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WHITE PAPER

Options and Financial Mechanisms for the Financing of Biodiversity Offsets

2017

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FOREWORD

This study arose from discussions with Erika Korosi from BHP at an event about biodiversity offsets sponsored by the Conservation Finance Alliance (CFA) at the World Parks Congress in Sydney in 2014. Much had been discussed and presented about offset design issues, implementation of the mitigation hierarchy and the need to offset residual impacts, but little information was available about the institutional and financial aspects of offset implementation. In fact, there was relatively little to report about offset implementation and financing at that time. A variety of companies were applying International Finance Corporation (IFC) Performance Standard 6 and assessing the need to undertake offsets but many were yet to be funded. At the same time, there were concerns

that some projects were moving ahead in critical habitat areas with insufficient funding to meet the conservation needs and no guarantees that funding would be committed and made available to ensure the protection of important habitats for threatened species and ecosystem services.

Effective and sufficient funding to achieve longterm conservation outcomes is a key element of a biodiversity offset, but how do we ensure that adequate financial resources are available? How do we ensure that current commitments to invest in biodiversity will be honoured in the long-term? Which mechanisms can be employed to direct funding to meet conservation priorities identified as necessary to compensate for residual impacts? In countries with established regulations, credits must be purchased in order to obtain a license to operate. The purchase of credits by developers funds the offset before the project commences. The demand for credits leads to supply and the certainty of the market facilitates

financing. However, the differences between what is happening in developed markets versus developing ones is significant. In most developing countries regulations requiring no net loss either do not exist or are in the early stages of development. Moreover, the systems to implement such programmes will need time to develop along with the capacity within countries to ensure compliance. As a result, most commitments to effective mitigation are voluntary or induced as a result of project finance from financial institutions. However, in these cases, there are no explicit requirements to finance offsets, nor is there specific availability of financing to ensure the delivery of the conservation outcomes required to achieve the no net loss requirements in the lending regulations. International Financing Institutions (IFIs) provide funding for most project elements but that funding does not extend to any biodiversity conservation, restoration, or other offset requirements, and in many cases lenders have been averse to requiring that companies commit to the full cost of delivering an offset.

The lack of available financing mechanisms, along with the concern that biodiversity and ecosystem services had to bear the risk of the financing lacuna, have given rise to this study. The CFA's innovative financing working group, along with a Business & Biodiversity Offsets Programme (BBOP) working group, were interested in exploring the implementation of biodiversity offsets including the different financing mechanisms that could be employed to achieve conservation results as well as the institutional and legal mechanisms that would be required to ensure the successful design and implementation of offsets. It was felt that opportunities for long-term financing could be achieved through targeted loan mechanisms, development of mitigation bonds, structured payments to conservation trust funds,

conservation banking, and other options. These mechanisms, coupled with effective national and local-level institutional and legal mechanisms, would ensure the viability of offsets over the long term.

Thanks to the support of the CI-BHP Alliance, the CFA contracted with Conservation Capital to undertake this analysis of biodiversity offset financing. The CFA and WCS are grateful for the financial support provided to make this study possible. The study benefited also from the input of various experts from the financial, academic, private sector, and NGO community; many of whom have years of experience working on the implementation of good practice approaches to reduce impacts on biodiversity and ecosystem services and on the design of offset programmes. Many of these individuals met at a day-long workshop in April 2017 to

Ray Victurine

review a draft of this document and provide invaluable input. The input and insights provided contributed to a much-improved second draft of the report.

The conclusions of the report indicate that we still have much to do to address the lack of financing mechanisms to guarantee the longterm funding for biodiversity offsets. However, we hope that the ideas discussed in this paper around how to ensure that the flow of financing to compensate for the loss biodiversity and ecosystems services, does not fall short, while development activities continue to exert pressure on those resources. We believe that there is an important role for the international financial institutions and development agencies to support offset financing so it can meet the objectives of sufficiency and permanence.

Wildlife Conservation Society • CFA Executive Committee

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WHITE PAPER: Options and Financial Mechanisms for the Financing of Biodiversity Offsets

1. Executive Summary

Increasingly the Conservation Finance Alliance (CFA), the Business and Biodiversity Offset Program (BBOP) and Wildlife Conservation Society (WCS) observe efforts by companies to

employ the mitigation hierarchy and attempt to offset their residual impacts. Many of these projects are still in the design phase but more and more companies are moving towards implementation of offset initiatives. Although the number of offset projects under implementation is still relatively modest, lessons drawn from these experiences have highlighted the fragility of certain offset projects stemming from inadequate financing and frailties within their

underlying funding structures. The lack of adequate finance is a major risk in achieving the permanence of offset schemes around the world, especially where regulations do not require them and where compliance regimes are lax.

Framing Biodiversity Offsets

The design of biodiversity offsets is deeply rooted in the mitigation hierarchy. Providing a clear sequential framework, the mitigation hierarchy enables infrastructure project developers to consider and incorporate biodiversity and specifically a 'no net loss' target into their project designs.

The mitigation hierarchy places biodiversity offsets as a last resort to be implemented only once all biodiversity losses within a development or infrastructure project have been avoided, minimised, or indeed restored or rehabilitated. The hierarchy is fundamental for ensuring that biodiversity offsets are not misused as a “licenseto-trash”. Only after activities within three categories of actions have been planned for and exhausted, should offsets be considered as a means for achieving a no net loss or net gain¹.

Taking this into consideration, once the mitigation hierarchy process has been applied, a biodiversity offset allows a project to deliver a no net loss or a net gain of biodiversity.

Enshrined within biodiversity offsetting application are the three major principles of **permanence, additionality and equivalence**².

These three principles lie at the heart of this White Paper as they directly impact the financial

suitability and sustainability of offsets. In particular, ensuring and achieving permanence, whereby positive impacts generated by an offsetting activity endure into perpetuity, requires sufficient upfront capital or ongoing financial commitments in order to deliver and achieve an offset.

¹ The Biodiversity Consultancy, 2017, <http://thebiodiversityconsultancy.com>

² See Appendix for a discussion on these principles and a more comprehensive description of the mitigation hierarchy

While the notion of an offset existing into perpetuity is noble and indeed necessary, without adequate secured finance to cover ongoing management and operations costs, maintaining biodiversity offset impacts into perpetuity remains and will continue to represent a significant challenge.

Biodiversity Offset Finance

To date very little attention has been paid to the design and development of adequate financing and associated mechanisms to support offset funding needs across both the short and long term. Addressing offset financing is a topic of growing relevance and importance for governments, companies and civil society³. In practical terms, financial sustainability together with legal security and effective management are considered critical in order to respect and realise permanence requirements.

The availability of sufficient finance is implied within the other major principles of additionality and equivalence. Without appropriate, adequate, and long-term finance, the additional biodiversity conservation required by offsets would fail to materialise and the goal of conserving biodiversity that is equal to, or greater than, what has been impacted, would never materialise.

Financing needs, options, risks and challenges however still receive little attention during the offset design stage⁴. Likewise, it appears that in many instances offsets are designed and implemented before adequate financing mechanisms have even been considered⁵.

It is therefore unsurprising that some financial offset commitments recede or diminish over their lifetime. Indeed, this characteristic illustrates the multiple complex challenges which beset the financing of offsets.

Furthermore, in many cases the uncertainty of terms for which project developers are responsible and liable for offsets through to completion, undermines accurate budgeting and payments.

Laying the Foundation

Financing is not a standalone issue, but rather it is intertwined through the entire biodiversity offset value chain alongside the need for diligent management. To generate momentum for both the sector and its practitioners, a more holistic set of interventions should be made not only to engage financing institutions, but also to engage regulators, governments and service suppliers, such as asset managers.

By addressing these interventions, this paper considers key dynamics relevant to building the overall incidence and quality of biodiversity offset projects, as follows:

- **Building Requirements:** Actions or interventions designed to increase the requirement for biodiversity offsets to be implemented by project developers, making project approvals dependent on offset financing commitments, for example;
- **Building Propensity:** Actions or interventions designed to increase the

³ See Appendix for a discussion on these principles

⁴ Personal correspondence, David Marsh (02/11/2016)

⁵ Personal correspondence, Conrad Savy (13/01/2017)

desire or will of key actors to engage in creating high quality biodiversity offsets;

- **Building Practicality:** Engaging with biodiversity offsets tends to be complex and expensive – and this is almost certainly suppressing engagement. Possible interventions to address this include simplification of complex valuation issues and concepts; the development of offset interventions that are “asset-like” rather than ‘cost-centrelike’; the development of more biobanking mechanisms, offset aggregators and other similar consolidation instruments that allow smaller players to participate in this space; and finally, those interventions which are directly aligned with the pure subject matter of this paper.

Assessing potential sources and forms of finance for offsets and evaluating their inherent risks and challenges is critical for the three key audience groups of this White Paper:

- **Project Developers:** Infrastructure developers impacting a natural ecosystem who need to purchase some kind of biodiversity credit or develop an offset as compensation for this damage;
- **Offset Developer:** A specialist that secures, restores and protects a habitat(s) to generate an offset which it provides to project developers to compensate for their actions;
- **Project Financier:** Finance providers willing to fund biodiversity offsets through one or more of the mechanisms described in this report.

The goal of this paper is to support these stakeholder groups to understand and identify

suitable forms of funding to either directly or indirectly finance offset costs.

Building a Track Record

Outside of regulated markets (e.g. the United States, Australia) to date, the relative lack of demonstrated offset delivery presents risks and opportunities for financiers. Outcomes of this report therefore focus on building and scaling a “market” and a track record for offset financing, by presenting a series of practical conclusions and recommendations aimed at enabling more institutional funding for biodiversity offsets.

In evaluating these drivers, the White Paper focuses almost exclusively on how greater demand for offsets can be generated and sustained and how offset supply can be safeguarded by a variety of financing products categorised under three distinct pillars, including:

- **Upfront Capital:** The complete financing of start-up capital and ongoing management costs for an offset project satisfied through a single lump sum secured before any project activity begins;
- **Ongoing Finance:** Regular ongoing payment contributions satisfying recurrent costs of an offsetting project through to completion of that project;
- **Financial Guarantees:** Financial safeguards to protect project finance and reduce investor risks, specifically funding failure, thereby attracting greater institutional investment and protecting against non-delivery risks.

Central to the conclusions of the report are mechanisms such as third-party funding

institutions including Conservation Trust Funds (CTFs), and financial guarantees or insurance products. It is important to note that these mechanisms should not be confused as representing funding sources themselves; rather they are conduits and safeguards for finance transactions.

Furthermore, the White Paper does not address socio-economic factors which are fundamental to the success of offsets, particularly in developing economies. However, it does recognise that the offset payments that flow to communities and households are important in achieving offset objectives. The comprehensive assessment of all socio-economic factors influencing offset financing would complement the findings of this report; however, for now they are referenced purely in the context of a risk assessment.

White Paper Conclusions

- **Upfront Balance Sheet Funding:** Most project developers engaged in this White Paper, selected upfront, balance sheet funding as their dominant or preferable financing mechanism. Transferring liability for delivering the offset to a third party, and receiving the offset as soon as possible at an affordable cost, were their key priorities. This would imply prior availability of a supply of offsets (for example - offset units from protected areas or other aggregated sites). Most project developers confirmed that other forms of offset finance were less attractive if balance sheet funding was available. The majority also confirmed a preference for channelling their funding through an independent, third-party financing institution, such as a CTF, if upfront balance sheet funding was available. They also expressed interest in exploring whether these institutions could support the

transfer of offset liability and ultimately delivery of offsets.

- **Importance of Regulation:** Financing needs, and the role of financiers, are very different according to whether a context is regulated or unregulated. The presence of enabling regulation can facilitate investment into the sector, as is the case with the United States wetland mitigation and conservation banking sectors. The ability of financing institutions, insurance companies, and other professional service suppliers to design investment products and mobilise offset capital, is significantly enhanced by clear regulated governance and guidelines. This specifically applies to regulations requiring project developers to adhere to the mitigation hierarchy and offset their residual impacts. In turn, this legislation catalyses demand and volume.

Four groups effectively determine offset regulation: (i) government, (ii) sector regulators, (iii) financial institutions, and (iv) shareholders. In order to build scale and institutional buy-in for offsets, it is vital for these groups to create offset demand through appropriate legal structures and effective measures for compliance, as well as building demand by stimulating access to capital (i.e. the Equator Principles). Financing institutions can furthermore be more diligent in ensuring biodiversity offsets and environmental commitments sit within the terms and availability of their finance.

- **One of Many Permits:** Biodiversity offsets often constitute one of a plethora of licenses and permissions required to

implement an infrastructure project. Governments, and potentially other offset developers, should leverage this position in providing “off the shelf” upfront offsets, quickly and efficiently to incentivise project developer engagement. Calculating the development cost prior to the issuance of a license, when leverage still exists, is fundamental to this model.

