

Tread lightly

**Biodiversity and ecosystem services
risk and opportunity management
within the extractive industry**

Summary report
October 2011

About the Natural Value Initiative (NVI)

<http://www.fauna-flora.org/initiatives/nvi/>

The NVI is a collaboration between Fauna & Flora International, the United Nations Environment Programme Finance Initiative (UNEP FI), Nyenrode Business University, the Dutch Association of Investors for Sustainable Development (VBDO) and the Brazilian Business School Fundação Getulio Vargas (FGV). It has four broad objectives, to:

- Build awareness of corporate dependence on ecosystem services and impact on biodiversity and the links to corporate risk;
- Build expertise both in companies and investors on evaluating and managing biodiversity and ecosystem services (BES) risks and opportunities;
- Stimulate improved performance within the private sector and encourage greater reward of responsible behaviour;
- Mainstream biodiversity and ecosystem services into investment analysis.



Fauna & Flora International <http://www.fauna-flora.org>

Fauna & Flora International (FFI) is the world's first established international conservation body, founded in 1903. FFI acts to conserve threatened species and ecosystems worldwide, choosing solutions that are sustainable, are based on sound science and take account of human needs. Through its Global Corporate Partnership Programme, FFI aspires to create an environment where business has a long-term positive impact on biodiversity conservation. FFI leads the Natural Value Initiative collaboration.



VBDO <http://www.vbdo.nl/>

De Vereniging van Beleggers voor Duurzame Ontwikkeling (VBDO) aims at generating a more sustainable capital market by raising awareness both with multinational corporations and investors about the contributions they can make towards a sustainable capital market. The VBDO also formulates strong opinions on different topics related to sustainability, and regularly carries out research, visits Annual General Meetings of stock listed companies and engages in an active dialogue with banks, insurance companies, media and stock listed companies. As such VBDO is the only association in the Netherlands representing institutional as well as individual sustainable investors.



Nyenrode Business Universiteit <http://www.nyenrode.nl/cfs>

The Center for Sustainability of Nyenrode Business Universiteit is a multidisciplinary team of academic professionals that focuses on:

- Adding sustainable value for our clients and our society, by means of;
- Conducting practice-related scientific research, to;
- Stimulate sustainable development and innovation in business and society; and
- Offering leading higher education on sustainable development.



United Nations Environment Programme Finance Initiative (UNEP FI)

<http://www.unepfi.org>

The United Nations Environment Programme (UNEP) Finance Initiative is a strategic public private partnership between the UNEP and the global financial sector. UNEP FI works with over 200 financial institutions that are signatories to the UNEP FI Statements, and a range of partner organisations to develop and promote linkages between the environment, sustainability and financial performance.

Foreword



I am really encouraged to see work like this emerging. We all need to understand better how we depend upon biodiversity and ecosystems for our economic prosperity and personal well-being. Leading businesses clearly have a tremendously important role to play as we build a sustainable future through our transition to a green economy. Our recently published Natural Environment White Paper clearly outlines our vision for the natural environment over the next 50 years and the important role of business in achieving this vision.

Richard Benyon MP, Parliamentary Under Secretary for Natural Environment and Fisheries, Department for Environment, Food and Rural Affairs, UK Government



Fauna & Flora International took a strategic decision some twenty years ago to engage directly and constructively with the private sector as a means of delivering on our objectives to conserve species and habitats worldwide in a way that goes hand in hand with meeting human needs. We have seen the extractive industry take great strides in its consideration of biodiversity. We are at a point of evolution. Society, governments and the private sector are realising that the services from the natural world are undervalued, underpriced and finite. Biodiversity conservation is no longer the preserve of the philanthropists; it is vital for sustainable development. We are proud to be working with a number of the companies featured in this report for their proactive approach on this issue. However, there is always more to be done.

Mark Rose, Chief Executive Officer, Fauna & Flora International



Biodiversity is a complex subject for most companies. As the avant-garde now seems to realise, biodiversity is as much a common denominator for all environmental aspects as human rights are for the social elements. There is a need to foster better understanding of this within the private sector and amongst investors. The plan of action should be threefold: coming up with a clear-cut business case, understanding how to act to conserve biodiversity and finding indicators to measure the effects of those actions and the extent of our progress. This is by no means an easy task. It is probing into unknown territory. Many costs are not yet quantified, nor are they incorporated in the cost-price of a product. This represents a key barrier to private sector movement on this issue. In order to be fit for the future, companies need to understand the nature of their impact on our planet and its living occupants. For investors who want to make sound and long-term returns, this understanding is as vital as for companies. In my experience, companies appreciate the active engagement of investors who take their responsibility as 'co-owners' of a company seriously, together with that of other engagement groups like civil society. After all, by gaining a better understanding of their impacts and acting responsibly to manage them, companies can assure sustainable development and our long-term survival. It is up to the investors to stimulate this sustainable pattern of behaviour.

