



Business @ Biodiversity

Natural Capital Accounting and Net Impact: An investigation into the interlinkages

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List of acronyms

B@B	Business and Biodiversity
BBOP	Business and Biodiversity Offsets Program
BSR	Business for Social Responsibility
CDP	Carbon Disclosure Project
CEV	Corporate Ecosystem Valuation
EROVA	Environmental Risk, Opportunity & Valuation Assessment tool
EP&L	Environmental profit and loss account
ESG	Environmental, social and governance
ESIA	Environmental and social impact assessment
EU	European Union
FI	Financial institution
GHG	Greenhouse gas
GRI	Global Reporting Initiative
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
IIRC	International Integrated Reporting Council
InVEST	Integrated Valuation of Ecosystem Services and Trade-offs
IP&L	Integrated profit and loss account
IPIECA	Global oil & gas industry association for environmental & social issues
ISO	International Standards Organisation
LCA	Life cycle assessment
NC	Natural capital
NCA	Natural capital accounting
NCC	Natural Capital Coalition
NCD	Natural Capital Declaration
NNL	No net loss
NGO	Non-governmental organisation
NVI	Natural Value Initiative
Ph.D.	Doctorate of Philosophy
PS	Performance standard
SDG	Sustainable Development Goal
TESSA	Toolkit for Ecosystem Service Site-based Assessment
TIMM	Total Impact Measurement & Management
UN	United Nations
UNCBD	UN Convention on Biological Diversity
UNCCD	UN Convention on Combating Desertification

UNFCCC	UN Framework Convention on Climate Change
UNICEM	L'Union Nationale des Industries de Carriers et Matériaux de Construction
UNSEEA	United Nations System of Environmental Economic Accounts
WRI	World Resources Institute
WBCSD	World Business Council for Sustainable Development

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Executive summary

Objective

This report represents the main output of the 2016 work of the Natural Capital Accounting (NCA) for Business Workstream 1 of the EU Business and Biodiversity (B@B) Platform, the objective being to:

‘Investigate the links between natural capital accounting for businesses and the concept of ‘net impact’. The study was only a high level review, also involving exploration of links between business, governments and financial institutions (FIs), and coverage of company, product and project levels.

Approach

The study comprised undertaking a combination of desk research, a questionnaire survey and a workshop. A total of 26 questionnaire responses were obtained from a mix of businesses, government bodies and others, including consultancy firms and NGOs (see Annex 1). The workshop, held in Brussels in May 2016, had 11 attendees from business, government bodies and others (see Annex 1).

Key definitions and study scope

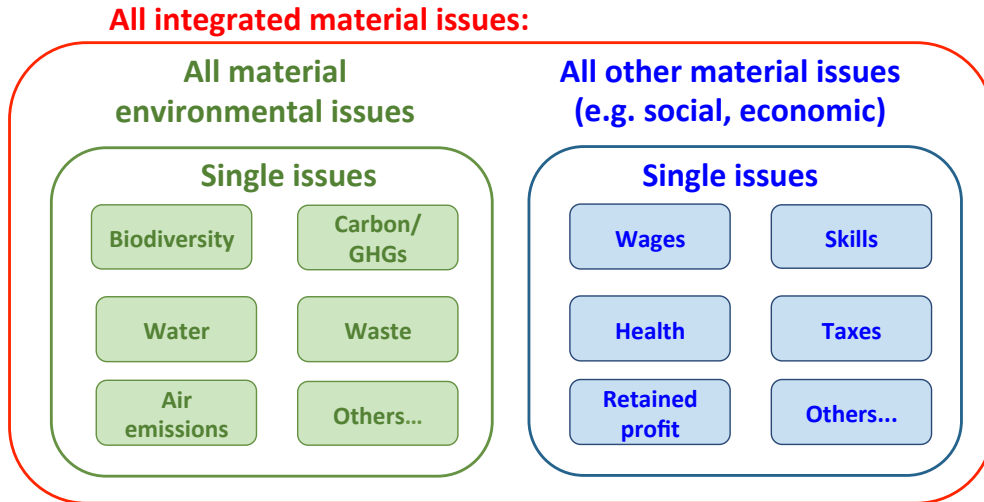
- Natural capital accounting for business is defined as: ***‘identifying, quantifying and/or valuing environmental dependencies and impacts to inform business decision-making and reporting’.***
- Natural capital, as defined by the Natural Capital Coalition (2016), is: ***‘the stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) that yield a flow of benefits to people’.***
- For the purposes of this study ‘net impact’ is defined as: ***‘the aggregated sum of environmental effects caused by an aspect of business over a period of time’.***
- Given the focus of the B@B Platform, greater emphasis has been placed on the biodiversity element of natural capital, while recognizing that it is intrinsically linked with all other elements.

Scope of net impact assessments

- Net impact assessments can be applied to any or all levels of organisational focus; so for example at a company, product, site/project; and along any or all parts of the value chain (i.e. upstream/suppliers, direct operations and downstream/customers/disposal).
- The effects addressed by a net impact assessment may cover single issues (e.g. carbon, biodiversity, water), all material environmental issues, or all material sustainability issues¹ (see Figure ES1.1).

¹ An example of an assessment of all material issues is an Integrated Profit and Loss Account.

Figure ES1.1 Net impact scope



Source: Spurgeon and Clarke (2016).

- There are numerous other related terms describing possible approaches and outcomes of addressing net impact (e.g. net zero, no net loss, net positive and net gain). Many of these have their own specific definition² dependent upon the context they are used in (see Figure ES1.2).

Figure ES1.2 Associated terms for net impact

Ambition	Outcome	Related terms
Net Positive Goal	Net gain	Net positive Net positive gain Net positive impact Total contribution
Net Neutral Goal	Net neutral	Net zero No net loss Carbon/water neutral Zeronaughts
Improvement Goal	Net loss	Less bad Incremental reduction Minimising impacts

Source: Spurgeon and Clarke (2016).

² These terms are explained in Section 2.3.

- When considering the best approach to address net impact, many important aspects should be taken into account such as ensuring the proper application of the mitigation hierarchy³ in planning decisions. In the case of biodiversity offsetting, this includes addressing the limitations of substitutability of benefits, the risks related to achieving like-for-like restoration, the time-lags and long-term sustainability of results. Consequently, several sets of operational principles have been proposed.

Drivers and business case

- The international policy framework includes the Aichi Targets, Paris Agreement and EU Biodiversity Strategy. These lead to a raft of demands of varying nature and strength from governments, FIs, NGOs and think-tanks, businesses and consumers.
- The EU's Biodiversity Strategy aims to 'Ensure no net loss of biodiversity and ecosystem services' (Action 7 or Target 2). However, whilst EU Directives and EU government regulations cover net impact to an extent, they do not provide a comprehensive framework to achieve no net loss. There are EU Directives and EU government regulations in place that effectively require a net impact assessment approach under certain circumstances (e.g. under the Environmental Liability Directive and Article 6 of the Habitats Directive⁴), most of the requirements are too loose or only voluntary. The current situation is resulting in continual environmental degradation through cumulative impacts.
- There are multiple possible business case benefits that have been proposed for adopting net impact approaches, which can include: improved prioritisation, competitive advantage, enhanced communications strategy, reputational benefits, reducing risks, cost savings, access to finance, encouraging innovation, and many more. However, the business case can be difficult to quantify, with few examples available. In many instances there may be no business case, or no traditional business case, because appropriate incentive structures do not exist.

Issues and challenges

- There are a number of challenging barriers to adoption, including: a lack of quantified business case examples, lack of financial incentives to do it, lack of standardisation, lack of specific requirements to do it, government frameworks for action, lack of interest from investors, disagreement over monetary valuation approaches and companies preferring business as usual.
- There are mixed feelings about using monetary valuation for evaluating environmental impacts. A few organisations and individuals contributing to this study strongly oppose using monetary based approaches, in particular in relation to evaluating biodiversity impacts. This is due to the complexities, controversies and uncertainties involved, and in part due to a perceived risk of commercialising nature. Most others see monetary valuation as a useful additional approach, albeit with limitations, that allows enhanced comparison of trade-offs and a powerful value based perspective to help inform better decisions.

Net impact assessment linkages with NCA

- Net impact assessments are closely linked to most natural capital accounting (NCA) approaches. Of the 11 NCA approaches identified by the EU B@B Platform in 2015, three are considered to have strong direct links, seven have potential strong links and one has weak links (see Figure ES1.3).
- Undertaking a 'net impact' assessment is also considered an NCA application in its own right. However, net impact assessments can be an integral part of many other NCA applications such

³ The mitigation hierarchy advocates first to avoid impacts, then to reduce, then to restore and lastly, if necessary, to compensate for any residual impacts.

⁴ For example, Article 6.4 of the EU Habitats Directive states that *'the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected', which is to be evaluated through an 'appropriate assessment'*.

as: risk and opportunity assessments, comparing options, assessing impacts on stakeholders, communication and various others.

- The relative level of maturity of methods to quantify and evaluate net impacts for each NCA approach is generally low to medium/high (see Figure ES1.3). However, the maturity and acceptability of methods depends on the issue being assessed. Monetary valuation and quantitative (indicator) based approaches are reasonably well developed for parameters such as carbon, air emissions, water and recreation, but less so for biodiversity. However, quantitative approaches are fairly well developed for biodiversity (although they are applied inconsistently).

Figure ES1.3 Summary of NCA approach links with net impact assessments⁵

NCA for business approach		Link to net impact	Maturity of net impact methods	
Decision-making	1	Dependency	Weak links	Medium
	2	Impacts	Potential strong links	Medium/High
	3	Risk/ opportunity & materiality	Potential strong links	Low/Medium
	4	Valuation (full cost accounting)	Potential strong links	Medium/High
Both	5	Inventory	Potential strong links	Low/Medium
	6	Indicators	Potential strong links	Medium/High
Reporting	7	Environmental Profit & Loss Account (full cost accounting)	Direct strong links	Medium
	8	Environmental Balance Sheet (full cost accounting)	Direct strong links	Low/Medium
	9	Environmental Financial Accounting (environmental components)	Potential strong links	Low/Medium
	10	Environmental Financial Accounting (site management costs)	Potential strong links	Low/Medium
	11	Integrated Financial NCA & reporting	Direct strong links	Low/Medium

Links between business, government and financial institution

- Governments can set policies, and put in place and better enforce regulations that require businesses to consider, undertake and disclose net impact assessments. Such an approach could lead to considerable advances in national and global sustainability. Most respondents though believe that governments are doing far too little, too slowly, in this space.
- Governments are also best placed to develop and enforce standardized methodologies for companies to adopt in relation to undertaking net impact assessments. A number of respondents said governments should be doing much more in this respect.
- Perhaps the strongest interlinkage between businesses, governments and financial institutions on this topic is the growing number of financial institutions demanding that development projects

⁵ Note that the assessment within this table is indicative only, based the author’s professional judgement.

achieve no net loss or net gain in relation to biodiversity impacts as a precondition to obtain project finance. There are also growing interlinkages with impact investing and environmental, social and governance (ESG) ratings.

Links with other sustainability concepts

- Net impact has strong direct links with impact investing, integrated reporting, the green economy and creating shared value. It can also be applied to better compare options and help justify more sustainable solutions. For example, this applies to:
 - Circular economy
 - Green Infrastructure
 - Bio-based materials/Bio-economy
 - Many other more specific concepts, such as sustainable urban drainage systems (SUDS)

Methodologies and tools

- A number of analytical approaches, tools and guidelines already exist to support net impact assessments, however, there is a need for greater standardization and broader acceptance.
- Although the Natural Capital Protocol is a useful standardized framework to inform net impact assessments (one of its proposed applications), it is not detailed and prescriptive enough to inform consistently applied net impact assessments.
- Quantitative analysis tends to favour single-issue assessments whilst monetary valuation appears more appropriate for multiple issue assessments because it allows greater comparison. However, great care is needed when considering trade-offs between issues.

Key overall conclusions

- There are considerable potential advantages for businesses and global sustainability if net impact approaches become more widely adopted. However, requirements and incentives for businesses and financial institutions to apply net impact assessments structures need to be enhanced.
- To derive these benefits, greater collaboration is required between businesses, governments and FIs, in particular around developing standardised and agreed measurement and valuation methodologies. This needs to ensure application of the mitigation hierarchy and the long-term sustainability of possible compensation measures.
- Closer links should ideally be made i) between business government and FI approaches, and ii) between assessments at different levels of organisational focus (e.g. aggregating project/site and product impacts to a company level).

Suggestions for action

The author and the members of the EU B@B Platform identified a series of suggestions for action during the preparation of this report:

Suggestions for all

Key recommendations for businesses, governments and financial institutions are to:

- Collaborate with all other stakeholder groups, including businesses, governments, FIs, consultants, NGOs and academics on net impact related initiatives; in particular, helping to:
 - Create and agree upon standardized and more prescriptive ways of quantifying, valuing and offsetting biodiversity and natural capital impacts.
 - Develop agreed principles as to what issues are substitutable and offset-able, and under what circumstances.
 - Share data and case studies in order to promote mutual learning and contribute to the development of a broader framework for addressing net impact.

Suggestions for businesses

- Understand how the concept of net impact is relevant to your business and identify how your company can best harness the concept.
- Investigate, develop and test approaches to assess and reduce net impacts, and exchange experience with others to help improve the regulatory framework and available guidance.
- Determine what type and level of net impact goal your company should strive towards, and set an appropriate policy accordingly.

