NCA VES –SCOPING WORKSHOP ON BUSINESS ACCOUNTING

Workshop report
DRAFT

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This work was undertaken as part of the project advancing the SEEA Experimental Ecosystem Accounting. This note is part of the Project "Natural Capital Accounting and Valuation of Ecosystem Services" (NCA VES) which has been established to advance the knowledge agenda on environmental-economic accounting, particularly ecosystem accounting, by initiating pilot testing of the System of Environmental Economic Accounting (SEEA) Experimental Ecosystem Accounting (EEA) in five strategic partner countries to the European Union (EU), namely Brazil, China, India, Mexico and South Africa. The United Nations Statistics Division (UNSD), the United Nations Environment Programme (UN Environment) and the Secretariat of the Convention on Biological Diversity are the implementing agencies of the project "Natural Capital Accounting and Valuation of Ecosystem Services. This project is funded by the European Union.

United Nations

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1 INTRODUCTION

The project **"Natural Capital Accounting and Valuation of Ecosystem Services" (NCAVES)** has been established to advance the knowledge agenda on environmental-economic accounting, particularly ecosystem accounting, by initiating pilot testing of the System of Environmental Economic Accounting (SEEA) Experimental Ecosystem Accounting (EEA) in five strategic partner countries to the European Union (EU), namely Brazil, China, India, Mexico and South Africa. The United Nations Statistics Division (UNSD), the United Nations Environment Programme (UN Environment) and the Secretariat of the Convention on Biological Diversity are the implementing agencies of the project. This project is funded by the European Union.

The main objectives of the NCAVES project include:

a) improving the measurement of ecosystems and their services (both in physical and monetary terms) at the (sub)national level;
b) mainstreaming biodiversity and ecosystems in (sub)national level policy-planning and implementation;
c) contributing to the development of internationally agreed methodology and its use in partner countries.

As part of the objective to mainstream ecosystem accounting and promote its use in partner countries, the project also includes a **workstream on business accounting**. While it's true that businesses and governments often have different aims when it comes to environmental accounting and are attempting to capture different kinds of information, it's clear that the work undertaken by governments can be hugely useful to that of businesses, and vice versa. Therefore, this workstream aims to:

a) contribute to the alignment of natural capital accounting between the public and private sectors;
b) explore how to harness synergies between the public and private sectors in the collection and use of statistics and data for natural capital accounting;
c) provide a technical methodological contribution at the level of methods or of indicators that promotes alignment.

To reach these objectives, there is a need to bring together the public and private sectors to look at the intersection of business accounting and the SEEA, particularly with regards to ecosystems and ecosystem degradation and restoration. One of the main activities of the workstream was the organization of a scoping workshop, which took place on 16 and 17 Oct in New York.

To prepare this workshop two main activities have taken place:

1. a literature review of current practices in business accounting and reporting related to ecosystems and ecosystem degradation and restoration; the findings were reported in a 'background paper' (13 June 2019)
2. interviews with 12 companies to explore their interests and needs in terms of data collection/interpretation and accounting/reporting related to impacts and dependencies on ecosystems; the business consultation paper[1] includes the results of the business consultation and provides first options for aligning national and corporate natural capital accounting; it serves as an important preparatory document for the workshop.

This workshop report provides information on the workshop agenda, the workshop participants and on the main findings. A key outcome is a summary of initial ideas which will form the basis of a roadmap for aligning private and public-sector approaches to natural capital accounting. The roadmap has been further elaborated in a separate document (COMING SOON). The roadmap suggests concrete areas of work that UNSD can facilitate between companies and the statistical community as well as ideas on how to embed this work in the wider agenda on corporate natural capital accounting.

[1] https://seea.un.org/sites/seea.un.org/files/business_consultation_public_version.pdf

2 WORKSHOP CONCEPT

2.1 Background

There is an increasing recognition within the private sector on the importance of including environmental risk assessments (impacts and dependencies) in the business decision-making process. A pre-requisite for doing so effectively and efficiently is the ability to capture environmental impacts and dependencies into business risk management processes and related accounting and company reporting systems. There are a growing number of companies implementing such environmental accounting systems, albeit these come with different names. In parallel with the growing interest, initiatives are emerging that seek to standardize environmental accounting methods for the purpose of enhanced efficiency, robustness and comparability (over time and across locations). Similar interests and developments are occurring within governments attempting to better understand and manage the consolidated environmental impacts or dependencies. Several have started engaging with the private sector to help in delivering policies and programmes that safeguard that value for future developments.

In order for the public and private sectors to join forces in decision making and reporting on the relationships between the economy and environment, effort is needed for both communities to understand the needs and approaches of the other. At the national level, the System of Environmental-Economic Accounting (SEEA) is the international statistical standard that produces internationally comparable statistics and accounts that provide a view of the interrelationships between the economy and environment. At present, there is no equivalent available yet at the business level. Financial accounting is standardized through the International Financial Reporting Standards (IFRS), but there is little consideration of environmental issues. There nevertheless exist many initiatives for business accounting and reporting on the environment, although a globally accepted standard is lacking. Steps towards aligning public and private sector approaches are being made, but this alignment is still in a stage of infancy.

To contribute to advancing these issues, the United Nations Statistics Division (UNSD) organized a technical workshop to better understand the similarities and differences of the public and private sectors in terms of natural capital accounting approaches and data requirements.

2.2 Objectives of the workshop

The workshop served as a first opportunity to communicate between the statistical community and the business community with the aim to identify synergies and differences in terms of natural capital accounting approaches and related data requirements. In particular, the workshop focused on informing each other, exploring synergies and defining the way ahead:

- Inform:
    - the statistical community about the current state of play in terms of corporate NCA and reporting and about the obstacles businesses are facing, in particular with regard to data collection
    - the business community about the SEEA Experimental Ecosystem Accounting (SEEA EEA) framework, its basic concepts and approaches, type of data that are collected and the revision process
- Explore:
    - to what extent the SEEA EEA framework in its current form is useful for natural capital assessment and natural capital accounting by businesses, both in terms of methodological approach and data collection
    - the opportunities for adapting the SEEA EEA framework to make it more tailored to the business needs
    - the extent to which national statistical offices (NSOs) can benefit from data collection by businesses.
- Define the way forward:
    - In terms of future strategy and steps to be taken.

2.3 Workshop program

The workshop aimed to bring together a number of key stakeholders and experts from the business, statistical, and accounting and reporting communities. The envisaged number of participants was +/- 25. The list of participants can be found in Annex 1.

The 2-day program (see below) was composed of three main blocks:

- Overview of the current state of play (SEEA EEA framework, business community initiatives) as well as the perspectives of the private sector, the public sector and the accountants
- Case study centered discussions: break out group discussions on four case studies. Case studies were concrete NCA approaches applied by the private sector, but each from a different perspective (e.g. water, biodiversity). The discussions aimed to explore how these NCA approaches align with the SEEA EEA approach and how data collected by NSOs could support application of these NCA approaches.
- Structured discussion on key takeaways for each community (statisticians, businesses, financials and accountants) and preparation of an initial roadmap.

DAY 1		
9:00 – 9:15	**Introduction** (UNSD) **Welcome, objectives, expected outcomes**	
9:15 – 9:40	**Participants introduce themselves**	
9:40 – 10:10	**The SEEA EEA framework** (Bram Edens and Jessica Ying Chan, UNSD)	
10:10 – 10:35	**State of play of corporate NCA and reporting** (Johan Lammerant, UNSD consultant)	
10:35 – 10:55	**Coffee break**	
10:55 – 11:20	**The business perspective** **Clarifying business challenges and needs in terms of NCA** • Thomas Polzin, DOW • François Xavier Morvan, KERING • Liz Hunt, SYNGENTA • Ionut Pester, BASF and Value Balancing Alliance	
11:20 – 11:45	**Environmental accounting – A critical building block of the New European Green Deal?** (Thomas Verheye, European Commission)	
11:45 – 12:30	**The perspective of the accounting and reporting community** • Tatiana Krylova, UNCTAD • Alyson Genovese, GRI	
12:30 – 13:45	**Lunch**	
13:45 – 14:40	**Introduction to break-out sessions on case studies** • Application of the SEEA EEA Framework to Forico, a forestry company (Johan Lammerant – with thanks to Simon Cook (Forico) and Carl Obst (IDEEA)) • CASE 1: Application of an NCA approach on transport infrastructure projects (Ian Dickie, eftec) • CASE 2: Enhancing business value from ecosystem services (Thomas Polzin, DOW; Jennifer Molnar, The Nature Conservancy)	
14:40 – 15:25	**Group 1A discusses CASE 1**	**Group 2A discusses CASE 2**
15:25 – 16:10	**Group 2A discusses CASE 1**	**Group 1A discusses CASE 2**
16:10 – 16:30	**Coffee break**	
16:30 – 17:00	**Plenary feedback of outcomes + discussion**	

17:00 – 17:30	**Findings of the business consultation** (Johan Lammerant)
17:30 – 17:35	**Closing of Day 1**

DAY 2		
9:00 – 9:40	**Introduction to break-out sessions on case studies** • CASE 3: Environmental Profit and Loss (François Xavier Morvan, KERING) • CASE 4: The Biological Diversity Protocol (Joel Houdet, BDP Consultant)	
9:40 – 10:25	**Group 1B discusses CASE 3**	**Group 2B discusses CASE 4**
10:25 – 11:10	**Group 2B discusses CASE 3**	**Group 1B discusses CASE 4**
11:10 – 11:40	**Coffee break**	
11:40 - 12:10	**Plenary feedback of outcomes + discussion**	
12:10 – 12:45	**Setting the scene** • Ian Dickie, representing the Natural Capital Coalition, relevant initiatives by the Natural Capital Coalition (Combining Forces, Natural Capital Visibility in Financial Accounting) • Ilaria di Matteo, UNSD, The UN Committee of Experts on Business and Trade Statistics • Gail Glazerman, SASB	
12:45 – 14:00	**Lunch**	
14:00 – 15:00	**Key takeaways and opportunities for alignment - structured discussion** • **Reflections from the statistical community** (represented by Brazil, India, Mexico and UK) • **from the business community** • **from the financial, accounting and reporting communities**	
15:00 – 15:45	**Preparing a roadmap for aligning private and public-sector approaches to natural capital accounting – structured discussion**	
15:45 – 16:00	**Closing**	

3 CONSOLIDATED WORKSHOP MINUTES

The below workshop minutes provide the key messages of the presentations and main findings and conclusions of the discussions for the three main blocks of the programme:

- Overview of the current state of play
- Case study discussions
- Key takeaways for each community

All presentations can be found on https://seea.un.org/events/scoping-workshop-seea-and-business-accounting. The presentations are briefly summarized in these minutes.

The views of individual participants have been anonymized and/or synthesized into overall conclusions, where relevant clearly distinguishing the views of different stakeholder groups (e.g. specific views of statistical community, or the business community).

3.1 Overview of current state of play

3.1.1 The SEEA EEA Framework (*Bram Edens* and *Jessica Ying Chan*, UNSD)

As traditional accounts have important limitations (e.g. national accounts do not cost depletion or degradation nor capture all economic contributions of nature such as regulating services), decision makers don't have the type of key information which is necessary to effectively pursue and track sustainable development. Therefore, the System of Environmental-Economic Accounting (SEEA) was developed as the measurement framework for natural capital accounting at the national level. The SEEA is the international statistical standard that produces internationally comparable statistics and accounts that provide a view of the interrelationships between the economy and environment. The SEEA Central Framework covers individual environmental assets such as timber and water resources. A novel development is the SEEA EEA which takes a spatial explicit approach in deriving accounts for ecosystems and the services they provide from underlying spatial information (maps). Over 90 countries have compiled the SEEA Central Framework and over 40 countries have compiled (or are in the process of compiling) SEEA EEA accounts. The adoption of SEEA EEA as an international standard is foreseen in 2021.

Such an accounting framework for the environment has several benefits:

- It presents environmental and economic information together in a consistent way
- It allows for environmental data to be integrated with the existing System of National Accounts measures
- It provides international comparability, broad credibility and replicability
- SEEA EEA is spatially explicit and aims to transform data into information; 'integrated narratives' are applied to provide contextual information.

