BIODIVERSITY BENEFITS? NO NET LOSS & NET GAIN APPROACHES IN PERU & THE UK

Claudia Valencia Franke, claudia.valencia@atkinsrealis.com, AtkinsRéalis, Peru.
Milagros Saloma, milagros.salomapacheco@atkinsrealis.com, AtkinsRéalis, UK.
Claire Wansbury, claire.wansbury@atkinsrealis.com, AtkinsRéalis, UK.
Juan Tito, juan.tito@atkinsrealis.com, AtkinsRéalis, Peru.

Abstract

Peru and the UK present contrasting contexts for biodiversity and approaches to protecting it. Peru, which ranks seventh out of 201 in the Global Biodiversity Index (GBI), has a biodiversity No Net Loss (NNL) approach to offsetting, applicable only to significant negative effects that cannot be avoided, mitigated, or rehabilitated. Meanwhile, the UK ranks 142 in the GBI: one of the most nature-depleted countries in the world. However, Biodiversity Net Gain (BNG) is an increasingly common practice in the UK and has recently become mandatory in England.

We flag the urgency of applying BNG approaches worldwide, considering global declining trends and the need for these to change to a Nature Positive trajectory. We will compare AtkinsRéalis' experience using NNL and BNG in Peru and the UK.

This presentation explores opportunities and challenges faced while applying these concepts, such as the need for robust legal and policy systems for their effective implementation, challenges of introducing the NNL or BNG approaches and adapting to new frameworks. Reflections on Peru and the UK will be valuable for other countries.

1. Introduction

Land-use change, habitat degradation and fragmentation, deforestation, spreading of invasive species and pollution are key drivers for biodiversity loss (Arlidge et al., 2018). All industries contribute to one or more of these drivers, yet global and national economies and societies are nature-dependent (Dasgupta, 2021).

The concept of No Net Loss (NNL) of biodiversity arose within a United States policy in 1990 (Abe & Tanaka, 2021). NNL requires compensation for adverse development impacts, balancing project-generated losses with compensation gains. Since 1990, the concept has spread to many countries, and in 2006 it was included in IFC's Performance Standard 6 (PS6) (IFC, 2006, 2012). Later, in 2012, PS6 introduced the requirement to achieve Biodiversity Net Gain (BNG) for critical habitats[1] (IFC, 2012; de Silva et al., 2019).

BNG is a superior goal to NNL (Bull & Brownlie, 2015), aiming 'to leave the natural environment in a measurably better state than beforehand' (Natural England, 2021). In the biodiversity loss emergency, there has been a greater focus on such net positive outcomes (Maron et al., 2019; Obura et al., 2023).

[1] Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes (IFC, 2012).

This is reflected in the Nature Positive concept[2] and the Kunming-Montreal Global Biodiversity Framework Goal A[3] (CBD, 2023).

This paper compares experiences in Peru and the UK, which have contrasting biodiversity and legal frameworks.

2. The Mitigation Hierarchy, NNL and BNG

The mitigation hierarchy should help limit the negative impacts of development on biodiversity (CSBI, 2015). It has become a widely used framework to manage biodiversity impacts from businesses (BBOP, 2010). The sequence of actions (Figure 1) aims at managing negative impacts to reach NNL or, ideally, BNG.

NNL and BNG are ecological mitigation and compensation policies, offsetting any residual impacts from development projects to achieve a balance between losses and gains (NNL) or to achieve more gains than losses (BNG) (Bull et al., 2013; IUCN, 2017).

