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DEVELOPING CORPORATE NATURAL CAPITAL ACCOUNTS

Summary Report

For the Natural Capital Committee

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eftec
73-75 Mortimer Street
London W1W 7SQ
tel: 44(0)2075805383
fax: 44(0)2075805385
eftec@eftec.co.uk
www.eftec.co.uk



This document has been prepared for the Natural Capital Committee by:

Economics for the Environment Consultancy Ltd (eftec)
73-75 Mortimer Street
London
W1W 7SQ
www.eftec.co.uk

in association with RSPB and PwC

Study team:

Allan Provins (eftec)
Duncan Royle (eftec)
Katharine Bolt (RSPB)
Will Evison (PwC)
Victoria Cox (PwC)
Ece Ozdemiroglu (eftec)
Shannon Anderson (eftec)
Adams Koshy (eftec)

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1. NATURAL CAPITAL AND BUSINESS

This study presents a framework for corporate natural capital accounting (CNCA). Natural capital refers to the stock of natural assets upon which our economies and societies are built. Combined with financial, manufactured, social, and human capital, natural capital produces value in the form of 'final goods and services' (e.g. timber, fish stocks, minerals, water provision, air purification, flood prevention).

The scope of the work is ambitious and ground-breaking. It is a framework within which corporations and landowners can account for natural capital, documenting assets and liabilities in a balance sheet format that extends traditional financial reporting. By understanding how a business makes use of natural capital assets, decisions can be taken to better manage them, with potential benefits to both the business and society.

Understanding and managing natural capital is an increasing concern for many businesses. The benefits of successfully managing natural capital are no different to good management of other types of capital. Put simply, it makes good business sense to understand the value of natural capital upon which an organisation relies and impacts. Corporate natural capital accounting is designed to help businesses do just that.

2. CORPORATE NATURAL CAPITAL ACCOUNTING

Corporate natural capital accounting makes use of a balance sheet format for documenting natural capital assets and liabilities. There are two main reporting statements for the business to consider when making decisions that could affect the natural capital it owns or manages:

- **Natural capital balance sheet:** this reports the value of natural capital (assets), and the costs (liabilities) of maintaining those assets.

Businesses account for depreciation of the value of their material assets in terms of the cost of maintaining or replacing them. The same applies to natural capital assets. The asset value includes both the private value that the business receives from its natural capital (some of which is reported in financial accounts) and external benefits that society derive (for which the business does not currently account). Liabilities are based on the current replacement or maintenance costs of natural capital assets as a minimum.

- **Statement of changes in natural assets:** this reports the change (gain or loss) in asset values and liabilities over an appropriate accounting period.

These statements are underpinned by a comprehensive framework for measuring and valuing natural capital. The full details of this framework are set out in the Main Report and accompanying Guidelines document¹.

CNCA sits within a wider field of environmental management and reporting tools. It is an addition to existing environmental monetary reporting tools that serve a variety of different purposes. In fact, CNCA can use information generated by some of these tools to report the costs and benefits

¹ eftcc, RSPB and PwC (2015) Developing Corporate Natural Capital Accounts, Final Report for the Natural Capital Committee, January 2015.

associated with natural capital assets that the company has an identifiable stewardship role for, either through ownership or due to legal or regulatory obligations.

Overall CNCA establishes a system of valuing natural capital over time and the appropriate funding of its maintenance and enhancement. It is central to the management and financing of natural capital as well as to its measurement.

3. NATURAL CAPITAL BALANCE SHEET

The natural capital balance sheet (Figure 1) is essentially a statement of natural capital asset values and liabilities at the reporting date of the account. It reports separately the private benefits to the company and the external benefits that are enjoyed by the rest of the society. It also distinguishes between renewable assets and non-renewable sub-soil assets, such as minerals and energy reserves.

Figure 1: Natural capital balance sheet*

	Reporting year £'m					Of which reported in fin. accts.
	Non-Renewables		Renewables		Total Value	
	Private	External	Private	External		
Assets						
1 Baseline value	50	-	40	60	150	
2 Cumulative gains / (losses)					-	
3 Additions (disposals/consumption)					-	
4 Revaluations and adjustments					-	
Gross asset value	50	-	40	60	150	40
Liabilities						
5 Legal provisions					(5)	(4)
6 Other maintenance provisions					(15)	
Total liabilities					(20)	(4)
Total net natural capital					130	36

Note: *Values are illustrative.

All values reported on the balance sheet reflect the flow of benefits and liabilities into the future, calculated in (discounted) present value terms.

