Non-Energy Extractive Industry and Biodiversity Conservation

Benchmarking Discussion Paper

Outcome of a workshop by the European Union Business and Biodiversity Platform
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1. Introduction

1.1 Background to the document - why a discussion paper?

The global loss of biodiversity has become one of the major environmental challenges of the 21st century. Globally, biological diversity is being lost at an alarming rate. The recent findings of the Millennium Ecosystem Assessment show that 60% of all ecosystem services worldwide are in decline and species are becoming extinct at up to 1,000 times the normal rate. According to the TEEB\(^1\) report these un-accounted services represent 6% of global GDP.

The concern for biodiversity is integral to sustainable development, competitiveness, economic growth, employment and improved livelihoods. Many of the services that biodiversity and ecosystems provide are currently threatened. These are timber production, water supply, waste treatment, natural hazard protection, regulation of air quality, regulation of regional and local climate, regulation of erosion, etc. In the long run, the loss of ecosystem services threatens business opportunities as well.

To respond to this challenge, EU leaders endorsed the long-term vision and ambitious 2020 headline target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss. Recently, to fulfil this aim, the Commission adopted a new EU 2020 Biodiversity Strategy "Our life insurance, our natural capital: an EU biodiversity strategy to 2020"\(^2\). To achieve the objectives therein, the full and committed engagement of business to this endeavour is essential.

Companies in the non-energy extractive industries are engaging more and more in dialogues with governments and conservation organizations. In order to be sustainable, businesses need to combine generating profits with good environmental and social performance. Dealing with environmental issues goes far beyond managing risks. In 2007, The High Level European Conference on Business and Biodiversity in Lisbon called on businesses, governments, the EU and NGOs to:

- Continue raising awareness of the strong competitive advantage to be gained by conserving biodiversity;
- Promote the use of a wide range of market mechanisms, corporate responsibility and regulatory schemes to conserve biodiversity;
- Support large and small businesses with operational tools for conservation of biodiversity and measuring their performance in meaningful ways; and
- Encourage new incentives to develop and strengthen partnerships between companies, governments at all levels, NGOs and universities/scientific institutions.

Within this context, this Benchmarking Discussion paper aims at helping businesses find solutions to biodiversity challenges related to their activities ensuring a

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\(^1\) The Economics of Ecosystems and Biodiversity (TEEB) study: http://www.teebweb.org/

\(^2\) COM(2011) 244
fair income and green growth, while providing benefits for biodiversity and ecosystems. It is worth highlighting, that this document is coherent and in line with the recently adopted initiatives, in particular the Communication from the Commission Tackling the Challenges in Commodity Markets and on Raw Materials\(^3\), and the guidance document on Non-Energy Mineral Extractions and Natura 2000 produced in the context of the implementation of the Habitats Directive\(^4\). These two initiatives are taken as a reference basis.

The Guidance document on NEEI and Natura 2000 provides a good overview of the NEEI industry in Europe, the legislative framework to protect nature in the EU and other relevant initiatives.

### 1.2 Purpose, scope and target audience of the document

**Purpose:**
The aim is to compile information on existing tools that can further facilitate the engagement of businesses in the NEEI sector integrating biodiversity concerns into corporate strategies and decision-making, such as, *inter alia*, business-operating principles for biodiversity conservation.

Many best practices, guidance principles and initiatives on biodiversity conservation have been published over the last few years. While many of them give general recommendations useful more specifically at the corporate level, others may be more relevant at the local level or for a specific product or service. Selecting the right method or guide as well as the right support from stakeholders may be a difficult task.

Therefore, the final objective of this document is to guide companies towards the most appropriate tools and methods for integrating biodiversity conservation into extractive industry business activities, taking into account economic constraints, value for society and environmental benefits.

**Scope:**
The document provides a general summary on biodiversity policy, an overview of existing standards or guidelines, some best practices to improve the biodiversity performance of the NEEI sector. It provides companies, specifically the non-energy extractive industry, with the information needed to conserve, improve and even create biodiversity in their quarries during and after use.

**Target audience:**
This document targets companies in the non-energy-extractive sector and four of their European associations, such as: CEMBUREAU, Eurogypsum, IMA-Europe or UEPG. It is addressed both to large corporate groups and Small and Medium Enterprises (SMEs) within the EU, although most of the information and tools described hereafter are also likely to be applicable beyond the EU borders.

### 1.3 Nature and structure of the document

Part 2 is a general overview of information necessary to a solid understanding of the non-energy extractive industry’s specific issues regarding biodiversity.

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\(^3\) [COM(2011)25]

\(^4\) Directive 92/43/EEC
Part 3 presents relevant studies and methods specific to the non-energy extractive industry sector. An analysis grid has been included to enable the reader to have at a glance an overview of each standard. In this context, the reader should be able to choose the most convenient support (publication, method, and tool) to address its needs.

The gaps and needs analysis will cover use and applications of existing standards and best practices as well as needs for additional guidelines.

The document is concluded with an analysis of relevant case studies developed by company members of the B@B Platform.

The last section then takes a broader look at the general need and indeed the opportunity to link biodiversity action within the non-energy extractive industry more closely to the objectives of the CBD and the guidance under the CBD which has been adopted by the 192 Country Parties.

2. Extractive industry sector and biodiversity

Extractive activities and some of the techniques used which have a significant adverse effect on biodiversity have long been an area of concern for the achievement of biodiversity objectives. The effects of some of these extractive practices are very visible on landscapes and seascapes and have significant impacts on the integrity of ecosystems and the status of wild species of fauna and flora. This can be exacerbated by the fact that these activities also tend to operate for long periods of time, leading to uncertainty about both their impacts over time and the need for ecological restoration work once the extractive operation is over.

Aware of these concerns and impacts, part of the non-energy extractive industry sector has actively addressed the biodiversity challenges it faces including adopting standards and guidelines and actively engaging with biodiversity experts to mitigate its impacts, to ensure no net loss of biodiversity and in some instance to strive for a net positive biodiversity impact. Hence, it is a sector in which biodiversity is being actively addressed and from which many lessons can be learned as well by businesses operating in other sectors.

2.1 Potential impacts of the non-energy extractive industry on biodiversity

The Guidance document on NEEI and Natura 2000 provides a good overview of some of the major potential negative effects of extractive activities on biodiversity which are applicable both with and beyond Natura 2000 sites. These include.
- Habitat loss and degradation
- Species disturbance and displacement
- Land clearance
- Hydraulic disruptions and changes in water quality
- Habitat changes that may promote invasive species colonisation
- Noise and vibrations
- Movement-related disturbances
- Dust
- Landslides and collapses
- as well as pollution of water, soil or air due to the use and storage of hazardous substances during the extraction and processing activities.

It is worth noting that these adverse effects do not happen in all extractive sites and it is important to highlight that the impacts of an extractive activity need to be assessed to the extent possible on the basis of a life cycle approach, as some negative impacts can be mitigated and overcome in the restoration phases.

It is important to highlight that the adverse impacts of extractive industries on biodiversity can and should be anticipated in the long term, then avoided, mitigated and when none of these options are possible, compensated for. Adopting sound, integrated biodiversity management practices, mining companies can actually contribute to the protection of biodiversity in areas outside of protected areas.

In practice, however, this is often not always the case for a series of different reasons. Several voluntary initiatives seek to address these challenges, as described below.

