Understanding the demand for REDD+ credits

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Summary

Reducing emissions from deforestation and forest degradation (REDD+) has emerged as a potentially important component of the global policy-mix to mitigate climate change. Against a background of increasing engagement between private-sector entities and conservation organisations, private sector investment has emerged in REDD+. Despite slow developments at the international scale, there continues to be private sector interest in REDD+, and continued voluntary investments in REDD+ projects and initiatives.

In order to better understand possible models for private sector engagement in REDD+, this paper analyses the motivation of private sector stakeholders to engage in REDD+, the perception of the potential of REDD+, the critical obstacles to making REDD+ functional and how actors perceive themselves as part of future REDD+ scenarios.

Based on interviews and a workshop with private sector actors, this paper finds that few expect a regulatory market for REDD+ to emerge and that credits from the voluntary market have to be tailored to specific needs. As a carbon offset, REDD+ provides insufficient motivation for investment, particularly if cheaper alternatives exist. Co-benefits such as biodiversity conservation and community development are more important when traditional corporate social responsibility (CSR) motivations play a role.

Project scale remains important not only for the fact that smaller projects are viewed as offering more visible benefits to stakeholders but also as a means of having more control over risks on the ground, posing a challenge for the design of jurisdictional REDD+. Moving towards supply chains that are free from deforestation offers an opportunity to tackle commodity-driven deforestation. While questions remain about how such an approach might be integrated into REDD+, it could help address a perceived gap between private sector understanding of the values of REDD+ and the risks associated with these values not arising - termed here as a 'missing middle'.

Introduction

The private sector has been traditionally viewed as being in conflict with organisations aiming to conserve the environment (Ehrenfeld 2003), but this has shifted with increasing engagement between private sector entities and conservation organisations (Rose & Colchester 2004; Brockington & Duffy 2011). The idea that firms can benefit society and the environment while making profits, has taken root; firms across the economy are being held accountable to this by conservation organisations and consumers (TEEB 2010; Robinson 2012).

Such corporate greening (the discovery by business of the cost, innovation and marketing advantages of improving environmental performance, Guziana 2013) has grown hand-in-hand with the development of CSR programmes (Robinson 2012) that emerged as part of the corporate response to the challenges of environmental damage and climate change (Kolk & Pinkse 2004) but are also often viewed as important marketing strategies (McWilliams & Siegel 2001; Kitzmuller *et al.* 2012). Multi-national companies in particular have high incentives to engage in CSR as a way to reduce reputational risks (Ruggie 2008), with many seeing CSR programmes as effectively a licence to operate (Earthwatch *et al*. 2002).

Beyond CSR, opportunities have been identified for businesses to profit directly from engagement with conservation including the development of new markets for ecosystem services (TEEB 2010).

Climate change policy, in particular, has witnessed great change in the 2000s, both with respect to regulations and markets established by governments, as well as voluntary initiatives and largely unregulated carbon offset markets. With tropical deforestation and forest degradation estimated to account for approximately 15% of global anthropogenic greenhouse gas emissions (van der Werf *et al.* 2009), stakeholders, ranging from international organisations and national governments to conservation organisations and the private sector, have sought to design strategies and policies for Reducing Emissions from Deforestation and forest Degradation (REDD+).

REDD+ was first termed by the United Nations Framework on Climate Change (UNFCCC), with member countries initially focusing on it as an essential and time-limited contribution to mitigate the impacts of climate change. In its simplest form, governments and firms would reward tropical countries for reducing deforestation rates, receiving carbon credits in return. Cap-and-trade schemes like the European Union's Emissions Trading System (EU ETS) were touted as a way of establishing a price for forest carbon stocks. Since 2005, and in spite of initial high motivation and commitment from many stakeholders, including national governments, local communities, conservationist NGOs and the private sector (Palmer & Engel 2009; Nhantumbo 2011), progress in REDD+ has been slow.

In mid-2015, the final framework for REDD+ suggested broad agreement in its overall scope, objectives and monitoring, reporting and verification (MRV) (Meyer 2015). The scope of REDD+ has, however, increased dramatically from early proposals for a tool targeting reduced deforestation at project scale, funded by firms purchasing carbon credits, to potentially nation-wide programmes targeting deforestation, degradation and re-forestation, known as 'Jurisdictional and Nested REDD+' (JNR). Between 2005 and 2015, many policy initiatives and experiments have claimed the mantle of REDD+, at all scales, involving a range of stakeholders, from Norway's investments in national programmes in Indonesia (Lee & Pistorius 2015), to Bosques Amazonicos (a Peruvian company) supporting organic certification of Brazil nuts in Madre de Dios (Peru) to encourage illegal gold

miners to switch activities (IGES 2013). The critical need to stem tropical deforestation, whether for climate reasons or otherwise, is generally agreed upon, but concerns have been raised regarding the potential efficacy of REDD+ to reduce deforestation, including doubts over cost (Gregersen *et al*. 2010), infringements on local community rights (Larson 2011), and debates about how permanent reductions in deforestation might be achieved (Palmer 2011). This last issue is partially related to how REDD+ might be implemented on the ground, in terms of the policies, and extent to which these address underlying drivers of deforestation (see Angelsen 2010).