The SEEA EEA conceptual framework is visualized in Figure 3-1. There are five core ecosystem accounts:

1	Ecosystem extent account	physical terms
2	Ecosystem condition account	physical terms
3	Ecosystem services supply and use account	physical terms
4	Ecosystem services supply and use account	monetary terms
5	Ecosystem monetary asset account	monetary terms

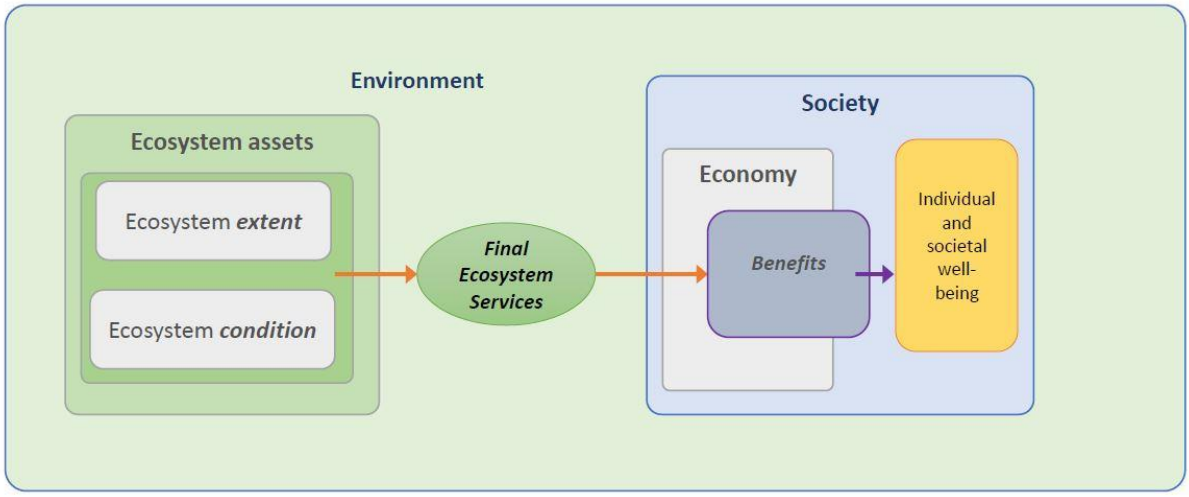
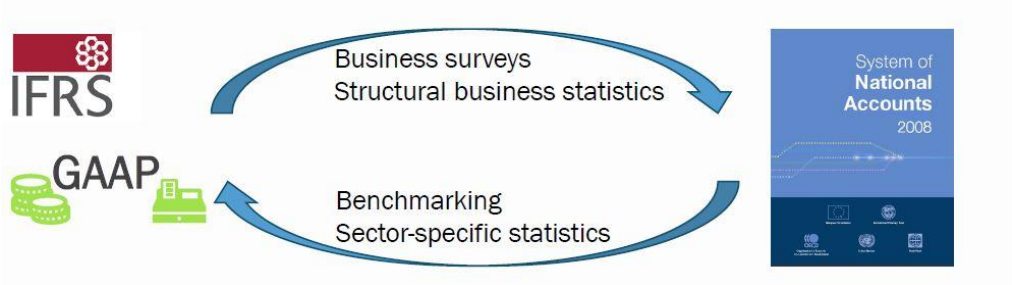


Figure 3-1: SEEA EEA Conceptual Framework

The presentation provided a number of initial insights on how to link public and private natural capital information. Alignment is possible, as evidenced in the field of financial capital which is highly harmonized. The System of National Accounts (SNA) which is the internationally agreed standard set of recommendations on how to compile measures of economic activity, describes a coherent, consistent and integrated set of macroeconomic accounts. The building blocks of macroeconomic accounts are business-level data like annual financial reports which are collected through business surveys by statistical offices. Annual financial reports (i.e. business accounts) are in line with the International Financial Reporting Standards (IFRS) or 'generally agreed accounting principles' (GAAP)[2] (see **Error! Reference source not found.Error! Reference source not found.**). Thus, macrolevel accounts are dependent on business accounts. At the same time, businesses depend on national macroeconomic accounts for important information for benchmarking purposes and obtaining sector-specific statistics.

A similar flow of information in the field of natural capital does not exist at this moment. Although the private sector, being one of the main users of natural capital, is increasingly taking efforts to measure and value their impacts and dependencies on natural capital – albeit on a smaller scale - there is no consistency in natural capital accounting and reporting approaches by the private sector. At present, there is no international natural capital reporting standard available. The need for alignment, the opportunities for alignment as well as the related challenges are elaborated in more detail in sections the roadmap document (COMING SOON).



[2] There are a number of differences between IFRS and GAAP. A detailed overview of these differences exceeds the scope of this Roadmap but can be found in https://www.investopedia.com/ask/answers/011315/what-difference-between-gaap-and-ifrs.asp . In short:

- GAAP is a common set of accepted accounting principles, standards, and procedures that companies and their accountants must follow when they compile their financial statements.
- IFRS is a set of international accounting standards, which state how particular types of transactions and other events should be reported in financial statements.
- Some accountants consider methodology to be the primary difference between the two systems; GAAP is rules-based and IFRS is principles-based.

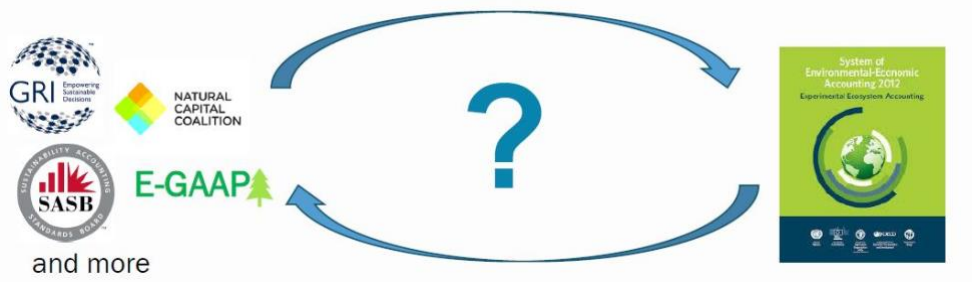


Figure 3-2: Information flows between private sector and NSOs

3.1.2 State of play of corporate NCA and reporting (*Johan Lammerant*, UNSD consultant)

Recent research by UNSD under the business workstream of the NCAVES project provides a good insight in the current state of play in the field of business NCA and reporting. The focus of the research was on how businesses cover **ecosystem degradation and restoration** in NCA and reporting. This refers to changes in the ecosystem assets, such as improvements in condition ('*restoration*') or reductions in stock due to extraction, '*degradation*' or natural loss. The focus on degradation and restoration assumes that we focus on the state of ecosystems where businesses have impacts or dependencies on. As a consequence, the research has focused in particular on:

- water and biodiversity including ecosystem services
- business risks and opportunities of respectively non-action and action by businesses.
- this also includes climate change risks related to degradation of ecosystems as well as opportunities related to ecosystem restoration.

Water and biodiversity are typical landscape scale elements that often go beyond the direct land footprint of companies and therefore are interesting to make the bridge to (sub)national level information (e.g. river basins, ecosystems). The same applies to climate change adaptation.

The research distinguished the following categories and examples of business NCA and reporting approaches and frameworks (non-exhaustive overview of examples):

- Voluntary framework for natural capital assessment: Natural Capital Protocol
- Voluntary target-based approaches for natural capital accounting and reporting: Planetary Boundaries and SDGs
- Voluntary standards on natural capital reporting: GRI, CDP and IIRC
- Voluntary standards on monetization of natural capital impacts and dependencies: ISO 14007 and ISO 14008
- Voluntary accounting and reporting approaches based on integrated reporting thinking: E P&L
- Voluntary thematic accounting approaches: water assessment, biodiversity assessment
- Regulatory frameworks for non-financial reporting: the EU Non-Financial Reporting Directive

Global trends in corporate non-financial reporting are the following:

- increased demand from governments, investors and wider society (e.g. NGOs) to disclose information about business non-financial performance, as part of corporate CSR reporting
- voluntary guidelines are rapidly transitioning into mandatory reporting requirements in many parts of the world
- reporting integration is the new normal and "non-financial" is the new financial. Environmental and social issues such as climate change, water scarcity and human rights will increasingly be seen as financial rather than non-financial issues. Transparency about the financial risks and opportunities and the likely effects on the business's value creation will be key
- the future of corporate responsibility reporting is all about communicating impact, not statistics. Context is important. Financial stakeholders need to know what impacts a business is having on society and the environment, and how this could impact the business performance in the future.
- growing tendency towards harmonization and standardization of non-financial accounting and reporting approaches.

Analysis of disclosed information on natural capital reveals many gaps. For water for instance, there are many issues such as lack of consistent assessment approaches, lack of site-specific information, lack of clear targets, lack of information on supply chain.

3.1.3 Findings of the business consultation (*Johan Lammerant*, UNSD Consultant)

The business consultation – in-depth interviews with 12 multinational companies as part of the UNSD research under the business workstream of the NCAVES project – aimed:

- to get a clear understanding of the **company's current approach** in terms of natural capital focus areas and natural capital assessment, accounting and disclosure (to have an insight in the broader picture)
- to explore the **company's natural capital data needs and data sources**, as well as their views on strengths and weaknesses of these data sources (e.g. completeness, granularity level) and on lacking data;
- to explore the **company's opinion on the SEEA EEA Framework** as 1°/ a promising approach for collecting natural capital data at national or subnational level that could potentially be used by businesses, and 2°/ an ecosystem accounting approach that could be useful for corporate NCA.

Key findings related to data collection and interpretation were the following:

- overall, data collection is considered as an **expensive activity** for companies and it's often hard for sustainability professionals within the industry to justify return of investment.
- therefore, **data sharing and open source databases** are very **important** for companies.
- it is very important for businesses that data are **scientifically robust.** Many companies are much interested in Science Based Targets.
- the **challenges** faced in terms of data collection and interpretation can vary much according to:
    - > type of data in DPSIR framework: pressures, state, impacts and dependencies
    - > organizational focus area: product level, site level, project level, supply chain level (upstream part of value chain), corporate level, sector/portfolio level
    - > thematic area: water, biodiversity, climate hazards
    - > data collection approach e.g. Environmental impact assessment (EIA), primary data, secondary data, modeling, …
- **data on pressures** ('impact drivers' according to the Natural Capital Protocol) are relatively easy to collect by the company, although there are differences:
    - > at site level, all companies are measuring wastewater emissions (often differentiated over different pollutants) and water use; for biodiversity, companies are mainly measuring habitat destruction by direct land intake at project level;
    - > the picture is very different for companies with a large footprint in the supply chain and gets really complicated when thousands of smallholder suppliers are involved (e.g. agrobusiness companies); primary data collection from suppliers often results in low quality data (low confidence level). In such cases, companies often rely on secondary data such as life cycle assessment (LCA) databases or even input-output (IO) modelling but issues here are regional differences which are not sufficiently captured in LCA or too generic data;
    - > land use and/or land transformation (e.g. 'deforestation') is often applied as a proxy for biodiversity pressures;
    - > climate hazard data are not consistently collected by all companies, but companies that do collect such data often rely on commercial data sources;
- **data collection on the extent and condition of the ecosystem which is affected by a company's activities**
    - > site level assessments of ecosystem extent and condition are typically applied by mining companies, building and infrastructure companies, forestry companies and companies that apply site level investments which might affect ecosystems;
    - > different approaches are applied such as IUCN's BIRS tool (Biodiversity Indicator and Reporting System) for measuring site level biodiversity performance in quarries, or EIA which is always carried out for large infrastructure projects and which provides

detailed information on water, biodiversity, etc.; some companies (e.g. forestry) continuously measure extent and condition parameters of forested land; other companies apply a particular ecosystem services lens for identifying nature-based solutions opportunities at site level (see DOW case study under section 3.2.3);

- **data collection on the extent and condition of the ecosystem which is affected by a company's activities**
  - > assessing ecosystem extent and condition of ecosystems outside the site's fences requires an interpretation step (which is the area of influence (affected area) and which are the affected ecosystems?), so, mostly this is completely out of scope;
  - > tools are used, such as WRI's Aqueduct tool which provides insights in e.g. water scarcity areas, or IBAT for biodiversity (insight in the location of protected areas); however, IBAT doesn't solve the question if these protected areas are really impacted by a company's activities;
  - > data on ecosystem services are collected by 50% of the interviewed companies but this doesn't reflect the mainstream situation;
- **Data on the impacts and dependencies requires even more interpretation**
  - > **water use** is a typical dependency which is measured by all companies, at least at site level; but information on only extracted volumes of water is not sufficient to assess the impact on ecosystems or other stakeholders in the watershed, and to assess water scarcity risk for the company!
  - > **water scarcity** is considered as a material risk by many companies; supporting tools include WRI's Aqueduct, WWF's Water Risk Filter or the Verisk Maplecroft data sources on climate and environmental risks; however, the granularity of these supporting tools and data sources is often not sufficient;
  - > it was generally acknowledged that **assessing biodiversity impacts is challenging;** it requires insights into cause – impact relationships and sensitivities of different species and habitats to certain pressures;
  - > a main challenge is the **lack of data** on the **carrying capacity** of the affected ecosystems; companies aiming for 'zero impact' or 'planetary boundaries' need such information, as this is essential for the assessment.