Natural capital asset value

The balance sheet reports the following lines for natural assets:

1. **Baseline value:** the discounted flow of asset value - i.e. the profile into the future - based on a relevant reference point. For example, this may be the asset value at the inception of the account, a target condition, or a historical level.
2. **Gains/(losses):** how the quality and hence the value of the assets (the profile into the future) has changed in the accounting period relative to the baseline value. The quality of the asset may change due to investments in improvements or external impacts.

3. **Additions/(disposals or consumption):** how the quantity and hence the value of the assets (the profile into the future) has changed in the accounting period relative to the baseline condition. The quantity of natural capital assets could change through acquisition, creation, or disposal and natural events (e.g. storms, flooding).
4. **Revaluations and adjustments:** all other potential causes of changes in value (the profile into the future) other than quality or quantity that warrant separate monitoring and reporting. This may include changes in economic variables, such as market prices, but it may also include changes in scientific knowledge or information that may lead to a revaluation.

Natural capital liabilities

The liabilities section of the balance sheet reports the cost of maintaining natural capital assets. These are reported as the (discounted) present value of the future costs and are divided into:

5. **Legal provisions:** natural capital maintenance actions the business is required by law or contract to perform.
6. **Other maintenance provisions:** the cost of the remaining requirements, to maintain the natural capital assets.

Supporting information

The balance sheet is underpinned by several supporting schedules and accounts including:

- A **natural capital asset register** of all the assets and their condition that fall within the boundaries of the business over time;
- A **schedule of natural capital maintenance costs** recording the costs of maintaining natural capital assets;
- A **physical flow account** of the expected flow of goods and services from the natural capital that benefit both the business and the wider society; and
- A **monetary account** that records the private and external value of physical flow of goods and services.

Further detail on these components of the CNCA framework is provided in the Main Report.

The **statement of changes in natural assets** highlights the changes in natural capital value and liabilities over accounting periods (Figure 2).

Figure 2: Statement of changes in natural assets*

	Reporting year £'m				
	Non-Renewables		Renewables		Total
	Private	External	Private	External	Value
Movements in:					
1 Gains/(losses)	-	-	(10)	(10)	(20)
2 Additions/(disposals or consumption)	(5)				(5)
3 Revaluations and adjustments			20		20
4 Total liabilities			(2)		(2)
Change in natural capital	(5)	-	8	(10)	(7)

* Illustrative values

The statement of changes in natural assets reports movement in balance sheet values over the accounting period and analysed by:

1. Gains/(losses): the underlying value movement due to the quality of natural capital;
2. Additions/(disposals or consumption): the impact of quantity changes on natural capital;
3. Revaluations and adjustments: the impact of revaluations and other changes on natural capital value, and
4. Total liabilities arising from changes in the maintenance costs of natural capital.

CNCA will become a richer source of information for a business as it is repeated over time. Trends in asset value and liabilities (compared to snap shot values) will provide better information about priorities for maintaining and enhancing the natural capital and highlighting risks to the business.

4. MAKING USE OF NATURAL CAPITAL ACCOUNTING

CNCA adds value to both existing environmental and financial information (Table 1). Reporting of natural capital is not done for its own sake but to input into the strategic and functional decisions of a business, such as:

- Developing long-term strategies to identify:
 - Opportunities to generate new revenues to safeguard natural capital (e.g. new products/services, payments for ecosystem services).
 - The risk to revenues, liabilities, reputation and customer base of not maintaining natural capital.
- Operational decision-making: for example, investing in natural versus physical infrastructure; assessing the impacts of changes to natural assets; or prioritising the allocation of limited maintenance budgets.
- Reporting: on the health and performance of natural capital to different parts of the business, to investors, regulators, employees, and customers.
- Environmental management: supporting and enhancing overall management of natural capital.

An account may also assist in consultations with policy makers and regulators, for example in making a case for public funding to help maintain natural capital assets.

Table 1: Role of corporate natural capital accounting

Environmental reporting	Financial reporting
<ul style="list-style-type: none"> • CNCA shows what the business needs to spend to ensure the benefits from natural capital are sustained over time. • CNCA focuses on the business as the defining unit so that the accounts align with the property claims and the liabilities of the business alone. • CNCA does not attempt to evaluate the effect on natural capital of a business along its entire supply chain but instead focuses the analysis to those aspects that a business has direct control over. 	<ul style="list-style-type: none"> • CNCA reports mainly on the natural capital assets owned or managed by the business just like financial accounts. • CNCA reports both the financial values accruing to the business (that are captured to some extent in financial accounts) <i>and</i> the unpriced benefits that accrue to the company and the rest of the society. • CNCA reports both legal liabilities to maintain natural capital (captured in financial accounts) and the additional costs associated with avoiding the degradation of natural assets. • CNCA is forward looking as the objective is to maintain natural capital into the future, while financial accounts report what happened in the previous accounting period. • CNCA reports not only the changes in natural assets over time but also the causes of such changes (quantity, quality, beneficiaries, and internal/external factors).