Many scholars and practitioners nevertheless agree that to work in practice, REDD+ needs to be implemented at a scale that includes as much of the world's tropical forest as possible in order to prevent 'leakage', defined as reductions of carbon emissions in one place causing emissions in another (Atmadja & Verchot 2011). Such scale would require a huge level of financing yet UNFCCC negotiations have failed to resolve the financing issue due to continuing disagreements among countries about who should pay and how (Leonard 2015). To date, finance flowing into REDD+ has been dominated by public funding from richer countries, significantly through Norway's agreements with Brazil, Indonesia and Guyana. The private sector has engaged with REDD+ for a wide range of voluntary reasons including offsetting of emissions, greening of supply-chains and counterbalancing potential future risk (Corbera & Schroeder 2011). Opportunities to profit have also arisen, for example from trading in REDD+ credits.

Private sector commitment to REDD+ has been strengthened through the New York Declaration on Forests, signed by 53 multinational companies and 37 governments, that pledges to halve deforestation by 2020 and end it by 2030 (UN 2014). A number of multi-nationals have recently committed to the goal of zero net deforestation, for example, Procter and Gamble have committed to eliminating deforestation across its palm oil supply chain by 2020 (Shankleman 2014).

Existing literature on private sector involvement in REDD+ frames the issue as a mismatch between supply and demand. Conservation International (2013) (CI) estimated that REDD+ projects in existence represent more than three times current voluntary market demand, while the Global Canopy Programme (GCP) *et al.* (2014) estimate demand for REDD+ could be as little as 3% of supply between 2015 and 2020. Despite the continued absence of REDD+ from existing regulatory schemes such as the EU ETS, the fact that the private sector continues to invest in REDD+ raises the question of what motivates them to do so.

The term 'REDD+' is nebulous and has been used to cover a range of activities concerning forests. Its scope has grown in the official UNFCCC proceedings from Reducing Emissions from Deforestation (RED) to include degradation (REDD) and then conservation of standing forests and reforestation (REDD+). REDD+ is, however, generally used as a catch-all term for projects and policies that are intended to avoid and reduce deforestation and forest degradation and contribute to regrowth of new forests. Since it has also grown in scale, initially focusing on project-based approaches before encompassing jurisdictional approaches at a regional or national scale, this paper adopts a broad definition, i.e., including projects and policies that fall both inside and outside the official UNFCCC process, and activities implemented at project and jurisdictional scales, funded both under regulatory schemes and through voluntary markets (Supplementary Material S1).

Drawing on data from interviews and a workshop with private sector actors, this paper has a number of key objectives: it examines motivations of firms engaging in REDD+ for their investments and purchases of credits; decision-making procedures of those currently engaging in REDD+; barriers and risks that have prevented additional investors from engaging with REDD+; and, how private-sector stakeholders perceive REDD+ in the future.

Methodology

Views of private sector stakeholders participating in REDD+ were evaluated in a two-step process. In the first, semi-structured one-to-one interviews, following interview guides (Supplementary Material S2), were conducted with fourteen individuals. An initial mapping exercise was undertaken of key organisations involved in REDD+ located in Europe. The exercise focused on firms currently investing in REDD+, those investing in other types of carbon offsets, associations representing emitting industries and REDD+ investors, commodity purchasers and carbon-market traders. Contact was made with firms, organisations and individuals and interviews were scheduled. Further contacts were made and interviewed via snowball sampling.

Interviews were conducted between December 2013 and June 2014 at the London School of Economics (LSE) and across London. Four participants were not available to meet in person so phone and Skype interviews were conducted.

The focus was on firms that had either provided investment into REDD+ projects or purchased REDD+ credits, rather than project developers. Motivations and risks associated with developers are different from those of middle-men looking to purchase credits and sell them on, and different again from those looking to directly invest in REDD+ projects or purchase credits emanating from such projects. Therefore, unless explicitly stated the firms, or entities, referred to here are those investing in REDD+ or purchasing credits.

Questions focused on the potential interest of purchasers in REDD+, motivations of existing REDD+ purchasers, key decision-makers regarding offsetting in firms, time horizons of firms engaging (or not) in REDD+ and main barriers for engaging private sector finance in REDD+ (Supplementary material S2).

In a second step a workshop was held under Chatham House rules at LSE in April 2014. Nineteen participants were involved, drawn from the REDD+ working groups of the Carbon Market Investors

Association (CMIA) and the International Emissions Trading Association (IETA). They included representatives of project developers, investors, international donors and a range of companies who provided legal and institutional support to REDD+ projects. While they shared a background similar to those selected for interview, they were mutually exclusive, in order to allow us to check the validity of hypotheses developed on the basis of interviews.

The workshop was structured around three main sessions focusing on: where does REDD+ stand today; barriers and risks for REDD+; and the future for REDD+ (Supplementary Material S3). Each session started with a brief presentation that raised findings from interviews, followed by open discussion to validate findings and raise fresh perspectives.