Key findings related to potential synergies with SEEA are the following:

- companies are not aware of the existence of the SEEA-EEA framework; companies are not using natural capital data collected by NSOs;
- all in all, interviewees expressed **interest in increased access to more detailed, comprehensive, spatially referenced and regularly updated ecosystem accounts;**
- an additional **advantage for multinational companies** with sites in many countries, would be that NC data from local NSOs would be more standardized if they all collect and process data in line with the UNSEEA EEA principles or recommendations;
- most companies limit their assessments to impacts on 'stocks'; a minority of companies also includes the flows of ecosystem services in their assessments; a minority of companies applies monetization in the valuation step;
- an often-applied business application is the **identification and assessment of business risks** related to ecosystem degradation e.g. operational risks (e.g. due to decreasing availability of water); in the specific case of water availability, companies declare that the **following type of information would be of most interest** to them:
  - > data on water levels, both actual and future water levels (under several scenarios)
  - > data on pressures from other stakeholders (e.g. who else is extracting ground water in the watershed area?)
  - > data on policy priorities and policy targets (e.g. Science Based Targets)
  - > data on the minimum acceptable water level (threshold values) in order not to disturb other human activities (such as transport on rivers) or not to harm biodiversity values (e.g. wetlands)
- companies having adopted **a 'zero impact' or a 'planetary boundaries' approach** are very much interested in data related to carrying capacity, threshold values, environmental flows, etc.
- companies aiming for **No Net Loss or Net Gain**, will need to define a baseline; ecosystem accounts might provide this information if granularity is sufficiently high;

- companies looking at aligning their water and/or biodiversity targets with **science-based targets** which have been established at a higher level (e.g. extent and condition of specific ecosystem types such as threatened habitats), would benefit from (sub)national ecosystem accounts which include a local translation of these science-based targets for water and biodiversity;
- Companies considering **investment in ecosystem restoration projects**, would benefit from ecosystem accounts including biodiversity accounts for estimating the return on investment when comparing options for ecosystem restoration.

A more extensive reporting can be found in the 'background paper' (13 June 2019) and the business consultation paper.

3.1.4 The business perspective

The **business perspective – 'clarifying business challenges and needs in terms of NCA' –** was introduced by means of four short presentations by *Thomas Polzin* (DOW), *François Xavier Morvan* (KERING), *Liz Hunt* (Syngenta) and *Ionut Pester* (Value Balancing Alliance). As both DOW's and Kering's story are extensively discussed under the case studies (see section 0), only the presentations by Syngenta and the Value Balancing Alliance will be summarized here.

Starting from the observation that a common model for corporate impact management accounting is missing (in terms of scope, data sources, measurement tools, valuation coefficients, disclosure format) and comparability between company performance is completely impossible, in June 2019 the **Value Balancing Alliance** (VBA) was established by BASF. The VBA is a group of companies, supported by many international organisations such as the EC, WBCSD, Capitals Coalition, OECD, etc., aiming to develop a model to empower decision makers to create and protect long term value. Concrete objectives are the development of a common method to assess and monetize total value created (standardization), the design of a disclosure frame similar to financial statements (external disclosure), the piloting of the model for multi-capital decision-making and steering (internal business steering) and making the outcome publicly available for broad uptake via the OECD (scalability).

As part of Syngenta's Good Growth Plan, which consists of six commitments, with two of them related ecosystem health (soil and biodiversity), the company is heavily promoting the concept of multifunctional field margins (MFFM), which are biodiversity rich buffer strips on the edges of farmland. These MFFM provide not only higher biodiversity values but also a whole range of natural capital benefits, ranging from prevention of soil erosion to provision of wild pollinators and natural pest-control species. Research is needed to develop a more sophisticated model for MFFM benefits evaluation. Natural capital data provided by NSOs might offer part of the solution.

This was followed by a discussion. Main findings and conclusions were:

- An observed difference – but at the same time an opportunity for alignment – between NSOs and corporates in terms of disclosure is the fact that NSOs heavily rely on objective thresholds (e.g. exceedance of a norm) while companies rather rely on the concept of materiality ('material risks').
- To move forward, companies need to know 1) how reliable the data is and 2) how specific the data is to serve business needs. The business community can have very specific needs (depending on type of business application and organizational focus area[3]).

[3] It is important to have a good understanding of what these terms mean. They are derived from the Natural Capital Protocol.
A 'business application' is the intended use of the results of a natural capital assessment, to help inform decision making. To make it simple the following example related to groundwater extraction can clarify things: a company can use natural capital data (e.g. available ground water) to compare different investment sites, or a

- In particular, for project or site level assessments there is a concern from the business side that maps developed from SEEA EEA accounts might not have the required granularity. But this needs to be further explored.
- On the other hand, national NC data/information can provide context for companies; although maybe not useful in all cases, this contextual information may be a strong point.
- Monetised outcomes are important for many companies. This is reflected in DOW's Nature Goal, Kering's environmental profit and loss (E P&L) approach, Syngenta's ambition to have monetary values of the natural and social capital benefits of bufferstrips in farmlands ('multifunctional field margins') and the ambition of BASF and the Value Balancing Alliance (VBA) to produce standardized integrated value balance statements across industry. Thus, this is definitely another area for exploring alignment.
- Businesses see a lot of gaps and limitations in terms of natural capital data—availability, frequency, quality – as well as in terms of measurement, valuation, accounting and disclosure approaches. Therefore, there is a growing interest in standardization (e.g. E-GAAP, VBA) and also from this perspective the uniform SEEA EEA approach as applied in almost 100 countries globally is quite attractive.
- NSOs tend to move more in a direction of being stewards of an expanding data ecosystem, coordination of efforts by different stakeholders to collect different types of data, and of standardizing it towards compliance with statistical standards. Thus, the question is: can we add data from businesses? In the traditional area of financial/economic statistics, NSOs are already collecting information from companies. Aggregation of local data to national and global data is an accounting issue and is dependent on how we take data and information and structure it.
- There is a need to clarify who uses what kind of information. This is also a challenge and responsibility for the statistical community.
- Overall, there is a need to find commonalities in data needs and data supply between NSOs and businesses.

3.1.5 Environmental accounting – A critical building block of the New European Green Deal? (*Thomas Verheye*, European Commission)

The presentation started with an overview of the needs and opportunities for strengthening environmental accounting:

- Increasing (interlinked) natural capital risks jeopardize society and economy (see **Figure 3-3**); business and governments are realizing the need to go beyond climate, to look at climate, water, land and biodiversity together
- Increasing corporate environmental risk awareness and management for businesses, which follow a different model from the public sector (cost-benefit)
- At the same time there is a poor understanding of environmental risk by businesses—globally, green finance is only at 1-2%
- Increased demand for Total Environmental Impact Management;
- New (European) Green Deal[4] extends priorities beyond climate and moves sustainable finance center stage

company may want to know if its water extraction has impacts on the local ecosystem which exceed the ecosystem's carrying capacity, or a company may want to know if they will face operational risks if they go on pumping as they do now. These are different business applications which require different sets of natural capital data.

The organizational focus area refers to the different organizational levels a natural capital assessment can focus on e.g. product, project/site, corporate, supply chain, sector. This will highly determine the required granularity of the data.

4 https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

- SDGs and Paris Agreement driven 'sustainable finance' hype contrasts with finance reality (see **Figure 3-4**);
- Natural capital proof infrastructure (financing &) development most urgent
- Lacking methods for measuring and (forward) managing total environmental impact hampering public and private greening efforts.

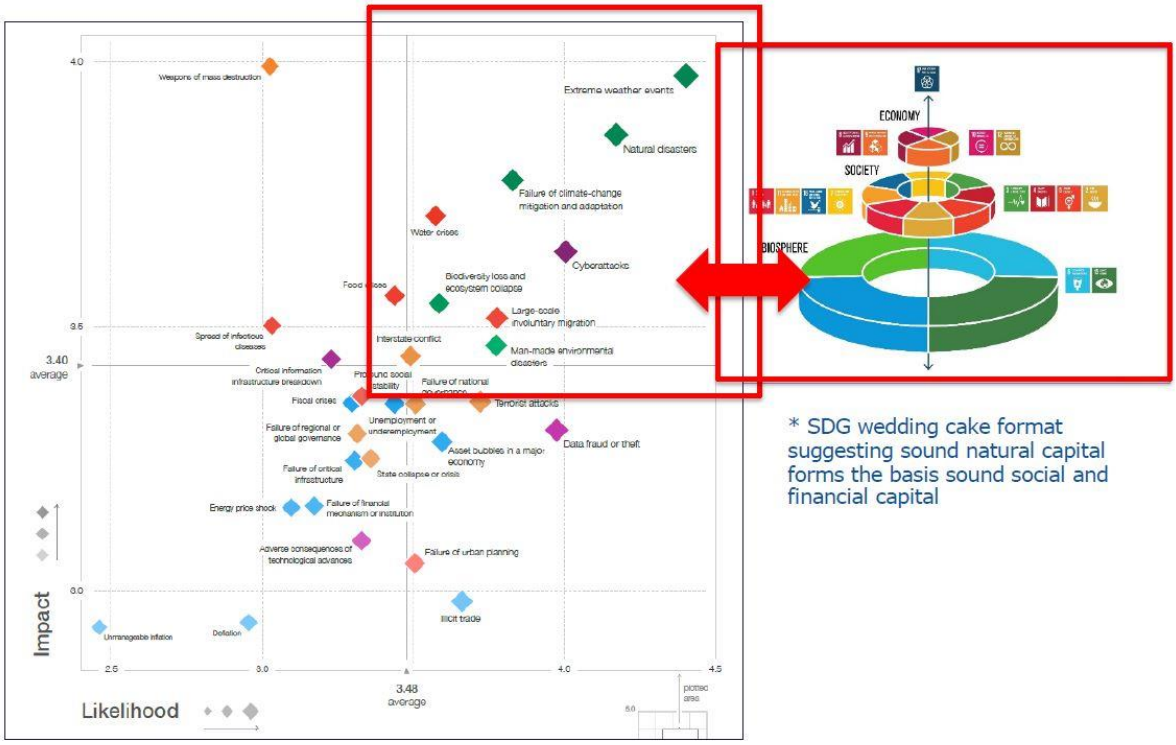


Figure 3-3: Natural capital risks affecting society and economy (Source: Thomas Verheye, UNSD Scoping workshop, 16-17 Oct New York)

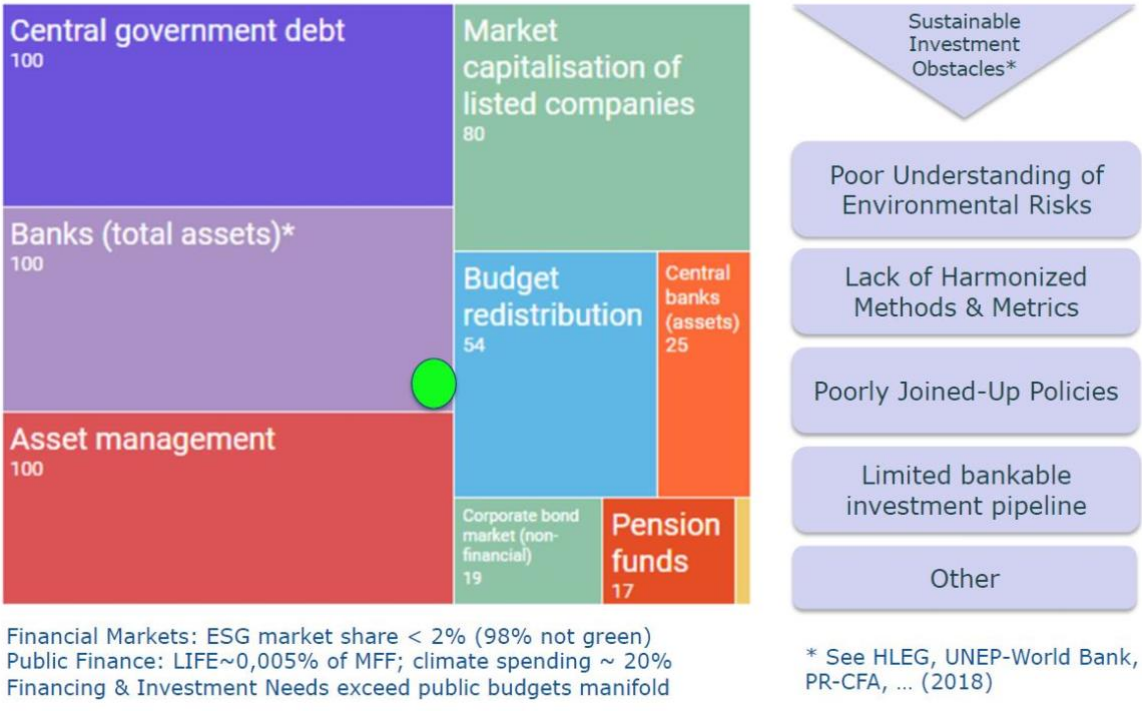


Figure 3-4: Sustainable finance market share very marginal (Source: Thomas Verheyen, UNSD Scoping workshop, 16-17 Oct New York)