2.2 Business opportunities for the non-energy extractive sector from protecting biodiversity

The extractive industry engagement with the biodiversity community has led to an articulation of a number of key and often critical benefits for businesses and importantly also for biodiversity.

Companies with strong environmental performance can develop this into a competitive advantage: they perform better on the stock market, manage their resources more efficiently, and provide better products and services. Sharing responsibility and taking action for biodiversity is not only an ethical issue, it also makes economic sense. Healthy ecosystems support healthy people, sustainable companies, sound economies and hence green growth.

Since the Millennium Ecosystem Assessment highlighted the connections between businesses activities and biodiversity conservation, ecosystems are ever more considered as key services providers: provisioning of goods, regulating biophysical processes, providing cultural services, etc. Things are beginning to change: companies are beginning to recognise the competitive advantages that can be gained from the sustainable use of natural resources. Facing the challenge of biodiversity conservation, this has to be led both by Governments, policy makers and businesses.

Since businesses consume ecosystem goods and services, they contribute to ecosystem change. For many, their profits depend directly on well-functioning ecosystem services. Indeed, biodiversity and ecosystem services provide essential raw materials for businesses - in industrial production, commerce and trade. For these sectors, biodiversity conservation makes good business sense.

From a business perspective, the reasons to invest in biodiversity conservation are increasingly forceful. An increasing number of market opportunities related to biodiversity conservation such as markets for ecosystems services are developed. The reasons to invest in biodiversity are even more obvious for business that depends directly on the health of ecosystems. But even businesses that do not directly depend
on natural resources can be motivated by new policy incentives as well as changing consumer behaviours to ‘go green’.

Environmental footprint management is increasingly seen as an efficient tool regarding risk management and new opportunities development.

For example, the ICMM Good Practice Guidance for Mining and Biodiversity\(^5\) explains, “good biodiversity management can bring benefits to mining companies, including:

- increased investor confidence and loyalty;
- shorter and less contentious permitting cycles, as a result of better relationships with regulatory agencies;
- improved community relations;
- strong supportive partnerships with NGOs;
- improved employee motivation; and
- reduced risks and liabilities.”

To this list, one can also add improved brand reputation and company image, especially with regard to the growing number of customers and shareholders who have become aware of and care about ecological issues. Furthermore, building sustainable partnerships with stakeholders and identifying common goals can contribute positively to a business’s goodwill.

2.3 Policy and legislative context

2.3.1 Global context regarding business and biodiversity policy

International institutions have acknowledged the need to engage with business on biodiversity issues.

The Convention on Biological Diversity (CBD) calls upon the private sector to engage in the implementation of the Convention and acknowledges that businesses can significantly contribute to achieving its objectives. The CBD secretariat recognizes the potential impacts of business operations on biodiversity and the role that the business community and civil society need to play for the implementation of the three objectives of the Convention, at all levels.

Involving business in the preservation and sustainable use of biodiversity and fair sharing of the benefits is an important challenge internationally. This was a major conclusion of the Millennium Ecosystem Assessment and was confirmed during the ‘Business and the 2010 Biodiversity Challenge’ meeting of November 2005 in Brazil, organized by the CBD. In March 2006, a decision was therefore adopted focusing exclusively on private-sector engagement. The CBD Conference of the Parties (CoP9) in May 2008 (Decision IX/26 - Promoting business engagement) noted with appreciation and welcomed among others, the Business and Biodiversity efforts of Portugal, Germany and the Netherlands for their efforts to mobilize the Business community, highlighting the “business and the 2010 challenge” and for engaging business in biodiversity issues, as a means of working towards the 2010 target.

\(^5\) www.icmm.com/document/13
Importantly, business engagement was discussed at the 10th Conference of the Parties (COP10) of the CBD which took place in October 2010 in Nagoya, Japan. At COP10, the EU and its Member Countries had an opportunity to shape the global strategy for business engagement in biodiversity and in this context to relate global polices to policies at the European and national levels. During that meeting the parties adopted a Decision on Business Engagement (http://www.cbd.int/nagoya/outcomes/).

2.3.2 EU context regarding business and biodiversity policy

The Habitats Directive together with the Birds Directive forms the cornerstone of Europe’s nature conservation policy. All in all the directives protects over 1.000 animals and plant species and over 200 so called “habitat types” (e.g. special types of forests, meadows, wetlands, etc.), which are of European importance. It is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection.

Since 2001 the Heads of State of the EU agreed to halt biodiversity loss by 2010. The recognition of biodiversity loss has since become a strong political issue both at global, national and regional levels.

The European Commission’s Biodiversity Communication6 called in 2006 for a partnership on business and biodiversity. The Biodiversity Action Plan7, attached to the 2006 Biodiversity Communication includes Action B3.1.6 on developing business and biodiversity partnerships, and Action B3.1.7 on development of partnerships between the financing sector and biodiversity.

The Environment Council of 15 March 2010 agreed the new vision and target as follows:

AGREES on a long-term vision that by 2050 European Union biodiversity and the ecosystem services it provides - its natural capital - are protected, valued and appropriately restored for biodiversity’s intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.

For this vision to be achieved AGREES further on a headline target of halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.


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In 2010 the Commission set up the Business and Biodiversity Platform\(^8\).

In May 2011, the Commission has adopted a new EU biodiversity strategy to 2020\(^9\) to deliver on the target. This strategy sets out six sub-targets focusing on reducing the most significant pressures on biodiversity.

In order to adopt an ambitious international biodiversity target it will be crucial to actively reach out to other important partners and engage them in discussions. Part of this discussion involves the role of businesses in the process.

2.4 Main stakeholders involved

The non-energy extractive industry can be roughly divided into construction minerals (quarrying), industrial minerals (not all hard-rock), and metallic minerals (usually hard-rock), although these categories are not always distinct. Industry associations and biodiversity-related initiatives tend to divide along somewhat similar lines.

Government bodies include agencies charged with the allocation of mining or drilling concessions, state enterprise (which may be directly involved in extractive industry), finance ministries that receive taxes and other revenue from extractive industry, environmental and health and safety ministries and departments, trade ministries, labour ministries, planning ministries, and local authorities.

For example, though relationships between competent authorities and the extractive industries vary widely between different regulatory systems, it is often the case that competent authorities are primarily responsible for the planning and environmental regulation of extractive developments and ancillary facilities. Companies must usually apply to the concerned competent authority for planning permission and licenses/permits to authorise any discharges, emissions and waste generation. Competent authorities will impose strict limits on emissions including noise levels according to relevant standards.

During the EIA process for a given development, the potential impacts are discussed with the relevant competent authority, which may propose amendments such as different mine designs, extraction, processing and waste disposal methods, road diversions, underground belt conveyors or even cable transfer systems. However, in exercising their regulatory competences, competent authorities are usually conscious of the potential long-term benefits that extractive developments can confer to local communities in the form of employment and new streams of revenue. In order to reach agreements that safeguard the environment while promoting local interests and creating bankable investment opportunities, extractive industries and local authorities must be willing to engage in dialogue with each other, and indeed with local residents and other relevant stakeholders.

Civil society includes environmental NGOs, consumer protection NGOs, organised citizens. For the general public and local authorities, landscape and biodiversity conservation is of increasing importance and site restoration is now usually a prerequisite for extractive developments. The quality of site restoration depends

\(^8\) EC B@B Platform (http://ec.europa.eu/environment/biodiversity/business/index_en.html)

largely on the conditions imposed by the concerned local authority and indeed the cost of restoration. Alternative after-uses, such as for the conservation of wildlife or the creation of public green spaces, are now commonly also requested by local authorities.