Results

Motivations of private sector stakeholders

Preparatory and pre-regulatory demand

A key question asked of interviewees was their perception of motivations of existing REDD+ purchasers. Responses varied, but a conclusion from all interviewees was a dichotomy between those investing for purely voluntary reasons, and those anticipating REDD+ being used in regulatory markets. Interviews with two REDD+ market experts (and validated at the workshop) led to the determination of two different categories of investors in the latter area. The first were those who faced potential future regulatory obligations and were looking to engage with REDD+ in order to gain experience. It was the consensus of participants to the workshop that this type of demand had declined recently due to declining prospects for REDD+ in regulatory markets. It was raised, both in interviews with emitting industry associations and at the workshop, that for entities looking to meet regulatory targets, the main factor determining whether they should engage in offsetting or not was minimising costs.

The second category of investors identified were those companies motivated by resale opportunities that investing in REDD+ might bring. A workshop participant suggested that this type of investor had also declined, not only due to the reduced short-term prospects for REDD+ in regulatory markets, but also due to the experiences of early investors in projects that were perceived to have failed.

Corporate social responsibility and offsetting

For those companies looking to engage in REDD+ for voluntary reasons the motivations discussed by REDD+ purchasing interviewees and at the workshop were markedly different from those of pre-regulatory entities. Discussions at the workshop can be succinctly summed up by the phrase used by a workshop participant when discussing the motivations for financing REDD+: 'it's all about the story', suggesting that what was crucial was the message that could be communicated to stakeholders. A workshop attendee with experience in marketing REDD+ credits however, raised the cogent point that to a number of companies the story of REDD+ was currently unattractive. REDD+ was predominantly viewed as actors being paid to stop cutting down the rainforest. In the workshop, this prompted the question raised by one participant of 'why should I pay someone to stop doing something?' In the discussions that followed participants reached the consensus that the idea of paying for something tangible, like building an eco-lodge, was more attractive. This moves away from the idea of REDD+ as an 'emission reduction story' - the traditional view as observed by a workshop participant, where REDD+ is perceived merely as a tool to offset emissions - towards the role of co-benefits, for example, biodiversity protection. While such co-benefits were initially viewed as 'the cherry on the top for REDD+' by workshop participants, i.e. as an additional benefit above and beyond the planned objective, the discussion concluded that they should now be seen as playing a central role in investment decisions.

An existing REDD+ purchaser interviewee highlighted that for firms looking to engage as part of their CSR programmes, the relevance of projects to their overall strategic direction was also important, and it was this relevance that had helped determine the decision to invest in REDD+ in their

organisation. Such firms looked to projects that offered wide benefits, and fitted within their corporate strategies, including a consideration of their customers. For example, a key business sustainability leader interviewee revealed that REDD+ was of particular relevance to firms with supply chains extending into forest landscapes.

A more hands-on approach to REDD+, where investors engage directly with the project on the ground, was reported by two interviewees to have not only helped make REDD+ attractive but also enabled greater control over risk. For one interviewee, such an approach was motivating firms to make direct investments in organisations that developed REDD+ initiatives and projects. An example of this approach is Kering, a luxury goods company, investing into Wildlife Works, a REDD+ project developer, (Supplementary Material S4).

With regard to the price sensitivity of CSR investors, in analysing interviews and results of the workshop, it became useful to differentiate between those seeking to use REDD+ credits for CSR only and those seeking to use it for carbon-neutral CSR (i.e. voluntarily offsetting a company's emissions). When the question regarding price sensitivity was raised at the workshop it was the consensus that prices did not seem to be important for the former, who were reported to often view the purchase of REDD+ credits, as described by one participant, as a 'charitable donation'. The latter group, however, tended to care more about prices; with the overall aim of offsetting their emissions as cheap as possible. They were only willing to pay higher prices if projects were charismatic and generated wider public relations (PR) benefits. Such firms, one interviewee ventured, often purchased large volumes of cheap offsets in order to cover the majority of emissions (e.g. renewable energy or industrial gas destruction), and a small volume of relatively more expensive REDD+ offsets with co-benefits.

Other potential sources of demand

New pockets of demand have begun to emerge with little or no regulation from government. Instead, they have developed as a result of direct or indirect action in the private sector, responding either to internal drivers, such as the desire to move towards green supply chains, or external private sector-led drivers, such as through sustainability indices.

Charitable donations were identified at the workshop as being targeted by REDD+ project developers. A number of large philanthropic foundations have already been active including the MacArthur Foundation and the Clinton Foundation (PwC *et al*. 2011). For example, the latter has supported carbon monitoring in countries such as Guyana, while the MacArthur Foundation has a dedicated programme aiming to minimise deforestation in countries like the Democratic Republic of Congo.

Other sources of demand for REDD+ identified by participants included incentives provided by sustainability targets, such as the Dow Jones Sustainability Index (DJSI), that evaluates the sustainability performance of the largest 2,500 companies listed on the Dow Jones Global Total Stock Market Index.

In a discussion at the workshop a participant with experience in seeking new markets for REDD+ reported that they were investigating demand from companies potentially exposed to significant risk from their investments in carbon-intensive assets that could become stranded if climate or energy regulation is tightened ('stranded assets'). The Generation Foundation (2013) identified market forces and socio-political pressure, along with regulation, as risks that could lead to significant stranding of fossil-fuel intensive assets. Thus, large institutional investors, such as pension funds, could potentially diversify their portfolio away from companies holding potentially stranded assets, towards less-risky opportunities that might thrive in a low-carbon future. The extent to which such opportunities might include REDD+ would depend on the barriers and risks encountered.