Suggestions for governments

- Investigate and develop more specific guidance and methodologies for companies and others to quantify, value and if appropriate, offset impacts.
- Where practicable, reinforce, enhance and converge existing principles and guidelines under different national and local requirements to make net impact assessments more consistent.
- Pilot and, if appropriate, consider mandating new regulations requiring companies to assess their net impacts at all levels of organisational focus.
- Develop and support wider opportunities and incentives for businesses to deliver no net loss or net positive impacts (e.g. biodiversity offset banks and markets, labelling schemes, tax breaks).
- Understand that conducting such assessments is challenging for businesses, so ensure any proposed requirements and methodologies are appropriate and avoid unfair competition.

Suggestions for financial institutions

- Investigate and experiment with introducing net impact assessment approaches in areas other than project finance (e.g. prioritizing investments in net zero/positive companies).
- Start applying single-issue net impact assessments (e.g. GHGs) to investment portfolios and then consider broadening assessments to include say biodiversity and water.

Suggestions for the EU B@B Platform

- Consider reviewing existing requirements and guidelines for net impact assessments in particular biodiversity, building upon no net loss work already undertaken by the EU.
- Ascertain what additional net impact guidance is needed to supplement the Natural Capital Protocol and explore potential forms of suitable incentive structures.

1 Introduction

1.1 Context

This report represents the main 2016 output of the Natural Capital Accounting (NCA) for Business Workstream 1 of the EU Business and Biodiversity (B@B) Platform. It follows on from the 2014 study that developed a [guide](#) and [decision-matrix tool](#) to assist companies in deciding which form of NCA approach is best for their needs, and the 2015 [study](#) that explored NCA linkages between business, government and financial institutions.

The topic was selected at the EU B@B Platform Bureau meeting in January 2016 based on suggestions originally presented and discussed at the 2015 EU Annual Business and Biodiversity Conference.

1.2 Objective

The objective of the 2016 NCA workstream was to:

‘Investigate the links between natural capital accounting for businesses and the concept of ‘net impact’. It was a high level review, including an exploration of these linkages between business, governments and financial institutions, and covering a range of organisational levels (e.g. company, product, project/site and value chain levels).

1.3 Approach

The study has involved a combination of desk research, a questionnaire survey and a workshop. At the outset, a [briefing note](#) and [questionnaire survey](#) were sent to all Platform Members with an interest in Workstream 1, as well as to several public and private financial institutions (FIs) selected from other workstreams. The questionnaire included various questions covering definitions, applications, drivers, inter-linkages and tools etc. (see Annex 2).

A total of 26 questionnaire responses were obtained from a mix of businesses, government bodies and others, including consultancy firms and NGOs (see Annex 1 for full details).

Based on the questionnaire responses, a workshop briefing paper was compiled and sent to all workshop attendees in advance of the workshop. The workshop was held at the European Commission, DG Environment premises in Brussels on May 18th 2016 with 11 attendees, again representing businesses, government bodies and others (see Annex 1 for details).

1.4 Background definitions and focus of study

This year’s work builds on that undertaken in 2014 and 2015 and draws on several key definitions already adopted by the workstream (see Box 1). It maintains a broad scope in that for the purposes of this study, NCA is taken to cover all forms of decision-making and reporting associated with the environment.

Box 1.1 Background definitions agreed by the workstream

This study defines natural capital accounting for business in a broad sense as: ***'Identifying, quantifying and/or valuing environmental dependencies and impacts to inform business decision-making and reporting'***.

Natural capital is defined by the Natural Capital Coalition (2016) as: ***'The stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) that yield a flow of benefits to people'***.

The term **'natural capital'**⁶ (NC) in this report effectively covers all environment issues. However, the main focus of the study is on biotic or living natural capital (i.e. biodiversity, but also water and soil) rather than both non-living non-renewable elements such as fossil fuels and minerals⁷ and impact drivers/pressures/residuals such as GHGs, NOx, noise and waste etc.

Given the focus of the B@B Platform, greater emphasis has been placed on the biodiversity element of natural capital, while recognizing that it is intrinsically linked with all other elements. The study does though cover all environmental issues. Due to the broad scope of the study, efforts were focused and directed by the interests and involvement of those members of the B@B Platform that fully engaged in the study.

1.5 Contents

- Section 1 introduces the objective, approach and scope adopted for the study.
- Section 2 explains what is meant by net impact and associated concepts.
- Section 3 outlines the drivers, business case and barriers to adoption.
- Section 4 explores the linkages with natural capital accounting for business approaches.
- Section 5 highlights applications for different levels of organisational focus.
- Section 6 investigates business, government and FI perspectives and inter-relationships.
- Section 7 considers linkages with other sustainability concepts.
- Section 8 highlights some of the tools and guidelines available for use in net impact assessments.
- Section 9 sets out what business responses a net impact approach can result in.
- Section 10 provides some overall conclusions and recommendations for business, governments, financial institutions and the EU B@B Platform.

⁶ For the sake of brevity, this report sometimes uses the term 'natural capital' and 'NCA' to have a broader meaning of 'environmental' and 'environmental accounting'.

⁷ It is recognized that non-living components such as fossil fuels and minerals are typically covered anyway by standard accounting approaches, and are not a priority area of focus for the EU to cover in the NCA workstream.

2 What do we mean by net impact?

2.1 Definition of net impact

According to definitions of net and impact in the Oxford dictionary, ‘net impact’ effectively relates to **‘the overall marked effect remaining once all factors have been taken into account’**⁸.

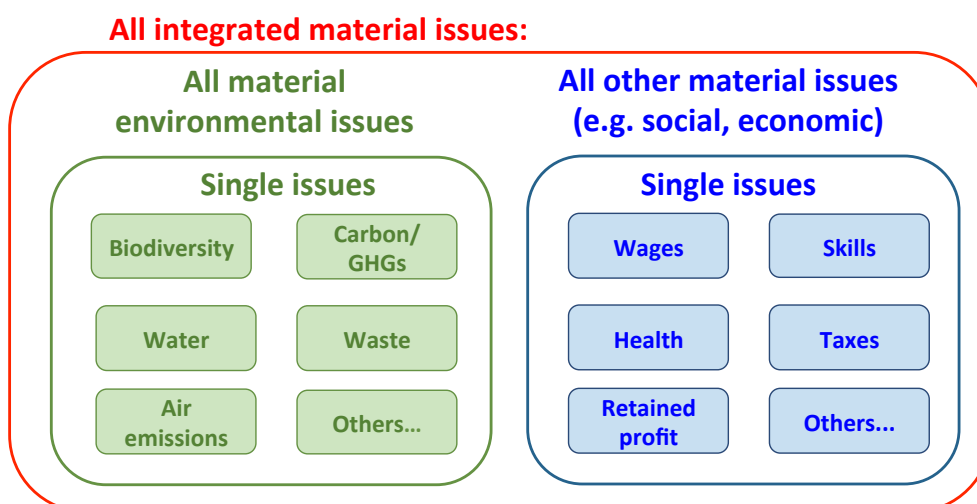
For the purposes of this study, based on the above as well as questionnaire and workshop inputs, we adopt the following definition: **‘the aggregated sum of environmental effects caused by an aspect of business over a period of time’**.

However, the connotation of ‘net impact’ in a broader environmental and sustainability context is actually more complicated. There are in fact numerous terms closely associated with ‘net impact’ that have evolved fairly specific meanings in different contexts, countries and sectors. For example, this includes the terms: ‘no net loss’, ‘net zero’, ‘net positive’, ‘net present value’ etc. These inter-related terms are highlighted and discussed further below in Section 2.3.

But first, the definition adopted in this study warrants further consideration. The term ‘effects’ relates to impacts on different issues or parameters. These may be single issues, such as just carbon or biodiversity or water, or multiple issues (see Figure 2.1). So a net impact assessment might solely focus on investigating the net impact upon say biodiversity (or indeed an aspect of biodiversity, such as one or more species or habitats). However, it may alternatively address all environmental issues (or at least all material ones).

The term ‘environmental’ stresses the focus on the environment (or effectively ‘natural capital’). However, net impact assessments can benefit significantly from being more holistic in terms of incorporating wider sustainability issues (e.g. social and economic/financial) as well (see Figure 2.1). This would be necessary for an overall sustainability net impact assessment, ideally covering all forms of capital (natural, social, human, financial, intellectual etc⁹).

Figure 2.1 Net impact scope of issues considered



Source: Spurgeon and Clarke (2016).

⁸ <https://en.oxforddictionaries.com/definition/net>

⁹ However, issues around aggregating and trade-offs between impacts need to be considered.

The term **'aspect of business'** covers all the different types of organisational focus, such as a whole company, a project or operational sites, or products. It can also cover any or all parts of the value chain, including direct operations as well as upstream (i.e. the supply chain) and downstream (e.g. distribution, sales, customer use and disposal).

The term **'aggregated sum'** relates to the fact there may be negative and positive impacts, but that it is the 'net total effect' of all such impacts that should be determined. This brings added challenges when the assessment is considering how to 'net off' multiple issues, whether that is multiple environmental issues or multiple environmental, social and economic issues. By determining a 'net sum', it implies this may result in an overall negative, neutral or positive impact (see also Section 2.2).

The term **'period of time'** adds another important aspect raised by several questionnaire respondents and workshop attendees. It is essential to understand and clearly define the time horizon over which the impacts are being considered. This may be say a one year period, if comparing a company's net impacts for the annual accounts. Or, if assessing a project, it should cover the whole project, typically for the design life of the project. This should ideally include sourcing, construction, operation and decommissioning phases. This is especially important as the positive and negative impacts can vary significantly between phase and over time in say the operational phase. A related term is 'whole life costing'.

2.2 Other key considerations

Whilst the definition above seems fairly straightforward, there are other important inherent features that should be considered. Selected considerations raised during the study include those set out below.

Adoption of the mitigation hierarchy. Numerous questionnaire respondents and workshop attendees highlighted the importance of adopting the mitigation hierarchy when considering net impacts. Prior to simply offsetting any impacts with purchasing offsets and paying compensation, it is important to strictly follow the mitigation hierarchy, which involves first attempting to avoid any such impacts, then minimise them and finally offset them. The mitigation hierarchy prioritises efforts to avoid, then to minimise, and then to rehabilitate or restore losses of biodiversity, prior to considering measures to offset biodiversity loss. It is founded on the principle that efforts to reduce net impact or achieve no net loss through avoidance and minimisation are more reliable and less risky than compensation measures.

Impacts not necessarily substitutable. It is important to recognise that impacts between different issues are not necessarily substitutable. This is a complex and contentious issue. It can apply within say a single issue such as biodiversity (e.g. can you compare and trade-off one type of habitat with another?), between different environmental issues such as biodiversity and water, and between different environmental and social issues (e.g. biodiversity and jobs). This relates to the concept of strong and weak sustainability and arguments over trading off natural capital with other forms of capital (Ekins et al 2003)¹⁰.

Net impacts to which stakeholder group? There will be differences in what impacts occur to which stakeholder group. For example, the company, local communities and other stakeholders may all have a mix of positive and negative impacts affecting them, even just linked to a single issue such as biodiversity. This highlights the need to restore or compensate for impacts on-site, or nearby rather than in distant locations where a different set of stakeholders may benefit. Again, this is another challenging and contentious issue. It also relates to the concept of 'shared value', and the move by some companies towards attempting to generate positive impacts to both the company and stakeholders through its actions.

¹⁰ Weak sustainability is a concept in environmental economics where natural capital can substitute by other forms of capital, whilst strong sustainability assumes that natural capital is complementary to, and not interchangeable with other forms of capital.

Actual versus perceived impacts. Another interesting challenge posed to companies assessing net impacts is how best to deal with perceived impacts as well as actual impacts. For a single impact, scientific evidence may suggest a negligible adverse impact, whilst local stakeholders may perceive the impact to be significantly adverse. Dealing appropriately with both is the recommended approach.

One way that organisations promoting net impact concepts have attempted to address such issues is to develop agreed sets of principles that must be applied. Some example principles are further considered in Section 2.4.

2.3 Associated terms and concepts

The term ‘net impact’ is rather broad and all encompassing. Figure 2.2 below shows the relationship between several different terms associated in some way to the concept of ‘net impact’. The figure shows a spectrum of ambitions that a company may wish to adopt ranging from just trying to ‘improve’, through to becoming ‘net neutral’ (which involves having ‘no net loss’), and ultimately to becoming ‘net positive’ in relation to its impacts. Each of these levels of ambition have related terms that are commonly used, as shown in the figure. Some of the terms are explained briefly underneath, with some examples provided as to their sometimes specific, but often broad, application.

Figure 2.2 Associated terms for Net Impact

Ambition	Outcome	Related terms
Net Positive Goal	Net gain	Net positive Net positive gain Net positive impact Total contribution
Net Neutral Goal	Net neutral	Net zero No net loss Carbon/water neutral Zeronaughts
Improvement Goal	Net loss	Less bad Incremental reduction Minimising impacts

Source: Spurgeon and Clarke (2016).

