

**BRIDGING FUNDING GAPS FOR CLIMATE AND SUSTAINABLE DEVELOPMENT:
PITFALLS, PROGRESS AND POTENTIAL OF PRIVATE FINANCE**

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In a world where natural capital is often unpriced or undervalued, thus making resource exploitation very lucrative, environmentally degrading activities will continue to dominate the economy. The past decade has seen a burgeoning interest in scaling up private investment to address persistent socioeconomic and environmental challenges globally. The recently formulated sustainable development goals and global climate agenda have further heightened the urgency for a more holistic and integrated conceptualization of transitioning towards a sustainable low-carbon economy. Despite the increasing appeal of green finance as a concept, the delivery of an empirical evidence base that illustrates the effectiveness of projects aligned with climate action and sustainable development—both in terms of measurable performance and value for money—has been less forthcoming. Concurrently, there have been numerous claims of the potential of ‘unlocking’ the trillions of dollars of private finance that is available for investment. We perform a critical analysis of literature from across a spectrum of research topics to explore the inhibiting barriers and apparent disconnect between the purported available—or required—finance and the *actual* finance invested in sustainable development. Furthermore, we consider actions that government agencies and the research community might consider in order to better incentivize private investment in developing and low-income countries that will facilitate low-carbon sustainable development. We provide suggestions for fiscal and policy reform in addition to identifying the need for a centralized reporting and convening body. We conclude that far more coordinated efforts are required to encourage investments in long-term and sustainable landscape-scale initiatives. Current efforts at securing finance, implementing initiatives and building the knowledge base are accelerating but remain fragmented and often sectorial in their nature; we thus offer some key recommendations for areas of future progress.

1. Introduction

The world is in a transition phase propelled by the imperative to ensure that global average temperatures remain below 2 °C above pre-industrial levels (Peters et al., 2013; UNFCCC, 2015). Within this context, the boundaries placed on already stressed social-ecological systems result in increasing demands on land and natural resources (Gardner et al., 2009; Liu et al., 2007). Concomitantly, the global population continues to rise in both numbers and affluence (World Bank and International Monetary Fund, 2016), and yet alleviating poverty, maintaining biodiversity, and achieving food and water security, all within the context of an ever-changing climate, remain some of the greatest challenges of our time (Godfray et al., 2010; Laurant et al., 2014; West et al., 2014). In order to meet these challenges, we are

facing uncharted territory that requires taking unprecedented action to recalibrate globally towards a low-carbon economy. Unlocking private finance is regularly regarded as a solution to achieving such change (African Development Bank et al., 2015), however the enabling political, regulatory and economic conditions that would stimulate re-directing the bulk of private sector investment towards meeting these goals remain unchanged (Parker et al., 2012; Almassy et al., 2015).

There is a long-standing awareness that funding for environmental and climate efforts is scarce (Ferraro and Pattanayak 2006; James et al., 1999). However, in recent years, there is a growing discourse claiming the availability of trillions of dollars to finance the global environmental agenda, simply waiting to be “unlocked” (World Bank, 2015).

This review attempts to categorically quantify currently invested amounts in sustainable development efforts and reveal specific sums

required to holistically fulfill global commitments towards climate, environment and development goals. While international discussions often mention trillions of dollars available, literature providing empirical evidence or concrete figures are scarce, with major inconsistencies in the available information. Here we discuss some of the pitfalls of contemporary funding structures and consider both the rate of current progress and the potential for emerging opportunities that could help to bridge the gap between finance ambition and reality.

While there are countless drivers and motivating factors to achieving global climate and sustainable development ambitions, there are a number of specific commitments and international agreements that have helped reorient the global focus. Most prominent among these are the UNFCCC Paris Agreement on climate change (Rogelj et al., 2016), the CBD Aichi targets for biodiversity (Blackie and Sunderland, 2015), and the UN Sustainable Development Goals (SDGs) (Steffen et al., 2015; Egler and Frazao, 2016; Waygood, 2014). Although these globally conceived commitments are welcome and almost universally supported, implementation efforts, and ultimately fulfillment of their ambitious goals, will continue to present persistent challenges. It has previously been noted that disconnects may exist between global commitments and the human and technological capacity to implement (Murcia et al., 2016; Holl, 2017). We agree with this assertion and further speculate that a similar disconnect exists between global ambitions and financial realities and that the mechanisms by which such commitments can be fulfilled will likely require transformations across scales of geographies, policies, and economies.

Financing options to support conservation, climate action, and sustainable development have been expanding in recent years and vary across different scales, types and time horizons—all of which are largely dictated by funding sources. Funds such as the World Bank BioCarbon Fund, the Clean Development Mechanism, the Global

Environment Facility and the Green Climate Fund have emerged to support the global agenda. Capital can also be obtained from local, federal and international sources as well as disparate sources encompassing regional governments, conventional financial institutions such as banks and private equity firms, development finance institutions, private sector investment, high net worth individuals and others, although philanthropic and government sources dominate this space (Shames et al., 2014). This is problematic, since these sources can only fulfill a small fraction of the overall finance required to meet the sustainable development and climate agendas. As such, new funding structures and innovative collaborative partnerships represent important shifts in the financial markets to develop solutions. Calls for the up-scaling of finance have been directed at all levels of government and international funding agencies, accompanied by a recent focus on the private sector

(Schuyt 2005; Stein et al., 2010). A recent multi-partner report of multilateral and regional development banks “From Billions to Trillions: Transforming Development Finance” makes clear that:

To meet the investment needs of the Sustainable Development Goals, the global community needs to move the discussion from “Billions” in ODA [official development assistance] to “Trillions” in

investments of all kinds: public and private, national and global, in

both capital and capacity. . “Billions to trillions” is shorthand for the realization that achieving the SDGs will require more than money. It needs a global change of mindsets, approaches and accountabilities

to reflect and transform the new reality of a developing world with highly varied country contexts (African Development Bank et al., 2015, p1).

There is a general consensus that current public funding to achieve meaningful sustainable development is insufficient and should thus be strategically used to leverage private sector

investment.¹ However, the

scope of operations and responsibility of financial institutions and individual private actors has altered due to risks presented by global environmental forces such as climate change. Environmental, social and political conflicts can ultimately result in business disruption. Meanwhile, ensuring business continuity is essential for private sector operations to mitigate risk. These issues are clearly integrated, representing a direct risk for financial institutions, governments, and private actors and emphasizes the need for collaborative and holistic frameworks, regulations and policies to mitigate risk and work towards a common goal.

