THE CAMBRIDGE NATURAL CAPITAL LEADERS PLATFORM

E.VALU.A.TE: SUMMARY AND SIGNPOSTING

UNIVERSITY OF CAMBRIDGE
PROGRAMME FOR SUSTAINABILITY LEADERSHIP
25 YEARS

Contents

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Natural Capital Leaders Platform members

Foreword

With increasing consumption, growing population and a seemingly unlimited appetite for economic growth across the globe, pressure on natural resources and the accompanying impact on the environment look set to increase at an alarming rate. The relationship between business activity, growth and loss of natural capital is well understood, with progressive companies acutely aware of their responsibilities towards the environment, not only because of the likely risks to their business of resource scarcity (and the policy ramifications that may bring) but also to their licence to operate in a world where reputation is increasingly a function of sustainability performance.

By understanding the relationship between natural capital and business performance, companies can conceive of strategies to minimise and mitigate risks, while generating value through improved resource efficiency, reputation and sustainability based innovation.

Many of the goods and services provided by nature are currently not paid for, nor are the impacts of business operations compensated for; this leads to inefficiency and over-use. By translating the environmental impacts of business activities into a monetary value the scale of the issues and the return on investment becomes evident; this enables the trade-offs required to protect natural capital to be more easily assessed.

Business has a number of options when considering how to value environmental externalities. There are a growing number of tools developed for this purpose, ranging from generic frameworks for embedding ecosystem service valuation in business processes, to bespoke assessments of individual products and processes. Getting started can be somewhat bewildering, which is why CPSL, with members of the Natural Capital Leaders Platform, have developed E.Valu.A.Te, a 'how to' online Tool and Practical Guide.

The online Tool, supported by the Practical Guide, leads companies through the process of externality valuation, focusing particularly on the agricultural supply chain. Importantly, through a case study approach, this shows how the results can be used to generate business action. This is showcased through a practical example, where natural capital valuation allowed a company to take better informed management decisions within its value chain.

As business leaders face the fact that we are no longer living off the dividends of natural capital but off the capital itself, valuation of the services provided by nature will become an indispensable part of making the clear cut business case necessary to drive the responsible use of natural resources.

Polly Courtice, LVO
Director, University of Cambridge Programme for Sustainability Leadership

1 Introduction

Leading companies recognise the need to identify and address externalities – it is one of the four key commitments made by business in the Natural Capital Leadership Compact[1]. This ground-breaking compact, designed by business leaders to properly value and maintain the Earth's natural assets, shows that leaders recognise that we are no longer living off the dividends of 'natural capital'[2], but off the capital itself.

This represents a clear statement from business that there is a need to build a deeper knowledge base around the un-costed impacts on people and the environment associated with the production and consumption of goods and services. By pledging to integrate externalities into the assessments of business risk and opportunities within their decision making process, signatories of the Compact take bold steps towards business growth that is not driven solely by demand.

In order to achieve this commitment, businesses within the Natural Capital Leaders Platform came together to strengthen their understanding of, and to develop practical guidance around, how to undertake an evaluation of these un-costed impacts. E.Valu.A.Te (Externality Valuation Assessment Tool) represents a suite of resources that brings together comprehensive guidance for environmental externality assessment, stimulated directly by business needs. This has resulted in an online Tool, the first of its kind, that guides users through the evaluation process for environmental externalities.

E.Valu.A.Te provides more evidential support around the process of valuation using a step-wise, bottom-up approach. The work, driven by business, aims to generate the critical mass required to address the unintended impacts of business upon natural capital.

A suite of supporting documents has been developed to help business use the Tool. This summary report introduces and signposts to each, enabling readers to select the resource most suitable for their needs.

- **Listening to Business[3]:**
  An analysis of business motivations to assess environmental externalities (introduced in section 4).
- **E.Valu.A.Te: the Tool[4]:**
  An online Tool that provides interactive, step-by-step guidance to help corporates complete a site-specific evaluation of environmental externalities (introduced in section 5).
- **E.Valu.A.Te: the Practical Guide[5]:**
  A detailed Practical Guide that provides the supporting information for the Tool and deeper dives into evaluation assessments with examples from case studies; it also offers guidance on scoping to identify and prioritise externalities (introduced in section 5).