Net impact (term as used in France)

According to one contributor to the study, in France, the term ‘net impact’ generally refers to the difference between the negative biodiversity impacts of a project and related positive biodiversity impacts (the latter either coming from the project itself or from compensation measures). The concept is used at a project level, in the scope of EIAs (environmental impact assessments) and mitigation hierarchy. It is mainly used for defining compensation measures for impacts on biodiversity to obtain a licence for construction works (new or existing infrastructures) in relation to government regulations on protected biodiversity.

No net loss (in an EU context)

The EU uses the term ‘**no net loss**’ extensively in relation to biodiversity. In this context it means that **‘damages resulting from human activities must be balanced by at least equivalent gains to avoid a net loss of biodiversity and ecosystem services’**.

It is supported by the EU No Net Loss principle: **‘that conservation/biodiversity losses in one geographically or otherwise defined area are balanced by a gain elsewhere provided that this principle does not entail any impairment of existing biodiversity as protected by EU nature legislation’**.

No net loss and net gain (in a project finance context)

The terms ‘**no net loss**’ and ‘**net gain**’ have a specific meaning within project finance in relation to biodiversity and habitats. The [International Finance Corporation](#) (IFC), and other financial institutions supporting the [Equator Principles](#)¹¹, use these terms in relation to whether to finance large projects that may have an impact on natural habitat and critical habitat.

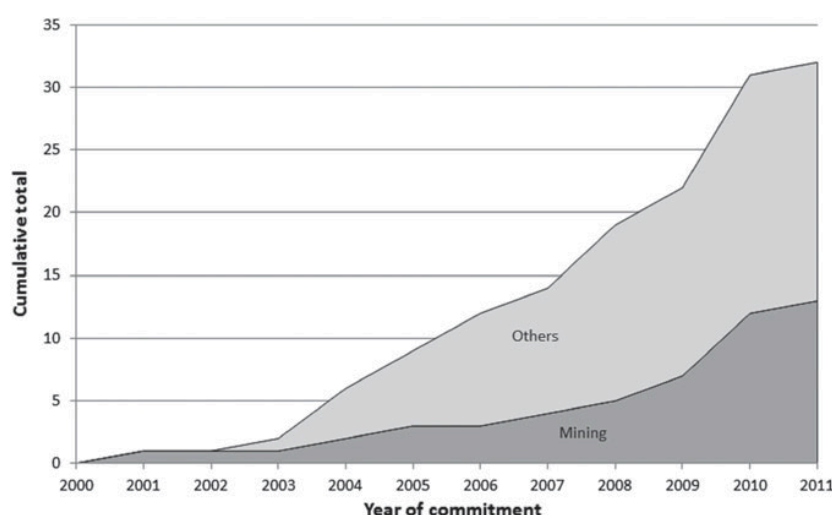
Net positive

An increasingly used related term is that of ‘**Net Positive**’, again, with a very specific meaning and context. This has been defined as where a company **‘puts more back into the environment (or society) than they take out, with a resulting overall positive impact’** (Uren et al, 2014). The concept was originally developed by Forum for the Future and WWF led ‘Net Positive Group’, and is now being taken forward by the [‘The Net Positive Project’](#). This is a fee-based membership group, that organisations can join with a view to becoming ‘Net Positive’ organisations. The concept has an accompanying set of principles that companies can use as a checklist for good practice (see Box 2.1).

Net positive impact

IUCN and the extractives industry use the term ‘net positive impact’ (NPI) specifically in relation to biodiversity (IUCN, 2015a and 2015b). Rainey et al (2014) report on a review of corporate goals around net positive impact and no net loss (focussed on biodiversity) set from 2000 to 2012. The mining sector (including aggregates, minerals metal and coal) has the greatest take-up, with 13 companies out of 32 identified in total (see Figure 2.3).

Figure 2.3 Growth in corporate net positive impact/no net loss commitments (to 2012)



Source: Rainey et al (2014)

¹¹ Banks that have adopted the Equator Principles, a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in project finance.

Total contribution

This term was coined by The Crown Estate and is an approach they use to account for the total environmental, social and economic value they contribute to the UK¹². It has been developed to demonstrate the positive impact they have beyond the financial revenue they generate (see also A4S, 2015).

Other terms and applications

Several global companies associated with “[The B Team](#)” have recently announced their aspiration to achieve ‘Net-Zero Carbon Emissions by 2050’ including Chinese construction company Broad Group, African telecommunications group Econet, Brazilian cosmetics manufacturer Natura, the consumer goods company, Unilever and international investment group Virgin (The B Team, 2015).

‘**Carbon neutrality**’, or having a ‘**net zero**’ carbon footprint are effectively the same and refers¹³ to ‘**achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered or offset, or buying enough carbon credits to make up the difference**’.

There is considerable work going on in net zero and net positive buildings, primarily focused around energy use. For example, according to Torcellini et al. (2006), a ‘**net zero-energy building**’ (ZEB) is defined as a, ‘**residential or commercial building with greatly reduced energy needs through efficiency gains such that the balance of energy needs can be supplied with renewable technologies**’. However, the net zero/positive building concept has also been extended to carbon, water and waste (e.g. Joustra & Yeh, 2015). Similarly, there is a move to creating net zero and net positive cities, for example in relation to waste and energy¹⁴.

The term ‘**Zeronauts**’ has also been introduced, which is, ‘**an inventor, innovator, entrepreneur, intrapreneur, investor, manager or educator who promotes wealth-creation while driving adverse environmental, social and economic impacts toward zero**’ (Elkington, 2012).

Another terms Interface, an international carpet tile producer, uses the term ‘**restorative impact**’ which for them, means ‘**eliminating all the negative impact and focussing on including social and ecological positive impacts within our business models**’.

2.4 Principles associated with net impact

Given the complexity of issues associated with net impact, a number of principles have been developed around the topic by scientists and institutions. Two commonly referred to example sets of principles are shown below: firstly for organisations aspiring to become net positive (Box 2.1) and secondly for projects attempting to offset biodiversity impacts (Box 2.2).

Box 2.1 Net positive principles (for companies aspiring to become net positive, as proposed by Uren et al, (2014)).

1. The organisation aims to make a positive impact in its **key material areas**.
2. The positive impact is clearly demonstrable, if not **measurable**.
3. As well as aiming to have a positive impact in its key material areas, the organisation also shows **best practice in corporate responsibility and sustainability** across the spectrum of social, environmental and economic impact areas, in line with globally accepted standards.
4. The organisation **invests in innovation in products and services, enters new markets, works across the value chain**, and in some cases, **challenges the very business model** it

¹² <https://www.thecrownestate.co.uk/our-business/how-we-measure-value/>

¹³ This definition is from Wikipedia and is deemed to represent a fair and appropriate meaning.

¹⁴ For example see <http://efficientgov.com/blog/2014/05/28/city-moves-towards-zero-waste-net-positive-energy/>

- relies on.
5. A Net Positive impact often requires a **big shift in approach** and outcomes, and cannot be achieved by business-as-usual.
 6. **Reporting** on progress is **transparent, consistent, authentic and independently verified** where possible. **Boundaries and scope** are clearly defined and take account of both positive and negative impacts. Any **trade-offs are explained**.
 7. Net Positive is delivered in a robust way and **no aspect of a Net Positive approach compensates for unacceptable or irreplaceable natural losses**, or ill treatment of individuals and communities.
 8. Organisations enter into **wider partnerships and networks** to create bigger positive impacts.
 9. **Every opportunity is used** to deliver positive impacts across value chains, sectors, systems, and throughout to the natural world and society.
 10. Organisations **publicly engage** in influencing policy for positive change.
 11. Where key material areas are ecological, robust environmentally restorative and socially inclusive methods are applied.
 12. An **inclusive approach** is adopted at every opportunity; ensuring affected communities are involved in the process of creating positive social and/or environmental impacts.

Box 2.2 Principles for biodiversity offsetting (for site/project developments, as proposed by the [Business and Biodiversity Offsets Programme \(BBOP, 2009\)](#)).

1. **Adherence to the mitigation hierarchy:** A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimization and on-site rehabilitation measures have been taken according to the mitigation hierarchy.
2. **Limits to what can be offset:** There are situations where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected.
3. **Landscape context:** A biodiversity offset should be designed and implemented in a landscape context to achieve the expected measurable conservation outcomes taking into account available information on the full range of biological, social and cultural values of biodiversity and supporting an ecosystem approach.
4. **No net loss:** A biodiversity offset should be designed and implemented to achieve in situ, measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity.
5. **Additional conservation outcomes:** A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity to other locations.
6. **Stakeholder participation:** In areas affected by the project and by the biodiversity offset, the effective participation of stakeholders should be ensured in decision-making about biodiversity offsets, including their evaluation, selection, design, implementation and monitoring.
7. **Equity:** A biodiversity offset should be designed and implemented in an equitable manner, which means the sharing among stakeholders of the rights and responsibilities, risks and rewards associated with a project and offset in a fair and balanced way, respecting legal and customary arrangements. Special consideration should be given to respecting both internationally and nationally recognised rights of indigenous peoples and local communities.
8. **Long-term outcomes:** The design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the project's impacts and preferably in perpetuity.
9. **Transparency:** The design and implementation of a biodiversity offset, and communication of its results to the public, should be undertaken in a transparent and timely manner.
10. **Science and traditional knowledge:** The design and implementation of a biodiversity offset should be a documented process informed by sound science, including an appropriate consideration of traditional knowledge.

3 Drivers, business case and barriers

3.1 Introduction

One of the questionnaire surveys asked: ***‘What demands do you see being placed on companies to carry out net impact?’*** This led to various useful points covering not only the demands, but also other business case arguments for adopting a net impact approach, which are summarised below. The question also gave rise to a selection of barriers to adoption highlighted by respondents. These are covered further below too.

3.2 Underlying drivers

A number of underlying drivers will continue to increasingly lead businesses, governments and financial institutions to adopt net impact requirements and approaches. Root causes include the lack of resources available to supply the growing global population; the linear economy model we currently operate; and the fact that resource use and impacts are not currently priced at the right level.

This in turn has led to international agreements such as the UN Convention on Biological Diversity (UNCBD) and UN Framework Convention on Climate Change (UNFCCC). These drive other agreements such as the Aichi Biodiversity Targets and the Paris Agreement, which in turn catalyse actions from others, including the EU, encouraging the adoption of net impact approaches.

EU Biodiversity Strategy. Since 2011, the EU is committed to halt the loss of biodiversity and the degradation of ecosystem services by 2020. The EU’s Biodiversity Strategy sets out 6 targets and 20 specific actions geared towards this overall objective. Action 7 of Target 2 is to ***‘ensure no net loss of biodiversity and ecosystem services’***. The action calls for development of a methodology to assess the impact of EU funds on biodiversity and foresees that the Commission proposes ***“an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting schemes).”***

The EU states that ***‘to avoid a net loss of biodiversity and ecosystem services, damages resulting from human activities must be balanced by at least equivalent gains’***. Whilst EU legislation protects a wide variety of habitats and species (e.g. compensation for damage occurring in Natura 2000 sites is a legal requirement of the EU Birds and Habitats Directives¹⁵), unavoidable residual impacts on species and habitats not covered by nature legislation still occur. This results in a net loss of biodiversity and ecosystem services.

As a result, in a resolution of 20 April 2012, the European Parliament urged the EU Commission to ***‘develop an effective regulatory framework based on the ‘No Net Loss’ initiative, taking into account the past experience of the Member States while also utilizing the standards applied by the Business and Biodiversity Offsets Programme’***. It stressed the importance of applying such an approach to all EU habitats and species not covered by EU legislation. Consequently, the EU has been investigating this issue through a number of studies looking to develop some form of wider ‘no net loss’ and biodiversity offsetting approach. For example, see the EU No Net Loss webpage¹⁶, and Conway et al (2013); Tucker et al (2013); Rayment et al (2014); and Tucker et al (2016).

¹⁵ For example, Article 6.4 of the EU Habitats Directive states that *‘the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected’*.

¹⁶ For an overview of the EU’s goals and activities in relation to net impact and no net loss, see http://ec.europa.eu/environment/nature/biodiversity/nnl/index_en.htm.

3.3 Demands from others

The ensuing demand on companies to adopt net impact assessment approaches of one kind or another is varied and growing. Some of the demands are briefly outlined below.

National legislation around biodiversity impacts. As indicated already, EU legislation such as the Birds and Habitats Directives, and Environmental Liability Directives mean that EU member states in effect have a no net loss requirement for certain impacts on biodiversity, as transposed into their national regulations. Different countries thus have slightly different overall requirements, with some countries imposing broader demands for developers that impact on non-EU protected habitats (see Box 3.1). Companies then adhere to the relevant national regulations (e.g. see Box 3.2).

Box 3.1 Examples of relevant national requirements in the EU

In **Germany**, the 1976 Federal Nature Conservation Act introduced the Impact Mitigation Regulations. This law is mandatory and precautionary, aiming to ensure ‘no net loss’ by first avoiding damage, and then requiring restoration and compensation for residual unavoidable impacts. Ecological impacts in the German system can be mitigated either through like-for-like compensation or through an intervention worth an equal number of “eco-points” as the original site before impacts (Ecosystem Marketplace, 2016).

In **France**, the “doctrine ERC”, is a guideline on applying the mitigation hierarchy (avoid, reduce and compensate) issued by the French Ministry for Environment in 2013, which gives general guidance. In some regions more specific guidelines have been issued by DREAL (regional authorities in charge of environmental and industrial issues). However, none of these give precise instructions as to how to assess ecological equivalency to compare between biodiversity gains and losses. Instead, a range of techniques is suggested; allowing flexibility, but reducing consistency.