Understanding current financial flows for the environment and development is complicated by myriad definitions and classifications for similar projects and the absence of mandatory reporting requirements (Scherr et al., 2013; Reed et al., 2016). Currently, there exists a dearth of empirical evidence and systematic knowledge of the financing scope specifically directed towards environmental and developmental sustainability action including climate mitigation and adaptation, holistic landscape approaches, ecosystem services, green supply chains, and biodiversity conservation (Sayer et al., 2017). Prior investigation on determining finance flows pertaining to sustainability is both fragmented and focuses primarily on niche topics such as watershed protection or climate change mitigation infrastructure. The issue is further convoluted by the multiple interpretations of what is considered “green finance” or “sustainability”. As such, attempting to determine concrete facts regarding vague concepts is extremely difficult. It is crucial to have reliable, integrated information regarding the current status of financial flows across various domains, sectors and efforts such as climate change and sustainable development. In order to properly assess the current state of financing and inform clearly articulated strategies and financial decisions to address gaps and allocate limited resources in the most efficient way possible.

By synthesizing recent literature, this paper provides an introduction to the current finance

mechanisms for sustainable development efforts (including climate mitigation and adaptation, conservation, sustainable forest management, integrated land management, and landscape approaches) and explains some of the barriers to unlocking private sector finance. Although this is not a comprehensive overview—the scope of global financial markets and how they relate to sustainable development is too broad to be captured within a single review—this article represents a starting point from which further investigation can be built upon. We discuss the challenges and opportunities for investment potential in sustainable development activities (more specifically as they relate to climate and environmental initiatives) and provide some key recommendations to incentivize future private sector engagement. For ease of understanding—and in an acknowledgement of the multiple and diverse interpretations of implementation efforts—we henceforth apply the term “sustainable development” as an all-encompassing term for initiatives that contribute towards climate, environment, conservation and development objectives – although reiterating the point that all activities related to the SDGs is beyond the scope of a single review.

abundance of literature related to the challenges of financing sustainable landscapes, amongst other landscape-scale issues for society and environment. This additional source of information, coupled with the first

2. Methods

The foundation for this review is based on knowledge captured from previous literature reviews of integrated landscape approaches (Reed et al., 2016, 2017a). These reviews followed standard systematic review methodology and consisted of screening almost 17,000 peer-reviewed and grey literature documents related to reconciling issues of conservation and development (see Reed et al., 2015 for a detailed methodology). Despite these previous reviews being focused on the more specific topic of landscape approaches, the breadth of the search terms applied (Reed et al., 2017b) accounted for the retrieval of an

author's prior experience in the financial sector and our collective knowledge of the financing gap to meet climate and sustainable development targets, provided the motivation for this review. We there-

fore firstly re-visited the data collected during the aforementioned re-views and subsequently used snowballing methods for capturing further literature of relevance via screening bibliographies of relevant articles; web screening of appropriate finance and research organizations, followed by a rapid appraisal of retrieved documents – largely comprising “grey literature” reports; and examining further literature of relevance known to the author group and partners.

3. Financing overview

In this section we first provide a brief overview of the current financing system for sustainable development and illustrate some of the key financial mechanisms for initiatives that contribute towards the global climate and sustainable development agenda. Although we attempt to provide a coherent and systematic overview, it is important to note here that the nature of private financing (private corporations are competitive with no obligation to publicly disclose financial information) and the literature related to financing sustainable development in general, is highly fragmented, therefore not making this a simple (or linear) task. Indeed, much of the financing system contains overlaps

that contribute towards this lack of clarity – for example, development finance institutions (DFIs) can be considered a distinct mechanism for financing but depending on individual structure can also be an example of blended finance, and can contribute towards global climate or sustainable development financing – therefore also increasing the potential for double-counting. We complete this section by highlighting some key barriers currently impeding private sector engagement in sustainable development initiatives.

International discourse frequently references trillions of dollars available for sustainable development projects within international fora (World Bank, 2015). However, upon review, we suggest that these funds in fact refer to the general existence of global private capital seeking positive returns. Various sources have recognized a disconnect between investors seeking projects and projects seeking funding due to a perceived lack of opportunity as well as challenges sourcing a viable pipeline of bankable projects (The New Climate Economy, 2014; Egler and Frazao, 2016; Girishankar, 2009; Bennett and Carroll, 2014; Huwlyer et al., 2014). We identify a paucity of comprehensive research providing empirical evidence supporting the current state of green finance being spent across the various sectors and forecast needs for the near future. Specifically, statements are often made at international negotiations to the effect of trillions of dollars of financing being either available or required.² However, information on the actual spending in various sectors is more frequently stated in the billions of dollars (UN, 2014; Parker et al., 2009; World Bank, 2015) (see Table 1).

One such example demonstrating the current funding gaps is provided when examining climate financing – the goals of which are to improve the resilience of ecological and human systems to climate change through enhancing greenhouse gas sinks and reducing emis-

sions (International Finance Corporation, 2016b). In 2014 there was a total of USD361 billion of climate finance, of which only USD141 million was provided by the private sector; yet after analyzing the national climate change commitments and policies in 21 emerging markets, the International Finance Corporation forecasts that there will be approximately USD23 trillion of

climate investment opportunities between 2016 and 2030 in these markets (International Finance Corporation, 2016b). Distributed equally across the 14-year period, this would equate to over USD1.6 trillion per year – more than four times the current (global) investment of USD361 billion. Similar gaps exist in

Blended finance combines private with public finance and includes mechanisms such as traditional public-private partnerships (PPPs) as well as development finance institutions (DFIs). DFIs are alternative finance institutions, typically government backed or with a combined public and private ownership structure, that operate by market principles to provide capital and investment in private sector in countries or sectors that otherwise have difficulty attracting capital (Te Velde, 2011). Some well-known DFIs include the International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD), African Development Bank (AfDB); others, such as NorFund, SwedFund and the UK's CDC, are purely publicly owned DFIs (Kingombe et al., 2011). These institutions seek to maximize profits as well as provide positive development impacts including social and environmental benefits. DFIs have been instrumental in providing access to a range of flexible services and financing options including long-term debt, concessional finance, and growth capital in the form of equity and insurance, in addition to a wide range of technical services and capacity building. DFI commitments in 2014 totaled USD 131 billion, which comprised 33% of total climate finance flows (Buchner et al., 2015).

