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Compensation for Environmental Damage

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About This Series and MLRI

This *Working Papers Series on International Best Practice*s is prepared within the scope of the **Mining Legislation Reform Initiative (MLRI)**, a project of the **AUA Center for Responsible Mining**. MLRI is a multi-year effort, funded by the **Tufenkian Foundation**, to improve Armenia's legislation ensuring that mining in Armenia provides sufficient benefits to the country and local communities. The initiative involves drafting and passing legislation that elevates the socio-economic benefits of mining, while reducing the negative environmental and public health impacts. A key component of the MLRI is collaborating and partnering with civil society, advocacy groups, academic institutions, and relevant national and international organizations. MLRI works with the key governmental and legislative bodies in getting the draft legislation passed into law. For more information visit http://mlri.crm.aua.am.

About the AUA Center for Responsible Mining

The American University of Armenia (AUA) Center for Responsible Mining promotes the creation and adoption of global best practices in socially, environmentally, and economically responsible Mining in Armenia and the region. To achieve this, the Center conducts research, training, and advocacy engaging all key stakeholders including industry, civil society, financial institutions, and the public sector. For more info, visit http://crm.aua.am.

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Introduction

Mining should be designed to secure optimal net benefit for the citizens of the host country over the long term with the lowest social and environmental impact. However, negative social and environmental impacts of mining activities on local communities and the environment often require compensation. While it is relatively easy to estimate engineering costs and financial payments to governments, estimating social and environmental costs is more difficult but unavoidable.

Compensation refers to payments or other benefits provided by companies to affected communities to compensate for economic, social, environmental or cultural damage caused by the mining operation.[1] An environmental offset is a conservation action that is intended to compensate for the negative environmental impacts of a mining development. The terms "offset" and "compensation" are used interchangeably and include both financial payment for impacts or other measures designed to counteract harm or impacts. Offsets can be:

- *Proponent managed*. The proponent delivers and manages the offset utilising internal company resources;
- *Third party delivered*. The proponent may enter into an arrangement with a suitable third party provider to deliver the offset requirement. This may include purchasing an existing offset through a 'biobank' or similar facility; and
- *Centralised and financially based*. The proponent may contribute to a centralised trust or fund, administered by Government or other entity, and used to achieve strategic environmental outcomes through targeted actions. Centralised offset funds should be sufficiently resourced, competently administered and monitored to ensure environmental outcomes are delivered and publicly reported.

The conservation outcomes resulting from these measures are designed to compensate for significant residual adverse impacts arising from project's implementation, after appropriate preventive, minimisation and mitigation measures have been taken. The goal of compensatory offsets is to achieve a clear net gain of ecosystem function.

Current situation in Armenia

The Armenian legislation stipulates that the funds earmarked for environmental programs are to be no less than the sum of nature protection and nature use payments collected in "the preceding second budget year." In practice, these funds are only partially used for this

[1] See http://www.eisourcebook.org/cms/files/attachments/worldbank/9point8-Sharing-Mining-Benefits-in-Developing-Countries.pdf, p. 4.

purpose. Compensation received for environmental damages is financially based, accumulated in the state budget and administered by the central government in Yerevan.

The environmental fees that are paid by mining companies can be allocated through subventions to affected communities. Some of the funds are returned to the affected communities through locally defined investments for improving the environmental conditions. However, the amount is subject to approval in the annual state budget and, most often, more than half of the funds collected for environmental protection purposes are used to finance other priorities. Moreover, agreements on resettlement and compensation during mine development are largely agreed between proponent and authorities, with limited involvement of project-affected peoples.[2]

International best practice

Sharing benefits generated by mining operations within communities is a necessity in best practice jurisdictions. Compensation for landholders and other project-affected peoples by the granting of a mining lease is typically a legal obligation that the proponent must fulfil in addition to regular tax payments. It is one of three benefit-sharing channels (the other two are government payments and community / social investment). The affected people are sometimes compensated in monetary terms and the payments for social and environmental impacts can be considerable. Management and disbursement of compensation funds can be a challenge. A trust structure can help ensure effective management of funds intended for compensation-related community projects and payments over time.