- **Offset brokers:** Project developers are calling for low cost, immediately available, ‘off-the-shelf’ offset solutions to become available. Creating a dedicated offset brokerage providing both offset funding and access to offsets themselves could increase project developer participation with offsets; provide greater assurance for offset developers to commit to projects at risk before an offset ‘buyer’ is identified; and improve transaction efficiency, liability transfer and accountability. Such a brokerage could also act as an offset financing institution connecting offset related finance with suitable projects.
- **Voluntary Offsets:** Currently, biodiversity offsets are voluntary or induced in most countries. Induced offsets are those not required by law but which are deliberately applied; such as those required by lenders as a contractual condition for accessing finance. These offsets are carried out based on a company or other party’s commitment to adhering to no net loss principles. However, there are generally no legal requirements for compliance with those commitments. In some cases binding contracts are being utilised in voluntary

situations to apply leverage both in the delivery and uptake of an offset, but these are generally infrequent (for example, the Environment Bank.)⁶

Outside of bespoke, negotiated contracts featuring binding commitments, voluntary offsets regularly offer insufficient certainty for investors. Principally, they simply lack consistent and secure demand and supply at scale. This lack of volume and liquidity, together with no meaningful offset exchange or market, is currently deterring many investors from entering offset financing.

However, voluntary offsets can provide a valuable proving ground for legislative demand-led models. To build momentum, greater emphasis on the provision of financing should be placed within the broader voluntary offset space. This could include making financing available to project developers to finance offsets (possibly at concessional or “biodiversity protection rates”), as well as to offset developers to produce lower risk and timely offsets. Doing so would create incentives for more binding agreements for buyers to pre-purchase those offsets on a voluntary basis. Even with these potential mechanisms in place, implementing voluntary offsets will be challenging without some level of requirement or binding contract in place for the offset to be delivered.

- **Training and Capacity Building:** Poor capacity, expertise, experience and

⁶ Source:
http://www.environmentbank.com/documents/2_LPA_info_sheet_

training have been identified as major hurdles for both designing and mobilising offset finance. Offset developers require training tools and resources. Resource allocation for enabling and supporting stakeholders' comprehension of the offset space would be time and money well spent. Training should extend to management and risk groups of financing institutions focusing on pricing, risk, and the application of offset considerations within different forms of finance.

- **Benefits of Upfront Over Variable Funding:** Securing upfront capital to finance the total delivery costs of an offset reduces both systemic and specific risks associated with delivering that offset, and even more so over recurring variable finance forms. This also mitigates against temporal losses of biodiversity. Upfront funding includes debt-based finance and balance sheet financing, (through specialist conduits such as CTFs or other third parties), are generally preferred by practitioners over variable funding forms.

Institutionally sourced upfront financing structures should therefore be prioritised by project developers, offset developers, and financiers in the short to medium term before more complex, recurring financing designs are attempted.

- **Valuations:** An important consideration when assessing upfront financing needs is that of accurate valuation. To ensure the offset is fully financed through to

delivery, the participating parties should model the expected offset costs through to full delivery of management plan

outcomes (with sufficient permanence) while ensuring contingency allowances are also incorporated. Natural capital accounting can provide a framework for nature related components of valuations.

- **Applying Institutional Covenants:** To date, some very positive and instrumental work has been completed by financing institutions to design offset based covenants; e.g. by the European Bank for Reconstruction and Development. Effective covenants mitigate pricing manipulation and other delivery risks. Institutions should look to share these covenants to form an industry standard and bring consistency to offset application and funding throughout the financing institution sector⁷. The Business and Biodiversity Offsets Programme could provide a suitable platform for discussions around this topic.
- **Engaging Insurance:** Deeper engagement between offset and insurance industries is required to determine what components of offset projects could be insurable. Engagements should initially focus on the terms and pricing of insurance-based products and on identifying key triggers.

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⁷ For examples see - http://www.foresttrends.org/documents/files/doc_3127.pdf

2. Introduction

Increasingly, the Conservation Finance Alliance (CFA), the Business and Biodiversity Offset Program (BBOP) and Wildlife Conservation Society (WCS) observe efforts by companies to employ the mitigation hierarchy and attempt to offset their residual impacts. Many of these projects are still in the design phase but more and more companies are moving towards implementation of offset initiatives. Although the number of offset projects under implementation is still relatively modest outside the United States, lessons learned from these experiences have highlighted the fragility of certain offset projects which stem from inadequate financing and frailties within their underlying funding structures. The lack of adequate finance is a major risk in achieving the permanence of offset schemes globally, especially when regulations do not require them.

CFA events delivered at the 2014 World Parks Congress in Sydney and at the 2015 BBOP meeting in Barcelona, raised interest to assess what market-based financing mechanisms exist or could be designed to mobilise long-term finance for biodiversity offset projects at scale. It is clear, from an institutional financing perspective, that biodiversity offsets are not yet demonstrated or proven at scale; nor are they widely adopted by governments, policy makers and corporate business⁸. In this sense, the White Paper works to address challenges relating to

mobilising more volume and funding options for biodiversity offsets.

Framing Biodiversity Offsets

The design of biodiversity offsets is deeply rooted in the mitigation hierarchy. A sequential framework, the mitigation hierarchy enables infrastructure project developers to consider and incorporate biodiversity and specifically a ‘no net loss’ target into their project designs.

The mitigation hierarchy places biodiversity offsets as a last resort consideration, to be implemented only once all biodiversity losses within a development or infrastructure project have been avoided, minimised, or indeed restored or rehabilitated. The hierarchy is fundamental for ensuring that biodiversity offsets are not misused as a ‘licence-to-trash’. Only once these three activities have been planned for and exhausted, should offsets be considered as a means for achieving a no net loss or net gain legacy⁹. In fact, effective mitigation efforts can contribute to reducing residual impacts and therefore the scope and investment requirements of the offset.

⁸ The United States is undoubtedly the most advanced market for offsetting however even this market is susceptible to challenges and barriers raised in this White Paper.

⁹ The Biodiversity Consultancy, 2017, <http://thebiodiversityconsultancy.com>

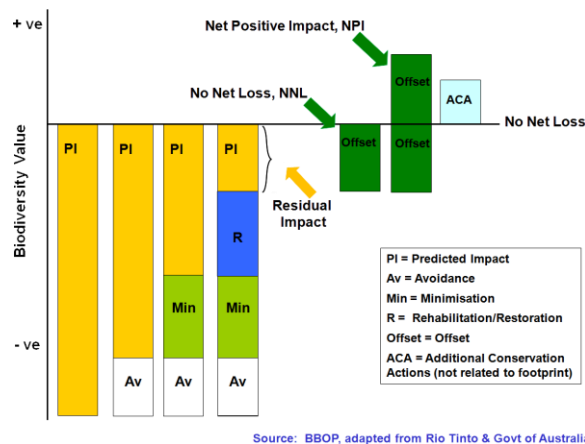


Figure 1: The mitigation hierarchy⁸

Once the mitigation hierarchy process has been applied, a biodiversity offset allows a project to deliver a no net loss or a net gain of biodiversity.

Biodiversity offsets are defined as “*measurable conservation outcomes of actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people’s use and cultural values associated with biodiversity*”¹¹.

Enshrined in the application of biodiversity offsets are three major principles of **permanence, additionality and equivalence**⁹.

These principles lie at the heart of this White Paper as they directly impact the financial feasibility and sustainability of offsets. In particular, ensuring and achieving permanence, (whereby positive impacts generated by an

offsetting activity endure into perpetuity), requires sufficient upfront capital or ongoing financial commitments in order to deliver and achieve an offset.

To date, however, very little attention has been paid to the design and development of adequate financing and associated mechanisms to support offset funding needs across both the short and long term into perpetuity. Furthermore, while the notion of an offset existing ‘into perpetuity’ is noble and indeed necessary, without adequate finance to cover ongoing management and operations costs, maintaining biodiversity offset impacts into perpetuity remains and will continue to represent a significant challenge.

Considering these principles and addressing offset financing is a topic of growing relevance and importance for governments, companies and civil society¹³. Therefore, in practical terms, financial sustainability (along with legal security and effective management) is being considered as a critical pillar in order for offsets to respect and realise these principles.

Sufficient financing is implied by the other major principles of additionality and equivalence. Without appropriate, adequate, and long-term finance, the goal of conserving biodiversity which is equal to, or greater than, what has been impacted, would never materialise.

At present, offset financing needs, options, risks, and challenges generally receive little attention during the offset design stage¹⁰. In many instances, offsets are designed and implemented before adequate financing mechanisms have

⁸ Source http://bbop.forest-trends.org/events/no-netloss/img/misc/mitigation_hierarchy.png ¹¹ Source: The Business and Biodiversity Offsets Programme;

⁹ See Appendix for a discussion on these principles and more comprehensive description of the mitigation hierarchy ¹³ See Appendix for a discussion on these principles

¹⁰ Personal correspondence, David Marsh (02/11/2016)

been considered or designed¹¹. It is therefore unsurprising that some financial offset commitments recede or diminish over their lifetime. This characteristic illustrates the multiple complex challenges which beset the financing of offsets.

Laying the Foundation

Financing is not a standalone issue, but is intertwined through the entire biodiversity offset value chain, together with diligent management. To generate momentum in this sector a more holistic set of interventions should be made engaging financing institutions, regulators, governments and service suppliers such as asset managers.

Appropriate and adequate government regulations and policies, while distinct from financing mechanisms, are proven to instil the confidence, accountability and consistency required to mobilise and structure biodiversity offset financing. They may also compel more offset-targeted finance through regulatory requirements.

The key dynamics relevant to building the overall incidence and quality of biodiversity offset projects are as follows:

- **Building Requirements:** Actions or interventions designed to increase the requirement for biodiversity offsets to be implemented by project developers. These might, for example, stem either from new regulations imposed by governments or from conditions imposed by financiers of development projects. In either case, there need to be enforceable requirements so that compliance with offset requirements can

be monitored and assured. Building knowledge and capacity around the need for, benefits of, and practicalities around biodiversity offsets across regulatory bodies and financing institutions, will be key to generating momentum in this space.

- **Building Propensity:** Actions or interventions designed to increase the desire or will of key actors to engage in the development and implementation of high quality biodiversity offsets. Once again, building and transferring knowledge will be key here. The more project developers (and their financiers) understand about the importance, relevance, benefits, and options around biodiversity offsets, the more likely they will be to build these into their *modus operandi*. However, this dynamic also cross-pollinates with the third ‘practicality’ dynamic below: the more efficient, accessible, cost efficient and impactful offset projects that can be made, the more likely project developers and financiers will be to engage.
- **Building Practicality:** Engaging with biodiversity offsets tends to be complex and expensive – and this is almost certainly suppressing engagement. Possible interventions to address this include simplifying complex valuation issues and concepts such as equivalence and additionality¹²; developing offset interventions that are ‘asset-like’ rather than ‘cost-centre-like’ (for example through greater use of conservationbased enterprise interventions); the development of improved due diligence and contracting methodologies (that incorporate

¹¹ Personal correspondence, Conrad Savy (13/01/2017)

¹² How these concepts are communicated to financiers to support their understanding of them for the purposes of structuring suitable financing products should be explored.

performance-based conservation covenants) that may help relieve trust issues between project developers and offset providers; the development of more bio-banking mechanisms providing immediate access to ‘off-the-shelf’ offsets; consolidation instruments such wrapping offset costs into existing funding for protected areas; and finally those interventions that are directly aligned with the pure subject matter of this paper including debt funds, performance bonds, and insurance instruments.

Timing for engaging these interventions is critical and this White Paper recommends a “one step at a time” approach focusing on more established and commonly understood tools, rather than attempting to implement complex structures currently only evidenced in conceptual form.

Assessing potential sources and forms of finance for offsets and evaluating their inherent risks and challenges is critical for the following key audience groups of this White Paper:

- **Project Developers:** Infrastructure developers impacting a natural ecosystem who need or desire to purchase or develop an offset as compensation for this damage. The company may be required through regulations to purchase or deliver an offset; it may need to comply with lending regulations and provide an offset, or it may want to meet voluntary no net loss commitments;
- **Offset Developer:** A specialist that secures, restores and protects a habitat(s) to generate an offset which it provides to project developers to compensate for their actions. Offset

development may also be undertaken directly by project developers or financiers;

- **Project Financier:** Finance providers willing to fund biodiversity offsets through one or more of the mechanisms described in this report. These include financing institutions capable of providing project and specific offset targeted funding at scale. These could be the same financial institutions financing the project, or separate financing entities with a commitment to biodiversity finance;
- **Governments / Regulators:** Representing stakeholders that design, impose and enforce laws and regulations that require project developers to participate in biodiversity offset mechanisms and monitor compliance with these laws.

The goal of this paper is to firstly support these stakeholder groups to understand and identify suitable forms of funding and to either directly or indirectly finance offset costs. Secondly it sets out to increase communications and learning between these groups to create a collective approach to the sector.

