



Biodiversity offsets: voluntary and compliance regimes

A review of existing schemes, initiatives
and guidance for financial institutions
August 2012



UNEP



WCMC



UNEP **Finance Initiative**
Innovative financing for sustainability



1972-2012:
Serving People
and the Planet

Citation

Doswald, N*, Barcellos Harris, M*, Jones, M*, Pilla, E‡, and Mulder, I§. (2012) *Biodiversity offsets: voluntary and compliance regimes. A review of existing schemes, initiatives and guidance for financial institutions.* UNEP-WCMC, Cambridge, UK. UNEP FI, Geneva, Switzerland

* UNEP - World Conservation Monitoring Centre (UNEP-WCMC)

§ UNEP - Finance Initiative (UNEP-FI)

‡ Inter - American Development Bank

Disclaimer UNEP-WCMC

The content of this paper do not necessarily reflect the view or policies of UNEP-WCMC, contributory organizations or editors. The designations employed and the presentations do not imply the expression of any opinion whatsoever on the part of UNEP-WCMC or contributory organizations, editors or publishers concerning the legal status of any country, territory, city or area or its authority, or concerning the delimitations of its frontiers or boundaries or the designation of its name of allegiances.

Disclaimer UNEP FI

The United Nations Environment Programme Finance Initiative (UNEP FI) is a strategic public-private partnership between the United Nations Environment Programme (UNEP) and more than 200 financial institutions globally. The Biodiversity & Ecosystem Services Work Stream is based on the need to engage the financial services sector in identifying and addressing the challenges arising from the loss of biodiversity and the degradation of ecosystem services.

Unless expressly stated otherwise, the opinions, findings, interpretations, and conclusions expressed in the paper are those of the various contributors. They do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor the views of UNEP, the United Nations, or its Member States. Neither do they represent the consensus views of the member institutions of UNEP FI. The designations employed and the presentation of material in this paper do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries.

Disclaimer Inter-American Development Bank

The information and opinions presented in this publication are entirely those of the author(s), and no endorsement by the Inter-American Development Bank, its Board of Executive Directors, or the countries they represent is expressed or implied.

This publication has been made possible due to a partial sponsorship of the IDB.

Design: Romeo GraphicDesign&

Published in 2012 by UNEP-WCMC and UNEP FI

Copyright © UNEP-WCMC and UNEP FI

Prepared by



UNEP promotes environmentally sound practices globally and in its own activities. This publication is printed on 100% recycled paper, using vegetable - based inks and other eco-friendly practices. Our distribution policy aims to reduce UNEP's carbon footprint.

Summary

“Biodiversity offsets” are a conservation and business tool that have arisen from regulatory requirements in a number of countries (e.g. USA, Brazil and in Europe). Biodiversity offsets are positive measurable actions undertaken to compensate for a harmful action related to project development, with the aim of redressing the balance or tipping it towards the positive. This ensures that overall there is no adverse affect or ‘no net loss’ to biodiversity.

A growing number of businesses, including financial institutions, are undertaking voluntary biodiversity offsets as part of their environmental or risk management strategies. Despite the experience and benefits generated, engaging in offset activities raises a number of challenges, such as addressing the reputation problems associated with poor outcomes and metrics, the design of the offset, cost and timing, application to different business sectors, and the eventual implementation.

Nevertheless, the motivations for financial institutions to engage are clear, demonstrating leadership, gaining an ability to influence the regulatory process, reducing operational risk exposure, and taking advantage of new business development opportunities.

A number of initiatives are investigating these issues and are generating guidance, and in doing so are demonstrating that biodiversity offsets are not only feasible but also beneficial and contribute to long-term sustainable development.

Contents

1.	Introduction	5
2.	Compliance and voluntary biodiversity offset schemes	7
2.1	Compliance regimes for biodiversity offsets	7
2.2	Voluntary offsets	9
3.	Biodiversity offsets for business: opportunities and risks	12
3.1	Issues and existing guidance for implementing biodiversity offsets	13
3.2	Biodiversity offsets and the financial sector	15
3.3	The business case for banks	16
3.4	Challenges and difficulties	16
4.	Conclusions	19
	Bibliography	20
	Annex I: Offset schemes in Latin American countries	22

1. Introduction

Mitigation of social and environmental impacts as part of any proposed development have increasingly become accepted good practice as companies strive to reduce exposure to reputational risk and develop a social and legal licence to operate. One of the mitigation measures being increasingly adopted by regulatory and voluntary initiatives are **biodiversity offsets**.

Biodiversity offsets are positive measurable actions undertaken to compensate for a harmful action related to project development, with the aim of redressing the balance or tipping it towards the positive. This ensures that overall there is no adverse affect or 'no net loss' to biodiversity. They can be applied as part of the mitigation hierarchy (avoid, minimize, restore and offset) along with prevention and mitigation measures.

This paper provides an overview of biodiversity offsets as a mitigation mechanism and examples of the different types of global regulatory and voluntary initiatives adopting this concept, as well as highlighting some existing challenges and opportunities.

Environmental sustainability is a global concern epitomised in the 7th Millennium Development Goal that 192 United Nations member states have agreed to achieve by 2015. **Biodiversity** is central to environmental sustainability because it underpins the **ecosystem services** that contribute to human-wellbeing (1). Under the Convention on Biological Diversity (CBD), 193 states have committed to protect and reduce the loss of biodiversity, which is occurring at an alarming rate (1; 2). Many countries additionally have national laws and regulations concerning biodiversity conservation.

Biodiversity has been rising up the agenda world-wide since the Rio Earth Summit in 1992, not only in policy and public opinion but also in business.