As involvement of private actors in international sustainable development dialogue has escalated, further unique partnerships have emerged between government, private sector, NGOs and civil society. One such example is the Tropical Landscapes Finance Facility that consists of public and private funding to provide long term financing aimed at catalyzing sustainable land use (TLFF, 2017). TLFF funding targets renewable energy, agriculture, forestry and environmental services with the aim of benefiting rural livelihoods through

leveraging policy reform and building models that combine commercial finance and development (TLFF, 2017). Other recent private sector and blended finance initiatives and mechanisms that directly and indirectly funnel finance flows towards environmentally beneficial initiatives include green bonds, conservation finance, impact investing, REDD+ and foreign direct investment, among others. In 2014 The Nature Conservancy and JP Morgan Chase established NatureVest to focus on financing investable projects that deliver both conservation results and financial returns for investors (FAO and Global Mechanism of the UNCCD, 2015). Other initiatives, such as the Global Canopy Programme's Unlocking Forest Finance (UFF) project focusing on channeling finance to aid in sustainable development efforts where investment needed to achieve the SDGs is estimated to be an annual amount of USD3.3–4.5 trillion for developing countries (OECD, 2016) and USD5–7 trillion globally (Almassy et al., 2015; UN, 2014). However, total official development assistance (ODA) in 2015 fell far short of this at approximately USD132 billion (OECD, 2016). Expecting such a shortfall to be picked up by the private, or indeed any other sector, is arguably misguided and clearly represents the current disconnect between stated ambitions and reality. In addition to ODA, government funding varies from infrastructure investment and public private partnerships to conservation finance. Governments also play pivotal roles in incentivizing private investment through policies, subsidies, grants, concessional loans and risk mitigation mechanisms including insurance and government guarantees. The importance of conservation finance as part of wider global efforts addressing climate change and sustainable development is undeniable, yet

transitioning to sustainable landscapes, serve as further examples of the potential of forging new partnerships.³ Finally, the recent commitment of the Norwegian government to invest USD400 million in a collaborative arrangement with the Global Environment Facility, the UN Environment Programme, the Sustainable Trade Initiative (IDH) and a number of agri-businesses⁴ is further evidence of the growing impact of public-private partnerships. Blended finance initiatives clearly represent a significant area of potential. However a recent report found that although USD51.2 billion had been invested historically and investments had accelerated in the past decade, efforts remain both geographically and sectorially fragmented and better data is required to engage and incentivize private investors (Business and Sustainable Development Commission and Convergence, 2017).

Along with these innovative funds and partnerships, more conventional mechanisms such as green bonds or accessing renewable energy

inadequate funding remains a persistent challenge.

Approximately

companies on the stock market may provide increased accessibility for

USD52 billion annually, primarily from philanthropic and public funds, currently flows to conservation projects (Huwyler et al., 2014); however, it is estimated that an additional annual investment of USD200–300 billion is required for ecosystem preservation globally across land and oceans (Huwyler et al., 2016).

Unsurprisingly—given the large range of perceived required investment referred to above—a specific value requirement for forest or terrestrial conservation remains unclear. Another important public funding mechanism exists through

national development banks whose primary role is to act in under-financed areas including providing credit finance to long-term investments, socially valued projects, and mitigating market failures arising from asymmetrical information (Torres and Zeidan, 2016).

mainstream investors. According to the Climate Bonds Initiative, an estimated USD694 billion of green bonds were issued in 2016—comprising of USD118 billion in labeled green bonds and USD576 billion in unlabeled climate-aligned bonds—representing a mere fraction of the USD90 trillion global bond market (Boulle et al., 2016). While the green bond market is often touted as an area of significant potential, these figures suggest current progress is insufficient considering an estimated USD2.5–3 trillion of capital per year is required for climate related investments, of which 60–70% needs to be invested in emerging markets (Boulle et al., 2016).

Foreign direct investment (FDI) is the most reliable and long-term source of private foreign investment in developing countries. Due to commerce and trade globalization, significant investment shifts from developed to developing and emerging markets have resulted in a dramatic increase in FDI from USD54 billion in 1980 to USD1.23 trillion in 2014 (World Economic Forum, 2016). However, it is important that governments not only implement policies to create enabling environments to attract investment but also safeguard against exploitation by ensuring social and environmental standards are met and provide local opportunities and technology transfers (UN, 2014).

A shifting global economy has also stimulated competitiveness, perceptible as international banks scale up green investments; however, “some banks note that the potential ‘greenwashing’ of banking services to gain a competitive edge – including bonds or other securities linked to green loans, or green project finance – remains high in certain markets, with few mechanisms to monitor or verify transactions” (Robins and McDaniels, 2016, p14).

The risk of greenwashing has been present in the private sector for many years, particularly with the mainstreaming of corporate social responsibility and increasing consumer demand

to meet social and environmental standards. While there is a great deal of discussion surrounding green finance, it is estimated that the proportion of ‘green’ bank loans account for only 5–10% in the few countries where such national loan measures exist (Zadek and Robins, 2016). Only 60 jurisdictions have taken action to align their financial systems with sustainable development at some level—yet fully comprehensive approaches remain absent (Zadek and Robins, 2016). Naturally, capitalism, competition and free markets have also stimulated private investment in projects that demonstrate solid business cases for investment where the viability of cash flow and precedent of financial returns is strong. This is also evident in scenarios where investment improves efficiency, reduces costs and provides supply chain stability, such as water-efficient agriculture that reduces the risk of climate change or drought while decreasing input costs and increasing profits

³ <https://globalcanopy.org>.

⁴ <https://medium.com/world-economic-forum/10-achievements-from-davos-2017-29dfac315e98>.

(Shames et al., 2014).

The recent emergence of creative investment mechanisms and new financial technologies (known as fintech) allow investors to engender positive environmental impacts through their investments. These instruments continue to advance and are instrumental in providing accessibility to financial services, particularly in developing countries where much of the rural population has had little or no access previously. Furthermore, these instruments have increased access to insurance, which is an important financial mechanism and safeguard against the uncertainties and volatility of climate change that can be detrimental to smallholders and farmers in developing nations. Fintech will integrate the financial system and the real economy, presenting opportunities for greater decentralization and for developing countries to circumvent outdated processes in developing capital markets—both of which emphasize the global obligation of developed economies to transfer knowledge and technology to facilitate this transition (Castilla-Rubio et al., 2016). Despite this progress and the optimism such new mechanisms provide, tangible traction in reducing emissions and keeping carbon below agreed levels will not be attainable without simultaneous divestment from high-carbon activities and resource depleting business models.

4. Barriers to private sector investment

The literature reveals various obstacles that hinder the scaling up of private investment including market failures, information gaps, undervaluation of natural capital, over-reliance on voluntary commitments and inconsistent policies. With prevailing market disincentives businesses will continue to allocate their capital where it can be used most efficiently to maximize return on investment, regardless of environmental impacts (Druce et al., 2016; McFarland et al., 2015).

