



Net Positive Impact on biodiversity

The conservation case



International Union for Conservation of Nature



RioTinto



Net Positive Impact on biodiversity: the conservation case

Key messages

- Net Positive Impact (NPI) on biodiversity is a target for project outcomes in which the impacts on biodiversity (i.e. the variety of ecosystems and living things) caused by the project are outweighed by the actions taken to avoid and reduce such impacts, rehabilitate affected species/landscapes and offset any residual impacts.
- Governments, businesses and organizations around the world are increasingly adopting NPI-type policies and commitments, and international lenders are including NPI safeguards as part of their finance conditions.
- Continued infrastructure development, resource extraction and other activities are inevitable to support economic growth and development. NPI goals and safeguards therefore have an important role to play in advancing sustainable development and contributing to global conservation targets.
- The main strengths of NPI lie in its grounding in the Mitigation Hierarchy (which entails pursuing impact avoidance and reduction, as well as rehabilitation, before resorting to offsetting), and in the suite of tools that has been developed to measure and verify the conservation impacts and gains.
- The degree to which the potential benefits of NPI are realized in practice will depend on the quality of its implementation and the existence of enabling environments for NPI applications, including positive working relationships between governments, businesses and conservation organizations. Care will be needed to ensure that NPI applications address the risks and shortcomings seen in earlier mitigation and offset efforts.
- Initial indications of the conservation benefits of NPI applications look promising. The new frontrunners in the extractives industry look set to largely achieve net gains in biodiversity and uptake of NPI is likely to increase, particularly within this sector.

What is this paper about?

NPI on biodiversity is realized when the presence of a project or operation in an area ultimately generates positive impacts on biodiversity – impacts that not only balance but are broadly accepted to outweigh, over a quantified timescale, the biodiversity disturbances and damage associated with its activities.

This briefing paper summarizes the main arguments, from a conservation perspective, for operationalizing the concept of NPI on biodiversity. It is intended to provide a synthesis of the potential biodiversity conservation benefits and issues arising from implementation of NPI targets or commitments, whether the implementing bodies be private sector businesses, national governments or other organizations. The business case for NPI is outlined in a separate briefing paper.

NPI for biodiversity is a relatively new concept and biodiversity conservation requires long-term action, so the evidence base for the conservation benefits of NPI is still small. This paper therefore looks primarily at the potential conservation gains from NPI, as well as emerging lessons from the experience to date with NPI implementation.

Background on NPI

The context within which NPI has been developed includes the following three global developments concerning biodiversity:

- **Compelling evidence on biodiversity loss, its impacts and human causes**

Reports on the loss of biodiversity regularly hit the headlines. Globally, over 20,000 species are known to be threatened with extinction; one in four mammals and one in eight birds face a high risk of extinction in the near future (IUCN, 2009). The future extinction rate is projected to take another big leap (to more than ten times the current rate) due to changes over the next 50 years. Biodiversity loss is one of the main factors behind the reduced capacity of ecosystems to provide services such as water purification, pest control and climate regulation (Millennium Ecosystem Assessment, 2005). Biodiversity loss also has important economic implications. The loss of ecosystem services, from land-based ecosystems alone, is estimated to cost US\$ 2-4.5 trillion annually (TEEB, 2008). At the same time, it has become increasingly clear that human activity is behind nearly all the major threats to biodiversity. Habitat destruction and degradation is the biggest threat (affecting 89% of all threatened birds, 83% of mammals, and 91% of threatened plants) and over-exploitation and pollution also rank among the top threats to biodiversity (IUCN, 2009).

- **Increasing recognition of need to reconcile conservation and development**

The conservation community is increasingly aware that conservation and development need to go hand in hand. Continued development is essential for economic growth around the world and for much-needed progress on

poverty, health, education and other global challenges. At the same time, biodiversity impacts are often an inevitable consequence of development projects and operations. Recognizing these two 'givens', the conservation community has become increasingly open to working with governments and the private sector to find development models that offer economically and environmentally sustainable solutions to biodiversity loss and degradation.