Giuseppe van der Helm, Executive Director, VBDO



Introduction

In the last two years alone, we have seen investor action linked to the biodiversity impacts Anglo American's Pebble mine in Alaska¹, a high profile campaign waged by Greenpeace against Cairn Energy's proposed activities in Greenland² and the withdrawal of investments in Barrick Gold, Freeport McMoRan and Rio Tinto³. Although multiple factors were at play in these incidents, biodiversity and ecosystem services or BES (see box 1) were fundamental issues in all of these exposures.

The loss of biodiversity and ecosystem services impacts on society's ability – and that of business – to respond to future challenges of water and resource scarcity and climate change. As we move towards an increasingly resource and carbon constrained world, both the oil and gas and mining sectors are likely to experience reputational, operational, regulatory and financial risks associated with the decline of BES. Such risks are increasing as a result of: greater demand for resources; extraction of mineral reserves in remote locations; companies operating at the edge of current technologies in challenging operating environments and changing investor and societal appetite for risk. The extractive industry provides products that are essential to society. Such companies must be able to recognise that they depend on BES and operate within societal expectations of environmental and social performance. This is becoming increasingly fundamental to gaining access to resources and to continued business growth.

Box 1: Defining biodiversity and ecosystem services

Biodiversity is the variability among living organisms, including diversity within species, between species and of ecosystems.

Ecosystem services are the benefits that people receive from ecosystems and can be divided into three broad areas:

- **Provisioning services:** Goods or products obtained from ecosystems such as food, freshwater, timber and fibre;
- **Regulating services:** Benefits obtained from natural processes such as climate, disease, erosion, water flows and pollination, as well as protection from natural hazards;
- **Cultural services:** Non-material benefits obtained from ecosystems, such as recreation, spiritual values and aesthetic enjoyment (elements of biodiversity are included within this e.g. charismatic species);
- **Supporting services:** Functions that maintain all other services, such as photosynthesis, water and nutrient cycling.

Biodiversity underpins healthy ecosystem services.

Source: Hanson, C. et al., 2009

“Investor understanding of biodiversity is shifting; where biodiversity loss was once seen only as a distant risk to corporate reputation, many investors now realize that a company’s social license to operate may rest on good stewardship and stakeholder engagement.”

Barbara Krumsiek,
President,
Chief Executive Officer and Chair of Calvert Investments, Inc

Benchmarking BES management in the extractive industry

For further reading see:
Tread lightly – the full report on naturalvalueinitiative.org/publications

In this report, the Natural Value Initiative (NVI) reviews 30 companies in the mining and oil and gas sectors with total market capitalisation of £1,638 billion (US\$ 2,545 billion, Euro 1,900 billion). The study was conducted on behalf of the following investors: UK-based asset managers Aviva Investors and F&C Investments, US-based asset managers Calvert Investment Management, Inc. and Pax World, Dutch investors Mn Services, Robeco and Syntus Achmea, an Australian pension fund, VicSuper, and in collaboration with a Swedish advisor to institutional investors, Ethix SRI Advisors. Collectively, these represent £787 billion (approximately Euro 913 billion, US\$ 1,223 billion) of assets under management⁴.

The survey supports and extends one conducted by Insight Investment and Fauna & Flora International in 2005⁵. It evaluates progress made by the sectors in: addressing the issue of biodiversity; responding to emerging thinking on ecosystem services and developing robust systems to manage risk and realise opportunity associated with these issues. This document is the executive summary of the report which outlines company responses, identifies strengths and areas of common weakness, makes recommendations for improvement and offers further actions for investors, government and the industry. It is these suggestions for improvement that the investors involved in this study are using in their ongoing dialogue with companies identified as underperforming within the analysis.

Approach

The Ecosystem Services Benchmark (ESB) is based on a benchmarking methodology that was originally developed by the UK-based asset manager Insight Investment and Fauna & Flora International for the oil and gas⁶, mining and utilities sectors. This methodology was updated and adjusted to reflect the increasing maturity of thinking on this issue and the recent developments in tools and approaches for understanding and managing impacts and dependence on ecosystem services. Its focus is on corporate impacts on biodiversity and the extent to which companies consider the role of ecosystem services management in water management and climate adaptation and mitigation. The ESB considers five interdependent categories of performance: competitive advantage, governance, policy and strategy, management and implementation, and reporting. These categories are weighted to reflect the relative importance of each element. The different categories are weighted as follows: competitive advantage (15%), management and implementation (25%), reporting (20%), policy and strategy (20%), and governance (20%). Different levels of performance are assigned ranging from one (poor performance) to four (best practice).

The analysis was conducted from January 2010 to July 2011 and was based on publicly available information. The companies included in the analysis were selected by the investors listed above on the basis of their assets under management. Each company was invited to discuss the results to ensure that these were an accurate reflection of its activities and to supplement information in the public domain with internal information. Of the 30 companies, 19 (69%) responded to this invitation. Lack of response from companies is interpreted as a reflection of 'questionnaire fatigue' and a lack of perceived materiality of the issue.