The second part of the presentation described the emerging corporate environmental accounting practice, such as:

- Both the corporate and project dimension will be added as parallel environmental accounting workstreams in the EC's environmental accounting programme (see **Figure 3-5**)
- Pioneering E P&L practice moving from niche to growing environmental practice (see also Kering's case study under Section 3.2)
- Growing (corporate) interest in developing harmonized approach (see reference to Value Balancing Alliance under 3.1.4)
- Actions to promote generally accepted environmental accounting standards (EGAAP); the EC is funding a LIFE Preparatory project on E-GAAP (supporting the VBA initiative) and will establish an 'Environmental Accounting Practitioners Platform' (sharing best practice among sectors) and an International Environmental accounting Experts Panel (to follow corporate E-GAAP development).
- Status, similarities & differences with national environmental accounting (SEEA, …)

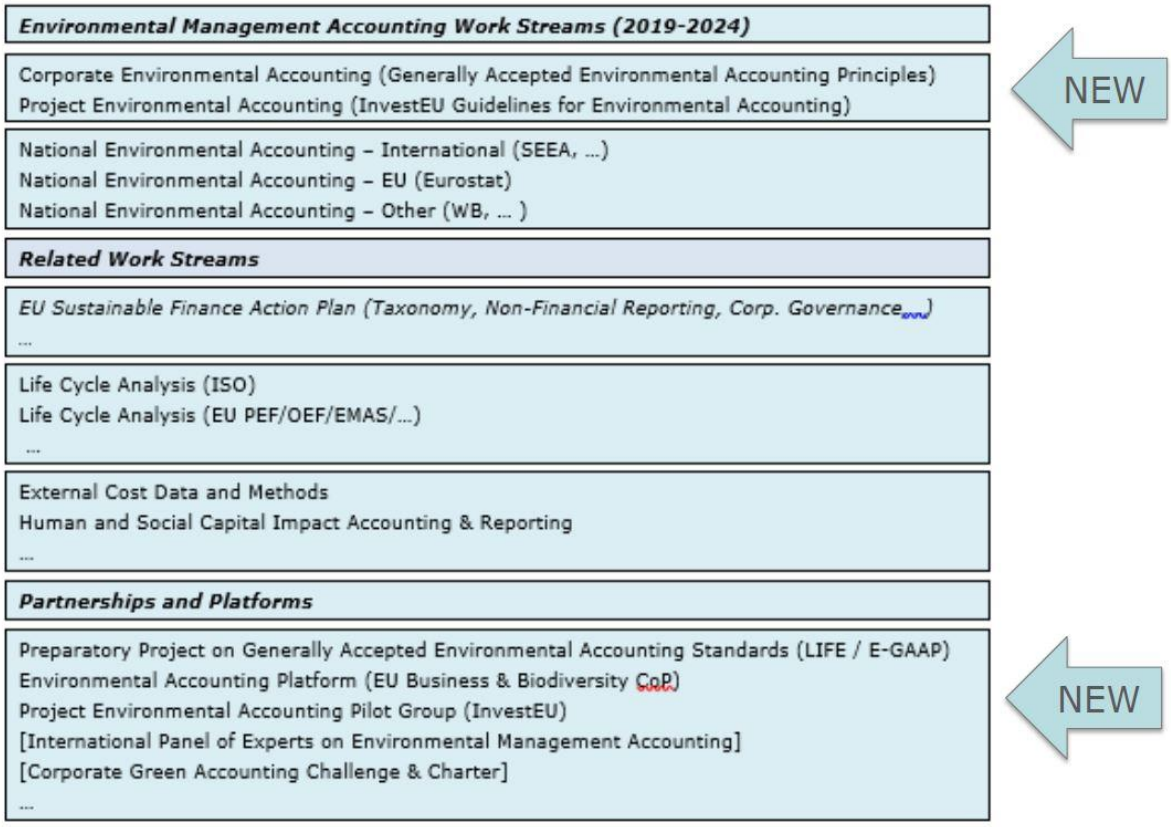


Figure 3-5: Environmental accounting programme of the European Commission (Source: Thomas Verheye, UNSD Scoping workshop, 16-17 Oct New York)

Finally, the presentation concluded with some key reflections, such as:

- Environmental accounting is critical (missing) building block for delivering (any) green deal;
- Combine natural capital & circular economy agenda for improved efficiency;
- Natural capital accounting is critical for future proofing business & society;
- Promote synergies between corporate natural capital accounting solutions ("E-GAAP") and national environmental accounting (SEEA) plans and priorities;
- Prioritize completion of core natural capital accounts (air, water, land, biodiversity) to enable future proofing of businesses & societies.

The presentation was followed by a discussion, which resulted in the following findings:

- Cost benefit drives public sector but businesses do not operate on this logic. Investors will invest in a loss making company as long as the company has a plan while businesses focus more on risks.
- Sustainable finance, one of the priority areas of the New European Green Deal, suffers from poor understanding of environmental risk. Environmental accounting can facilitate this understanding as it allows manageable "language instead of complex language.
- We need 'good enough' methods to measure 'total impact'. Need to look at air (including climate), water, land and biodiversity together (holistic view). As an example, future infrastructure projects in the EU will need to based on sound sustainability proofing indicators.
- Need a dashboard on the public sector side as well—like Kering. Not necessarily regulated but we need to tell a harmonized story.
- Some relevant findings from the emerging Environmental Accounting Practice are:
    - Development of E-GAAP. Not aiming to do IFRS equivalent but balance and income sheet statement that is reaching the investor and board—not separate CSR report. This can support non-financial reporting on a much stronger basis. Should not only affect reporting and disclosure but also decision-making. Something digestible and easy to understand.
    - EC Business and Biodiversity Platform spin-off to focus precisely on accounting topic (whole picture, including biodiversity)
    - Public-private partnerships and platforms
    - Need to better see how accounts apply to four pillars (air, water, land, biodiversity) to help have digestible information on risk—need to make progress within next five years. Hopefully the European Green Deal will give a boost to these efforts.
    - European Court of Auditors findings: SEEA accounts lack purpose—at both public and private sector level we need to have figures that are easy to communicate
    - Accounts needs to be in monetary terms to make things comparable
    - Risk-adjusted NPV analysis based on SEEA EEA accounts could be helpful

3.1.6 Perspective of the accounting and reporting community

The perspective of the accounting and reporting community was presented by **Tatiana Krylova (**UNCTAD) who talked about **Core SDG indicators on enterprise reporting: measuring private sector's contribution to the SDG agenda**, and **Alyson Genovese (**GRI) talking about the Global Reporting Initiative.

Under SDG 12 'Responsible consumption and production', target 12.6 is relevant in this discussion: "Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle". A guideline on core SDG indicators was developed with the purpose to help governments assess the private sector contribution in the achievement of the SDG. This was done under the auspices of the International Standards of Accounting and Reporting (ISAR) group of the UN Conference on Trade and Development (UNCTAD). Global Core Indicators have been developed for four areas: economic, social, environmental and institutional (governance aspects). One strength of the indicators is that they are simple and implementable. Member States are currently piloting the indicators, and some countries will report at this year's ISAR meeting.

The Global Reporting Initiative (GRI) provides the global standard for companies to disclose their global impact on environment and society. Increasingly the pressure to report comes from the regulatory space (stock exchanges, governments, etc). GRI periodically updates their standards. For instance, the GRI for water has been updated in 2018. Metrics, concepts, and data collection methodology from the CEO Water Mandate Corporate Water Disclosure Guidelines and CDP Water Questionnaire 2018 have been included. The new version of GRI for Water and Effluents includes three topic-specific disclosures (Water withdrawal, Water discharge and Water consumption) and two 'management approach' disclosures ('Interactions with water as a shared resource' and 'Management of water discharge-related

impacts'). These management approach disclosures were created because businesses and stakeholders are not only interested in pure data but also in the risks related to water use and wastewater discharge and how these are managed. The amount of water withdrawn and consumed by an organization and the quality of its discharges can impact the functioning of ecosystems, which can have wider social and economic consequences for local communities. This risk-based reporting is in line with the global increased interest of regulators, investors and other stakeholders in natural capital related risks., and therefore is expected to be included in other updates of GRI standards in the future. .

Currently, GRI is developing biodiversity standard, GI 304. This is being supported by several institutions with a specific ask to create the standard for corporate transparency on biodiversity, including the European Commission, European Environment Agency, UNEP, IUCN, WWF, the International Council on Mining and Metals (ICMM) and the Dutch Central Bank. It is anticipated that this work will begin in early 2020, with a standard resulting in 2021 (pending budget availability).

3.1.7 The Natural Capital Coalition (*Ian Dickie*, advisory board NCC)

The Natural Capital Coalition (NCC) – now the Capitals Coalition – was established by the natural capital community as a collaborative space to harmonize approaches and grow a supportive enabling environment for natural capital thinking. Its purpose is to mainstream the inclusion of natural capital in decision making, harmonizing approaches and getting them to scale, quickly. The Coalition represents almost 300 organizations.

In 2016 the NCC published the **Natural Capital Protocol**, which is a standardized framework for business to identify, measure and value its direct and indirect impacts and dependencies on natural capital. One of their projects is the **Combining Forces initiative**, aiming to bring together national, local and business approaches to natural capital. The recommended priority areas of Combing Forces are visualized in Figure 3-6.

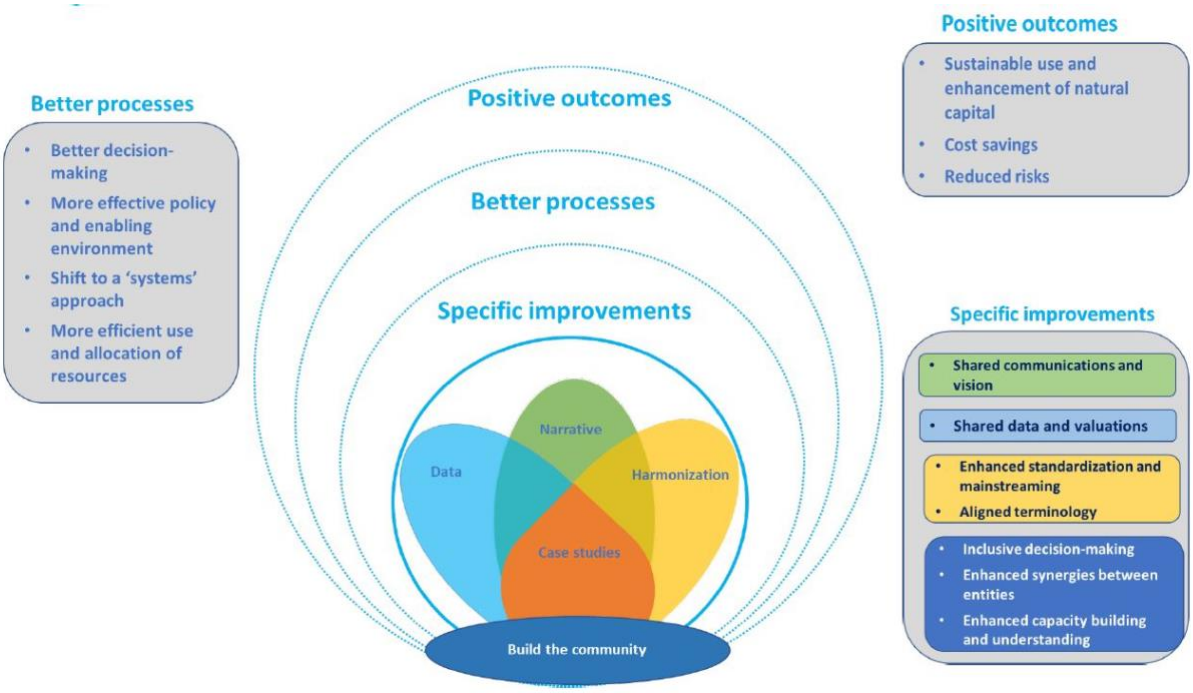


Figure 3-6: Benefits from the Combining Forces initiative

Another very relevant development is the ongoing project '**The visibility of natural capital in financial accounting**'. It aims to investigate approaches to integrate natural capital data into financial accounts. Outputs will be demonstrated with case studies showing adjusted balance sheets. Four methods are

under investigation (Figure 3-7). A draft report would be available by end of October 2019. The project intends to inform policy frameworks (e.g. EC) and the research agenda on natural capital.