Key	
●	Build requirement
●	Build propensity
●	Build practicality

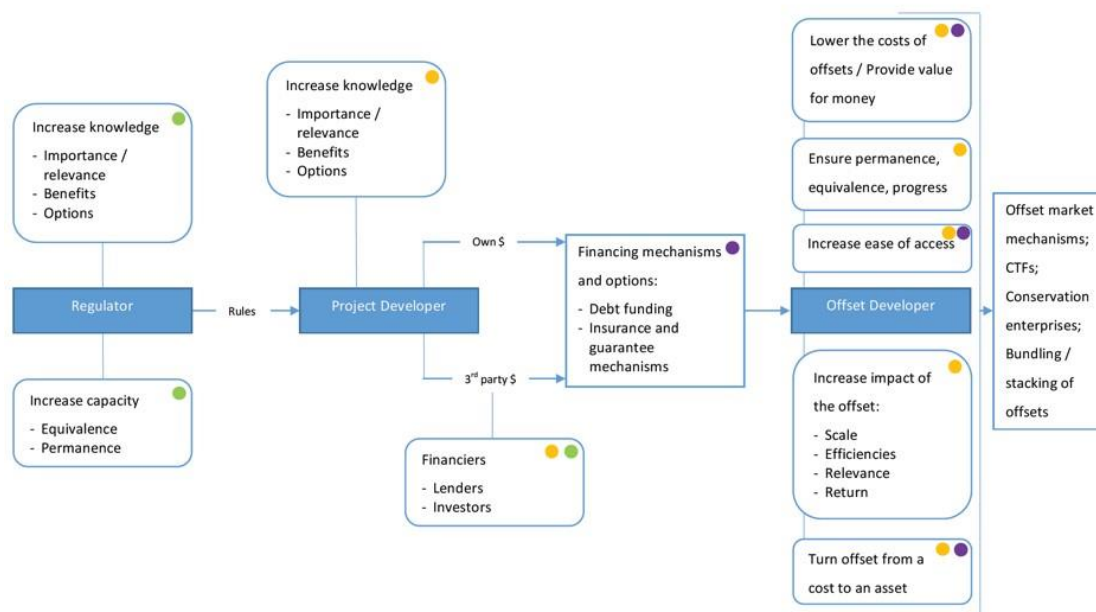


Figure 2: The biodiversity offset value chain and the dynamics required to build the incidence, quality, and sustainability of biodiversity offset projects.

drivers such as regulation, scale, consistent methodology, risk liabilities and barriers to entry for financiers.

Figure 2. focuses on these principal “actor types” in the biodiversity offset value chain and considers the key dynamics relevant to building the overall incidence and quality of biodiversity offset projects.

To date, the relative lack of demonstrated offset delivery presents risks and opportunities for financiers pioneering this sector. Outcomes of this report therefore focus on building and scaling a “market” for offset financing by making a series of practical conclusions and recommendations aimed at releasing more institutional funding into this sector.

No attempts are made to differentiate between geographies or regions. Instead, basic ingredients required to mobilise larger secured funding streams across multiple and diverse contexts are described. Specific emphasis is placed on identifying demand and supply-side

In evaluating these drivers, the White Paper focuses almost exclusively on how greater demand for offsets can be generated and sustained, as well as how offset supply can be safeguarded by a variety of financing products categorised under three distinct pillars. These include the following:

- **Upfront Capital:** Complete financing of start-up capital and ongoing management costs for an offset project satisfied through a single lump sum secured before any project activity begins;
- **Ongoing Finance:** Regular ongoing payment contributions satisfying recurrent costs of an offsetting project through to project completion;

- **Financial Guarantees:** Financial safeguards to protect project finance and reduce investor risks, specifically funding failure, thereby attracting greater institutional investment and protecting against non-delivery and /or non-payment risks.

Central to the conclusions of the report are mechanisms such as third-party funding institutions, including Conservation Trust Funds (CTFs), and financial guarantees or insurance products. It is important to note that these mechanisms do not represent funding sources; rather, they are simply conduits and safeguards for funding. Nonetheless, they are directly relevant to this report in catalysing, underwriting, or securing offset capital.

Furthermore, the White Paper does not consider socio-economic factors which are fundamental to the success of offsets particularly in developing economies although it does recognise that the offset payments flowing to communities and households are important to achieve offset objectives. Comprehensively assessing all socio-economic factors that influence offset financing would complement the findings of this report; however, for now they are referenced solely in the context of a risk assessment.

3. Funding Biodiversity Offsets – Financing Mechanisms

Assessing and selecting an appropriate financing mechanism forms a critical part of offset design and execution. Without sufficient finance, no biodiversity offset – no matter how well designed, implemented or managed – stands a realistic chance of reaching the goal of no net loss of biodiversity or of permanence.

Each financing mechanism set out below is described with relative attributes, both advantages and disadvantages¹³. Where available, case studies illustrate these mechanisms in practice for delivering offsets¹⁸. These descriptions are classified under the pillars of **upfront capital**, **ongoing finance** and **financial guarantees**¹⁴.

Upfront Capital

Upfront payments are generally structured across two forms:

- **Lump Sum:** Developers may opt to structure and set aside a lump capital sum on their balance sheet to finance offset activities or requirements with sufficient permanence. Alternatively, they may buy a pre-structured offset solution from an offset developer whereby the offset liability, including permanence, shifts to that offset developer.

Project developers may opt for a lump sum structure to reduce uncertainty along with medium to long term administrative and financial burdens. In these cases, project developers could directly control their budgets as opposed to placing them in a CTF, for example. The transfer of liability would then need to be managed directly between the project and offset developer.

- **Committed sums:** These include lump sums that are used to capitalise CTFs or an equivalent facility in order to safeguard capital for release gradually over time to finance the delivery of an offset by an offset developer. The payments could be made in the form of: **a) a sinking fund** - a lump sum payment with an established time frame (e.g. 30 years) when some capital and generated interest are drawn down to finance the capital and operational costs of offsets, or **b) a perpetual or endowment fund** - only income from the investments is spent on delivering the offset, covering all capital and operational costs. In these cases, an endowment guarantee may be structured to protect against a loss of income. These payments also form part of most conservation banking schemes; however, issues of transferring offset liability and permanence must be carefully considered in these structures. Development of multipartite agreements with government, the third-party financial management institution, and the company to provide for transfer of liability, could make the lumpsum payment option much more attractive for companies to participate where offsets

¹³ See Appendix for more detailed definitions and explanations; ¹⁸ See Appendix sections for more detailed descriptions of these case studies.

¹⁴ To fully address biodiversity offsetting finance in some cases the paper isolates offset payments or costs from other environmental

and general project development costs. Decoupling offset costs has been an intentional dynamic essential for understanding certain potential funding forms.

are voluntary.

Upfront payments do face challenges and specifically for small scale projects. More detailed forms of upfront payments are described below:

Balance Sheet Finance

Balance sheet finance is potentially the simplest form of offset funding whereby a project developer will utilise their own balance sheet capital to finance the purchase or delivery of an offset. Generally, this is achieved by purchasing an offset directly from an offset developer, such as a conservation bank, in a single upfront payment or lump sum. Thereafter, the offset developer is in most cases, liable for both delivering that offset to the buyer and also for permanently completing the offsetting activity. This approach works well in regulated environments, but in many parts of the world such systems do not exist yet. In cases of nonregulated or voluntary markets, up-front balance sheet finance is still an option, but the company needs to find a third party to receive the payment, assume liability for delivery and oversee the offset implementation.

Positive Attributes

- **Transfer of Liability:** Where there is a permanence goal under regulated mechanisms, liability is generally transferred immediately from the project to the offset developer at the point of an upfront payment and once certain criteria have been met. Responsibility for calculating offsetting activity, development and delivery costs to a permanent state therefore sits with the offset developer. The findings of this report feature this as the

preferable outcome for both parties. The ability to transfer liability for an offset in non-regulatory markets (induced and voluntary markets) could help attract more up-front money for offsets;

- **Simplicity:** Balance sheet funding represents a direct transaction between a willing buyer and willing seller, or provider. In regulated environments, the purchase of upfront credits is a highly efficient means of funding offsets. – enabling project developers to rapidly meet their offsetting needs or liabilities;
- **Budget Planning:** Upfront balance sheet funding enables project developers to budget their offset costs more effectively in a single lump sum;
- **Security:** If budgeted properly, the full costs of delivering the offset project are satisfied upfront and in full, providing greater surety to both the project and offset developer. This allows early investment in conservation actions and reduces the risk of residual biodiversity losses. This is a desirable outcome for offsets both in regulated and non-regulated markets.

Negative Attributes

- **Under capitalisation:** All upfront payments, including balance sheet funding, present a risk to offset developers when the actual costs of delivering the offset exceed the original budget and the balance of the upfront payment. If the full liability for delivering the offset does not vest or transfer, this risk also applies to project developers. For example, even though the project developer and offset developer may

circumstances, unless other funding can be secured, the offset developer is at risk of non-delivery or incompleteness. This point emphasises the need for high quality and comprehensive valuation methodologies and, in some cases, insurance or other underwriting mechanisms;

- **Illiquidity:** Balance sheet funding can restrict funding flows to offset developers when funds are most needed, for example

Case Study: Utah Copper Company (Balance Sheet Finance - United States)

The Kennecott Utah Copper LLC, a subsidiary of Rio Tinto Plc, expanded its storage facilities in the 1990s negatively impacting 427 hectares (ha) of wetlands. Under U.S. law, the company had to offset and mitigate the environmental loss.

The Kennecott Inland Sea Shorebird Reserve was associated with heavy upfront costs, totalling US\$ 20 million in 1995. Up to 70% of this was used to purchase and secure land for offset development. Additional annual monitoring costs, over a legally required 7-year period, are estimated at US\$ 90,000 per year.

A wetland mitigation plan was developed by Kennecott and a Technical Advisory Committee consisting of various environmental organisations and government agencies. The plan established the company's responsibilities in terms of mitigation construction, operation, maintenance, and monitoring.

Although only a one-to-one offset was required, Kennecott opted to create a larger, voluntary offset with the aim of creating an environment where the wetlands had a greater chance of conservation success. The company therefore constructed a 1,011-hectare shorebird and waterfowl refuge, known as the Kennecott Inland Sea Shorebird Reserve.

In 1997, because of initial success, the site was expanded from 1,011 ha to more than 1,460 ha. Four additional ponds were added to the existing five and the overall outcome was a net gain for biodiversity. The additional ponds have been designated as a bird reserve into perpetuity and act as a wetland mitigation bank for impacts from other projects affecting wetlands in the same watershed.

Overall, the Kennecott offset had two components. The first component was the legally required mitigation site to offset the loss of wetlands from Kennecott's storage facilities. The second component was the wetland mitigation bank, which consisted of the four additional ponds, resulting in a total of five total ponds and a net gain impact.

They have a contract whereby the offset developer has received money to deliver the offset, the project developer may still ultimately be liable under regulated offset requirements unless regulation allows its liability to be shifted as a result of the payment to the offset developer. In these

circumstances, resulting from unforeseen project delays or costs.

Project Loans

Project developers often take out loans to cover development costs for an infrastructure project which may include, for example, a mine, port or road project. In some cases, the project developer may factor the costs of purchasing an offset into this holistic project finance loan. In other cases, it is conceivable that lenders whose standards require mitigation, including offsets, would begin to package their financing to include the cost of delivering an offset. Related to the biodiversity offset, part of this loan would subsequently be used to finance the upfront requirement. In these cases, offset costs would be included in the total project budget.

Positive Attributes

- **Leveraging Financial Institutions:** Financing institutions control significant reserves of capital used to finance the types of projects listed above. Wrapping offset costs into general project finance enables both project and offset developers to exploit these large capital reserves;
- **Price competitiveness:** As project loans are linked to a profitable project, like a mine or port, it may be easier to secure cheaper finance as a result of the annual revenue or security against assets or revenue from the underlying project;
- **Pricing flexibility:** Financiers could layer offset related finance into project finance instruments and apply different terms to make these products either more attractive or indeed profitable. For example offset exposure could be stripped out into a

separate loan tranche issued over a longer or shorter term, at a different finance rate compared to the main instrument and with specific performance indicators which could be linked to the underlying costs.

- **Economies of Scale:** Due to factors such as volume and liquidity, institutional debt funds are generally capable of raising finance from capital markets at lower rates which can subsequently be passed onto developers;
- **Improved Cost Management:** By taking out a fixed term loan, a project developer can finance an offset upfront, and manage their effective payment for that offset cost over the term of the loan;
- **Smaller Scale Project Developer Engagement:** Loans are more accessible than balance sheet finance for smaller developers without sufficient liquid financial resources. This reduces barriers to entry which in turn enables greater price competitiveness for loans;
- **Insurance:** Some forms of project finance may take out insurance against nonpayment by the underlying project developer – this insurance could extend to specific payment obligations by the project developer to the offset developer to ensure sufficient funding exists to deliver the offset into perpetuity.