Company performance

Results

The table below divides the 30 companies that were evaluated in accordance with their performance against the Ecosystem Services Benchmark.

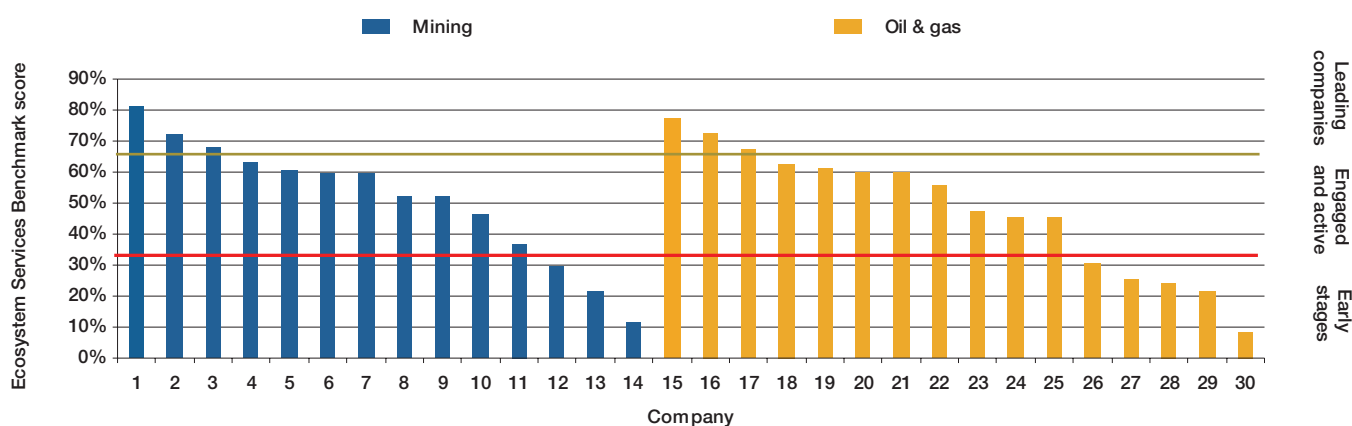
Table 1: Benchmark results (presented in alphabetical order)

	Mining	Oil & Gas
Leading companies: Risk and opportunity formally assessed, comprehensive integration of BES into policy and management systems	Anglo American plc (AAL)*^ Rio Tinto plc (RIO)*^ Xstrata plc (XTA)^	BG Group plc (BG)*^ Eni Spa (ENI)*^ Royal Dutch Shell plc (RDSB)*^
Companies engaged and actively managing BES: Awareness demonstrated through acknowledgement of company's impact on biodiversity, its inclusion within certain aspects of risk management and/or some reference within policy documents and/or management tools	Barrick Gold Corporation (ABX) BHP Billiton Ltd (BHP)*^ Freeport-McMoRan Copper & Gold Incorporated (FCX)* Cemex SAB de CV (CEMEXCPO)^ Holcim Ltd (HOLN)*^ Lafarge S.A. (LG)*^ Lonmin plc (LMI)^ Vedanta Resources (VED)*^	BP plc (BP)*^ Cairn Energy (CNE)^ Encana Corporation (ECA)* ExxonMobil Corporation (XOM)* Neste Oil OYJ (NES1V)*# Petrobras (PETR4) Sasol Ltd (SOL)+ * Statoil ASA (STL)*^
Companies in early stages of BES management: Risk evaluation in early stages of development, activity to manage impact and dependence limited	Amg Advanced Metallurgical Group N.V. (AMG) ArcelorMittal (MT)*+ First Quantum Minerals Ltd (FM)	Gazprom Neft (SBN) Lukoil (LKOH) PT Perusahaan Gas Negara Persero Terbuka (PGAS)*# SBM Offshore N.V. (SBMO)# Tullow Oil plc (TLW)^

* Companies that engaged with the NVI to confirm the accuracy of our analysis
 + Mining represents a small but growing part of the company's operations, BES management practices are evolving
 # These companies have a lower risk exposure to BES than the other companies included in the analysis. Management activities on BES appear appropriate for the level of risk exposure
 ^ Companies reviewed in the 2005 Insight Investment and Fauna & Flora International benchmark
 Companies highlighted in bold type had the highest benchmark scores for their respective sectors

It should be recognised that there is a range of sophistication of BES management within each of the three groupings of companies (see figure 1). Those companies identified as in the early stages of BES management pose a greater risk to investors. The ESB measures the maturity of the company's management systems on biodiversity. It does not measure the extent to which the company is exposed to risk. PT Perusahaan Gas Negara Persero Terbuka and SBM Offshore, for example, provide pipelines and services to the oil and gas sector respectively and Neste Oil refines oils. As a result, their biodiversity risk exposure is very different to that of the major oil and gas producers.