1 www.leadershipcompact.com
2 Natural capital' is an economic metaphor for the limited stocks of physical and biological resources found on Earth, and the limited capacity of ecosystems to provide ecosystem services (i.e. the direct and indirect contributions of ecosystems to human wellbeing).
3 Listening to Business can be accessed here
4 For access to E.Valu.A.Te : the Tool, please contact John.Pharoah@cpsl.cam.ac.uk
5 The Practical Guide can be accessed here

2 Understanding externalities

The dependencies and pressures that business activities place on the natural environment and its services are well known. These impacts and services are often not paid for – they are not reflected in market prices or reflected in corporate financial statements.

Instead, natural resources are utilised freely by a variety of actors. As a result, many resources are used unsustainably, reducing the availability of these resources for other parties now and in the future. If companies generate emissions to air, land or water or exploit resources beyond sustainable levels, they limit the productivity and/or resource take for themselves and for other potential users, this may reduce societal welfare.

As well as using these services free of charge, business activities have impacts upon the environment – the stock of natural capital and the ecosystem services it provides. These impacts, which may affect the welfare of other stakeholders, are also not paid or compensated for. Such impacts are classed as 'externalities' and can be both positive and negative. There is therefore a need to quantify and value these externalities which are not currently being accounted for by business.

In E.Valu.A.Te (business) externalities are defined as:

Costs (benefits) resulting from (business) activities that are not accounted for in market prices or otherwise compensated, borne by parties who did not choose to incur those costs (benefits).

Valuing externalities can help businesses make better-informed decisions that take into account the degradation of (or benefits provided to) the environment and those that depend upon it.

This work has been driven by a business need:

"I need to know I'm not putting money in the wrong place; I want to put my effort on the externality where I can make a bigger impact and the biggest change."
Platform member.

2.1 What's new?

A range of activities and tools exist to help companies account for their environmental impacts (such as the Corporate Ecosystem Valuation[1] and the Ecosystem Service Review[2] as well as initiatives such as the B Team[3] and The Economics of Ecosystems and Biodiversity for Business Coalition[4]). However, a need was identified to open up the 'black box' of valuation in a more interactive and engaging manner; this was stimulated by the **Listening to Business** analysis. The E.Valu.A.Te suite of resources was designed to be complementary to existing tools and not duplicative.

E.Valu.A.Te provides business with a deeper understanding of the practical steps required to complete an evaluation of their environmental externalities, including what data is required, which models to apply and how to select appropriate valuation studies to determine a monetary value to a particular impact.

1 World Business Council for Sustainable Development (2011) Corporate Ecosystem Valuation Guide. WBCSD, Geneva.
2 WRI, WBCSD and Meridian Institute (2008) The Corporate Ecosystem Services Review (ESR). World Resources Institute, Washington DC.
3 http://bteam.org/
4 http://www.teebforbusiness.org/

2.2 How to evaluate environmental externalities

Valuation can be used to express different environmental impacts of business operations in the same unit, which allows for direct comparison and trade-offs. The value of externalities depends on the impact that the use of natural resources by a company has on the welfare of other stakeholders also using those resources.

Linking environmental impacts to human welfare enables valuation

Businesses' operational activities can have impacts upon the environment. These impacts can be assessed by measuring or modelling changes in the environment and are expressed in biophysical units. These impacts can be positive or negative changes in the quality or quantity of the environment, i.e. natural capital and its ecosystem services.

When people also depend on this environment (for example, for health, drinking water, food, recreation, housing), the changes in the environment have an impact on human welfare and well-being. Using environmental valuation techniques, the impact on human welfare can be estimated and a monetary value can be assigned to this impact.

Figure 1 shows how business operations can be linked to human well-being impacts. It gives an example of how pesticide use (operational activity) may have an unintended environmental impact (eutrophication) that can have a negative impact on human welfare, for example on drinking water, fish (that can be used for recreation or consumption) or water recreation. It is this process that E.Valu.A.Te interactively explains and guides users through, step-by-step.

Figure 1: Example of how an operational activity can have environmental impacts that lead to human welfare impacts

E.Valu.A.Te shows users how to consider changes in the environment resulting from the activities of their company and the effect these changes have on the welfare of others who depend on the same environmental resource. It does so by comparing scenarios. By using scenarios a comparative review of potential strategies and actions related to addressing that specific externality can then be assessed.

The Tool uses 5 steps and a series of questions (see Table 1) to guide users through a full evaluation:

The Tool walks users through each step of this process, offering support and comment on the choice of methodologies available.

A worked business case also shows how these steps can be applied, offering users the opportunity to consider the application of each stage to a specified business case. The Practical Guide supports this tool, providing more detail on each step.

By design, the Tool uses a limited set of environmental impacts as they relate to activities in the supply chain; it focuses upon the growing phase in an agricultural supply chain (Figure 2). These have been developed with a wide stakeholder group and included a detailed review of other approaches.

