three main social sectors—government, the private sector, and civil society—often with a public policy objective, such as climate change and/or development (Pinkse & Kolk, 2012). This is reflected in the definition of partnerships offered by Van Huijstee, Francken, and Leroy (2007), who describe partnerships as “collaborative arrangements in which actors from two or more spheres of society (state, market and civil society) are involved in a non-hierarchical process, and through which these actors strive for a sustainability goal” (p. 77).

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climate data quality issues as a core challenge for insurance companies; who struggle to access a robust index through which to determine commercially viable premiums for crop insurance (SSG Advisors, 2016a, 2016b). Partners have leveraged expertise within the partnership for capacity building within KMD, in order to facilitate greater investment in data. This has ultimately helped the partnership to take steps toward overcoming this resource gap within the business environment (SSG Advisors, 2016a, 2016b).

In another example of national governments working with development partners to assist businesses to build resilience to climate change, the “Coping with Drought and Climate Change in Zimbabwe” initiative pursued a range of micro and small enterprise business development activities in the Chiredzi region, with the aim of diversifying the maize-based local economy, introducing adaptation measures to build climate resilience and reducing poverty (Dougherty-Choux et al., 2015). Among the initiative’s activities were demonstration plots, farmer field schools, and other capacity building activities to increase farmer’s ability to pursue diversification strategies, improved soil moisture management approaches, and more resilient mixed production models. Reflecting ongoing interest in the partnerships approach to adaptation, this project is now being built on through the “Scaling up Adaptation in Zimbabwe” project implemented by Oxfam in partnership with Plan International, SAFIRE, and the University of Zimbabwe (Climate Adaptation UNDP, 2016).

4 | TOWARD AN ASSESSMENT FRAMEWORK FOR ENABLING PRIVATE SECTOR ADAPTATION TO CLIMATE CHANGE IN SSA

This review has drawn from two fairly disparate literatures to identify key factors required to provide an enabling environment for business development, as well as the main barriers and drivers of private sector adaptation (Tables 1 and 2). We believe combining these literatures makes an important contribution for two main reasons. First, while the private sector adaptation literature has tended to treat the private sector as a homogenous entity and has sought to identify drivers and barriers to adaptation in the private sector in general, the private sector development literature disaggregates the private sector, and thus makes space to develop greater insight into enabling conditions that are more directly relevant to SMEs. This is important given the unique potential of SMEs to contribute to more equitable climate resilient development.

Second, this paper has begun to reveal complex and multifaceted interlinkages and synergies between the conditions required to promote SME development and adaptive capacity (Fankhauser, 2016; Fankhauser & McDermott, 2014). Often SMEs in SSA not only lack the ability to adapt to climate change, but also face significant barriers to business growth. Yet some of the constraints that limit SME adaptive capacity also limit the general growth and development of SMEs. Both literatures highlight, for example, the role of technical and managerial capacity, a skilled workforce, economic incentives and access to finance, as well as regulatory frameworks, policies, institutional arrangements, and market access. Measures to create an enabling environment for SME adaptation therefore hold the potential to also support broader climate resilient development. Meanwhile situating private sector adaptation within a broader exploration of the elements that are likely to enable climate resilient private sector development and growth offers the opportunity to address the broader structural deficits and barriers that limit adaptive capacity and condition SME vulnerability. This is especially important in light of Tol & Yohe’s (2007) “weakest link” hypothesis, which suggests that adaptive capacity may be disproportionately influenced by the least developed aspects of enabling environments.

This review has additionally revealed factors that are considered more explicitly within one of the sets of literature examined and which are perhaps overlooked by the other. For example, the private sector adaptation literature emphasizes the importance of access to climate information and expertise to enable businesses to undertake climate change vulnerability assessments and to plan for climate change impacts. The SME development literature meanwhile affords particular attention to the role of infrastructure and to enabling SMEs to build resilience through better access to local, national, and international markets. It also provides a greater focus on the need for business development services and for capacity building and training more generally. In combination, these literatures make space for more holistic efforts to structure enabling environments for private sector adaptation; taking into account wider aspects of the business and policy environment, to address and remove structural barriers and enable adaptive capacity. With this aim, we end by presenting an organizing framework that attempts to integrate and represent the “building blocks” of an enabling environment for climate resilient development and private sector adaptation, as captured in existing literatures (summarized in Tables 1 and 2).