3. Integrating biodiversity aspects in business

3.1 Introduction

One of the aims of the Platform is to increase the number of "Biodiversity Business" which are defined as

“Commercial enterprise that generates profits through production processes which conserve biodiversity, use biological resources sustainably and share the benefits arising out of this use equitably.”

This definition reflects the three over-arching goals of the United Nations Convention on Biological Diversity (CBD), which also calls for increased efforts to enlist the private sector in biodiversity conservation, sustainable use and equitable benefit sharing. In both the environmental and business communities, there is growing recognition of the potential to conserve biodiversity on a commercial basis.

The business case for biodiversity is easy to make when a firm depends directly on biodiversity to operate. For businesses that are not directly and apparently dependent on ecosystem services, the emphasis needs to be on how biodiversity and ecosystem services (BES) indirectly impact their core business.

3.2 The key action points for business - TEEB

The business case for biodiversity and ecosystems is getting stronger. The companies that understand and manage the risks presented by biodiversity loss and ecosystem decline, and that move quickly to seize business opportunities, are more likely to thrive.

Business could significantly improve their biodiversity protection performance by adopting some type of corporate strategic planning to integrate biodiversity aspects in their business activities. This biodiversity-related strategic business planning exits already in some companies. For the purpose of this document, we would call this strategic planning "Biodiversity Management Plans" but other expressions can also be found in some Member States. The TEEB report itself refers to "Biodiversity and ecosystem strategies for business".

These "Biodiversity Management Plans" (BMP) would greatly benefit from including elements and principles which can be found in existing standards or guidelines, which will be described below, and the TEEB recommendations.

These BMP should cover the entire lifecycle of an extractive project, including the development or development phase, the operations phase, and the closure or

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decommissioning phase. In this respect, specific BMP plans for different phases might be appropriate. Further, the plans should be adaptable to enable responses to evolving circumstances.

Globally, the BMP should also address the impact of the non-energy extractive company’s value chain on biodiversity ranging from the impacts of its suppliers to customers. As a proxy for value chain impacts, the extractive industry sector might want to adopt targets to be defined.

According to TEEB’s recommendations, business can show leadership on biodiversity and ecosystems:

1. Identify the impacts and dependencies of your business on biodiversity and ecosystem services (BES). The first step is to assess business impacts and dependencies on biodiversity and ecosystems, including both direct and indirect linkages throughout the value chain, using existing tools while also helping to improve them.

2. Assess the business risks and opportunities associated with these impacts and dependencies. Based on this assessment, companies can identify the business risks and opportunities associated with their impacts and dependencies on BES, and educate their employees, owners, suppliers and customers. Economic valuation of BES impacts and dependencies can help to clarify risks and opportunities.

3. Develop BES information systems, set SMART targets, measure and value performance, and report your results. Biodiversity and ecosystem strategies for business are likely to include improved corporate information system, development of quantitative BES targets and performance indicators, and their integration into wider business risk and opportunity management processes. A key step for building trust with external stakeholders, while creating peer pressure within industry, is for business to measure and report their BES impacts, actions and outcomes.

4. Take action to avoid, minimize and mitigate BES risks, including in-kind compensation (‘offsets’) where feasible. BES targets may build on the concepts of ‘No Net Loss’, ‘Ecological Neutrality’ or ‘Net Positive Impact’ and include support for biodiversity offsets where appropriate. Industry associations will continue to play a key role in developing and promoting robust and effective biodiversity performance standards and impact mitigation guidelines for their members.

5. Grasp emerging BES business opportunities, such as cost-efficiencies, new products and new markets. Business can support the growth of green markets and help design efficient enabling conditions for biodiversity and ecosystem service markets. Such opportunities may be facilitated by engaging with public agencies, accountancy and financial standard setting bodies, conservation organizations and communities.

6. Integrate business strategy and actions on BES with wider corporate social responsibility initiatives. There is potential to enhance both biodiversity status
and human livelihoods, and help reduce global poverty, through the integration of BES in corporate sustainability and community engagement strategies.

7. **Engage with business peers and stakeholders in government, NGOs and civil society to improve BES guidance and policy.** Business can bring significant capacity to conservation efforts and has a key role to play in halting biodiversity loss. Business needs to participate more actively in public policy discussions to advocate appropriate regulatory reforms, as well as developing complementary voluntary guidelines.

Though a good deal of work had been undertaken on the biodiversity challenges facing the non-energy extractive industry (NEEI), there is still much more work to be done. Many businesses need to adopt corporate-wide biodiversity policies. Biodiversity strategies and action plans for companies as well as for sites are still needed in many cases. Improved methodologies and metrics for measuring the impacts of operations as well the impacts of mitigation measures, such as biodiversity offsets are also needed.

Perhaps most importantly the NEEI has both the challenge and the opportunity to develop strategies and action plans to biodiversity-protect the areas for which they have direct or indirect responsibility. In this sense, working with biodiversity experts from the conservation community can be seen as a win-win for the sector and for biodiversity in the broader landscape.

The first steps for the integration of biodiversity concerns into the non-energy extractive industries are similar to the other sectors:

- To define the dependency and impacts of business on ecosystem services;
- To identify the risks incurred in case of ecosystem services scarcity and define priority areas for further actions;
- To implement the identified best practices related to the defined priority areas into core activities.

### 3.3 Existing performance standards and guidelines

Certain standards and guidelines were developed by various organisations in an attempt to better report on their environmental performance and to manage biodiversity impacts. Such guidelines for biodiversity can be useful for the NEEI and for individual multinational companies; however, the management of biodiversity in SMEs should be further considered and any further work should take into account SMEs circumstances and capacity to manage biodiversity properly in their daily business. Hereafter, a non-exhaustive list of available standards or guidelines can be found:

- Global Reporting Initiative (GRI)
- International Finance Corporation (IFC) Performance Standards
- International Council on Mining and Minerals (ICMM) Guidance
- Climate, Community and Biodiversity standards
- Corporate Ecosystem Review
• Ecosystem Service Benchmark
• Fairtrade Labelling Organisation standards
• Forest Stewardship Council standards
• The Gold Standard
• ISO 14001 Environmental Management Standard
• IUCN Red List
• Marine Aquarium Council standards
• Marine Stewardship Council standards
• Rainforest Alliance certification schemes
• Union for Ethical BioTrade

The following section will provide a detail analysis of some of these standards, namely

• Global Reporting Initiative (GRI)
• International Finance Corporation (IFC) Performance Standards
• International Council on Mining and Minerals (ICMM) Guidance
• European Commission (EC) Non-energy Mineral Extraction and Natura 2000 Guidelines

**General reporting standards**

**Global Reporting Initiative (GRI)**

• The Global Reporting Initiative (GRI) \(^{11}\) is a network-based organization that pioneered the world’s most widely used sustainability reporting framework. GRI’s core goals include the mainstreaming of disclosure on environmental, social and governance performance. The Reporting Framework sets out the principles and Performance Indicators that organizations can use to measure and report their economic, environmental, and social performance. The cornerstone of the Framework is the Sustainability Reporting Guidelines. Other components of the Framework include Sector Supplements (unique Indicators for industry sectors) and National Annexes (unique country-level information). The reports accomplish these aims in three ways:

  • Benchmarking and assessing performance vis-à-vis laws, norms, codes, and voluntary initiatives;
  
  • Demonstrating how the organization influences and is influenced by expectations about sustainable development; and
  
  • Comparing performance within an organization and between different organizations over time.