- **Advances in technologies for biodiversity-aware planning**

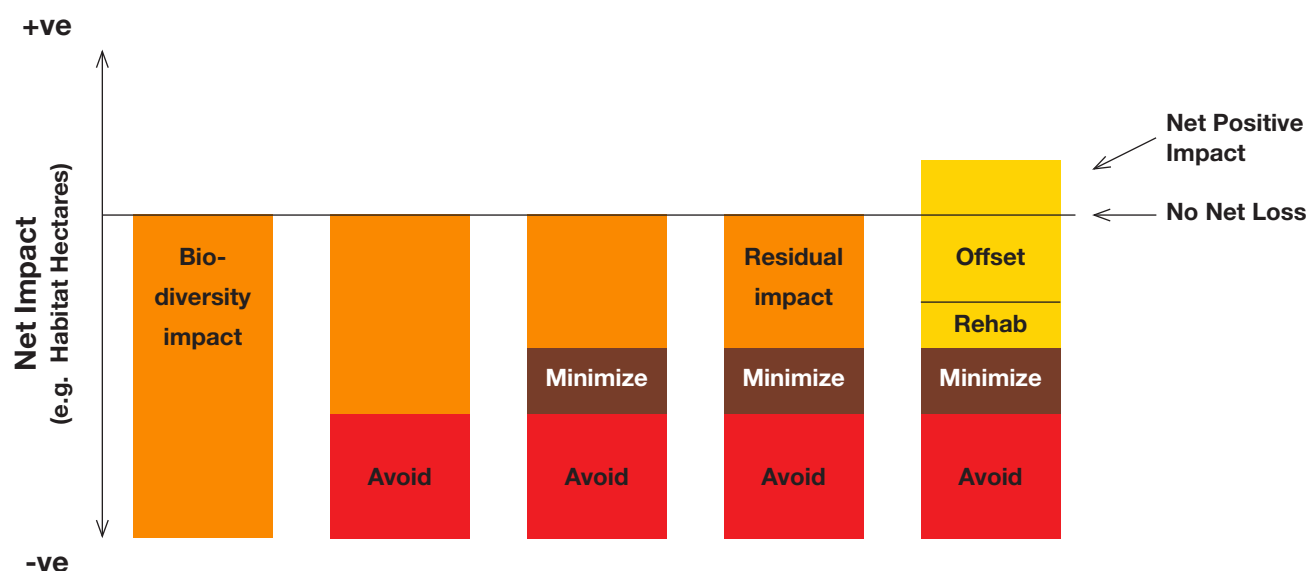
Project developers and land-use planners now have access to a wealth of data (e.g. from detailed Environmental and Social Impact Assessments) and powerful technologies (e.g. remote sensing and modelling tools) to enable them to more accurately understand biodiversity impacts and trade-offs. These new capacities mean that project design and land-use planning can better support the adoption and achievement of NPI goals.

The early adopters of NPI commitments have come from the extractives sector. In 2003, Solid Energy, a state-owned mining company in New Zealand, was the first to commit to NPI - in this case, to achieving a net positive result on the New Zealand environment, based on a cumulative result of all their activities. In 2004, Rio Tinto committed to achieving NPI on biodiversity as part of the company's corporate biodiversity strategy. As yet, no other businesses have made public, company-wide commitments to NPI.

However NPI is not of relevance only to the business community; it can be implemented by any organization, where the policies and practices could significantly impact biodiversity. In particular, governments (at local and national levels) are well placed to adopt NPI goals, as they can accurately assess, and plan for, conservation and development trade-offs

and take a landscape approach to NPI (as described later in this paper). Governments can also set and enforce regulatory requirements to ensure that other actors apply NPI-related approaches.

Figure 1. The Mitigation Hierarchy



Different versions of this diagram have been used by ICMM (2005), Rio Tinto (2008), BBOP (2009a), Kiesecker et al. (2010) and others. Net impact on the y-axis can be measured through currencies such as Habitat Hectares or species population sizes.

What does an NPI approach involve?

NPI can be adopted as a commitment (or aspirational target) on three different levels:

- project, site or operation level;
- corporate level (or institutional/national level in the case of organizations/governments); or
- landscape level for cumulative impacts.