Various studies aim to estimate the amount of

current funding directed towards specific action, such as climate change mitigation or adaptation, as well as investigating existing gaps (Climate Change Support Team, 2015; Miller, 2014; Parker et al., 2012; Castren et al., 2014; Financial Stability Board, 2016). However, there is a lack of information on the current scale of private investment flows to landscape approaches, the forest sector, climate action, environmental remediation, etc. This is due to various factors including the absence of coordinated and systemic efforts to collect information on investment flows, a lack of obligatory reporting requirements and an overall insufficient transparency, making it extremely difficult to fully comprehend the current state of private financing and identify areas of potential opportunity (Castren et al., 2014). There is some research available that examines investment in specific projects and initiatives typically in the form of case studies as part of broader research, however evidence detailing the success and investment of solely private sector led initiatives is less forthright. Others provide examples aimed at particular objectives such as climate adaptation or watershed protection; a one such paper provides specific project examples of climate adaptation initiatives categorized by financial instruments (Druce et al., 2016). Further research is needed to comprehensively investigate the factors influencing investment decision making, future trajectories of private sector companies and the main impediments limiting wide-scale, mainstream investment in sustainable development and environmentally sustainable operations. However, below we highlight some key factors identified from the literature that currently impede greater private sector investment (Table 2).

Information & funding gaps

Lack of transparency leading to ill-informed financial decisions, based on incomplete data and information regarding the impacts of non-monetary risks such as climate change and environmental factors, can lead to inefficient allocation of capital and contributes to a vul-

nerable financial system. Basing investment decisions and approval for

credit facilities such as loans on limited or non-comprehensive data impairs the ability to adequately adjudicate the risks associated with these decisions. This can result in weak investments and financial institution portfolios that have not accounted for or mitigated major risks such as climate related impacts. The data and information required to undertake the necessary financial rigor in project evaluation is not currently available, or is simply insufficient. Data will be crucial to informing resource allocation decisions, monitoring past progress and ensuring accountability (Sethi et al., 2017). Many projects, particularly landscape approach initiatives that integrate often dichotomous conservation and development challenges, have multiple objectives making it difficult to decipher financial flows to individual efforts. For example, a study of biodiversity financial flows indicated that nearly three quarters of total biodiversity aid flowed to projects with dual con-

servation and development objectives—which often leads to overstated financial flows or an exaggeration of the total funding in practice as the proportion distributed to each objective in a multipurpose project is unclear (Miller, 2014). The inability to decipher financial flows can contribute to flawed data and information, making it difficult to comprehensively assess the current financial situation as it pertains to various (and often overlapping) efforts such as climate change and conservation. This is then further complicated by political and institutional agendas influencing the classification of a particular project and what is explicitly mentioned in project descriptions, for example classifying as climate adaptation versus development aid, adding to the entanglement and complexity of financial flows and issues that hinder our ability to identify the most crucial gap areas, correlating causes and potential solutions (Donner et al., 2016; Sethi et al., 2017). While conservation and development initiatives are generally under-funded, such double counting or lack of transparency is becoming increasingly problematic due to

growing interest in more holistic approaches, suggesting existing limited funding is now spread even more thinly. Information gaps such as incomplete and asymmetrical information are noted as barriers across many types of financing. As seen with climate adaptation finance, this is experienced when crucial information like the expected impacts of climate change is either inaccessible, unavailable or unevenly distributed among actors, thus severely impacting informed decision making and potentially discouraging investment (Druce et al., 2016).

bound to short-term reporting of financial performance with which private companies compete, emphasizing the need to align investments to achieve short-term metrics and quarterly results. Such short-term outlook is well illustrated by a recent article on the science and art of high quality investing (Hanson and Rohan, 2015)

4.2. *Short-termism*

The maximization and preference of short-term profitability is referred to as “short-termism”, a problematic strategy that undermines long-term investment decision-making (Robins and McDaniels, 2016). Furthermore, short-termism systematically diminishes incentives for companies to invest in sustainability strategies and commit to the kind of long-term investments required by sustainable development projects with high up-front capital costs and long-term returns on investment (Waygood, 2014). In addition to shareholder and investor pressure for short-term returns, individual performance incentives and evaluation metrics on which employees, directors and decision-makers are assessed are often in direct conflict with long-term strategic solutions including environmental and social considerations. This presents a significant barrier for sustainable development projects to attract investors, the majority of whom demonstrate a preference for liquidity. The long-term commitment and lack of clear exit strategy combined with a plethora of additional risks—such as lack of precedence, proven cash flows and overall financial viability—often makes these types of projects unattractive to mainstream investors. Short-termism is further exacerbated by the overall economic and financial systems in which public companies are

Table 2

4 Key Barriers to Private Investment & Recommendations to Overcome Them.		
Barrier	Summary	Recommendation
Information Gaps	- Limited, non-existent or asymmetrical information on the risks associated with climate change leading to ill-informed decision-making	- Centralized information hub and convening body, further research to collect empirical evidence, leverage proven track record of DFIs
Short-termism	- Preference to maximize short-term profits undermining long-term investment decision-making	- Institutional and policy reform recognizing the value and benefits of long-term investment strategies
Undervaluing Natural Capital	- Exploitation of natural resources due undervaluation leading to negative externalities (i.e.: unpriced greenhouse gases, water pollution)	- Policy reform to accurately value natural resources, adoption of NCA
Voluntary commitments	- Voluntary commitments lacking recourse and regulation reform, regulatory reporting requirements, legally binding agreements	- Reliance on voluntary - Political and institutional

that defines long-term investors as having holding periods of two or more years. Despite being significantly greater than the typical quarterly reporting described above, a two-year investment is a fraction of what is needed in terms of tackling issues such as sustainable development and climate change. On his appointment as CEO, Unilever's Paul Polman set a precedent in this regard by doing away with quarterly reporting as an acknowledgement that such short-term reporting is fundamentally maladapted to the principles of long-term sustainability – however this example remains very much the exception rather than the rule.