Key definitions:

Biodiversity is the variety of life on earth, including in and between ecosystems, species and genes.

An **ecosystem** is the agglomeration and interaction between all living and non-living things in a particular area.

Ecosystem services are the resources and processes supplied by ecosystems that benefit humankind, such as clean water, food, fuel, climate regulation and recreation.

An **offset** is a positive measurable action undertaken to compensate for a harmful action with the aim of redressing the balance or tipping it towards the positive.

All businesses both depend to some extent on biodiversity due to the ecosystem services it delivers, and impact on biodiversity (1). This is especially the case for on-the-ground development, extraction of resources such as oil, gas, coal and metals, infrastructure projects, and agriculture. Negative environmental (and hence biodiversity) impacts from such projects include destruction and degradation (including pollution) of **ecosystems**. Conversely biodiversity conservation can benefit business and could be a key part of a company's environmental and social responsibility strategy.

Biodiversity is becoming relevant to business for four main reasons:

1. regulatory requirements;
2. external pressures or market access that influence operational practices;
3. access to capital related to a strengthening of lending requirements; and
4. reputational risks that arise from the way a company conducts business and thereby affects the environment and people. A number of banks in the United States, including Morgan Stanley, JPMorgan Chase and Citi, have tightened lending conditions in relation to mountaintop-removal

mining. This example indicates that ensuring good environmental practice is an important issue for banks and investors (3; 4; 5).

Apart from compulsory government legislation and ethical motivations by businesses to apply mitigation measures, there is an inherent question from a business perspective of whether the costs to apply mitigation measures, including the use of offsets, outweigh or balance a reduction in the related reputational, operational and financial risks.

A growing number of governments and businesses already have measures (either mandatory or voluntary) in place to avoid and minimize negative environmental impacts from business activities and, in some cases, to offset and/or compensate for any damage done. These measures may follow a **mitigation hierarchy** (Box 1) though they are not always referred to as such. The aim of the mitigation hierarchy is to adequately respond to the potential negative impacts from a development activity and to ensure 'no net loss'. It is also used to accrue additional conservation benefits. Indeed, the goals of some offset frameworks include a 'net gain' aspiration.

1

The mitigation hierarchy

The mitigation hierarchy is typically a five-step set of principles:

1. Avoid negative impacts where possible
2. Minimize the negative impacts if necessary
3. Restore and rehabilitate the environment from the environmental impacts
4. Offset the unavoidable and necessary harms by additional compensatory conservation action.
In some instance, financial compensation may be required either in lieu or in addition (§).
5. Accrue benefits to the environment

§ Variations of this hierarchy exist, including different word usages, but the principles are the same. In the USA for example, mitigation and compensation (and sometimes compensatory mitigation) are often used interchangeably for offset. Here we use compensation as meaning a financial fee for environmental (and/or social) damage, and mitigation as actions to alleviate any negative impacts.

2. Compliance and voluntary Biodiversity Offset schemes

An effective biodiversity offset should ensure that overall a project's unavoidable damage to an ecosystem is counterbalanced elsewhere. The use of biodiversity offsets as a tool for companies has arisen due to public concern over the environment and biodiversity and these may in the future contribute to international biodiversity markets (6, 7). The thinking behind market-based instruments, such as offsets, is that if positive and negative impacts on biodiversity can be measured and represented as credits and debits, they are more easily integrated as benefits or costs in economic decision-making. They are being driven by regulatory compliance, government-mediated payments, and voluntary schemes (8).

In this section, compliance regimes that have been developed, or are in development, are highlighted, along with the types of voluntary regimes that have emerged.

2.1 Compliance regimes for biodiversity offsets

There are three main legislative frameworks that can lead to offsets:

1. **Species and habitat legislation**
2. **Environmental Impact Assessment (EIA) regulations**
3. **Offset or compensation regulations**

North America, Europe and Australia are the main proponents for regulatory biodiversity offsets arising from habitat and species legislation. EIA or specific offset or compensation regulations are either the current mechanism or provide a potential driver for biodiversity offsets in Latin America and Asia (see Summary Table). Although there seems to be some interest in offsets in Africa, with possible developments within existing legislation, currently offsets in African countries are mostly voluntary. The agreement by Parties to the CBD in 2008 to promote business engagement, with biodiversity offsetting being one tool (9), serves as a further driver for governments to put offset policies in place and engage with businesses undertaking offsets.

1. Species and habitat legislation

The oldest and most developed biodiversity offset framework is that of the USA regarding the conservation of wetlands and endangered species. Federal guidelines to the Clean Water Act (1972) require that permits given to develop on wetlands follow a specified sequence of avoidance, minimization and compensatory mitigation (offset); and a similar procedure is required for exploitation of endangered species under the Endangered Species Act (1973). In the 1990s, mitigation banks for the wetlands offset were started, followed a little later by conservation banks (collectedly termed habitat banks) for endangered species.

Habitat banking involves the purchase (and conservation/restoration/creation) by a third party organization of land or habitat, which is then converted into credits that can be purchased by developers needing to offset a development. The success of these habitat banks has created interest in a number of countries including in Latin America and the Caribbean (10) and Europe (11).

2. Environmental Impact assessment (EIA)

A growing number of countries have specific EIA regulations in place for the development of

projects, but the regulations surrounding the outcomes differ between countries. For instance, EIA law in both Chile and Mexico requires avoidance, preventative measures and compensation (12). Other countries, such as China and Argentina, require compensation funds to be paid, most of which go to conservation efforts in the country (12). The practice and enforcement of these laws and regulations also varies among countries.

Some countries have EIA regulations in place but these do not yet require offsets or compensation. However, EIAs are still an effective mechanism through which mandatory offset regulation could be set eventually (10; 13).

