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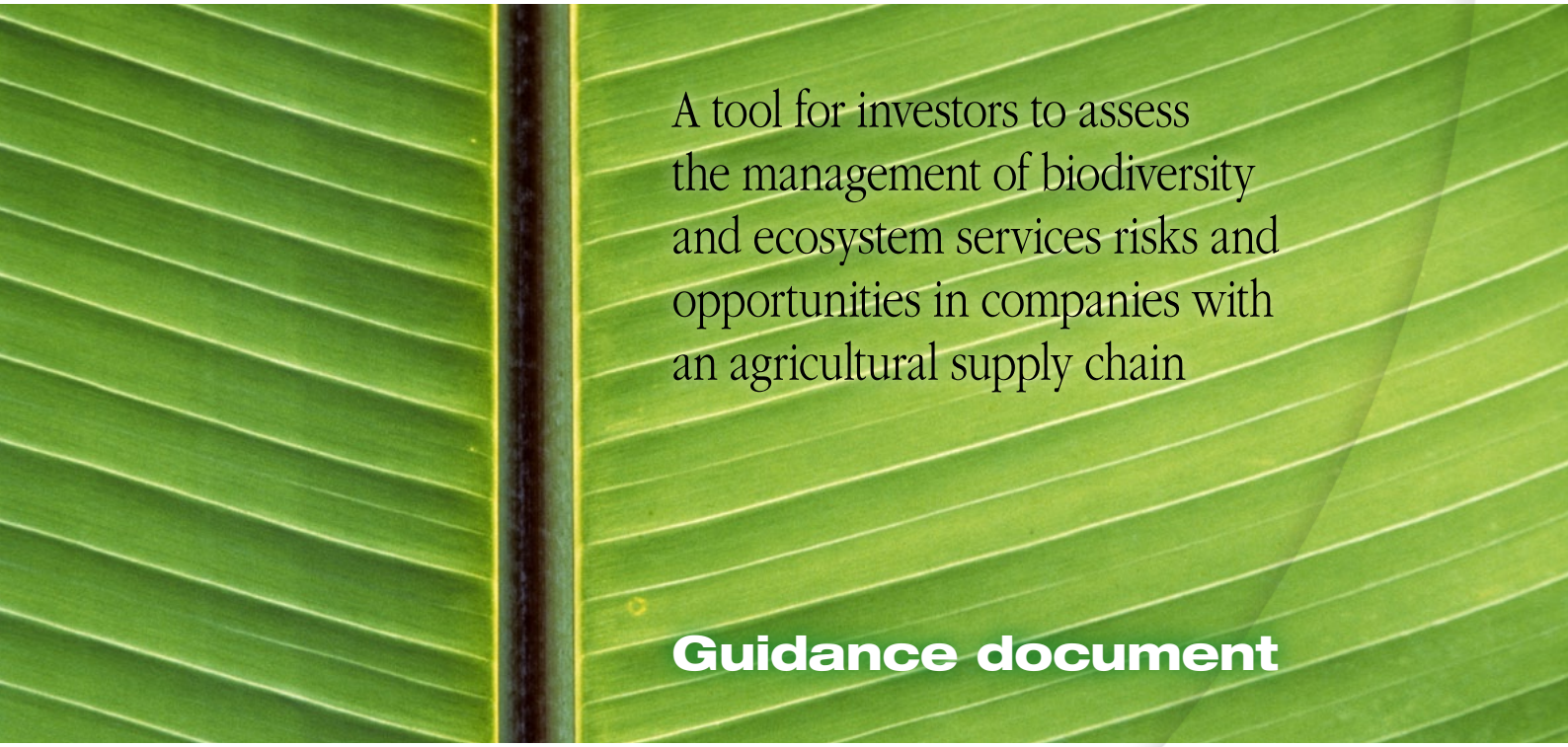
The Ecosystem Services Benchmark



A tool for investors to assess the management of biodiversity and ecosystem services risks and opportunities in companies with an agricultural supply chain

Guidance document

October 2009

FAUNA & FLORA International

FGV GVces Centro de Estudos em Sustentabilidade da EAESP

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About the Natural Value Initiative (http://www.naturalvalueinitiative.org/)

The Natural Value Initiative (NVI) – an initiative led by Fauna & Flora International (FFI) in collaboration with the United Nations Environment Programme Finance Initiative (UNEP FI) and Brazilian business school Fundação Getulio Vargas (FGV) – aims to create a toolkit for institutional investors to enable them to understand risk and opportunity relating to the impacts and dependency of their investments on biodiversity and ecosystem services.

Key partners

FAUNA & FLORA *International*

Fauna & Flora International (FFI) (http://www.fauna-flora.org/business.php)
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.

UNEP Finance Initiative
Innovative financing for sustainability

UNEP 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 170 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.

FGV GVces
Centro de Estudos em Sustentabilidade da EAESP

FGV – GVces (FGV) (http://www.ces.fgvsp.br/)
Fundação Getulio Vargas (FGV) is a pioneer school in business education in Brazil and one of the main centres for business education, research and consultancy in the country, as well as in South America. The Centre for Sustainability Studies (GVces) aims to disseminate the concept and practices of sustainability through educational activities, training, research, publications and communication.

Steering Committee

The project is guided by a multi-stakeholder steering committee whose members include: Banco do Brasil, VicSuper, Agribusiness Responsável Brasil, Bunge, KPMG, Business for Social Responsibility, WWF, Pax World, IUCN, Strathclyde University, Strategic Environmental Consulting and the Global Reporting Initiative. See Appendix 2 for a full list.

Acknowledgements

Many thanks to Strategic Environmental Consulting for their work in the early stages of the development of the benchmark. We are also grateful to the members of our Steering Committee and to the following individuals and organisations for their contributions to the development of this toolkit: Robert Barrington, Jack Foxall, F&C Asset Management Ltd, Imperial Tobacco, Monica Harris, Kate Hay, Kerry ten Kate, Pax World, Julie Robson, SAB Miller, Sainsbury's, Graham Sinclair of Sinclair & Company, Laura Somerville, Unilever, Luciana Vega and VROM. Throughout this document we have drawn from the excellent work conducted by the World Resources Institute, Meridian Institute and World Business Council for Sustainable Development set out in the Corporate Ecosystem Services Review. We are grateful also for the financial assistance provided by the Netherlands Ministry of Housing, Spatial Planning and the Environment (VROM) and UNEP Finance Initiative for this project.

Foreword

Biodiversity loss and the unsustainable use of natural resources are a rapidly growing problem; reversing the trend of decline is a formidable challenge for society. Within the framework of its Biodiversity Policy, the Dutch government is dedicated to this challenge. But the cooperation of NGO's, scientists and the private sector is crucial if we are to succeed. We are assisting private businesses analyse biodiversity and natural resources as risks and opportunities.

We have noticed a growing number of companies already managing and reducing their impact on biodiversity and finite resources. However and as always, more needs to be done. I was therefore delighted to support the development of the Ecosystem Services Benchmark. It is an important tool for investors and the companies being evaluated. The benchmark tool allows companies, shareholders and stakeholders to review company performance and develop best practice approaches. It also brings into focus all the good work companies are already doing. This publication of the benchmark methodology is not the end of a process; rather I consider it to be an exciting beginning of a learning-by-doing process that brings together investors, companies, NGO's and governments. I congratulate the Natural Value Initiative team on this important piece of work and look forward to future collaborations.

Dr. Jacqueline Cramer
Minister for the Environment, The Netherlands

If the natural world is the planet's bottom line, unless we change our business model – and change it fast – we will soon all be in the red. Regardless of our sophisticated technologies and increasingly urban lifestyles, humans – like all other creatures – are still intrinsically linked to ecosystems and the many services and benefits they provide us. Yet these linkages are poorly understood. The re-evaluation of these services is already beginning to shape new, emergent markets around the world. It is also leading increasingly to unforeseen risks for both society and business. The Ecosystem Services Benchmark, a key output from the Natural Value Initiative, has been developed to better enable investors to understand and address these risks in their investment portfolio. Without such tools, biodiversity and ecosystem services will remain unvalued and overexploited at significant cost to our society.

Mark Rose
CEO, Fauna & Flora International

We are on the brink of an unprecedented conflict for resources driven by a booming world population and the commensurate rapidly rising demand for food. These trends pose significant challenges for companies that rely heavily on natural resources and ecosystem services. It is therefore in investors' interests to be able to identify which companies are using resources most efficiently and planning for these future resource constraints; those that are will be better able to protect and enhance shareholder value. Based on a methodology developed by Insight Investment, The Ecosystem Services Benchmark provides the first comprehensive analysis of how companies within the food, beverage and tobacco sectors are addressing business challenges relating to biodiversity and ecosystem services. We hope it will be of value to investors, companies and other stakeholders.

Rory Sullivan
Head of Responsible Investment, Insight Investment

Brazil is a country that is rich in biodiversity. It also plays a significant role in the supply of the world's food. It is therefore fitting that the Ecosystem Services Benchmark has been developed based on both a European and Brazilian perspective. It is a challenge to create a tool that can evaluate corporate performance in the face of differing cultural norms and customer demands. We believe that the Natural Value Initiative has achieved this in its benchmarking tool and encourage institutional investors to integrate it as far as is possible into their approach to analysing investments.

Mario Monzoni
Director, Centre for Sustainability Studies, Fundação Getulio Vargas

Companies and their investors have long taken ecosystems services for granted, as if they came for free. Yet recent pressures on natural resources suggest that in future such services will start to command a premium, or worse, become unavailable. This could have a profound impact on the strategies and valuations of companies in high-risk sectors. The Ecosystem Services Benchmark will help us to identify which companies understand and manage those risks - and which companies are in danger of losing out.

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

In 2007, UNEP Finance Initiative developed a work stream on biodiversity and ecosystem services. It was apparent to us that biodiversity now, just as climate change was fifteen years ago, is to a large extent overlooked by the mainstream financial services and capital markets community. It was equally obvious that biodiversity and ecosystem services are integral to the ability of many companies to continue to secure raw materials and maintain strong operating margins. The Natural Value Initiative offers investors a set of tools and an approach that is tried, tested and effective, both in encouraging improved performance with those companies being evaluated, and in identifying areas of potential risk within an investment portfolio.

Paul Clements-Hunt
Head of Unit, UNEP Finance Initiative

1 The business case

Over 60% of the ecosystem services on which we and much of the agricultural system rely are being degraded or overexploited (MEA 2005). Unpredictable weather, competition for land between biofuels and traditional crops and declines in soil fertility are severely impacting our agricultural system.