4.3. *Undervaluing natural capital*

Private sector exploitation of natural resources is perverse; government policies often favor economic growth at the expense of environmental degradation and exploitation of natural resources. Recently, however, there is growing acknowledgement that the hundreds of

billions of dollars required annually to protect natural capital could be leveraged by the private sector through the sustainable supply of ecosystem goods and services (Parker et al., 2012). Nevertheless, undervaluation of natural capital has led to large profits for the private sector via the exploitation of natural resources, in turn fueling an unwillingness to reform to sustainable practices. Reporting is a vital step in recognizing that asset value of natural capital can drive investments in natural infrastructure, one solution being natural capital accounting (NCA). Action taken to provide solutions to the current undervaluation and exploitation is evident through a partnership led by the World Bank called WAVES (Wealth Accounting and Valuation of Ecosystem Services) and the Natural Capital Declaration launched in Rio in 2012, committing to regular NCA reporting by 2020 (Bennett and Carroll, 2014). Further efforts such as The Natural Capital Project and projects from The Economics of Ecosystems & Biodiversity, UNDP and others work towards establishing frameworks, processes and analytical tools to quantify and measure the value of natural capital (Huwyler et al.,

2014). However, it is difficult to shift “business as usual” practices that have led to inexpensive manufacturing and contributed to over-consumption habits, as natural capital has often been understood and treated as having little or no value. As such, this continues to be a challenging concept for many governments and private sector actors, compounded by the fact that benefits of conservation investment or preservation of natural capital have long-time horizons—making it difficult to quantify short-term underlying financial benefits. The importance of conservation finance as part of wider global efforts addressing climate change and sustainable development is undeniable—yet inadequate funding remains a persistent challenge (Heinet al., 2013).

4.4. *Voluntary commitments*

Thus far, voluntary commitments have largely driven private investment in landscapes. However, to achieve such investment at a meaningful scale, voluntary participation is insufficient. Nevertheless, recent years have seen the increase of voluntary commitments and

emerging partnerships and coalitions to take voluntary action. One example is the 2015 New York Declaration on Forests (NYDF) endorsed by 180 governments, companies, Indigenous community networks and civil society organizations to halve, and ultimately end, natural forest loss by 2020 and 2030 respectively (Supply Change/Forest Trends, 2015). While such global commitments are encouraging, there is a risk that this type of progress (voluntary and non-legally binding) is limited due to a lack of accountability, transparency and recourse for unmet conditions; just over half of NYDF endorsers have publicly disclosed progress toward their commitments (Supply Change/Forest Trends, 2015). Similar examples include the global restoration agenda under the Bonn challenge and efforts to enhance the sustainability of oil palm production under the RSPO (roundtable on sustainable palm oil). In addition to reliance on voluntary governing bodies, many of these agreements are characterized by a complete lack of recourse and follow-up. Similarly, aside from the recent emergence of regulatory requirements in some markets such as China and India, the green bond market is based on voluntary governing rules such as the Green Bond Principles and the Climate Bond Standards (tools to avoid green-washing) (Bouille et al., 2016). Investors’ ability to fully assess and mitigate the risks of investments that are labeled “green” based on voluntary standards, governance and information is limited, therefore presenting another barrier to investment or “unlocking” private finance. Other initiatives such as the Equator Principles aim to serve as a framework for financial industry actors to assess social and environmental risks associated with projects; however, the Principles explicitly state there is no liability as they are purely voluntary and intended to assist in the development of internal policies and procedures (Equator Principles, 2013). On the surface, it appears that major steps have been

taken to adjust the priorities and actions of conventional financial institutions to support more sustainable and environmentally conscious investments and businesses. However, a disconnect remains between these voluntary commitments and the core business model of these financial institutions.

Private sector commitments and voluntary pledges of more than 600 global businesses and investors to reduce greenhouse-gas emissions and energy consumption played an important role in influencing governments to reach the Paris Agreement and serve as an example that voluntary pledges have an important role but cannot be solely relied upon ([International Finance Corporation, 2016a](#)). In this sense, the Paris Agreement exemplifies why voluntary commitments alone will continue to produce insufficient changes. Unlocking private sector finance

while continuing “business as usual” practices is counterintuitive and contradictory. Even with commitments to these lower levels—which are unsatisfactory themselves—we continue to operate on a “business as usual” model due to a jarring lack of supporting policies to reduce emissions. It is commonly accepted that current NDCs will exceed carbon emission targets ([Rogelj et al., 2016](#)) and are not conducive to achieving a rapid response to the environmental catastrophe the global community faces ([Steffen et al., 2015](#)). With a long history of broken promises and failed pledges, voluntary commitments should be a catalyzing force to achieve transformational change, rather than depended upon as acceptable and sufficient stand-alone actions. Such

commitments should stimulate further action and pressure governments to spark punctuated transformation through holistic approaches that simultaneously address social, economic and environmental issues.

5. Discussion

A significant disconnect is evident between the current investment in sustainable development and the figures in the trillions of dollars regularly touted as available—and required. Furthermore, concrete synthesized evidence on exactly how much these “green” investments account for as a percentage of the overall market is also lacking, but it is commonly agreed that it represents a mere fraction ([Climate Bonds Initiative, 2016](#)). Expecting transformational change from increasing these type of investments when they co-exist in tandem with business models, financial systems and government policies that incentivize the very actions and activities responsible for the environmental damage we are trying to rectify is radically unrealistic. A much more profound paradigm shift is necessary to establish long-term political and private sector support since “huge pools of private finance will not change their direction whilst price signals continue to favour the destruction and degradation of nature, rather than its restoration and maintenance” (Parker et al., 2012, p7). By recognizing that change needs to occur to “unlock” private finance, we acknowledge implicitly that current systems are failing and a shift on a global scale is required to incentivize private investment in environmentally sustainable action. Free market logic and capitalism should result in efficient allocation of capital; therefore, if the enabling economic and political conditions already existed, there would be no need to incentivize private sector investment in green initiatives and climate action—it would already be occurring. The focus of international discourse

and policy discussions should therefore move beyond efforts to tap into private capital to encompass assessing how to address root causes creating current conditions that incentivize resource depletion and fail to recognize the true (beyond simply economic) value of natural capital. Although it is an extremely difficult endeavor—particularly in developing countries with already weakened political environments—addressing political conditions that have resulted in economic systems incompatible with planetary limitations and environmental systems could provide a solution to minimize the catastrophic implications of our current “business as usual” trajectory.