In each case, implementing an NPI approach usually involves planning project-level responses to biodiversity impacts. For example, Rio Tinto's company-wide commitment to NPI is articulated in terms of operation-level activities: the company aims to achieve NPI on biodiversity by the closure of each of its operations. Rio Tinto has already completed detailed planning for NPI and begun implementation of the four elements of the Mitigation Hierarchy for its

ilmenite mine in south-eastern Madagascar, as a pilot application of its NPI approach, as well as at several other sites.

Whether applied at a project, corporate, or landscape level, an NPI approach is based on a well-established framework for the systematic planning of actions to reduce biodiversity impacts. This framework, known as the Mitigation Hierarchy, prioritizes impact avoidance as the most preferred option, followed by impact mitigation and rehabilitation, and finally, once these options have been exhausted, biodiversity offsetting to cover any residual damage that cannot be otherwise addressed (see Figure 1).

It is important to note that biodiversity offsets are not always an appropriate course of action. Some biodiversity impacts are so severe and irreversible that

avoidance is the only option. This would be the case, for example, for impacts likely to cause the extinction of an endangered species or for impacts that would block local people's access to important ecosystem services (FFI, 2014a).¹

¹ For more information on the Mitigation Hierarchy and the principles of biodiversity offsetting, see FFI, 2014; McKenney and Kiesecker, 2010; ten Kate et al., 2004; Gibbons & Lindenmayer, 2007; BBOP, 2009.

How does NPI differ from NNL?

The origins of NPI lie in a similar target-based approach – that of No Net Loss (NNL). As a more established approach, NNL has been used as the benchmark for numerous corporate commitments to tackle biodiversity impacts. Over 40 companies have made public statements on company-wide commitments or aspirations to NNL of biodiversity (Forest Trends et al., 2014). In addition, NNL is gaining ground within the public sector. For example, the UK Department for Environment, Food and Rural Affairs has committed to a target of NNL of biodiversity by 2020 and the EU is in the process of developing an NNL policy initiative.

In principle, the difference between NPI and NNL is simple: a commitment to NPI goes further than one to NNL. However, in practice the distinction between these two concepts is somewhat blurred and the terms are often used interchangeably.

Indeed, NPI and NNL approaches have much in common. They both share the same framework for prioritizing biodiversity activities – the Mitigation Hierarchy – and a similar approach to offsetting residual biodiversity impacts (based on principles such as additionality, equivalence and permanence).

Essentially, an NPI commitment can be considered equivalent to an NNL commitment but with a wider margin of error built in to ensure that at a minimum NNL is achieved. This is particularly important where conservation gains are uncertain (e.g. in areas undergoing rapid development) or where biodiversity impacts are more serious (e.g. in critical habitats).

How can NPI contribute to biodiversity conservation?

As an operational approach, NPI offers considerable potential to advance biodiversity conservation on a number of levels, including:

- integrating conservation into business policies and practices;
- supporting national-level conservation gains; and
- contributing to global conservation targets.

INTEGRATING CONSERVATION INTO BUSINESS POLICIES AND PRACTICES

First and foremost, due to its grounding in the Mitigation Hierarchy, an NPI approach entails companies prioritizing impact avoidance and minimization – optimal for biodiversity conservation – before resorting to rehabilitation and/or offsetting, where these are appropriate. As noted earlier, some of the most serious biodiversity impacts cannot be mitigated and avoidance is the only appropriate option. In this way, implementation of an NPI approach **optimizes the extent of natural area that is left intact** and avoids over-reliance on the less conservation-effective responses of rehabilitation and offsetting.

This is particularly important given the concerns that have been raised about biodiversity offsetting, including the risks that companies could use it to sidestep on-site environmental protection and management, and that the conservation gains it delivers are uncertain and not comparable to the losses sustained (Gardner et al., 2013). Since biodiversity offsets are most common and most significant in high-biodiversity-impact operations, implementation of an NPI approach in these situations – where the biodiversity stakes are highest – can help **drive conservation best practice where it matters most**.

In addition, by promoting impact avoidance and mitigation, NPI helps companies realize **cost-effective** responses, thereby encouraging them to favour these actions over the considerably more costly offsetting.