Figure 1: The extent of sophistication of BES management systems varies considerably across the companies surveyed



Key findings

BES was considered a significant issue for 27 of the 30 companies reviewed based on the nature and location of the companies' operations. The results from reviewing those 27 companies are summarised below.

Table 2: BES management in the extractive sector: key trends and figures

Criteria	Proportion and (number) of companies			
	Mining		Oil & gas (n=13)	
	2005 n=13	2011 n=14	2005	2011
Policy commitment on biodiversity	85% (11)	79% (11)	92% (12)	84% (11)
Detailed policy commitment on biodiversity	23% (3)	43% (6)	15% (2)	46% (6)
Biodiversity risk assessments undertaken for all sites	0% (0)	21% (3)	23% (3)	31% (4)
Activities underway to manage biodiversity	92% (12)	93% (13)	92% (12)	100% (13)
Action plans at all high risk sites (in terms of biodiversity)	0% (0)	14% (2)	8% (1)	21% (3)
Quantitative metrics reported for biodiversity	0% (0)	29% (4)	0% (0)	0% (0)
Targets in place for biodiversity management	15% (2)	57% (8)	15% (2)	54% (7)
Piloting ecosystem services tools	-	29% (4)	-	38% (5)
Exploring ecosystem services markets	-	38% (5)	-	38% (5)

Limitations of the analysis

In the absence of widely agreed performance metrics for BES, this analysis is heavily reliant on process-based measures of management quality as a proxy for performance on the ground. Due to resource constraints, the methodology used did not undergo extensive stakeholder consultation, nor were the results subject to audit. The results of those companies that engaged in the process will be higher than those that did not, as the information required for completion of the analysis was frequently not available in the public domain. In some instances, cultural variations and language issues may have adversely impacted on a company's performance. These results should be viewed with this in mind.



Juan Pablo Moreiras/ FFI

Conclusions

Both the mining and oil and gas sectors have matured in their approach to BES:

Since the Insight Investment Benchmark of 2005, more companies have detailed policy commitments on BES, risk assessments are more sophisticated and more extensive and piloting of emerging methodologies on ecosystem services is underway.

BES was perceived by 80% of the companies surveyed as a material issue:

Perceived materiality was assessed based on companies making specific reference to BES in publicly disclosed policy and strategy documents, or standards. Significantly more companies (20%) made detailed commitments on biodiversity in 2011 compared to the 2005 survey⁷, although overall the degree of high level policy commitments was slightly lower. This reflected the differences in the sample of companies used in 2005 compared to 2011.

More companies are committing to causing ‘no net loss’ of biodiversity:

In 2004 Rio Tinto made an ambitious commitment to ‘have a net positive impact’. Rio Tinto remains the only company to have made such an ambitious commitment, however, two companies commit to causing “no net loss” of biodiversity and a number of companies are exploring the potential for making a similar commitment. The benefits of such a commitment have not yet been quantified. However, those companies making such commitments feel that they confer competitive advantage.

Realisation of the linkages between the management of biodiversity, climate and water are growing:

Efforts to integrate BES into broader environmental management (water management, climate adaptation, biofuels sourcing) are still in their infancy. A number of companies (in particular Rio Tinto, Anglo American, ExxonMobil, BP, Shell and Eni) were beginning to adopt an integrated approach with BES being specifically addressed as a line item/component within water management and climate mitigation and adaptation policies and strategies. These companies have also undertaken pilot projects to explore the use of ecosystem services restoration for, for example, coastal protection initiatives or reduction of water filtration costs. However, often it was not clear how systematically ecosystem services considerations were integrated into water and climate management.

Approaches to corporate level biodiversity risk evaluation appear to be maturing:

Over 90% (25) of the companies reviewed included biodiversity within their corporate risk management practices to some extent (based on public disclosures). Despite widespread activity on the issue, only five out of the 27 companies surveyed reported activity to manage biodiversity at all high risk sites.

“As an investor, Mn Services is often faced with a lack of awareness within companies of the biodiversity risks they face. We believe that it is important that companies in the extractive sector are aware of the risks and challenges that they are facing relating to this issue.”

**Kris Douma,
Head of Responsible Investment & Active Ownership,
Mn Services**

It is challenging to determine how well risks are managed at a corporate level:

Few companies disclosed the processes underlying their risk evaluations, for example, companies rarely defined what they meant by sites of 'high biodiversity value', hence the exact scope of such risk assessments and their utility for identifying all risks was not uniformly clear. Where transparent and comprehensive risk evaluations and assurance processes are lacking, it is challenging to determine whether the activities underway to manage BES are sufficient to manage the company's corporate level risk exposure. Incomplete evaluation of risk and implementation of risk management practices, and an emerging understanding of ecosystem services exposes even the companies most advanced in their management of these issues to spills, liabilities and lawsuits.

Contributions to conservation are being made:

The majority of the companies had activities in place that aimed to contribute to biodiversity conservation, whether through developing projects to address impacts, one-off contributions to conservation via donations or through ongoing partnerships to build the capacity of conservation organisations.