Overall the aim could be to prepare and review accounts regularly in order to keep natural capital under frequent management review. A long term view is required though. Whilst some parts of an account can be monitored on year-on-year (e.g. maintenance costs), other natural capital elements can change slowly overtime or may be impractical to measure on an annual basis.

5. TESTING THE CNCA FRAMEWORK

The CNCA framework has been tested with a group of ‘pilot organisations’ (Table 2). The framework was also considered by a wider group of organisations including representatives from the public sector, private sector, accounting bodies, academic experts, NGOs and other landowners.

Table 2: CNCA pilot organisations

	Lafarge Tarmac Extractive industry	National Trust Conservation NGO	The Crown Estate Statutory corporation	United Utilities Water and wastewater utility
Pilot site	Mancetter, Warwickshire	Wimpole Hall Estate, Cambridgeshire	The Windsor Estate, Berkshire/Surrey	Fylde Coast, Lancashire
Natural capital responsibility	Owner and land manager	Owner and land manager	Owner and land manager	Liability to limit pollution
Business activity on-site	Hard rock quarry with restoration plans post extraction	Farm undergoing conversion from ELS to HLS* and organic. Open for recreation	Farming and forestry activities. Open for recreation	Operation of sewerage infrastructure and permitted discharges
Significant services supported by natural capital	Non-renewable extraction, carbon storage, water regulation, recreation, biodiversity	Climate regulation, food provision, recreation, and biodiversity	Food provision, timber, recreation, landscape amenity, climate regulation air filtration	Water quality regulation

Notes: * Agri-environment Entry Level (ELS) and High Level Schemes (HLS).

Pilot 1: Lafarge Tarmac

A private joint venture business in the construction and extraction industry

Lafarge Tarmac has extensive quarrying operations in the UK (and elsewhere) which often entail after-care conditions that require the company to restore the site to a pre-agreed condition. The pilot CNCA was applied to a site (Mancetter), which has been a site of mining operations since 1873. The operation is nearing the end of its license for extraction, after which, the land must be restored – most likely to a nature reserve and recreation site.

The CNCA framework offered an opportunity to understand the range of costs and benefits of the site over time and its transition from quarry to restored site. This includes a broader appreciation of the benefits the company gets from natural capital and its importance in business operations, such as water use. The CNCA reporting statements also help communicate the net benefits of the restoration to the local planning authority, local population, and other stakeholders.

The pilot revealed the change in values and costs associated with the significant land use change over the lifetime of the quarry. Two accounts were prepared: (a) to reflect the flow of benefits from the asset in its existing condition (in 2014) and associated liabilities, which include costs of restoration; (b) a hypothetical account for 2032 to illustrate the change in the asset condition and the expected flow of benefits it supports, as well as maintenance costs. Compared to its existing condition, the restored site will deliver significantly enhanced wildlife conservation, carbon sequestration and recreation benefits. The benefits are shown to exceed the costs of restoration, in spite of some benefits being omitted due to incomplete data.

This pilot also illustrated the framework approach to reporting non-renewable assets, showing the change in non-renewable value (mineral stocks) over time and the increase in renewable value of the site.

Pilot 2: National Trust, Wimpole Estate

A major landowner and conservation charity

The Wimpole farm estate shifted to organic farming and Higher Level Stewardship in 2008 in response to degraded natural capital (particularly degradation of soils due to the use of heavy machinery and intensive crop rotation).

Compared to a baseline set in 2008, the account for 2014 showed how the conversion to organic farming under Higher Level Stewardship had little impact on financial income (changes in yields were offset by lower input costs and modest price premiums for organic outputs), but generated significant improvements to non-market benefits such as carbon sequestration and wildlife improvements.

Application of the framework was useful in several ways:

- Improving reporting on natural capital asset condition can assist the National Trust in monitoring progress on achieving its multiple objectives (social, environmental, and economic);
- Valuing non-market benefits, the framework has the potential to improve the processes for budgetary decisions involving investments in natural capital; and
- Supporting the National Trust's public policy discussions, for example by making the case for subsidies to support environmentally sensitive land management.

Feedback from the National Trust has been very positive about the potential for CNCA for wider use across the organisation. The next step is to consider streamlining the approach across the existing data systems and development of processes to capture the ecosystem services that are commonly supported by National Trust, such as recreation and wildlife conservation.