By involving transparent application of the Mitigation Hierarchy and through the use of its quantitative measurements and metrics, implementation of an NPI approach promotes **accountability** in a company's reporting of project impacts and responses. Although many environmental stewardship mechanisms exist, the Mitigation Hierarchy is the only approach requiring quantification of project impacts.

As NPI uptake increases, the conservation benefits of the concept will likely broaden in scope. In addition, as more companies commit to NPI, and a strong portfolio of NPI experience is established, it is hoped that entire sectors will move towards NPI commitments. There are already some encouraging signs of sector-wide movement on this issue. Numerous companies within the extractive industries, in particular, are actively pursuing policies that follow the Mitigation Hierarchy approach with NNL or NPI targets in some specific circumstances. This sector could be 'ripe' for transitioning to NPI approaches in the near future, which would lead to considerable **value-added in terms of conservation gains**.

NATIONAL-LEVEL CONSERVATION GAINS

Since implementation of an NPI approach involves complex conservation issues and technical assessment tools (such as biodiversity quantification, monitoring and verification), companies will likely need to draw on external conservation expertise. In this respect, NPI creates **opportunities for partnerships** between corporates and conservation organizations, which in turn can lead to improved practices within the sectors concerned. At the same time, the conservation organizations

involved can gain valuable learning from these partnerships, as they are exposed to business-oriented approaches to conservation and the challenges of planning, implementing, monitoring and verifying biodiversity impacts.

Similarly, NPI approaches will most often require companies to work closely with host governments to plan and coordinate conservation activities, particularly with the identification of avoidance areas, as well as in the case of offsets outside the operation site. Such off-site offsets can yield important conservation benefits, for example when dealing with impacted or endangered migratory species. More broadly, they can enable companies to **contribute to national-level conservation priorities** by, for example, supporting the implementation of certain elements of **National Biodiversity Strategies and Action Plans**. This can include the identification of high conservation priority areas, the establishment of stakeholder consultation mechanisms to help balance conservation priorities with development needs, the establishment and management of protected areas and the rehabilitation of threatened habitats). Such public-private collaboration in offsets (and in NPI in general) would also support the **mainstreaming of biodiversity conservation** in governments' sector development policies and the creation of **positive incentives for businesses to invest in biodiversity conservation**.

These opportunities for strengthened collaboration between businesses, conservation organizations and governments in identifying, prioritizing and managing conservation objectives are likely to generate substantial support for **integrated conservation planning**. Private sector involvement can also significantly boost a country's institutional and financial capacity for such conservation activities, yielding **more rapid and significant conservation gains** than

would otherwise be achievable. In this respect, it is important to ensure that private sector contributions are additional to (rather than a substitute for) existing and projected government investment in conservation.

CONTRIBUTION TO GLOBAL CONSERVATION TARGETS

On a broader scale, widespread uptake of an NPI approach will directly contribute to achievement of the **Aichi Biodiversity Targets** of the Convention on Biological Diversity (CBD). These 20 targets, adopted as part of the CBD Strategic Plan for Biodiversity 2011-2020, include for example Target 11, which deals with improving and expanding protected areas, and Target 15, which deals with conservation and rehabilitation of degraded ecosystems. Whilst public sector and donor funding will remain important revenue streams for conservation in developing countries, new and innovative financial mechanisms are required to fill existing funding gaps for successful achievement of these global targets.

Private sector funding, channelled through commitments to NPI, represents a significant opportunity to create such mechanisms.

Enhancing national-level conservation gains from NPI

Moreover, conservation gains can be further strengthened if businesses and governments take a 'big-picture' approach to NPI. Two examples of such an approach are considered here: a landscape approach to NPI and aggregated offsets.

LANDSCAPE APPROACH

Ideally, NPI would be undertaken at a landscape scale, taking into account the geographical and ecological context of a project or development during the planning and implementation stages. There is no universal recipe for applying such a landscape approach, but the key issue is that the biodiversity values of the landscape (e.g. species, habitats), ecological processes (e.g. ecotones, migration) and conservation priorities (e.g. key species, protected areas, areas crucial for ecosystem services such as water) are all considered in the development of an NPI strategy. Understanding biodiversity values in the wider landscape will help to contextualize the approach taken for mitigating and offsetting any impacts.