Partnerships with NGOs are used to build capacity within the private sector:

Of the 12 companies scoring the highest in the analysis, nine had (either current or historic) strategic, long-term, multi-project partnerships that inform corporate strategy and management of BES on the ground. This was a two-way process, with some NGOs seconding corporate staff to their own operations to build capacity in governance and organisational management, for example.

Current corporate reporting metrics provide limited insight into risk exposure:

Less than 50% of the companies reviewed reported extensively against BES related indicators. Reporting and performance metrics remain a key area of weakness throughout all companies due to a lack of appropriate, widely agreed BES performance indicators. This remains an inherently challenging area due to the complexities of measuring impact on, and monitoring change of, BES. Review of the data reported against the Global Reporting Initiative (GRI) indicators shows that the information reported as complying with GRI guidance is highly variable in nature. Sector specific indicators (such as those set out by the Cement Sustainability Initiative, the GRI Mining and Metals sector supplement the International Petroleum Industry Environmental Conservation Association (IPIECA) Guidance on Voluntary Sustainability Reporting) offer a good step towards a more quantified approach that will be beneficial for investors. However, more could be done to provide companies with guidance on the level of detail and nature of disclosures required to clearly communicate on their management of BES risks and opportunities.

Interest in environmental markets and tools to understand ecosystem services impact and dependence is growing:

Of the companies surveyed, just over a third were exploring the implications of the growing public policy interest in ecosystem services based markets. Interest is highest in wetland offsets and mitigation banking in the USA and reduction of emissions from deforestation and forest degradation (REDD) more broadly. Interest and engagement on the development of tools to understand and evaluate impacts and dependence on ecosystem services is high, particularly in the oil and gas sector.



Recommendations

The following recommendations are suggested based on the findings within this report:

For investors:

- **Work with companies, governments and environmental groups to identify appropriate measures of BES risk and performance for the extractive sector:** In doing so, investors will be better able to identify and monitor risk within their investment portfolios.
- **Account for BES risks and opportunities:** Establish clear policies and processes to account for BES risks and opportunities in equity and bond funds, integrating BES into broader environmental, social and governance (ESG) analysis.
- **Build capacity to engage on the issue with portfolio companies and corporate clients:** Work with extractive companies to identify and adhere to acceptable standards of performance set out within internal investment policies (see table 3 for guidance).
- **Identify areas of risk and opportunity within your investment portfolio using tools such as the Ecosystem Services Benchmark:** Risk factors to consider are 1) existence of an aggressive exploration policy with a high proportion of assets in countries or areas of high biodiversity/ low conservation capacity; 2) lack of knowledge of areas or issues that could be deemed sensitive or high risk throughout a company's operations; 3) failure to acknowledge potential reputational and litigation/regulatory risk associated with mismanagement of impacts on areas of important biodiversity and ecosystem services; 4) failure to implement audited action plans at site level for sites identified as high risk; and 5) failure to explore the implications of declining BES for business. Opportunities for building brand value and reducing costs may arise as a result of a proactive approach on points one to five above, exploration of emerging market mechanisms for ecosystem services and biodiversity conservation, testing of new tools and approaches and contribution to addressing sectoral level barriers to progressing corporate management of the issue.
- **Work with companies in your portfolio to decrease their risk profile:** Engage with high-risk companies within the sector, providing them with guidance as to what constitutes good performance.

For governments:

- **Ensure the extractive industry sector is fully integrated into National Biodiversity Strategies and Action Plans and national ecosystem services assessments:** Governments in countries that are rich in mineral reserves or in which a significant proportion of the industry is headquartered, should ensure that national biodiversity strategies and action plans and national ecosystem services assessments are defined and that the private sector is supporting those established plans.
- **Strengthen concession permitting processes:** Ensure the process for awarding permits and leases for oil and mineral rights is done in a manner that supports the country's commitments under the Convention on Biological Diversity. This should set out requirements for companies to avoid, minimise, mitigate and offset their impacts on ecologically sensitive sites.
- **Continue to explore means of reflecting the true value of BES in decision-making:** Fund further evaluations of extractive sector impacts and dependencies on BES as a part of national level ecosystem services assessment. The findings should be used to inform future policy setting and regulations.
- **Strengthen the incentives and ability for companies to report on BES:** Governments are encouraged to put in place a legal requirement for disclosure of material social and environmental issues, including BES. Such legislation

should provide detailed guidance on BES risk, defining when a BES risk becomes material. It should also set out recommendations on BES indicators, developed in conjunction with companies and investors. Although inherently challenging, this is essential to drive consistent and comparable disclosure of data in the sector.

For companies:

Companies should attempt, where feasible, to follow the recommendations outlined in table 3 which sets out a suggested best practice approach to understanding and managing this issue, based on practices observed in this sector and others.