Market failures

There are various market failures and inconsistent policies that have shaped the current high-carbon economy and continue to disincentivize private sector sustainability. Exploitation of natural resources and collapse of ecosystem services has been attributed in part to market failures where changes in ecosystem services, which are public goods, are treated as externalities of market production and are not internalized by the producer ([Arriagada and Perrings, 2009](#)). The emergence of payment for ecosystem schemes, and particularly REDD+ has attempted to correct this market failure ([Ferraro and Kiss, 2002](#); [Lund et al., 2017](#); [Pattanayak et al., 2010](#)); however, this too has encountered many challenges – for example, issues of: insecure land tenure, elite capture of incentives, equity concern between recipients of payments and beneficiaries of ecosystem services, uncertainty over conditional based incentives, and unfavourable economics of REDD+ programs (especially when compared with a favourable market for commodity crops) and an uncertain global carbon trading market ([Muradian et al., 2013](#)). Information gaps also have a hand in creating another market failure related to Fintech since

information on new technologies is often scarce and controlled by the creator of the technology, resulting in the difficulty of investors' understanding and subsequent underinvestment in adoption of new technologies; investors that do finance Fintech therefore often charge a premium due to perceived risks from lack of understanding directly related to information gaps—and these premiums

further reduce investment and scaling up of the technology ([The New Climate Economy, 2014](#)).

2. Fragmented efforts to financial system changes

Our findings show that there is clear and encouraging momentum regarding upscaling finance to achieve globally conceived commitments for climate and sustainable development. However, the rate of progress remains insufficient, represents a small fraction of the economy and a number of impediments to incentivizing private sector engagement persist. Furthermore, our review leads us to question the very ideology that supports the notion of “unlocking” private sector finance to fulfill climate and sustainable development ambitions.

Unlocking private finance is vital to achieve global climate agendas, but broader fundamental systemic changes and policy reforms are likely required to ensure that sustainable socio-economic development occurs within planetary boundaries ([Steffen et al., 2015](#)). One area of significant potential involves strategically leveraging public finance through systemic change and stimulating private investment to accompany a parallel paradigm shift in the global economy. However, in a changing global environment perpetuated by a complexity of social, environmental, political, and cultural issues has presented new risks—particularly in the global south—that investors do not have the knowledge or capacity to adequately assess and mitigate. Moreover, with an absence of sufficient empirical evidence on project performance and a lack of precedent on the financial viability of projects, there is little incentive for private sector transformation from ‘business as usual’ practices. Such evidence gaps enhance the risk of failing to meet the commitments of the environment and development agenda; a sentiment that is well-acknowledged by a recent UNEP report: A failure to scale up the current momentum

allows for continued investments in an unsustainable development pathway, with associated negative and often irreversible effects such as accelerated climate change... Despite the positive momentum, we risk slipping backwards if the bulk of financing continues to flow towards unsustainable production and consumption patterns. Without a more rapid, scaled redeployment of financing, we will lock in development trajectories that hinder the realization of the global goals and take us beyond the tipping points for life-supporting climate and wider ecosystems (Robins and Zadek, 2016, p13)

Currently, global challenges such as climate change, poverty, and environmental degradation arise as seemingly disparate issues on a project level and activities to address these challenges are sectorial. While there are numerous efforts across various sectors, coordination between these efforts often fails to appear obvious. Looking at examples within the financial system alone there have been multiple positive, albeit highly fragmented, efforts that ought to instill optimism, such as The Alliance for Financial Inclusion, The Green Infrastructure Investment Coalition, The Principles for Responsible Investment, The Principles for Sustainable Insurance, The Sustainable Banking Network, The Green Bond Principles, The Sustainable Stock Exchanges Initiative, The UNEP Finance Initiative, and The Vulnerable 20. However, the fragmented nature of these actions only further perpetuates the disconnect between various industries, even within the same sector, as well as current policy and legislation.

The changes required to transition to a low carbon economy hold significant consequences, some of which are potentially disruptive to certain economic sectors; therefore, financial policy makers must understand the implications of this transition in order to avoid financial shocks and losses in asset values (Financial Stability Board, 2016). In response to these concerns the Financial Stability Board established the Task Force on Climate-

related Financial Disclosures to identify necessary information for investors, lenders and insurance underwriters to comprehensively adjudicate climate-related risks and opportunities (Financial Stability Board, 2016). As with any significant change there

will be a transition phase where necessary precautions and adjustments will need to be made, however transition holds financial and economic growth potential in addition to environmental and social benefits. A recent CitiBank report compared the costs and benefits of a low-carbon future (action scenario) versus the business-as-usual path (inaction scenario); the report suggests that over the next 25 years the cost of investment is nearly identical for the two scenarios and the low-carbon scenario is actually less expensive (Channell et al., 2015). Even without factoring in the cost savings from avoided climate-related damages “Citi’s ‘Action’ scenario implies a total spend on energy of \$190.2 trillion while the ‘Inaction’ scenario is marginally larger at \$192 trillion” (Channell et al., 2015, p. 23). Similarly, recent reports from the World

Economic Forum ([Green Growth Action Alliance, 2013](#)) and [The New Climate Economy \(2014\)](#) suggest that a shift to a low-carbon economy will result in a long-term net economic benefit, although these latter two reports acknowledge that the initial up-front investment would require an additional 5% investment compared to business-as-usual to 2030.

Realizing national commitments resulting from the Paris Agreement will require significant financing. While these commitments are not yet at the required level to reach global climate targets of 1.5°, further financing will be required in years to come as the “ratcheting” up of these commitments continue to unfold. This creates significant opportunity for financial institutions to be a part of the move towards a low-carbon economy. There are both risks and opportunities resulting from climate change that financial institutions cannot afford to ignore as energy subsidies, emission standards and carbon pricing will directly impact the financial position of clients that these institutions finance ([International Finance Corporation, 2016b](#)). Banks and other financial institutions will be inherently exposed to these risks through their credit exposure with clients who

are affected by climate change; therefore, accounting for these risks will become an important consideration in credit adjudication and decision making processes. However, an opportunity arises to capitalize on being an integral player in shaping the future green economy and financing infrastructure. The G20’s Financial Stability Board detailed three primary climate risks: physical risks including natural disasters and the impact on insurance liabilities and financial assets; liability risks which pose significant risk to carbon extractors and emitters as well as their insurers; and transition risks that could potentially result from the adjustment towards a lower-carbon economy including changes in policy, technology and reassessment of the value of assets as long-range costs and opportunities become clearer ([International Finance Corporation, 2016b](#)). Furthermore, governments must integrate their NDC commitments into budgets and strategies, creating policies such as performance standards, carbon pricing, and market-based support to ensure appropriate action is realized ([International Finance Corporation, 2016a, 2016b](#)). Feasibility of such large-scale systematic change will be challenging, expensive and time intensive, however the risk of inaction is far greater. It will require significant efforts not only by industry and government, but also by consumers and citizens who can help shape and influence this change through making educated choices; resulting in combining top down and bottom up approaches.