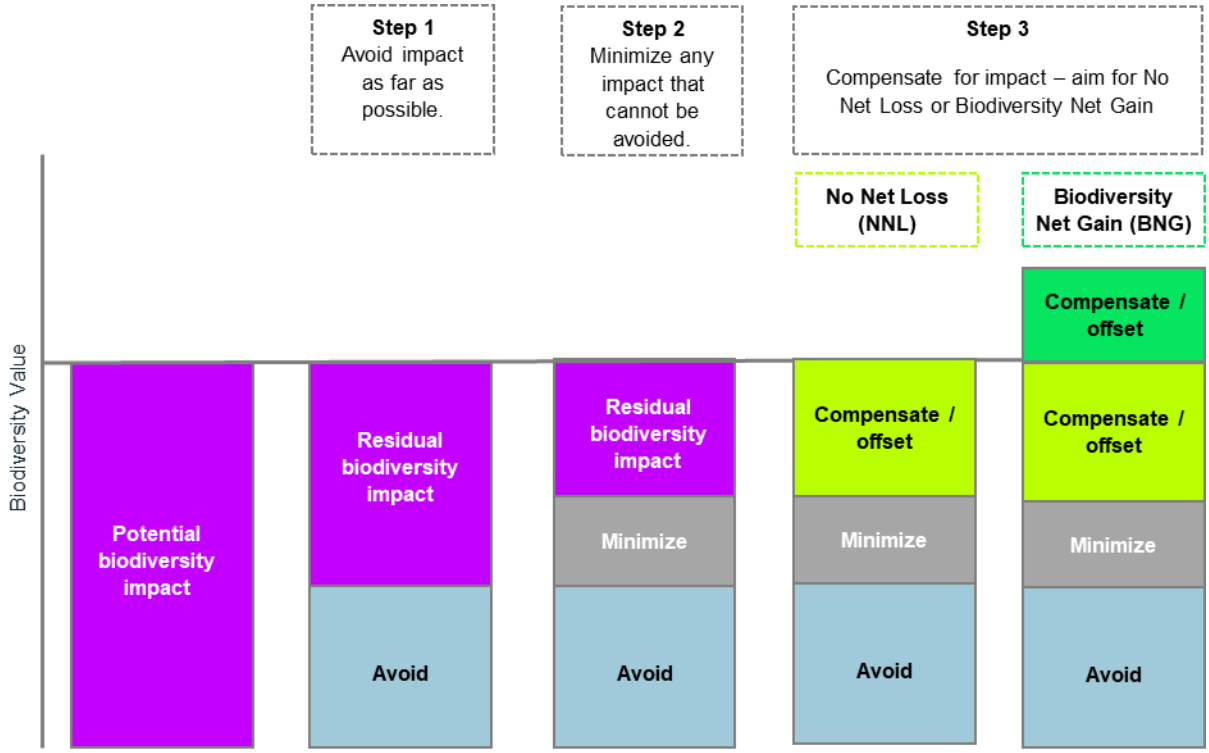

Figure 1: Mitigation hierarchy – linked to the concepts of NNL and BNG. Source: AtkinsRéalis, after BBOP, 2012.

3. NNL and BNG: legal framework and applications in Peru and UK

While the NNL and BNG approaches have been implemented for over two decades, their application has varied significantly. This is evidenced in the "global north" and "global south", with the former having a longer history of environmental legislation and policies, and more stringent law enforcement. Peru

[2] A global societal goal defined as 'Halt and Reverse Nature Loss by 2030 on a 2020 baseline and achieve full recovery by 2050.' (Nature Positive, 2024).

[3] Goal A: Protect and Restore - The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050; Human induced extinction of known threatened species is halted, and, by 2050, the extinction rate and risk of all species are reduced tenfold and the abundance of native wild species is increased to healthy and resilient levels; The genetic diversity within populations of wild and domesticated species, is maintained, safeguarding their adaptive potential.

and the UK will be used as references in this analysis to compare the implementation process of NNL and BNG.

Peru is the third largest country in South America and categorized as mega-diverse, ranking at seven (out of 201) in the Global Biodiversity Index (GBI). Most of Peru still comprises natural ecosystems. The latest trends indicate that Peruvian biodiversity is increasing, but there is also an increase in threatened species (CBD, 2024).

Peru became a party of the Convention on Biological Diversity in 1993, and has had biodiversity protection legislation ever since, but the mitigation hierarchy only became a legal requirement in 2014, through the first Guidelines for Environmental Compensation (MINAM, 2014). This introduced the NNL concept. In 2016, two complementary guidelines were published, (MINAM, 2016). However, these concepts are not evenly understood or applied, including sometimes being confused with "economic compensation", whose benefits are far from BNG.

The Peruvian Ministry of Environment (MINAM) is publishing ecosystem-specific guidelines on "ecological value", letting users calculate the habitat-hectares required to compensate for any losses. With 36 official ecosystems recognized in Peru (MINAM, 2018), such guidelines are essential as ecosystems vary greatly, so generic rules would mean important features could be overlooked, leading to inadequate offsets. Ones published so far only cover 13 ecosystems, leaving many still vulnerable as no offsets are being actively required due to a lack of specific legislation. Compensation measures typically focus on "fragile ecosystems", with rare exceptions, and only to produce NNL. "Fragile ecosystems" is a legal term for certain important, unique and/or vulnerable ecosystems the Government deems as conservation priorities. Those ecosystems that do not currently have a specific guideline remain in a grey area, making implementing proper compensation a significant challenge for developers.

The biodiversity context in the UK contrasts strongly with Peru: it is one of the most nature-depleted countries, ranking 142 in the GBI. Despite ambitious goals and legislation, the UK's nature continues to decline (State of Nature Partnership, 2023).

On 12 February 2024, BNG became mandatory in England (DEFRA, 2024) under new regulations resulting from the Environment Act (HM Government, 2021). According to this pioneering law, developers requiring planning permission must deliver a minimum of 10% BNG. This is hoped to be a significant legislative step towards biodiversity recovery in the UK.

To calculate BNG requirements, the Statutory Biodiversity Metric (SBM)[4] is used. This calculation tool accounts for biodiversity value in a standardized way by calculating biodiversity units, based on habitat type, size, condition, and strategic significance. It compares baseline and post-development habitats to quantify changes. It is too early to predict the new law's results. However, the metric has been developed over a decade of piloting and testing. The SBM is purely habitat-based. For the most distinctive habitat and those deemed irreplaceable, the SBM's guidance states that the tool-based calculation is insufficient and that a bespoke compensation is required where loss cannot be avoided.