3. Offset or compensation regulations

Finally, some compliance mechanisms regarding biodiversity offsets or compensation are very specific and are not part of either habitat/species legislation or EIA. In Brazil, for instance, offsets and compensation are required from the Forestry Code and Protected Areas Law respectively. In the former, Brazilian landowners are required to retain a fixed percentage of natural vegetation on their property or must offset by compensating another landowner to retain more. In the latter, developers must compensate their industrial impacts by paying a fee to the Protected Areas system, which supports the maintenance of existing or establishment of new protected areas.

Compulsory biodiversity offset regulation has existed in the Netherlands since the early 1990s. The 'National Ecological Network' (Ecologische Hoofdstructuur or EHS) was implemented to increase the amount of nature areas from 460,000 ha in 1991 to 730,000 ha by 2018 over a 25 year time span. Any attempts to encroach on areas destined to be an 'EHS' area require the use of the mitigation hierarchy with the application of biodiversity offsets as a last resort, in order to achieve the basic principle of a 'no net loss of biodiversity'. There are a number of laws that underpin the application of these offsets.

Also classed in this category are existing and planned regulations that specifically address biodiversity offsets. For instance, although Madagascar has EIA regulations that could (but currently do not) address biodiversity offsets, the country aims to develop a biodiversity offset policy for mining and logging companies (14). Costa Rica and Panama currently have ecosystem service payment/compensation schemes, which are also the potential basis of a biodiversity offset mechanism.

Table 1 : Countries where there are existing, planned and potential laws and regulations leading to offsets (or compensation).

Planned and potential laws refer to those where a framework is established for offsets or compensation but offsetting is either not yet specifically mentioned, in force, or in practice enforced. [Information taken from (14) – not exhaustive].

‡ EU legislation, e.g. EU Natura 2000 sites, as opposed to European country legislation

Laws Regulations	Species Habitat legislation	EIA	Offset Compensation
Existing	USA; Canada; European Union‡; Germany; Switzerland; Australia	Mexico; Chile; South Africa; China; Pakistan	USA; Mexico; Brazil; Colombia; Paraguay; Netherlands; Australia
Planned or potential	UK; France; Vietnam; New Zealand	Argentina; Uganda; Madagascar; Ghana; Egypt; EU; India; Japan; Malaysia; Mongolia; Pakistan; Russia; South Korea; Thailand; Peru	Costa Rica; Panama; South Africa; Uganda; Madagascar; Indonesia; Mongolia

2.2 Voluntary offsets

Voluntary offsets are undertaken either to pre-empt a mandatory requirement on operational grounds or because offsets are a natural follow-on from a business' social and environmental policy and good practice commitments.

As shown in **Table 1** above, many countries have legislation in place that could lead to mandatory offsets or are actively considering putting offset polices in place. Currently there are a number of examples of voluntary offsets being undertaken by businesses in different countries, including in the USA, Chile, Venezuela, South Africa, Uganda, Madagascar, Ghana, Guinea, Mozambique, Sweden, and Malaysia (14). Most voluntary offsets are undertaken by extractive industries (oil and gas and mining) but there are also examples from other sectors, such as water and urban development (14; 15; 16).

Voluntary offsets are usually undertaken by companies with the support of conservation organizations (e.g. The Nature Conservancy (TNC)'s Development by Design initiative; (13), and Conservation International (CI) - see Box 2), consulting firms or through partnerships with various organizations such as the Business and Biodiversity Offsets Programme (BBOP) (17). Some companies additionally have environmental/biodiversity strategies with a commitment to have a 'Net Positive Impact' on biodiversity, where biodiversity offsets are required (e.g. Rio Tinto (18) or Gold Reserve Inc. - see Box 2).

Gold Reserve Inc: An example of a voluntary offset scheme in Venezuela

Gold Reserve Inc undertook a biodiversity offset for its Brisas Copper-Gold Project in Venezuela with support from Conservation International.

Gold Reserve Inc commissioned an environmental and social impact assessment for the project, which has an estimated mining area of approx. 3,100 ha of forest land in the Imataca Forest Reserve. Biodiversity information in the area was gathered prior to the project implementation and evaluated in a regional context.

The mitigation hierarchy was followed to avoid and minimize any environmental impacts. The residual impacts were offset to ensure “no net loss”. A number of biodiversity offset activities were undertaken: the creation and expansion of a protected buffer zone adjacent to the Canaima National Park upstream of the Brisas mine site, tree-planting, a number of agro-forestry and ecotourism projects based on traditional livelihoods, and the establishment of a biodiversity research station (14; 29; 30).

Moreover, the Equator Principles (EPs), a voluntary set of standards for determining, assessing and managing social and environmental risk in project financing with capital costs exceeding USD 10 million, apply the mitigation hierarchy. The EPs have been adopted by 77 financial institutions (of which 3 associates) as of August 2012. The EPs are meant to ensure that projects financed by commercial banks, which may exhibit considerable impacts on biodiversity and ecosystems, are “developed in a manner that is socially responsible and reflect sound environmental management practices. By doing so, negative impacts on project-affected ecosystems and communities should be avoided where possible, and if these impacts are unavoidable, they should be reduced, mitigated and/or compensated for appropriately” (19). Recently, the IFC Performance Standards, which form the operational basis of the Equator Principles, have been revised and the new version came into effect as of January 2012. For the first time biodiversity offsets are mentioned explicitly in Performance Standard 6 on ‘Biodiversity Conservation and Sustainable Management of Living Natural Resources’ (20). In effect this means that those banks that comply with the Equator Principles are obliged to apply the mitigation hierarchy in project finance as stipulated by the IFC (see Box 3).