The cumulative impacts of developments should also be considered at a landscape scale. Impacts on biodiversity of multiple projects will be under-estimated unless specifically assessed through a comprehensive Cumulative Impact Assessment (CIA). A CIA should combine the effects of current and future projects in order to understand the cumulative impacts of these developments on key elements of biodiversity. A CIA is most effective when combined with the conservation plans of a given country or region, so impacts are viewed in relation to conservation priorities.

The Nature Conservancy has been developing a 'Development by Design' (DbD) approach that blends landscape-level conservation planning with application of the Mitigation Hierarchy, to ensure that

the use of biodiversity offsets is consistent with sustainable development practices. DbD is a science-based approach that helps project and land-use planners determine when and where offsets would be appropriate, and apply an accounting framework to quantify and plan for NNL or NPI goals.

AGGREGATED OFFSETS

Where a national or regional biodiversity conservation framework exists, there is opportunity for the residual impacts of several projects to be considered together and offset as an aggregate. Aggregated offsets address the residual impacts of several projects to meet landscape or ecosystem level conservation needs. This approach has the potential to improve biodiversity outcomes by creating larger conservation areas compared to the alternative of individual, disconnected offsets. Moreover, aggregated offsets may improve ecological integrity when compared to several smaller offset sites, by reducing fragmentation between individual offsets, maximizing area and shape regularity of offsets, and augmenting existing conservation areas.

Aggregated offsets undertaken within a policy-driven offsets framework can contribute to the expansion and strengthening of protected areas and may help to improve decision-making around sustainable development within a landscape by identifying the limits to what can, and cannot, be offset. However, if they are not coordinated within a higher level planning process, they may require additional consultation between the project proponent, stakeholders and offset implementing agency.

Concerns about NPI

The concerns raised regarding NPI are similar to those cited for NNL, revolving around the issues of: (i) difficulties in following the Mitigation Hierarchy; (ii) the poor record of biodiversity offsets to date; and (iii) the risk of adverse impacts of mitigation on local communities.

THE CHALLENGES INVOLVED IN ADHERING TO THE MITIGATION HIERARCHY

These difficulties include, for example: quantifying the status of biodiversity; identifying threshold levels to predict likely changes in biodiversity levels or ecosystem health; monitoring biodiversity change; identifying remedial activities that produce commensurate (or superior) biodiversity gains for the affected area/species; and, dealing with the long-term nature of biodiversity losses and gains (which risk making losses more serious and gains undermined by future events or trends). Because of these challenges, some conservationists have argued that NPI or NNL is false advertising (as companies may be unlikely to reliably demonstrate achievement of these goals), and that some companies will be tempted to skip out the initial stages of the Mitigation Hierarchy and simply use offsets as a 'licence to trash', rather than as a last option after impact avoidance and reduction and rehabilitation (McKenney and Kiesecker, 2010).

THE MIXED RECORD OF BIODIVERSITY OFFSETS

Implementation of biodiversity offsets has often been poorly managed; indeed many offset programmes have failed to achieve their goals (Pilgrim and Ekstrom, 2014). This low success rate seems to be partly due to poor design (resulting in offset programmes that are overly complicated) and inadequate attention to the need for stakeholder engagement. These failings are exacerbated by a lack of incentives for effective implementation, as some government authorities do not have the

capacity needed for effective monitoring, oversight and enforcement of offset regulations.

POSSIBLE ADVERSE IMPACTS OF MITIGATION ON COMMUNITIES

There is a risk that mitigation will be carried out without due regard for the needs and rights of local communities. If not adequately planned and implemented, rehabilitation and offset activities may leave communities worse off, e.g. by prohibiting local people from accessing and using natural resources (Temple et al., 2012). Impact mitigation needs to engage with local stakeholders from the outset, in order to avoid such problems (e.g. through community-based planning of compensation measures) and seek community support (e.g. for maintaining the integrity of 'avoided' set asides and offset areas).

RESPONSES TO THESE CRITICISMS

Operationalizing an NPI approach does indeed pose considerable challenges for development and land-use planners, and risks for local stakeholders, as described above. Nonetheless, NPI offers a pragmatic solution with better conservation outcomes than any other approach, and is the best option available at the moment. So far, NPI has been applied in a responsible manner and early indications are that these applications will be largely successful in reaching their goals. There is a critical need however to maintain and improve on-the-ground performance of NPI as uptake increases.