Negative Attributes

- **Use of covenants¹⁵:** Project finance often fails to incorporate adequate covenants

will stipulate the required offset action to be undertaken. If not adhered to, the loan will effectively be in default.

¹⁵ Covenants are legal agreements between parties, regularly used as part of loan agreements to stipulate any actions to be undertaken by the investee. In the case of offset loans, covenants

related to the delivery of an offset. This may be a result of limited capacity within certain finance institutions to design and apply such covenants. Offset-related covenants are obligations incorporated into financing agreements which work to ensure the borrower satisfies all the undertakings of that offset;

- **Under Capitalisation:** If offset costs exceed the original budget of an offset, under a project loan, there may be limited scope to increase funding allocations or commitments to the offset if it impacts on, or requires amendments to, the general project loan.

Freestanding Offset Loans

Whilst currently unavailable for offset developers, freestanding loans could be issued by a financing institution directly to a project developer, **or** to an offset developer solely for the purpose of financing an offset or offset project. This is distinct from project finance where the offset cost is wrapped within an overall project budget. These agreements may incorporate covenants ensuring the loan is used exclusively for financing the offset, and in some cases concessionary rates or fiscal incentives could be designed to incentivise their uptake. This competitiveness and flexibility makes them relevant for consideration. Freestanding loans may also be an option for projects with outstanding offsets and with limited financing to implement those commitments.

Positive Attributes

- **Performance incentives:** Offset related performance incentives could be applied to freestanding loans. If for example, an offset developer secured a loan to finance the

implementation costs of an offset which they intended to sell at a future date to a project developer – i.e. off-the-shelf; the loan provider may reduce the costs of finance if the offset developer exceeded pre-set performance targets in delivering the offset. These targets would likely be related to the delivery risk of the offset which should decrease over time, and ultimately manifest in a higher likelihood of the offset being achieved and subsequently sold to a project developer - at which time the loan would be repaid. An example can be found in a loan agreement between African Wildlife Capital and Asilia Africa¹⁶, whereby the loan interest rate decreases as the borrower achieves measurable conservation outcome targets¹⁷.

This model could also be applied through tranche-based structures where the total loan is dispersed in gradual tranches as the offset developer meets certain milestones within the offset implementation. As already mentioned this type of loan may be especially attractive in those situations where offsets have either been underfunded or have not been implemented at all. The loans would be useful support projection or recuperation of biodiversity. Payment would need to be secured against project revenue;

- **Targeted:** Unlike offset commitments wrapped into project finance, freestanding loans are designed specifically to deliver the offset. They therefore mitigate against dilution risk whereby over time a project developer may divert offset targeted funds into non-offset related project delivery costs such as machinery;
- **Single Lender:** The offset can focus on a single financier or lender generating

¹⁶ See: <http://www.asiliaafrica.com/asilia-africa-african-wildlifecapital-sign-pioneering-conservation-bond/>

¹⁷ Source African Wildlife Capital - <http://www.africanwildlifecapital.com>

potential pricing efficiencies. This supports the notion of optimised funds or financing vehicles specialising in offset financing opening new opportunities for investors and project developers alike.

Negative Attributes

- **Availability:** Few financing institutions would consider free standing loans without a proven revenue or a secure payment source being identified before the loan is issued, or in the case of the offset developer where there is a secure offtake agreement in place for the offset. Some financing institutions may lend against secured income from an offset site, for example a payment for ecosystem services, but this model needs to be tested further. This limitation could however be addressed if financing institutions become more engaged with offset related finance and bring their own funding solutions and products to the sector – *see for example green bonds*;
- **Externalisation of Impacts:** There is a concern that freestanding loans go against the concept of internalising environmental damages and that they could create a disincentive for companies to follow appropriate mitigation measures. Thus, certain commentators observed that loan offset finance should always be wrapped within project finance as a formal obligation for the project developer to compensate for environmental damage caused by the project. This is a valid argument. However, without regulation built-in project finance may push project developers towards less environmentally conscious lending institutions that normally do not apply responsible conditionality.

Green Bonds

Although more complicated, there is the potential to provide up-front financing through a bond issuance. The bond would need to be issued by an issuer (financial institution) with the highest possible rating in order to keep the interest rate as low as possible. The bond could be issued using the revenue streams from the project in question as collateral to demonstrate that potential for repayment. The funds from the bond issue would be available up-front to provide most or even all the offset financing. The bond issue would be for a period of 20 to 25 years.

Positive Attributes ▪ Leveraging Different Financial

- **Institutions:** Financing institutions control significant reserves of capital capable of financing the types of projects that could contribute to the conservation of biodiversity. Some investors (pension funds, impact investors) are looking for both returns and conservation benefits at a significant scale and bond finance can offer that opportunity. Bond finance offers the opportunity to expand the type of investors engaged in conservation activities by providing options to impact investors.
- **Targeted:** Bond financing directly delivers the compensation required, in other words a bond would be issued for a specific project that would deliver conservation results. The bond could be issued to finance all costs upfront, or partial upfront costs with remaining costs covered through annual earnings.

Negative Attributes

- **Externalisation of Impacts:** Like freestanding loans, green bonds for funding offsets go against the concept of internalising environmental damages and could create a disincentive for companies to follow appropriate mitigation measures.

Complexities of Upfront Capital

- **Small Scale Engagement:** Most larger scale offsets require significant upfront capital commitments which can represent an obstacle, especially for smaller project developers;
- **Sufficient Capital:** Upfront capital is generally needed to comprehensively satisfy the CAPEX and OPEX costs of delivering an offset. To date, this has been reflected by contributions into a CTF. Beyond these examples, another demonstrated method would include ringfencing capital within special purpose holding vehicles to secure balances into perpetuity;
- **Heavy Upfront Costs:** In many instances to date, project developers simply lack capital for the required or available offset, a complexity exacerbated by front-loaded project costs incurred during the start-up phases¹⁸;
- **Delivery and Liability:** Project developers with strong balance sheets, significant cash flows and/or significant financial backing might still be reluctant to relinquish control of capital to an independent entity, such as CTF, before a project or offset has been delivered or secured¹⁹. To mitigate against this scenario, while considering permanence requirements, one solution would be for the project developer to contractually agree to only deposit retained funds to a third-party organisation, (in this case, the CTF), over the long-term, subject to the credit rating and performance of the organisation being maintained.

- **Amortising Payments:** Project developers generally prefer to amortise costs over time, meaning that expenses and commitments are spread across longer periods and into the profitability or revenue generating phase of their activities. Amortising payments enable offset costs and commitments to be discounted over the short to medium term. Limited offsets specific, market-based options are currently available for this approach; however, it does lend itself toward debt-based offset financing products;
- **Budgeting Constraints:** For project developers whose annual revenues typically vary in response to conditions outside of their control (e.g. systemic risks), it remains challenging to accurately determine offset budgets and allocations based on future cash flows. Businesses generally prefer to budget for regular fixed offset costs rather than variable payments²⁰, and from the offset provider's perspective, this again highlights the importance of upfront payments.

Ongoing Finance

Fixed Regular Payments

In cases where upfront payments are impractical, especially for smaller companies, or if companies prefer to cover their offset costs from operational funds (using generated revenue) rather than capital or investment funds, they may seek alternative annual or other regular fixed payments. These are used to pay the offset cost on a recurring basis over a prescribed period.

Positive Attributes

¹⁸ Personal communication, Ross Hamilton (29/11/2016)

¹⁹ Personal communications, Jared Hardner (01/11/2016), John Pilgrim (21/12/2016)

²⁰ Personal communications, Pippa Howard (02/11/2016), David Marsh (02/11/2016)

- **Participation:** Providing longer term flexible payment options incentivises and encourages smaller scale project developers to compensate through offsets. These costs can be factored into their annual budget and classed under environmental cost centres (which also include other expenses like rehabilitation or environmental impact assessments)²¹;
- **Mitigates Regulator Backlash:** The availability of more flexible payment options for offsets reduces arguments against regulators that offsetting is unaffordable;
- **Potential for a Permanent Fund:** Annual payments could include an amount to cover specific on-the-ground activities with an additional amount paid to escrow and invested over the life of the payments. The amount of the extra payment would be based on either the number of years chosen to reach full capitalisation and the return on investment of the established escrow fund each year, or on a percentage of project revenues exceeding the offset funding needs until the capitalisation target is reached. This approach represents another hybrid strategy between the annual payments scheme and the up-front payment option, but with the endowment created later in the process of implementing the offset.
- **Potential for another Hybrid Model:** A hybrid model may offer an alternative that combines upfront payments with those regular annual payments. A lender or Government could require an upfront

payment that represents some percentage of total investment costs (e.g. 1-2%). This payment would be the minimum payment for the offsets (floor amount). Once the final cost of the offset is determined, the company would make annual payments to ensure that sufficient funds are available to meet offset requirements. This approach reduces the overall up-front cash burden as well as ameliorating the amount of the annual payment needed to meet offset obligations. This approach would require Governments or lenders to establish requirements for both an upfront fee or percentage payment for the offset and then for subsequent payments from revenue to meet obligations.

Negative Attributes

²¹ Personal communication, Lisa Gaylord (06/12/2016)

- **Commitment risk:** Project developers may withdraw their commitment or may no longer be able to afford offset payments, thereby increasing the likelihood of offset failure. These events may be driven by systemic risk (market wide events not

Revenue-Based Funding - Royalties

Whilst similar to annual finance commitments which are generally fixed payment commitments, royalty-based payments differ in

Case Study: Nimba Biodiversity Conservation Programme – ArcelorMittal Liberia: ArcelorMittal Liberia (AML) started its Biodiversity Conservation Programme in 2011 to compensate for biodiversity impacts resulting from directly shipping ore from the country's Nimba Mountain Range. AML has been working with Fauna and Flora International (FFI) and Conservation International (CI) in this context. In 2014, FFI successfully developed the first Management Plan for the East Nimba Nature Reserve and CI signed the country's first conservation agreements with six communities in northern Nimba. The yearly budget for the Programme was originally set at US\$ 500,000 and increased to US\$ 700,000 in 2014. As an example of an annual payment, c. US\$ 85,000 was paid to FFI and CI directly in 2015. However, this case study illustrates the risk and susceptibility of annual payments. Due to a loss of habitat and species in 2014, AML had to pay an additional US\$ 300,000 in 2015, but AML deferred this payment due to low global iron ore prices.

Gamsberg Zinc mine - South Africa: Illustrating an annual payment commitment into a CTF, the Gamsberg zinc mine was purchased in 2015 and relicensed by Black Mountain Mining (BMM), a subsidiary of Vedanta. Biodiversity offsets, previously a voluntary requirement, became a legal requirement resulting from the relicensing. The new environmental licence identified four broad habitat classes and required that 2,000 – 4,000 hectares of each of these classes be set aside and declared national protected areas. BMM also had to devise an offset plan, including details on how the offsets would be financed. The financial arrangement stipulated that an annual payment be made to a trust from where offset activities would be funded. To provide financial security, Vedanta was compelled to guarantee the annual payments from BMM to the trust.

necessarily in the control of the company, such as a drop-in commodity prices), or unsystematic risks (those impacting only the company, such as poor product sales). Such risk may be reduced if the developer adopts the hybrid scheme whereby a longterm fund is established over time, or through a binding contractual commitment to either government, project lenders or a CTF to make the payments. Another option for addressing payment issues would be to establish a contract with a waterfall payment, whereby the biodiversity offset payments would be given priority and payments to meet offset requirements would be made prior to covering other responsibilities.

that they are not budgeted on a yearly basis. Rather, a percentage of an identified revenue stream from the development project or other company income stream, also known as a royalty, is allocated towards the offsets. For example, in the context of a mining company, a royalty (or percentage of revenue) per ton of iron ore might be allocated toward offsets, rather than allocating a fixed upfront or annual payment.

Positive Attributes (*also see Fixed Annual Payments*)

- **Growth correlation:** In most royalty-based scenarios, funding captured and committed

for offsets will be correlated to positive financial performance. Unfortunately, growth in royalty payments may be at the cost to the environment with more damaging activities taking place. But this may not be the case with systematic risks, as any additional cost to the environment incurred unsystematically should have been anticipated at the offset's design stage.

Negative Attributes

- **Third Party Exposure:** Exposure to external influences and systemic risk such as management (offset-conscious management teams are replaced by a group unaware of offsets) and implementation risks (e.g. the underlying revenue stream fails and therefore the offset fails);
- **Subjectivity:** Project developers may appear committed to an offset programme, but the royalty allocation could be miniscule relative to the revenue stream;
- **Offset Planning:** Volatile and inconsistent revenue streams into an offset project make it difficult to plan costs and actions to implement that offset. There is no guarantee that funds will be sufficient to deliver the conservation outcomes to deliver no net loss (especially if the royalty

is not tied to a specific funding commitment that contractually delivers them).