The GRI Sustainability Reporting Guidelines & Mining and Metals Sector Supplement \(^{12}\), which was first piloted in October 2003, finalised in July 2008 and released in 2010, are designed to cover all activities of the sector across the project lifecycle from


\(^{12}\) [http://www.globalreporting.org/ReportingFramework/SectorSupplements/MiningAndMetals/MiningAndMetals.htm](http://www.globalreporting.org/ReportingFramework/SectorSupplements/MiningAndMetals/MiningAndMetals.htm).
exploration, to decommissioning. It details reporting requirements relevant to the project phase and to stakeholders. In particular, the Supplement covers the following key issues:

- The control, use, and management of land;
- The contribution to national economic and social development;
- Community and stakeholder engagement;
- Labour relations;
- Environmental management;
- Relationships with artisanal and small-scale mining; and
- An integrated approach to minerals use.

The core biodiversity elements covered are EN11, EN12, MM1 and MM2\textsuperscript{13}. The additional relevant biodiversity elements are EN13, EN14 and EN15. They cover reporting requirements relative to: identifying risk associated with operations; direct and indirect impacts on biodiversity; amount of land disturbed or rehabilitated; sites requiring biodiversity management plans; and preventing, managing and remediating damage to natural habitats from extractive activities.\textsuperscript{14} See Table 1, below, for a review of these elements.

**Table 1. Biodiversity elements of the GRI Mining and Metals Sector Supplement**

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<tr>
<th>Biodiversity elements</th>
<th>Focus</th>
<th>Scope</th>
<th>BMPs</th>
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<td>EN11 - Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.</td>
<td>Identifying and understanding certain risks associated with operations in and around biodiversity. Emphasizes managing and monitoring activities to reduce the risk of impacts and to manage the impacts on biodiversity, or avoid mismanagement. Emphasizes that failure to do so may damage reputation; incur delays in planning permissions and loss of a social license to operate.</td>
<td>Reporting potential impacts on land that lies within, contains or is adjacent to legally protected areas as well as areas of high biodiversity value outside of protected areas.</td>
<td>Information pertaining to: geographic location; subsurface or underground land that may be owned, leased or managed by the organization; position relative to protected areas and high biodiversity value area outside protected area; type of operation; size (km\textsuperscript{2}) of operation; biodiversity value, including attributes of the ecosystem and the listing of protected species (IUCN, Ramsar, Natura 2000, etc.)</td>
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\textsuperscript{13} Note: ‘EN’ stands for Environmental Performance Indicator, while ‘MM’ stands for Mining and Metals Sector-Specific Commentary.

\textsuperscript{14} For further information on GRI’s approach to biodiversity reporting in general, see their Biodiversity Reporting Resource which was released in 2007. Available at: http://www.globalreporting.org/LearningAndSupport/GRIPublications/ResearchPublications/Topics.htm.
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<td><strong>EN12 - Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.</strong></td>
<td>Direct and indirect impacts on biodiversity resulting from activities, products, and services. Provides background to the organization to institute an organizational strategy to mitigate these impacts.</td>
<td>Protected areas and areas of high biodiversity value that are not legally protected. Seeks to glean structured and qualitative data to allow for comparisons across organizations and over time based on the relative size, scale and nature of impacts.</td>
<td>Requires reporting on significant direct and indirect impacts relative to: construction or use of manufacturing plants, mines and transport infrastructure; pollution; invasive species, pests, pathogens; reduction of species; habitat conversion; and changes in ecological processes outside the natural range of variation (e.g. salinity or temperature changes in water). Impacts should be referenced according to: species; extent of impact (area); duration of impact (time); and reversibility or irreversibility of impacts.</td>
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<td><strong>MM1 - Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated.</strong></td>
<td>Amount of land disturbed or rehabilitated</td>
<td>Land that is under direct ownership or lease, which is managed for production activities or extractive use</td>
<td>Report the area disturbed as a result of company activities; terrestrial and aquatic areas should be considered.</td>
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<td><strong>MM2 - The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place.</strong></td>
<td>Focus on sites needing biodiversity management plans to minimize and manage risks and opportunities for the company.</td>
<td>Number and overall percentage of sites identified as needing biodiversity management plans.</td>
<td>Reporting criteria for the BMP includes: scale of impact; sensitivity of area; local community use of biodiversity; ecosystem services provided by local environment; cultural relevance; protected status; endemic or Red Listed species; potential post closure use; business case/risk aspects.</td>
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<td>EN13 - Habitats protected or restored</td>
<td>The indicator focuses on preventing, managing and remediating the damage to natural habitats that result from an organization’s activities. The scope of the indicator covers areas where remediation has been completed or the area is actively protected.</td>
<td>Measures the implementation of a specific strategy to prevent or remediate the negative impacts associated with organizational activities.</td>
<td>An assessment of the area based on its condition at the close of the reporting period; the size and location of habitat areas that are protected and restored. Note any partnerships with third parties for restoration/protection activities beyond what the organization has done itself.</td>
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<tr>
<td>EN14 - Strategies, current actions, and future plans for managing impacts on biodiversity</td>
<td>This indicator focuses on developing strategies, current actions and future plans to benchmark biodiversity performance against. The development of these benchmarks is particularly important for operations in countries without strong national programs to manage biodiversity.</td>
<td>This covers the entirety of the organization’s approach to managing indirect and direct impacts on biodiversity (detailed through EN11 and EN12). Strategies, actions or plans should be influenced by national regulations, if applicable.</td>
<td>Demonstrable integration of biodiversity considerations via analytical tools into environmental site impact assessments; establishment of risk exposure to biodiversity through a set methodology; establishing targets and objectives; monitoring processes and public reporting.</td>
</tr>
<tr>
<td>EN15 - Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.</td>
<td>This indicator concerns itself with IUCN Red List species and national conservation list species with habitats in areas of company operations. It is intended to assist companies with the process of identifying where operations threaten species and allow them to avoid harm and prevent extinction.</td>
<td>This covers the habitats that are affected by operations</td>
<td>Reporting should cover species that are: critically endangered; endangered; vulnerable; near threatened; and least concern.</td>
</tr>
</tbody>
</table>

The GRI focuses on identifying organizational activities that threaten, either directly or indirectly, biodiversity within the project areas. Attention is also given to developing strategies to minimize these impacts and to recognize the opportunities and risks that biodiversity impacts pose to the company. It is worth noting that the GRI guidelines are mostly developed for large companies and they might need to be adapted to be used by SMEs.
International Finance Corporation (IFC) Standards

The IFC’s, a group of the World Bank, Environmental and Performance Standards\textsuperscript{15} are intended to define clients’ roles and responsibilities in managing their projects, as well as define the requirements for receiving and retaining IFC support. The standards include requirements to disclose information. The IFC’s Performance Standard 6\textsuperscript{16} focuses on biodiversity conservation and sustainable natural resource management as a component of sustainable development. The standard adopts the definition of biodiversity found within the Convention on Biological Diversity, and its stated objectives are to:

- protect and conserve biodiversity, and
- promote the sustainable management and use of natural resources through the adoption of practices that integrate conservation needs and development priorities.

This includes mitigating or avoiding threats to biodiversity from operations, and sustainably managing renewable natural resources.