Not only does the value of the compensation need to meet expectations, but also its form, with growing recognition that one-off cash payment is inappropriate. Proponents and governments are under increasing scrutiny to ensure that benefits from mining projects are not limited to financial compensation for damages and that they contribute positively to communities affected by mining developments. To gain and maintain social acceptance from affected communities, proponents often go beyond legal requirements by investing in community development.

Compensatory offsets

In best practice jurisdictions, offsets are used to compensate for the biodiversity values lost through mining activities.[3] Offsets transfer the responsibility for managing biodiversity to another area of land. They include targeted actions implemented to compensate for significant residual impacts on biodiversity values, following the application of the 'avoid-minimise-mitigate' environmental management hierarchy.[4] By such sequencing, offsets

[2] The World Bank (2016), Armenia: Strategic Mineral Sector Sustainability Assessment, April, p. 77.
[3] See http://www.icmm.com/publications/pdfs/4934.pdf.
[4] See http://www.minerals.org.au/leading_practice/sustainable_development/biodiversity_offsets_policy/.

become the fourth measure in the conservation hierarchy and are only considered after all reasonable actions to avoid or mitigate environmental damage on the site have been investigated.[5]

Any offset action must be additional to what is already required by law. The requirement of 'additionality' must be based on clear criteria to ensure that offsets are not approved unless they provide a conservation benefit additional to what would otherwise occur. Any compensatory offset should leave the environment better off than before the project. The area is better off if there is 'informed agreement of stakeholders that the proposed offset is more extensive in area, greater in environmental value (less disturbed, less damaged, more biodiversity, greater environmental service value), higher in ecosystem function and under a more secure level of protection, such as by financing in perpetuity'.[6]

Given that the purpose of offsets is, at a minimum, to create a no net loss situation and, often, to create an environmental gain, unproven offset techniques are inappropriate as they are unlikely to result in ecologically sustainable outcomes. No net loss is considered too modest a goal in best practice jurisdictions, with legislation requiring offset schemes to maintain or improve environmental outcomes, instead of simply requiring 'no net loss' or 'maintaining viability'. There is increasing agreement that the best practice for a compensatory offset should be a substantial net gain in ecosystem function. In other words, the area, value, etc., of the tract lost is multiplied by a "small multiple" of more than one, commonly three, and less than ten. The development of the European Union's no net loss initiative has consistently sought to anchor compensation and offsetting into a strict mitigation hierarchy. In other words, offsetting and compensation should be a last resort, ensuring that avoidance and prevention of negative impacts is not forgotten as the first objective.[7] Nevertheless the EU policy does not promote net gain. Instead, the EU has developed a sophisticated planning tool called green infrastructure. The purpose of this is to put at the front of mind of all regional planning the replacement as far as reasonably practical of grey infrastructure when redesigning public and private space with green infrastructure. Such an approach to planning may be particularly useful in a small country like Armenia, as it will put green space at a premium.

In best practice jurisdictions, there is minimal use of indirect offsets. This is due to significant uncertainty of linkages with impacts and higher risk that biodiversity outcomes may not be achieved. However, offsets near the project area are often more valuable for affected

[5] Goodland, R. (2012). Responsible Mining: The Key to Profitable Resource Development. *Sustainability*, vol. 4, pp. 2099-2126.
[6] Goodland (2012).
[7] http://ec.europa.eu/environment/nature/biodiversity/nnl/index_en.htm

communities and for conservation than significant expenditure on restoration of areas directly affected by mining. Offset areas are most often legally protected and managed in perpetuity as the impact of the development is permanent. Unless biodiversity offsets are secured through appropriate legal mechanisms, the environmental outcomes of offsetting will be uncertain. Furthermore, offset schemes are most effective when they are underpinned by enforcement and compliance mechanisms and adequate regulatory resourcing from the outset.

Carbon offsets

As greenhouse gas emissions (GHG) have risen to their highest level, a clear case for offsets is when a mining company aims for a project to be carbon neutral. To become carbon neutral, the company is required to calculate the amount of GHG it expects to emit over the course of the mine's life and then plant and protect the required number of trees to sequester the equivalent amount of GHG. Thus, the carbon offset could be a tree plantation or a degraded forest tract rehabilitated to a semi-natural forest. The trees should preferably be native species planted on appropriate formerly forested land. Support of the local people is essential and they can often be trained as forest managers.