Tax Deductions

Fiscal tax laws represent an opportunity to incentivise the uptake of offsets. For example, project developers in some cases could be able to deduct offset related costs as a tax loss to thus release budgets to finance those offsets. This mechanism is a questionable form of offset finance as the tax break in the majority of cases would not satisfy the full offset costs.

Positive Attributes

- **Participation:** Tax incentives could motivate more uptake of offsetting activities.

Negative Attributes

- **Abuse:** As noted above, this may provide an avenue for abuse whereby valuations for offset costs may be manipulated to generate a higher tax loss. Consequently, this may result in low quality, less expensive offset projects being valued at inflated rates relative to their real value.

Case Study: Lom Pangar Hydropower Project (Cameroon): A 58,000 hectare (ha) National Park was gazetted in the Deng Deng Forest (to date, the Park consists of 74,753 ha). To fund the Park and other areas surrounding it for the protection of gorillas, a water tariff scheme was devised tying the offset funding to the revenue of the project. It was estimated the project would collect \$29 million in annual water tariffs, which at the time was calculated to be sufficient for subsidising the operational and maintenance costs of the dam as well as the management costs of the Park. Subsequent projections however indicated the royalty stream to be inadequate for covering Park management costs, clearly illustrating the risks of a revenue-based royalty to fund offsets.

Revenue-based funding - Conservation Enterprise, Payment for Ecosystem Services, Carbon Finance (Conceptual Special Situations)²⁷

This White Paper recognises that these mechanisms cannot be either the starting point, or central to any offset. Rather they offer a means of diversifying revenue within an offset landscape. Revenue-based funding mechanisms can also be used to deliver offsets. In other words, investment in revenue-based options as part of offset implementation can foster incentives for the effective management and protection of biodiversity. However, for the purposes of this paper, revenue-based funding is identified as a source for financing biodiversity offsets.

- **Conservation Enterprise:** a relevant asset class whereby business activities and revenues in and around protected areas are captured or diverted to support the conservation of those underlying landscapes. Conservation enterprises are unusual in conservation work, as they create “assets” rather than ‘cost centres’ that drive conservation outcomes. There may be scope to utilise revenue streams from conservation enterprises as platforms to finance biodiversity offsets or to service loan-based offset finance²⁸;
- **Payment for Ecosystem Services (PES):** This offers an ongoing variable revenue stream which can be captured to finance the costs of developing an offset. For example, biodiversity offsets that protect a water catchment zone can potentially generate revenue - the PES payment, from

beneficiaries of the water supply downstream;

- **Carbon Finance:** A type of PES, finance from climate change mitigation mechanisms could be captured and used to finance an offset, depending on the nature of the biodiversity offset. For example, a forested area protected by a biodiversity offset might be able to demonstrate that carbon-financing, through a mechanism such as the United Nations Reduced Emission from Deforestation and Degradation (REDD) or Voluntary Carbon Standard, are fundamental to its long-term effectiveness. Two principal challenges exist with these models: firstly, addressing additionality combining carbon offsets with biodiversity offsets; and secondly, low and unstable carbon prices;
- **Bundling and Stacking Offsets:** An emerging concept for environmental services, they constitute joint ventures principally between biodiversity and carbon offsetting to reduce habitat loss, as well as to protect biodiversity and mitigate climate change through the restoration, protection, and enhancement of natural areas.

Bundling refers to “*merging multiple ecosystem services from a land area under a single unit of transaction or credit type*”.

Stacking refers to “*independently selling different types of ecosystem services from a land area through multiple tranches or units of sale e.g. biodiversity credits, carbon credits, and water credits*”.

In preparing this White Paper, no evidence was

²⁷ Positive and negative attributes from the following revenue based payment models often overlap and are hence presented in a single unit. However, each mechanism should be considered on their own individual merits.

²⁸ For more information on conservation enterprise see www.conservation-capital.com

found to suggest the conceptual frameworks of bundling and stacking are realisable at scale in the short to medium term. The complexities of these concepts are significant, and markets are not stable enough to project how they might work in reality. Further action related to bundling and stacking in the context of offset finance should only be undertaken once more straightforward funding options have been routinely proven.

Financial Guarantees

Insurance Products

Insurance offers protection against very specific trigger events stipulated in the policy. Issued by regulated insurance providers, insurance is a common form of protection used throughout many sectors and industries to guard against a myriad of risks. Insurance products may be structured to protect both project and offset developers across risks including non-payment, underlying delivery liability and permanence accountability. Insurance products may protect against market-based risk events outside of the control of the financier or developer; examples include political unrest at a project site or a drop in commodity prices to which an offset payment mechanism is pegged. Further engagement with the insurance sector to design these products is required.

Positive Attributes

Insurance mechanisms could offer a service to ensure long-term sustainability of offsets. They conceptually address the following main risk types:

- **Specific / Unsystematic Risk:** These include risks associated directly with the

project itself, for example a project developer refusing to pay or reducing the annual funding requirements of an offset;

- **Impact Risk:** Risks where, despite solid financing and execution, the offset may not be delivered to the intended permanent state, e.g. due to a flood or natural forest fire.

Negative Attributes

- **Triggers:** Based on interviews for this White Paper²², insurance providers are only willing to underwrite specific risks, such as a project developer lapsing on payments;
- **Costs:** Variable insurance premiums could impact long term financial planning.

Other Forms of Financial Guarantee

This White Paper recommends that these mechanisms are explored in further detail but only in consultation with experts in each respective industry. The risk is that by exploring these mechanisms in more detail, some of the core attributes could be lost:

- **Captive Insurer:** A captive insurance company can be described as an “internal insurance company” – an insurance company formed by the insured. Captive insurers are often used by oil, gas or extractive companies. Such companies choose to purchase insurance, but given the costly and risky nature of their operations, this can be incredibly expensive. These businesses often, therefore, opt to selfinsure.

²² Personal communication EJ Hentenaar – Lockton Solicitors

e.g. by establishing a captive insurer. The captive insurer could be owned

by the insured or an affiliate thereof. Captive insurers are capitalised by the insured to an amount capable of covering the full risk liability and to satisfy statutory requirements of jurisdictions where the captive insurer operates. As the insured and the captive insurer sit within the same corporate family, there is effectively no transfer of risk to an external party. The appropriateness of captive insurance therefore needs to be carefully considered, including the costs and benefits derived;

- **Irrevocable Letter of Credit:** Also known as a bank guarantee, these letters are often used in extractive industries, for example to guarantee a mining company can meet its obligations to repair and restore natural damages. The bank or guarantor provides funds to a third party, normally the government in the case of mine closure, under terms set out in the letter of credit. In this case, the third party entitled to the funds would be the offset developer, paid through a binding agreement with the project developer, who remains responsible for ensuring the offsets continue to receive funding under the terms of the letter of credit;
- **Performance Bonds:** Also known as surety bonds or insurance bonds, performance bonds are similar to letters of credit. They are formed by agreements between an insurance company and the insured to provide capital to a third-party beneficiary under certain conditions.

Conservation Trust Funds

Conservation Trust Funds, in the context of offsets, are private, legally independent grantmaking institutions that provide sustainable financing for biodiversity conservation²³. CTF's represent one form of third-party financial institutions that would have the capability of managing upfront payments or collecting annual payments and channelling those funds to entities that would deliver the offset. Combined with upfront, annual, or royalty payments, CTFs offer an alternative governance and administrative arrangement for managing offset financing.

CTFs are capitalised by project developers in return for the CTF sourcing delivering offsets. The CTF pays funds to offset developers in return for delivering the offset. Some CTFs utilise funds in an endowment form whereby upfront capital is used to capitalise the endowment, and interest from this capital is drawn down over time. In certain cases, upfront capital is used to capitalise the endowment in addition to other early stage funding costs outside of the endowment.

Positive Attributes

- **Bespoke:** CTFs are bespoke offset financing vehicles specifically designed and optimised for protecting, managing and delivering offset capital and offsets;
- **Transparency:** CTFs provide transparency and accountability to offset payments and delivery;
- **Recurring Finance:** In certain circumstances, (for example, endowments), recurring payments by project developers

²³ Based on the Conservation Finance Alliance definition Source - <https://www.cbd.int/financial/trustfunds/g-rapidassess.pdf>;

can mitigate against some risks associated with undercapitalisation;

- **Permanence:** CTF endowments can provide parlance of financing and offer greater stakeholder participation and buyin.

Negative Attributes

- **Illiquidity:** CTF mandates can restrict funding flows to offset developers when they are most needed, for example resulting from unforeseen project delays or costs;
- **Ongoing Commitments:** To function effectively, CTFs generally rely on continual payments from the project developer to maintain and grow the capital base, unless the endowment has been sufficiently capitalised upfront. Again, this

presents a risk as the greatest project costs are experienced in the early project phases, requiring sufficient initial funding deposits into the CTF. In incidences of poor management, budgeting, or unexpected costs the CTF could become undercapitalised;

- **Poor Management:** CTFs rely on competent management and can be susceptible to negligence or even corruption. Establishing a steering committee can mitigate against poor management, which can also apply to project developers.

Case Studies: Conservation Trust Funds

- **The Brazilian Biodiversity Fund - FUNBIO – Brazil:** Formed in 1996 to contribute to the UN Convention on Biological Diversity in Brazil, FUNBIO offers a transparent CTF for companies to reduce and mitigate their impacts while fulfilling legal obligations to do so. By 2016, FUNBIO was managing a total of US\$ 593 million and supported 256 projects and 310 protected areas covering c.67 million hectares (ha). FUNBIO has established an Atlantic Forest Fund whose income derives from compensation payments made by companies required to compensate for their impacts. The programme operates in the State of Rio de Janeiro and companies can elect to make their compensation payments to FUNBIO. Since December 2009, FUNBIO has provided funding for 50 conservation areas in the State, protecting 506,000 hectares. As of November 2016, FUNBIO has received around \$90 million in compensation payments for investing in conservation activities;
- **Great Victoria Desert Biodiversity Trust – Australia:** The Trust was formed in response to government regulations requiring AngloGold Ashanti Australia, on behalf of the Tropicana joint venture, to provide an upfront payment of AUD\$ 1.6 million and contribute AUD\$ 0.25 - 0.35 million annually since 2015 onward, into the Trust in order to finance offsets;
- **Shaw's Pass Road Project – South Africa:** This project involved the widening of a road in South Africa between the towns of Hermanus and Caledon, impacting 1 hectare (ha) of critical habitat. The provincial road department was required to offset these impacts by securing 30 ha of the same environmental habitat on nearby private land. Successful negotiations with the landowner resulted in the required 30 ha, plus an additional 30 – 40 ha secured for conservation. A special purpose fund was established within CapeNature, a local conservation organisation, and financed with ZAR 7.5 million, committed into the special purpose fund by the provincial road department. The facility earns interest of c.R 350,000 per year, of which a portion is paid directly to the private landowner to manage the agreed conservation area;
- **Mozambique Biofund:** Mozambique's national CTF, BioFund, was launched in 2015 and seeks to support the country's severely underfunded protected areas. The Mozambique Biodiversity Offset Roadmap suggests the BioFund should channel offset funding from infrastructure and offset projects to certain equivocal protected areas. The BioFund has initially been capitalised by organisations including KfW, World Bank, Global Environment Facility, Conservation International and the Global Conservation Fund, to the value of c. US\$ 24 million. BioFund is now in the process of determining the mechanisms it will establish to manage offset financing as part of its current strategic planning process. Similar processes are underway in Uganda with the newly established Uganda Biodiversity Fund, and in Madagascar with the Biodiversity and Protected Areas Foundation. The expectation is to bear examples by 2018 of CTFs playing roles in offset financing.

4. White Paper Findings

Taking into consideration the positive and negative attributes of each funding mechanism and the overall risk and sustainable finance environments of offsets, the following findings are drawn from the White Paper:

Regulation and Creating Demand for Offsets

- **Establish National Offset Regulations:** Designing and enforcing regulations that require project planning to follow the mitigation hierarchy is key to catalysing effective offset finance. Once regulations are in place, developers will need to implement offsets and the financing needs will be communicated to financing institutions. In terms of market demand and surety for offset financing, government regulation is the key driver. Financial requirements for no net loss are too limited to drive the certainty required for markets. Only government regulations create the appropriate scale;
- **Voluntary Reality Check:** Voluntary offsets have a chequered history; they represent company goodwill, but there are many cases where offsets have fallen short or have not been implemented at all. There is a need to improve the voluntary offset environment as there is a disconnect between projects that are causing impacts, commitments to undertake offsets, and the funding to implement these actions. Developing a financing mechanism specifically for financing offsets, both

public and private, would bridge some of these disconnects. This would allow for the creation of offsetting impacts at scale across meaningful landscapes and would release significant amounts of offset capital.