Performance Standard 6 is supported by Guidance Note 6 on Biodiversity Conservation and Sustainable Natural Resource Management. The Guidance Note delves into specific requirements for IFC clients to consider during the lifecycle of their project, including during planning, operations and closure. Specifically, the Guidance Note broadly outlines where biodiversity impacts arise, with a focus on, inter alia: project activities, facilities developed, supply chain impacts, and stakeholder consultation. These are summarised in Table 2 below.

Table 2. Biodiversity elements of the IFC Performance Standards

<table>
<thead>
<tr>
<th>Biodiversity elements</th>
<th>Comments on Performance Standard 6 and the Guidance Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Focuses on biodiversity conservation and sustainable natural resource management as a component of sustainable development. Biodiversity is defined as in the Convention on Biological Diversity.</td>
</tr>
<tr>
<td>Scope</td>
<td>The Standard is applied to projects in all habitats, regardless of whether or not those habitats have been disturbed and whether or not they are legally protected. The applicability of the standard is also applied during the Social and Environmental Assessment (EA) Process.</td>
</tr>
</tbody>
</table>

\textsuperscript{15} See: http://www.ifc.org/ifcext/sustainability.nsf/Content/EnvSocStandards.

\textsuperscript{16} See: http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards.
### Biodiversity elements

<table>
<thead>
<tr>
<th>Comments on Performance Standard 6 and the Guidance Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMPs</strong></td>
</tr>
<tr>
<td><strong>Guidance Note</strong></td>
</tr>
</tbody>
</table>

It is worth noting that the ICF standards are mostly developed for large companies and they might need to be adapted to be used by SMEs and that not all environmental aspects (E;G; use of hazardous substances) are applicable to all NEEI operations.

### Sector specific guidelines and standards

**International Council on Mining and Minerals (ICMM) Guidance**

In 2006, ICMM\(^\text{17}\) produced the framework document “Good Practice Guidance for Mining and Biodiversity” (GPG)\(^\text{18}\) for the mining sector (and generally applicable in other industries too) to help the extractive industry improve its biodiversity conservation performance. The increasing social awareness and monitoring of industry performance made this necessary, particularly due to the remote nature of the work and its tendency to take place in biodiversity-rich areas. The guidance document is intended to assist ICMM members (and others) to honour ICMM's Sustainable Development Framework\(^\text{19}\), which states their commitment to “contribute to conservation of biodiversity and integrated approaches to land use planning.”

The GPG demonstrates that good biodiversity management can bring additional benefits, including:

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• increased investor confidence and loyalty;
• shorter and less contentious permitting cycles, as a result of better relationships with regulatory agencies;
• improved community relations;
• strong supportive partnerships with NGOs;
• improved employee motivation; and
• reduced risks and liabilities.

The GPG structures its guidance around three phases of the mining project lifecycle:

• project **development**, which includes exploration, pre-feasibility and feasibility studies and construction;

• **operations**, which here includes core mining facilities and activities and ancillary infrastructure; and

• **closure** planning and implementation.

Each section of the GPG provides detailed guidance on understanding the interface between mining activities and biodiversity, and together details the systems, tools and processes that can be applied to help companies manage impacts on biodiversity during each phase of the project lifecycle.

As a guidance document, the GPG covers the broad spectrum of mining activities, as outlined in Table 3, below.

**Table 3. Biodiversity elements of the ICMM Sustainable Development Framework**

<table>
<thead>
<tr>
<th>Biodiversity elements</th>
<th>Comments on the GPG for Mining and Biodiversity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus</strong></td>
<td>Encourages companies to minimize or prevent negative impacts on biodiversity from mining operations in remote, environmentally or socially sensitive areas. Argues a business case for protecting biodiversity, particularly as part of a company’s commitment to maintaining its social or functional ‘license to operate.’ GPG provides the mining industry with an outline of the steps to improve biodiversity management throughout the mine cycle, utilizing such steps to minimize the likelihood of negative impacts on biodiversity, project delays and damage to their reputation.</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>The scope of the GPG focuses on understanding the interfaces between operational activities and biodiversity; assessing the likelihood of activities having negative impacts on biodiversity; mitigating potential impacts on biodiversity; and exploring the potential to contribute to biodiversity conservation. Also emphasizes the need for stakeholder engagement in the identification, assessment, mitigation and management of biodiversity.</td>
</tr>
<tr>
<td><strong>BMPs</strong></td>
<td>Biodiversity management is divided into the three phases of total operations: project development, operations and closure. Each phase is sub-divided into discrete actions that occur as part of the project phase.</td>
</tr>
<tr>
<td><strong>Development</strong></td>
<td>All stages from initial exploration through completion of development, including exploration, pre-feasibility and feasibility studies, and construction. During the exploration stage, the document focuses on addressing biodiversity at each phase and suggests alternatives to minimize exploratory impacts upon local biodiversity. For the pre-feasibility and feasibility assessments, emphasis is placed upon identifying biodiversity, reviewing mining options, assessing impacts on biodiversity, reviewing legal codes and requirements, and integrating biodiversity responsibilities throughout the cycle of assessment and construction for mining operations. During the development stage, emphasis is placed on minimizing impact and covering the myriad of ways that infrastructure can negatively harm biodiversity and ecosystem services.</td>
</tr>
<tr>
<td><strong>Operations</strong></td>
<td>All activities relating to the extraction and processing of ore, disposal of waste materials and the transport of products. This section covers the activities encompassed by mining operations and explains their connection to biodiversity. Ancillary infrastructure highlights potential impacts on biodiversity, which are often overlooked. These include water and sanitation infrastructure impacts, potential hazardous waste spills, and minimizing the introduction of invasive species. The operations section discusses the interfaces between mining activities and biodiversity, and how direct or indirect impacts may affect natural resources. Gradual clearing of vegetation for mine infrastructure and operations may leave habitat fragmented. Overall this section assesses the myriad of activities associated with extractive industries and connects them explicitly to biodiversity considerations.</td>
</tr>
<tr>
<td><strong>Closure</strong></td>
<td>Focuses on the process of ending mining operations in an environmentally and socially acceptable manner. The closure activities focus heavily upon identifying and implementing opportunities for rehabilitation and conservation enhancement, a process that should be continuously revisited through the early lifecycle of the mining operations. Emphasis is placed on establishing objectives by taking into account: relevant regulatory requirements; consultation with key stakeholders; reconciling competing interests; integrating all available information on biodiversity; technical limitations due to changes from mining operations; pre-mining land use and extent of degradation; and whether mitigation or enhancement is intended.</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Environmental and Social Impact Assessment (ESIA) documenting: initial environmental and social impacts arising from the project; baseline documentation of environmental and social aspects to aid monitoring and evaluation; impact prediction from the project, including analysis of alternatives; mitigation and enhancement measures; monitoring to verify predictions; follow up audits to ensure that environmental management practices are implemented; and stakeholder engagement throughout the project. An assessment relevant to biodiversity should also be undertaken, particularly in relation to ecosystems, species and, if appropriate, genetic biodiversity. It would assess the interconnections between the levels of biodiversity and how they will be affected; develop biodiversity indicators; assess the range of impacts; and consider mitigation. Environmental Management Systems (e.g. ISO 14000) provide a framework for integrating biodiversity into policies; documenting biodiversity in partnership with local stakeholders; documenting and assessing local biodiversity risks/aspects; maintaining a register of legal requirements; planning and preparing mitigation efforts; implementing mitigation efforts; monitoring and evaluating mitigation efforts; managing a review of procedures and adopting an adaptive management approach.</td>
</tr>
</tbody>
</table>

Though the ICCM guidance focuses directly on biodiversity conservation rather than the other objectives of the Convention on Biological Diversity (CBD), as discussed in section 4 below, it provides a sound basis for establishing a best practice benchmark for the extractive industry sector. It is worth noting that the ICMM guidelines are
mostly developed for large companies and they might need to be adapted to be used by SMEs.