Biodiversity offsets

If a mine cannot avoid converting, for example, 20 km^2 of forest, a biodiversity offset would be to conserve in perpetuity a similar nearby tract of unconserved forest of a small multiple of the 20 km^2 lost. The key here is similar, both in area and ecosystem function, including species diversity, carbon sequestration capacity, condition, etc.

A "paper park" can be converted into a viable conservation unit by offset financing provided by the project proponent. Bolstering an existing conservation unit by financing the purchase of a critical tract adjacent to the existing conservation unit is more cost effective than financing a new conservation unit. Inclusion or addition of buffer zones or conservation of corridors between conservation units also can be cost effective.

Rehabilitation of a degraded area into some simulacrum of the ecosystem lost can be a valuable offset. The goal would be restoration of the degraded area into a fully functioning, stable ecosystem with the same ecosystem functions, including the species diversity index, as the surrounding area or the tract lost to the mine.

Compensatory offsets in Australia

Offsets are legal requirements in 14 best practice jurisdictions. Regulation in at least 15 further jurisdictions, often related to environmental impact assessment, suggests or facilitates the use of offsets. Australia, for example, has strong offset policies and well-developed guidance and implementation mechanisms.[8]

[8] See http://www.icmm.com/publications/pdfs/4934.pdf, p. 13.

Offsetting has gained traction in Australia as a means of facilitating mining developments that may otherwise be rejected on the grounds that they have unacceptable impacts on biodiversity.[9] In Australia, federal environmental approvals occur under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) and also apply to mining activities. The *EPBC Act*, *Environmental Offsets Policy* and *EPBC Act*, *Offsets Assessment Guide* explain how to identify suitable offsets for matters protected under national environment law. The majority of proposed actions that need approval under the federal *EPBC Act* also require environmental approval from the relevant Australian state or territory government before they can proceed.

Under the *Environmental Offsets Policy*, offsets should directly correlate to the impacts of a proposed action. This is consistent with best practice offset techniques. In practical terms, offsets can include protecting at-risk environmental assets, restoring or extending habitat for threatened species or improving the values of a heritage place. The policy's five key aims are to:

- ensure the efficient, effective, timely, transparent, proportionate, scientifically robust and reasonable use of offsets;
- provide proponents, the community and other stakeholders with greater certainty and guidance on how offsets are determined and when they may be considered;
- deliver improved environmental outcomes by consistently applying the policy;
- outline the appropriate nature and scale of offsets and how they are determined; and
- provide guidance on acceptable delivery mechanisms for offsets.[10]

The policy also sets out a number of principles that are applied in determining the suitability of offsets. That is, suitable offsets must:

- deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action
- be built around direct offsets but may include other compensatory measures
- be in proportion to the level of statutory protection that applies to the protected matter
- be of a size and scale proportionate to the residual impacts on the protected matter
- account for and manage the risks of the offset not succeeding
- be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs
- be efficient, effective, timely, transparent, scientifically robust and reasonable; and

[9] See http://www.nela.org.au/NELA/Documents/Fundamental_Principles_for_Best_Practice_Biodiversity_Offsets.pdf.
[10] Australian Government, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, October 2012, p. 6.

- have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.[11]

The policy notes that "an offsets package is a suite of actions that a proponent undertakes in order to compensate for the residual significant impact of a project".[12] The actions can comprise a combination of 'direct offsets' or 'other compensatory action/indirect offsets'. A minimum of 90% of the offset requirements for any given impact must be met through direct offsets. Direct offsets are defined as actions that provide a measurable conservation gain for an impacted protected matter. Conservation gain is the benefit that a direct offset delivers to the protected matter, which maintains or increases its viability or reduces any threats of damage, destruction or extinction.[13] Examples include:

- improving existing habitat for the protected matter;
- creating new habitat for the protected matter;
- reducing threats to the protected matter;
- increasing the values of a heritage place; and/or
- averting the loss of a protected matter or its habitat that is under threat.

Direct offsets may also include:

- the improvement and creation of new habitat through regeneration and rehabilitation activities across a landscape;
- implementing feral animal control programs that reduce predation of a particular threatened species;
- improving the population of a species through captive breeding and release programs; or
- undertaking activities that improve the values of a heritage place or wetland of international importance, such as upstream management activities to improve estuarine water quality.