Voluntary offsets need to address the issue of volume. Dependable and professional investors require guarantees on supply and demand at scale. These requirements need to be consistent and secure over the longterm. Voluntary sectors should assess further how this can be achieved and take on lessons learned from the carbon sector. Developing and adopting more voluntary offset standards, such as the BBOP standard, should be considered by relevant offset participants;

- **Accommodating Finance:** Offset regulators must be conscious of the needs and requirements of financing institutions when designing offset regulations. Too much regulation can be a hindrance for financiers, and too little regulation can be deemed as risky. Building on existing standards (such as IFC PS6) in developing regulations can better harmonize government regulations and IFI requirements, thereby creating consistency for businesses;
- **Ensuring Effective Conservation Outcomes:** Any offset financing needs to be directed at programmes or activities that are designed specifically to deliver conservation on the ground. Experience indicates that having a developer make a payment to a government or other entity without the payment being tied to specific outcomes is a recipe for failure. Such payment mechanisms, called in-lieu fees, have a long history of poor delivery of conservation on

the ground, and are not recommended as mechanisms for financing offsets.

Offset Brokerages

- **Offset Availability:** Offset brokers would support the stockpiling of off-the-shelf offsets providing instant access for project developers to banks of diversified offsets. This would enable the short term transfer of liability and compliance with regulated offsetting requirements in a cost and time efficient process. Brokers would further support valuable services for the sector such as market research and price and volume transparency and forecasting;
- **Offset Banks:** Enabling the stockpiling of offsets within offset banks would provide a 'critical mass' required for countries with no offset regulation, especially developing countries, to commit to more formalised regulated models. Without this availability some countries may be reluctant to enforce regulation on project developers and indeed foreign investors;
- **Funding availability:** Offset brokers could broker finance deals between financiers and project developers and offset developers. This would again engage and support third party participants in this sector including lawyers and regulators.

Liability transfer

- **Liability Transfer Note:** Market regulators could design a formal liability note stating which party is responsible for delivering an offset. The note could include details such as the offset description, finance requirement and whether this has been fully

satisfied, delivery status of the offset for a set duration and by a set deadline, and finally who the liable party is for delivering the offset. The note would generally be exchanged between the project developer as the initial liability holder to the offset developer;

- **Liability Exchange:** An online exchange or offset database that lists who is responsible for delivering an offset and also when an offset has been successfully delivered. This could be designed by regulators so as to improve transparency. Offset brokers and other third parties would manage transactions on the exchange;
- **Liability for Investors:** Offset stakeholders need to uniformly address when offset liabilities could be transferred by a project investor looking to exit their position in a project. There may be cases where offset liabilities and associated costs vest at a shareholder or investor level. During investment or project exits, these outgoing investors may seek to reduce this liability in order to maximise their attractiveness for incoming financiers or shareholders. They should not, however, be able to transfer liability to a third party who may be unsuitable to manage or finance that offset project commitment. This dynamic may provide the scope for, or a direct need for, a regulator, due diligence, and a monitoring agency for offsets. Practical actions such as the design of offset related legal covenants to govern financing agreements under a regulated framework, would support this process.

Offset design

- **Targeted impacts:** Firstly, 'best practice' guidelines should be established to ensure as

much as possible that offsets can be aggregated within the same catchment areas as a development project, and secondly form contiguous offsetting areas rather than multiple, small-scale, sporadic sites. In some countries, existing and new protected areas may be appropriate providers of offsets. The priority should be to make it easier for developers to comply with and commit to offsets, as well as to direct funding with high conservation value;

- **Financing reality check:** Development and Equator banks are committed to the mitigation hierarchy and offsetting of residual impacts. Although the requirements for no net loss are in place, there is no specific financing for offsets available from these institutions. Development of biodiversity funding instruments by these financing institutions could make it more attractive for companies to undertake early investments in restoration and other conservation actions. This case should be raised with these institutions to consider upfront funding of offsets as a matter of course;
- **Public Sector Participation:** Public sector developers should engage, including through formal compliance, with offsetting requirements. In this sense, governments could lead the way and set a good example for private sector developers to follow. The report found that in some instances, IFIs, especially development banks, could communicate more proactively at a policy level with governments.

Training, Education and Capacity Building

- **Training for Professional Services²⁴:** Initiate a process for designing a specialist biodiversity offset training programme to be offered to relevant professional services sectors including: financing institutions; financial market regulators; offset regulators; asset managers and insurance groups. Training modules may address the following topics: what are offsets; why they are important; how to engage offsetting; the need for and benefits of offsetting; core principles for offsetting (additionality, equivalence etc.); understanding ecological valuations and PS6; regulations and governance; offsetting risks; overcoming barriers to entry; value of upfront vs recurring payments;
- **Training for Offset & Project Developers:** Specialist training programmes for offset developers and project developers should be designed, including training modules for understanding offset finance products; how to engage and deal with financing institutions; returns-driven financing (e.g. sub-modules on PES, conservation enterprise, and carbon finance); and financing guarantees;
- **Training for governments:** Training will be especially important for governments and public stakeholders. Regular training events, replicating those for the professional services stakeholders, will be required to factor in changes in government officials. Education resources and tools should be developed for these groups, specifically related to policy, regulatory schemes and offset banking.

²⁴ For institutions see <http://www.equatorprinciples.com/index.php/b4b>.

- **Institutional engagement:** A workshop event should be organised focusing specifically on institutional financiers. This workshop should address such topics as: “How can financing institutions raise upfront offset capital at scale”; “What financing institutions require to raise upfront offset capital at scale”; and “Setting up special biodiversity offset credits through an offset crediting facility”.

Institutional Covenants & Methodologies

- **Covenant design:** A roadmap should be designed to capture the work to date of financing institutions in applying offset related covenants in their financing agreements;
- **Assessing risk and value:** A process should be initiated between offset leaders and financing institutions to design a publicly available methodology which those institutions could use to assess the values and risks of offset projects. This formula and its guidelines could support the design of more offset-specific funding

forms and better financing terms. It would be necessary for the management and risk committees of these financing institutions to receive training on these methodologies.

END

Trusting Offset Developers

- **Building Trust:** Earning institutional confidence in offset developers and mechanisms supports the mobilisation of offset finance. As project developers are ultimately responsible for the success of biodiversity offsets in most jurisdictions, confidence in the implementing party, regardless of whether it is a government, a conservation organisation or otherwise, is of the utmost importance. Therefore, without a well-designed offset backed up by successful trackrecord, strong management, robust finance and repayment plans, and exit strategies, project financiers are reluctant to release significant funding to offset implementers²⁵.

Deeper Engagement with Insurance Sectors

- **Insurance and Offsets Workshop:** A workshop on connecting offset finance and the insurance industry should be organised to discuss ideas and product concepts related to this recommendation.

²⁵ Personal communication, Jared Hardner (01/11/2016)

WHITE PAPER

Options and Financial Mechanisms for the Financing of Biodiversity Offsets

APPENDICES

Stakeholder Considerations

i. Leveraging Financial Institutions

Financial institutions have become offset stakeholders, both voluntarily and through

regulatory mechanisms such as PS6 and the Equator Principles. Catalysing this engagement is the concept that offsets also present a liability to be considered in appraising risk, and an income opportunity to potentially structure products targeting return generation²⁶.

However, despite the risks and opportunities presented by offsets, institutional financial markets (with certain exceptions in the United States and programmes such as the Natural Capital Financing Facility) have generally, to date, failed in effectively engaging offset mechanisms. Subsequently the potential for utilising institutional finance to leverage offset driven outcomes and impacts are being missed³⁴.

The reasons for this include institutional barriers to engagement such as a lack of technical expertise with practical experience, limited clarity on financial regulations²⁷ governing offset sectors, and biodiversity offset based methodologies adapted for financial institutions. Comprehensive understanding of the risks posed by offset mechanisms has also not been developed by institutional financial markets.

Furthermore, the ability of financial institutions to

enforce compliance which governs biodiversity offset commitments, is complicated given the client relationship between the project developer and the lender.²⁸ By applying offset related covenants and through pricing offset risks into loan based products, which increases the lending rate, institutions risk either losing clients or being out priced by project financiers. Financing institutions and offset developers should reflect and better understand how offset projects directly influence underlying financial risk and therefore pricing. Variables such as the proportion of offset costs against total project costs, regulatory governance, and repayment mechanisms will impact finance pricing.

Complexities also arise for example, when large development projects are financed by multiple

institutions, as any single institution will have their leverage for enforcing offset driven outcomes diluted. In these cases, the lender's ability to influence offset commitments, implementation, and management is reduced in line with the total funding amount and number of financiers. Furthermore, the leverage that financial institutions have over offsets will depreciate as the finance is paid down, which on average appears to be for only 25% of the project's lifetime²⁹.

Regulators should protect offset projects by ensuring that banks and other financiers are not able to influence or jeopardise the viability and sustainability of offset projects by trying to reduce their lending or financing rates in return for less costly and potentially less effective offset projects. The required offset project budget should not be influenced by cheaper borrowing rates for example.

Initiatives, such as the Biodiversity for Banks (B4B) training programme launched by the Equator Principles Association, World Wildlife Fund (WWF) and the Business and Biodiversity Offsets Program (BBOP), are attempting to address these issues and assist banks to incorporate biodiversity in their lending process and decisions more effectively³⁰. They are highly commended by this White Paper and are key protagonists for following up on its recommendations.

ii. Management Continuity

Changes in management or ownership at the project level can hamper the continued flow of

²⁷ For example, the Financial Conduct Authority in the United Kingdom of Securities & Exchange Commission in the United States

²⁸ Personal communication, Fabian Huwyler (05/01/2017)

²⁹ Personal communication, John Pilgrim (21/12/2016)

³⁰ Personal communication, Courtney Lowrance (12/01/2017)

finance to offset commitments. During the first phases of a project there is normally greater enthusiasm for biodiversity offsets. However, this enthusiasm can diminish as projects move into their operational phase where, for example, management is incentivised to reduce costs. This can expose and make offsets vulnerable, especially in voluntary contexts³¹.

Changes to key management personnel also increase vulnerability to offsets, and new managers often seek to reduce costs and increase margins. Significant key-man risks become prevalent as “champions” or implementers of offsets can be replaced, promoted or leave the project developer⁴⁰. Similarly, if a project changes ownership during its operational lifetime, the offset commitments of that project will often fall away or be neglected in a voluntary offset. These non-permanence problems will always be present in voluntary offsets unless the offset asset passes outside the developer’s control.

iii. Regulatory Uncertainty

Legislative regulation should and does stimulate market confidence for offsets. Conversely, within voluntary contexts where offsets are not required by law but are voluntarily undertaken, poor legislative regulation can undermine confidence especially from institutional financiers.

Regulatory uncertainty or an outright lack of policy creates confusion and disincentivises offset investing. While offset regulation has rapidly increased across the world, there is a need for regulation to be contextually relevant and enforceable and it must not act as an obstacle for development. Rather it should work as an enabler of both³².

iv. Valuations

A related factor is the **adequate valuation** and need for consistent methodologies to support **economic pricing** of offsets. Effective, consistent, and accurate evaluation of biodiversity underpins mechanisms such as conservation banks and biodiversity exchanges. The application of consistent and robust methodologies is vital to enable the formation of tradeable units and creates a pricing basis for biodiversity credits. This process must be driven by regulation.

Equivalency implications again need to be addressed here. Maintaining a fluid market will depend on these rules and on the participation of enough buyers and sellers, or in other words liquidity and volume. Rules need to exist to protect against either public or private sector monopolisation of pricing or indeed pricing manipulation which is a characteristic of low volume, low liquidity equity markets for example.

However, the principle of equivalence is important to consider here as the greater the focus on equivalence, the more fragmented and the less impetus is given to form offset mechanisms such as conservation banks³³.

The Secretariat of the Pacific Community has observed limitations of valuation methodologies in cases where no underlying asset is available to value, as is the case with some protected areas. In these instances, developers can be encouraged to develop rather than safeguard natural areas³⁴.

³¹ *Personal communication, David Marsh (02/11/2016)* ⁴⁰ *Personal communication, Lisa Gaylord (06/12/2016)*

³² *Personal communications, Jared Hardner (01/11/2016), John Pilgrim (21/12/2016)*

³³ *Personal communication, John Pilgrim (21/12/2016)*

³⁴ *Personal correspondence Sylvie Goyet - Secretariat of the Pacific Community*

v. **Price competitiveness vs commercial project debt funding (balance sheet drivers) – cost of capital**

Within the conceptual nature of parts of this White Paper, in cases whereby offset financing and project finance are separated, the cost of offset specific funding may exceed that of project financing products. For example many lenders may secure their funding from these same commercial banks before adding their own interest margin factoring the offset risk.

In these cases, offset developers or companies would be expected to seek and prefer more unrestricted and lower cost capital. There is therefore a role, specifically for governments, to stimulate or subsidise lower lending or capital rates to offset focused financiers or enable other incentives such as tax allowances.