The degradation of ecosystem services such as freshwater provision, climate regulation and soil fertility (see box 1) clearly has implications for the long-term viability of the businesses dependent on them, in particular those with agricultural supply chains. Increasingly this is translating to business risk and opportunity.

Box 1 **Defining ecosystem services**

Ecosystem services – also called 'environmental services' or 'ecological services' – are the benefits that people obtain from ecosystems. Examples include freshwater, timber, climate regulation, protection from natural hazards, erosion control and recreation.

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. A company **impacts** an ecosystem service if the company affects the quantity or quality of the service. See Appendix 1 for a list.

Source: C. Hanson et al. (2008) *The Corporate Ecosystem Services Review*

1.1 Business risk & opportunity

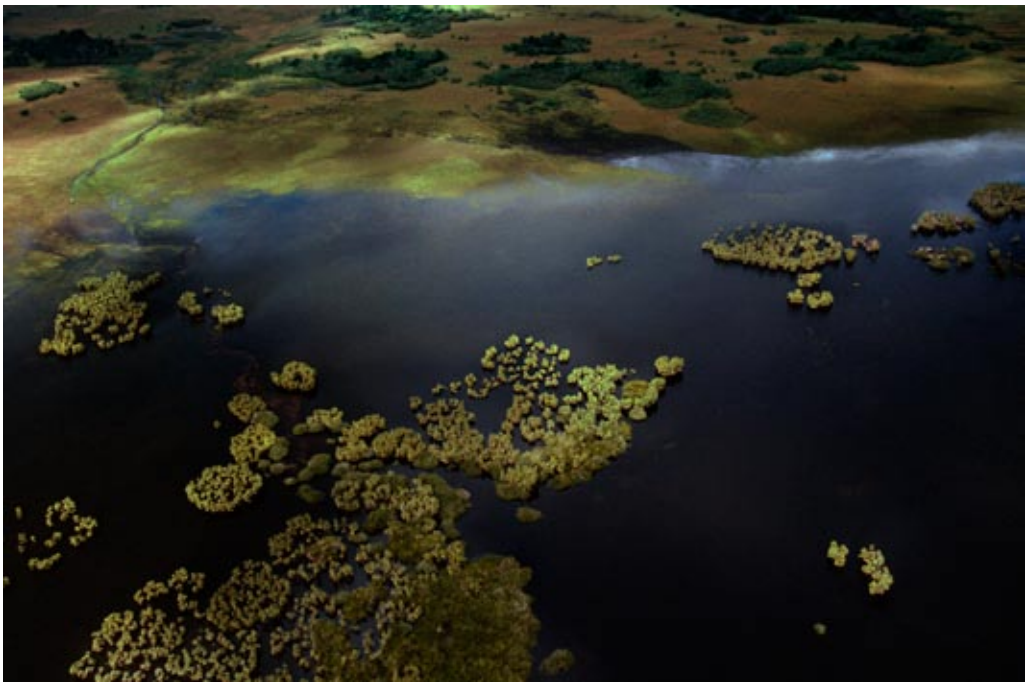
These risks and opportunities[1] include:

- **Operational risk**: Increased scarcity and cost of raw materials such as freshwater, fish or timber, disruptions to business caused by natural hazards exacerbated by loss of ecosystem services, higher insurance costs for disasters such as flooding, increasing costs of natural services as they become scarce all give rise to potential operational risks. An example is pollination: the potential annual value of all pollinators to US agriculture is estimated to be between $4.1 and $6.7 billion.[2] Major crops such as oranges and almonds are dependent on insect pollination. Pollinators are in decline globally. Without bees, for example, Californian agriculture would lose many of its highest value crops.
- **Regulatory risk**: Penalties arising from the emergence of new government policies such as taxes and moratoria on natural resource extraction and rationing of scarce resources give rise to regulatory and compliance risk.
- **Reputational risk**: Exposure from media and non-governmental organisation campaigns (such as those linked to palm oil cultivation and soya cultivation), shareholder resolutions and changing customer preferences can give rise to reputational risk.
- **Competitive advantage**: Early movers into the growing markets for certified sustainable raw materials may secure greater market share in an increasingly competitive marketplace. Competitive advantage may be increased through developing new technologies, raw materials and processes that enable companies to reduce resource intensity, reduce degradation, improve efficiency and increase supply chain resilience.

1.2 A tool for investors to evaluate risk and opportunity

Despite these emerging risks and opportunities, there are few tools available to enable investors to understand the extent to which companies are dependent on – or impact on – biodiversity and ecosystem services. As a result, company exposure to the risks above is unclear. Investors can potentially gain competitive advantage by identifying companies that are managing their risks and capturing opportunities, flagging them as stronger performers within their portfolio.

The Natural Value Initiative (NVI), an initiative led by Fauna & Flora International (FFI) in collaboration with the United Nations Environment Programme Finance Initiative (UNEP FI) and Brazilian business school Fundação Getulio Vargas (FGV), aims to address this gap by creating a toolkit to enable institutional investors to better understand the impacts and dependency of their investments on biodiversity and ecosystem services. The Ecosystem Services Benchmark or the 'ESB' is the result. It was designed specifically to evaluate the food, beverage and tobacco sectors and created in conjunction with six investors – Aviva Investors, F&C Investment, Grupo Santander Brasil, Insight Investment, Pax World and VicSuper. Collectively these investors hold €455 billion (£398 billion, US$633 billion[3]) of assets under management.



1.3 This document, its aim and application

This document describes the Ecosystem Services Benchmark (ESB), drawing examples from its pilot study with six investors and a selection of 31 companies within their portfolios. Supporting material for reference to this guidance can be found in section 3.9, page 24.

This document is aimed primarily at asset managers but can also inform the banking and insurance sectors. Using the ESB to assess companies within an investment portfolio will enable investors to identify companies that are proactively managing these risks and opportunities and those that have not yet responded. It has a secondary application for companies within the food, beverage and tobacco sectors for which it provides a strategic framework within which to consider the issue. By using it, companies will learn how to communicate more effectively with investors, gain greater reward for sustainable sourcing and facilitate effective management of an issue of increasing significance.

2 Biodiversity benchmarking and financial institutions

This section provides an overview of the use of benchmarking within the finance sector on broader sustainability issues and on biodiversity specifically.

2.1 The benchmarking approach

Benchmarking provides an objective and consistent basis for examining comparative risk exposure and management of companies. The approach combines research into key issues using a structured analysis of company performance and engagement with investee companies (UNEP FI 2008). It provides a useful reference point for investors and companies to identify areas of strength and weakness.

Box 2 **What is a benchmark?**

A benchmark measures the quality of a company's policies, products, programmes, strategies, etc., and compares them with standard measurements, or similar measurements of the best-in-class companies. It aims (1) to determine what and where improvements are called for, (2) understand how other companies achieve their high performance levels and (3) use this information to improve the company's performance.

Reference: http://www.businessdictionary.com/definition/benchmarking.html

Benchmarks are most valuable where the issue is emerging and is overlooked by more holistic analyses of sustainability performance. Corporate management of biodiversity and ecosystem services falls into this category. In such circumstances, benchmarks can provide a logical and strategic framework in which a company can start to evaluate the risks and opportunities associated with the issue. They can also provide a good framework for engagement with all stakeholders (e.g. government and NGOs as well as investors) of a company on areas where performance can be improved.

The benchmarking approach is supported by the Principles for Responsible Investment under Principle 4 'We will promote acceptance and implementation of the Principles within the investment industry – Support the development of tools for benchmarking Environmental, Social and Corporate Governance (ESG) integration'.[4]

From the perspective of the wider conservation and policy-making community, Decision VIII/17 adopted by the Conference of the Parties to the Convention on Biological Diversity[5] in Curitiba in Brazil in 2006 highlighted the important role that biodiversity benchmarks could play in guiding and assessing companies' biodiversity management practices.

2.2 Biodiversity benchmarking

Over the last six years, a small number of asset managers have been particularly proactive on the issue of biodiversity. In 2004, F&C Asset Management (F&C) undertook a review of the extent to which biodiversity could be considered a material issue for each major industry sector (F&C 2004). From this analysis, they concluded that the food and beverage sectors both impacted on **and were impacted by** loss of biodiversity and that biodiversity was therefore a potentially material issue for such companies. Based on this analysis, F&C focused on the extractive industry and undertook a benchmarking study of 20 companies that looked into policy, strategy, management and reporting using publicly available information (F&C 2004). This was used as the basis of a public report and call for corporate action on areas identified as weak.

Insight Investment undertook similar work, also in 2004, creating a benchmarking tool to evaluate approaches to biodiversity management within the oil and gas, utilities and mining sectors which was applied to 22 and then 36 companies within the extractive sector (Insight Investment 2004 and Foxall et al 2005). These approaches were used to inform investment decision-making. The results contributed to an overall picture of a company's approach to extra financial issues.

2.3 Strengths of the benchmarking approach

The benchmarking approach adopted by investors such as F&C and Insight Investment on biodiversity has a number of strengths:

- **Consistency**: provides consistent basis for examining the comparative risk exposure and management of companies as regards biodiversity.
- **Increases access to information**: reveals strengths and weaknesses of companies and provides credible, objective information that enables ongoing dialogue and engagement on an issue currently overlooked in investment analyses.
- **Measures response**: by repeat benchmarking, it is possible for investors to track a company's response to an identified area of weakness and evaluate the effectiveness of the company's response.
- **Guidance on performance improvement**: offers companies peer comparison, a framework and suggestions for continual improvement. Disclosure and public visibility of the results of the benchmark offers companies an incentive for further improvement.

2.4 Limitations

It also has a number of limitations:

- **Objectivity**: regardless of the structure of the benchmark, it is inevitable that some subjectivity is overlaid on the findings.
- **Risk exposure**: company disclosures rarely provide detail on the regions from which the company sources products and raw materials; hence, getting a clear picture of the company's inherent risk profile is challenging. The ESB therefore focuses on evidence that the company has performed such a risk assessment itself and gives an assessment of risk management rather than inherent risk.
- **Performance versus process**: the ESB reflects management actions in place to understand and manage impacts and dependence on biodiversity and ecosystem services as a proxy for on the ground performance rather than directly measuring that performance itself. This is not ideal, but reflects a lack of widely agreed performance metrics in this area.
- **Evidence-based analysis**: the analysis relies heavily on publicly reported information. Without site visits, claims cannot readily be verified.
- **Scale and products**: companies vary by size, range of products and level of influence over their supply chain. The level of devolution of management of the issue also varies. This will, in turn, influence the nature of the management systems in place, the ability of the company to influence supply chain impacts and levels of risk exposure. The ESB makes every attempt to be sensitive to these issues.
- **Resource intensive**: the research is resource intensive if performed as a stand-alone exercise. If undertaken in conjunction with a review of other sustainability issues, e.g. water management issues in relation to securing supply, however, the problem is lessened.