The relevance of the new IFC Performance Standard 6

The Equator Principles (EPs) are a credit risk management framework for determining, assessing and managing environmental and social risks in project finance transactions. They are adopted voluntarily by financial institutions and are applied where total project capital costs exceed USD 10 million. The EPs are primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making. (31)

The new Performance Standard 6, which came into effect as of January 2012, specifically addresses the mitigation hierarchy and biodiversity offsets. Paragraphs 7, 10, 17 and 19 are all relevant to offsets and the mitigation hierarchy:

7. *As a matter of priority, the client should seek to avoid impacts on biodiversity and ecosystem services. When avoidance of impacts is not possible, measures to minimize impacts and restore biodiversity and ecosystem services should be implemented. Given the complexity in predicting project impacts on biodiversity and ecosystem services over the long term, the client should adopt a practice of adaptive management in which implementation of mitigation and management measures are responsive to changing conditions and the results of monitoring*

throughout the project's lifecycle.

10. For the protection and conservation of biodiversity, the mitigation hierarchy includes biodiversity offsets, which may be considered only after appropriate avoidance, minimization, and restoration measures have been applied. A biodiversity offset should be designed and implemented to achieve measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity; however a net gain is required in critical habitats. The design of a biodiversity offset must adhere to the "like-for-like or better" principle and must be carried out in alignment with best available information and current practices. When a client is considering the development of an offset as part of the mitigation strategy, external experts with knowledge in offset design and implementation must be involved.

17. In areas of critical habitat, the client will not implement any project activities unless all of the following are demonstrated:

- No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical;
- The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values;
- The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time; and
- A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program.

19. In instances where biodiversity offsets are proposed as part of the mitigation strategy, the client must demonstrate through an assessment that the project's significant residual impacts on biodiversity will be adequately mitigated to meet the requirements of paragraph 17.

For more information, please see the IFC Performance Standards, Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management:

<http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards>

Voluntary offset programs, such as BBOP, often follow a 'net gain' objective. Companies undertaking mandatory offsets where regulations stipulate or are understood to require a 'no net loss' objective sometimes voluntarily include a net gain approach (Australia is the exception with a net gain required for native vegetation).

The approaches to biodiversity offsets in a voluntary setting can also be more varied and innovative than in a mandatory setting. For example, under a credit system (e.g. in habitat banking), offsets can be stacked, i.e. multiple credits are valued and sold from one site, or bundled, where multiple ecosystem services are bundled together. Working examples of the latter are evidenced in the carbon markets, where biodiversity benefits are sometimes used to add value (e.g. Climate, Community and Biodiversity Alliance (CCBA) certified projects).

3. Biodiversity Offsets for business: Opportunities and risks

In the broadest sense, biodiversity markets include any payments for the protection, restoration, or management of biodiversity. This includes biodiversity offsets, conservation easements, certified biodiversity-friendly products and services, bio-prospecting, payments for biodiversity management, hunting permits and eco-tourism (8).

Biodiversity markets however often refer only to those that relate to the mitigation hierarchy. Based on this more narrow definition, the current global annual biodiversity market size is at least \$2.4 - 4.0 billion (14), and is primarily driven by offset programmes in the United States that operate through wetland banking and species or conservation banking. The actual market size is likely to be larger than this because many existing programmes are not transparent enough to estimate their value (14).

Future non-trivial market development opportunities are highly likely because of the interest in biodiversity (and offsets) worldwide. Furthermore consumer preference is increasingly favouring environmentally responsible practices and products. Additionally, and as previously discussed, there are many reasons why business would want or need to be involved in biodiversity offsets (see Box 4), and indeed many companies are currently voluntarily undertaking biodiversity offsets (14; 21).

4

Why offset?

A report by IUCN and Insight Investment (15) conducted 37 interviews and further discussions with an additional 20 people from the private sector, governmental and intergovernmental organizations as well as non-governmental organizations (NGOs) to understand the business case for biodiversity offsets. The report found that the private sector's involvement in voluntary biodiversity offsets was motivated by their role in providing:

- a)** a licence to operate by improving the business' reputation and regulatory goodwill;
- b)** better access to capital;
- c)** lower costs of compliance with regulations;
- d)** new market opportunities;
- e)** competitive advantage and influence over regulations;
- f)** 'cleaner' disposal of assets during mergers and acquisitions;
- g)** employee satisfaction and retention.

However, there are risks and challenges to undertaking biodiversity offsets:

One of the most frequently cited risks of biodiversity offsets concerns their ethos: it is feared that offsets can in fact be 'a licence to trash' (22). This could lead to reputational risks for businesses and financial institutions. However, given the recognition of biodiversity offsets from the CBD and development of robust principles, which are increasingly being adopted, this risk can be addressed as long as the mitigation hierarchy is followed. Nonetheless, it does raise important issues concerning the "thresholds" of each step in the hierarchy (discussed below). Any contentious issue arising from the undertaking of a biodiversity offset, could lead to criticism and hence negate the business benefits.

There are financial and legal implications of developing a biodiversity offset, as well as

implementation questions that need to be addressed. Offsets can cost companies large sums of money and many voluntary contributions have been in the order of millions of dollars (15). This may not necessarily be a problem for high earning projects with a relatively small area of impact to offset, but could be more challenging for other sectors with a larger footprint or complex supply chains.

Timing and duration of the offset are other important factors. Offsets are usually started prior to the commencement of the development project, incurring upfront costs (23). In the USA, offsets are legally required to be “in perpetuity” and most conservation organizations will argue for offsets to be long-term. This requires long term financial and legal assurances in order to implement an offset project (23).