An overview of the relationships between activities and impacts as well as the affects they have on human welfare is included in the Practical Guide and the Tool.

Figure 2: Environmental impacts of the agricultural growing phase

3 Listening to business

The motivations for environmental externalities assessment

Companies are aware of the importance of addressing their environmental impacts and are trying to inform themselves in order to take action:

“We're focused on understanding externalities and their relationship to our business, in terms of their risk to our business.”

Platform member

However, in this desire to marshal its resources to effect the biggest change and the most positive impact, companies are finding a gap between awareness and full engagement with the management of externalities and the use of valuation in strategic decision making. This gap can be attributed to a variety of factors, including: an absence of internal consensus; a lack of strong legislation; inadequate or erroneous evidence; and insufficient financial and market incentives.

Not all companies face the same gap between awareness and full engagement with the management of externalities. **Listening to Business** analyses the positioning of businesses, across various sectors, on the evolution towards strategic decision making around the reduction of their un-costed impacts on natural capital. **Listening to Business** discusses findings from interviews with members of the Natural Capital Leaders Platform. It answers the core questions:

- What is motivating business to manage their environmental externalities?
- What is the variation between sectors on priority areas in terms of risk and business responses?
- What does business need to close the gap between awareness of externalities and taking action?

Once an externality is identified and the materiality to a business confirmed, the level of risk and opportunity can be evaluated using the online Tool. This enables a shift to designing appropriate strategies to address these externalities.

4 E.VALU.A.TE

Externality **Valu**ation **A**ssessment **T**ool.

E.Valu.A.Te (Externality Valuation Assessment Tool) was developed to deepen business understanding of how to undertake externality assessments. It consists of an interactive, online Tool and a Practical Guide. It uses step-wise, bottom-up guidance to lead companies through the process of externality valuation, focusing particularly on the agricultural supply chain. Through a case study approach, E.Valu.A.Te also shows how businesses can apply the results.

- E.Valu.A.Te: the Tool - An online tool that provides interactive, step-by-step guidance to help corporates complete a site-specific evaluation of environmental externalities. This includes a complete case study that details the decisions, data, models and results made by a company at each step of the Tool.
- E.Valu.A.Te: the Practical Guide - Detailed guidance that provides the supporting information for the Tool and dives deeper into evaluation assessments with examples from case studies; it also offers guidance on scoping to identify and prioritise externalities.

4.1 The Tool

The online Tool provides guidance and decision making options, through an interactive interface, that are required to complete an evaluation of environmental externalities. Based upon the decisions made, the tool directs the user to the appropriate analysis sections, guiding through the whole evaluation process.

This enables a deeper understanding of the economic valuation procedure. It also provides the necessary details to perform the biophysical assessment required to complete a full environmental externality evaluation for the defined business needs.

The tool is focused upon a 5 step process introduced in Table 1. This gives the overview of an environmental externality assessment and the necessary questions that must be answered throughout the process.

> *"When resources have no financial value in the market it becomes another type of investment difficult to calculate."*
>
> Platform member.

4.2 The Practical Guide

As well as providing detailed support for the Tool and case study examples, the Practical Guide includes details of how to undertake the scoping phase. This phase aims to help users explore if an externality assessment is necessary to support the corporate strategy, and if so, what externalities it should focus on. This involves assessment of the business case for the study, the choice of company activities and environmental impacts, the environmental context and the socio-economic context: those parties whose welfare may be affected.

4.3 What does it do?

A key starting point to evaluating environmental externalities is the development of scenarios. The assessment can focus on the externalities related to either the *current operations* or a *change in operations* under a new strategic course.

It is important to consider that the economic value of an externality (determined by the change in human welfare) relates to a change in the environmental conditions caused by a particular action of a company. The net economic value of the externality is shown by the difference between the scenarios.

For example, a company may be interested in the environmental impacts related to a *change in operations*: from handpicking (Figure 3b) to mechanical harvesting (Figure 3a). The difference between these scenarios represents the impact of the business operations. In this example this could be an increase in emissions of greenhouse gases due to fuel use for machinery.

Another example is where a company is interested in the environmental impacts of their *current operations*. In absence of the company, the land would not have been converted to cropland (Figure 3a or b) and there would still be forest (Figure 3c). In this case the impact of the business operations could include a loss of wild species diversity or a loss of carbon stored in the trees and soil.