Table 3: Best practice approach to BES management

	What do we mean?	Indications of Best Practice
Policy and strategy	Introduce company-wide policy and/or strategy commitments to understand and manage biodiversity and ecosystem services risks and opportunities	<ul style="list-style-type: none"> • Board-approved publicly available policy on biodiversity (or reference to biodiversity in board-approved environment or sustainable development policy supported by more detailed policy guidance). This should commit to avoid, minimise and mitigate and offset impact where possible. • Integration, or exploration of the potential for integration of BES into policies and strategies on water, climate (adaptation and mitigation) and (where applicable) biofuels production and sourcing. • Group-level BES strategy that acts as a framework for implementing policy commitments developed, in conjunction with key stakeholders, and informed by local, regional and national priorities as appropriate, which include credible goals and measurable targets. • Ensure equivalent standards of policies and strategies to those outlined above for joint ventures and third parties such as contractors.
Governance	Processes and resources are in place to undertake a formal risk and opportunity evaluation of impact and dependence on biodiversity and ecosystem services	<ul style="list-style-type: none"> • Identify and periodically review the BES risks, impacts and opportunities for contributing to BES associated with all existing and proposed operations, using tools such as the Integrated Biodiversity Assessment Tool. This should also be informed by local, regional and national biodiversity priorities and goals identified in National Biodiversity Strategy and Action Plans, national ecosystem assessments and discussions with key stakeholders. • Integrate consideration of BES risks and impacts into key decision-making processes and governance structures, particularly early exploration. • Ensure that risk evaluations for water, climate and biofuels consider both impact on BES and dependence. • Appropriate resources are assigned to managing the issue.
Management and implementation	Tools, training and assurance processes are in place to drive improvement through the company and its suppliers in accordance with policy and strategy commitments	<ul style="list-style-type: none"> • Ensure consistency and transparency of integration of BES analysis into Environmental and Social Impact Assessments. • Take action to avoid, minimise and mitigate BES risks, including in-kind compensation ('offsets') where appropriate, formalising these activities in audited biodiversity action plans or site management plans that include BES at all sites where there is a significant risk to biodiversity or opportunity to contribute to BES conservation. • Develop partnerships with key stakeholders that contribute to BES conservation priorities and corporate strategy. • Ensure closure and sale planning includes consideration of BES -related issues • Ensure that water management plans consider the role of natural assets e.g. maintenance of natural vegetation in controlling water run-off. • Ensure that site climate mitigation plans consider the role of land based carbon and that adaptation plans consider the role of natural vegetation e.g. mangroves.
Reporting	Internal and external reporting processes, targets and indicators are in place for BES, allowing effective communication to stakeholders	<ul style="list-style-type: none"> • Implement company-wide BES information collection and reporting systems with clearly defined target audiences, measure performance, set targets and disclose company performance, with a particular focus on high-risk locations and operations. Set out the location of these operations, including risks and activities to mitigate these. • Use more quantified metrics of corporate risk as recommended by the GRI, IPIECA and Cement Sustainability Initiative e.g. percentage of high-risk sites with biodiversity action plans in place. • Collaborate with regulators and environmental groups to develop metrics for BES performance.
Competitive advantage	Value is created or protected through company activity across the whole operational life cycle to ensure sustainable use of biodiversity and ecosystem services e.g. cost-efficiencies, new products and new markets	<ul style="list-style-type: none"> • Review and test emerging tools on ecosystem services impact analysis and valuation e.g. the Corporate Ecosystem Services Review and Ecosystem Valuation Initiative to build a more comprehensive understanding of the potential risks and opportunities associated with BES impacts and dependence. • Explore or develop mechanisms for generating value and minimising operational cost linked to biodiversity and ecosystem services e.g. biodiversity offsets and REDD, ensuring that appropriate safeguards are in place. • Review external BES threats which might compromise positive company performance, reputational gain and competitive advantage.

Next steps for the NVI

Each company that was evaluated against the Ecosystem Services Benchmark has received a summary of their results with specific recommendations for actions. These are being used by the collaborating investors listed on the back page of this publication, as part of their ongoing engagement process with the companies in which they have an interest. This engagement will encourage action on areas where risks are unmanaged and opportunities unrealised. In undertaking work on various sectors on BES management, it has become apparent to the NVI that a more robust, quantified, business case for managing the issue is required together with a uniformly agreed means by which BES risk, and therefore materiality, can be measured and monitored. In the coming year the NVI will be focusing its attention on that, collaborating with a range of partners to do so.

“What is still missing is a set of tools that goes one step beyond framing good operational practices, and enables companies and their investors to impute an economic value to BES value held, added or lost.”

**Karina Litvack,
Head of Governance and Sustainable Investment,
F&C Investments**

Final comment

Despite the best efforts of governments, conservation groups and leading companies, biodiversity and many ecosystem services are still declining. Research increasingly shows that managing natural assets and threats before they become costly is a means to curb risk exposure while increasing competitiveness. If profitability and social responsibility are to be sustained into the future, then so too must ecosystem services and biodiversity. Multi-sectoral partnerships between the extractive industry, environmental groups and governments will be fundamental to addressing some of the significant gaps in the tools and metrics needed to deliver this.