- **International applicability**: in developing the benchmark, we made every effort to make it globally applicable. In doing so, we encountered examples where issues of significant importance in one market may not translate to another. For example, within Europe there is significant concern about the use of genetically modified foods. In Brazil there is widespread use of genetically modified crops. Whilst we addressed this issue within the current benchmark, it suggests that similar issues will arise if used in other countries.
- **Integration**: the analysis pulls out a single issue when the reality of business operation requires tradeoffs between multiple issues. Until such time as existing management systems encompass this issue, we believe that this is justified.
- **Completeness**: the unstructured nature of many companies' websites and limitations on analysts' time means that there is a risk of overlooking data.

2.5 Constraints

In testing the ESB, we identified a few constraints to implementing it:

- **Concerns about competitive advantage**: where companies see competitive advantage in sustainability initiatives they may be reluctant to release materials for analysis.
- **Questionnaire fatigue and resource constraints**: companies may be reluctant to engage as a result of demands placed on their time by a range of questionnaires.

Some of the limitations can be overcome by focusing only on publicly available information. However, whilst this places fewer burdens on the company being evaluated, it also removes some of the potential advantages of the process, e.g. enhancing communication between companies and investors.

Despite these limitations and constraints, until such time as widely accepted metrics for the issue are developed, benchmarking remains one of the few approaches that can give an insight into a company's approach to managing its impacts and dependence on biodiversity and ecosystem services.

3 The Ecosystem Services Benchmark

This section outlines the objectives, scope and content of the Ecosystem Services Benchmark (ESB) outlining how it can be applied, the results obtained and value added that can be achieved through its application. Throughout this section we include examples and guidance drawing from our experience of piloting the ESB on 31 companies in the food, beverage and tobacco sectors.

3.1 Objective

The ESB has been developed to enable institutional investors to better understand the risks and opportunities associated with their investment's management of their impacts and dependence on biodiversity and ecosystems services. The tool is also valuable to the companies being evaluated, enabling them to measure and track their performance and identify key areas for improvement.

3.2 Why the ESB is unique

The ESB focuses on impacts *and dependence* on biodiversity and ecosystem services associated with the production and harvesting of raw materials in companies with agricultural supply chains (including agricultural commodities, livestock and fish). Most traditional measures of performance consider impacts only or just one element of environmental performance.

3.3 Value added

The ESB has a number of features that make it particularly appealing:

- It increases understanding of risks and opportunities associated with ecosystem services within the finance sector to enable poor performance to be identified and addressed and good performance rewarded.
- It is not a questionnaire and is largely populated based on publicly available information, minimising the burden on companies being evaluated.
- It provides a strategic framework on an overlooked issue that may not be evident in established management systems, e.g. ISO14001.
- It provides signposts to useful tools and initiatives that can save companies time and money, shortcutting labour-intensive methodology development.
- It enables identification of shared challenges that may require cross-sectoral collaboration.

3.4 Scope

The ESB focuses exclusively on a company's impacts and dependence on biodiversity and ecosystem services within the agricultural supply chain. It does not address social issues such as the health/ social impacts of tobacco. It does not include the direct operational footprint of the company, e.g. greenhouse gas emissions from manufacturing plants or the impact of supermarket sites on local biodiversity, except where companies are deemed to be significant users of ecosystem services (e.g. beverage companies and their use of water).

The ESB has been designed specifically for evaluation of the food, beverage and tobacco sectors, but has broader applicability to any supply chain company with an agricultural/ natural resources footprint.

3.5 Users

We envisage two primary sets of users:

- **Institutional investors**: The ESB is designed to enable institutional investors to evaluate how well a company is managing potential risks and opportunities relating to biodiversity and ecosystem services and to engage with those companies to reduce their potential risk exposure (see box 3 for experiences from piloting this methodology).

Box 3 Using the ESB – some perspectives from investors who have used it

Following a period of stakeholder consultation on the content of the benchmark, it was piloted on 31 companies with six investors. We worked with Aviva Investors, F&C Investments, Grupo Santander Brasil, Insight Investment, Pax World and VicSuper to:

- Refine the benchmarking tool and approach.
- Review their portfolio of companies in the food, beverage and tobacco sectors.
- Identify a shortlist of companies based on these holdings for analysis, adjusted to ensure a spread across sectors and a range of geographies (multinationals and Brazilian companies) to ensure a more global view of the issue were obtained).
- Hold meetings with the companies to check initial desk-based research; investors attended over two thirds of all meetings held.

The investor group that piloted the ESB outlined the following strengths and uses of the ESB:

- **To identify risks**: the ESB enables identification of poorly performing or high-risk companies or sectors. This enables prioritization of effort by the investor.
- **To raise the profile of the issue within key investments**: direct communication with companies as part of the ESB process tells the companies that investors are interested in biodiversity and ecosystem services, and see it as a potentially material investment issue, thereby stimulating action on the issue.
- **To enhance corporate understanding of the issue**: communicating directly with companies helps the companies understand that they have biodiversity impacts and requirements.
- **To enable informed engagement**: the provision of information enables engagement by the investors with individual companies on areas of weakness.
- **To encourage performance improvement**: by providing companies with scores to assess their position against peers and clear recommendations for improvement, and combining this with the engagement process outlined above, the ESB encourages year on year performance improvement.
- **To consolidate and communicate activity within the sector analysed**: wide dissemination of the results informs the emerging review of the economics of ecosystems and biodiversity, ensuring that policy is shaped with a good understanding of ongoing corporate activity on this issue.
- **To inform screening criteria in ethically screened funds**: elements of the ESB could be incorporated into screening criteria for funds, enabling new products to be developed.

- **Companies in the food, beverage and tobacco sectors**: The results from the benchmarking study can be used to develop a strategic framework for driving forward a company's approach to managing impacts and dependence on biodiversity and ecosystem services. This will enable increased quality of communications to investors, improved risk and opportunity management, and insight into how to address business critical issues that may not be routinely managed through current supply chain practice.

3.6 An overview of the benchmark

Developing the benchmark

The Ecosystem Services Benchmark is based on a tried and tested benchmarking methodology that was developed by the UK-based asset manager Insight Investment and conservation NGO Fauna & Flora International for the oil and gas, mining and utilities sectors (Insight Investment 2004). Based on established risk management practices such as ISO14001, the ESB draws from material including (but not limited to) the Global Reporting Initiative (GRI 2006), Corporate Ecosystem Services Review (WRI et al 2008), Roundtable on Sustainable Palm Oil (RSPO) Principles and Criteria[6], and the International Finance Corporation Performance Standard 6 (IFC 2006). Consultation with a number of parties underpinned its development:

- Feedback received from a selection of companies evaluated within the Insight Investment extractive sector benchmark.
- Two consultation workshops convened by the NVI – in the UK on 8th August 2007 and in Brazil on 3rd September 2007 – which brought together over 90 members of the finance sector, NGO community, and food, beverage and tobacco sectors.
- Further consultation with industry leaders and NGOs through engagement with our multi-stakeholder steering committee.

The methodology was revised on the basis of this feedback and cross-referenced to other relevant initiatives. Following a further consultation with key stakeholders, the methodology was piloted on 31 companies in the food, beverage and tobacco sectors and adjusted to its current form.

The structure of the benchmark

The ESB considers five broad categories of performance; all five sections of the benchmark are interdependent:

- **Competitive Advantage**: Measures the extent to which business value is created or protected through company activity to ensure sustainable sourcing with a focus on biodiversity and ecosystem services.
- **Governance**: Evaluates the extent to which responsibility is assigned for managing this issue. It reviews whether processes are in place to engage with stakeholders and undertake a formal risk and opportunity evaluation linked to impact **and dependence** on biodiversity and ecosystem services. This section is absolutely key, as it drives activity in all other areas. Guidance on risk assessment is provided in box 4.

  The local context greatly influences this assessment. For example, the impact on the local water supply of expanding the production of a crop will depend in part on other users and on the prevailing availability and quality of water in the catchment area. Therefore, when considering risk, investors need to consider how companies, particularly primary producers and commodity processors, are managing impacts and dependencies at a landscape level such as watershed level (WRI et al 2008).

  The extent of actual risk will also depend on the complexity of the supply chain, level of

Box 4 **Factors in assessing risk and opportunity**

We outline below a number of questions that can be used to evaluate the level of risk and opportunity within a company.

Risk

Operational

- Is the company particularly dependent on ecosystem services such as water, natural pollinators which are likely to become scarce? If reliant on such services, are there substitutes?
- Do products or ingredients that may be impacted by shortages in such services form a significant volume or value for the business?
- Does the company sell to a customer base that is engaged, aware and concerned about use and impact on biodiversity and ecosystem services?
- Are key company operations or suppliers located in areas which are heavily exploited and use of ecosystem services is unsustainable?
- Is this giving rise to conflict over resource use?
- Is the company dependent on a small number of customers who could impose stringent performance requirements on them?

Reputational risk

- Is the company sourcing from areas in, near or containing areas of known ecological sensitivity either protected by law or highlighted by key stakeholders, e.g. NGOs, as important? If not known, this remains a risk.
- Does the company have strong relationships with key stakeholders such as NGOs?

Regulatory and compliance

- Does the company source raw materials from regions that have laws or regulations which limit or require payments for resource use?

Opportunity

Market differentiation

- Can the company differentiate its brand or product through improved environmental efficiencies?
- Is market demand increasing or declining for goods produced with efficient resource inputs?

Access to new revenue streams

- Does the legal and operating environment allow investigation into new sources of revenue, e.g. organic products, carbon credits or water rights?

traceability, scale of raw materials purchased and the extent to which the company has policy and procedures in place that enable the identification and management of risk and opportunity.

- **Policy and strategy**: Evaluates the extent to which there is a consistent policy and strategic framework in place for driving improvement and managing risk and opportunity and guidance/ standards to aid implementation.
- **Management and implementation**: Evaluates the extent to which tools, training and assurance processes are in place to drive improvement through the supply chain and cover all priority suppliers/ products/ farmers based on a risk and opportunity assessment.
- **Reporting**: Evaluates the extent to which the company has internal and external reporting processes, targets and indicators which report progress against stated policies and standards on sustainable sourcing (focusing on impacts and dependence on biodiversity and ecosystem services).

The detailed benchmark is outlined in table 1. Different companies have different impacts and dependence on ecosystem services according to where they sit within the food supply chain, the product they provide and the geographic area where they operate. The ESB is therefore structured to reflect the differences between those companies that own or lease agricultural lands and those that buy from suppliers enabling different questions to be answered according to the nature of the company being evaluated (see box 5).