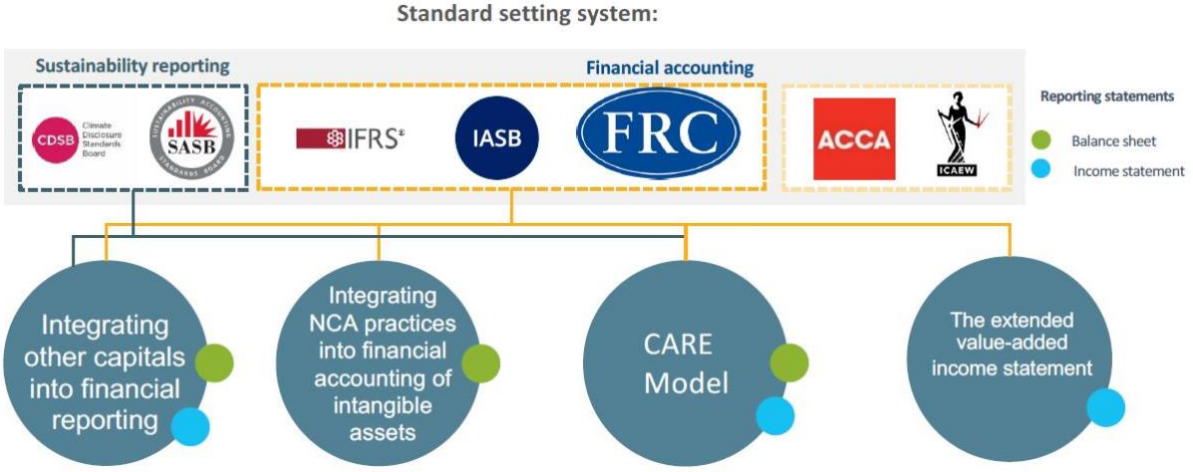


Figure 3-7: Methods considered in the 'visibility of natural capital in financial accounting' project of the Natural Capital Coalition

3.1.8 Sustainability Accounting Standards Board (*Gail Glazermann*, SASB)

SASB, the Sustainability Accounting Standards Board, is an independent, non-profit standards-setting organization for ESG information. SASB connects businesses and investors on the financial impacts of sustainability. SASB has developed 77 industry-specific disclosure standards, used by companies and investors globally. They've evaluated the financial materiality of sustainability issues in each industry. SASB identifies disclosure topics with evidence of impact on financial condition, operating performance or risk. Results are presented by means of materiality maps (see Figure 3-8). SASB standards also offer companies and investors a tool for decision-making on the SDGs. For companies, financially relevant SDG targets by industry are identified, activities to address the SDGs that are aligned with industry-specific drivers of value are prioritized and decision-useful performance information on company-specific activities related to key SDGs is gathered.

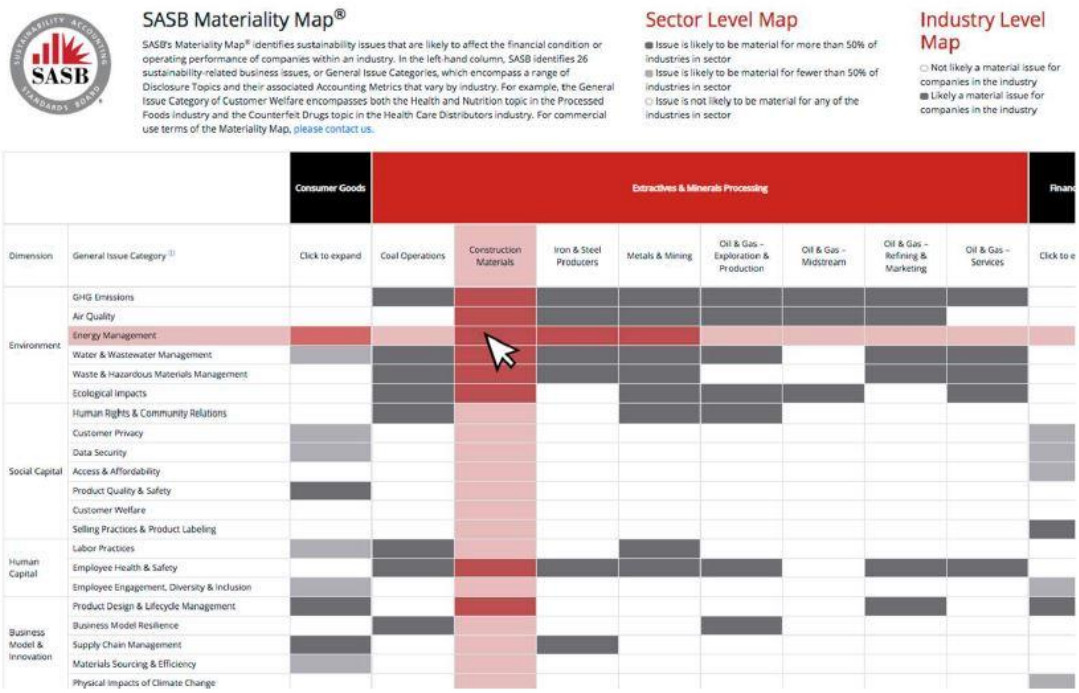


Figure 3-8: Example of a SASB materiality map

This presentation also offered useful insights in the growing importance of ESG reporting and the related challenges. Based on extensive analysis by SASB of large numbers of sustainability reports over the recent decades, a number of key observations were made:

- There is increased awareness that ESG factors (such as natural capital condition) can influence long-term risk and returns; the changing nature of valuations requires broader information set to understand risk;
- While companies are quite confident in the quality of reported data, investors are dissatisfied with the quality of ESG disclosure; one of the reasons is that most ESG reporting provides information on policies and targets, not on performance; another reason is the lack of comparability: even when data is numeric, it isn't always comparable; this is due to unclarity in terms of metrics, methodologies and different units of measurement.

3.1.9 UN Committee of Experts on Business and Trade Statistics (Ilaria Di Matteo, Business Statistics, UNSD)

The UNCEBTS was created in 2018 by the UN Statistical Commission to coordinate and guide the development of business and trade statistics. They developed a 2-year work plan to improve and strengthen business and related trade statistics. Five task teams have been established, one of them focusing on sustainability. The task team will develop guidance for business indicators on wellbeing and sustainability, including social entrepreneurship, "decent work", environmental impact, and SDGs, and conduct a joint global assessment on the status of implementation of business statistics on well-being and sustainability. The focus is on corporate sustainability, quality of jobs and environmental impact.

3.2 Case study discussions

As an intro to the in-depth discussions on 4 concrete case studies, the Forico case study was presented, the first company to directly apply the SEEA EEA framework[5].
Each of the four case studies was first presented and then thoroughly discussed in two subsequent breakout groups. Feedback was provided in plenary.

3.2.1 Forico - Using SEEA-EEA for natural capital accounting in the forestry sector

Forico is an Australian forestry company. It is the largest private land owner of Tasmania, managing +/- 175.000 ha on behalf of institutional investors, of which +/- 95.000 ha is covered with plantation species for commercial purposes (chips for paper industry, timber) and +/- 77.000 ha is covered with natural native forest and which is managed for conservation purposes (see Figure 3-9). Natural forest occurs in a very dispersed way within the whole property. Forico's forests are FSC, PEFC and Responsible Wood certified. There is a strong demand for certified forestry products from customers, while also investors are increasingly requesting forest companies to be certified according to sustainable forestry management schemes. Forico's situation is quite unique given its large area of conservation forest, but there is a substantial cost to manage this forest (+/- 500.000 $ / year).

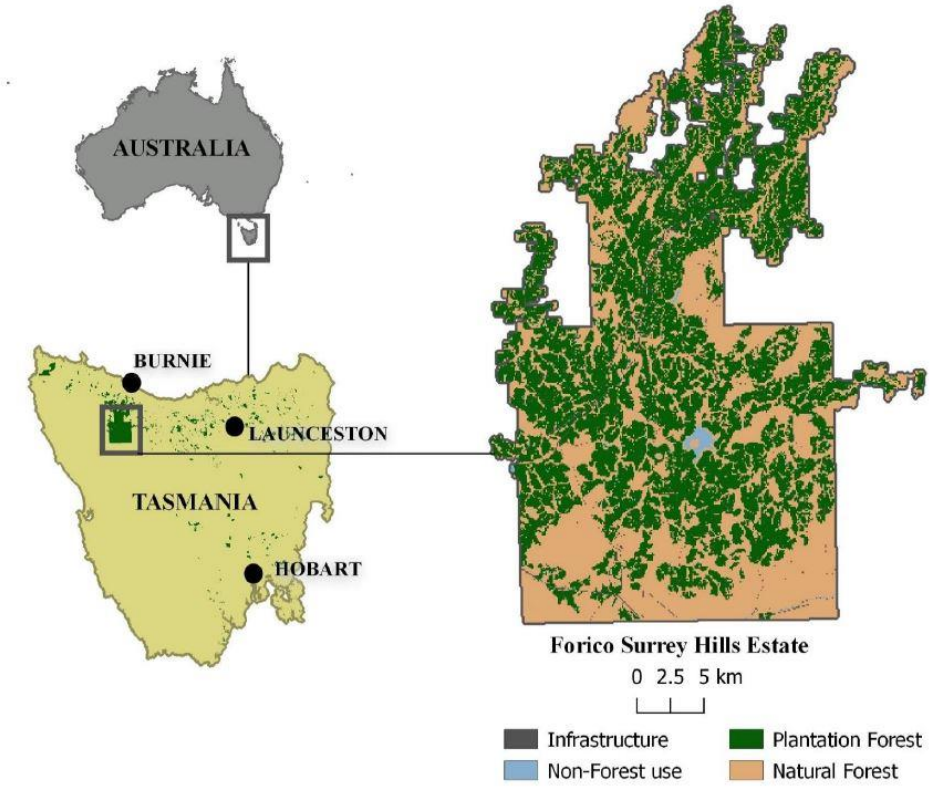


Figure 3-9: the Forico context

Therefore, in line with Forico's vision of 'Making every hectare count', NCA and in particular the SEEA EEA is now being explored as a technique to value ecosystem benefits of the forest and to communicate with stakeholders. As Forico will ultimately look to monetise their accounts, the alignment between the SEEA EEA and approved accounting / financial standards will be increasingly important, as the

[5] Presentation prepared by Simon Cook, Forico, and Carl Obst, IDEEA – as they were not present in the workshop, Johan Lammerant presented the case.

accounts will need to be audited and investors will want to complete due diligence on the identified ecosystem services i.e. make the framework credible and respected.

Forico sees concrete opportunities in applying the SEEA EEA framework and principles to its own operations and promotes the uptake of such approaches by other companies. From a technical point of view, Forico applies a very comprehensive GIS, works with ecosystem assets (they call them Forest Management Zones, or FMZ), attributes condition values to these FMZs and will ultimately attempt to monetize the flow of ecosystem services. These cover carbon sequestration, water provisioning, timber provisioning, habitat provisioning and cultural ecosystem services. The operational integration in the company's balance sheet is presented in Figure 3-10.