3.4 EC Non-energy Mineral Extraction and Natura 2000 Guidance

The EC has recently released a new guidance document for the NEEI sector entitled ‘Non-energy mineral extraction and Natura 2000’. The document recognises that the NEEI sector is responsible for providing many of the raw materials for manufacturing and construction in Europe and at the same time that this sector can also even contribute to Natura 2000 which is a network of sites whose purpose is to safeguard Europe’s rarest and most endangered habitats and species and return them to a favourable conservation status as a major contribution to the EU’s biodiversity objectives. In particular it notes:

- The extraction of minerals inevitably has an impact on the land upon which it operates. This can also, on occasion, cause damage to natural habitats and serious disturbance to wildlife.
- The type and degree of impact depends on a range of factors and must therefore be determined on a case by case basis.
- In the case of Natura 2000, extractive activities may cause the loss of valuable rare habitats and species protected under EU legislation or affect the physical structure and functioning of these habitats in particular areas, thereby causing a loss in overall ecosystem resilience.
- Not all effects are negative, the non-energy extractive industry also makes an important positive contribution to biodiversity conservation, for instance through the rehabilitation of mining sites at the end of the project cycle.
- More and more companies are adopting biodiversity policy statements as part of their overall cooperate social responsibility strategy and are actively restoring used quarries and mines for the benefit of wildlife. This is especially valuable in areas that have already lost much of their nature.

The guidance document focuses on sustainable ways for NEEI projects to function within a Natura 2000 site in accordance with requirements under the Birds and Habitats Directives. NEEI projects in and around Natura 2000 sites are not automatically excluded. Instead, if they are likely to have a significant effect on the site in question, they must be subject to an Appropriate Assessment. Depending on the outcome, a decision will be taken whether or not to approve the plan or project and if so under what conditions. The aim is to avoid an adverse effect on the integrity of the Natura 2000 site.

The guidance sets out the potential impacts of NEEI on biodiversity and nature and possible ways to prevent/mitigate them. Importantly, it specifies procedures to be followed, under the provisions of the Habitats Directive, for the assessment and authorisation of projects with likely significant effects on Natura 2000 sites. In particular, an appropriate assessment should be conducted to assess the potential impact on the Natura 2000 sites’ conservation values. Depending on the findings of the assessment, decisions about authorisation would be taken.

The guidance highlights the importance of strategic planning as a valuable tool to identify and possibly avoid conflicts at an early stage.

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The guidance contains many good practice examples, e.g. an NEEI company can create and maintain an industrial biodiversity action plan (IBAP) for projects within Natura 2000 areas, but also outside of the Natura 2000 network, to demonstrate how mineral sites may contribute to creation of important wildlife habitats on mineral sites. In these cases various benchmark methodologies can be helpful.

4. Gaps analysis of some existing standards and guidelines

This section undertakes a gap analysis of the relevant standards presented in the previous section. It does on the basis of a project’s phases with sections on planning, development, operations and closure.

4.1 Planning phase

The planning guidelines put forth by the GRI, the ICMM, the IFC, as well as the European Commission Guidance, focus on identifying and reviewing impacts by extractive industry activities on biodiversity. The ICMM focuses on identifying biodiversity, reviewing mining options, assessing impacts on biodiversity, reviewing legal codes and requirements, and integrating biodiversity responsibilities throughout the cycle of assessment and construction for mining operations. The IFC emphasizes assessing the different values attached to biodiversity, including habitat destruction and invasive alien species. In addition, under IFC requirements, clients must assess the type and importance of biodiversity present, taking into account: location and scale of project activities, including those associated with facilities and material impacts on biodiversity arising through supply chains or third party relationships; proximity to areas with important biodiversity; and types of technology used. Uniquely, the IFC also enables a ‘no-go’ decision during the feasibility studies; the Guidance note provides guidance on performing alternative assessments, and the creation of a Biodiversity Action Plan to address biodiversity issues. The IFC and ICMM both make use of an Environmental and Social Impact Assessment to document baseline conditions and to allow for monitoring and evaluation of impacts, and the mitigation activities to take place. The GRI, on the other hand, does not focus specifically on life-cycle phases of mining, but does devote one indicator to reporting on managing and monitoring activities to reduce the risk of impacts and to manage the impacts on biodiversity. The GRI also looks at land in or near protected areas, or areas with high biodiversity values.

Gap analysis

The guidelines on the planning phases could be strengthened by recommending that extractive industries which envisage to operate within protected areas, or areas of high biodiversity value: Natura 2000 sites, RAMSAR-designated sites, UNESCO natural and mixed World Heritage sites, and other internationally or nationally recognized ecosystems or areas of importance, actively consider that potential impacts, if properly assessed and understood, may be avoided or mitigated against by altering the extraction site’s initial design and methods of operation or by selecting an alternative location for all or parts of the quarry or mine as explained in the guidance document on Non-Energy Mineral Extractions and Natura 200021. Guidelines could also be strengthened by including, when appropriate, a specific focus on

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species endemism or threatened status. A best management practice to consider supporting would be to limit high impact extractive activities and encourage extractive industries to seriously and rigorously consider alternatives.

4.2 Development phase

Development phase activities can have the greatest impacts on biodiversity of any life cycle phase. These range from general land and habitat clearing, to fragmentation from road development and inadvertent introduction of invasive species. The GRI makes no mention of development explicitly, although indicators that are used to report on activities across the sector may pertain to development activities, and are discussed in the next section. The ICMM states that development should be planned to minimize impacts and then details the ways that infrastructure and development activities can impact biodiversity.

Gap analysis

A facet of the development phase that merits further consideration and is briefly mentioned in the ICMM, are those activities pertaining to land clearing and habitat fragmentation. Guidelines could be strengthened by including a stronger focus on off-site impacts such as: roads allow others to access previously remote regions, which may bring additional impacts. A site management plan to limit outside public access to the site without infringing upon traditional stakeholder rights may be needed to control outside factors. This may be a difficult balance to achieve, but minimizing the ease of access is necessary to protect edible or economically valuable biodiversity. Guidelines could be improved by highlighting more clearly that scoping the sites should also be done as carefully as possible.

4.3 Operations phase

The time frame for extractive operations can be quite large, lasting into decadal time scales. The area of extractive operations is the weakest of all four categories within the extractive lifecycle, mainly due to a lack of guidance on how to proceed during this phase to minimize extractive impacts. The GRI’s EN12 focuses on impacts to biodiversity as a result of activities, products and services in protected areas and areas of high biodiversity value outside of protected areas (italics added.) EN14 asks for strategies and current actions to manage impacts on biodiversity and EN15 asks for information pertaining to the number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations. The GRI also highlights the area of land impacted, and the number of sites requiring biodiversity management plans. The ICMM focuses on activities that may additionally impact biodiversity, e.g. ancillary infrastructure, and how mining operations may inadvertently impact biodiversity by fragmenting habitat or altering ecosystem services.