Box 5 **Sector specific differences**

We tested the benchmark on five different sub sectors across the food, beverage and tobacco value chain: producers, processors, retailers, beverage and tobacco. We designed the ESB such that the questions were broadly applicable across each section with the exception of:

- **For tobacco:** question 1.1 'Value Creation' was omitted as, in many countries, the sector is prevented from marketing tobacco products by law.
- **For companies with land holdings:** there are different versions of questions 4.5 on coverage and 5.1 on supply chain monitoring/ or farm level data collection to reflect that these companies liaise with growers/ farmers rather than suppliers.

The benchmark was designed to cross-check these process-based measures through data collection against a small number of key indicators of performance at farm level. However, our pilot study showed that such indicators were largely unused. They are therefore omitted from this version of the benchmark.

Performance levels

The benchmark evaluates company performance against specific criteria, which represent the different categories of a strong management system. For each criterion, companies are evaluated against four performance 'levels' reflecting the spectrum of current practice, from *'no apparent activity to manage the issue'* (Level 1) through *'current strong performance'* to *'perceived best practice'* (Level 4). Best practice in the ESB reflects an ideal company approach and is amalgamated from examples of company best practices in the five different areas of performance. It therefore does not represent 'best practice' performance in any one company.

Level 1 is assigned a score of 0, Level 2 a score of 1, Level 3 a score of 2 and Level 4 a score of 3. Further details of the scoring is provided with the Excel spreadsheet 'Ecosystem Services Benchmark V1.xls' that provides the detailed tool. This can be downloaded from http://www.naturalvalueinitiative.org

Table 1 **The Ecosystem Services Benchmark**

Criterion	Level of performance
1. Competitive advantage	
1.1 Value Creation (not for tobacco) *Note: This question should not be used for the tobacco industry in line with the legal safeguards on tobacco advertising*	
Extent to which business value is created through active brand differentiation and development of new product lines linked to sustainability concerns with a focus on biodiversity and ecosystem services.	**Level 1** No activities in place, or just ad hoc public-relations-based activities. **Level 2** Pilot projects in place to generate data for potential company-wide roll-out. **Level 3** Projects scaled up from pilot phase and clearly linked to business strategy and brand value. **Level 4** Sustainable product line(s) developed and fully integrated into core business strategy and brand value.
1.2 Ensuring sustainability of supply	
Measures are being put in place to reduce demands placed on shared or declining ecosystem services or to restore ecosystems on which the company is dependent: focus on issues that require collaboration or address root causes of overexploitation, e.g. collaboration to sustainably manage the extraction of water by a range of different users in a water stressed area.	**Level 1** No activities in place, or just ad hoc public-relations-based investments. **Level 2** Activities in place, but engagement is ad hoc and issues driven rather than linked to strategy. **Level 3** Pilot projects to reduce impact/ dependence on biodiversity and ecosystem services developed to generate data for potential company roll-out; wider action plan developed to address key issues. **Level 4** Series of activities in place to address priority issues that create barriers to sustainable sourcing, e.g. long-term non-governmental organisation partnerships, collaboration with industry associations/ governments, participation in multi-stakeholder process as part of a strategic approach based on impacts and dependencies.
2. Governance	
2.1 Responsibility	
Responsibility for biodiversity and ecosystem services risk and opportunity management: adequate resources are assigned to ensure effective management of risks and opportunities – responsibility assigned at all levels at 1) group / divisional level and (where relevant) 2) site level.	**Level 1** Not clearly assigned. **Level 2** Named manager at group level. **Level 3** As for Level 2, but manager no more than two levels from board. **Level 4** Board responsibility rests with named member of executive board.
2.2 Risk assessment – nature of products	
Key areas of dependency and impact on ecosystem services have been identified: risk profile linked to nature of products sold, e.g. product heavily dependent on pollination services or requires significant chemical inputs.	**Level 1** Lack of formal risk assessment process to identify priority products/ crops/ species for action to control risk and identify opportunities. **Level 2** Risk assessment activities in place but ad hoc and issues driven rather than linked to strategy. **Level 3** Strategic evaluation of those products of a) greatest risk and/ or b) greatest value to company. **Level 4** Full risk assessment of all commodities/ products against all relevant risk factors. At farm level, this includes assessment of landscape level risks. Good understanding of value of priority products and supply chains and the associated financial exposure to business. Results integrated into a fuller risk assessment and associated action plan.

Criterion	Level of performance	
2.3 Risk assessment – nature of supply base		
Supply base mapping: risk profile in relation to geography of sourcing and level of influence over supply chain to manage that risk, e.g. product grown in areas of high biodiversity importance or where key ecosystem services are scarce.	**Level 1**	No evaluation of supply base undertaken. Geographic risks in relation to biodiversity and ecosystem services are unknown.
	Level 2	Some knowledge of where priority (where priority means level of risk in relation to biodiversity and ecosystem services) raw materials (crops/ species) are sourced from and of structure of supply chain/ growing operations.
	Level 3	Significant proportion of priority raw materials (crops, timber, fish, etc.) traced at least to country level.
	Level 4	In-depth knowledge of supply chain, includes traceability of priority crops and species to country/ocean and regional level. Results integrated into a fuller risk assessment and associated action plan.
2.4 Stakeholder engagement		
Engagement with external stakeholders: robustness of processes in place for engagement with external stakeholders to enhance understanding of potential risks and opportunities relating to impacts and dependence on biodiversity and ecosystem services	**Level 1**	No consultation with external stakeholders.
	Level 2	Stakeholder consultation on ad hoc basis.
	Level 3	Formal, risk and opportunity-based stakeholder engagement process in place with results used to inform activities.
	Level 4	As for Level 3, plus participation in roundtables and other collaborative stakeholder groups in addition to having a formal stakeholder engagement process in place. Results integrated into a fuller risk assessment and associated action plan.
3. Policy & strategy		
3.1 Policy and strategy framework		
Statement of policy and strategic objectives for sustainable sourcing (including biodiversity and ecosystem services) determines whether there is a consistent framework for driving improvement and managing risk and opportunity.	**Level 1**	No specific policy statement.
	Level 2	Issues covered in general terms/ at very high level as part of overall environment/ sustainable development strategy; lacks elaboration of specific standards or targets.
	Level 3	Specific reference to biodiversity and ecosystem services in policy or strategy documents.
	Level 4	Comprehensive policy and strategy and/ or, where appropriate, commodity/ species specific policies and commitment to understand and minimise impacts on biodiversity and ecosystem services, e.g. references to efficient use of resource, farm management standards, external assessment process, goals and targets, ongoing review.
3.2 Standard setting		
Standards for resource and farm level: provides supporting guidance and standards for implementation of the high-level policy/ strategy.	**Level 1**	No standards set.
	Level 2	Minimum standard set at group level to comply with environmental legislation in areas of operations, or specific standards limited to a few commodities/ locations/ issues.
	Level 3	Farm level standard / supplier standards are set that go beyond compliance but are implemented for only a few products/ commodities.
	Level 4	Comprehensive farm level/ supplier standards set internally to address priorities identified by a risk assessment.
4. Management & Implementation		
4.1 Supplier and grower engagement		
Driving improvements through supply chain and at farm level: extent to which tools and mechanisms are in place to drive improvement through the supply chain.	**Level 1**	No tools or mechanisms in place to drive improvement through the supply chain/ at farm level.
	Level 2	Tools or mechanisms in place to drive improvement focusing on a small number of commodities or issues.
	Level 3	Tools and mechanisms to drive improvement are in place for the majority of the supply chain/ most areas of production.
	Level 4	As for Level 3 plus incentives are in place for suppliers/ farmer to adopt and implement the tools.

Criterion	Level of performance
4.2 Capacity building	
Capacity building to support improvement: extent to which programmes are under way that identify gaps in capacity to deliver sustainable resource management in-house and within the supply chain and to address those gaps.	**Level 1** No capacity building undertaken. **Level 2** In-house key capacity building needs identified and programme in place to address them. **Level 3** Tailored capacity building and extension services implemented on a pilot basis within supply chain in addition to in-house training. **Level 4** Extensive in-house and supply-chain capacity building programmes in place.
4.3 Assurance	
Proof of implementation: extent to which processes are in place to ensure effective implementation of programmes.	**Level 1** No processes in place **Level 2** Company self-assessment of its producers and its own programme implementation, but conducted for a few limited companies/ commodities with no clear strategy justifying this. **Level 3** Self-assessment of all key suppliers and commodities with some third party certification against known and widely accepted standards, e.g. Roundtable on Sustainable Palm Oil Criteria, Forest Stewardship Council, Rainforest Alliance (against standards for banana, coffee, citrus, cocoa, pineapple, flowers and foliage, tea), general Sustainable Agriculture Standard, Marine Stewardship Council for all projects for which this is demonstrated to be of strategic advantage for commodities. **Level 4** Third party audits, certification against known and widely accepted standards for all commodities and suppliers of demonstrated risk or where opportunity for value creation lies as defined by a strategy.
4.4. Coverage – breadth of implementation	
Breadth of implementation – product/ commodity coverage: examines the extent to which programmes in place reflect the risk and opportunity profile of the products/ commodities produced.	**Level 1** No implementation. **Level 2** Limited application, e.g. premium lines but not value lines; finished products, not ingredients, ancillary but not core products (e.g. wood for curing tobacco, biomass for energy generation). Unspecific / generalised targets to increase coverage. **Level 3** Specific public targets to implement in all supply chains/ farms where high-risk commodity/ species is a significant ingredient or component, i.e. occurs above a defined threshold and / or known risk of land expansion or heavy agrochemical use. **Level 4** Significant coverage combined with specific commitment to increase coverage as for Level 3.
4.5 Coverage – depth of implementation *Note: There are two options provided: the first is more relevant for companies with land holdings, the second for companies that source their raw materials through third parties*	
For companies that own land Depth of implementation – farmer coverage: examines the extent to which programmes in place reflect a risk-based comprehensive coverage of growing activities OR **For companies sourcing from third parties** Depth of implementation – supplier coverage: examines the extent to which programmes in place reflect a risk-based comprehensive coverage of the supply chain.	**Level 1** No implementation. **Level 2** Programmes in place for at least 25% of the farmers identified as a risk from the perspective of dependence and impacts on biodiversity and ecosystem services. **Level 3** Programmes in place for at least 50% of the farmers identified as a risk from the perspective of dependence and impacts on biodiversity and ecosystem services. **Level 4** Programmes in place for all the farmers identified as a risk from the perspective of dependence and impacts on biodiversity and ecosystem services. OR **Level 1** No implementation. **Level 2** Programmes address first tier suppliers. **Level 3** As for Level 2, plus engagement with most influential links in value chain which may not necessarily be the first tier of the supply chain; contact may be direct or through collaborative process **Level 4** Systematic approach to engaging with suppliers identified as a priority on the basis of risk and opportunity analysis. Management activities in place to control risk and enhance opportunities.