In the **Netherlands**, compensation for biodiversity impacts is required under a number of regulations, including the Nature Conservation Act, the Law on Spatial Planning, the Flora and Fauna Act, and the Forestry Act. Impacts to National Ecological Network (EHS) sites require the responsible party to designate new EHS areas in order to ensure no net loss of biodiversity, or where this is not possible, make a financial contribution to the National Green Fund (Ecosystem Marketplace, 2016).

In **Spain**, an Environmental Impact Assessment (EIA) law passed in 2013 allows the use of conservation banking and provides preliminary guidance on the instrument’s use, but does not mandate the use of offsets outside of significant impacts to Natura 2000 sites. Instead, the responsibility of establishing offset requirements is left to regional governments (Ecosystem Marketplace, 2016).

In **Sweden**, the Swedish Environmental Compensation System introduced in 1999 a framework for offsetting impacts to species or habitats where impacts take place within Natura 2000 or other protected high-priority sites. Mitigation is typically carried out by the municipal government, and mitigation requirements may be relatively relaxed in terms of requiring like-for-like or spatially relevant compensation (Ecosystem Marketplace, 2016).

In the **UK**, some compensatory conservation measures around offsetting do exist in planning policies and law (e.g. under the Habitats and Birds Directives). However there is no legislation enforcing offsetting, so there is no formalised offsetting system in place. Whilst the government has provided some guidance on biodiversity offsetting (e.g. Defra, 2012), including a quantitative methodology, it’s use is voluntary.

Box 3.2 HeidelbergCement's approach to net impact

Prior to commencing extractive operations at a given site, HeidelbergCement conducts an environmental impact assessment and, if the affected site is of exceptional biological value, commissions appropriate biodiversity studies. These studies apply the mitigation hierarchy, with priorities set as follows: prevention, mitigation, compensation. Accordingly, HeidelbergCement checks first whether excavation work can be avoided or at least adjusted in such a way that the ecosystem is not disrupted or that such disruptions are kept at a minimum.

During the extraction phase, high priority is assigned to mining techniques that minimize environmental damage and species protection programmes may be adopted. In areas of high biodiversity value, biodiversity management plans are developed, which define actions to ensure conservation of nature and fauna (e.g. by creation of specific habitats or the implementation of say a sand martin protection program). For the subsequent restoration of extraction sites a restoration plan adhering to the principles of the mitigation hierarchy is established.

Restoration of extraction sites after site closure is the best approach to mitigate potential negative impacts - by creating aquatic or terrestrial habitats to ensure proper compensation of potential negative impacts. Depending on the habitats created in the former extraction sites and the situation before extraction started, the net impact can even be positive (e.g. restoring a site that was former agricultural land into calcareous grassland).

Non-EU countries tend to have a far more varied stance on requirements for net impact assessment type approaches, with countries such as USA, Australia, South Africa etc. having various national and sub-national approaches in place for biodiversity.

EU non-financial reporting. Recent EU legislation on non-financial reporting for public companies¹⁷ will give more reason for companies to potentially adopt a net impact approach at a company level. Although unlikely to explicitly demand a net impact assessment approach, the guidelines should broadly set out what type of information to include and how. Net impact approaches such as Environmental Profit and Loss (EP&L) accounts should probably closely align with the requirements. The guidelines, due to be published by the European Commission by the end of 2016, are to be non-binding, and apply to publicly listed EU companies with over 500 employees.

FI project finance requirements. One of the most significant drivers of a net impact approach has been the demand for it at a project level from financial lending institutions. It stemmed from [IFC's Performance Standard 6 \(PS6\)](#) (see Section 8.3), which requires developments seeking project finance over US\$10 million to ensure 'no net loss' of biodiversity in 'natural habitats' potentially affected by the development, and a 'net gain' for those biodiversity values for which 'critical habitat' has been designated and which may be impacted by the development. Actions to achieve these goals can include 'set-asides' (i.e. land areas within the project area over which the client has management control that are excluded from development), and biodiversity offsets.

IFC's PS6 has become the benchmark biodiversity standard that many other banks have now adopted (e.g. Equator Principle Banks) or adapted, such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD).

Some companies, such as Shell, have also adopted the guidance and requirements set out by the IFC in relation to achieving a net gain in critical habitats that they operate in or nearby. In terms of net impact for ecosystem services, Shell manages that through an impact assessment process where the need for compensation for loss of local livelihoods is

¹⁷ Directive 2014/95/EU on disclosure of non-financial and diversity information by certain large undertakings and groups.

identified. Furthermore, for remediation of polluted sites, Shell uses the notion of net impact on human health as a guiding principle.

Investors (e.g. asset owners and investment managers). The market for impact investing is growing, and net impact assessments offer an excellent way to demonstrate the extent to which investments are likely to have a positive environmental impact. The investment industry is already beginning to use 'social return on investment' (SROI) approaches, which in effect is a form of net impact assessment, like cost:benefit analysis. Integration of environmental impacts within SROIs is likely to increase, as inevitably will the demand for investment options that also give rise to positive social and environmental impacts.

Some investors are already applying carbon footprint assessments to their investment portfolios. For example, the Dutch bank ASN Bank aims to have a net neutral carbon investment portfolio by 2020, and is also beginning to explore the option of having a net neutral impact on biodiversity.

Financial institutions are increasingly recognising the business risks (and opportunities) associated with natural capital. This will even more so be the case once the forthcoming [Natural Capital Protocol Finance Sector Supplement](#) is published. As such, they are increasingly likely to request their corporate clients to disclose additional information on their natural capital impacts and dependencies.

NGOs and think-tanks. Businesses are coming under pressure, as well as receiving support, from NGOs and think tanks to adopt net impact assessment approaches. For example, BBOP and IUCN are both encouraging companies to adopt net impact approaches in relation to biodiversity. Key objectives are to not only encourage companies to offset unavoidable adverse impacts to biodiversity, but to do so in an appropriate way. As such, both organisations have developed a number of guidance documents highlighting principles, methodologies and recommendations.

As mentioned previously, the think-tank Forum for the Future has established the [Net Positive Project](#), a membership based initiative encouraging companies to adopt a 'Net Positive' approach to business. In addition to the 12 principles developed that such companies should follow (Uren et al, 2014), a number of other supporting documents have been produced, including a guide to measuring impacts to inform assessments of net positive (Aeron-Thomas and Le Grand, 2015).

Businesses. It is likely that businesses will increasingly demand suppliers and business partners to reduce their environmental impacts. This is particularly the case given the increasing scrutiny of company value chains. It will necessitate measuring and disclosing such impacts, with net impact assessments potentially playing a key role. Increased demand could be applied over time through the purchasing power of large corporations, such as has happened with the [Roundtable on Sustainable Palm Oil](#) (RSPO) and [Roundtable on Responsible Soy](#) (RTRS).

Ratings Agencies. There may be increased future demand from rating agencies if the number of businesses committed to net impact continues to grow.

Consumers. There are growing requests from society for companies to be more transparent on the impacts and dependencies they have on natural capital. Linked to this is the proliferation of product labels covering different aspects of sustainability. Labels that reliably inform consumers of the extent to which a product has a negative or positive impact on the environment (and society) could become popular - if a suitable form of measurement could be agreed.

Consumers in theory could have enormous power to change government and corporate behaviour. However, on balance consumers still tend to be more interested in access to cheap goods and services, although that may be changing slowly.

3.4 Business case benefits

In addition to the above push factors, there is a growing business case for companies to adopt net impact approaches too. The following business benefits can be linked to companies adopting net impact approaches, many of which were suggested by questionnaire respondents. The challenge, however, is to move beyond anecdotal evidence and suggestions to providing quantified examples as to where benefits have actually been realised.

Enhanced adoption of sustainability. A net impact approach can be a powerful means of prioritising important environmental issues to address and justifying expenditure to deal with such issues. It can also help facilitate integration of environmental issues into core business and corporate strategy, thereby driving sustainability internally, and leveraging other benefits mentioned above. As highlighted in Section 7, net impact approaches also strongly support adoption of other sustainability concepts such as circular economy and integrated reporting.

Enhanced communication strategy. Adopting a net impact assessment approach can help inform key messages to communicate. Promoting net impact approaches has also proven to be a powerful communications tool (e.g. for Kering and HolcimLafarge).

Competitive advantage. Where biodiversity management regulations and standards are weak or non-existent, businesses can achieve competitive advantage through use of net impact approaches. For example, using the insights gained and results, they can position themselves well to deal with what will be an increasingly constrained business environment (resource depletion, tightening regulations, climate change impacts, etc.), and be able to improve and then compare themselves with competitors and competing products that have a less positive or more damaging environmental impact.

First Mover Advantage. Companies that are 'early adopters' and pioneer best practice in a particular space tend to obtain first mover advantage, a form of strategic/competitive advantage. In relation to companies assessing net impacts, this includes companies such as Vodafone (see Box 3.3), Kering and HolcimLafarge. First mover advantages under these circumstances include enhanced publicity and reputational benefits, and the ability to influence the methodologies that evolve which companies eventually have to use.

Box 3.3 Vodafone Netherland's EP&L

What is an E P&L?

The Vodafone Environmental Profit & Loss account (EP&L) is an overview of all the positive and negative environmental values (or impacts) that Vodafone creates in the course of its business and throughout its value chain. To take two examples, Vodafone creates positive environmental value by the mobile connectivity services it provides such as Smart Garbage systems which help customers avoid energy and related air emissions. However, Vodafone has a negative environmental impact from the energy used by its data centres and in the production of mobile devices.

Why Vodafone developed an EP&L

Vodafone aims to use the EP&L to improve its decision making so that it can reduce its negative impact on the environment and boost its positive impact. By knowing what impacts it has, Vodafone can strategically focus on its full performance, rather than just its financial performance. This EP&L has five goals:

1. Strategic insights on the environmental value of the value chain
2. Insights for internalisation
3. Clarity
4. Forecasting
5. Benchmarking

Scope

In order to identify Vodafone's impact, five steps were taken:

- Step 1: Decide what to measure
- Step 2: Map the value chain
- Step 3: Collect data
- Step 4: Valuation
- Step 5: Calculate EP&L

Results

In the 12 months to 31 March 2015, Vodafone Netherlands had a negative environmental impact (Loss) of ≈€20.9 million, of which ≈€2.3 million was caused directly by Vodafone Netherlands' own operations. The negative impact includes four key elements: network, products, customer service operations, and buildings. Greenhouse gas emissions account for 44% of the total negative environmental impact, water for 32%, air for 24% and waste for 1% of the total EP&L.

On the other hand, the positive impact of Vodafone's services is ≈€37.4 million, which derives from enabling customers to reduce their carbon footprint).

Source:

https://www.vodafone.nl/assets/downloads/algemeen/environmental_profit_and_loss_account_2014_2015.pdf

Reputational benefits. Companies adopting a net impact approach, can gain a number of benefits through a potentially enhanced reputation. This could include for example, increased sales and improved relationships with regulators. However, companies would need to ensure they applied any net impact approach appropriately to avoid potential adverse publicity.

Reducing risks. A greater understanding of the full extent of the interwoven environmental and social impacts their business may cause has led many companies to seek better ways of understanding and reducing risk. Net impact assessments, particularly fully integrated assessments, are a potential way to understand such impacts. Supply chain risk management and mitigation strategies are increasingly being adopted by companies, and net impact assessments are beginning to play a role in that too.

Cost savings. Businesses can typically find cost savings and enhanced efficiencies through driving down their negative impacts. For example, company energy bills can often decline significantly when energy efficiency strategies are put in place (e.g. when driving down carbon emissions). Net impact assessments can help focus efforts and drive such cost savings.

Access to finance. Companies that can demonstrate a net positive environmental and outcome may increasingly find it easier to access finance with better terms including lower interest rates. This is already the case with projects that comply with the Equator Principles and associated biodiversity offsetting requirements.

Encouraging innovation. By focussing on what causes the most significant impacts, new materials, products and processes can be developed and used that reduce the impacts. As such, net positive assessments help companies look at environmental issues, materials to use, and product and project design in a different way.

New products and services. Companies adopting net impact approaches could find that they identify new potential business lines. This could range from selling carbon or biodiversity credits to developing new service offerings in terms of restoring habitats or consulting services. Furthermore, biodiversity itself presents potentially significant untapped opportunities in the form of new products and services (which a net impact approach may

shed light on), and new markets for biodiversity and ecosystem services are emerging (e.g. offset banks and payments for ecosystem services).

Licence to operate. A well-conducted net impact assessment could potentially improve a company's license to operate at a particular location. This could in particular be useful to justify green field site developments – assuming that the assessment could demonstrate net positive environmental and social impacts. Indeed, net impact assessments showing positive outcomes could engender wider social acceptance at all levels.

Employee engagement and interaction. The approach is likely to help attract top talent. The process of simply conducting net impact assessments can also enhance staff engagement, interaction and morale.

Enhanced marketing and profits. Net impact approaches can provide useful information to compare products, brands and companies, thereby promoting those with better environmental credentials and potentially enable green premiums to be applied to products.

3.5 Barriers to adoption

Whilst there are clearly a number of drivers and a growing business case for companies to adopt net impact assessment approaches, various barriers to adoption also exist. Some key barriers identified in the study are set out below.