Decision procedures, barriers and risks

Different decision-making procedures and time horizons

Participants were asked who the key REDD+ decision-makers were in their respective firms. For those engaged in purchasing for CSR, decision-making generally lay with the CSR department, although in some instances decision-making went all the way to the CEO. Decision-making within CSR departments implies that finance for REDD+ comes out of general CSR budgets, and workshop participants highlighted the implications for the time horizon of those investments. With CSR budgets generally decided annually, investments often fluctuate from year-to-year. One participant responded (and there was general agreement subsequently) that, for voluntary purchases for CSR, horizons were not more than five years and often much shorter, suggesting a severe disconnect between financing for REDD+ and the typically longer timeframe of many REDD+ projects - rates of carbon sequestration determine that newly-planted forests take decades to reach maturity.

A new type of REDD+ project from which investors receive not only REDD+ credits but also sustainably-sourced commodities was identified as a key potential future source of demand by a participant involved in developing projects, with longer time horizons than for CSR projects.

Barriers, obstacles and risks

Preparatory and pre-compliance market demand

Initially raised by an emitting industry association interviewee, and validated at the workshop, was the perception that many stakeholders, especially those anticipating regulatory markets, view a lack of regulatory frameworks and a lack of clarity regarding future regulations as a major barrier to investing in REDD+. Concerns were also raised by both potential purchasers (through emitting industry associations) and suppliers (through project developers at the workshop) over actual emergence of regulatory markets and REDD+'s eligibility into such markets. Emerging pilot institutions and procedures to register projects were perceived by project developers as being too

bureaucratic, with a lack of clarity regarding the types of projects that would be allowed to generate credits and conditions under which they might be created.

In addition, these investors were deemed by a project developer to be the most price-sensitive and were also concerned with technical risks relating to REDD+ such as additionality, leakage and permanence (see Palmer & Engel 2009; Palmer 2011). It was the view of the same project developer that these risks were likely to be incorporated into criteria that would allow entry of REDD+ into regulatory markets and thus are likely to form part of the risk-assessment of any regulatory purchasers.

Voluntary demand

Risks related to investments in the voluntary market were perceived, by both interviewees and at the workshop, to be different from regulatory investments. A major barrier, identified by a participant marketing REDD+ projects, was the current low profitability and expectations of future low profitability of REDD+ projects that generate revenues from the sale of credits. Price was deemed, in interviews with market experts, to be less important to investors with more general CSR motivations.

Project failure has great potential to damage the reputations of stakeholders involved, and has been a common theme of many REDD+ projects to date, for example the Ulu Masen REDD+ demonstration project in Aceh (Indonesia) (Supplementary Material S5). However, the private sector faces a challenge in measuring, quantifying and understanding reputational risks associated with REDD+, particularly given the range of activities, initiatives, countries and contexts. Reducing reputational risk, or at least helping companies understand and quantify the risk could, in the view of participants, provide further impetus for companies to scale-up investment in REDD+. There are private sector institutions that already perform this role to some extent in the form of standards (for example The Verified Carbon Standard). However, at present these standards are extremely

stringent, require huge effort and finance, and were highlighted by project developers, as a major barrier of entry to the market.

Supply chain greening risks

The potential for REDD+ to find investment from companies looking to improve environmental performance in supply chains, and promote sustainable agricultural activities, was raised by a commodity trader interviewee and repeated by others including existing REDD+ purchasers. A commodity market expert interviewee proposed a mechanism for firms to certify commodities as being 'deforestation-free' via a trading mechanism with other firms, when zero deforestation sourcing is not possible within their own supply-chains. At the workshop a REDD+ market expert participant reported that there have been some moves toward such tools through initiatives such as the Round Table on Sustainable Palm Oil. These, however, have encountered heavy criticism with accusations of weak standards and continued deforestation in members' concessions (Greenpeace 2013). The same market expert commented that more research was required to exploit the potentially large synergy between REDD+ and the move toward sustainable supply chains.

REDD+'s missing middle: The difficulty for private sector stakeholders to understand the complexity of REDD+

The workshop set out to understand two key aspects of the current market: the value or services that private sector actors obtain from REDD+, and, the risks that these values or services may fail to emerge. Although participants recognised the importance of both, discussions also raised a further dimension: a broad lack of understanding of REDD+ in the private sector inclusive of its values and risks, characterised here as REDD+'s 'missing middle'.

Informed by discussions at the workshop this missing middle is conceptualised as consisting of three elements: a lack of understanding of the values that REDD+ can bring to the private sector (highlighted above with regard to the lack of an attractive story for REDD+); a lack of understanding

of the risks associated with REDD+ (demonstrated above in the discussion regarding difficulties in understanding and valuing reputational risks); and, a lack of understanding regarding the mapping of risks on to values.

Future scenarios for private sector involvement into REDD+

In a discussion on the relative attractiveness of different scales of REDD+ projects a participant with experience of marketing REDD+ commented that CSR purchasers preferred 'small, nice, cuddly' projects, and the ownership, control and PR benefits these can offer in contrast to JNR. In the discussion that followed a market expert raised the perception that there were fears from some buyers of working too closely with national or regional governments due to issues of corruption, further reducing the attractiveness of JNR vis-à-vis project-scale. Countering this, however, was the opinion raised by a project developer that firms wanted projects to be embedded in overall JNR frameworks, as these were more likely to reduce technical issues such as leakage.