Once scenarios have been selected, the Tool also guides users through the next steps in the externality evaluation. These include: determining appropriate models and data to use; considering the human welfare impacts resulting from the business operations on the environment; and finally assessing a value. Table 1 outlines the 5 steps that the Tool takes users through, why each stage is required and what it will help achieve.

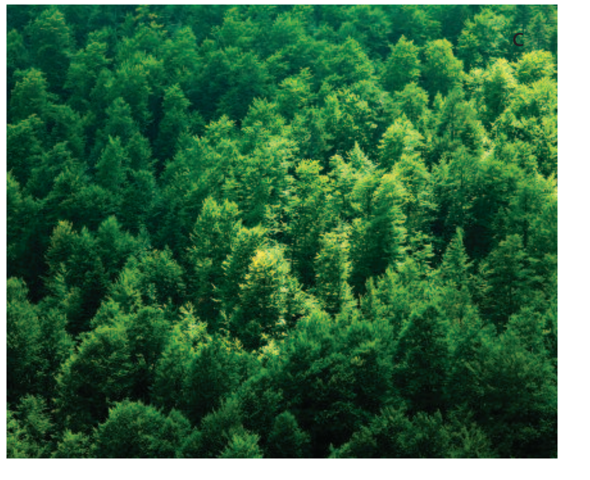

Figure 3: Scenario development is an important step in externality assessment

The Practical Guide provides greater detail for each step within the E.Valu.A.Te Tool, as well as using examples from case studies that show how these stages can be applied.

STEP	QUESTIONS IN EACH STEP	WHY IS THIS STEP NEEDED?	WHAT WILL IT HELP ME DO?
Scenario Selection	? What scenario do I want to assess?	Externality assessment looks at net changes in the environment and human welfare by comparing scenarios. The actual impacts of business activities are relative to an alternative situation or strategy. Using scenarios, businesses can compare various management options and assess the actual impact of their activities relative to that alternative situation or strategy.	This step will help you to define your scenarios and specify them such that the assessment results support the corporate strategy.
Activities and Impacts	? What environmental impact do I want to consider? What operational activities do I want to focus upon?	The main externalities that will be quantified have to be selected based on their relevance in the context of a) the business operational activities and resource use and b) the corporate sustainability strategy and risk.	This step will show you the relationships between different environmental impacts and business activities and help you to determine which to focus upon.
Models and Data	? What model can I use to assess these? What data do I need to undertake this assessment? Where can I get the appropriate data?	Various models and methods can be used to analyse biophysical impacts on the environment. These have different data requirements. The online Tool and Practical Guide describe a set of suitable models, their data requirements and (dis)advantages to support the selection of a suitable model.	This step will help you to determine which models and data are appropriate for your assessment.
Human Welfare Impact	? How do the environmental changes impact human welfare?	Externalities arise because other people are affected by the environmental impacts that a company generates, either positively or negatively. Relating biophysical impacts to human welfare impacts is necessary to understand how the welfare of people (stakeholders outside the company) is affected by business activities. This understanding is needed for the valuation step.	This step will help you to link environmental impacts (the outputs of the biophysical models) to the associated changes in human welfare.
Valuation	? What kind of value data do I need? How should I apply them to my case?	The valuation step places a value on the environmental impacts that have affected the welfare of other people. By expressing the environmental impacts in a common metric, they can be compared to one another and to other financial results. This may guide trade-offs and management decisions.	This step will help you to identify the most appropriate valuation study and to apply this to your particular case, so that the various impacts can be compared.

Table 1: Explanation of each step in the online tool

5 The business case for valuation

A variety of business case studies were developed which are highlighted throughout the Practical Guide to exemplify each of the steps towards an environmental externality evaluation. A full case study from SABMiller also punctuates the Practical Guide at every step and is highlighted within the Tool. This demonstrates which decisions were made by the business at each stage of the assessment. This not only shows users how the Tool and Practical Guide can be applied and how the decisions at each step impact the final results, but also highlights the business successes that can be evaluated through a valuation assessment.

5.1 A practical case: The learning journey

As part of the Natural Capital Leaders Platform, SABMiller undertook a valuation of the environmental externalities related to its procurement of malting barley in Rajasthan, India. It did so by comparing the externalities associated with two scenarios: a *change in operations* to the production of new barley varieties and the *current practice* where more traditional crops, such as wheat, are grown in a water scarce area.

The study[1,2] considered the increased yields that could be gained through better crop management and the increased adoption of new barley varieties. It was shown that this resulted in positive externalities in terms of reduced carbon emissions and water usage, which in turn generated a profit per farm impacted. Despite these benefits, the study also revealed that barley production is just part of the picture in Rajasthan, and wider systemic changes to the entire agricultural system are needed to address the rapid fall in groundwater resources.