Lack of business case and financial incentives. Whilst there are anecdotal suggestions as to the many potential business benefits, there are few examples where such benefits have been quantified. In many instances there is no business case, as appropriate financial incentive structures simply do not exist. The benefits tend to still be too 'soft' and somewhat intangible, and strongly linked to communicating company actions to stakeholders.

Lack of standardisation. Perhaps the biggest barrier of all, and one frequently raised in the questionnaire responses and workshop, is a lack of standardisation. This is in particular the case around issues such as approaches and units for measurement and how impacts from different issues can be traded off. Having said that, measurement and metrics around greenhouse gas emissions is clearly well advanced and generally accepted, and several countries (e.g. USA and the UK) have their own government endorsed monetary value estimates for the impacts. Measurement and metrics around biodiversity is more complex, requiring different aspects of quantity, quality and distinctiveness to be taken into account. However, significant progress has also been made in recent years with biodiversity, for example in relation to guidance on quantifying impacts and appropriate offsets (e.g. Defra, 2012).

The Natural Capital Protocol provides a standardised general framework to help improve consistency for all natural capital assessments, including net impact assessments. However, more prescriptive and detailed methodologies for assessing net impacts that are more widely agreed are still lacking.

General lack of government action. Although legislation covers some issues to an extent (e.g. covering protected habitats and species), it is perceived as being weak and insufficient. A number of questionnaire respondents commented on how slow governments were to develop and strengthen regulations on the topic, highlighting considerable scope for governments to take greater action and enhance sustainability as a result. Given that the EU and national governments are struggling to operationalise no net loss principles themselves (in relation to biodiversity), it is hard to expect companies to do it. However, some companies (e.g. Rio Tinto) have been leading the way on this.

Lack of interest from investors. Whilst there is some growing interest (e.g. Equator Banks in relation to biodiversity and project investments, the impact investment community, and banks such as ASN), this represents a tiny fraction of financial institution activities. Generally speaking, the vast majority of FIs are currently not interested in net impact assessment approaches and associated information in their day to day activities. This may

be for a number of reasons. It could be because they don't know how to assess such impacts in a suitable way for their needs, or they don't think such information is sufficiently material to their decisions: or perhaps more likely, a combination of both.

Interestingly, Interserve pointed out in its questionnaire response, the potential link between 'no net impact' and a sustainable business model, which it thinks may exist. This they believe would be of interest to their investors if more evidence became available.

The Ministry of Economic Affairs for the Netherlands suggests that FIs should request their corporate clients to disclose information on such impacts (and dependencies) on natural capital, because of the relevance of those impacts for their risk assessments.

Disagreement over monetary based approaches. It is clear from the workshop discussions and questionnaire survey responses that there are mixed feeling over using a monetary approach to evaluate impacts to the environment. Several individuals and businesses appear to strongly oppose using monetary based approaches, in particular in relation to evaluating biodiversity impacts due in part to the complexities, controversies and uncertainties involved, including a perceived risk of commercialising nature.

Preference for 'business as usual'. Businesses involved in generally environmentally damaging industries may be averse to, and lobby against, strengthened requirements for net impact assessments. Indeed, those sectors and companies causing the largest environmental impacts are understandably nervous of more stringent requirements.

However, it does present the opportunity for companies in such industries to demonstrate the overall net positive impact to society they generate, and for the leading companies to demonstrate how their activities are much less harmful to the environment than their competitors are. It will also catalyse a transition to less damaging products and processes.

4 Linkages with NCA approaches

4.1 Introduction

Net impact assessment approaches are, or can be, closely linked to most natural capital accounting (NCA) for business approaches. Table 4.1 lists out the 11 categories of NCA for business approaches identified in the 2014 NCA workstream output¹⁸ and indicates the extent to which they are linked. The table also indicates the relative maturity of net impact assessment methods (e.g. quantification and valuation) as applied, or applicable, to each NCA approach (see Section 4.5).

4.2 Strong direct links

There are three NCA approaches that are by definition effectively directly linked with net impact assessments. These are briefly explored in more detail below.

Environmental Profit & Loss Account (full cost accounting). Although not always promoted as such, an EP&L is effectively a form of integrated net impact assessment (at least integrated in terms of material environmental impacts). By definition it places monetary values on the societal costs (and benefits) arising from the environmental impacts caused by a company (and potentially its supply chain, or part of a company's activities). Careful wording is often used to express what is effectively a total net value or to show how the values compare. For example, Holcim¹⁹ (2014) sets out its Integrated Profit and Loss Statement, which sums its financial, socio-economic and environmental values to give a total 'triple bottom line calculation' value.

Environmental Balance Sheet (full cost accounting). There are few examples yet of company balance sheets that take into account the start and end value of environmental assets and liabilities. The UK Natural Capital Committee report on 'Developing Corporate Natural Capital Accounts' (Provins et al, 2015) show one way this can be achieved, using three case study examples. The change in value from the start to end of the accounting period represents the value of the net impact, which may be a loss or a gain. To date this approach has been applied more by organisations with large land-holdings rather than companies producing goods.

Integrated Financial NCA & reporting. This framework for developing fully integrated financial and natural capital accounts (Houdet et al, 2015) is, in theory, a potential way to conduct fully comprehensive net impact assessments for businesses.

4.3 Potential strong links

Seven other NCA approaches potentially have strong links with net impact approaches, although they are not always directly linked. These are each briefly explained below.

Impacts. As the name implies, there can potentially be strong links between NCA 'impact' assessment approaches and net impact approaches. However, it is not always the case. For example, Environmental Impact Assessments (EIAs) typically highlight the overall significance of a range of environmental impacts, but they don't always go that next step of comparing positive and negative impacts. In some cases though, EIAs can lead to informing mitigation measures and biodiversity offsets that intended to result in no net loss or net gains (so a clear direct link).

¹⁸ See Spurgeon (2014) for more details.

¹⁹ Now part of LafargeHolcim.

Table 4.1 Net impact linkages with NCA for business approaches

NCA for business approach		Description	Link to net impact	Maturity of methods	Explanation
Decision-making					
1	Dependency	Determines the nature and extent to which companies depend on natural capital (NC).	Weak links	Medium	A net impact assessment approach can be applied to evaluating both a 'with' and 'without' the dependency scenario in order to value the company dependency.
2	Impacts	Determines the nature and extent to which companies impact NC.	Potential strong links	Medium/High	By definition, this approach has direct links. Methods to assess such impacts are fairly well developed.
3	Risk/opportunity & materiality	Involves identifying & quantifying NC related risks and opportunities. Potential materiality may also be assessed.	Potential strong links	Low/Medium	A net impact approach can be used to help identify and evaluate risks and opportunities.
4	Valuation (full cost accounting)	Involves valuing the importance of NC and other environmental costs and benefits to society & the company. Form of full cost accounting for management decisions.	Potential strong links	Medium/High	There can be strong links here, with considerable experience of applying cost-benefit analysis and net present value calculations to determine net monetary value impacts.
Both					
5	Inventory	Documents information about the nature and extent of NC on a piece of land and/or other environmental outputs (e.g. pollutant/residuals) generated.	Potential strong links	Low/Medium	An inventory approach can be used to compare stocks or outputs between different time periods, thereby informing net impacts.
6	Indicators	Involves using physical units, indicators and indices for assessing NC and other environmental impacts (e.g. from pollutants).	Potential strong links	Medium/High	Quantitative indicators are often used for determining net impacts, especially for carbon, water and biodiversity. Methodologies are quite well developed.
Reporting					
7	Env. Profit & Loss Account (full cost accounting)	Applies societal monetary values to company related NC impacts. It is a form of full cost accounting, which can be applied from product to company level and along the value chain.	Direct strong links	Medium	EP&L approaches are, by definition, useful for evaluating and highlighting net impacts, particularly at company and supply chain level. Methodologies are developing quite rapidly, but are still weak on biodiversity.
8	Env. Balance Sheet (full cost accounting)	Includes information (physical and/or monetary values) on the NC assets typically owned or managed by a company on landholdings. Form of full cost accounting at a site or corporate level.	Direct strong links	Low/Medium	Environmental Balance Sheets would be an excellent means of informing net impact assessments by comparing opening and closing stocks at start and end of a period. There is considerable scope for this approach, which is linked to CNCAs.
9	Env. Financial Accounting (env. components)	Involves including and specifying financial components of a conventional financial profit & loss account and balance sheet that directly or indirectly relate to NC impacts.	Potential strong links	Low/Medium	Although not typically linked with financial information within company accounts, net impact assessments could be undertaken focussing on net financial costs and benefits. Direct costs and benefits are well linked, whereas indirect ones are less so.
10	Env. Financial Accounting (site management costs)	Involves assessing the financial cost implications of maintaining NC (e.g. habitats, species and ecosystem services) to a certain quality that are under company ownership or management on landholdings.	Potential strong links	Low/Medium	Although not often done, one can compare financial costs incurred with financial and societal benefits generated, to determine overall net impacts. This approach is increasingly being adopted (e.g. through CNCAs).
11	Integrated Financial NCA & reporting	Involves including physical units as well as societal and financial values within a fully integrated set of balance sheets and profit & loss accounts.	Direct strong links	Low/Medium	A core objective of this integrated quantitative and monetary accounting approach is to determine net impacts. It can draw upon many of the quantitative and monetary valuation methods available.

Risk and opportunity. Net impact assessments can usefully feed into risk and opportunity assessments through highlighting the relative nature and extent of negative and positive impacts. However, not all risk and opportunity assessments need to necessarily evaluate the net impacts. For example the WRI (2012) Corporate Ecosystem Services Review methodology does not

Valuation (full cost accounting). Environmental valuation used for decision-making at a project and product level can be used to evaluate net impacts. This is often the case, for example, when applying cost:benefit analysis to weigh up the full range of societal impacts in monetary terms over the lifetime of a project. It does though rely on the ability to include an appropriate monetary value for all key environmental issues affected, or alternatively, the weighing up and inclusion of any such impacts that cannot be adequately monetized.

Inventory. Inventory based approaches to NCA, such as counting species diversity and abundance at a site level at a specific point in time, can be used to determine net changes over a period of time.

Indicators. Use of environmental indicators for either decision-making or reporting are closely aligned with net impact assessments because non-monetary based net impact assessments typically require the use of some form of indicators, or units, as a means of measurement. For example, this would include use of tons of carbon emitted and m³ of water impacted.

Environmental Financial Accounting – of environmental components. This NCA approach focuses more on identifying direct and indirect environmental costs actually incurred by a company (e.g. environmental protection, management, treatment and disposal costs; license and permit costs; and environmental fines and compensation payments). However, there may be good reasons to assess the net environmental impacts associated with such expenditures. Indeed, there may be a need to assess associated net impacts either to justify environmental expenditures or evaluate suitable levels of compensation claims.

Environmental Financial Accounting – of site management costs. When determining the financial costs required to manage important or protected habitats to a certain quality on company landholdings, it can be useful to determine the associated financial and societal benefits. In so doing, one is effectively conducting a net impact assessment.

4.4 Weak links

Finally, there is one NCA approach categorised as having ‘weak links’ to net impact assessments.

Dependency. By definition, dependency assessments are different from impact assessments, as they focus on the environmental dependencies of businesses rather than assessing environmental impacts. They therefore involve determining the impact to the business (e.g. loss of value) from not having the natural capital dependency (e.g. a particular source of water or coast protection afforded by a coastal habitat). This is sometimes measured in terms of loss of business profits without the dependency, or financial costs to the business to provide an alternative equivalent service. When assessing loss of profit, the approach generally involves applying a net impact assessment in terms of evaluating the difference (net) in values both ‘with’ and ‘without’ the dependency.

4.5 Maturity of net impact methods

An indication of the relative maturity of quantification and valuation methods used in different NCA approaches is also shown in Table 4.1. The assessment is indicative only, based on the professional judgement of the author. It suggests that some of the methods used are relatively mature, for example in relation to some of the monetary valuation approaches used for say carbon, water, air emissions and waste, and some of the more detailed quantitative approaches used to assess biodiversity. However, in cases where the NCA approaches are less well developed, the level of maturity of methods can perhaps be considered low to medium.

5 Applications of net impact

5.1 Introduction

Although undertaking a ‘net impact’ assessment is often listed as an actual application or use in its own right in the context of NCA, net impact assessments can also feature in a broad range of other applications too. For example, both the Natural Capital Protocol (Natural Capital Coalition, 2016) and last year’s EU B@B NCA outputs (Spurgeon, 2015) list ‘net impact’ as a category of application. However, as we can see below, net impact assessments can be applied in many of the other applications that both documents cover too. Table 5.1 sets out some of the key applications listed in the above two documents and indicates what net impact assessments can be used for within each category.