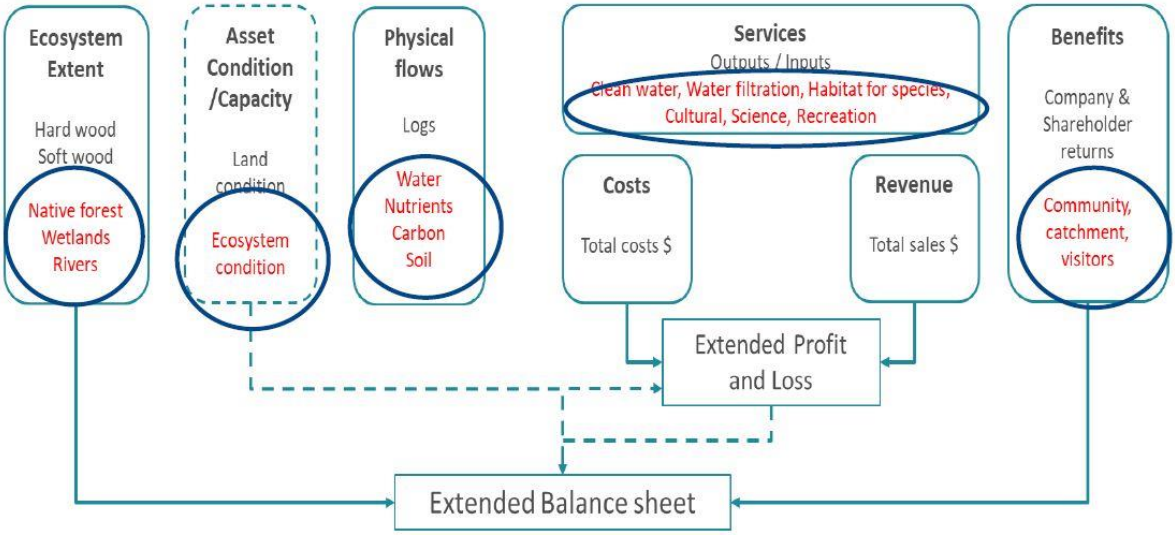


Figure 3-10: Integration of ecosystem accounts in Forico's balance sheet

The business case for Forico is that by applying an NCA approach, the company gets more insights in potential additional revenue opportunities (e.g. voluntary carbon markets) and will become more attractive for investors. The SEEA EEA provides a number of advantages compared to other corporate NCA approaches, such as:

- Accounting principles of SEEA EEA and SEEA & SNA more generally are relevant recording approaches for integrating environmental/ecological data at corporate level
- Supports targeted operational and investment choices in landscape management (what, where and when)
- Supports detailed understanding of sustainability and resilience (explicit linking of stocks and flows); a focus on natural capital stocks and dependencies rather than societal benefits/impacts is needed to make the connection to "what's in it for me"
- Stakeholder engagement recognising spatial context and multiple values, i.e. not only value for the company but also wider societal values
- Integrated information system (multiple themes for a single, context specific narrative); in this case information on stocks (extent, condition) is linked to information on flows (several ecosystem services) and changes in stocks directly reflect in changes of ecosystem services; the context specific narrative is Forico's vision 'Making every hectare count'.
- Accounting / transaction basis allows full integration of ecological data with financial and accounting systems (transactions, journals and ledgers); however, this needs engagement with corporate accountants (CFO etc) to talk through details of SEEA EEA approach
- Auditable, comparable, time series
-
- Scenario and risk analysis (e.g. impacts of climate change).

3.2.2 Case Study 1: Corporate NCA in Transport Infrastructure (*Ian Dickie*, eftec)

This CNCA (corporate natural capital accounting) method has been developed for the UK Natural Capital Committee. The method has been applied so far to 35 organisations (public and private) in UK and Ireland. The general approach is well aligned with SEEA EEA, but there are some differences: it includes abiotic flows; it uses a welfare-based valuation approach; and maintenance costs are estimated and used to assess a so-called liability as an additional step. And finally, CNCA presents the outcomes in a balance sheet (see Figure 3-11). The method is promoted by the construction company Balfour Beatty (UK) as a means to achieving No Net Loss in biodiversity (see Figure 3-12). The balance sheet presents a non-financial biodiversity metric score alongside the monetary values for the benefits and maintenance costs.

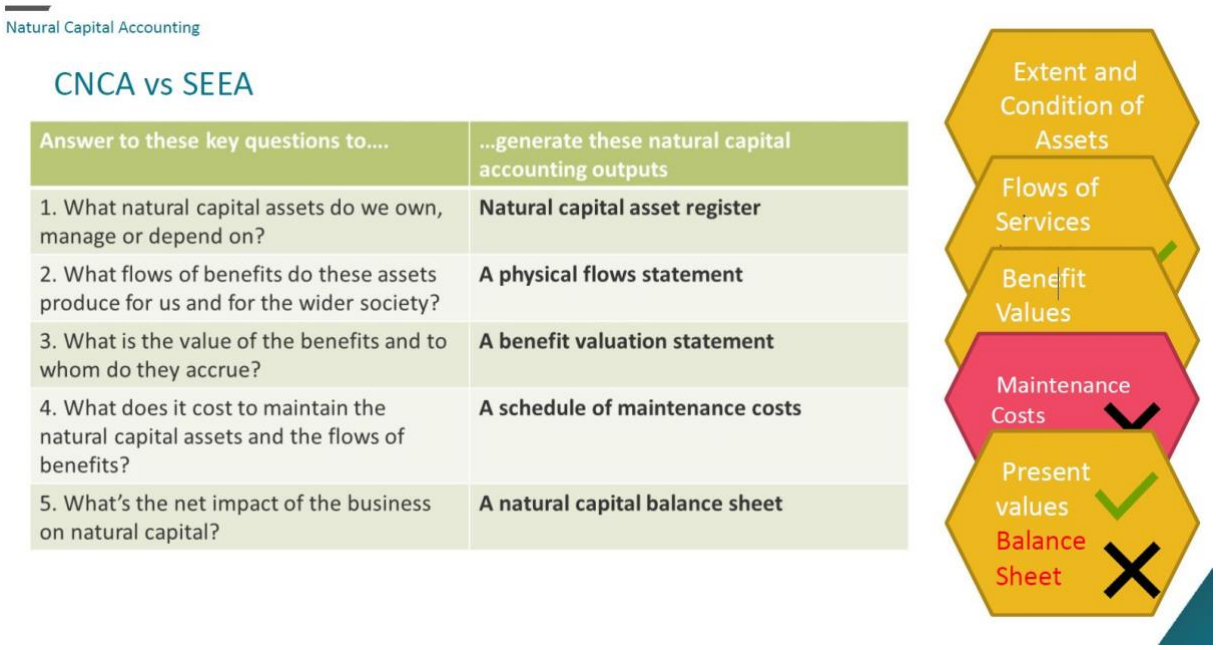


Figure 3-11: Differences between CNCA and SEEA EEA

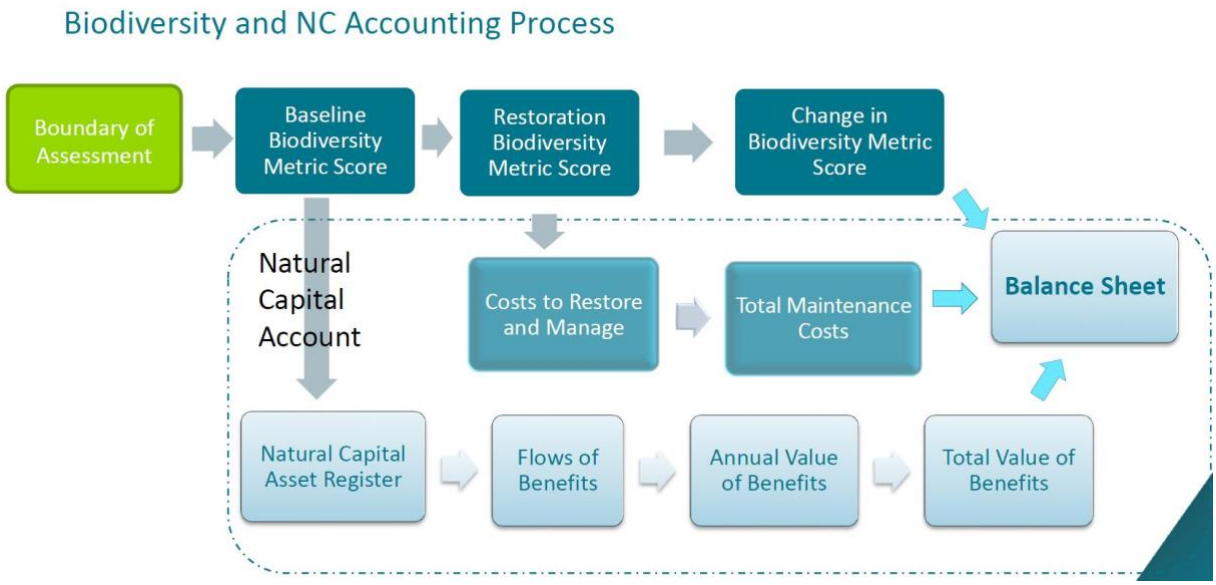


Figure 3-12: Linking biodiversity No Net Loss with the CNCA approach

The subsequent discussion confirmed that, despite the abovementioned differences, the approach is generally aligned with SEEA EEA:

- CNCA also relies on a natural capital or 'ecosystems' asset register (although a different list of assets than SEEA ecosystem typologies is applied) including extent and condition accounts
- CNCA also uses the concept of 'ecosystem services supply and use account' (both in physical as in monetary terms) and 'ecosystem monetary asset account'; it also applies a one year accounting period.

The key appeal of the balance sheet approach including the definition of a liability is: are you spending enough money in order to maintain the set of services? Another strength of the approach is the split presentation of monetary results (ecosystem services values, maintenance costs, …) and intrinsic biodiversity values. This is only feasible if a standardized biodiversity metric is in place which allows to measure gains and losses of biodiversity. An increasing number of countries in Europe have national biodiversity metrics (e.g. UK, Netherlands, Finland, Germany). The concept is quite strong and this can create consistency.

The method requires a strong communication approach with stakeholders. The communication of benefits is key. A key remark related to the fact that this approach seems to be a combination of a balance sheet approach and a Profit & Loss approach, which is confusing (profits and losses are usually not included in a balance sheet). The approach also does not have same double entry bookkeeping (DEBK) approach as financial accounting. This was acknowledged as an element for future clarification and improvement.

Remaining challenges or points to take into account for improving the approach are the following:

- A question was raised about how to assess changes over time. There must be large uncertainties, if you assume bigger trees will grow, you get bigger values.
- There was a concern related to quality of data. While the approach uses the same data as the UK NSO, there is a need to implement quality assurance processes, such as the one the UK NSO applies. They have used a red/amber/green system to flag data quality.
- The approach might be complicated for many countries. Thus, its applicability to other countries may be limited.
- There is a need to be clear on terminology to avoid misunderstandings
- It was not completely clear how land that isn't owned is dealt with in the balance sheet.

3.2.3 Case Study 2: Dow's Valuing Nature Journey - How a multinational chemical corporation is realizing value through nature based solutions (*Thomas Polzin* (DOW) and *Jennifer Molnar* (The Nature Conservancy))

DOW is one of the few companies who have really embraced the concept of nature-based solutions. Nature-based solutions are based on investments in natural infrastructure. Natural (or green) infrastructure is a planned or managed natural or semi natural system (such as mangroves or wetlands) that can help companies harness ecosystem services as a substitute to so-called gray infrastructure (such as dams or water treatment plants).

There is a strong business case for companies to invest in natural infrastructure solutions. Natural infrastructure can help companies harness the services that nature offers (ecosystem services) as a substitute to gray infrastructure. They may provide more benefits than gray infrastructure, while fulfilling the same function, being equally efficient, and providing the same level of performance. By investing in natural infrastructure, companies can reduce costs, improve operations, generate financial gains, or enhance their reputation. supporting local fisheries Creating or restoring wetlands on the banks of rivers and streams can both increase biodiversity and be more cost-effective than stormwater control measures created with gray infrastructure. Oyster reefs, another NI solution, can reduce coastal

erosion and protect businesses from storm surges, while also filtering contaminated seawater and supporting local fisheries[6].

DOW has formulated an ambitious Value Nature goal of obtaining benefits of 1 billion USD by 2025, through business-driven projects that enhance nature. DOW combines a top-down with a bottom-up approach and encourages its staff to identify opportunities for nature-based solutions. A supporting toolset has been developed, consisting of Nature Screen (identify), ESII tool (measure and compare) and Nature Scorecard (understand) (see Figure 3-13). TNC owns the products. The ESII tool is made publicly available.

Their working basis is the objective to improve business decisions by taking nature into account. The case is situated in its largest site - Freeport Texas, where issues are around air quality / coastal protection / water supply and agriculture. Projects are screened in, based on 'significant' impact but defining significance is up to the interpretation of the local project managers. As the whole approach focuses more on opportunities (i.e. creating business value by applying nature based solutions) than on impact reduction, significance rather relates to the expected Return on Investment. Project managers might get more funding for their project if classified as a Nature Goal project.

The ESII tool is easy for operational level decision-making, consists of 5 questions tied to 4 pillars of nature (air, water, soil, ecosystems). TNC's econometric solutions group has identified 13 relevant ecosystem services to DOW. They have translated these services into metrics engineers would understand e.g. liters of water saved rather than talking about, say, water regulating service). The ESII tool is accepted by the government as a credible approach, and the tool was used in Texas to turn an area used to bury ash into a wetland.