Participants of the workshop were almost equally split over the future of REDD+. The first camp held that under clarified institutional settings and rules, REDD+ could eventually re-gain momentum, while the second expressed high uncertainty in this regard. Unless a robust framework for regulatory markets emerges, for instance through JNR, it was the perception of a market expert that private sector stakeholders preferred to participate in efforts to reduce emissions from deforestation and forest degradation in a narrower context. A point of consensus across the workshop, and also seen in interviews with market experts, is the likely move away from REDD+ being the focal point of projects and activities, in the sense that the main motivation of firms investing was carbon credits. Instead, firms are looking for wider benefits from their investment, with multiple sources of income. There is an increasing focus on other benefits that arise from projects that aim to reduce deforestation and generate a return in other ways, such as agro-forestry.

Discussion and Conclusion

REDD+'s brief history has been marked by periods of optimism and pessimism. The current mood in the private sector is generally pessimistic, with doubts over the emergence of regulatory demand and supply of credits outstripping demand, reported both by participants and in the literature (CI 2013; GCP *et al*. 2014; Forest Trends 2014). While reportedly in decline, the finding that resale opportunities from investing in REDD+ remain is mirrored by Forest Trends (2012), which found that almost half of buyers of forest carbon credits (including Afforestation and Reforestation credits through the CDM) were motivated by either resale or investment or for regulatory or pre-regulatory reasons. In the voluntary market, recent commitments by companies to reduce deforestation in supply chains (UN 2014) and innovative moves to market REDD+ as a tool to reduce investment-risk offer potential. These voluntary actions raise the interesting proposition that at least some investment can be built on self-reinforcing action from within the private sector, with little or no government involvement.

Consistent with Corbera and Schroeder (2011) this paper finds that investors in REDD+ have different motivations, from pre-regulatory purchasers to those looking to voluntarily offset emissions, to those looking to reduce deforestation in supply chains. Firms seeking regulatory credits (or pre-regulatory experience) were more interested in obtaining low-cost options, whilst those purchasing for CSR were more interested in co-benefits (see also Forest Trends 2014), and the associated PR. Differentiated motivations for investing in REDD+ imply policymakers in REDD+ jurisdictions and project developers need to offer a range of different products, or at least to better understand the differentiated market.

A good understanding of the aims and function of REDD+, along with its values and risks, is lacking among many private sector investors. Both values and risks differ depending on motivations. But even where there is an awareness of risks, the private sector is unable to measure and quantify

these. REDD+ lies outside the main activities of most firms, and if they are unable to understand or quantify specific risks of a particular project or initiative, they may be reluctant to invest. Improved understanding of the risks involved in different projects and initiatives might help direct capital to those with a better chance of reaching their aims. This could benefit REDD+ by helping to reduce demand for riskier projects and initiatives.

This lack of understanding regarding REDD+ (the 'missing middle') needs to be overcome if markets are to develop further. Helping to bridge this missing middle, aiding the private sector to understand the value that may arise from investing in REDD+ (and the positive impacts that REDD+ may bring to the environment and also to a company's image), and to understand (and quantify) the risks that may be encountered through such investment, could boost private sector investment. Given the multiplicity of REDD+ projects and initiatives, workshop participants unanimously agreed that there needs to be movement towards creating unified packages of information regarding REDD+.

In general, one of the greatest obstacles to innovation, especially in finance, is investors' natural resistance to change and new products often fail because investors are reluctant to shift strategy. This challenge has been met by other products in the environmental sphere such as Green Bonds (Climate Bonds Initiative 2015). Aversion to change can be even greater when investors are required to assess new products on the market themselves. Providing suitable, reliable and comparable information might remove at least one obstacle to greater engagement of private sector finance with REDD+.

Streamlining standards and the variety of certificates on offer could also reduce complexity for private sector decision-makers and might even help secure senior corporate backing. The recent growth in REDD+ standards and certificates mirrors the growth in certification schemes and eco-labels for timber that occurred in the 1990s. Indeed, some of the arguments for standardising timber eco-labels and certification schemes, for instance, that the diversity of labels can be confusing for

consumers (making it difficult to compare products' attributes) and weaken labels' credibility (see Fischer *et al*. 2005), can also be applied to REDD+. Some degree of standardisation, under the auspices of the UNFCCC, might help raise understanding of the potential values and benefits of REDD+ and assist in the understanding, measuring and quantification of the risks involved.

Given the scale of tropical deforestation, the current level of public and private investment to reduce it is tiny compared to what is required (CI 2013; GCP et al 2014). This is the case irrespective of whether REDD+ is implemented in the form of positive incentives (like payments for environmental services) or reducing deforestation in supply chains so that inputs to production can be certified as being 'deforestation free'. Yet, at the scale of individual projects or jurisdictions such as Acre in Brazil (Climate Focus 2013), the private sector can potentially make a difference (see Edwards *et al*. 2014). Indeed, where the private sector is part of the problem, in the sense of supplying commodities that drive forest conversion, it can be argued that it should, as quoted by a workshop participant, 'pay someone to stop doing something', becoming part of the solution. Supply chains that are free of deforestation would be a step in this direction and efforts should be made to integrate these with JNR.