The full report “Tread lightly: Biodiversity and ecosystem services risk and opportunity management within the extractive industry” can be accessed at naturalvalueinitiative.org/publications

Glossary and abbreviations

BBOP	Business and Biodiversity Offsets Programme.
BES	Biodiversity and ecosystem services.
Best practice	In this report ‘best practice’ refers to performance level 4 in the Ecosystem Services Benchmark (ESB). It is created based on observed best practice within the five key performance areas of the ESB combined with ideal performance in this area, thus it does not represent best practice within a single company but rather a composite of best practices and an ‘ideal’ approach to managing biodiversity and ecosystem services impacts and dependencies.
Biodiversity⁸	‘Biological diversity’ means 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 (Article 2, Convention on Biological Diversity).
Biodiversity impacts⁹	Harmful effects on biodiversity through activities that threaten the abundance, location and viability of biodiversity caused directly (e.g. through habitat loss) or indirectly (e.g. through anthropogenic climate change) by human activities. This report focuses on impacts that may be caused by the operations of extractive companies. Companies’ operations may lead to more significant secondary impacts to which other causes, such as government policy and further habitat conversion by people in the area, also contribute. Impact is sometimes also referred to as ‘footprint’.
Biodiversity opportunities¹⁰	Some companies already recognise the potential opportunities presented by support for company operations among staff and other stakeholders, but in faster permit and concession negotiations that produce earlier revenues and considerable savings, as well as the competitive advantage of favoured status as a partner.
Biodiversity risks¹¹	We use this term to refer to two categories of business risk that extractive companies may face unless they demonstrate high standards with respect to the conservation of biodiversity, and the corresponding business opportunities associated with good practice. The first is the risk that they may face difficulties accessing resources in new sites and capital for new investments, likely through competitive disadvantage relative to others with better practice. The second category of business risk is loss of revenues through incurring liabilities, damage to reputation and increased operating costs. The risks to biodiversity from companies’ operations (see ‘Biodiversity impacts’), and more broadly the risks to society from the current unprecedented global loss of biodiversity to which companies’ operations contribute, are of great importance, but are not what we mean by the term ‘biodiversity risk’ as used in this report.
Dependence¹²	A company depends on an ecosystem service if that service functions as an input or if it enables, enhances, or influences environmental conditions required for successful corporate performance.
Ecologically sensitive sites¹³	Sensitive sites include both protected areas and areas not subject to legal protection but which have been identified as having local, regional or national importance as a result of the biodiversity they hold. These include habitats that are a priority for conservation (often defined in National Biodiversity Strategies and Action Plans prepared under the Convention on Biological Diversity) and sites that are valuable for cultural reasons. In addition, several international conservation organisations have identified particular areas of high biodiversity value.
Ecosystem¹⁴	A dynamic complex of plant, animal, and micro-organism communities and their non-living environment interacting as a functional unit. Examples of ecosystems include deserts, coral reefs, wetlands, rainforests, boreal forests, grasslands, urban parks and cultivated farmlands. Ecosystems can be relatively undisturbed by people, such as virgin rainforests, or can be modified by human activity, such as farmlands.
Ecosystem services¹⁵	The benefits that people obtain from ecosystems. Examples include freshwater, timber, climate regulation, protection from natural hazards, erosion control, and recreation.