3.1 Issues and existing guidance for implementing biodiversity offsets

A number of challenges in developing and implementing offsets may cause concern to prospective offset developers and sponsors.

First is the question of “thresholds”: at what stage is a biodiversity offset appropriate? Biodiversity offsets are deemed not appropriate for ‘critical’ or ‘non-substitutable’ biodiversity. This, however, can be difficult to determine and guidance on the topic is still sparse. In Western Australia, for example, an offset is considered to be inappropriate in any case where “residual environmental impacts are expected to have an adverse effect on ‘critical’ or ‘high value’ assets” or where the biodiversity values to be lost cannot be replaced (24). These considerations require effective definition and identification of critical/high value biodiversity.

Secondly, is the question of the assessment of the site and the offset site. There are two different and related issues to this question. The first is about how to **measure or value biodiversity** (See Box 5). There are a number of different options. Many mandatory schemes rely on a proxy measure based on area of land and different ratios dictated by the regulations (e.g. a 1:1 area ratio between development site and offset site or a greater proportion of offset land). The second is about the **equivalence** of the offset site to the developed site. On the whole, it is agreed that offsets should be on a “like-for-like” (or “in-kind”) basis whereby the biodiversity values being conserved are equal to the values being lost, as adopted by the USA wetland mitigation approach for example. However, where it is not appropriate or possible to provide “like-for-like”, offsets that are designed around the conservation needs of the species or habitat being impacted are sought. In addition, some organizations also promote “like-for-like-or-better” (or “trading up”) offset measures as a potential option.

Thirdly, is the question of where to **locate** the offset site. The question of location is critical in relation to ecosystem services. When an offset site is not located near to the development site, the beneficiaries at the offset site may not be the same community losing the utility of the ecosystem services at the development site. Therefore governments and local stakeholders will often require that offsets should be located near the development site or in the same watershed/biogeographical region. However, this may not always be feasible or appropriate. Furthermore, locating offsets elsewhere can sometimes yield greater biodiversity benefits. The use of landscape level planning software can be helpful in these circumstances.

Fourthly, some of the challenges faced by banks around offsets range from the **timing of their engagement** with different projects and thus the feasibility of influencing the manner in which

the client has applied the mitigation hierarchy, and the resources (time, expertise, money) allocated to undertake the development, implementation and monitoring of offsets. Also, banks may have concerns about risks associated with the current lack of standards and potential credibility issues surrounding biodiversity offsets, as well as the difficulties in determining when offsets are appropriate.

Finally, it is necessary to ensure **additionality** or **no overall net loss**. Additionality means that the conservation action undertaken for offset development would not have otherwise happened in the project's absence. However, there are different interpretations of what counts as additional (12). For instance, it has been argued that providing money to enforce protection in established protected areas could be seen as additional. On the other hand, it is not additional, in the strict sense, in terms of habitat loss (15).

Fortunately, a number of organizations and initiatives are investigating the above issues and have generated guidance. For example, BBOP has compiled a comprehensive array of handbooks, resource publications and case-studies (17), is continuing to work on these issues and has produced a draft standard on biodiversity offsets. Additionally NGOs (e.g. BirdLife International, Conservation International, TNC) are also working with companies (e.g. Rio Tinto, BP) on these issues. There is also experience from long established programs (e.g. in the USA and Australia) to draw upon.

5

Quantifying biodiversity loss and gain

Measuring and valuing the biodiversity in an area is challenging not least because biodiversity is such a broad term referring to many different components and their interactions (see [key definitions](#)). When offsets are required to protect particular species or habitats, the task is easier. Nevertheless, no two areas are the same and some measure needs to be used to determine the equivalence of offsets.

There are essentially three ways that have been used to establish measures for biodiversity offsetting:

- **Area:** In the past, area was most often used as a proxy, coupled with a multiplying ratio (usually more than 1:1), although it is increasingly supplanted by more reliable and sophisticated metrics and relies on ecological baselines prepared by government to underpin the ratios.
- **Biodiversity metrics:** These are composite measures selected to quantify loss and gain of biodiversity. Several different approaches exist, many based on variations of 'area and condition'. For example, 'Habitat hectares', a composite of vegetation quality and area, is a metric used in Australia. A variety of similar area/condition metrics are used around the world. Once suitable loss/gain metrics are selected, landscape prioritization schemes (e.g. Marxan site selection software used by TNC "development by design" [10]) can optimise the sites where the necessary amount of conservation gains can best be achieved.
- **Economic valuation:** Currently no offset approach uses economic valuation alone, without any other biodiversity metric. The advantage of incorporating economic valuation is that it provides a common denominator (usually US\$) and allows for costs and benefits to be compared, which is one of BBOP's methods (32). However, there are many issues surrounding economic valuation, including the validity of some of the methods.

3.2 Biodiversity offsets and the financial sector

Interest in biodiversity offsets is growing particularly within multilateral financial institutions (MFIs) (16). Biodiversity offsets are referred to and/or adopted in a number of the standards from multilateral development banks and other financial institutions. These standards attempt to ensure that projects comply with the minimum environmental, social and governance levels required as a condition of access to development finance. Some examples of MFIs and their approach to the mitigation hierarchy and offsets are described in the table to below:

Table 2: Examples of the mitigation hierarchy approach adopted by five key multilateral financial institutions