The framework presented is adapted from Stenek et al. (2013), who reviewed the private sector adaptation literature to build an index assessment framework around five key factors for influencing private sector adaptation, which they labeled “Data and information,” “Institutional arrangements,” “Policies,” “Economic incentives,” and “Communication, technology, and knowledge.” Many aspects of the adaptation literature (as summarized in Table 2) are captured by Stenek et al. For example, their framework stresses factors such as financing instruments and incentives to support private sector adaptation, as well as the importance of access to climate and hydrological data at a temporal and spatial resolution that is salient to
business decision-making. In this way, the framework developed in Stenek et al. takes an important first step toward conceptualizing enabling environments for private sector adaptation and we found its key elements useful to help structure our framework. However, Stenek et al. only seek to capture elements specific to private sector adaptation and thus our framework, presented in Figure 1, extends and adapts the work of Stenek et al. through the integration of wider private sector development literature.

The “building blocks” for SME adaptation outlined in Figure 1 are inextricably and complexly linked. To offer one illustrative example of these linkages, having appropriate policies and institutions in place is a necessary condition for the development of climate data and information and the establishment of funds that can be accessed by the private sector. Connecting arrows in Figure 1 therefore represent interlinkages and dependencies between the different elements. Stenek et al. constructed a set of indicators of enabling environments for private sector adaptation for each factor that they identified to influence private sector adaptation. The elements in Figure 1 are similarly dissected in Table 3, allowing the framework to serve as an organizing mechanism that helps to break down the many interrelated factors of an enabling environment, characterized in existing literatures.

Adaptation requirements are locally contingent and adaptation planning requires extensive consultation to ensure that it is implemented in contextually appropriate ways. Thus, our framework must be understood as providing only broad categories of enabling conditions that themselves require scrutiny, consultation with local and situated actors, and reflexive application. Nevertheless, we believe the framework could have broad applicability in efforts to cultivate an enabling environment for private sector adaptation, climate resilient development, and SME growth.

Our expanded framework offers a coherent approach to exploring and understanding the complex interlinkages between different broad elements of enabling environments, as reflected in the current knowledge base. To examine national provision for private sector adaptation through Infrastructure, Markets, and Information and Communication Technologies (ICT), for example, the framework calls for the consideration of access and reliability in electricity and water supplies, the presence of well-developed markets, as well as of business zones and centers that support market activities of enterprises; including export processing zones (EPZ). It calls for the evaluation of road infrastructure, ports, and airports and the extent to which these facilitate transport and access to these key urban centers and markets. The framework also examines the extent to which public and key infrastructures incorporate climate change impacts and adaptation into their design, operations, and decommissioning. And in relation to information and communication technologies, the framework demands consideration of the availability and market penetration of technologies such as mobile phones and the internet, including within rural areas. It considers the availability and usability of climate and adaptation information delivered through ICT’s, (including websites and online portals), which are targeted at SMEs and the broader private sector, and which have relevance to specific geographical areas.

By combining key private sector development and adaptation elements and providing a description of how to examine the extent to which these elements are provided within a country, the framework could function as a general assessment tool: Offering a means through which to pursue a holistic, systematic and detailed evaluation of enabling environments for private sector adaptation within and across countries and to identify general strengths and weaknesses within business environments.
(Crick et al., 2016). In addition to facilitating national evaluations and international comparisons, the framework could also serve as a guide through which to examine opportunities for developing country governments, international agencies, and donors to focus strategies for enhancing private sector adaptation and to identify structural deficits and policy priorities. It might be helpful, for example, in the identification of trade-offs, conflicts and interactions, as well as overlaps and synergies between policies or initiatives surrounding private sector development and adaptation. New policy measures are not always needed and synergies with existing policies can be reinforced once they are identified. The identification of misalignments within existing regulatory frameworks and policies could also lead to revisions and advances in policymaking (OECD, 2015).

