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Biodiversity offsets in

Biodiversity Offset is a creative tool that ensures the development of extractive operations is not conducted at the expense of conservation

BY **MEHRDAD NAZARI & DON PROEBSTEL**

WITH the increasing expectations of stakeholders and investors with regard to responsible mining practices, Biodiversity Offset (BDO) can be an important contribution to developing a social licence to operate.

The central importance of, and stakeholder expectations associated with, biodiversity conservation in mining has been highlighted in the World Bank's *Extractive Industry Review*, the Mining, Minerals and Sustainable Development Project, and the recent Canadian Roundtables on CSR and Canadian Extractive Industry in Developing Countries and its consensus Advisory Group Report.

In response, mining companies and their stakeholders are seeking new approaches in order to attain 'no net biodiversity loss' for their operations. BDOs are rooted in the principles of the Rio Declaration on Environment and Development (Earth Summit, 1992) and adapt a concept dating back to Wetland Mitigation Banking, which has been used in the US since the 1970s.

More recently, the Business and Biodiversity Offset Program (BBOP) has emerged as a partnership of more than 40 companies, leading conservation groups, governments and financial institutions.

BBOP is exploring and testing BDOs, and it offers the following definition: "Biodiversity offsets are measurable, conservation outcomes, resulting from actions designated to compensate for significant, residual, adverse, biodiversity impacts arising from project development, and persisting after appropriate prevention and mitigation measures have been implemented. The goal of biodiversity offsets is to achieve no net loss, or preferably a net gain, of biodiversity on the ground with respect to species composition, habitat structure and ecosystem services, including livelihood aspects."

BBOP is developing a suite of tools to assist in the design, implementation and evaluation of BDOs, and it is currently road-testing its emerging methodologies on pilot projects from extractive and other sectors.

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MITIGATION HIERARCHY

The application of BDOs in emerging markets is still in its early stages. However, it is already attracting a growing following among major conservation non-government organisations (NGOs) and the business sector. Some critics liken the BDO concept to donating to an animal shelter to 'offset' mistreating one's dog at home. But, this is neither the intent nor the methodology that is being developed using a multi-sector and consensus-seeking approach. The basic mitigation hierarchy applicable to environmental and social impact assessments also applies to the development of an appropriate BDO.

A project developer would be expected to progress their project through an iterative design process. This prioritises avoidance and impact minimisation over mitigation, offset and compensation measures. Residual impacts (those not amenable to avoidance or mitigation) could then be addressed through the development of appropriate BDOs. Consultation with key stakeholders, particularly local communities and indigenous people, is also an important element feeding into the development of BDOs.

BANKABILITY AND CREDIBILITY

More rigorous planning and consultation processes are also expected by the IFC Performance Standards and the Equator Principles – benchmarks used by major project-finance institutions, export-credit agencies, multilateral financial institutions and others to appraise, and manage, the social and environmental risks associated with their prospective investments.

Experience suggests that, in addition to working with local and indigenous communities, the involvement of conservation NGOs is a critical component in generating credible BDO initiatives. This is not merely stating the obvious – mining companies are better at mining, while NGOs and other stakeholders have an edge on conservation and credibility. Without the involvement of legitimate NGOs, most BDO concepts might not gain credibility and would not be able to contribute to a social licence.

The involvement of international NGOs will also help to develop practical approaches to complex methodological issues surrounding BDOs. NGOs can assist in assessing and validating baselines and benchmarks, selecting appropriate 'offset currency' and indicators (hectares, trees or frogs?), identifying eligible components in view of the project-specific context (planting trees, capacity building or trading up to higher biodiversity priorities) and on the use of multipliers (planting two trees for every one removed).

In many cases, responsible mining operations, applying best global practice – which is anticipated to increasingly incorporate BDOs, where appropriate – are seen as the preferred development option, compared to unregulated and poorly run operations.

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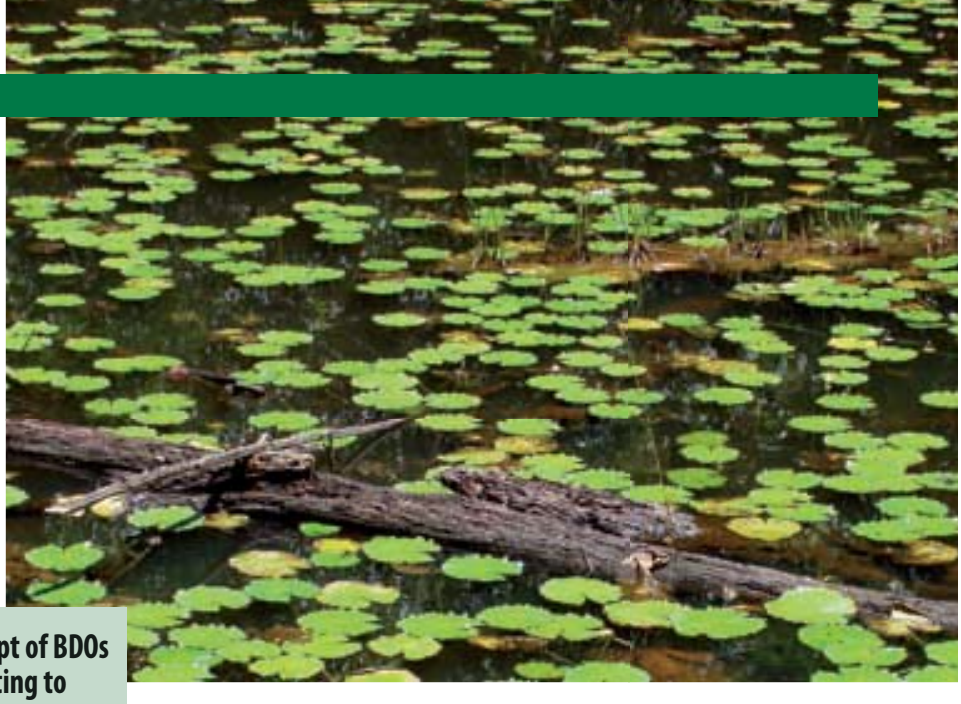

The latter include artisanal and small-scale mining (ASM), which is a growing phenomenon in emerging markets, commonly associated with significant adverse biodiversity (and other) impacts.