Institution	Adopted Mitigation Hierarchy
IFC	In May 2011, the IFC's sustainability framework was updated and became effective in January 2012. The revised Performance Standard 6 (PS6): Biodiversity Conservation and Sustainable Management of Living Natural Resources: generally requires that "clients should seek to avoid impacts on biodiversity and ecosystem services. When avoidance of impacts is not possible, measures to minimize impacts and restore biodiversity and ecosystem services should be implemented". Furthermore, "For the protection and conservation of biodiversity, the mitigation hierarchy includes biodiversity offsets, which may be considered only after appropriate avoidance, minimization, and restoration measures have been applied. A biodiversity offset should be designed and implemented to achieve measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity; however, a net gain is required in critical habitats." (20)
Asian Development Bank	"The borrower/client will need to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks and, as a last resort, propose compensatory measures, such as biodiversity offsets, to achieve no net loss or a net gain of the affected biodiversity." (25)
European Bank for Reconstruction and Development	The bank requires that " 1. The client will seek to avoid adverse impacts on biodiversity; 2. Where significant impacts on biodiversity cannot be avoided, the client should identify ways in which the project can be modified to minimise impacts on biodiversity; 3. Where significant impacts on biodiversity can neither be avoided nor minimised, the client should identify measures to mitigate those impacts; and 4. Where significant residual impacts on biodiversity remain, in spite of all reasonable attempts to avoid, minimise and mitigate those impacts the client will identify actions or projects to offset those impacts. Any offset projects must be structured and agreed with EBRD." (26)
European Investment Bank	"The promoter is also required to apply the mitigation hierarchy, i.e. to take appropriate measures to avoid, minimize or rehabilitate/mitigate impacts that may damage biological diversity. Where residual adverse impacts on biodiversity remain, the promoter may propose biodiversity offsets, where appropriate." (27)
Inter-American Development Bank	"The Bank favors avoiding negative environmental impacts; when impacts are unavoidable, Bank-financed operations require mitigation measures; and for impacts that cannot be fully mitigated, compensation or offsets should be implemented." (28)

While MFIs are beginning to embrace offsets, a 2010 report shows that commercial banks and investors have a very limited understanding of biodiversity offsets and the mitigation hierarchy and do not apply the concepts in their financial products or within risk management (29). Notwithstanding this, the loss of biodiversity and ecosystem services is becoming increasingly material to financial institutions (FIs) either through the rise of regulation controlling access to resources, adverse impacts from environmental disasters, or negative reputational exposure, all of which may affect financial returns from project financing. In this shifting landscape, practices to manage biodiversity better are slowly gaining momentum at the board level, with some visionary companies leading the way, and are providing a means through which these material issues can be addressed. For the financial sector, in addition to requiring appropriate mitigation and offset regimes to help manage risks associated with project finance, there is an opportunity for forward looking banks that want to position themselves as intermediaries in niche markets for biodiversity offsets (3).

3.3 The business case for banks

There is growing interest and adoption of biodiversity offsets as a key step in the mitigation hierarchy with a number of offset schemes arising through regulation or as part of voluntary practices. The recognition of biodiversity offsets by the CBD may help to increase interest in the tool further. It is likely that the interest and uptake of biodiversity offsets will continue to grow. By adopting biodiversity offsets, financial institutions can go beyond current EIA practices and impact mitigation measures to pursue 'No net loss' or 'Net gain' on biodiversity.

There are a number of motivations for financial institutions to further engage and develop biodiversity offsets requirements. The business case for further engagement involves:

Responsible leadership and reputation. IFC, EBRD and others are raising the bar, leading by example and influencing others to adopt similar best-practice doctrine.

Influence the regulatory process. By engaging early-on in the discussion of standards and guidance for biodiversity offsets, banks may influence the process of establishing regulatory offset schemes for biodiversity.

Reduce operational risk exposure. Ensuring projects or corporate activities with large ecological footprints reduce risk exposure in relation to safeguarding their reputation and ensure smooth operations by retaining legal and social licences to operate, which could reduce credit risk for lenders.

Business development. Though there are only a few compliance markets, financial institutions could offer services ranging from advisory, intermediation, debt or equity provisioning to public or private clients, taking into account that such markets would likely remain niche in the near future.

3.4 Challenges and difficulties

Many of the challenges faced by FIs are shared by other businesses and governments undertaking biodiversity offsets.

Reputation problems associated with poor outcome and metrics. There are still a number of organizations that believe offsets are a false solution that will perpetuate overexploitation of

biodiversity (30). Much of the criticism arises from the complex nature of biodiversity as a subject with many components and the challenges around measuring and agreeing on tradeoffs. The way different stakeholders interact and value biodiversity is highly diverse and any tradeoffs would require transparent participatory processes, built on solid standards and principles.

Design. As biodiversity offset science is still in its infancy, there are a number of unresolved design problems. Examples of these are:

- Choosing the appropriate metrics - how to offset degradation of biodiversity and ecosystem services in terms of 'quantity' (area) and 'quality'.
- Threshold - deciding when an offset is appropriate and the threshold between when best to stop mitigating and start offsetting impacts.
- Additional complex issues such as ecosystem services and climate change- How to design offsets that appropriately take into account ecosystem dynamics and climate change?
- Managing uncertainties around design - how to account for failure or timing issues?
- Leakage - displacement of avoided threats elsewhere.

Cost and timing. As an additional component of the mitigation hierarchy, offsets have also an added cost regarding design and implementation. As they are supposed to be created in perpetuity, there are issues around long-term financing of such activities as well as governance and tenure. In terms of timing, of particular relevance to FIs would be the challenge of requiring biodiversity offsets from a project where impacts had already taken place as project financing can take place during different stages of the development activity.

Application to different business clients. As raised above, most of the examples of offsets to date have been from the extractive sector, which have a small direct footprint with high financial return. There are large challenges facing the application of like-for-like or like-for-like-or-better as a benchmark for more 'land hungry' sectors, such as biofuels.