For firms with operations not directly involved in deforestation, the problem with JNR is whether it will be sufficiently attractive and offer enough of a communicable storyline while providing sufficient finance to make it work. An institutional structure could be created that attracts a (capped) number of private sector partners to pool resources, at a size that allows each partner to obtain CSR benefits and retain sufficient ownership and control. Yet, the extent to which the private sector would be willing to get involved with a jurisdiction such as Acre in Brazil, whether individually or as part of a 'club', remains to be seen. It may require the incorporation of the benefits of REDD+ that appear to make it attractive to the voluntary market, such as co-benefits and associated PR. But then REDD+ policy would need to be designed to tackle multiple objectives - likely to be more challenging than tackling the single objective of reducing emissions from deforestation and forest degradation.

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Supplementary Material

S1: REDD+ market context

In the 2000s, private sector finance for REDD+ was expected to be predominantly generated from entities regulated under emissions trading schemes, with mandated emissions reductions partially met via the purchase of 'offset' credits from REDD+ projects (Clements 2010; Agrawal et al 2011; Phelps *et al.* 2011). For example, firms facing obligations under the European Union's Emissions Trading Scheme (EU ETS) can use credits from Clean Development Mechanism (CDM) and Joint Implementation (JI) projects. The peak of private sector interest in REDD+ as a potential new investable asset class was just prior to 2009 (Forest Trends 2014), when the demand from regulatory markets was projected to rise in the near future. Investors saw opportunities to profit by selling on REDD+ credits to entities with potential future compliance needs under regulated emissions trading schemes, despite continued uncertainty over the future eligibility of REDD+ in the EU ETS.

At present, only credits from the Clean Development Mechanism (CDM) and Joint Implementation (JI) are eligible for use by EU ETS installations and although there has been some discussion regarding the inclusion of REDD+ in the CDM, this is unlikely to occur in the short-term. A general scepticism regarding future REDD+ compliance demand in Europe (communicated to the authors by a carbon market expert), and a move away from offsetting in the EU ETS, has been compounded by a lack of new carbon trading schemes to emerge since the EU ETS. Perhaps most significantly, the Waxman-Markey Bill in the USA proposed a national level cap-and-trade scheme that would have allowed between 500 million to 1 billion tonnes of REDD+ credit purchases by participating firms per year (Open Congress 2009). Credits would have been sourced from eligible projects and countries, with a gradual movement towards a fully national-level approach, with purchases made directly from governments. The failure of the passage of the bill in the US Senate in 2009 reduced short-term expectations of the return from REDD+ investments, and removed the immediate prospects of national-level demand for REDD+ from the US.

Further damage to potential compliance demand for REDD+ came with the repeal of the Australian Carbon Pricing Mechanism in 2014. Although the Australian scheme had not yet granted eligibility to REDD+ credits it did represent a potential future source of demand, especially given close relations between Australia and Indonesia on REDD+, through the Indonesia-Australia Forest Carbon partnership that ran between 2009 and 2014.

California is the only jurisdiction that has made concrete moves towards the inclusion of REDD+ offsets in a jurisdiction-scale climate policy framework. It implemented a state-level cap-and-trade scheme in the absence of US national policy in January 2013, initially only allowing domestic offsets. Each regulated entity can use such offset credits to meet 8% of their annual emissions, with the use of international credits initially capped at 2%, before rising to 4%. Eligible REDD+ credits are likely to come initially from two jurisdictions, also States: Chiapas in Mexico and Acre in Brazil. Given that REDD+ is yet to enter into the Californian scheme, the future potential scale of investment remains speculative. GCP estimate that up to 80 million tonnes of REDD+ credits could be purchased by Californian regulated entities by 2020, about 70% of the proposed emission reductions in Acre, between 2015 and 2020 (GCP *et al.* 2014).

Beyond the regulatory market, a market for those looking to voluntarily purchase REDD+ credits has emerged. This market is relatively small, especially in comparison to the potential REDD+ supply pipeline with an estimated 28 million tonnes of REDD+ credits purchased by a variety of different types of companies for voluntary reasons in 2012, for a total value of US$216 million, slightly less than the previous year (GCP *et al*. 2014). This demand is exceeded by the supply of credits generated by all current projects (GCP *et al*. 2014). In 2012 30 million tonnes of REDD+ credits from existing projects remained unsold, over 50% of the total supply in the pipeline for that year (Forest Trends 2012). The implication of this unsold surplus can be seen in the reported prices for REDD+ credits, down from US$7.4/$tCO_2$ in 2012 to an average of US$4.2/$tCO_2$ in 2013 (Forest Trends 2014).

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S2: Interview Guides

Questions for entities focused on offsetting for compliance

- What are the prospects of REDD+ playing a role in compliance markets?
    - Do you think there is potential interest from compliance buyers for REDD+ options?
    - On what time horizon do you sense that compliance purchasers are making decision regarding offset purchases?
    - What have been the main reasons why compliance entities have made decisions between different offsets?
        - How large a role has price vs other factors played in decision-making?
    - Who have been the key people in the organization regarding compliance purchases?