Criterion	Level of performance	
5. Reporting		
5.1 Farm level data collection/ supply chain monitoring *Note: There are two options provided: the first is more relevant for companies with land holdings, the second for companies which source their raw materials through third parties*		
For companies that own land Data on impacts of primary production: checks for the presence of quantified key performance indicators – a key tool in driving performance improvements, e.g. number of farms committed to sustainable agriculture practices	**Level 1**	No individual farm level data collected: primary producers prepared to declare legal compliance only.
	Level 2	Limited data collected only (own operations only).
	Level 3	Systematic collection of farm level data (own and contract farms).
	Level 4	As for Level 3, plus farm level data assessed against detailed set of performance indicators: data held centrally.
OR	OR	
For companies sourcing from third parties Monitoring performance: information reported internally to track improved understanding and management of biodiversity and ecosystem services in the supply chain (could be process indicators).	**Level 1**	Information is not available to track performance improvement down the supply chain/ at farm level.
	Level 2	Internal systems in place to track performance against the standards set but these are incomplete.
	Level 3	Internal systems in place to track performance against the standards set and are complete.
	Level 4	Internal systems in place to track performance against the standards set. Trends indicate progress in priority areas.
5.2 Quantitative targets		
Improvement in practice: checks to what extent quantitative targets have been set – an essential tool to drive forward policy and strategy implementation.	**Level 1**	No targets set.
	Level 2	Targets set for a small number of issues/ areas on an ad hoc basis and may be issues driven.
	Level 3	Targets set for small number of issues of strategic importance, going beyond immediate operational impacts (e.g. sustainable sourcing).
	Level 4	Targets set for all issues of strategic importance, with evidence of improved performance against those targets.
5.3 Reporting		
Disclosure of appropriate information: checks extent to which information is collected, used for management and communicated to key stakeholders in a way that meets their information needs, controls risk and realises opportunity.	**Level 1**	Brief mention; no detail.
	Level 2	Discussion of issues; supply chain stories; no reporting on results or targets, some communication on priority areas and limited reporting on results or targets.
	Level 3	Detailed disclosure of: e.g. high-risk crops/species; standards and assessment framework; coverage strategy (which raw materials and why); % primary producers assessed, audited, certified; progress against targets; results and challenges; pilot projects and technical assistance; £ invested at farm/resource level.
	Level 4	As for Level 3, reported data is verified by a third party verifier.
5.4 Public affairs and lobbying		
Disclosure of relevant public affairs activity: no lobbying activities are conducted that run counter to stated policies on sustainable sourcing.	**Level 1**	No information on lobbying or public affairs activities or simple statement of compliance with law on political donations.
	Level 2	Disclosure of membership of trade and business associations, multi-stakeholder processes and support for voluntary initiatives.
	Level 3	As for Level 2, plus discussion of specific policy positions on material biodiversity / sustainable sourcing issues.
	Level 4	As for Level 3, plus disclosure demonstrates alignment of company's sustainability activity with its public affairs and lobbying activities.

Weighting the categories

Since some of the elements of the benchmark play a greater role in risk management and realising opportunities than others, the ESB adjusts the relative scores of each section as shown in the

table below in order to calculate the final score and level of performance. This also compensates for the fact that the number of questions varies from section to section.

Category	Weighting factor
Competitive advantage	15%
Governance	20%
Policy & Strategy	20%
Management & Implementation	25%
Reporting	20%

3.7 Using the benchmark

The application of the benchmark assumes a basic level of understanding by investors/ analysts of the concept of ecosystem services, its definition, potential corporate impacts and dependence on ecosystem services, and the risks associated with mismanagement. Its application requires an understanding of corporate approaches to environmental management rather than scientific training. It is recommended that those investors wishing to use this tool are familiar with the following documents prior to conducting the review:

- World Resources Institute, the Meridian Institute, and the World Business Council for Sustainable Development (2008) *The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks & Opportunities Arising from Ecosystem Change.* Version 1.0. Washington, DC.
- Millennium Ecosystem Assessment (2005) *Ecosystems and Human Well-being: Opportunities and Challenges for Business and Industry*. World Resources Institute, Washington, DC.
- Fauna & Flora International (2008) *Dependency and impact on ecosystem services – unmanaged risk, unrealised opportunity: A briefing document for the food, beverage and tobacco sectors.*

Alternatively, the research and analysis could be contracted out to consultants familiar with the issue. An approach for its application is outlined below based on our piloting of the ESB.

Step 1: Undertake research on the company based on publicly available information (website, corporate social responsibility reports, environmental reports, annual reports, Roundtable on Sustainable Palm Oil disclosures, Carbon Disclosure Project returns, etc.).

Step 2: Conduct 1-2 hour face-to-face interviews or teleconferences with the companies.

Step 3: Perform a web search to identify any materials inconsistent with claims made by the company, e.g. adverse press coverage.

Step 4: Update summaries of company performance.

Step 5: Review results to ensure consistency of approach and check any unusual results.

Step 6: Analyse results and rank company performance against sector average and best in class.

Step 7: Companies check their results to ensure that any inaccuracies have been identified.

Step 8: Finalise ranking and performance level.

The approach will vary according to the in-house capacity and resources available within different investors. For situations of limited resources, reducing the research to steps 1 and 6 will significantly lower the resources required. It will also, however, reduce the accuracy of the work.

The ESB methodology is summarised within a spreadsheet: 'The Ecosystem Services Benchmark V1.xls'. The spreadsheet collates the raw benchmarking data into a series of graphs for quick analysis and cross-sectoral comparison.

Three different layers of analysis allow:

- Identification of sectors within a portfolio which are not currently active on the issue and that present a potential risk.
- Identification of companies that show limited apparent activity on managing the issue.
- Identification of common areas of weakness across sectors that might benefit from cross-sector collaboration.

The ESB can provide information for investors' ongoing engagement / dialogue with the company under evaluation. By incorporating discussion of the recommendations and outcomes of the analysis into dialogues with poorly performing companies, improved performance can be encouraged and ultimately risk is more effectively managed.

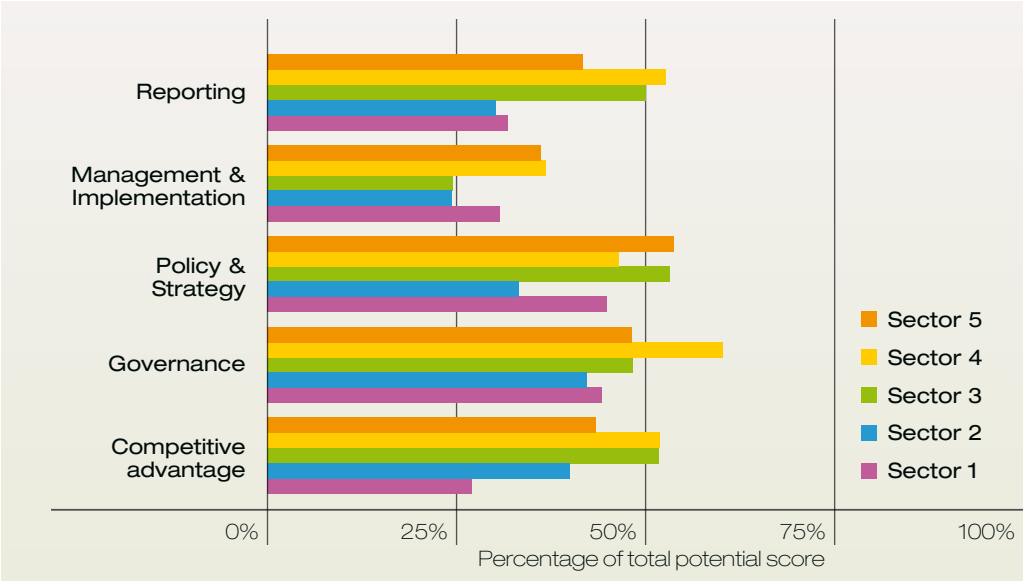
Outputs obtained from applying the benchmark

Throughout this section we have used examples adapted from our pilot of the ESB on companies in the food, beverage and tobacco sectors in order to illustrate the nature of results that can be obtained from using the ESB. Three levels of analysis can be obtained through inputting raw data from evaluating company disclosures into the 'The Ecosystem Services Benchmark V1.xls'spreadsheet created in Microsoft Excel (this can be downloaded from http://www.naturalvalueinitiative.org). These are explained below.

- **Cross-sectoral level**: The ESB summarises data for each performance area (competitive advantage, governance, policy and strategy, management and implementation, and reporting). Figure 1 demonstrates how this analysis looks. It is based on illustrative rather than actual data. This enables investors to focus on those sectors that are less advanced in their management of this issue.

Figure 1

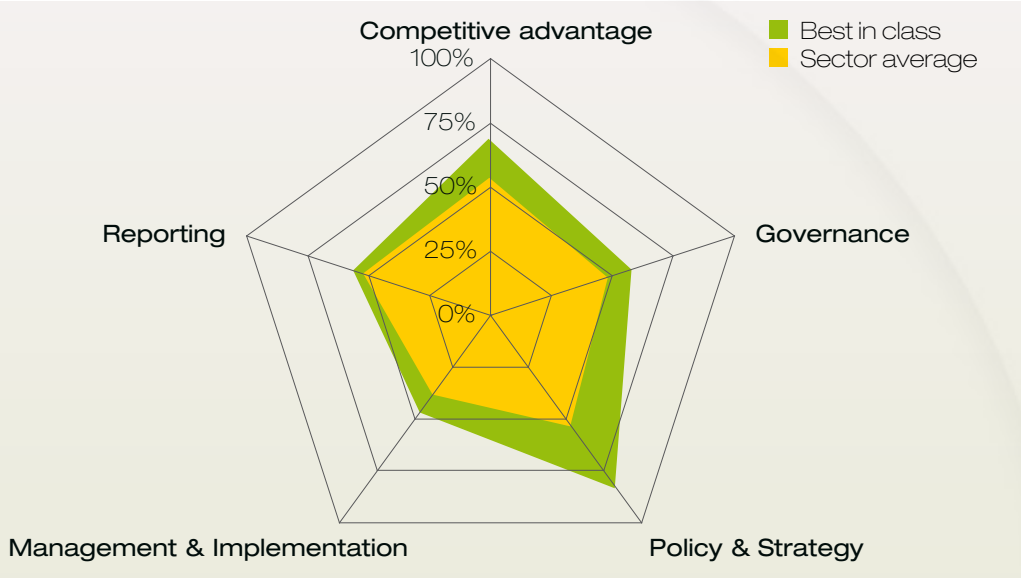
Sectoral average performance against benchmark categories (broken into performance areas)



- **Sectoral level**: The sectoral level analysis of the ESB enables key trends, areas of strength and weakness, and common best practice to be identified on a sectoral level. Figure 2 (again adapted from data gathered from our pilot study – figures are illustrative only) shows how sector averages and best-in-sector data can be presented to allow identification of particular areas of weakness within a sector compared to another. This enables a portfolio to be reviewed and sectors of potential risk to be identified.