Implementation. Some of the issues raised above are relevant here, such as stakeholder buy-in and leakage. Other issues relating to implementation refer to:

- Lack of data or capacity in many countries to identify appropriate offset sites.
- The presence of local communities and stakeholders with other interests, whose needs must be carefully considered and provided for.
- Countries' requirements for a mandatory offset may not necessarily meet the 'no net loss' standard, which may require a company to develop multiple offsets to comply with both government and lender requirements at a high cost.
- Land availability or conflicting uses may be an important barrier.

Many of the challenges around biodiversity offsets are being addressed by academia and conservation organizations. Although no single initiative has covered all issues they each have a number of strong points.

BBOP has undoubtedly provided the biggest contribution to date on the topic of biodiversity offsets

with some key achievements, including focused scientific papers on biodiversity offset principles, criteria and indicators; and publications on methodologies to design and implement offsets. A number of conservation organizations and a growing number of consultancies have also developed successful bilateral projects with companies and governments, as for example TNC's Development by Design initiative.

4. Conclusions

In an increasingly complex global scenario of interconnected issues, such as the rapid loss of biodiversity and ecosystem services combined with a growing population and climate change with severe consequences to human wellbeing and food security, there will be growing expectations that project financing and infrastructure investments should not exacerbate the problem. Indeed there will be expectations that they should contribute towards the solution of protecting biodiversity and sustainable use of ecosystem services. The deployment of biodiversity offsets particularly within a framework of the mitigation hierarchy and a 'no net loss' approach can contribute to this ultimate goal.

There exists a number of challenges in applying and implementing biodiversity offsets, including basic issues such as when, where and how this is most appropriately done. However, NGOs, companies and initiatives, such as BBOP, are continually providing guidance, and successful case studies (15; 21) demonstrate that biodiversity offsets are not only feasible but can also be beneficial.

Bibliography

- 1. Millenium Ecosystem Assessment.** *Ecosystems and Human Well-Being: Opportunities and Challenges for Business and Industry.* 2005.
- 2. Biodiversity Crunch. Williams, N.** 2010, *Current Biology*, Vol. 20, pp. R863-R864.
- 3. UNEP FI.** *Demystifying Materiality - Hardwiring Biodiversity and Ecosystem Services in Finance.* Geneva: UNEP Finance Initiative, 2010.
- 4. Tholen, J., Mulder, I., Howard, P.** *The Nature of Ecosystem Service Risks for Business. s.l.: KPMG Sustainable Insight, May 2011, 2011.*
- 5. New York Times.** *Banks Grow Wary of Environmental Risks.* 2010.
- 6. Bishop, J., Kapila, S., Hicks, F., Mitchell, P., Vorhies, F.** *Building biodiversity business.* London, UK, and Gland, Switzerland: Shell International Limited and the International Union for Conservation of Nature, 2008.
- 7. Ecosystem Marketplace.** *Beyond carbon: biodiversity and water markets. s.l.: EM Market Insight Series, 2009.*
- 8. Madsen, B., Carroll, N., Moore Brands, K.** *State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide. Washington D.C. : Ecosystem Marketplace, 2010.*
- 9. CBD.** *Biodiversity offsets: a tool for CBD parties to consider, and a briefing on the business and biodiversity offset programme. s.l. : CBD/UNEP/COP/10/INF/27, 2010.*
- 10. Borvarnick, A., Knight, C. & Stephenson, J.** *Habitat banking in Latin America and Carribbean: A feasibility Assessment. s.l. : United Nations Development Programme, 2010.*
- 11. Eftec, IEEP, et al.** *The use of market-based instruments for biodiversity protection - The case of habitat banking. s.l. : Technical Report for the European Commission DG Environment, 2010.*
- 12. Darbi, M., Ohlenburg, HHerberg, A., Wende, W., Skambracks, D. & Herbert, M.** *International Approaches to Compensation for Impacts on Biological Diversity. s.l.: Final Report, 2009.*
- 13. Development by design: blending landscape-level planning with the mitigation hierarchy. Kiesecker, J.M., Copeland, H., Pocewicz, A. & McKenney, B.** 2010, *Frontiers in Ecology and the Environment*, Vol. 8, pp. 261-266.
- 14. Madsen, B., Carroll, N., Brands, K. and G. Bennett.** 2011 *Update: State of Biodiversity Markets. Washington D.C. : Forest Trends, 2011.*
- 15. Ten Kate, K., Bishop, J. & Bayon, R.** *Biodiversity offsets: views, experience, and the business case.* Gland, Switzerland and Cambridge, UK : International Union for Conservation of Nature and Natural Resources (IUCN), and Insight Investment Management, 2010.