Questions for existing REDD+ purchasers

- What have been the motivations of existing REDD+ purchasers?
    - What have been the key lessons from the experience of these existing purchasers?
    - Would jurisdictional REDD+ be as attractive to existing purchasers as project-based credits?
    - How important has price considerations been in non-compliance offset purchasers decision-making?
- Who have been the key people in the organization regarding REDD+/offset purchases?
- What are the main barriers to engaging private sector finance in REDD+?
- What are the prospects for increasing non-compliance REDD+ demand?
    - What tools could be used to boost demand?

Questions for Exchanges involved in carbon trading

- What would be required to catalyse interest in the major exchanges in designing a REDD+ option market?
- What would be the steps required to establish a REDD+ options market place? How does this mirror (or differ) the establishment of any other carbon offset market? How would this be different for an options approach?

S3: Workshop material

Developing an Options Market and Complementary Financial Structures to Mobilize Private Capital for REDD+ and Manage Climate Policy Risks (Options Market and Risk-Reduction Tools for REDD+) - LSE – CMIA/IETA workshop – April 3, 2014

Overall project background

REDD+ is at a crossroads - discussions have advanced in the UNFCCC negotiations and readiness efforts are progressing with public financing but private capital is largely on the sidelines. A lack of demand is coupled with uncertainty and risks that hinder the implementation and development of supply. On the other hand regulated companies potentially face large carbon price uncertainty, generating significant risk. Options on REDD+ could provide a mechanism to mobilize private capital in the near and medium terms while offering business and governments a tangible hedging tool in today's uncertain policy environment. NORAD is funding the Environmental Defense Fund, in collaboration with the LSE, IIASA and the Mercator Research Institute on Global Commons and Climate Change to undertake a project to develop an Options Market and Complementary Financial Structures to Mobilize Private Capital for REDD+ and Manage Climate Policy Risks.

Project Outcomes

The project aims to produce research papers and modeling tools to support REDD+ options transactions and other risk-management mechanisms, along with communications and policy advocacy documents for non-technical audiences. The ultimate aim of the project is to facilitate at least one pilot transaction that demonstrates the options approach to REDD+ financing between private investors (possibly along with a public institution) and a REDD+ jurisdiction.

Workshop Objectives

LSE's role in the project is to help to understand the current REDD+ demand context, and the future prospects for any REDD+ market. To facilitate this understanding LSE is engaging with a number of different actors involved in REDD+ and carbon markets. As part of this engagement LSE approached both CMIA and IETA for

their assistance. The result has been the proposal for a workshop to be held with members of both CMIA's REDD+ Working Group and IETA's Land/Use Forestry Working Group at LSE on Thursday April 3, from 12:30pm until 3:30pm.

The workshop has two main objectives: the first is to canvass the expertise and experience of the members of the groups in answering the following questions:

- What are the prospects of REDD+ playing a role in compliance markets?
- What are the prospects for increasing non-compliance REDD+ demand?
- What have been the motivations of existing REDD+ purchasers?
- What have been the key lessons from the experiences of these existing purchasers?
- What are the main barriers to engaging private sector finance in REDD+?
- What are the main buyer, supplier and intermediary risks facing REDD+ today?

The second objective is to present initial thinking from LSE and the wider project regarding the use of options and other financial tools to reduce risks to both REDD+ sellers and REDD+ buyers and how they may increase demand and/or mitigate risk. It is our hope that the workshop can build relationships that can provide avenues for dissemination of findings from the work of LSE and the wider project.

Follow-ups and outputs

The aim of the work being undertaken by the LSE is to produce a report outlining the current state of REDD+ demand, the perceptions of private sector operators as to the outlook given the current policy conditions and the interest, if any, in risk reduction tools such as options. The report from LSE will be complemented by a similar report from EDF focusing on perceptions in the United States. These reports will be accompanied by a programme of stakeholder engagement focusing on communicating the key messages to policy-makers, and also testing and refining the findings and messages from the study through further engagement with private sector stakeholders.

Agenda

The workshop will be built around three separate sessions. In each an LSE staff member will very briefly outline the topics of interest and our initial findings and thoughts on each topic before starting an open discussion focusing on the key questions within each topic.

12:30pm – 1:00pm	***Buffet Lunch and Greetings***
1pm – 1:15pm	***Introduction***
1:15pm – 2:00pm	***Where does REDD+ stand today?***
	5 minute presentation followed by open discussion on:
	○ Prospects for Compliance/Non-compliance
	○ Motivations for current purchasers
	○ Lessons from previous experience
	○ Jurisdictional v Project based approaches
2:00pm – 2:45pm	***Barriers and Risks to REDD+***
	5 minute presentation followed by open discussion on:
	○ Main barriers to engaging private sector
	○ Main risks facing buyers, suppliers and intermediaries
2:45pm – 3:30pm	***The Future for REDD+***
	5 minute presentation followed by open discussion on:
	○ Options and other tools to reduce risk
	○ Actions to enable interim financing
	○ California possibilities
	○ Post 2020 Prospects

166 Session 1 presentation:

Where does REDD+ stand today?