Table 5.1 NCA applications using net impact assessments

Application	Organisational level		
	Company	Project/site	Product
Net impact/ Total value	<ul style="list-style-type: none"> • Net/total impact of a company • Land/habitat valuation 	<ul style="list-style-type: none"> • Net/total impact of a project • Land/habitat valuation 	<ul style="list-style-type: none"> • Net/total impact of a product
Risk & opportunity assessments	<ul style="list-style-type: none"> • Assess nature & magnitude of impacts 		
Compare options (investment appraisal & prioritization)	<ul style="list-style-type: none"> • Select investments • Select suppliers • Strategy 	<ul style="list-style-type: none"> • Investment appraisals (Select projects & variations, such as green infrastructure versus conventional options) 	<ul style="list-style-type: none"> • Select supplier • Select materials
Assess impacts on stakeholders	<ul style="list-style-type: none"> • Assess nature & magnitude of impacts 	<ul style="list-style-type: none"> • Assess nature & magnitude of impacts • Environmental liability & compensation 	<ul style="list-style-type: none"> • Assess nature & magnitude of impacts
Communication (e.g. Reporting & certification)	<ul style="list-style-type: none"> • EP&L • Environmental Balance sheets • Net Zero/ Positive 	<ul style="list-style-type: none"> • Net Zero/ Positive 	<ul style="list-style-type: none"> • Product certificates • Labelling • Net Zero/Positive
Other	<ul style="list-style-type: none"> • Supply chain management • Mergers & Acquisitions • ESG rating 	<ul style="list-style-type: none"> • Obtain permits • Access to project finance • Land management • Payments for Ecosystem services (PES) 	<ul style="list-style-type: none"> • Supply chain management

5.2 Net impact applications

Net impact/total value. Clearly net impact assessments are central to net impact applications. At all levels this could involve ascertaining the net impact the company has on a single or multiple issues, resulting in a total societal value created (or eroded) for the company, project/site or product. At a project/site and company level, such a net impact/total value approach is particularly relevant for determining the overall societal value of land/habitats, which could reveal additional values that increase the financial value of that land (e.g. for selling or for revaluing the company’s fixed assets for the balance sheet).

Risk & opportunity assessments. Risk and opportunity assessments can be used to assess the nature and magnitude of natural capital impacts. This application is often a broader assessment that can then lead to deeper consideration of other applications. Applying a net impact assessment type approach to this, whether at a company, project/site or product level, is a useful way to ascertain the nature and magnitude of impacts – particularly if a fully integrated and monetary based approach is adopted.

Compare options (investment appraisal & prioritization). Net impact assessments are an ideal way to compare alternative options at all levels of organizational focus. Such comparisons may be fairly high level, for example to aid prioritization, or detailed, for example in investment appraisals. The comparisons may focus on single issues or be fully integrated covering all material issues. Monetization of impacts can certainly help when comparing the monetary costs of alternative options. Indeed, cost:benefit analysis and net present value calculations are commonly used in investment appraisals.

Assess impacts on stakeholders. Businesses may want to identify which stakeholders are affected, in what way, and to what extent through natural capital impacts caused by their activities. Such impacts may be negative or positive, and sometimes both. Net impact assessments are thus an ideal way to identify and determine the nature and extent of the impacts, and ascertain what the net impacts are for each stakeholder group.

Communication (e.g. Reporting & certification). There is a whole host of ways that natural capital impacts can be communicated for an internal and/or external audience, and net impact assessments can play a key role. At a company level, environmental profit and loss (EP&L) approaches are increasingly being adopted (e.g. Vodafone, LafargeHolcim, Kering and AkzoNobel (4D P&L²⁰). These tend to convert a range of natural capital impacts into monetary values and often leave it to the reader to interpret the results how they want (e.g. in terms of netting off the impacts or not).

A number of certificates, standards and declarations exist that relate to the environmental credentials of different products. These employ a net impact approach to varying degrees, with probably excellent potential for using net impact approaches even more. They include for example, [Forest Stewardship Council](#) (FSC) Certified, [Marine Stewardship Council](#) (MSC) Certified, [Rainforest Alliance Certified](#), CE Marking, ISO standards (e.g. 14006 on Ecodesign and 14046 on water footprinting), and Environmental Product Declarations (which document environmental impacts associated with a product). However, these generally tend to focus on ensuring good environmental management in the production and sourcing of products rather than assessing net impacts. They thus do not tend to state or imply that a product has a net positive impact. The ISO 14046 standard on water footprinting is an exception in that it does involve quantifying water consumption.

Companies seem to increasingly be looking to position their business and products as net zero or net positive when it comes to certain environmental parameters (notably carbon, biodiversity and water at present). However, it is still early days yet as methodologies are still being developed. Net impact assessment approaches though can certainly inform internal decision-making (e.g. product design) and help market and position a company and/or product (e.g. comparing environmental performance against a benchmark or competitors).

Other. In addition, there are numerous other NCA applications at all levels of organizational focus (e.g. see Spurgeon, 2015) where net impact assessments can potentially play a key role. This includes supply chain management, where companies and materials can be assessed based on the net environmental impact they have. Evaluation of mergers and acquisitions (M&A) and environmental, social and governance (ESG) ratings could also be enhanced by net impact assessments.

²⁰ Four dimensional profit and loss accounts – see <http://report.akzonobel.com/2014/ar/case-studies/sustainable-business/measuring-our-impact-in-4d.html>

At a project/site level, there are many other applications that net impact assessments can be used for, including obtaining permits and access to funding (e.g. by demonstrating that a project has no net loss or net gains in terms of biodiversity and other environmental impacts). Net impact assessments can also help inform land management options, for example, how best to use available land taking into account ecosystem services, and to inform potential payments for ecosystem services (PES) schemes.

5.3 Other net impact application observations

The questionnaire responses also flagged the following relevant issues (in no particular order):

- When comparing different issues, monetary values are seen by many (but certainly not all) as a useful and comparable metric. Indeed, there are still strong divisions between those that see monetary valuation as a useful tool to help inform values and decisions, and those that are vehemently opposed to attempting to place monetary values on such sensitive and complex issues such as habitats and species. Monetary valuation is clearly one way that an overall aggregated sum can be established (based on a weak sustainability approach). However, uncertainties over monetary valuations of biodiversity could mean it was difficult to be sure that no net loss or net gain has been achieved. It may be better to restrict net impact assessments to address single issues (i.e. use a strong sustainability approach) or at least show how each single issue has been addressed rather than just quoting a single overall value.
- There is a strong need for a common framework and detailed methodology with agreed metrics for measuring impacts that are considered acceptable.
- It is important to avoid greenwash. One business respondent noted that a number of companies are using the NPI or the NNL terminology but don't seem to have a reliable methodology. Other companies are thus more reluctant to adopt such a goal as it is quite difficult to measure and to follow progress towards an NPI objective. However, the respondent added that it doesn't mean that those companies using NPI/NNL terminology don't do anything to reduce negative impacts and improve positive ones.
- Linked to the above is the fact there are major challenges in dealing with trade-offs (i.e. what is acceptable substitution between impacts on one issue and another). As indicated, a potential solution is to present the full range of results for all issues examined, highlighting which are positive and negative.
- It is important to consider and show who is benefiting from a business's operations – shareholders or stakeholders – or ideally both.
- It is important to consider the full life cycle (i.e. whole life costs) when looking at product impacts. This should include extraction, manufacturing, transport, use and disposal related impacts. In this respect, net impact assessments can help demonstrate the value of moving from product use in a linear economy to their use in a circular economy.
- Undertaking a net impact assessment for a single product (or material) could be a relatively easy entry into the concept for a company (e.g. compared to a company wide assessment).
- There is scope to significantly improve the way LCA results are presented in a simpler way to consumers, businesses and other stakeholders.
- Site level assessments could and indeed should become building blocks for corporate level assessments – certainly for those companies with landholdings that form the basis for their business.
- Site/project level assessments are perhaps the most important level to focus on and get right for net impact assessments, especially in terms of biodiversity and the detail one can go into. Corporate and product level assessments tend to be more high level and

can be somewhat theoretical (e.g. where LCA models are used), whereas the site level is where the real impacts are actually occurring.

To adequately cover biodiversity impacts at the site level requires good science and data, for example, on species diversity and abundance. The concept of 'ecological equivalence' is extremely important in this context, for example in terms of offsetting like-for-like habitats or an alternative amount of a different habitat. However, it appears that there is still a lack of government guidance on the specifics (e.g. in France and Germany), although there is some guidance on this in the UK (Defra, 2012).

6 Business, government and FI perspectives & interlinkages

6.1 Introduction

It would be logical and beneficial for governments and FIs worked closely together with businesses, encouraging and supporting them to adopt a harmonized approach to net impacts that all could follow. However, it seems that as a result of their different perspectives, this is failing to happen. There are relatively few strong interlinkages between the three. This section briefly explores the different perspectives and extent of interlinkages between the businesses, governments and FIs in relation to net impact in particular brought out by the questionnaire survey, but also by the workshop and literature review.

6.2 Perspectives in relation to net impact

Businesses are generally focused on making a profit for themselves and for their shareholders. However, some of the more sustainable companies, have set goals in relation to having net zero (e.g. for carbon) and net positive (e.g. for biodiversity) impacts. The main focus seems to be on managing their negative impacts. However, some companies with large landholdings, or with activities affecting landholdings (e.g. Interserve) are beginning to consider how they can enhance natural capital stocks too.

The concept of net impact can be applied at the project, organisational, sectoral, area, country etc. level. Similar principles and metrics can be applied

Much of the activity in this space seems to be led by a range of business case drivers including access to finance, managing risks and opportunities and seeking competitive advantage (see Section 3.4). However, there are some regulations in place too, although that seems mainly to do with key EU protected habitats and species.

Whilst large public multinationals may have the resources and vested interests in pursuing net impacts, smaller companies and private companies, and in particular SMEs perhaps do not (unless there is an easier way to do so).

Governments signed up to the UN CBD and UNFCCC have a number of strong drivers in place pushing them towards taking actions, which align closely with net impact approaches. In addition the UN Convention on Combating Desertification (UN CCD) has a target for land degradation neutrality, through sustainable land management and ecosystem restoration²¹.

Governments should have a strong interest in maintaining their national and regional stocks of natural capital (especially biodiversity). However, they should also be interested in flows over time too and how that changes (i.e. impacts).

Governments also should in theory be concerned about trying to maximize the net societal impact from use of their national resources, projects, policies and programmes. Indeed, cost:benefit analysis was initially developed as a tool for governments to assess the overall societal welfare provided by alternative projects.

Interestingly, however, there was a common feeling amongst questionnaire respondents that governments paid inadequate attention to the topic. Despite policy statements such as the EU no net loss (NNL) initiative, and national government initiatives, governments have failed to show the commitment to put NNL principles into practice.

A comprehensive policy framework for NNL is lacking (see Tucker et al 2013 and 2016). However, even without introducing a legal framework to enforce NNL, there is a potential for governments and the EU in terms of setting the framework – with suitable agreed guidance, metrics and measurement tools – businesses and local authorities could be further

²¹ An accompanying SDG target (15.3) includes the aim 'strive to achieve a land degradation-neutral world'.

encouraged to measure their impacts and introduce NNL targets and initiatives. The EC has already commissioned reports that provide a knowledge base for this (e.g. Rayment et al, 2014 report on metrics and long term conservation mechanisms for offsets/ NNL).

Financial Institutions are also generally focused on making a profit. However, there is a difference between public financial institutions, such as the World Bank (including the International Finance Corporation - IFC) and European Investment Bank (EIB) compared to private financial institutions. The former have been established with a much stronger societal remit, so consequently have had more interest to date in adopting net impact approaches. Having said that, around 80 private banks have become Equator Banks²², by signing up to the Equator Principles, which includes requirements for no net loss and net gain goals for biodiversity in relation to large projects they fund.

All financial institutions are particularly concerned with risk (and to a lesser extent, opportunity) management. Private financial institutions appear to like simple metrics and approaches when it comes to environmental and biodiversity matters.

6.3 Business and government interlinkages

Governments have a great opportunity to set policies, and to put in place and better enforce regulations that require businesses to consider, undertake and disclose net impact assessments. As mentioned above, even just setting a framework with suitable agreed guidance, metrics and measurement tools would help. Such approaches could lead to considerable advances in national and global sustainability. Most respondents though believe that governments are doing far too little, too slowly in this space.

Governments are also best placed to develop and enforce standardized methodologies for companies to adopt in relation to undertaking net impact assessments. Again, a number of respondents said governments should be doing much more in this respect.

There is potential for governments to apply net impact approaches to procurement requirements for government suppliers.

As argued in last year's NCA workstream outputs (Spurgeon, 2015), considerable benefits could be gained by enhancing consistency between government and corporate natural capital accounting approaches; including in relation to net impacts. Various governments are now adopting the UNSEEA (2014a and b) environmental economic accounting system framework and experimental ecosystem accounting approaches. These suggest accounting systems that can establish annual net impacts and set out ways to capture ecosystem baselines that could also be used to inform net impact assessments.

6.4 Business and FI interlinkages

Perhaps the strongest interlinkage between the three on this topic is the financial institutions demanding that businesses achieve no net loss or net gain in relation to biodiversity impacts and obtaining project finance. IFC led the way with their Performance Standard and Guidance Note 6 on biodiversity. Now over 80 banks have adopted the same standards as a result of signing up as Equator Banks.

There are also some direct interlinkages through the impact investment community, although this market is relatively small at present, and environmental impacts are perhaps not as closely assessed as social impacts.

FIs are also increasingly considering ESG issues, although these don't currently tend to focus much on net impact approaches. However, there is considerable scope for them to do so in the future (if standardized approaches become more widely adopted).

²² Banks that have adopted the Equator Principles, a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in project finance.

Apart from the above, though, which represents a relatively small portion of the FI market, FIs generally appear to have little interest in this topic.