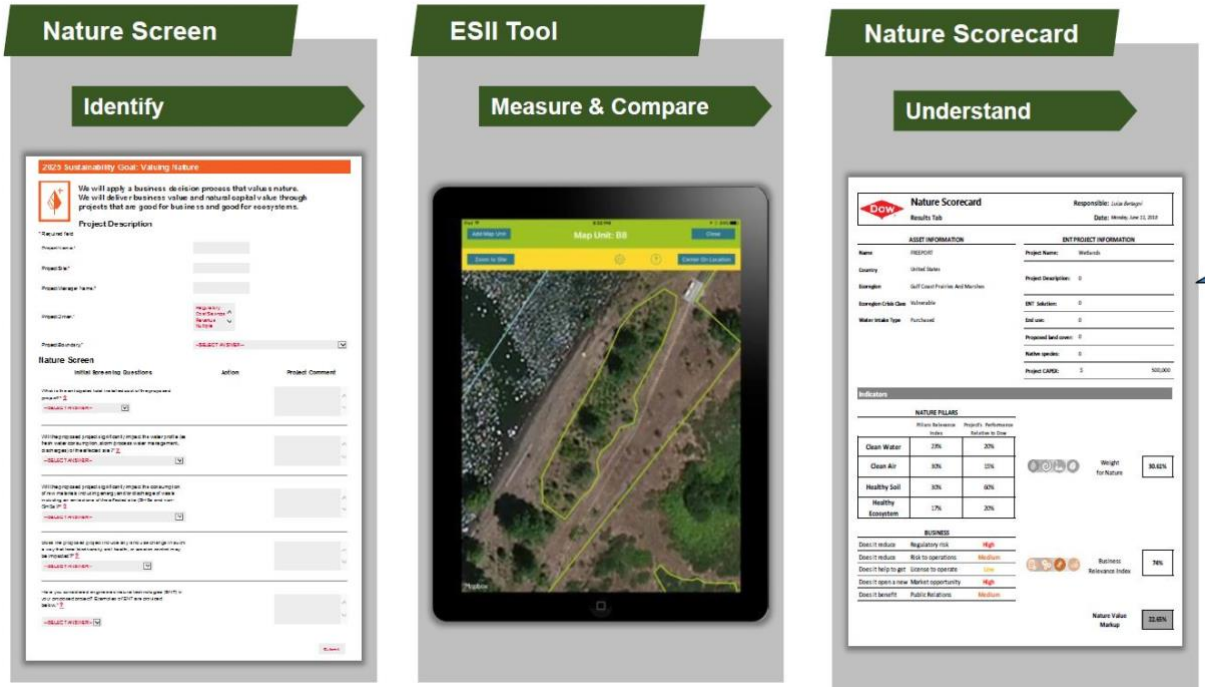


Figure 3-13: DOW's toolset for identifying, measuring and interpreting biodiversity

The subsequent discussion revealed that the approach is not closely aligned with SEEA EEA; it is more a managerial system than an accounting approach, and it is not used for cost accounting within DOW.

6 See https://www.naturalinfrastructureforbusiness.org/business-case/

A strength of the approach is that it is very practical, in the sense that practical tools have been developed which were put in the hands of decision makers.

The real innovation of the whole Value Nature goal was the improved communication on biodiversity with the employees. More than 82 projects are implemented to date. As the low-hanging fruits have been harvested, identifying new opportunities gets increasingly more challenging. There is no specific budget to fund projects, and the implementation is driven by bottom line return on investment to the company.

The tool uses public data. Greater granularity of data is important, but the precise data needs depend on many factors. There are however specific demands for better carbon and biodiversity data / metrics.

Weaknesses of the approach are:

- the difficulty to assess which of two projects is better for nature; this is why DOW is developing the Nature Scorecard;
- its focus on positives only, not on negatives (i.e. negative environmental impact); it was explained that this is partly due to legal reasons, which is likely a bigger concern for US incorporated companies; on the other hand 'failure to act' is much more present in the US than in the EU. In fact, the EC is preparing a regulation that would guarantee that you cannot be sued if you are taking care of the long-term;
- the whole approach is driven by individuals who strongly believe in it; it is not embedded in the culture of the company, with risk in case of change of leadership.
- the focus is very much on the project level, figures at corporate level are hard to produce.

3.2.4 Case Study 3: Environmental Profit & Loss Account (*François-Xavier Morvan* (Kering))

An Environmental Profit and Loss account (E P&L) is a company's monetary valuation and analysis of its environmental impacts, including its business operations and its supply chain from cradle-to-gate. So, this scope (entire supply chain – which is broken up into four tiers) and the focus on monetization are key features of the E P&L. An E P&L internalizes externalities and monetizes the cost of business to nature by accounting for the ecosystem services a business depends on to operate in addition to the cost of direct and indirect negative impacts on the environment (see Figure 3-14). The primary purpose of an E P&L is to allow managers and stakeholders to see the magnitude of these impacts and where in the supply chain they occur.

It is a tool to build awareness of the importance of nature to the sustainability of businesses; enhance visibility across a company's supply chain, deepen understanding to focus sustainability efforts and implement better-informed operational decisions; improve specificity for risk management regarding environmental dependencies and impacts; and support a more holistic view of a company's performance, while bringing clarity and transparency to stakeholders at all levels and identifying new opportunities to enhance the sustainability of a company's products.

The E P&L analysis provides a metric to measure and monitor the footprint of the company's operations and suppliers all the way to the initial raw materials. The impact is expressed in euros per hectare. Monetization is essential, and Kering has turned every physical impact into a financial unit. This is key for communicating with the CFO, as biophysical units do not allow for an understanding of how much to invest in a solution. Also, assessing externalities and dependencies in a regional context requires insights in regional price-setting, so one needs to have monetary values. Using monetary values enables people to see how sourcing impacts price, and E P&L. This gives people a tool to understand real values

before starting production. This is especially important for Kering, which specializes in high-end goods and apparel, as an understanding of these real values can impact the content of seasonal fashion collections. The E P&L relies on a classification of ecosystem services and TEEB[7] coefficients for monetizing ecosystem services. TEEB data are used as default data (no better data available).

The E P&L and the associated methodology were developed with the support of PWC and Trucost and first applied by Puma in 2011. The E P&L used existing input-output models and developed new valuation methodologies, building on a large volume of work in the fields of environmental and natural resource economics such as TEEB. Kering, the parent company for Puma, is continuously working to refine the methodology and has released its E P&L methodology in an open source mode[8], with interactive maps. Kering has expanded E P&L across all brands and are now able to publish a group E P&L.

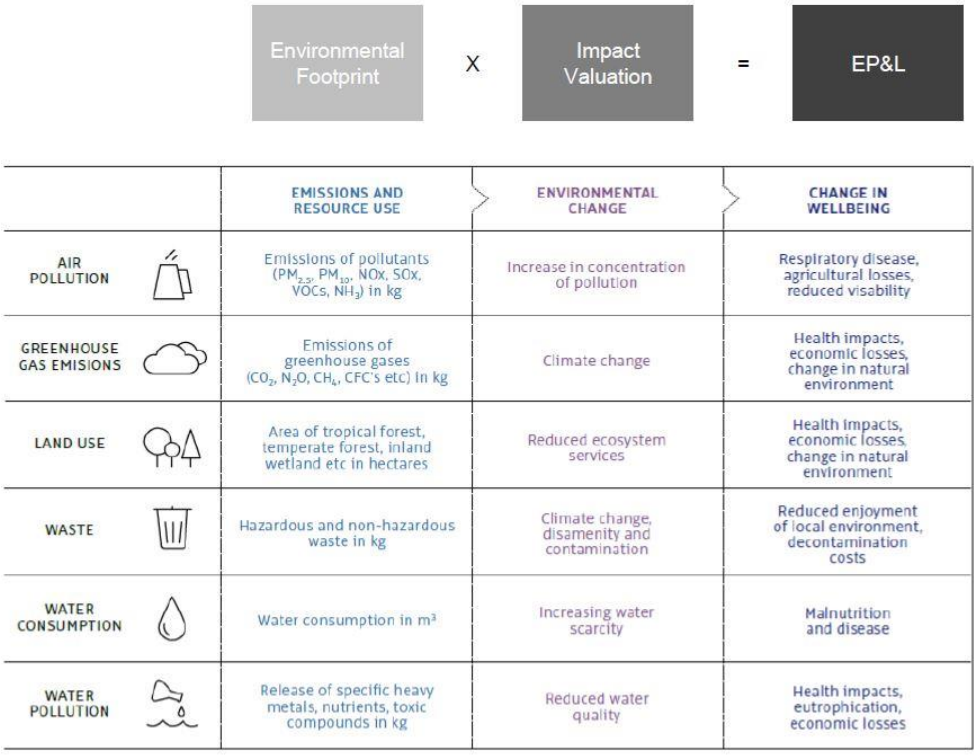


Figure 3-14: Environmental Profit & Loss general approach

E P&L is not only a reporting tool but also a decision making tool for scenario analysis to understand how the company can optimize sourcing practices. The idea is not to have a nice E P&L report or asset account but to have a systematic way to understand impact and how they can change these impacts. From Figure 3-15, it's clear that leather goods and shoes which make up 75% of products, have a huge footprint in terms of natural resources. Another objective of the E P&L is to foster dialogue with Group stakeholders to share best practices and establish a mutual understanding of priorities. Thus – and even more with the visually very attractive way of presenting – the E P&L is also a very suitable communication tool.

7 The Economics of Ecosystems and Biodiversity
8 https://www.kering.com/en/sustainability/environmental-profit-loss/methodology/

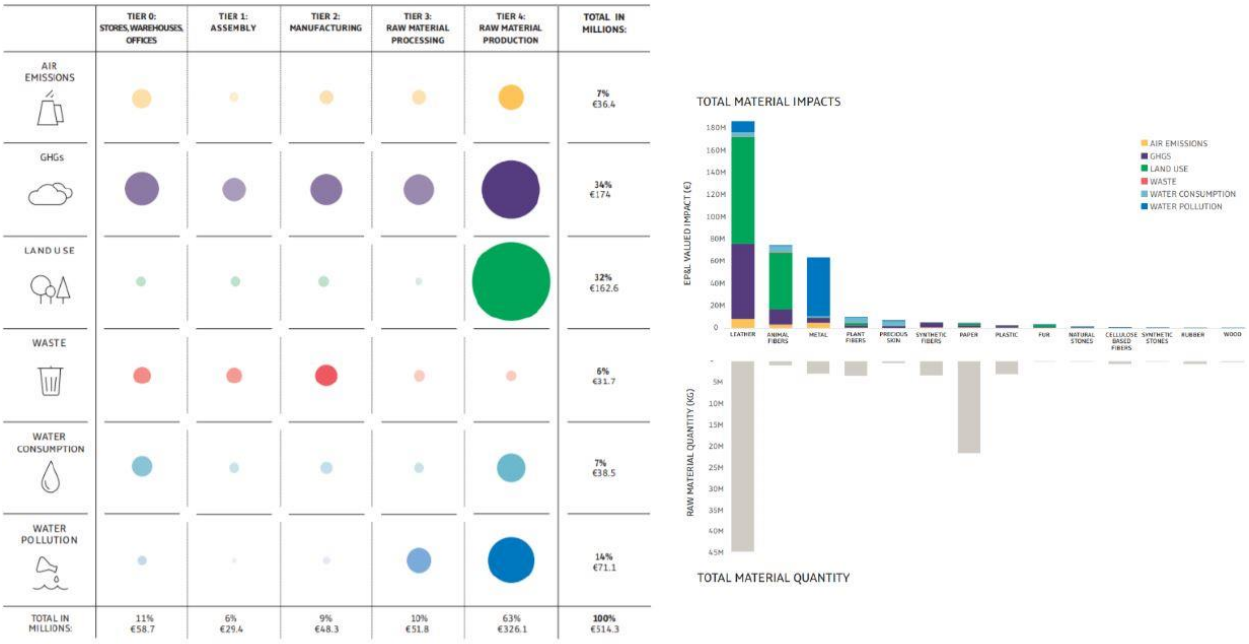


Figure 3-15: E P&L 2018 results for different tiers in value chain and different raw materials

Kering released data on water intensity and looked at both the physical impact and monetized impact. Species richness, soil organic carbon, and biomass as proxies for ecosystem degradation and decline in ecosystem services leads to change in monetary value of change in ES. Kering uses land-use as a proxy for biodiversity and is investigating other ways to get closer to biodiversity.

To be able to do E P&L, Kering relies on a huge quantity of data. However, data collection is a challenge. They collect a sample of data that is representative for the suppliers; further up the supply chain they use input-output modeling. Kering would be interested to know if SEEA can provide good data for use in life cycle analysis.