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Our thoughts

- There is no current demand for REDD+
- For REDD+ to enter into compliance markets it needs to be demonstrated
- Non-compliance motivations could assist in boosting interim demand
- Jurisdictional REDD+ may be less attractive to voluntary buyers

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What we'd like to know

- What are the prospects of REDD+ playing a role in compliance markets?
- What are the prospects for increasing non-compliance REDD+ demand?
- What have been the motivations of existing REDD+ purchasers?
- What have been the key lessons from the experiences of these existing purchasers?

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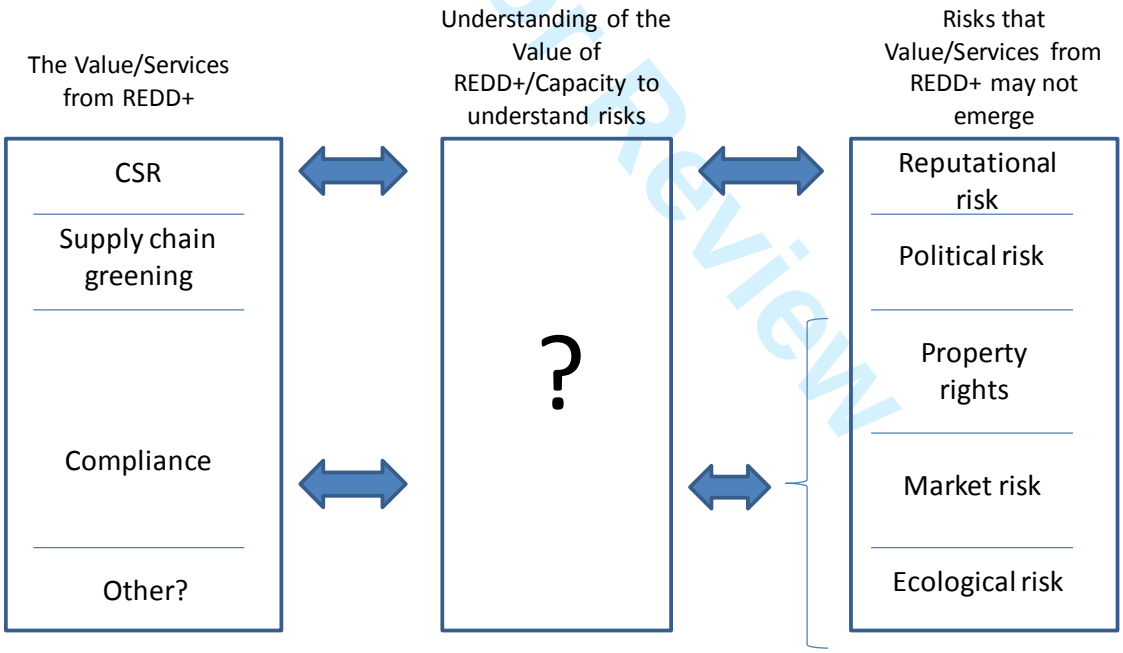
170 Session 2 presentation:



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S4: Kering and REDD+

Kering is a French multinational clothing and accessories company controlling global brands such as Puma and Gucci. The firm has a strong commitment to sustainability dating back to an original ethics charter issued in 1996. One of its subsidiaries, Puma, moved to Environmental Profit and Loss Accounting in 2011.

As part of its sustainability strategy, Kering has committed to a number of environmental targets with direct or indirect relevance to forests. These include a commitment to offset all its emissions from Scope 1 and 2 activities – using offset programmes that contribute to the welfare of the community and the conservation of biodiversity in its regions of operations.. In order to help achieve this objective in 2012 Kering procured a 5% stake in Wildlife Works, a leading REDD+ project development and management company. This allowed Kering to take a place on the management committee of the company through which it procures the REDD+ credits that it uses to offset all its emissions.

Kering's engagement with REDD+, despite its relatively higher price than otherwise offset opportunities, fits within the overall target of its sustainability arm to:'invest in for-profit businesses that incorporate biodiversity conservation and social concerns into their business model, resulting in net-positive social and environmental impacts.'

The multiple benefits that REDD+ offers to Kering may well lie behind the companies large commitment to the asset class. Further REDD+ investments may also prove useful to meet other sustainability targets that Kering has set itself. The company has committed that 100% of the leather used in its products will be from sources that do not result in converting ecosystems into grazing or agricultural lands. REDD+'s potential role in providing green supply chains, along with offsetting carbon emissions may therefore offer strong motivations for companies with multiple sustainability objectives to invest in the asset.

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S5: Ulu Masen REDD+ demonstration project

The Ulu Masen REDD+ demonstration project, covering around 750,000 hectares in Aceh (Indonesia), was designed by Aceh's Government in combination with the private company 'Carbon Conservation', and with some initial guidance from Flora and Fauna International (Institute for Global Environmental Strategies 2007). Merrill Lynch was reported to have invested US$9 million into the project in an arrangement that committed the bank to purchase US$9 million worth of credits with an option to buy further credits (Business Green 2008). The project was validated by the in 2008 but the validation subsequently expired and the project stalled, with no credits issued. Part of the land planned for the project has since been sold to a Canadian mining company (Sydney Morning Herald 2012).

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