The valuation of natural capital translates the principles of action into a clear cut business case for addressing these trade-offs.

"The extent of the inter-connections between resources means that issues such as water scarcity, food and energy security cannot be addressed in silos. As global populations continue to grow, managing the relationship and trade-offs between water, food and energy is only going to become more critical. SABMiller seeks to apply this kind of nexus thinking to our business decisions.

This approach to valuing the external impacts of our business activities is a valuable tool to support better resource management. It also represents an important step in the journey towards factoring natural capital into business decisions."

Andy Wales
Senior Vice President Sustainable Development
SABMiller

1 The (sustainable) business case for Natural Capital Valuation: Lessons from valuing the externalities of SABMiller India's Barley Program in Rajasthan can be accessed here
2 Bowe C., van der Horst D. & Meghwanshi C. (2013); Assessing the externalities of SABMiller's barley extension program in Rajasthan. This can be accessed here

6 How can externality assessment add value to business?

Business is expressing an urgent need for consensus on measurement and valuation of externalities believing that a common language will help validate the topic and facilitate discussion within the business agenda.

Assessing and assigning value to externalities, has the potential to inform strategic decision-making, but to achieve this companies need to adopt a more systematic and integrated approach to avoid fragmented thinking. To help companies address this need, senior management commitment to assessing externalities is required and the conclusions of these assessments need to be fed back to inform critical operational decisions. This can create leadership insights and add business value through better quality decision-making.

A key step is the creation of a value proposition that includes both an assessment of risks and a realistic statement of opportunities. Potential opportunities could include significant improvements in the management of scarce resources, cost savings and reputational benefits; these can result in competitive advantage and maintaining a leading position for a company. This could also bring about the innovation required for business to better manage the demands placed on natural capital, as they manage other forms of asset.

The debate here is what actually adds value?

Mitigating future risks and costs, enabling better dialogue with policy makers and key stakeholders, or delivery of relevant data that will strengthen the case for new generation technology, are some examples. Linking this proposition to established management tools such as risk assessments and stakeholder mapping can facilitate senior leadership support and alignment.

Evaluating externalities may provide the next stepping stone to take action. While there is a healthy debate around the accuracy and meaning of the values themselves this should not distract companies from the core issue, which is what these externalities actually mean for their business.

E.Valu.A.Te, through the online Tool and Practical Guide, interactively provides companies with the understanding, guidance and examples of how externality valuation can be undertaken to allow better informed management decisions and generate business action.

Cambridge Natural Capital Leaders Platform

Wasteful resource use and impacts upon natural capital can undermine long term economic and social stability, and constitutes a strategic risk for businesses.

Yet it is recognised that assessing and pricing externalities is not something that is easy and often the business drivers to do so are not yet in place. For most companies this represents a steep learning curve, but we can climb it faster if we share knowledge and experience. The Natural Capital Leaders Platform provides a unique forum where companies can develop the insight and understanding of these issues, as well as developing deep engagement to help companies shape and benefit from the latest academic research. Measuring and managing what matters to business provides the crucial stepping stones along a natural capital net positive journey.

www.cpsl.cam.ac.uk/natcap

Cambridge insight, policy influence, business impact

For 25 years the University of Cambridge Programme for Sustainability Leadership (CPSL) has worked with leaders on the critical global challenges faced by business and society.

CPSL contributes to the University of Cambridge's mission and leadership position in the field of sustainability via a mix of executive programmes, business platforms and strategic engagement, informed by the University and other partners. CPSL is an institution within the University's School of Technology. HRH The Prince of Wales is the patron of CPSL and we are a member of The Prince's Charities, a group of not-for-profit organisations of which His Royal Highness is President.

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In the UK
1 Trumpington Street,
Cambridge CB2 1QA, UK
T: +44 (0)1223 768850
F: +44 (0)1223 768831
E: info@cpsl.cam.ac.uk

In Brussels
The Periclès Building
Rue de la Scinece 23
B-1040 Brussels, Belgium
T: + 32 (0)2 894 93 20
E: info.eu@cpsl.cam.ac.uk

In South Africa
Open Innovation Studio
27 Buitenkant Street
Cape Town 8001, South Africa
T: +27 (0)21 469 4765
E: info.sa@cpsl.cam.ac.uk

www.cpsl.cam.ac.uk

Designed by: Adrenaline Creative
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