- 16. UNEP.** *Are you a green leader? Business and biodiversity: making the case for a lasting solution.* s.l. : United Nations Environment Programme, 2010.
- 17. BBOP.** *Business, Biodiversity, Offsets and BBOP: An Overview.* Washington D.C.: BBOP, 2009.
- 18. Rio Tinto.** *Rio Tinto's biodiversity strategy.* London, UK and Melbourne, Australia: Rio Tinto, 2004.
- 19. Equator Principles.** *The Equator Principles.* 2006. <http://www.equator-principles.com>.
- 20. IFC.** *IFC Performance Standard 6.* 2012. Available at [http://www.ifc.org/ifcext/policyreview.nsf/AttachmentsByTitle/Updated_PS6_August1-2011/\\$FILE/Updated_PS6_August1-2011.pdf](http://www.ifc.org/ifcext/policyreview.nsf/AttachmentsByTitle/Updated_PS6_August1-2011/$FILE/Updated_PS6_August1-2011.pdf).
- 21. ICMM.** *Mining and Biodiversity: a collection of case studies - 2010 edition.* London, UK International Council on Mining & Materials, 2010.
- 22. Parliamentary Office of Science and Technology.** Biodiversity Offsetting. *Post Note.* January 2011, Vol. 369.
- 23. McKenny, B.** *Environmental offset policies, principles, and methods: a review of selected legislative frameworks.* s.l.: Biodiversityneutralinitiative, 2005.
- 24. Treweek, J.** *Scoping study for the design and use of biodiversity offsets in an English Context.* s.l.: Defra, 2009.
- 25. ADB.** *Safeguard Policy Statement.* s.l.: Asian Development Bank, 2009.
- 26. EBRD.** *Environmental and Social Policy.* s.l.: European Bank for Reconstruction and Development, 2008.
- 27. EIB.** *The EIB Statement of Environmental and Social Principles and Standards.* s.l.: European Investment Bank, 2009.
- 28. IDB.** *Environment and Safeguards Compliance Policy.* s.l.: Inter-American Development Bank, 2006.
- 29.** *Biodiversity offsets and the mitigation hierarchy: a review of current application in the banking sector.* **UNEP FI and BBOP. s.l.** : Pricewaterhousecoopers, 2010.
- 30. Friends of the Earth.** *Media Briefing: Convention on Biological Diversity COP-10: how the world must protect biodiversity.* s.l. : Friends of the Earth, 2010.
- 31. BBOP.** *Compensatory Conservation Case Studies.* Washington, D.C.: BBOP, 2009.
- 32. Nazari, M. & Proebstel, D.** Biodiversity Offsets in Mining. Environment and Communities. 2009, pp. 42-44. <http://magazine.mining.com/Issues/0901/BiodiversityOffsetsMining.pdf>.
- 33. Equator Principles.** [Online] [Cited: 19 September 2011.] www.equator-principles.com.
- 34. BBOP.** *Biodiversity offset cost-benefit handbook.* Washington D.C.: BBOP, 2009.
- 35. UNEP.** *Caribbean environmental law development and application.* Mexico: UNEP Regional Office for Latin America and the Caribbean, 2002.

Annex I: Offset schemes in Latin American countries¹

Country	Legal requirements to offset	Potential mandatory offsets	Voluntary offsets
Argentina	No	Current laws in place but offsetting not current practice	Some voluntary offsets and PES feasibility studies
The Bahamas	EIA law requires mitigation, management and compensatory measures	-	No information
Barbados	No	No	No information
Belize	No	EIA in place requesting mitigation measures but not offsets	No information
Bolivia	No	EIA laws	Voluntary forest conservation offsets; PESA schemes
Brazil	Different compensatory laws in place	-	Some voluntary offsets, PES schemes and compensation funds
Chile	EIA in place that follow mitigation hierarchy	New native forest Law	-
Colombia	No	Draft PES strategy and biodiversity strategies	Voluntary offsets and PES schemes
Costa Rica	No	Possible to build on PES schemes EIA in place but no current offset	Most schemes forest on reforestation and forest protection; e.g. FONAFIFO
The Dominican Republic	No information	No information	No information
Ecuador	No information	No information	PES schemes
El Salvador	No information	No information	No information

Country	Legal requirements to offset	Potential mandatory offsets	Voluntary offsets
Guatemala	No information	No information	No information
Guyana	No	Environmental protection Act; biodiversity is included in the evaluation	No information
Haiti	No information	No information	No information
Honduras	No	EIA laws	No information
Jamaica	No	Natural resource conservation act requiring EIA	No information
Nicaragua	No information	No information	No information
Mexico	EIA requires on-site and off-site measures to correct and compensate	-	Voluntary schemes
Panama	Protected area compensation scheme	EIA in place but no current offset	PES scheme
Paraguay	PES Act financed by offsets	-	-
Peru	No	EIA fee compensation but interest in market-based instruments	PES schemes and some compensation / conservation schemes and voluntary offset
Suriname	No	No information	No information
Trinidad and Tobago	No	Environmental management Act requiring EIA	No information
Uruguay	EIA with mitigation measures necessary	-	Voluntary offsets
Venezuela	No information	Constitution makes provision for EIA	Voluntary offsets

1 Offset requirements, potential for offsets and voluntary schemes in IDBs borrowing member countries. All information is based on what could be found from References (10; 12; 14; 33) and web searches. (PES = payment for ecosystem services)

www.unep.org

United Nations Environment Programme
P.O. Box 30552 Nairobi, Kenya
Tel: ++254-(0)20-762 1234
Fax: ++254-(0)20-762 3927
E-mail: unepub@unep.org



The United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) is the specialist biodiversity assessment centre of the United Nations Environment Programme (UNEP), the world's foremost intergovernmental environmental organization. The Centre has been in operation for over 30 years, combining scientific research with practical policy advice.

The United Nations Environment Programme Finance Initiative (UNEP FI) is global partnership between the United Nations Environment Programme (UNEP) and the private financial sector. UNEP FI works with over 200 financial institutions that are Signatories to the UNEP FI Statements, and a range of partner organisations to develop and promote linkages between sustainability and financial performance. Through peer-to-peer networks, research and training, UNEP FI carries out its mission to identify, promote, and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.



219 Huntingdon Road,
Cambridge, CB3 0DL
United Kingdom
Tel: +44 (0)1223 277314
Fax: +44 (0)1223 277136
www.unep-wcmc.org



UNEP Finance Initiative
Innovative financing for sustainability

International Environment House
15 Chemin des Anémones
CH-1219 Chatelaine, Geneva
Switzerland
Tel: 22 917 8178
Fax: 22 796 9240
fi@unep.org
www.unepfi.org

Job Number: DTI/1571/GE