The responsibility here lies not only with the business sector. If corporate policies and practices relating to NPI are to succeed, they need to be supported by governments (serving an oversight function, and creating an enabling environment and conservation policy framework) and conservation organizations (working closely with businesses, providing conservation data and expertise, and holding companies to account).

In this respect, much work has been done in recent years to address these concerns (Pilgrim and Ekstrom, 2014). Numerous conservation organizations, such as IUCN, Fauna and Flora International and Birdlife International, are active in this area, working with the business sector to support best practice and develop quality assurance tools. In 2012, the Business and Biodiversity Offsets Programme (an international collaboration of more than 75 companies, financial institutions, government agencies, civil society organizations and service providers) produced the first best-practice standard for voluntary biodiversity offsets (BBOP, 2012). IUCN is also in the process of developing a set of policy recommendations on biodiversity offsets.

NPI conservation benefits in practice

The degree to which the potential conservation benefits of the NPI concept are realized is dependent on the extent and quality of its implementation in the field. While the uptake of NPI is still in its early

stages, it is expected to rise significantly over the next few decades as biodiversity management standards, commitments and regulations trend upwards. The NPI concept is likely to at least partly displace that of NNL as companies, countries and organizations position themselves in line with this specific benchmark.

The growth in obligations for biodiversity management is increasing rapidly. Since 2001, and in particular since 2006, a number of countries, states and provinces have policies requiring offsets (17 countries now have national-level policies specifically requiring offsets) (TBC, 2013). In addition, since 2012, the International Finance Corporation's (IFC) Performance Standards on Environmental and Social Sustainability include a requirement (PS6) for NNL of biodiversity for projects that affect natural habitat and a net gain of biodiversity for projects that impact critical habitat. This requirement covers IFC investments. It is also applicable to relevant investments of 78 other financial institutions that have signed up to the Equator Principles for large-scale projects in emerging markets

and use IFC Performance Standards as the underlying framework for risk management in these projects. Together these institutions are responsible for over 70% of project finance in developing countries (FFI, 2014b).

It is too early to judge the quality of NPI implementation, given the young and small portfolio of existing applications. A 2010 forecasting study on the first full-blown NPI application (in Rio Tinto's ilmenite mine in Madagascar) suggests that the mine – the largest development project in Madagascar – is broadly on track to achieve NPI on biodiversity by closure in 2065. The mining operation's impact on forest habitat is expected to be positive in the near future and the conservation status of the majority of impacted species also looks set to improve by project-end. However, the mine's impact on seven of the 90 high priority species in the area is predicted to remain negative at closure – unless special measures are put in place to address the needs of these species.

Conclusions

Operationalizing NPI offers considerable potential for advancing biodiversity conservation on the ground, integrating conservation into policies and practices, and helping achieve global conservation targets such as the Aichi Biodiversity Targets of the Convention on Biological Diversity (CBD).

It is too early to predict the extent to which these potential gains will be realized in practice, given the still young and small portfolio of NPI applications to date. However, a rapid growth in the uptake of the NPI approach is likely to take place in the next few decades and initial evidence from current NPI applications looks promising. The extractives sector may well produce the dominant share of early adopters of NPI. As this sector manages a large area of land worldwide and creates considerable biodiversity impacts, its uptake of NPI could potentially generate significant conservation gains.

While some concerns have been raised in terms of the potential risks and limitations of NPI implementation (based on similar concerns for NNL applications and biodiversity offsets in particular), much work has been done in recent years to establish quality assurance mechanisms, such as best-practice standards and verification and forecasting tools.

Overall, the conservation case for NPI is quite a strong one, assuming there is sufficiently high quality and quantity of its implementation.

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The initiative, which explored how an NPI approach on biodiversity could enable the private sector to better manage biodiversity and contribute to global conservation, ran from 2014-2015.

IUCN is currently drafting a Biodiversity Offsets Policy, which may provide further guidance.

For more information, visit: www.iucn.org/business

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