This function however requires project developers to internalise their environmental costs. With regards to government subsidisation this creates questions around who should pay to reduce social costs. An argument can be made that the public should contribute if the market finds that no-net-loss is a radically strict standard.

vi. **Standardisation across geographies to build sufficient scale (classic criticism of REDD and carbon markets from investors was the lack of volume and liquidity of tradable units)**

The mechanics of offset programmes should be standardised as much as possible across geographies and mechanisms, for example, by developing clear calculation methodologies. By standardising regulations across the European Union or USA for

example, a certain scale and critical mass of this sector could be generated. The resultant project and offset transparency, consistency and accountability at scale will in turn be more enticing for institutional investors such as pension funds.

Regulation again plays a role here. Carbon finance has in many cases failed as the underlying projects are too small. Larger projects, where the environmental impact and associated need for offsetting are heaviest, also bear significant project development costs which offset financing can exploit. Examples including mining, oil, hydropower and infrastructure development. Cross-border international best practice laws exist for many of these industries, and therefore there is the potential to standardise approaches and develop workable units of exchange for offsets at scale.

vii. **Security and Tenure of Land**

Secure land tenure plays a fundamental role in enabling offsets to function into perpetuity. While land can be secured through the gazetting of protected areas or conservation easements, that does not in itself guarantee these areas will be protected into perpetuity. Development of long-term contracts with individual landowners or with community organisations with traditional tenure offers an opportunity to secure offsets as long as there are sufficient long-term funds to meet contractual obligations with these parties.

Subsurface rights in certain jurisdictions (i.e. the right to the minerals or fossil fuels located under the ground) of conservation or offset areas are not protected or covered by protected area status or conservation easements.

For example, a discovery of oil or minerals located underneath offset areas might necessitate that the offset be moved to a different location, thereby compounding transaction but technically speaking, not always offset costs³⁵. It is therefore critical to consider the legal implications associated with land where offsets are planned and located. Legal and governance support has an important function in this regard.

³⁵ *Personal communication, John Pilgrim (21/12/2016)*

Role of Regulated Markets

Within the contexts of offset financing a distinction needs to be made between financial regulators and offset regulators.

Financial regulators govern and supervise financial institutions and their activities. Regulators provide guidelines and put in place restrictions in order to maintain integrity and best practice throughout financial sectors. Financiers are legally bound to adhere to these regulations in order to operate. Examples of financial regulators would be the Securities and Exchange Commission in the United States or the Financial Conduct Authority in the United Kingdom. A key role of these regulators is to protect investors against potentially unsuitable investment products, and therefore control financial institutions on which products they can design and offer investors. The role of the regulator is therefore to present safeguards and conditionality around relationships between financial institutions, the products they design and offer, and the suitability of clients for those products.

A critical point for offset developers to consider is the training, capacity and expertise which financial regulators have in place to effectively design guidelines and regulations governing the suitability of offset finance.

Offset regulation on the other hand is a market based regulator purely focusing on offset governance. In addition to setting offset project codes of conduct, its role would be to apply conditionality to offset

financing forms to ensure the offset is properly financed, delivered and liability managed. An international industry based equivalent would be the

International Accounting Standards Board which is an independent, private sector body that develops and approves international financial reporting standards.

In financial and offset contexts, regulation and policy provides a forum to identify and respond to risk, increasing transparency and consistency which in turn drives financial stability. Therefore, financial regulators, offset regulators, institutional markets and offset developers operating within regulated environments have a greater chance for mobilising, structuring and deploying offset finance at scale³⁶.

Formal policy in this regard increases support for and uptake of mass institutional participation, over and above only select niche players operating in the space³⁷.

While the funding approaches presented in this White Paper could conceptually be designed for both regulated and voluntary offset settings, voluntary contexts lack the structure, regulation and accountability required by financing institutions to mobilise offset funding at scale and to be compulsory. Therefore, voluntary offset funding mechanisms will be invariably weaker and susceptible to failure in the majority of cases, versus regulated forms of offset finance.

Policy advocates in this sector should be aggressive in requesting that adequate and properly structured offset finance be in place as a formal regulatory requirement.

Regulation can furthermore dictate the forms through which offsets are to be delivered. For

³⁶ Parker, C., Cranford, M., Oakes, N., Leggett, M. ed., 2012. *The Little Biodiversity Finance Book*, Global Canopy Programme; Oxford.

³⁷ Personal communication, Wayne White (17/11/2016)

example, national or sub-national regulation can stipulate that offsets be funded through the purchase of biodiversity credits, thereby establishing the foundation for a conservation banking system.

Likewise, regulation can require that offset payments be coordinated, grouped and utilised, through proper planning, to develop and fund aggregate offsets. Under the guidance of the World Bank, countries like Liberia and Mozambique are piloting such aggregate offset systems. WCS, and its partners, Biotope and Forest Trends, are implementing a project (COMBO) that is working with governments and offset stakeholders in Uganda, Guinea, Mozambique and Madagascar to explore the development of appropriate regulations and country-specific offset implementation measures that support offset aggregation, financing through third-party institutions, and upfront offset financing.

i. Mitigation Banks

The U.S. Wetland Compensatory Mitigation, driven by the Clean Water Act (§404), requires the offset of impacts on wetlands and streams after the mitigation hierarchy has been followed. Offsets must be sourced from projects in the same watershed as the impact, but can either be implemented by the project developer or must be purchased from third-party offset providers, called mitigation banks³⁸. In this case mitigation banks are a publicly or private owned wetland habitat which is protected, restored, created, or enhanced in order to generate and sell offset credits.

Similarly, conservation banks have been derived from mitigation banks, but differ in that they exist to protect threatened and endangered species and habitat and not wetlands exclusively.

The conservation banking regulatory system allows offset developers to establish conservation banks, often with finance from commercial lenders, to sell offset credits to project developers³⁹. Commercial lenders are attracted to and willing to fund such endeavours because the regulated market is formed through effective policies and legislation.

ii. Biodiversity Exchanges

Again, supported by regulated frameworks, biodiversity exchanges create a marketplace for buyers to purchase biodiversity offset credits structured around standard metrics of exchange from sellers. A somewhat equivalent example would be an emission reduction unit equating to 1 tonne of CO₂ equivalent. Metrics used to define biodiversity credits are more complex than for CO₂ and range from simplistic units, such as one hectare of forest, to complex combinations of natural habitat, species and ecosystems impacted.

Biodiversity exchanges facilitate business-to-business access for buyers, financiers, developers and importantly offsets themselves. In this regard, buyers have greater options to be more selective in the offset projects they engage which can be important for corporate social responsibility or governance reporting.

The New South Wales BioBanking scheme and BushBroker programmes in Australia provide examples of exchanges for market access and participation for both project developers legally required to offset their impacts, and other conservation minded stakeholders such as

³⁸ *Ecosystems Marketplace, Biodiversity Market Overview*, <http://www.ecosystemmarketplace.com/marketwatch/biodiversity/>

³⁹ *Personal communication, Wayne White (17/11/2016)*

conservation organisation, philanthropists, and governments⁴⁰.

⁴⁰ NSW Government, 2016, *BioBanking a market-based scheme*, <http://www.environment.nsw.gov.au/biobanking/>

Countries with Regulated Offset Policies

As of 2015, over 50 countries have passed laws or have policies in place that require biodiversity offsets or comparable compensatory mechanisms⁴¹.

	Offsets law guidance	Voluntary Contexts		Offsets law guidance	Voluntary Contexts
AFRICA			LATIN AMERICA		
South Africa	✓		Brazil	✓	✓
Morocco	✓		Columbia	✓	✓
Rwanda	✓		Paraguay	✓	
Egypt	✓	✓	Chile		✓
Uganda	✓	✓	Venezuela		✓
Madagascar		✓	Costa Rica		✓
Cameroon		✓	Panama		✓
Chad		✓	Argentina		✓
Ghana		✓	Bolivia		✓
Guinea		✓	Ecuador		✓
Namibia		✓	Mexico	✓	✓
ASIA			Peru		✓
China	✓		Uruguay		✓
Saipan	✓		NORTH AMERICA		
Vietnam	✓		USA	✓	✓
Philippines	✓		Canada	✓	
Malaysia		✓	OCEANIA		
Mongolia		✓	Australia	✓	

⁴¹ Sources: http://www.forest-trends.org/documents/files/doc_2411.pdf; <http://www.ecosystemmarketplace.com/marketwatch/biodiversity/>; <http://www.spc.int/wp-content/uploads/2016/12/Mitigation-hierarchy-offsets-review.pdf>

Kazakhstan		✓		New Zealand	✓	
Russia		✓		Federated States of Micronesia	✓	
Uzbekistan		✓		Kiribati	✓	
India		✓		Palau	✓	
EUROPE						
EU	✓					
Germany	✓					
Netherlands	✓	✓				
France	✓	✓				
UK	✓	✓				
Sweden	✓					
Spain	✓					
Denmark	✓					
Finland	✓					
Switzerland	✓					
Italy		✓				
Czech Republic		✓				
Norway		✓				
Sweden		✓				

Financial Guarantees and Associated Supportive Projects

Financing institutions and offset funding products can benefit in their design, pricing and application from both financial guarantees and associated supportive products.

Insurance and Guarantee Mechanisms

The primary objective of safeguard mechanisms is to ensure that offset funding remains available during periods when project developers are unable to raise funding. Secondly, they aim to protect the integrity and impact of the offset itself through to delivery.

Insurance mechanisms offer a service to ensure long-term sustainability of offsets. They conceptually address three main risk types:

- **Systematic risk** Market-based risk events outside of the control of the financier or developer, for example political unrest at a project site or a drop in commodity prices to which an offset payment mechanism is pegged;
- **Specific / Unsystematic risk** These include risks associated directly with the project itself for example a project developer refusing to pay or reducing the annual funding requirements of an offset;
- **Impact risk** Risks whereby despite solid

financing and execution, the offset may not be delivered to the intended state, for example due to flooding or natural forest fire.

Engagement with Insurance Sectors

Research for this White Paper from the biodiversity offsets community suggests insurance mechanisms will indeed be beneficial and welcomed. However, no such mechanism currently exists. Initial discussions undertaken as part of this research with commercial insurance and banking industries have proven positive for the design of offset-related insurance products⁴². These industries already have experience in providing guarantees to, for example, extractive industries by providing surety that mining companies will observe clean-up and rehabilitation commitments after mine closure. Indeed, mechanisms already used for environmental commitments at mine closure can potentially be adapted to enforce biodiversity offset.

Insurance uptake: Naturally, the appropriateness and uptake of insurance measures will be impacted by and depend on the economics of these products and whether they can be priced at levels acceptable to the project developer. Project developers should be encouraged to engage more proactively with these products either through regulatory provision or as part of financing agreements⁴³.

Insurance policies: Insurance offers protection against very specific trigger events stipulated in the policy. Issued by regulated insurance providers, insurance is a common form of protection used throughout many sectors and

industries to guard against a myriad of risks.

Insurance products typically work whereby the insured pays an insurance premium at agreed intervals in return for insurance cover under the policy. The size and cost of this premium or the price of the total policy are determined by a number of factors including the number of trigger events, the likelihood that these events could occur, and the behaviour and previous insurance claims of the insured.

It is conceivable that an insurance policy or contract could safeguard against a project developer lapsing or reducing the agreed annual funding requirements of an offset.

Insurance providers will not however be able to simply ensure that offset funding requirements are met during times when project developers are unable to do so. Such an arrangement has been confirmed as economically undesirable since the trigger would be open to subjective interpretation as to what constitutes “times” that project developers are unable to pay offsets. As the number and likelihood of trigger events

⁴² Personal communication, EJ Hentenaar (17/01/2017)

⁴³ Personal communication, Jared Hardner (01/11/2016)

increase, so will the cost of the insurance and associated premiums.

These concerns can be addressed by limiting the number of trigger events in the contractual agreement of the policy. The insurance sector and providers will therefore need to consider which events may constitute a trigger and payout.

For example, in the context of an extractive company, it is unlikely that an offset insurance provider will be willing to cover the risk of a slump in commodity prices, and thereby a slump in the company revenue (whereas a general insurer may be willing to cover this risk).

Insurance mechanisms further offer a means to disincentivise offset spending cuts, as triggering a pay-out may result in higher future premiums or the project developer becoming uninsurable. An incentive is therefore created for the project developer to sustain their offset payments.

Insurance product requirements: Based on interviews conducted in preparing this White Paper⁴⁴, insurance providers are only willing to underwrite specific risks, for example a project developer lapsing on an offset, if definitive trigger events are predetermined in the insurance contract, and only in contexts where offsets are deemed a legal requirement i.e. regulated markets.

Offset commitments enforced by regulation or legitimised through inclusion in a project developer's environmental licence, for example, would therefore become of possible interest to insurance providers.