Other compensatory measures (or indirect offsets) are defined as actions that do not directly offset the impacts on the protected matter but are anticipated to benefit the impacted protected matter, for example, funding for research or education programs.[14]

The policy also encourages 'advanced offsets' as a means to better manage the risks associated with the time delay in realising the conservation gain for a protected matter. Advanced offsets are offsets for potential future use, transfer or sale, for example, protection

[11] Ibid.
[12] Ibid, p. 8.
[13] Ibid.
[14] Ibid, p. 9.

or improvement of habitat for the conservation of a protected matter before an impact is undertaken.[15]

The *Offsets Assessment Guide* is a decision support tool used by the federal environmental department to determine the suitability of offsets in a transparent and consistent manner. The guide incorporates the best-practice principles for offsetting that are articulated in the offsets policy. It has been the subject of significant stakeholder consultation. The guide is publicly available and can be used by relevant stakeholders for planning purposes when preparing a referral for environmental assessment.[16]

The guide uses specific information about impacts and offsets to calculate whether a proposed offset adequately compensates for the residual significant impacts of a proposed action. The spreadsheet allows users to enter a range of data about impacts and offsets, including (1) the size and nature of the impact of the proposed action; (2) the size and nature of the proposed offset; and (3) risks associated with delivery of the proposed offset. An important feature is that it accounts for delays in the delivery of any conservation benefit.

There are generally costs associated with establishing an offset as well as its ongoing management and monitoring. These costs are dependent on the nature of the offset. Where data are available about the cost of a proposed offset, this can be entered into the guide. Data can then be used to calculate other compensatory measures where such measures form part of an offsets proposal.

Each proposal is considered on a case-by-case basis, taking into account the scale and intensity of the impacts from the proposal and the potential for offsets to deliver high quality conservation outcomes. Offsets do not imply that proposals with unacceptable impacts will be approved. They simply provide an additional tool that can be used during the environmental impact assessment process.[17]

The regulating agency has a monitoring and audit program to ensure that conditions of approval are implemented effectively. Breaches of approval conditions, including those relating to offsets, can incur significant penalties. The project proponent is required to provide information about the management of the offset as part of the ongoing monitoring. This may include flora and fauna survey data, water quality data, rates of breeding success and other information, depending on the nature of the impact and the offset requirements as stipulated in the Conditions of Approval.

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[15] Ibid.

[16] See https://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offset-assessment-guide.xlsm.

[17] *Environmental Offsets Policy*.

Conclusions and recommendations

Government authorities have increasing interest in biodiversity offsets over other forms of environmental compensation, because they are tangible, quantitative and enduring. Government policies in leading jurisdictions commonly refer to offsets as a potential or required tool to meet government targets to balance development with environment. There has been a steady increase in offset-related legislation for some decades and this has accelerated during the past decade. The International Council on Mining and Metals (ICMM) *Independent Report on Biodiversity Offsets*, outlines a core approach (four-step method) to measuring and exchanging biodiversity losses and gains, based on global best practice. Its application is illustrated with reference to government regulation and case studies. The report also covers offset implementation within regulatory and voluntary regimes, including implementation mechanisms, availability of service providers and the potential for using existing protected areas as sites for offsets.[18]

Before offsetting is considered as an option, every effort should be made to avoid and then mitigate the impacts of mining projects on the environment. This mitigation hierarchy should be clearly set out in relevant legislation as a mandatory pre-condition before any offsetting option is considered. Appropriate guidance should be provided to proponents on how they can demonstrate their endeavours to genuinely avoid and mitigate aspects of the proposed development.

In Armenia, challenges remain in ensuring that affected communities have a possibility to participate in decision-making and impact assessments that existing laws and regulations stipulate.[19] The government and project proponents should jointly promote capacity building and training initiatives for the affected communities and broader civil society. Capacity building initiatives may facilitate meaningful participation in project planning and monitoring and in negotiations with developers around resettlement and compensation, and ultimately contribute to social conflict prevention.

[18] See http://www.icmm.com/publications/pdfs/4934.pdf.

[19] The World Bank (2016), Armenia: Strategic Mineral Sector Sustainability Assessment, April, p. 83.

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