Gap analysis

Guidelines could stress the need for strict monitoring to understand how biodiversity is changing in the area.
4.4 Closure/decommissioning phase

The main focus of closure or decommissioning activities across standards is mitigation, rehabilitation and conservation enhancement opportunities for impacts that were unaddressed during the operational stage of extracting minerals. The ICMM provides the best standard with regards to the decommissioning phase, developing its closure activities around establishing objectives that take into account: relevant regulatory requirements; consultations with key stakeholders; reconciling competing interests; integrating all available information on biodiversity; technical limitations due to changes from mining operations; pre-mining land use and extent of degradation; and whether mitigation or enhancement is intended. The GRI uses EN13 on habitats protected or restored to report on closure activities, but provides no guidance on how to attain these objectives.

**Gap analysis**

The standards for decommissioning phase activities, particularly those under the ICMM, present a range of best practices that extractive companies can and should utilize. One additional requirement for Biodiversity Management Plans could be mandating a time frame beyond project closure for active engagement by the extracting firm to ensure that rehabilitation activities are successfully completed. One clear weakness is the lack of requirements to rehabilitate lands based on toxicity from tailing and pollution impacts. This may be an area best addressed through stakeholder engagement. If local communities are adversely affected by mining, by-product resettlement or medical assistance may become a necessary expenditure for the firm to maintain good social standing.

As regards reporting, Reporting guidelines could be further developed in partnership with the Global Reporting Initiative, perhaps in terms of an update to its 2007 Biodiversity Reporting Resource to align it with the CBD and the guidance for mining and metals reviewed in this document.

A robust reporting framework needs to include several key elements such as:

- **Baseline assessment** - status and trends of the area in terms of the four biodiversity components and the four GDM objectives
- **Key performance indicators** - to monitor and assess the impact of the management plan
- **Monitoring and assessment plan** - for regular reporting (quarterly or annually, as appropriate) on the impact of the management plan
- **Independent verification** - to ensure that CBD-compliant standards and approaches are being implemented.

**Public reporting** - including at least a public annual report on the performance of the management plan

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23 The proposed Green Development Mechanism could provide a CBD-compliant standard setting and certification process for enable independent verification. See: [http://gdm.earthmind.net](http://gdm.earthmind.net).
5. Integrating the CBD framework in "Biodiversity management Plans"

5.1 CBD-compliant benchmark

Building on existing standards and guidelines, when developing a “Biodiversity Management Plan”, it is recommended that business use as far as possible the objectives, conceptual framework and the definitions agreed in the CBD. This will allow a higher comparability between different “Biodiversity Management Plans” and different sectors. It could enable the extractive industries standard to develop credible biodiversity management plans for any location.

So far, GRI, the IFC and the ICMM recognise the CBD and in particular its definition of biological diversity (see Article 2 of the Convention), none of them fully develop their approaches in terms of all three CBD objectives set out in Article 1;

Various relevant methodologies - including commitments, guidelines and tools - have already been developed and formally accepted by the Parties to the CBD, and thus are already available for use in developing a CBD-compliant management plans. Other methodologies have been developed and accepted by the Parties to other biodiversity-relevant agreements and could be appropriate for use under a BMP. Still other methodologies have been developed voluntarily and could also be applied if appropriate to the situation.

The CBD includes definitions, objectives and concepts agreed by 190 parties, such as:

- **Biodiversity**
- ‘Ecological complex is highlighted in the CBD definition of biodiversity: “”
- ‘Ecosystem’
- Species’ and ‘domesticated or cultivated species’
- ‘Biological resources’
- **Conservation**
- **Sustainability**
- **Equity**

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24 the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems

25 a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit

26 species in which the evolutionary process has been influenced by humans to meet their needs

27 genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity

28 the conservation of biological diversity” (Article 1). In the context of a BMP, it explicitly refers to ‘in-situ conservation,’ which is defined as “the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties

29 the sustainable use of its components” (Article 1). This means “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations
5.2 Other Biodiversity-related management methodologies

Other conventions and agreements related to biodiversity have also developed commitments, guidelines and tools, which could serve as useful methodologies for developing BMP’s. For example, under the Ramsar Convention on Wetlands, its Parties adopted Resolution VII.16, which adopts a set of Principles and guidelines for wetland restoration that “provide a step-by-step process guiding the identification, development and implementation of a restoration project.” For an extractives project that aims for no net loss in wetlands, these guidelines may be particularly useful.

Another opportunity might be to explore establishing possible linkages between a BMP and the establishment of a UNESCO Man and Biosphere (MAB) site. The MAB Programme has been in operation since the early 1970s and today, it is active in more than 100 countries with over 500 listed sites - some of which may include extractives projects - which: “provide context-specific opportunities to combine scientific knowledge and governance modalities to:

- Reduce biodiversity loss;
- Improve livelihoods; and
- Enhance social, economic and cultural conditions for environmental sustainability.”

Regarding sustainable use, a BMP in some instances might also benefit from collaboration with the UNCTAD BioTrade Initiative and its Principles and Criteria which are also based on the objectives of the CBD.

6. Selected case studies

6.1 Lafarge UK quarry rehabilitation

Lafarge Aggregates Limited committed itself to restoring and maintaining about 100 hectares of lowland heath within former quarry workings, providing suitable habitat for re-colonisation by key bird species such as nighjar and woodlark, and creating suitable conditions for the spreading of other wildlife, especially invertebrates.

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30 the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding
31 “economic and social development and poverty eradication are the first and overriding priorities of developing countries” and “conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to and sharing of both genetic resources and technologies are essential”
33 http://www.biotrade.org/.
To provide some context, Lowland heath, where the quarry site is located, is a priority habitat within the UK BAP and within local BAPs where the site is located. Lowland heath in the UK has suffered considerable loss in area and fragmentation over the last 50 years through agricultural intensification, afforestation, quarrying and built development. Heathland creation and restoration is a major biodiversity objective within the Greensand Ridge, which passes through southern counties including Bedfordshire.

Following the completion of sand extraction within phases of the site, Lafarge conducted restoration. The restoration landform was created to achieve a major valley feature passing through the restored land and incorporating slopes of varying degree and aspect and flatter valley floor areas. Heather has been introduced by seeding, spreading of heather litter (brashings) and nursery raised stock.

Heather seedlings are now appearing in many parts of the restored site with more mature heather associated with the oldest part. Surveys have found the site to be regionally and probably nationally important for invertebrates, including 32 beetle species new to Bedfordshire, two nationally rare spiders and the only known UK site for a spider-hunting wasp. The site is home to 44 bird species including 5 red data species and 9 amber species.

6.2 Lafarge Greece quarry rehabilitation

Lafarge’s Volos Quarry extends over 87 hectares and operated from the late 60’s through 2004. The company has committed itself to rehabilitating the quarry and homogenize the quarry area with the surrounding environment by studying the fauna and flora of the region, harvesting local seeds for rehabilitation, and building a plant nursery in the area to replant vegetation and trees that are already conditioned to the environment.

During the first years the nursery produced 10,000 plants per year. Gradually the nursery expanded and reached 30,000 plants per year, but has since been moved to the Platanos limestone quarry and now produces 18,000 plants per year. The results showed that better results were achieved when the re-vegetation came from the plant nursery compared to those obtained from outside sources, as they grow in an environment similar to that of the quarry. Partridges and hares returned. Since 1990, more than 400,000 trees have been grown in the nursery.