Further investigation is required to analyze the nexus between the financial system and sustainable development in order to stimulate appropriate action. While various actors should align their activities on the landscape level to fully maximize benefits and reduce redundancy, this is currently complicated at a project or landscape funding level due to lack of global financial sophistication. While some distinct landscape scale projects exist, efforts remain fragmented; institutional and systematic changes must occur in order to create

suitable conditions, such as appropriate risk mitigation being in place so that landscape level funding mechanisms can be mainstreamed. Such actions can help leverage public finance to unlock private investment and stimulate public-private partnerships.

In a world where natural capital is often unpriced or undervalued,

thus making resource exploitation particularly lucrative, environmentally degrading activities will continue to dominate the economy. While this may be partially offset or complemented by sustainable development initiatives, they are insufficient as is. Voluntary agreements and commitments have a limited impact; these commitments must be harnessed and expanded to initiate policy reform and address market failures that are contributing to the global environmental demise. Improved monitoring, evaluation, reporting and overall enhanced information flows will facilitate deciphering additionality and distinguishing benefits resulting from efficient allocation of capital to environmental and sustainable development projects.

5.3. *Centralized convening body*

Donors often prefer concrete, measurable outcomes rather than intangible outcomes such as planning, communication and coordination activities. Combined with short time horizons characteristic of most donor funding schemes, this creates significant challenges in adequately building a strong base and feasible strategy from which to grow projects. Establishing a broad consortium of partners and a centralized body that provides access to current initiatives and connects projects and investors to appropriate resources would help in overcoming some of these challenges and could streamline planning processes, project initiation and finance sourcing stages. What we are proposing here is not new, but simply an extension of similar calls to develop a more synthesized and robust evidence base for conservation and development interventions (see for example [Fisher et al., 2014](#); [Baylis et al., 2016](#)). As projects evolve, the ability to access different sources of financing improves ([Devinit, 2016](#)). Financial institutions require the capacity to properly evaluate projects and mitigate risk factors; therefore, a proven track record and stability in terms of leadership, decision-making processes and stakeholder engagement enable investors to assess the

viability of projects and make informed financing decisions. When projects mature and stabilize, accessing funding at lower interest rates to reflect the decreased risk aids projects in retaining increased profits and allows for further reinvestment. High-risk, low-return donors are necessary to support the initial stages and upfront costs (Shames et al., 2014); however, this dependence limits the scalability of integrated landscape projects since such funding sources are finite. If we intend to scale up these initiatives globally to achieve climate targets, alternative options must be explored that could unlock further funding. Rather than relying on public investments in these initiatives—which often eventually profit involved private partners utilizing instruments such as deferred loans—government guarantees or other mechanisms offering favourable terms can provide solutions that will be repaid and thus carry greater impact or exist as part of larger programs where profits are reinvested.

perception of conservation opportunities, making them more attractive for investment. Particularly in cases where a company relies on a specific resource or environmental service; ensuring long-

5.4. *Understanding underlying financial benefits*

Conservation finance can help demonstrate the challenges associated with the above noted funding requirements and preferences. It is often difficult to quantify the underlying financial benefits of conservation since it typically encompasses multiple externalities, therefore enhanced collaboration between governments, NGOs, investors, and financial institutions can increase this understanding and make conservation opportunities investable (Huwylar et al., 2014). For example, collaboration amongst these actors can improve the understanding of the underlying benefits of conservation that may take time to be realized or are intangible and difficult to measure such as carbon sequestration, watershed protection, health benefits, wellbeing, cultural benefits, and climate mitigation among others. Examining underlying financial and non-financial benefits that are often overlooked could change the

term availability of these resources and services through conservation investments can help protect these interests and mitigate risk (Kissinger et al., 2015). Collaboration between organizations with varying objectives and expertise can bring light to these issues and benefits and provide opportunity for partnerships. In instances where projects will result not only in long term business sustainability, but also in social benefits there is potential for partnerships to be forged between investors, government and NGOs. Recent research demonstrates that investment in conservation has led to subsequent positive environmental outcomes through reducing biodiversity loss (Waldron et al., 2017), yet further research is still required with regards to the financial benefits as they apply to private sector investors. Aside from funding challenges, social, political and economic risks are among the key challenges in implementing conservation finance mechanisms (Waldron et al., 2013), particularly in biodiversity-rich regions where poor governance, corruption, poverty, social turmoil and land tenure issues are rampant (Wilshusen et al., 2002; Gardner et al., 2009). Establishing government stability and support for conservation and landscape approach projects is likely to increase private sector investment and FDI in these regions. Undervalued natural capital has benefited the private sector for years, largely due to weak or non-existent policies accompanied by subsidies that have essentially reduced the price of a natural resource below the marginal cost to society. Global subsidies total approximately USD1.9 trillion (8% of total government spending) with a large portion still being directed to inefficient energy production (African Development Bank et al., 2015), which if aligned with sustainable development through reform would be a momentous catalyzing force. In addition to inefficient fuel subsidies, emitters do not endure costs caused by damage their activities create, making greenhouse gases one of history's most prevalent market failures (Parker et al.,

2012). Establishing strong policies aligned with global emissions targets to address fiscal distortions from unpriced greenhouse gases offers a solution to improving resource efficiency and generates other benefits including reduced local air pollution (The New Climate Economy, 2014). Alongside political will and policy reform to address emissions and resource exploitation, aligning incentives to stimulate climate-resilient action and low-carbon energy alternatives will strengthen governments' ability to transition to a green economy and meet international obligations.

Importance of domestic funding and reform

Domestic financial systems and policy have a fundamental role in delivering on the global agendas through budgeting and tax generation as well as establishing enabling environments that can mobilize and leverage private finance; international financial institutions and bilateral support can provide technical and capacity building expertise to assist in these processes (Watson, 2016). Global agendas play an important role in national priority setting as domestic perceptions regarding which challenges and potential solutions are worthy of attention by leadership appear to be shaped by global agendas, the success of which will be influenced by the willingness of domestic leaders to mobilize resources to achieve them (Sethi et al., 2017). With limited public finance and increasing underfunded global objectives combined with augmented financial pressure for disaster recovery, efficient allocation to maximize impacts of scarce financial resources is vital. Domestic funding is progressively more important as public demand for scaling up domestic investment to protect forests is increasing, particularly in upper-middle income countries, and there is potential for international funding, albeit limited, to leverage more domestic funding (Vincent et al., 2014). Because climate change is a primary sovereign risk, it can no longer be ignored nor actions postponed by

governments, since the poorest and lowest rated sovereigns are impacted most severely, further negatively impacting their creditworthiness (Kraemer and Negrila, 2014). Policy and institutional reform is necessary to achieve global objectives and can serve as a powerful tool in securing scalable long-term sustainable change; however, this reform must also

be complemented by initiatives that can provide immediate progress and solutions. Given that policy and political risks are key barriers that private investors face and that often cause withdrawn and cancelled planned investments, expansion of these instruments is needed to overcome these risks through leveraging resources available such as the Green Climate Fund and Multilateral Investment Guarantee Agency of the World Bank (Climate Change Support Team, 2015).