FIs could have even greater influence on businesses to help meet government and natural capital goals. They could apply the concept of net impact in a broader range of services, for example targeting investments or giving more favourable loan terms to those companies that generate a net positive impact (for both environmental and social issues).

FIs may do better in the long run if they knew more about the net impacts of businesses that they invest in. FIs are increasingly using tools to assess risks associated with certain sectors and companies (e.g. Bloomberg's 2015 water risk valuation tool). There may also be increased future demand from rating agencies if the number of businesses committed to net impact continues to grow.

The Dutch FI, ASN Bank, was the first bank to set a strategy to become 'no net loss' for carbon. Their aim was to be Net Neutral for carbon by 2020 (in terms of their portfolio of investments), but this may be achieved earlier. This means that they would only invest in companies with very low, net zero or net positive carbon emissions. Now they want to extend this goal to biodiversity, and are currently exploring what the best form of measurement is for biodiversity and what the best no net loss type of strategy and target would be for the bank.

7 Links with other sustainability concepts

7.1 Introduction

Net impact approaches are closely linked with many other sustainability concepts. Although not covered much in the questionnaire and workshop, some initial high-level thoughts on the matter are provided here. The links have been split into those with direct links and those where net impact assessments can be usefully applied to compare sustainable options versus less sustainable options.

7.2 Direct links

Net impact approaches generally have strong direct links with the following:

Impact investment. As mentioned earlier, net impact assessments are integral to impact investments, and effectively all forms of socially responsible investments. Such assessments help to identify and quantify the extent to which investments have a positive societal impact (a key component often being from an environmental perspective).

Integrated Reporting. Whilst it is not officially the purpose of an integrated report to quantify or monetize the value an organization creates over a period, or its uses of, or effects on, all the capitals, they can be used to do so. Indeed, an integrated report should describe key outcomes (IIRC, 2013). This includes both positive outcomes (i.e., those that result in a net increase in the capitals and thereby create value) and negative outcomes (i.e., those that result in a net decrease in the capitals and thereby diminish value). Net impact approaches are certainly a useful potential means for informing integrated reports. Holcim's (2015) Integrated Profit and Loss account (IP&L) is an example of a natural extension of integrated reporting that quantifies impacts in monetary terms showing the overall balance of positive and negative environmental, social and economic impacts.

Green economy. Although not a specific requirement to use net impact approaches when implementing green economy approaches, the concept does closely align. For example, UNDS (2012) identifies a number of common principles adopted by countries attempting to move towards a green economy that includes using integrated decision-making and internalising externalities. Both of these can significantly benefit from using net impact assessment approaches.

Creating shared value. One interpretation of this concept is that it is where companies can create environmental and social value for stakeholders in addition to financial profits for themselves. Net impact assessment approaches can be used to help evaluate and demonstrate this.

Sustainable Development Goals (SDGs). The choice of issues to address in net impact assessments can usefully be informed by considering relevant SDGs. In addition, net impact assessments could help evaluate the trade-offs between different company (or country) policies or programmes targeting a mix of SDGs²³.

7.3 Comparison of options

Net impact assessments can also be readily applied to various other sustainability concepts to compare options and help justify more sustainable solutions. For example, this applies to:

- Circular economy
- Green Infrastructure

²³ Vionnet (2106) provides an interesting discussion on achieving a net-positive impact by using the Sustainable Development Goals. <http://www.goldstandard.org/blog-item/achieving-net-positive-impact-using-sdgs>.

- Bio-based materials/Bio-economy
- Many other more specific concepts such as sustainable urban drainage systems (SUDS)

In each case, a net impact assessment approach can be used in the form of an option appraisal. In so doing, it can help to weigh up the costs and benefits of environmental (social and economic) impacts and demonstrate that implementing such approaches, such as a circular economy solution, can be more appropriate than the conventional alternatives (linear economy solutions). Although in some cases the direct financial costs of the sustainable option may be less than the financial costs of a conventional alternative, by including the full range of environmental and social values, the sustainable solutions can often more readily be shown to generate a greater net benefit to society, and therefore be justified.

8 Guidelines and tools

8.1 Introduction

There are a multitude of guides and tools both directly and indirectly relevant to net impact approaches at all levels of organizational focus. This study is not able to cover this vast and complex aspect in any detail, given the study's scope. However, it does highlight some key guides mentioned in the questionnaire survey and identified in the brief literature review. Coverage of available tools is dealt with very briefly at the end.

8.2 Guidelines relevant to all levels

Guidelines targeted at businesses that are generally applicable for all organisational levels of net impact assessment include the following:

- **The Natural Capital Protocol (NCC, 2016).** This document has been developed for businesses as '*a standardized framework to identify, measure and value direct and indirect impacts (positive and negative) and /or dependencies on natural capital*'.

One of the five main 'business applications' identified in the Protocol is 'Estimate total value and/or net impact'. The Protocol goes on to say that the application is relevant if businesses want to '*assess net impact to determine whether a business activity creates net positive or net negative impacts on natural capital*'. Whilst the Protocol provides a generic framework for natural capital assessments that effectively encompasses conducting net impact assessments, it does not provide a single specific detailed methodology for assessing net impacts. The accompanying Sector guides don't do that either.

- **The Greenhouse Gas (GHG) Protocols (WRI/WBCSD 2004, 2005, 2011a & 2011b):** This series of documents provides more specific and detailed methodologies on how to quantify GHG emissions at a company, value chain, product and site level. The approaches specified are entirely amenable to net impact assessments.

In addition, on behalf of the Net Positive Group, Aeron-Thomas and Le Grand (2015) provide a useful overview of some of the different quantitative methodologies available for measuring impacts to inform net positive ambitions. The report's coverage of biodiversity is however, rather weak.

8.3 Site/Project level

Guidelines for companies undertaking net impact assessments at a site/project level include the following:

- **International Finance Corporation (IFC) Performance Standard 6 and Guidance Note 6 (IFC, 2011a and 2011b).** These 2011 documents update earlier 2006 versions. They specify requirements for projects to be eligible for project finance to ensure that projects affecting 'natural habitats' should '*achieve 'no net loss' of biodiversity where feasible*' and for those projects impacting 'critical habitat' '*to achieve 'net gains' of those biodiversity values for which the critical habitat was designated*'.

The Guidance Note simply specifies that 'appropriate methods and metrics' should be used but also that '*expert judgement*' may also be used '*in determining the appropriateness of offsets*'. Natural and critical habitats are reasonably well defined in the documents. This approach has been used by many companies to obtain finance for major projects.

Shell has used these guidelines to develop their own internal guidance on assessing residual impacts and the design of appropriate biodiversity offsets.

- **In the UK**, there are several government led publications that effectively cover net impacts, even though the connection is not so explicit. The first is aimed at government appraisals but is equally relevant for businesses to adhere to. The second two are specifically targeted at businesses.
 - **UK HM Treasury (2013) [Green Book](#)**. This is standard guidance used by the UK Government to carry out economic appraisals for public financed projects. The term ‘net impact’ does not feature although ‘net benefit’ and ‘net present value’ do. It specifies that in using a cost-benefit analysis²⁴ approach, ***‘the relevant costs and benefits to government and society of all options should be valued, and the net benefits or costs calculated. The decision maker can then compare the results between options to help select the best’***. A revised version is about to be published. It has been used by the UK Forestry Commission amongst many others.
 - **Defra (2012) [Biodiversity offset guide for developers](#)**. The UK government has established a step-by-step biodiversity offsetting methodology for developers to use. It is based on determining the ‘distinctiveness’, ‘condition’ and area of habitat impacted in order to calculate the number of ‘biodiversity units’ to offset. This approach has been used by Interserve, who is currently developing an internal net impact tool based on this.
 - **[UK Natural Capital Committee’s Corporate Natural Capital Accounting \(CNCA\) \(Provins et al, 2015\)](#)**. This guide sets out a methodology for assessing amongst other things: i) a natural capital balance sheet, which reports the value of natural capital assets and costs (liabilities) of maintaining those assets; and ii) a Statement of changes in natural assets, which reports the change (net gain or loss) in asset values and liabilities over an appropriate accounting period.
- **France** has several relevant guides including, for example:
 - **[Les lignes directrices nationales sur la séquence éviter, réduire et compenser les impacts sur les milieux naturels](#)** (Commissariat Général au Développement Durable, 2013). These are general guidelines set out by the Ministry of Environment on applying the mitigation hierarchy (avoid, reduce and compensate).
 - **[Elaboration des études d’impacts en carrières](#)** (UNICEM, 2016). This is a sector guide published by L’Union Nationale des Industries de Carriers et Matériaux de Construction, providing recommendations and good practice for the extractives industry for environmental impact assessments (including coverage of avoid, reduce and compensate). However, a robust, transparent, operational and accepted method to assess no net loss or net gains in biodiversity is still lacking in France. In view of this, EDF launched a PhD research study, in collaboration with two top biodiversity research institutes²⁵, to improve the assessment of ecological equivalency by integrating ecological, spatial and temporal dimensions.
- **The EU** has produced a number of reports that can usefully inform companies undertaking biodiversity net impact studies, although they are not guidelines per se. This includes Tucker et al (2013 and 2016) and Rayment et al (2014) covering various aspects of no net loss including issues around metrics.

²⁴ Cost:benefit analysis and net present value analysis has been applied for many years at project level. These analyses have been specifically developed and applied to determine net impacts for different project alternatives – in monetary terms.

²⁵ The Muséum National d’Histoire Naturelle (MNHM) and the Institut National de Recherche en Sciences et Technologies pour l’Environnement et l’Agriculture (IRSTEA).

- **IUCN** has also produced several documents on net impact and biodiversity offsetting, highlighting some of the complex issues involved and providing a number of recommendations:
 - [IUCN Policy on Biodiversity Offsets](#) (IUCN, 2016).
 - IUCN (2015) [No net loss and net positive impact approaches to biodiversity](#): Exploring the potential application of these approaches in the commercial agriculture and forestry sectors.
 - IUCN (2014). [Biodiversity Offsets Technical Study Paper](#).
- The **Business and Biodiversity Offsets Programme (BBOP)** has produced a number of useful guidance documents on net impact in relation to assessing and implementing biodiversity offsets, for example (BBOP, 2012) Resource Paper: No Net Loss and Loss-Gain Calculations in Biodiversity Offsets.
- Likewise, the **Cross Sectoral Biodiversity Initiative (CSBI)** has also recently produced a guide on the mitigation hierarchy that includes guidance on undertaking biodiversity offsets (Ekstrom et al, 2015).
- **HeidelbergCement** highlights a number of site level guides that they use to inform their general biodiversity impact management. This includes [WBCSD's Cement Sustainability Initiative's](#): (2005 and 2016) Environmental and Social Impact Assessment (ESIA) Guidelines; (2011) Guidelines on Quarry Rehabilitation; and (2014) Biodiversity Management Plan Guidance. However, guidance within these on quantifying and comparing impacts is limited.
- Other project/site related guidance mentioned in the questionnaire included WRI et al's (2013) Corporate Ecosystem Services Review.

8.4 Product level

There is fairly extensive guidance on quantifying environmental impacts for products, including LCA ISO 1440 and 1444 as well as [EU Product Environmental Footprint](#) work. However, none of these are particularly good for assessing biodiversity impacts.

A linked approach is that of [Environmental Product Declarations \(EPD®\)](#), which are independently verified and registered documents that communicate transparent and comparable information about the life-cycle environmental impact of products. It offers a complete programme for any interested organisation in any country to develop and communicate an environmental declaration according to ISO 14025 and EN 15804, with supplementary information on particular environmental issues, such as the carbon footprint of products (according to ISO/TS 14067) as 'Single-issue EPDs'.

8.5 Company level

At a company level, there appears to be relatively little guidance available. Kering (2015) produced a high level guide briefly outlining the methodology they used for their 2013 Group EP&L. This involved monetizing impacts GHG emissions, air pollution, land use, waste, water consumption and water pollution. There is also the [EU Organization Environmental Footprint](#) work, but like the product footprint work, it does not provide adequate coverage of biodiversity.

BBOP is drafting a guidance document to propose a roadmap toward achieving net biodiversity gains at a corporate level to be issued by the end of 2016.

8.6 Value chain level

Not much specific guidance appears to be available for establishing net impacts at supply chain level. However, this is though included to an extent in LCA guidance, in the GHG

'Corporate Value Chain (Scope 3) Accounting and Reporting Standard (WRI/WBCSD 2011b) and the Kering (2015) methodology.

8.7 Tools

The landscape for appropriate tools is even more complex and is rapidly evolving. The 2014 EU B@B NCA workstream output (Spurgeon, 2014) identifies tools linked to each of the 11 NCA approaches, many of which can be used to help quantify and value impacts to inform net impact assessments. BSR (2015) and WBCSD (2013) also provide a useful review of tools, some of which are applicable to net impact assessments. These two organisations are currently developing a combined updated web-based review of natural capital tools.