In Scotland and Wales, BNG is not mandated, but net biodiversity benefits are policy aspirations under the National Planning Framework 4 (Scottish Government, 2023) and the updated Planning Policy Wales (Welsh Government, 2024), respectively. Northern Ireland has no formal legislation or policy regarding BNG (CIEEM, 2023).

Nature can also be articulated regarding the benefits it provides to our society and economy in terms of natural capital value. The UK government also encourages 'natural capital' approaches to support decisions (HM Government, 2018), and some organizations have chosen to implement these along with BNG.

[4] Statutory biodiversity metric tools and guides - GOV.UK (www.gov.uk)

4. Project approaches

In recent years, several mine developers in Peru have been requested to apply the mitigation hierarchy to modifications or expansions. Most Peruvian mines are in the Andes mountains, where rich metal ore bodies and many natural ecosystems occur, including “bofedales” or highland wetlands. Affecting bofedales often require compensation plans, as they are legally “fragile ecosystems”, and because they are difficult to restore, they almost always require the last step of the mitigation hierarchy.

As described above, the official guideline aims for NNL. Indeed, the current formulas and their stringent application allow little room for proponents to aim for more gains, meaning BNG is not expected. This "minimum" approach is based on the misconception that in offsetting, larger areas are best. However, habitat quality is a crucial factor that is often overlooked in this approach. Prioritizing surface area over habitat quality can lead to suboptimal results. It should be noted that current guidelines do not include specific requirements for stakeholder engagement, which could lead to conflicts, as international experience shows effective participation is critical for successful and fair biodiversity offsets (BBOP, 2009). Results from the current legislation remain to be seen, as no recent compensation plans have been implemented yet, with most still under authority evaluation.

By contrast, in the UK, different drivers have increased private and public organizations’ interest in BNG. Some organizations have been proactive in implementing net gain, making commitments that surpassed the legislation at that time.

AtkinsRéalis has supported pioneering developers seeking BNG. The best and most cost-effective way to achieve a net gain is through its consideration from the outset. This requires additional early ecology input and collaboration of all design disciplines. Habitat creation or enhancement may often be required. These costs should be accounted for in the project’s budget.

The SBM is not a perfect tool, but it has facilitated the practical implementation of BNG. Moreover, it ‘rewards’ on-site compensation or compensation close to the development site by giving higher biodiversity units than offsetting losses at a distance. Offsetting costs encourages using the mitigation hierarchy, as minimizing losses in the first place is the cheapest way to deliver BNG. Nonetheless, using the tool correctly cannot only be a matter of maths; for example, the tool is habitat-based and doesn’t consider species. Therefore, the tool must be applied with expert knowledge.

5. Discussion

In a global biodiversity loss emergency, NNL is insufficient. BNG is a better goal, particularly where it quantifies losses and gains using science-based evidence, supporting stronger data-driven decision-making. It could also accelerate local biodiversity recovery. Although it has the potential of becoming a standardized method globally, current metrics such as those of the UK’s must be tailored to local needs in countries like Peru that are nature-rich but data-poor.

There are still many challenges to be addressed, including: delivering and demonstrating actual biodiversity gains; establishing suitable gain targets; meeting the additionality principle (Gonçalves et al., 2015); and avoiding choosing offsets rather than a proper mitigation hierarchy implementation (Gardner et al., 2013). There is also a need to consider all dimensions of biodiversity, such as species richness or ecosystem function, and have strong governance, including timely stakeholder engagement (Goncalves et al., 2015). Concerns have also arisen regarding resources (Gardner et al., 2013), with a very limited number of BNG experts available, most of whom are from the global north. In the UK, BNG implementation on projects depend on local planning authorities, which have limited resources. In Peru, compensation plans are an EIA commitment, delivered through the environmental management plan, without any aims to achieve BNG and with no room for adaptive management due to legislation stringency.

At a global scale, urgent action is needed to achieve Nature Positive. BNG can only be one contributor to this, not the whole solution, but it will be a key to positively impacting development projects.

6. Conclusions

The NNL and BNG approaches have grown worldwide over two decades, but their applications vary, and authorities have been slow in making them mandatory for development projects. While NNL targets are more widespread, BNG contributes better towards achieving Nature Positive. Despite this, BNG is rarely mandatory. In the UK, England is starting a country-wide experiment with BNG. In Peru, BNG is mentioned in legislation as a desirable outcome, but no steps have been made to produce biodiversity gains. Furthermore, until recently in Peru, even NNL was only required for fragile ecosystems, leaving all other habitats with negative balances, contributing to negative global trends.

NNL and BNG are substantive changes from the net losses caused by "business as usual". Despite the challenges, BNG should be favored whenever possible to achieve a Nature Positive future.

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