6.3 Holcim France conservation

Upon developing a new limestone quarry in Malancourt (Moselle), France, Holcim Granulat committed itself to elaborate solutions for the best possible coexistence between the limestone extraction activity and the protection of a natural environment (under ZNIEFF 134 classification) nearby.

In order to implement compensatory measures along with the opening of the new quarry, Holcim bought 20 Hectares of land included in the ZNIEFF 1, and has undertaken to set up a management plant for its sustainable management. As of 2009, a fence and protective earth barriers were set up to delineate the area and protect against rock falls, and in 2010, the site will be completely secured.

34 Natural area of fauna, flora and ecology interest
Holcim has further committed itself to implement other compensatory measure including an experimental project in species transplantation. Having found the *Epipactis muelleri* on the area impacted by the project, Holcim garnered state authorization for the orchid transplanting and conducted the transplantation, which consisted in moving 40 orchids and completing a report on the transplanting action. A scientific follow-up of this operation will continue for ten years after transplantation.

Holcim’s partnership with IUCN on biodiversity started in 2007. Since the partnership was established, the company has established an Independent Expert Panel, comprised of world-respected experts in the fields of biodiversity and anthropology, which provides recommendations on tools for embedding biodiversity conservation into its operations. Holcim is also actively involved in the WBCSD ecosystems focus area.

6.4 Rio Tinto

Rio Tinto’s commitment to ‘Net Positive Impact’ (NPI) on biodiversity was published in 2004. Since the policy was established, the company has undertaken a global review of mine sites to identify high-priority operations from a biodiversity perspective. They are developing tools to evaluate the biodiversity footprint of mines and the effectiveness of mitigating and compensatory actions, and are currently exploring mechanisms for independent validation of progress toward (or away from) NPI.

6.5 Heidelberg Cement

In order to systematically promote biodiversity at its mineral extraction sites, Heidelberg Cement has implemented a Group guideline that defines standards for restoration and rehabilitation, and ensures that all measures of after-use at Heidelberg Cement take into account the economic, ecological and social needs of the community.

7. Industry approach

NEEI companies and industry associations are committed to moving forward together on biodiversity, driven by the common belief that their quarries, pits and mines, when properly managed, are in fact biodiversity havens, and that the sector in particular can hugely contribute to the EC Biodiversity Strategy objectives.

See below the actions realised by the industry associations

<table>
<thead>
<tr>
<th>European databases:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cembureau Biodiversity case studies: <a href="http://www.cembureau.be/topics/biodiversity">http://www.cembureau.be/topics/biodiversity</a></td>
</tr>
<tr>
<td>Eurogypsum biodiversity brochure</td>
</tr>
<tr>
<td>International databases:</td>
</tr>
</tbody>
</table>
Further work is required to develop a methodology for numerical indexing of sites on Biodiversity value according to the numbers and types of species and habitats present. There should be a common scientifically-based reporting methodology.

**Other possible actions:**

- Review the Ecosystem Approach Sourcebook from an extractive perspective;
- Review the BioTrade Initiative from an extractive perspective;
- Address some of the areas requiring further study as listed in the recent Commission Guidance on Natura 2000 (Chapter 9.3);
  - Improving the EU mineral knowledge base that would allow assessing the potential overlapping of Natura 2000 sites with established/potential EU mineral resources should be further investigated, taking into account the results of the actions proposed by the EU Raw Materials Initiative in this regard. A short to medium term action could possibly be undertaken using the methodology developed in the OneGeology-Europe project using available information on Member States minerals resources. For a longer term initiative, GMES action.
- Potential use and possibilities for good practice adopted by the EU NEEI sector (e.g. biodiversity offsets and rehabilitation focusing on habitats restoration) to comply with the provisions under art. 6(3) and 6(4) of the Habitats Directive. In particular, biodiversity offsets is a key practice on which NEEI are undertaking significant efforts, which should deserve more attention and further dialogue in the future, in relation to the Habitats Directive. Identify main ideas coming out of the Jakarta & London Business & Biodiversity meetings and discuss their implications for the NEEI.

UEPG, CEMBUREAU and IMA-Europe have been working recently to develop a common biodiversity roadmap for the next 5 years. The overall plan of action is summarized as follows:

- Almost 200 case studies have been put into a common database to facilitate further understanding and analysis;
- 40 of these case studies which relate to French locations are being reassessing as a pilot project, in order to learn more from analyzing these in even greater detail;
- A database of practical Biodiversity management guidelines is being assembled from all sources, so that these can easily be shared widely in the NEEI sector;
- National Biodiversity plans are being monitoring and encouraged to develop amongst our member countries, and will encourage the leaders to share their knowledge and experience with the laggards;
- These good practices at a global level can later be promoted through sister industry associations in many parts of the world;
- UEPG will encourage the greatest possible participation in its next Sustainable Development Awards in 2013, building on the success of 2010.

Also some common industry reporting tools (called KPIs) are in the process of being agreed among the associations along the following lines:
- Number or % of quarry, pit and mine sites with rehabilitation or restoration plans (by implication generally including Biodiversity),
- Number or % of sites with community engagement plans in place,
- Number or % of sites within or within 500m of a designated conservation area, such as a Natura 2000 area,
- Number or % of sites with Biodiversity plans or programs.

Further work is required to develop a methodology for numerical indexing of sites on Biodiversity value according to the numbers and types of species and habitats present. There should be a common scientifically-based reporting methodology.

NEEI companies and industry associations are committed to moving forward on biodiversity, driven by the common belief that their quarries, pits and mines, when properly managed, are in fact biodiversity havens, and that the sector in particular can hugely contribute to the EC Biodiversity Strategy objectives.

8. Possible next steps

Building on this compilation of existing tools (e.g. standards, guidelines, KPIs), the next step within the Platform will be to elaborate a draft list of criteria to screen case studies in order to establish a benchmark methodology for best practices. This will be the focus of forthcoming workshop discussions with a view to coming to an agreement on the engagement of B@B Platform Participants in the context of the implementation of the new EU Biodiversity Strategy to 2020.
Annex 1. Key online sources of information

This section provides a selection of key online sources of information relevant to biodiversity and the extractive industry sector. It includes standards, guidelines and case studies.

- The Business & Biodiversity Offsets Program
  http://bbop.forest-trends.org/

- The Business & Biodiversity Resource Centre – Mining
  http://www.businessandbiodiversity.org/mining.html

- The Economics of Ecosystems and Biodiversity (TEEB)
  http://www.teebweb.org/

- The Energy and Biodiversity Initiative
  http://www.theebi.org/

- The European Aggregates Association (UEPG)
  http://www.uepg.eu/

- European Commission Business @ Biodiversity Extractive Industry Platform

- European Commission Management of Natura 2000 sites: Guidance

- GDM 2010 Initiative
  http://gdm.earthmind.net/

- GRI Mining & Metals
  http://www.globalreporting.org/ReportingFramework/SectorSupplements/MiningAndMetals/

- ICMM Environment Work Program
  http://www.icmm.com/our-work/work-programs/environment

- IFC Biodiversity Program
  http://www.ifc.org/biodiversity

- International Petroleum Industry Environmental Conservation Association
  http://www.ipieca.org/

- IUCN Working Group on Extractive Industries and Biodiversity
  http://www.iucn.org/about/work/programmes/business/bbp_our_work/bbp_mining/bbp_wgextractiv/