Other potential solutions to source funds for sustainable development include implementing tax system reforms to address negative externalities while raising revenue. If undervaluation of natural capital is not addressed and therefore has little financial impact on public entities and companies, “all efforts towards sustainability will be dwarfed by market mechanisms” (Almassy et al., 2015, p. 7). As previously discussed, natural capital accounting can aid in internalizing externalities of production and integrating true costs and values of natural resources and ecosystem services into economic activities and public assets. Other tax strategies such as carbon pricing can help eliminate one of the greatest market failures: greenhouse gas emissions. Policy reform can also direct low-cost capital towards climate-resilient investment through tax incentives, subsidies on interest rates, developing financial institutions dedicated to green financing, adjusting rules and addressing governance in order to support long-term goals (Climate Change Support Team, 2015).

5.6. *Progress and potential*

Amidst current bleak outlooks for scaling up private finance caused by myriad obstacles, there are many cases of positive momentum driving private sector investment. Despite apparent disconnects between investable projects and investors, DFIs (including multilateral, bilateral, and national banks) have become important sources of finance with valuable expertise in advisory services and in-depth understanding of

markets, policies and regulations affecting investment in sustainable development. DFIs can act as catalysts as they have experience with successful investments, setting precedent that could be leveraged as an evidence base to attract private sector interest in investing in lower-income countries (Trabacchi and Mazza, 2015; Te Velde, 2011).

Key intergovernmental platforms and agreements such as the Paris Agreement and SDGs have raised awareness of the importance and urgency of scaling up financial flows for sustainable development. In the coming years it will be important to continue to raise awareness and convene actors to improve collaboration and coordination while harnessing voluntary action and market leaders to scale up investment and drive mainstream investment. The cost estimates examined earlier indicate that this low-carbon economy path is economically feasible with lower costs than the business as usual trajectory, without accounting for the widespread environmental and social benefits it would have for the vast majority of the global population. This paper highlights the role of government to implement reform

efforts that will enable the transition to a green economy and stimulate private investment. Capacity building is needed across financial institutions, policymakers, regulators and project level actors to progress and manage the unique challenges climate change presents. In addition to policy and institutional reform, more comprehensive research and

empirical data is required. The [UNEP Inquiry \(2016\)](#) – The Inquiry Into

the Design of a Sustainable Financial System is a series of research papers aimed at improving policy and effectiveness of the financial system – is among the most comprehensive research we have found investigating financing sustainable development, however there remains a dearth of empirical evidence and further research is required

along with improved information flows to increase market transparency.

5.7. *Recommendations*

The insights gained throughout this literature review have informed the following recommendations that we believe would provide a foundation for overcoming the barriers discussed in this paper and facilitate the transition towards a green economy, as well as “unlocking” finance for sustainable development.

1) Government and policy reform to create an enabling investment environment and move beyond voluntary commitments.

· Policy reform to accurately value natural resources and environmental degradation.

· Incentivize scaling up of private investment through aligned subsidies, supportive financial measures and risk mitigation support.

· Address political risks and policies including implementation of regulatory reporting requirements to improve transparency.

2) Develop an international convening informational body to synthesize evidence and connect projects and investors to resources

· Centralized resource to reduce redundancies through coordination of efforts and provide a platform for information sharing including database of research, projects, investors and advisory services.

· Improving awareness of initiatives, funding sources, and projects and building capacity and financial literacy to improve the financial system.

· Provide support networks and identify collaboration opportunities.

3) Bridging finance gaps through and enhancing cost effectiveness of projects – monitoring, reporting, impact assessment (addressing information gaps)

· Leveraging centralized information and convening body to improve coordination and communication between various actors and investors.

· Develop a strong evidence base for sustainable development projects.

· Concrete financial information using existing projects and investments such as those made by DFIs.

Conclusion

Recent years have brought renewed focus to international challenges such as climate change and sustainable development with the ratification of the Paris Agreement and adoption of the SDGs that, in turn, has piqued the interest and involvement of financiers. With greater attention on these global challenges, discourse on how to achieve and finance these goals has been at the forefront of international discussions. A prevailing solution identified as being able to bridge the gap between the levels of finance required and the level currently invested has been the “unlocking” of private finance to fulfill sustainable development commitments. However, throughout our literature review we identified a number of barriers to bridging finance gaps, including: reliance on voluntary commitments, market failures, information gaps, short-termism, undervaluation of natural capital as well as inconsistent and often counterintuitive policies that have created market environments that disincentivize wide-scale private investment in sustainable development.

While slow moving and insufficient in tackling the magnitude of global sustainability challenges, some progress has been made, particularly with regard to cross sectorial commitments and initiatives are underway to support these goals. Leveraging voluntary commitments, innovative partnerships and collaboration, as well as utilizing existing expertise such as that of DFIs and other successful public-private partnerships offer further areas of potential. Harnessing this momentum and further catalyzing private sector investment to transition to a low carbon economy through institutional and political reform as well as improving collaboration and convening actors to efficiently access and allocate limited funding

will be crucial to create an enabling investment environment for sustainable development. Given the current

momentum and ongoing environmental concerns there is an urgency to the recommendations provided in this paper in order to establish an understanding of the outcomes and implications of sustainable investing that can help ensure investment decisions are well-informed, therefore maximizing efficiency of limited financial resources. Long-term sustainability and accessibility to resources and inputs required to maintain corporate longevity and market responsiveness are primary objectives of private sector actors. Demonstrating through further research that sustainable investments can assist companies in achieving this is likely to result in unlocking further private investment as companies compete to secure long-term profitability and resource access. This review has highlighted important areas of progress, future opportunities and current pitfalls, nevertheless expecting transformational change while operating within existing institutional and political frameworks is unrealistic. Furthermore, we've highlighted that such change is not only necessary but potentially economically viable ([Green Growth Alliance, 2013](#); [The New Climate Economy, 2014](#); [Channell et al., 2015](#)), however will require enhanced political will that recognizes the limitations of planetary boundaries.

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