Our framework may initially seem more relevant for SMEs operating within the formal sector (e.g., the factors relating to institutional arrangements, regulatory framework, and policies and financial incentives). However, many aspects of the framework are also relevant for informal SMEs, especially those relating to data and information, ICT, capacity development and training, in addition to some aspects of infrastructure and markets. Nevertheless, further research is required to better understand the specific constraints that informal SMEs in developing countries face in adapting to climate change. Since the literature on enabling environments for private sector and SME adaptation remains sparse, there is also much research still to be done with regards to expanding our understanding of how to support enabling environments more generally. Particular questions arise around how to strengthen engagement of SMEs in adaptation policymaking, so as to develop policies and initiatives that better account for their specific needs and priorities. Moreover, SMEs in SSA operate in a difficult business environment, with multiple constraints on their growth and adaptive capacity (Castells-Quintana, Lopez-Uribe, & McDermott, 2015; Lemma, Jouanjean, & Darko, 2015) and there remains strong disagreement regarding the relative importance of the different factors that are required for SME adaptation. There is also disagreement surrounding how successful initiatives based on attempts to improve these conditions have been in the past (Altenburg & Von Drachenfels, 2006; Byiers & Rosengren, 2012; OECD, 2004; Pauw, 2015; United

<table>
<thead>
<tr>
<th>Influential factors</th>
<th>Key elements</th>
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<tbody>
<tr>
<td>Policies and institutions</td>
<td>Institutional and governance arrangements</td>
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<tr>
<td></td>
<td>Climate change coordinating bodies/agencies at national and regional levels</td>
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<td></td>
<td>National and/or regional agencies/bodies supporting private sector development</td>
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<tr>
<td></td>
<td>Multistakeholder or public-private partnerships (MSP/PPPs) to support climate change adaptation decision making</td>
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<td>Private sector multipliers—private sector associations/entities (e.g., chambers, business associations)</td>
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<td>Networks or consortia on climate change adaptation</td>
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<td>Regulatory framework and policies</td>
<td>Climate change adaptation policies at national and regional levels</td>
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<td>Building standards and/or codes incorporating climate change considerations</td>
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<td>Local zoning rules incorporating climate change considerations</td>
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<td>Private sector development policies</td>
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<td>Climate change considerations integrated into policies supporting development of private sector and/or SMEs</td>
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<td>Infrastructure, markets, and ICT</td>
<td>Infrastructure and markets</td>
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<td></td>
<td>Transportation infrastructure</td>
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<td></td>
<td>Water and electricity infrastructure</td>
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<td>Markets and business zones/centers</td>
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<td>Access to inputs, irrigation, and new technologies</td>
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<td></td>
<td>Public and key infrastructure incorporating climate change considerations</td>
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<tr>
<td>Information and communication technologies</td>
<td>Information and communication technologies</td>
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<td></td>
<td>Websites/online portals on climate change adaptation and market information</td>
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<tr>
<td>Financial environment</td>
<td>Economic and financial incentives</td>
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<td>Government incentives</td>
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<td>Finance instruments</td>
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<td>Climate and adaptation funds</td>
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<td>Insurance schemes</td>
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<td>Data, information, and capacity development</td>
<td>Knowledge, capacity development, and training</td>
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<td>Climate change adaptation training courses or programs targeted at the private sector</td>
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<td>Research institutions or centers engaged in climate change research/work</td>
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<td>Forums/conferences on climate change</td>
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<td>Agricultural extension and training services</td>
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<td>Training and technology development centers</td>
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<tr>
<td>Data and information</td>
<td>Climate and hydrological observations, and early warning systems</td>
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<td>Seasonal weather forecasts</td>
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<td>Climate change projections</td>
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<td>Data and information on direct and indirect impacts of climate change</td>
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<td>Information on, or case studies of, adaptation measures, costs and benefits</td>
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<td>Information on, or case studies of, community vulnerability, risk and adaptation</td>
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<td></td>
<td>Adaptation decision support tools and toolkits</td>
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<td></td>
<td>Standardized risk assessment tools for private sector</td>
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Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008). Research exploring SME adaptive management behavior is particularly scant, but likely forms an important prerequisite.

This paper has called for an active role for governments in enabling private sector adaptation, yet we acknowledge that the state in developing countries can also present barriers to private sector development and adaptation. Measures such as distorting agricultural subsidies, for example, can have unintended adverse effects and exacerbate risks by discouraging action by businesses (OECD, 2015). For this reason, in many developed countries, including the United Kingdom and Australia, national governments are trying to reduce their role in facilitating climate change adaptation and instead transferring responsibilities directly to local governments and the private sector.