Insurance-based products will naturally have a restricted lifespan, most likely governed by the nature of the applicable project. Mechanisms

that protect payments to the offsets of mining projects should, for example, at least be in place for the duration of the mining activities and possibly longer.

However, these types of products will not be structured into perpetuity and are unlikely to satisfy permanence requirements. It is therefore critical to consider how permanence and longterm finance can be ensured in cases where safeguards are in place to protect short-term funding.

Captive Insurer

Captive insurers are capitalised by the insured to an amount capable of covering the full risk liability and to satisfy the statutory requirements of wherever the captive insurer is domiciled. Since the insured and the captive insurer sit within the same corporate family, there is effectively no transfer of risk to an external party. The appropriateness of captive insurance therefore needs to be carefully considered, including the costs and benefits derived.

As with the other guarantee and insurance mechanisms discussed in this section, captive insurers are often used by oil and gas or extractive industry companies. Such companies can choose to purchase insurance on the market, but given the nature of their operations, this can be incredibly expensive. Alternatively, these businesses can opt to self-insure, i.e. establish a captive insurer.

Captive insurers have some advantages. For example, they enable the insured to gain access

⁴⁴ Personal communication EJ Hentenaar – Lockton Solicitors

to reinsurance markets where contributions are normally tax deductible⁴⁵.

Once the captive insurers are established, they can be capitalised through premiums and contributions from the insured. If the insurer has been sufficiently capitalised, the insured may access the available compensation in an insurance event.

Other advantages of captive insurers, besides access to the reinsurance markets and tax deductible premiums, include

- The insured can dictate premium payments and adjust them around their own cash flows;
- Investment policies can be tailored to the needs of the insured and even used as cover for the normally uninsurable;
- Investment income can be generated through investing the capital in the captive insurer;
- Captive insurance provides an incentive to reduce the potential of a claim through proactive minimisation of risk⁴⁶.

Possibly the most well-known use of captive insurance is within BP's captive insurer, Jupiter Insurance Ltd. Jupiter, based in Guernsey, insures BP for a variety of incidents worldwide. The captive insurer has been capitalised over time through premiums and reportedly had a US\$ 6 billion capital base in 2009. Following the Gulf of Mexico oil spill, BP reportedly has access to \$ 700 million of payments from Jupiter to cover associated costs and expenses⁵⁶.

Within biodiversity offset contexts, captive insurers may be classed as providers of

⁵⁶ *Business Insurance*, 2010, BP can tap captive for \$700M in loss of rig, <http://www.businessinsurance.com/article/20100509/ISSUE01/305099971>

guarantees against offset financing failures. Hypothetically, a project developer could be set up to capitalise a captive insurer in a preferred domicile.

In an event the project developer is unable to meet its offset funding commitments, the captive insurer could be drawn against. This structure therefore ensures that offsets remain funded, but also acts as an incentive for the project developer not to lapse on their offset commitments as this will result in a reduction of capital and resultant investment income from its captive insurer.

Making Offsets Financially Sustainable into Perpetuity

The principle of permanence requires that offset areas are sustainably financed into perpetuity and not only for the lifetime of the project. Whilst debt and insurance mechanisms provide an opportunity for offsets to be more adequately financed, they do not necessarily provide the project developer with a long-term financing solution.

For example, it is unlikely that project developers would want or be able, to finance an offset area into perpetuity through debt and insurance-based products. This will particularly

⁴⁵ ICMM, 2005, *Financial Assurance for Mine Closure and Reclamation*, <http://hub.icmm.com/document/282>

⁴⁶ *Captive Insurance Alternatives, Advantages of a Captive*, <http://www.captive-insurance-alternatives.com/advantages-of-acaptive.php>

manifest in cases where the project lifetime is only a matter of years. Other mechanisms must therefore be sought to make offset areas sustainable and allow project developers to “exit” them.

It is important to note this does not absolve the project developer from their ultimate responsibility for the offset area. It simply necessitates options that allow that area to continue to be funded without persistent involvement of the project developer.

Furthermore, offsets are not the only aspect of environmental management where permanence is a factor. For example, many extractive industries are responsible for water treatment into perpetuity. This brings into question the relativity of permanence in the face of climate change, for example. Constructive thinking about this concept is therefore required.

Conservation Trust Funds

CTFs, sometimes referred to as environmental funds, are “long-term funding mechanisms legally restricted to specific purposes. They are used to make payments to offset providers over the long term in order to meet management costs or where the trust fund provides a source of income to manage the offset into the future”.⁴⁷ As previously noted in this White Paper, CTFs are in fact holding vehicles and finance conduits. CTFs are therefore neither offset development entities or an investment agency, but rather a channel through which money, both public and private, can flow towards environmental or biodiversity outcomes.

A 2008 review⁴⁸ of CTFs by the Conservation

Finance Alliance (CFA) noted that such funds have been established in more than 50 countries in the developing world, and are especially prevalent in Latin America and the Caribbean. In 2009, it was estimated that these funds managed a total of c. US\$ 1.5 billion.

CTFs have become increasingly popular as a mechanism to secure and store long term finance for conservation projects. Structurally, they target local or project specific funds to larger scale, national, regional, or even global funds designed to support conservation projects or outcomes.

There are different types of CTFs, although some CTFs have taken on the role of umbrella funds, combining many of these types and managing them together, albeit for different purposes. CTFs used in the context of biodiversity usually assume one of the following forms⁵⁹:

- **Endowment funds:** Capital within endowment funds is invested and only the returns from the investments are used to fund the desired conservation activities - thereby ensuring the fund can, at least theoretically, exist into perpetuity;
- **Sinking funds:** Capital within sinking funds is invested to generate a return, but pay-outs to conservation activities are more than the return generated by the investment, effectively drawing down the capital principal over the lifetime of the fund. These funds therefore do not allow for perpetual income for offsets, but can be used to finance a given stage of an offset

⁴⁷ DG Environment, 2014, *Study on specific design elements of biodiversity offsets: Biodiversity metrics and mechanisms for securing long term conservation benefits*

⁴⁸ CFA, 2008, *Rapid Review of Conservation Trust Funds*, <https://www.cbd.int/financial/trustfunds/g-rapidassess.pdf>

⁵⁹ World Bank Group, 2016, *Biodiversity Offsets: A User Guide*, <http://documents.worldbank.org/curated/en/344901481176051661/Biodiversity-offsets-a-user-guide>

project;

- **Revolving funds:** These funds receive regular additional resources to replenish the amounts of capital and interest previously used to finance conservation activities. Like endowments, these funds can theoretically exist into perpetuity to support offset projects through continuous additional contributions and returns on invested capital.
- **Hybrid Combinations:** CTFs can also combine the above funds. An endowment fund can, for example, have a separate sinking fund that is used to increase its capital over time, while also funding short term costs.

Furthermore, the CFA has identified the necessary requirements under which a CTF can be considered. These include:

1. The issue that needs to be addressed needs a commitment for at least 10 to 15 years;
2. Government support for such structures outside its direct control;
3. A critical mass of people, from different sources, that can work together;
4. Trustworthy financing and legal practices.

While CTFs could be established for a single offset, they offer advantages and economies of scale as larger financing structures that combine

various financing sources. Although development of a new CTF to help manage offset financing is an option that would result in establishment of a long-term funding institution, in many countries CTFs already exist and can put in place the internal mechanisms to manage offset financing. In the biodiversity markets, extractive companies in particular, seek to partner with existing CTFs and mostly in a sinking fund form. CTFs should however be cautious in ensuring that they share the values of corporate partners and be aware that partnership may tarnish their image. In addition, partnerships between corporates and CTFs have also evolved, some of which who have shown unique approaches, such as Peru's FONDAM that offers consulting services to mining companies or Suriname's SCF that proposes management of companies' foundations⁴⁹.

In a further evolution of the CTF, the concept of aggregate offsets has recently grown in popularity along with the recognition for the need of a recipient of financing for the management of the aggregated offset.

Aggregate offsets effectively draw capital from multiple development projects into a single vehicle which distributes finance towards dedicated, large scale offset areas and CTFs are well placed to play a role in managing the flow of funds from developers to the offset.

Aggregate offsets are being explored in Liberia for example, by establishing a single conservation trust fund for the extractive industry designed to support a series of proposed protected areas through an accountable and transparent mechanism⁵⁰, while in Mozambique Biofund is exploring how it can best play a role as an offset funder/developer as the country develops its offset regulations.

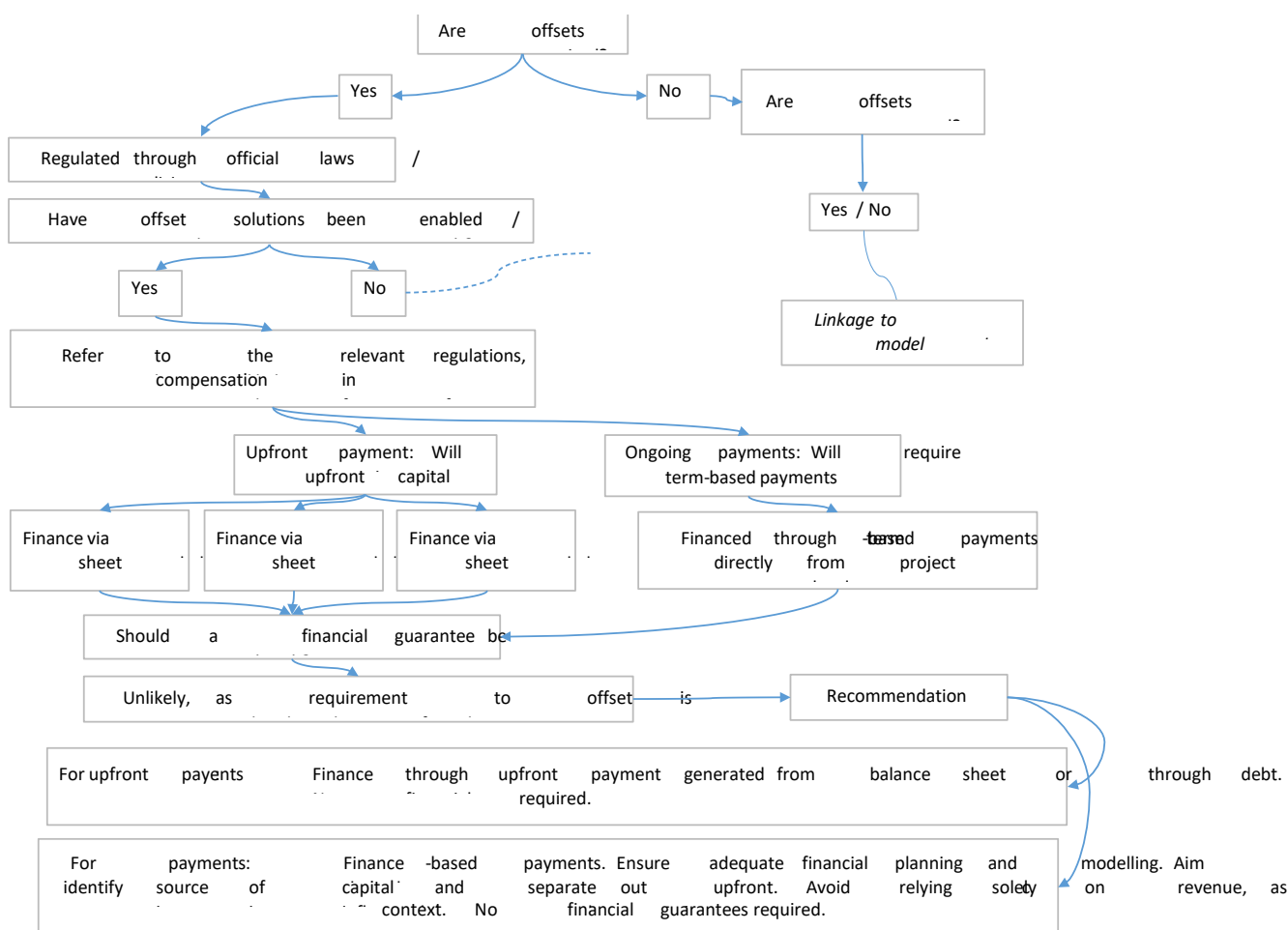
⁴⁹ CFA, 2008, *Rapid Review of Conservation Trust Funds*, <https://www.cbd.int/financial/trustfunds/g-rapidassess.pdf>

⁵⁰ World Bank Group, 2016, *Biodiversity Offsets: A User Guide*, <http://documents.worldbank.org/curated/en/344901481176051661/Biodiversity-offsets-a-user-guide>

Offset Decision Tree

Conservation Capital has developed a “decision tree” as a further attachment to this White Paper. This aims to guide project and offset developers through a process of assessing suitable forms and structures of offset finance and the suitability of insurance or underwriting mechanisms.

Set out below is a simple example demonstrating the process by which a project developer may perform the evaluation of potential forms of offset funding:



END