CASE STUDY

Gold Reserve Inc commissioned an environmental and social impact assessment (ESIA) for its Brisas copper-gold deposit, located in the Imataca Forest Reserve in the Bolivar State, Venezuela (an area famous for its wildlife). The ESIA, which was spearheaded by AATA International, and supported by Prizma LLC and others, was designed to meet Gold Reserve's corporate commitments to best practice and sustainability. The study was also designed to meet the global standards of the IFC Performance Standards and the Equator Principles.

"The concept of BDOs is contributing to a positive vision of win-win outcomes for all stakeholders"

For the Brisas project, the biodiversity baseline information was gathered and evaluated within a regional and landscape context. This allowed the consideration of other key, regional developments and challenges, including artisanal and small-scale mining activities, which are widely practised in the Imataca Forest Reserve. The regional perspective also helped to include matters of scale, connectivity, cumulative effects, and the inclusion of indigenous knowledge and government priorities. Potential biodiversity impacts were evaluated with a species-specific approach, which enabled a targeted determination of the presence/absence of critical habitats within the project boundary. It also enabled the identification of activities and interventions that could be incorporated into a BDO programme.

REDUCING IMPACTS

Using an iterative methodology, the ESIA process not only identified potential impacts but also assisted in the development of project alternatives to reduce conservation (and other) risks. This resulted in significant design changes to reduce adverse biodiversity effects. Key changes include splitting the waste-rock storage area to eliminate blocking or rerouting the Aymara Creek.

This creek provides a habitat for an endemic species of fish (*Bryconops colaroja*), as well as giving local communities access to the Cuyuni River system. Thus, several potentially significant, adverse effects were avoided in line with the mitigation hierarchy process and prior to considering any offsets. Furthermore, management measures and infrastructure additions were provided to protect environmental receptors, improve sediment control and address potential, acid-rock drainage.

However, despite adopting an iterative approach, and including design changes, a number of residual effects were expected to remain. These include those predicted to be associated with the presence of several, indigenous animals on or near the project site, some of which have local or international conservation status. Another key, residual impact revolves around the conversion of forest habitat into an open pit, which will eventually be reclaimed as a lake, rather than being returned to forest.

BIODIVERSITY OFFSET

To address residual impacts and ensure 'no net loss', or possibly even 'net gain' of local biodiversity, Gold Reserve adopted a biodiversity-offset strategy, and incorporated a portfolio approach to avoid putting all the proverbial eggs into the same basket.This philosophy requires the selection of several, different interventions to help risk management; an approach not unlike assembling a risk-adverse retirement fund.

Moreover, engaging and involving local and international NGOs, in addition to local communities and other stakeholders, were viewed as important ingredients for Gold Reserve's BDO strategy. As the offset strategy developed, it became apparent that there were opportunities for synergies with social, regional and cumulative impacts. In response, the offset strategy matured to include more than just biodiversity.

NGO ALLIANCES

The emerging BDO portfolio was taken to two short-listed, international conservation NGOs to explore possibilities for collaboration. The aim was to seek partnerships to help enhance conservation and development, and enable Gold Reserve to outsource activities to competent, credible organisations.

Gold Reserve proceeded with partnerships with Conservation International, a leading international, non-profit organisation (with a presence and networks in Venezuela) and Fundación Para el Desarrollo Sostenible (Foundation for Sustainable Development), based in Venezuela.

So far, the outcome of joint activities includes extending the biological baseline study by conducting a Rapid Biological Assessment through the Center for Applied Biodiversity Science (part of Conservation International). In addition, selected ecotourism and agro-forestry projects have been initiated and are already in the early stages of development.

PORTFOLIO SELECTION CRITERIA

The selection process used to assemble a preliminary BDO portfolio for further discussion with local communities and conservation NGOs considered a number of criteria, including:

- Biodiversity linkage (similar ecosystems, species, size);
- Expected desirability by key stakeholders (indigenous/local communities, and government);
- Sustainability (cost, risks, capacity, longevity);
- Partnership opportunities (including for mobilising of funds and expertise).

Using this approach, a number of preliminary options were developed, ranging from regional reclamation and sustainable agro-forestry assistance to more conventional measures aimed at strengthening existing pristine/protected areas.

WORK IN PROGRESS

The concept of BDOs is contributing to a positive vision of win-win outcomes, pursued by collaborating with stakeholders from local communities, business, conservation organisations and governments. Using both established and emerging approaches, mining projects can develop credible, sustainable and bankable BDO strategies and programmes.

BDOs have the potential to form a foundation for activities that reach beyond the scope of biodiversity and help to address more complex concerns, which incorporate the key facets of sustainability – environment, society and economy. Applying an adaptive, management approach and flexible alliance structures will contribute to the successful implementation of BDO strategies. These strategies are also expected to demonstrate Gold Reserves' commitment to responsible mining, and give confidence to both stakeholders and investors.

Mehrdad Nazari is senior ESIA and CSR advisor at Prizma LLC. Dr Don Proebstel is vice-president, environment and sustainability, at Gold Reserve Inc