Figure 2

Sector performance against benchmark categories

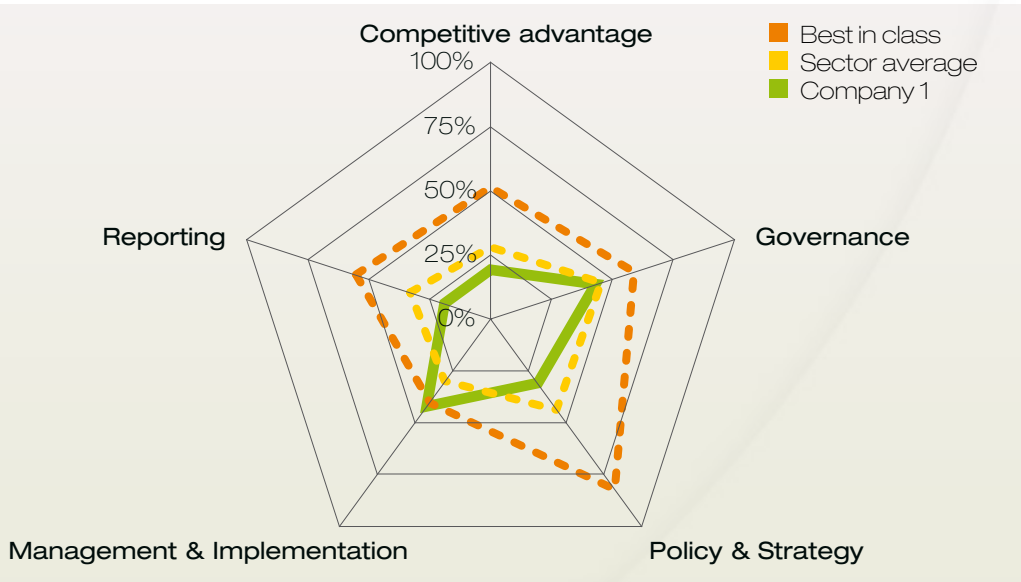


Scores are provided as a percentage of total possible scores within each category

- **Company level**: The ESB enables individual company results to be summarised both within spidergrams and as a level of performance (see figure 4). These enable areas of strong and weak performance to be readily identified. The tool calculates sector average and best-in-class performance, allowing investors to identify companies that are less developed in their approach to this issue. Figure 3 (based on a fictional company) demonstrates how this analysis looks. Companies demonstrating less activity on this issue can be identified, allowing investors to focus their attention on potentially high-risk companies within their portfolio. Companies falling within Level 1 and 2 should form the priority for investor engagement/ dialogue and represent relatively limited activity on the issue. By providing the results to the companies being evaluated, and combining this with recommendations for performance improvement, the companies can be encouraged to improve their performance on this issue.

Figure 3

Company performance against benchmark categories



Scores are provided as a percentage of total possible scores within each category

Figure 4 **The ESB results demonstrating how levels of performance are calculated for each company (based on fictional data)**

	Company	Benchmark scores as a percent of total possible score					TOTAL	
		Competitive advantage	Governance	Policy & Strategy	Management & Implementation	Reporting	SCORE	LEVEL
Sector 1	Company 1	17%	42%	33%	40%	17%	31%	Level 2 (26-50%)
	Company 2	17%	29%	33%	17%	21%	23%	Level 1 (0-25%)
	Company 3	33%	58%	33%	37%	42%	41%	Level 2 (26-50%)
	Company 4	17%	58%	42%	20%	54%	38%	Level 2 (26-50%)
	Company 5	50%	33%	83%	40%	25%	46%	Level 2 (26-50%)
	Sector average	27%	44%	45%	31%	32%	36%	
	Best in class	50%	58%	83%	40%	54%	46%	
Sector 2	Company 6	0%	29%	17%	7%	21%	15%	Level 1 (0-25%)
	Company 7	33%	46%	50%	37%	42%	42%	Level 2 (26-50%)
	Company 8	67%	50%	25%	37%	46%	43%	Level 2 (26-50%)
	Company 9	33%	42%	42%	20%	21%	31%	Level 2 (26-50%)
	Company 10	67%	46%	33%	23%	21%	36%	Level 2 (26-50%)
	Sector average	40%	43%	33%	25%	30%	33%	
	Best in class	67%	50%	50%	37%	46%	43%	

3.8 Performance levels

Table 2 opposite sets out the characteristics for different performance levels. This should be used as a guide when reviewing the final results of the ESB.

3.9 Supporting materials

The Natural Value Initiative has produced a series of documents, which act in support of the ESB:

- *The Ecosystem Services Benchmark V1*: A version of the benchmark tool and individual company analysis template in Microsoft Excel.
- *Linking shareholder and natural value: Biodiversity and ecosystem services risk management in companies with an agricultural supply chain*: A report from our pilot study of the tool, which highlights areas of best practice and common areas of improvement in managing impacts and dependence on biodiversity and ecosystem services.
- *Dependency and impact on ecosystem services – unmanaged risk, unrealised opportunity: A briefing document for the food, beverage and tobacco sectors*: A document outlining the business case for managing dependence and impacts on ecosystem services focusing on the food, beverage and tobacco sectors.

These documents can be downloaded from the NVI website http://www.naturalvalueinitiative.org

Table 2 **Defining performance levels**

	Level 1 (0-25%)	Level 2 (26 - 50%)	Level 3 (51 - 75%)	Level 4 (76-100%)
Competitive advantage	No activities or ad hoc public-relations-based activities to build brand value. No activities to address barriers to sustainable sourcing.	Pilot projects in place to develop & build brand value; intent expressed to roll out company-wide. Activities to address barriers to sustainable sourcing, but ad hoc & reactive.	Projects scaled up from pilot phase & linked to business strategy. Pilot projects to reduce impact/ dependence on BES with intent to roll out company-wide; wider action plan developed.	Sustainable product line(s) developed & integrated into core business strategy & brand value. Priority activities underway to address barriers to sustainable sourcing as part of a strategic plan.
Governance	Responsibility for driving forward action not assigned. No apparent evaluation of raw materials sourced/ suppliers to identify BES risks & opportunities. No consultation with external stakeholders.	Responsibility assigned at group level. Risk management & stakeholder engagement activities in place but ad hoc & issues driven, not strategic.	Responsible person has a link to the board. Risk evaluation activities conducted for a significant proportion of raw materials. Formal stakeholder engagement process in place & informs activities.	Responsibility rests with named member of executive board. Comprehensive, stakeholder informed, risk & opportunity assessment undertaken & results integrated into an action plan.
Policy & Strategy	No reference to biodiversity & ecosystem services in policy statements. No standards set to define levels of performance.	Policy disclosures address issue in general terms; too high-level to act as a strong implementing framework. Minimum standards requiring legal compliance or standards only for a few commodities/ issues.	Policy forms a good framework to drive performance improvement. Comprehensive standards for suppliers/ farmers which go beyond compliance but are limited in scope of application.	Strong framework to drive improved performance; comprehensive commitments. Comprehensive farm level/ supplier standards set internally to address risks and opportunities.
Management & Implementation	No tools, assurance process or capacity building in place to drive improvement through the supply chain or at farm level.	Tools or mechanisms (e.g. assurance) in place to drive improvement focusing on a small number of commodities or issues. In-house key capacity building needs identified & programme in place to address them.	Tools or mechanisms (e.g. assurance, third party certification against widely accepted standards) to drive improvement in place for the majority of risk areas. Tailored capacity building implemented on a pilot basis in-house & within supply chain. Specific public targets to manage areas of risk & opportunity.	As for Level 3, plus • incentives to encourage uptake of tools • extensive in-house & supply-chain capacity building • third party audits, certification against accepted standards for high-risk commodities & suppliers as defined by a strategy • significant coverage & commitment to increase this.
Reporting	No data available to enable monitoring of suppliers/ farmers. Very limited disclosures on BES, no relevant targets, no disclosure on lobbying activities.	Limited data collected, & internal systems in place to track performance against standards are incomplete. Public disclosures limited to discussion of issues, supply chain stories; no reporting on results or targets relevant to sustainable sourcing.	Internal systems in place to track performance against standards. For landowners: systematic collection of farm level data (own & contract farms). Targets set for small number of sustainable sourcing issues of strategic importance. Full disclosures on policy, risk assessments, standards, targets & management tools.	As for Level 3, plus: • targets set for all issues of strategic performance & trends show improved performance • disclosures verified by a third party • farm level/supplier performance data assessed • trends indicate progress in priority areas.

4 Fit with other tools and initiatives

This section outlines a number of emerging initiatives on ecosystem services aimed at the private sector and demonstrates the role of the Ecosystem Services Benchmark within this.

A number of tools are being developed focusing on corporate impacts on ecosystem services (see table 3 overleaf). These tools fall into five main categories as follows:

- **Input tools**: tools or initiatives that gather the data required by companies and other decision-makers to enable them to understand dependence and impact on ecosystem services and potential future scenarios/ trends.
- **Strategic frameworks**: frameworks for analysing data provided from input tools and evaluating the implications in order to define an appropriate set of risk and opportunity management activities.
- **Management tools**: tools that are designed to take the findings from employing the tools above and devise appropriate management responses.
- **Disclosure tools**: tools in place to encourage greater disclosure on the issue.
- **Evaluation tools**: tools designed to assess effective management of risk and opportunity. The ESB falls into this category and looks at the extent to which a company's use of all the tools above and others such as the Global Reporting Initiative is comprehensive enough to effectively manage risk and opportunity.

A company may employ any one or all of these approaches. The ESB acts as an overarching framework by which investors can evaluate company approaches to understanding and managing dependence and impacts on ecosystem services. It does this by determining the extent to which these and other tools are used to create a robust approach to risk and opportunity management and attempts to evaluate performance on the ground. It is the only investor-focused tool on biodiversity and ecosystem services.