Pilot 3: The Crown Estate, The Windsor Estate

A major land owner and manager

The Crown Estate is an independent property company set up under an Act of Parliament (1961). Its role is to ensure that the land and property it invests in and manages are sustainably worked, developed and enjoyed to deliver the best value over the long term. Its revenue surpluses are delivered to HM Treasury for the benefit of the public finances.

The pilot at the Windsor Estate provided an opportunity to apply the framework on a site that is managed with a view to long-term benefits, and which is recognised to have high environmental and cultural value that are not fully reflected in its financial accounts.

Taking account of these wider social values, the Windsor Estate delivers a significant net benefit to society. The gross external benefit is equal to £4.4 million per year, which is reported in the natural capital account as an asset value of £45.6 million (present value terms) over 100 years. This represents the net benefits that accrue to The Crown Estate and the external values that the Park delivers to the local community, visitors, and globally.

Pilot 4: United Utilities, Fylde Coast***A water and wastewater utility company***

United Utilities holds a licence to provide water and sewage services in North West England. It owns and maintains a network of water and wastewater infrastructure. The company continually invests in the maintenance and enhancement of wastewater infrastructure to protect public health and the quality of river and coastal environments. The statutory requirements that must be met for the treatment and discharge of sewage effluent can be interpreted as implying that United Utilities has a stewardship role with respect to the water environment.

The pilot account tested the 'extended' boundary of the CNCA framework to record the impact of United Utilities' investments and operations on natural assets that it does not own, nor has complete control over the quality of - with agricultural, industrial and maritime inputs also having an impact. The focus was bathing water quality at four designated sites on the Fylde Coast. The asset value of attaining regulatory standards at these sites is estimated to be approximately £200m in present value terms, accounting for open access recreation benefits at bathing waters. The associated liabilities are around £180m in present value terms, covering both capital and operating expenditure associated with the Fylde Coast sewerage infrastructure.

The results from the pilot account should be interpreted as indicative, representing the order of magnitude of costs and benefits. On the benefits side, the pilot provides only a partial account of the public health and environmental quality benefits associated with sewerage infrastructure. On the costs side, the pilot highlights the challenge with attributing liabilities to individual natural capital outcomes, where financial inputs are not recorded in alignment with specific external asset values and could originate from multiple sources.

The extended CNCA framework is particularly relevant to regulated organisations like United Utilities. Demonstrating the benefits associated with legal requirements for natural capital stewardship obligations is an important aspect of the regulatory framework within which the company operates. Through the regulatory strategic planning process regulated utilities, like United Utilities, are required to demonstrate the value that is delivered by investments that are ultimately funded by customers. Hence the extended framework could provide a way for regulated companies to report the asset value that is maintained or improved given the liabilities associated with statutory requirements.

6. RECOMMENDATIONS

The CNCA framework is not intended to be prescriptive. It is flexible in order to adapt to the potential diversity of organisations, natural capital assets and their uses to which it could be applied.

The development of this framework and its testing via the pilots represent only the first steps in a process for compiling natural capital information to enable better decisions to be made about its management, to the benefit of businesses and society more generally. Undoubtedly wider application will lead to refinements and improvements. To this end, the following recommendations are provided for users of the framework:

- 1. Focus on ‘quick’ wins.** Initial applications can prioritise topics or locations that are of high relevance for an organisation or important for natural capital maintenance. Applications that concentrate on one issue or site (like the pilots) or broad and shallow applications across an entire business could be considered. Like any new initiative, complete application of CNCA will require a long-term plan and adequate resources.
- 2. Focus on core natural capital assets.** An asset could be described as ‘core’ for an organisation if it provides a significant proportion of benefits to business and/or poses a significant risk to its sustained profitability. These assets may not be the easiest to include in a CNCA (e.g. may not have the most data or best understanding associated with them) but even an incomplete application can be useful in terms of furthering the decision-making process.
- 3. Improve the supporting data and knowledge inputted to CNCA.** There is a vast amount of environmental data already collected and management systems already in use by organisations. Their application in the context of CNCA will need to be further explored. This will be an iterative process, with the task of preparing an account helping to identify data needs, and updated data facilitating revisions of an account.
- 4. Support the improvement of the framework.** Methodological aspects of the framework and its application to address the needs of different businesses will benefit from further testing. This will make CNCA relevant to more organisations and improve general guidance that can be provided to the future users.
- 5. Consider extending the framework to include supply chain impacts.** CNCA is complementary to tools currently used by organisations to assess supply chain impacts. There may be opportunities to explore how to integrate these analyses to better understand an organisation’s overall impact on natural capital.