There do not yet appear to be any tools developed that adequately apply to all levels of organisational focus. The questionnaire survey and workshop also revealed that:

- **HeidelbergCement** currently use [IBAT](#) and [TESSA](#) to help inform baseline and impact assessments to determine what biodiversity restoration is needed.
- **Interserve** is developing their own biodiversity net assessment tool based on the UK Defra (2012) offsetting guides.
- **Naturallogic** has worked together with Trucost using their EEIO-model, which they highlight provides a very high level but nevertheless useful approach. They applied the model to revenues for a retailer to calculate an environmental impact per million Euros revenue. The assessment showed that even when little data is available, modeling supported by appropriate assumptions is a pragmatic way to help focus sustainability budgets to where companies can make a real difference. The approach thus helps make better use of resources and translates complex issues into clearly understandable business terms.
- **Sustain Value** developed the 'EROVA' (environmental risk and opportunity valuation assessment) tool specifically to help Antofagasta Minerals determine the extent to which its operations 'create environmental value', which is a company goal (Spurgeon and Fuenzalida, 2014). The tool includes a stock (asset) based approach and ecosystem services (flow) approach. It allows for qualitative, quantitative and/or monetary assessment of a comprehensive set of impacts including biodiversity, air emissions, water, waste etc. The tool also highlights which stakeholders are affected and to what extent and was recently expanded²⁶ to incorporate social and economic impacts too.
- **In the Netherlands**, the government has started to pilot the use of [Natuurpunten systematiek](#) (nature points), a tool developed by the Dutch 'Planbureau voor de Leefomgeving' (Environmental Planning Agency) to quantify the impact of project/activities in relation to habitat banking.
- **Life Cycle Assessments (LCAs)** are clearly extremely useful tools to use to establish net impacts for products. However, a general recognized weakness is still how they deal with biodiversity impacts, as these are highly site specific and rarely adequately covered. Usually, if they are included, it is only at a land use change level. There is considerable need for an improved international standard around assessing biodiversity within LCAs.

²⁶ It is now the ESE-ROVA (Environmental, Social and Economic – Risk, Opportunity and Valuation Assessment) tool <http://www.sustainvalue.co.uk/EROVA.php>

9 Resultant business responses

9.1 At all levels

As a result of adopting some form of net impact approach, whether as a requirement or voluntarily, questionnaire respondents came up with the following generic ways that businesses may respond at any level of organisational focus:

- **Innovate.** It can direct and focus companies to come up with novel ways to reduce their impacts and develop technologies and products that can be used to improve biodiversity and the environment (water, air quality, etc.).
- **Improve priority setting.** It can inform action plans (scope and focus) to reduce negative impacts and increase positive impacts.
- **Develop more sustainable policies.** It can encourage the establishment of more ambitious environmental (and biodiversity) policies.
- **Recognize important stakeholder values.** It can change businesses perceptions of values – helping businesses to better understand what their local stakeholders value and why.
- **Increased and improved community investment.** It can highlight the need for more, and better targeted community investment, for example to offset and make up for the negative impacts.
- **Other suggestions included:**
 - **Drive investments** in environmentally responsible activities and products etc.
 - **Offset negative impacts** where they cannot be reduced further.
 - **Compete with other companies** to demonstrate their contributions to society/planet.
 - **Improve marketing strategies and content** - for company, site and product development and story telling.
 - **Create new investment companies and/or funds.**

9.2 Site/Project level

At a site/project level, net impact approaches can lead to businesses:

- **Setting aspirational targets** around net impact, which should drive stronger application of the first three steps of the mitigation hierarchy (avoid, minimize and restore). Not having to do offsets is the preferred option.
- **Integrating biodiversity and environmental considerations at the outset** of the project planning process.
- **Conducting environmental impact assessments in a much more detailed and developed way.**
- **Developing specialized departments (for large companies only) to apply the mitigation hierarchy;**
- **Helping to develop offset markets.**

9.3 Product level

At a product level businesses adopting net impact approaches can lead to:

- **Product innovation** resulting in reduced environmental impacts.
- **New labels** for products or services.

9.4 Company level

At a company level, net impact approaches can result in:

- **Transparent reporting.** Companies adopting such an approaches and reporting on, for example, EP&Ls are providing a greater level of transparency with regards to the relative significance of their impacts.
- **Improved strategic portfolio analysis.** Can allow a company to consider its whole portfolio and informs strategy decisions about how to develop business in future – and understand risks associated with particular mix of business.

9.5 Value chain level

At a value chain level net impact approaches can leads to **improved management of supply chain risks**.

9.6 Dangers to businesses

It is important to point out that there is also a risk for national or European companies from a loss of competitiveness if the scope is not well defined, or the requirements are too onerous (especially compared to overseas/non EU competitors).

10 Conclusions and suggestions for action

10.1 Overall conclusions

Net impact approaches generally relate to assessing and comparing positive and negative business impacts to the environment²⁷. The concept is integrally linked to most natural capital accounting for business approaches and sustainability concepts, and to key EU sustainability goals.

However, use of net impact approaches, methodologies and terminology is highly variable. In some contexts the topic is quite well advanced (e.g. carbon, biodiversity and ecosystem services in project finance, and cost-benefit analysis of for some public project investment appraisals), but in most others it is relatively embryonic. Furthermore, there are many associated challenges, especially around biodiversity, but considerable work has already been undertaken, for example by the EU²⁸. The concept of net impact assessments is therefore highly deserving of further attention and harmonisation.

There are considerable potential advantages for businesses and global sustainability if net impact approaches become more widely adopted. However, requirements and incentives for businesses and financial institutions to apply net impact assessments structures need to be enhanced.

To derive these benefits, greater collaboration is required between businesses, governments and FIs, in particular around developing standardised and agreed measurement and valuation methodologies. This needs to ensure application of the mitigation hierarchy and the long-term sustainability of possible compensation measures. Closer links between business government and FI approaches should be made, and between assessments at different levels of organisational focus (e.g. aggregating project/site and product impacts to a company level).

10.2 Suggestions for action

This section provides key suggestions for actions identified by the author and members of the EU B@B Platform during the preparation of this report. It includes both general suggestions as well as suggestions for specific stakeholder groups to consider.

Suggestions for all stakeholders

Key suggestions for businesses, governments and financial institutions in relation to net impact are:

- Collaborate with all other stakeholder groups, including businesses, governments, FIs, consultants, NGOs and academics on net impact related initiatives, and in particular, help to:
 - Create and agree upon standardized and more prescriptive ways of quantifying, valuing and offsetting biodiversity and natural capital impacts. Ideally these need to be applicable between sectors and at product, project/site and company levels.
 - Develop agreed principles as to what issues are substitutable and offset-able, and under what circumstances.
 - Share data and case studies in order to promote mutual learning and contribute to the development of a broader framework for addressing net impact.

²⁷ However, it can, and ideally should, include assessing social and economic impacts too.

²⁸ http://ec.europa.eu/environment/nature/biodiversity/nnl/index_en.htm

Suggestions for businesses are:

- Understand how the concept of net impact is relevant to your business and identify how your company can harness the concept.
- Investigate, develop and test approaches to assess and reduce net impact, and actively exchange experience and lessons with other stakeholders, government and financial institutions, with a view to improving the regulatory framework and guidance.
- Determine what type and level of net impact goal (e.g. no net loss/net zero or net positive – for single or multiple issues) your company should strive towards, and set an appropriate policy accordingly.

Suggestions for governments are:

- Investigate and develop more specific guidance and methodologies for companies and others (e.g. government departments, local authorities and FIs) to quantify, value and if appropriate, offset impacts.
- Where practicable, reinforce, enhance and converge existing principles and guidelines under different national and local requirements for net impact assessments to make them more consistent and comparable.
- Pilot and, if appropriate, consider mandating new regulations requiring companies to assess their net impacts at all levels of organisational focus. In particular, further emphasis on net impacts for products and at a corporate level would be beneficial, although issues regarding competition need to be carefully considered.
- Develop and support wider opportunities and incentives for businesses to deliver no net loss or net positive impacts (e.g. biodiversity offset banks and markets, labelling schemes, tax breaks).
- Understand that conducting such assessments is challenging for businesses, in terms of being technically complicated, time consuming and data intensive. Consequently, any proposed requirements and methodologies should be appropriate for business to be able to implement and to avoid unfair competition.

Suggestions for financial institutions:

- Investigate and experiment with introducing net impact assessment approaches in areas other than project finance. For example this could cover prioritizing investments in companies that demonstrate a net zero/positive natural capital impact.
- Start with applying single-issue net impact assessments to your portfolio of investments (e.g. GHGs), and then consider broadening your assessments for example to include biodiversity and water.

Suggestions for the EU B@B Platform:

- Consider reviewing existing requirements and guidelines available in the EU (and elsewhere) for undertaking net impact assessments in relation to natural capital, and in particular biodiversity. This should build upon the work already undertaken on no net loss by the EU.
- Ascertain what specific additional guidance is needed to supplement the Natural Capital Protocol in relation to conducting net impact assessments that would be appropriate for all levels of organisational focus and value chain focus, and consider what suitable incentive structures may be practicable.

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Annex 1 Contributors to the study

Category	Expert name	Organisation	Completed questionnaire	Attended workshop	
				In person	By phone
Business	Antonio Martini	*Studio Martini	Yes	-	-
	Cécile Joucan	*LVMH	-	Yes	-
	Cécile Leclere & Marie Eve Reinert	*EDF (EIFER)	Yes	-	Yes
	Charles Le Maitre	*Vicat	Yes	Yes	-
	Christoph Reissfelder	*HeidelbergCement	Yes	-	-
	Geanne van Arkel	Interface	Yes	-	-
	Joseph Yalley-Ogunro	*British American Tobacco	Yes	-	-
	Mark McCorry	*Bord na Mona	Yes	-	-
	Martin de Jong	Vodafone	Yes	-	-
	Mikkel Kallesoe	*Shell	Yes	Yes	-
	Nicola Fiore	*Virtech Srl	Yes	-	-
Peter Smith	*Interserve	Yes	Yes	-	
Government	Lars Mueller	EU	-	Yes	-
	Jakub Wejchert	EU	-	Yes	-
	Martin Lok	Dutch Ministry of Economic Affairs	Yes	Yes	-
	Natthiya Kongphuthorn	Biodiversity-Based Economy Development Office (Thailand)	Yes	-	-
	Pat Snowden	UK Forestry Commission	Yes	-	-
Other	Alessandro Leonardi	ETIFOR	Yes	-	-
	Arnab Deb	India Business and Biodiversity Institute	Yes	-	-
	Beatrice Bellini	West Paris University	Yes	-	-
	Bianca Nijhof	Arcadis	Yes	-	-
	Caroline van Leenders	Rijksdienst voor Ondernemend, Nederland	-	Yes	-
	Daan Jochem Groot	N2 Inc	Yes	-	-
	Eric Dierckx	Naturalogic	Yes	-	-
	Gary Owen	Environmental Marine Solutions Ltd	Yes	-	-
	James Spurgeon	Sustain Value	Yes	Yes	-
	José Ramón Molina	TYPSA	Yes	-	-
	Leonardo Viana	Conservation International	Yes	-	-
	Natthiya Kongphuthorn	Biodiversity-Based Economy Development Office (Thailand)	Yes	-	-
	Phil Clarke	Consciam	Yes	-	-
Yann Verstraeten	ICFI (note taker)	-	Yes	-	

* NCA Workstream 1 Full Member Companies

Experts shown in bold kindly completed a questionnaire and attended the workshop.

Annex 2 Questionnaire survey

B@B Workstream 1: Natural Capital Accounting (NCA) for Business – Questionnaire Survey on Net Impact – April/June 2016

Notes to respondents:

Please use the empty box under each question to give your answer – the text box will enlarge to accommodate your text. **Please read all questions before starting to answer.**

Focus of survey: Although all aspects of the environment are covered (e.g. carbon, air emissions), the main focus should be on **biodiversity and ecosystem services**.

<p>1. Name and organisation</p>
<p>2. What type of organisation are you? (business, government, FI, consultancy, NGO etc.)</p>
<p>3. What do you understand by the concept ‘Net Impact’? (in relation to business and the environment)</p>
<p>4. How do you think the concept ‘Net Impact’ can be used/applied, and how does it inter-relate with other natural capital accounting/sustainability approaches and concepts (e.g. LCA, Circular Economy etc.), at the following levels? Just answer for any levels you have views on.</p>
<p>i) Corporate level</p>
<p>ii) Product level</p>
<p>iii) Site/project level</p>

<p>5. What do you see as current or potential inter-relationships for the concept of ‘net impact’ from a business, government and Financial Institute perspective? Are there any key similarities or differences in how they view/use the concept?</p>
<p> </p>
<p>6. What drivers/demands/requests do you see being placed on companies to carry out ‘net impact’ assessments: for what, by whom, why and in what format? (e.g. from clients, customers, governments, investors, NGOs – due to regulations, first mover advantage etc.)</p>
<p> </p>
<p>7. What guides and tools <u>have you used</u> in relation to assessing ‘net impacts’, in what context, and how useful are they? (e.g. state their weaknesses and strengths).</p>
<p> </p>
<p>8. What business responses/actions can ‘net impact’ assessments/approaches help to trigger?</p>
<p> </p>
<p>9. OPTIONAL: Please provide details of any particular net impact assessment/application you would like to share. This will potentially be included in a box in the study report. Include aim, context, approach and results. Please stick to between roughly 100 to 300 words.</p>
<p> </p>
<p>10. What other documents, guides, tools or on-going studies do you think could usefully inform this study? Feel free to attach useful documents or insert links.</p>
<p> </p>
<p>11. What actions could the EU or others take to improve the use and outcomes from companies adopting a ‘Net Impact’ approach?</p>
<p> </p>

Many thanks for completing the survey.