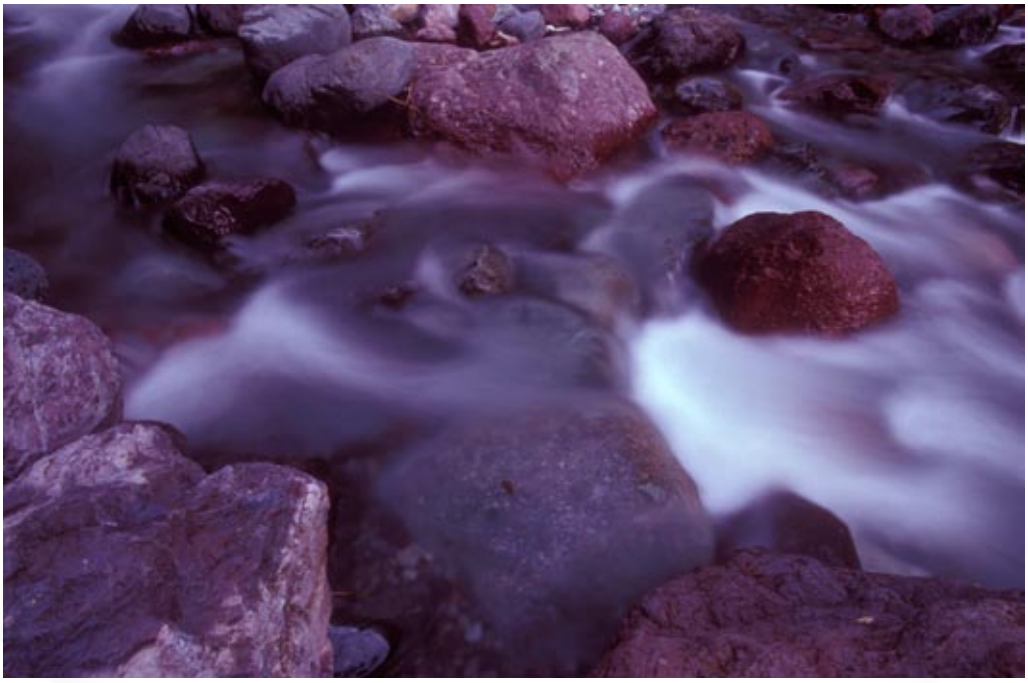


Table 3 **How the ESB relates to other initiatives**

Evaluation tools
The Natural Value Initiative Ecosystem Services Benchmark: uses management system/ process indicators to evaluate investment linked risk and opportunities associated with impacts and dependencies on all biodiversity and ecosystem services within the food, beverage and tobacco sectors. Aimed at investors and research focused rather than questionnaire based.
Disclosure tools
Global Reporting Initiative G3 guidance: sets out stakeholder-supported indicators for social, environmental performance including specific indicators on biodiversity. [7] **The Forest Footprint Disclosure Project**: uses a questionnaire-based approach to determine corporate footprint on forests and encourage disclosure. It does not target the range of ecosystem services on which companies depend and focuses on a small number of commodities and their impacts on forests.[8]

Input tools	Strategic frameworks	Management tools
InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs): enables companies, policy-makers, land managers to input and manipulate data via a mapping tool to assess the delivery, distribution and economic value of ecosystem services and biodiversity. Parameters can be changed to understand how changes in policy can impact a service.[9] **MIMES (Multiscale Integrated Models of Ecosystem Services)**: provides data sets for companies, policy-makers, land owners through mapping tool to enable identification of the value of ecosystem services, how this value is linked to human welfare and how this may change under different management scenarios.[10] **ARIES (Assessment and Research Infrastructure for Ecosystem Services) Project**: focuses on ecosystem services assessment and valuation in selected geographic areas for government, companies, NGOs.[11] **Integrated Biodiversity Assessment Tool (IBAT)**: provides access to information about high-priority sites for conservation to inform the implementation of corporate biodiversity policies and enhance environmental management systems.	**The Corporate Ecosystem Services Review (ESR)**: enables companies to identify business risks and opportunities arising from company's dependence and impact on ecosystem services. Can feed into Environmental Impact Assessments. Looks at risks and opportunities. Can be used to identify new markets/ products. Can be applied at site, market, product or sector level.[12]	**Business and Biodiversity Offset Programme**: provides companies with a set of tools and approaches to quantify company impact on biodiversity and ecosystem services and to design an offset.[13] **Corporate biodiversity action plans**: provides guidance at a site level to understand and manage risks and opportunities associated with biodiversity and increasingly with ecosystem services. Examples are tools developed by Rio Tinto and British American Tobacco.[14]

5 How investors should use the ESB

The ESB can be used in its entirety, or elements can be integrated into broader sustainability analysis tools. In creating it, we have focused solely on the issue of biodiversity and ecosystem services. We have done this because it is an emerging issue, as yet not fully represented even within environmental management and performance tools. In the long term, a focus on this issue alone is neither realistic nor appropriate given the range of social, environmental and economic issues that a company must manage to ensure sustained and sustainable profits. We therefore encourage investors to integrate elements of this tool into their broader investment analyses. By including questions on biodiversity and ecosystem services within broader questions on governance and risk, an important first step will be taken to securing corporate action on an increasingly significant business risk.

A number of developments are likely to encourage still greater focus on the issue of biodiversity and ecosystem services. In particular, a review of The Economics of Ecosystems and Biodiversity will conclude in 2010[15]; billed as the equivalent to the Stern review for biodiversity and ecosystem services, this is likely to have implications for national and international policy.

Box 6 **Where next for the NVI?**

The Natural Value Initiative intends to repeat this benchmarking exercise in 2010-11, working with our collaborating investors to engage with the companies being evaluated to encourage performance improvement.

We invite investors that are not yet engaged in this initiative to join us in this work, to gain a better understanding of this emerging issue and how it impacts risk within their investment portfolio.

Contact: info@naturalvalueinitiative.org for further details.

The deadline for reaching the 2010 biodiversity target **'to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth'** set under the Convention on Biological Diversity (CBD)[16] will pass. The target will be missed, putting pressure on governments to enforce existing policy and develop new, more effective measures to conserve biodiversity. Tools such as the ESB can demonstrate how the private sector is contributing to new targets currently under negotiation for the period after 2010.

At the same time, the United Nations Framework Convention on Climate Change will set out the policy framework successor to the Kyoto Protocol with the possible inclusion of the conservation of intact forests (Reduced Emissions from Degradation and Deforestation – REDD), shifting the value of land-based assets in certain areas.

These developments and others, combined with growth in population size and increased competition for food and fuel, mean that active management of corporate impacts and dependence on biodiversity and ecosystem services will become increasingly important. This will strengthen the need to incorporate these issues into any analysis of corporate risk and opportunity. By using the ESB, investors can start the journey to understand and manage what will become an increasingly significant issue for companies, particularly those with agricultural supply chains.

Glossary

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.
Biodiversity	'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[17]). Biodiversity underpins ecosystem services but is not an ecosystem service in itself.
Dependence[18]	The extent to which a company is dependent on ecosystem services for raw materials or security of supply and the extent to which its operation gives rise to environmental externalities.
Ecosystem	A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit (Article 2, Convention on Biological Diversity[19]). Examples of ecosystems are coral reefs, rainforest, deserts.
Ecosystem services[20]	Ecosystem services are the benefits obtained by people from ecosystems. These include: – provisioning services such as food, water, timber, fiber, and genetic resources; – regulating services such as the regulation of climate, floods, disease, and water quality; – cultural services such as recreational, aesthetic, and spiritual benefits; – supporting services such as soil formation, pollination, and nutrient cycling.
Impacts	A company impacts an ecosystem service if the company affects the quantity or quality of the service.
Opportunities[21]	Competitive advantage (monetization of intangible assets) realized 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.
Performance levels	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[22].
Risk[23]	The potential in the short (one year), medium (one to five years) to long term (five years plus) that the companies' dependence and impact on biodiversity and ecosystem services may affect company performance through impacts on brand or reputation, lack of access to raw materials or markets, and/or liability or compliance issues.
Sensitive sites	There is no current accepted definition of 'sensitive sites', but the term is often understood to mean sites of high biodiversity value, by virtue of high levels of biodiversity, endemism, rarity, vulnerability, threat or particularly important associated social or cultural values[24].
Stakeholder(s)	Stakeholders are those individuals, groups of individuals or organisations that affect and/or could be affected by an organisation's activities, products or services and associated performance[25].Stakeholders in the context of this report are those affected by and/or able to influence a company's biodiversity and ecosystem services risks and impacts.

Abbreviations

The most frequently used acronyms are listed below.

BES	Biodiversity and Ecosystem Services (acronym used only in this report)
CBD	Convention on Biological Diversity
ESB	Ecosystem Services Benchmark
FFI	Fauna & Flora International
FGV	Fundação Getulio Vargas
GRI	Global Reporting Initiative
IBAT	Integrated Biodiversity Assessment Tool
NVI	Natural Value Initiative
TEEB	The Economics of Ecosystems and Biodiversity
UNEP FI	United Nations Environment Programme Finance Initiative
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute

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Appendix 1 Definitions of ecosystem services

Service	Sub-category	Definition	Examples
Provisioning services			
Food	Crops	Cultivated plants or agricultural produce harvested by people for human or animal consumption as food.	Grains, vegetables, fruits.
	Livestock	Animals raised for domestic or commercial consumption or use.	Chicken, pigs, cattle.
	Capture Fisheries	Wild fish captured through trawling and other non-farming methods.	Cod, crabs, tuna.
	Aquaculture	Fish, shellfish, and/ or plants that are bred and reared in ponds, enclosures and other forms of freshwater or saltwater confinement for purposes of harvesting.	Shrimp, oysters, salmon.
	Wild foods	Edible plant and animal species gathered or captured in the wild.	Fruits and nuts, fungi, bushmeat.
Fibre	Timber and other wood fibre	Products made from trees harvested from natural forest ecosystems, plantations or non-forested lands.	Industrial roundwood, wood pulp, paper.
	Other fibres (e.g. cotton, hemp, silk)	Non-wood and non-fuel fibres extracted from the natural environment for a variety of uses.	Textiles (clothing, linen, accessories), corkage (twine, rope).
Biomass fuel		Biological material derived from living or recently living organisms – both plant and animal – that serves as a source of energy.	Fuel wood and charcoal, grain for ethanol production, dung.
Freshwater		Inland bodies of water, groundwater, rainwater and surface waters for household, industrial and agricultural use.	Freshwater for drinking, cleaning, cooling, industrial processes, electricity generation, or modes of transportation.
Genetic resources		Genes and genetic information used for animal breeding, land improvement and biotechnology.	Genes used to increase crop resistance.
Biochemicals, natural medicines and pharmaceuticals		Medicines, biocides, food additives and other biological materials derived from ecosystems for commercial or domestic use.	Echinacea (cold/flu remedy), ginseng, garlic, paclitaxel as basis for cancer drugs, tree extracts used for pest control.
Regulating services			
Air quality regulation		Influence ecosystems have on air quality by emitting chemicals to the atmosphere (i.e. serving as a 'source') or extracting chemicals from the atmosphere (i.e. serving as a 'sink').	Lakes (sink for industrial emissions of sulphur compounds). Vegetation fires (emit particulates, ground level ozone, and volatile organic compounds).
Climate regulation	Global	Influence ecosystems have on global climate by emitting greenhouse gases or aerosols to the atmosphere or by absorbing greenhouse gases or aerosols from the atmosphere.	Forests (capture and store carbon dioxide).
	Regional and local	Influence ecosystems have on local or regional temperature, precipitation and other climactic factors.	Forests can impact regional rainfall levels.