Comparing these political trajectories however is likely to be unhelpful, as typically these countries already have fairly strong enabling environments for private sector development. To follow through with our examples, at the date of publication the United Kingdom and Australia sit at number 7 and number 15, respectively, on the World Bank Doing Business project’s “ease of doing business” rank (World Bank, 2016). Moreover, the business environment in these countries often includes many of the elements identified within this review as required to support business development and private sector adaptation; including national climate change adaptation policies, climate change projections, data and information on climate change impacts, adaptation decision support tools as well as standardized risk assessment tools for the private sector and climate change training courses targeted at businesses. By contrast, very few of these key elements are generally found in developing countries (c.f., Burton, 2009).

This review therefore echoes recent private sector development literature that has argued for a move away from strategies that rely on reduced government intervention and dependence on the principle of well-functioning markets (Altenburg & Von Drachenfels, 2006; Arruñada, 2007; Durand-Lasserre & Selod, 2007; Lyons et al., 2013; Otto, 2009; United Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008; von Braun & Keyzer, 2006), calling instead for more reflexive forms of public intervention (Altenburg & Von Drachenfels, 2006; Fankhauser, 2016; Hampel-Milagrosa et al., 2015; Lyons et al., 2013; OECD, 2007; United Nations Industrial Development Organization (UNIDO), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), 2008).

5 | CONCLUSION

SMEs, and the private sector at large, will play an increasing role in climate change adaptation over the next 10 years (Pauw & Pegels, 2013). However, the extent to which SMEs are able to meet the challenges and opportunities of climate change will depend in part on the way in which governments at local, national, and international levels support an enabling environment for the private sector and for SMEs in particular. This paper has reviewed the literatures on private sector development and adaptation and, focusing particularly on SME adaptation, has synthesized these literatures into a framework that, while inevitably not comprehensive, identifies key “building blocks” constituting enabling conditions for private sector adaptation. We have proposed this framework has wide potential application as an assessment tool for systematic examination of enabling conditions within and across countries, as well as a means through which to focus strategies to enhance private sector adaptation and to identify trade-offs and interactions between policies or initiatives.

Perhaps the foremost contribution of this framework, however, is that it rests on integrating literatures on private sector development and adaptation and demonstrates important interlinkages between the conditions required for climate resilient development and adaptation within the private sector. By combining the two literatures, we have highlighted pathways for investment and development that show potential to simultaneously unlock SME adaptive capacity and business growth. This is fundamental since SMEs in SSA face multiple stressors and a range of obstacles in their business environment and adaptation is rarely undertaken in response to climate impacts alone (Smit & Wandel, 2006). The synergies in enabling climate resilient private sector development highlighted in this paper may also serve as pathways to policy responses to enable private sector adaptation, among policymakers who may otherwise struggle to reconcile actions to reduce longer-term climate risks with budget constraints, electoral cycles, and the immediate demands of their constituencies. We anticipate the value of this more holistic approach to developing enabling environments for climate change adaptation to be particularly important for those SMEs which typically face additional barriers to their growth and development, such as those that that are female-owned, rurally located, or operate within the informal sector. This is important because creating enabling environments for private sector adaptation among all SMEs in developing countries will be fundamental to the quest for equitable and climate resilient development.

ACKNOWLEDGMENTS

This work was carried out under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA), with financial support from the UK Government’s Department for International Development (DFID) and the International
Development Research Centre (IDRC), Canada. The views expressed in this work are those of the authors and do not necessarily represent those of DFID and IDRC or its Board of Governors. We also acknowledge financial support from the Grantham Foundation for the Protection of the Environment and the UK Economic and Social Research Council (ESRC) through the Centre for Climate Change Economics and Policy. The authors are grateful to Sam Fankhauser and Declan Conway (Grantham Research Institute on Climate Change and the Environment) for their very constructive comments on this paper and its earlier versions.

CONFLICT OF INTEREST

The authors have declared no conflicts of interest for this article.

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ACKNOWLEDGEMENTS


How to cite this article: Crick F, Gannon KE, Diop M, Sow M. Enabling private sector adaptation to climate change in sub-Saharan Africa. WIREs Clim Change. 2018;9:e505. https://doi.org/10.1002/wcc.505