ESB	Ecosystem Services Benchmark (a tool produced by the Natural Value Initiative).
FFI	Fauna & Flora International.
Governance ¹⁶	The process or set of processes by which a company's board and management regulate and control the company's activities, including the identification, evaluation and management of risk. This report focuses on governance structures for managing BES risk and the company's impact and dependence on BES.
High risk sites	Sites identified as being causes of potential reputational, operational and financial risk as a result of their BES profile. This could include sites that are located in or near protected areas or other ecologically sensitive sites or sites that have been identified as being in areas of high water scarcity.
ICMM	International Council on Mining & Metals.
Impacts ¹⁷	A company impacts an ecosystem service if the company affects the quantity or quality of the service.
IPIECA	International Petroleum Industry Environmental Conservation Association.
Natural value ¹⁸	The combined use and existence values of biodiversity, including direct and indirect uses such as the provision of ecosystem services and raw materials for food, healthcare and many other uses, as well as the inherent cultural, spiritual and aesthetic values of biodiversity to society.
Offset ¹⁹	Practical conservation activities undertaken with the aim of 'no net loss' of biodiversity in order to 'offset'– or compensate for–unavoidable harm to biodiversity caused by a company's operations. Offset refers to conservation activities undertaken once all attempts have been made to avoid and minimise damage to biodiversity. ²⁰
Opportunities ²¹	Competitive advantage (monetisation of intangible assets) realised by a company as a result of putting strong practices in place to avoid and minimise impacts on biodiversity and ecosystem services. An example might be securing a significant share of the market for organic produce. Or, guaranteeing product transport routes by managing / protecting the Natural Hazard Regulation ecosystem service.
NGO	Non-governmental organisation.
NVI	Natural Value Initiative.
Performance levels ²²	Categories of performance assigned by our toolkit which reflect a spectrum of business practice ranging from least formed (Level 1) to best (Level 4) practice. Companies are expected to progress from Level 1 to Level 4.
Policy ²³	We define policy as a high level aspirational commitment, setting out a company's position on a particular issue.
Stakeholders ²⁴	A person or group that has an investment, share, or interest—a 'stake'–in the issue at hand or who will be affected by decisions on the issue or can affect corporate performance. Stakeholders in the context of this report are those affected by and/or able to influence an extractive or utility company's BES risks and opportunities. They would typically include local communities, employees, suppliers and shareholders.
Strategy ²⁵	A planned course of action intended to best achieve adopted goals, which may be described in a policy. In the context of this report, we use 'strategy' to refer to a document defining the company's vision for desired outcomes on a given issue in the medium term, outlining goals, prioritising them and assigning targets.
The benchmark of 2005 ²⁶	A framework created by Insight Investment and Fauna & Flora International to analyse the comparative performance of extractive and utility companies on the management of biodiversity risks and impacts in 2005. It covers 35 issues under 19 headings across the five main elements of governance structures, policy & strategy, management & implementation, assurance & reporting and leadership.
UNEP FI	United Nations Environment Programme Finance Initiative.
VBDO	Vereniging van Beleggers voor Duurzame Ontwikkeling.
WRI	World Resources Institute.

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Declaration

Fauna & Flora International accepts funding from Anglo American, BHP Billiton, Rio Tinto, Eni e&p division and Holcim. It has a link to Lafarge through membership of Lafarge's biodiversity advisory panel. In order to ensure impartiality was maintained in the analysis, reviews of these companies were conducted by individuals with no link to these organisations, and reviewed by VBDO.

End Notes

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Collaborating investors



Collaborating organisations



Acknowledgements

The authors would like to thank the individuals and companies who agreed to be involved in our original research, who agreed to be featured in this report, and released resources to enable its completion including: Anglo American, ArcelorMittal, BP, BG, BHP Billiton, Encana, Eni, ExxonMobil, Freeport McMoRan, Holcim, Lafarge, Neste Oil, PGN, Sasol, Shell, Statoil, Rio Tinto and Vedanta Resources.

This report benefited greatly from the insights, expertise and support from a large number of individuals including: Vicki Bakhshi (F&C), Monica Barcellos-Harris (United Nations Environment Programme World Conservation Monitoring Centre), Mahlette Bertre (Conservation International), Rosanna Bolzoni (Eni), Becci Collacott (BP), Jessica Boucher, Margot Hill-Landolt, Joe Bull (Imperial College), Shelley Currin (Anglo American), Anna Foller (Ethix), Julie Gorte (Pax World), Rob Harris, Irene Jonkers (Nyenrode Business University), Angela Hawdon (FFI), Ard Hordijk (Nyenrode Business University), Marina Iodice (F&C), Paul Herbertson (FFI), Pippa Howard (FFI), Eric Landen (Landen Consulting), Faryda Lindeman (Mn Services), Rick Mire (ExxonMobil), Ivo Mulder (UNEP FI), Helen Nyul (FFI), Liz Rogers (BP), Jason Sali (FFI), Sam Sweeney, David Wright (FFI), Ruth Thomas (ICMM), Stefan Jansen (VBDO) and Rudy Verstappen (VBDO). We would also like to thank consultants Tracey Draper, Tim Reed, Julie Robson and Tomas van Ammers for their contribution to the report. This report would not have been possible without the support of the Dutch Government, Mn Services, Robeco and the Calouste Gulbenkian Foundation.

Steering Committee

The project is guided by a multi-stakeholder steering committee whose members include: Banco do Brasil, the Earth Security Initiative, Forest Trends, the Global Reporting Initiative, Bunge, Business for Social Responsibility, KPMG, Pax World, Forest Trends, Radcliffe Consulting, Strathclyde University, WWF, Strategic Environmental Consulting and the United Nations Environment Programme. In particular we would like to thank Juan Marco Alvarez, Liz Crosbie, Nick Bertrand, Mark Eckstein, Maaiké Fleur, Sean Gilbert, Julie Gorte, Mike Kelly, Alejandro Litovsky, Mike Radcliffe and Kerry ten Kate for their guidance and support throughout this project.

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Citation: Grigg, A., Harper, M. and Verbunt, S. (2011) Tread lightly. Biodiversity and ecosystem services risk and opportunity management within the extractive industry. The Natural Value Initiative.

Photographs: front cover by **Juan Pablo Moreiras/FFI**

Design: Sam Sweeney (<http://www.samsweeney.com>)

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Printed in Washington DC, USA.

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