Service	Definition	Examples
Regulating services continued		
Water regulation	Influence ecosystems have on the timing and magnitude of water runoff, flooding and aquifer recharge, particularly in terms of the water storage potential of the ecosystem or landscape.	Permeable soils facilitate aquifer recharge. River floodplains and wetlands retain water – which can decrease flooding during runoff peaks – reducing the need for engineered flood control infrastructure.
Erosion regulation	Role vegetative cover plays in soil retention.	Vegetation such as grass and trees prevents soil loss due to wind and rain and prevents siltation of waterways. Forests on slopes hold soil in place, thereby preventing landslides.
Water purification and waste treatment	Role ecosystems play in the filtration and decomposition of organic waste and pollutants in water; assimilation and detoxification of compounds through soil and sub-soil process.	Wetlands remove harmful pollutants from water by trapping metals and organic materials. Soil microbes degrade organic waste, rendering it less harmful.
Disease regulation	Influence that ecosystems have on the incidence and abundance of human pathogens.	Some intact forests reduce the occurrence of standing water – breeding areas for mosquitoes – which can lower the prevalence of malaria.
Pest regulation	Influence ecosystems have on the prevalence of crop and livestock pests and diseases.	Predators from nearby forests – such as bats, toads and snakes – consume crop pests.
Pollination	Role ecosystems play in transferring pollen from male to female flower parts.	Bees from nearby forests pollinate crops.
Natural Hazard regulation	Capacity for ecosystems to reduce the damage caused by natural disasters such as hurricanes and to maintain natural fire frequency and intensity.	Mangrove forests and coral reefs protect coastlines from storm surges. Biological decomposition processes reduce potential fuel for wildfires.
Cultural services		
Recreation and ecotourism	Recreational pleasure people derive from natural or cultivated ecosystems.	Hiking, camping and bird watching. Going on safari.
Ethical values	Spiritual, religious, aesthetic, intrinsic, 'existence' or other values people attach to ecosystems, landscapes or species.	Spiritual fulfilment derived from sacred lands and rivers. Belief that all species are worth protecting regardless of their utility to people – 'biodiversity for biodiversity's sake'.
Supporting services		
Nutrient cycling	Role ecosystems play in the flow and recycling of nutrients (e.g. nitrogen, sulphur, phosphorous, carbon) through processes such as decomposition and/or absorption.	Decomposition of organic matter contributes to soil fertility.
Primary production	Formation of biological material by plants through photosynthesis and nutrient assimilation.	Algae transforms sunlight and nutrients into biomass, thereby forming the base of the food chain in aquatic systems.
Water cycling	Flow of water through ecosystems in its solid liquid or gaseous forms.	Transfer of water from soil to plants, plants to air, air to rain.

Source: We reproduce this table with the kind permission of the World Resources Institute. It is taken from World Resources Institute, the Meridian Institute, and the World Business Council for Sustainable Development (2008) *The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks & Opportunities Arising from Ecosystem Change.* Version 1.0. Washington, DC

Appendix 2

The Natural Value Initiative Steering Committee

Organisations	Representatives
Agribusiness Responsável Brasil	Ocimar Villela
Banco do Brasil	Wagner de Siqueira Pinto
Bunge	Michel Santos
Business for Social Responsibility	Sissel Waage
Independent consultant	Kerry ten Kate
Global Reporting Initiative	Sean Gilbert
Grupo Santander Brasil	Ana Lizete
IUCN	Jeff McNeely
KPMG	Michael Kelly
Pax World	Julie Gorte
Pax World	Molly Mahoney
Sadia	Ane Ramos
Strategic Environmental Consulting	Liz Crosbie
Strathclyde University	Andrea Coulson
UNEP	Nic Bertrand
VicSuper	Danielle Welsh
WWF	Richard Perkins
Kilter Pty	Shawn Butters
Kilter Pty	Cullen Gunn

Endnotes

1 Based on discussions of risk and opportunity within The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks & Opportunities Arising from Ecosystem Change. (WRI et al 2008), Biodiversity and Ecosystem Services. Bloom or Bust? (UNEPFI 2008) and Dependency and impact on ecosystem services – unmanaged risk, unrealised opportunity: A briefing document for the food, beverage and tobacco sectors (Fauna & Flora International 2008)

2 Russell, K.N.. Ikerd, H., and Droege, S. (2005) The potential conservation value of unmowed powerline strips for native bees. Biological Conservation Volume 124, Issue 1, July 2005, Pages 133-148

3 This figure is composed of the following: Aviva Investors (€ 222.1 billion as at 30 June 2009), F&C investments (€ 101.billion as at 30 June 2009), Grupo Santander Brasil (€ 1.3 billion as at 30 June 2009) Insight Investment (€ 125.2 billion as at 31 March 2009), Pax World (€ 1.6 billion as at 30 June 2009) and VicSuper (€ 3.4 billion as at 1 May 2009). Currency figures are calculated based on historic rates at the date stated for each company's assets under management.

4 http://www.unpri.org/principles/

5 http://www.cbd.int/decision/cop/?id=11031

6 http://www.rspo.org/Key_documents.aspx

7 Global Reporting Initiative (2006) G3 Sustainability Reporting Guidelines. Version 3

8 Forest Footprint Disclosure Project http://forestdisclosure.com/

9 InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs): http://www.naturalcapitalproject.org/InVEST.html

10 MIMES (Multiscale Integrated Models of Ecosystem Services): http://www.uvm.edu/giee/mimes/

11 ARIES (Assessment and Research Infrastructure for Ecosystem Services) http://ecoinformatics.uvm.edu/projects/aries.html

12 The Corporate Ecosystem Services Review (ESR): http://www.wri.org/publication/corporate-ecosystem-services-review

13 Business and Biodiversity Offset Programme: http://bbop.forest-trends.org/

14 Corporate biodiversity action plans: http://www.businessandbiodiversity.org/action_company_bap.html

15 In March 2007, a commitment was made at the G8+5 meeting of Environment Ministers in Potsdam to undertake a Review on the Economics of Biodiversity Loss. The review will evaluate the costs of the loss of biodiversity and the associated decline in ecosystem services worldwide. Called TEEB (The Economics of Ecosystems and Biodiversity), initial findings from the study indicate that from 2000 and 2050, society will use ecosystem services with a total equivalent value of around £40 billion from land based ecosystems alone. The final results of the study will be presented at CBD COP-10 in October 2010. See http://www.teebweb.org/

16 http://www.cbd.int/2010-target/about.shtml

17 http://www.cbd.int/convention/articles.shtml?a=cbd-02 accessed 10 August 2009

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23 Adapted from WRI, Meridian Institute, and WBCSD. 2008. The Corporate Ecosystem Services Review. Washington, DC: World Resources Institute which states that companies are exposed to the following risks: operational, regulatory and legal, financing, market and product reputation.

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25 AccountAbility (2008) AA1000 Assurance Standard 2008

The investors collaborating on this initiative include:

Aviva Investors (http://www.avivainvestors.co.uk)
Aviva Investors is a global asset management business dedicated to building and providing clients with focused investment solutions. Wholly owned by Aviva plc, the world's fifth-largest insurance group with assets under management in excess of € 222.1 billion across a range of equity, fixed income, property, money market and alternative funds as at 30 June 2009, Aviva Investors' client base ranges from among the largest financial institutions to individuals saving for the future.

Grupo Santander Brazil (http://www.santander.com.br)
Grupo Santander Brasil, which includes banks Santander and Real is the largest commercial bank in Brazil. Grupo Santander Brasil is part of Banco Santander (SAN.MC, STD.N), a commercial bank based in Spain. It is the largest financial group in Spain and Latin America, with leadership positions in the UK and Portugal and has a large presence in Europe through its Santander Consumer Finance unit. In the first half of 2009, Santander recorded a net attributable profit of € 4.519 billion and as at 30th June 2009 has € 1.271 billion of assets under management.

F&C Investments (http://www.fandc.com)
F&C is an active fund manager with £88.3 billion (€ 101.1 billion) of assets under management at 30 June 2009. F&C invests globally and is a worldwide leader in Sustainable Investment strategies. F&C uses its influence as one of Europe's largest shareholders to engage companies, promoting the adoption of better environmental, social and governance practices to improve long-term business performance. Areas of engagement include biodiversity and ecosystem services, and F&C has published 3 research reports on this theme.

Insight Investment (www.insightinvestment.com)
Insight Investment is a UK-based asset manager with £116.6bn in assets under management (as at 31 March 2009). Insight has had a commitment to Responsible Investment since it was launched in 2002. Insight has published two benchmarks of biodiversity management within the extractive industry and a research report on biodiversity offsets as part of its programme of engagement on ecosystem management.

Pax World (http://www.paxworld.com/)
Pax World Investments is a leader in the field of Sustainable Investing with $2.2bn of assets under management as at 30 June 2009. The Pax World investment process combines rigorous financial analysis with equally rigorous ESG analysis in order to identify leading companies that are financially strong and meet positive standards of corporate responsibility and sustainability. By constructing investment portfolios made up of such companies, Pax seeks to deliver – to individuals, financial advisors and institutional investors – higher returns with lower risk over the long term.

VicSuper (http://www.vicsuper.com/)
VicSuper Pty Ltd is the Trustee of VicSuper Fund; one of Australia's fastest-growing public-offer superannuation funds with over 247,000 members and AUD6 billion in net assets as at 31 May 2009. Sustainability is VicSuper's central operating principle and guides every decision. At VicSuper, sustainability investing is a long-term approach that, when applied to investments in company shares and other assets, considers the implications of economic, governance, financial, strategic, environmental and social challenges on long-term profitability and shareholder value.

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