The subsequent discussion confirmed that there is alignment with SEEA since both focus on the same areas in physical terms (air emissions, etc). However, there is an issue with valuation since Kering values externalities whereas SEEA focuses on transactions and uses exchange values. Another concern relates to how E P&L can ensure that double counting does not take place: E P&L may show one multinational taking a certain action, but what if other companies start doing it and claim these same benefits in the same area?

A question was raised on social issues. Decisions on sourcing locations are indeed mainly based on environmental reasons than on social concerns. It's E P&L, not I P&L. Kering tries to modify internal standards and tries to influence sourcing. i.e. calf leather coming from Europe and US, and not from other countries (anymore). Sometimes there is limited flexibility e.g. cashmere can only be sourced in Mongolia/China – in that case Kering trains local farmers and works with local NGOs.

Any company that has an advanced cost-implementing system can implement such E P&L in a few months. The way of presentation is very convincing. Also, verification will become important in the future, or at least full transparency in terms of methods and their shortcomings. So, the idea was raised to promote more transparency among companies so that they can understand and evaluate to what extent data sources are high quality etc. Can we develop sort of a default database of biophysical data?

Kering expresses interest to test the use of NSO data, as they emphasized the importance of a common ground database for moving forward.

3.2.5 Case Study 4: The Biological Diversity Protocol - Adapting double-entry bookkeeping to net biodiversity impact accounting and disclosure (*Joël Houdet* (The Wildlife Trust))

The Biological Diversity Protocol:

- Is designed as a comprehensive biological diversity accounting and reporting framework that can help users produce the credible and unbiased information needed for various biodiversity-related applications, especially disclosure
- Relies on GHG Protocol Corporate Accounting and Reporting Standard as a benchmark for aim and structure, and is aligned with the Natural Capital Protocol;
- Can be used by any company in any step of the value chain;
- Helps users generate two main types of biodiversity information, i.e. biodiversity footprint (surface area adjusted for condition) and species level impact data;
- Includes guidance on how to:
    - Develop and manage a **biodiversity impact inventory** according to the appropriate organisational and value chain boundaries
    - Identify and determine material biodiversity impacts
    - Assess impacts on biodiversity, considering the nature of the biodiversity components impacted
    - Account for net changes in biodiversity, in accordance with the impact mitigation hierarchy (including purchasing offsets) and the associated equivalency principle (like-for-like)
    - Apply the biodiversity accounting framework (based on adaptations to Double-Entry Book Keeping (DEBK)) to build **Statements of Biodiversity Position and Performance** (see and account for biodiversity gains and losses over time
    - Validate and verify a biodiversity impact assessment
    - Disclose or report on an organisation's consolidated impacts on biodiversity in a coherent and meaningful manner

Statement of Biodiversity Position (or Biodiversity Balance Sheet):	**Statement of Biodiversity Performance** (or Biodiversity Net Impact statement):
Biodiversity assets *(ecosystem extent accounts in hectares) (A) =*	**Net biodiversity impacts** (hectares equivalent) (X) =
accumulated positive impacts *(condition-adjusted ecosystem extent accounts in hectares equivalent) (B) +*	***periodic Positive Impacts / Gains*** *(condition-adjusted ecosystem extent accounts in hectares equivalent) (Y) –*
accumulated negative impacts *(condition-adjusted ecosystem extent accounts in hectares equivalent) (C)*	*periodic Negative Impacts / Losses (condition-adjusted ecosystem extent accounts in hectares equivalent)*
or	*or*
A = B + C	*X = Y – Z*

Figure 3-16: Key components of the BD Protocol: the Statement of Biodiversity Position and the Statement of Biodiversity Performance

Two case studies (both in France) were presented. For both, statements of biodiversity position and performance were prepared. Statements can be consolidated for several projects together (see Figure 3-17).

Assets (A)			Accumulated negative impacts (C)		
Ecosystem accounts	Hectares (Ha)	Percentage (%)	Ecosystem accounts	Hectares equivalents (Ha eq.)	Percentage (%)
			Garrigue-type condition 0	26,11	6%
Garrigue-type condition 0	26,11	6%	Garrigue-type condition 1	21,60	5%
			Coussoul condition 2	163,80	40%
Garrigue-type condition 1	27,00	7%	Coussoul condition 3	33,60	8%
			Accumulated positive impacts (B)		
Coussoul condition 2	273	67%	Ecosystem accounts	Hectares equivalents (Ha eq.)	Percentage (%)
			Garrigue-type condition 1	5,40	1%
Coussoul condition 3	84,00	20%	Coussoul condition 2	109,20	27%
			Coussoul condition 3	50,40	12%
Total	410,11	100%	Total	410,11	100%

Figure 3-17: Example of consolidated Statement of Biodiversity Position for both case studies

Ideas for future work relate to expanding the 'adapted DEBK' approach to:

- To other Natural Capital Impacts & Dependencies, from stock extent and condition to benefits so as to build comprehensive NC statements of position and performance in non-monetary values
- Externality-based statements of position and performance, separate from financial statements, also based on adapted DEBK
- Accounting frameworks and methods that would link non-monetary quantitative, financial and externalities values for different accounts, from an integrated accounting and reporting perspective

The subsequent discussion acknowledged that this is a typical accounting tool: it includes a balance sheet ('where we stand currently') and a P&L ('gains and losses') which goes back into the balance sheet. It allows users to track ecosystems over time and changes in terms of condition (restoration or degradation trend). This can tell management what ecosystems they need to focus on. For example, it can tell users the percentage of their assets that are in good condition, etc. Companies currently look at flows and monetize them, but very few are looking at assets/extent and condition. So, the BD Protocol doesn't apply valuation but first looks closely at extent and condition. Instead of jumping straight into monetary values, the BD Protocol focuses on stocks.

The BD Protocol adapted double-entry book keeping because of the desire to align with financial book keeping. Traceability and adaptability are difficult right now, but this is exactly a strength of "double entry" book keeping. For the tool developer this is an important starting point. Anything not related to financials is a little too vague and may not be taken seriously by management.

The BD Protocol is well suited to apply the no net loss concept, but no net loss accounting works best at project level.

While the BD Protocol can be applied to any sector, any industry, and company, right now the tool is for professionals and not for management level.

The BD Protocol advises users to take all impacts on land and landcover into account. With regard to species, users need to be selective as one can't measure impacts on all species. So, developing specific accounts on specific species based on a materiality assessment – i.e. which species in the user's boundary are material? Red-list species, for example, will probably score highly and be considered material.

The question of how to consolidate different conditions for different ecosystems was also discussed. There are many different ways of defining condition and this differs across countries. But the BD Protocol is an accounting framework and doesn't dictate condition methodology (the same goes for assets).

The BD Protocol is better suited as a project approach. It is unsure how it can be used further up the supply chain, as it would be difficult to get the necessary information for the whole supply chain. However, it was suggested that you can develop ecosystem accounts using modeling (economic data), and some companies are willing to do this without real biodiversity data. This needs to be further explored. Maybe the outcome could be to do assess site level with real biodiversity data and the supply chain with modeling.

Some other questions were raised such as:

- There are natural changes in extent/condition and business-induced changes in extent/condition - how to attribute things to business action?
- How can the data behind it be visualized? For example, visuals like those produced by Kering would help drive decisions as well.
- The BD Protocol should part of a system that enables users to understand risk better. While one finding may be that 30% of stocks are well-managed, this information doesn't necessarily help businesses to understand their risk better.
- Condition weighted extent seems consistent with SEEA EEA, and participants agreed with the point that this is underpinning income/flows. However, some ecosystems are more unique than others, so does the BD Protocol weigh the uniqueness of the ecosystem?
- How frequently should ecosystem extent and condition be assessed? Ecosystem condition generally doesn't change overnight. Species accounts might be assessed more frequently (maybe every 2 years) than habitat accounts (maybe every 5 years).
- What is the advantage of this approach versus Forico's approach? The Forico approach doesn't use double entry book keeping and instead present findings in a table.
- Does the BDP make a link with cost of maintenance and management?

3.3 Key take-aways for different stakeholder groups

3.3.1 NSOs

- Participants noted that the data requirements of companies for reporting is so far closely related and aligned with the SEEA already. At the same time, further alignment is crucial, as are standards at the business level.
- To achieve better alignment, NSOs need to better understand business uses and needs of data, including data gaps and access issues
- Countries (e.g. India) expressed interested in the BD Protocol as they are currently compiling biodiversity accounts, and there is potential to harness synergies.
- Countries also noted the need to focus both on assets and liabilities/risks. In particular, the SEEA-CF and SEEA-EEA could be integrated to look at cost and benefit.
- There is an opportunity to bring the Natural Capital Protocol and the SEEA more closely together.

3.3.2 Businesses and International Organizations

- the business community generally agrees that sufficient and reliable data (high confidence in quality) is very crucial
- availability of standard high-quality datasets is even more important than standardization of approaches
- businesses first want to understand the landscape of data, then they can see how to organize data for different needs and audiences; some companies mainly need data at a site or project level while other companies need supply chain level data
- there is also a need to explore how different information technologies and tools can be integrated into easier data collection
- some are interested to start pilot testing, i.e. applying NSO data for fulfilling company needs
- international organisations (e.g. OECD) have made data open, free, easily readable (tax payer money anyway).

3.3.3 Reporting/Accounting (SASB, UNCTAD, GRI)

- Support more consistency in global data
- A lot of data are available, need to make sure it is high quality and fit for purpose. Need to keep into account developing countries. Haven't focused on impact yet because of this.
- In getting companies to adopt, you really need to look at the specific company needs.
- There is no 'one size fits all' tool. But if we can have a few different models that are generally accepted and that the market trusts should be a goal. Need simple language to do this.

4 INITIAL ROADMAP

Finally, participants were asked about their ideas for the way ahead. Based on participants feedback, further thinking within UNSD in the subsequent weeks and feedback collected during different occasions where the findings of this project were presented (the Capitals Collaboration Day (Madrid, 6 Nov), the European Business & Biodiversity Summit (Madrid, 8 Nov), Impact Valuation Roundtable

(Lausanne, 28 Nov)[9], an initial roadmap has been developed which provides a number of key building blocks.

Key building blocks of the roadmap are at least the following:

1. **Cooperation and platform for dialogue**.
   - Overall consensus in the workshop that – as both communities have common goals ('taking care of natural capital') – cooperation is key.
   - The roadmap should not only be a UNSD exercise but should be developed jointly with businesses, NSOs, policy makers and experts.
   - The Combining Forces initiative by the Natural Capital Coalition has similar goals. The roadmap therefore should be well aligned with their strategy and actions.
   - Establishing a platform for dialogue between both communities to ensure that they keep talking with each other.

2. **A common glossary**. All stakeholders should understand each other well. Essential for this, is the preparation of a common glossary where terms and definitions as applied in SEEA EEA are compared to those applied in corporate natural capital accounting and missing terms and definitions are completed. This would provide a good starting point.
   - A start has been made in the background report (see https://seea.un.org/sites/seea.un.org/files/background_paper_release_for_unseeaforum.pdf)
   - We can rely on other existing material (such as a common dictionary developed in the UK as part of the alignment of the UK No Net Loss policy and national NCA; also work being done by the British standards group on NCA).

3. **Pilot studies, i.e. experimental case studies.** There was a broad consensus on the need for pilot studies to help us understand the exact data needs from businesses and the extent to which NSOs can meet these needs.
   - Pilots can be categorized: thematic, by sector, by organizational focus area (e.g. corporate versus project level, site versus supply chain), by business application, stocks focus or flow focus or both, etc.
   - In the short term, there is a preference for case studies in NCAVES target countries – although this is not exclusive
   - As corporate data needs might be different according to the type of business application and the organizational focus area, pilots should try to cover different applications and organizational focus areas
   - All NSOs in the room (India, Mexico, Brazil, UK) are happy to be involved.
   - Interest has been expressed so far by Kering, Value Balancing Alliance, Biological Diversity Protocol, Ecoacsa (Spain).

4. **Guidance and training.** Once we have case studies and lessons learnt, we can develop guidance material, both for companies ('how to use national SEEA accounts and related information?') and NSOs ('how to make our accounts and data more accessible and informative to the business community?'), followed by training in a later stage. Education, awareness raising and communication will be very important.

5. The **SEEA EEA revision process** should take stock of the findings of the workshop and reflect if and how the revision process can take them into account.

[9] Presentations by Johan Lammerant in Madrid, remote presentation – on invitation by Kering – by Bram Edens to the Impact Valuation Roundtable group

6. **Expanding the stakeholder community**. For example:
   - the environmental management accounting community (larger than NCA community) – and footprint community
   - the financial community

7. **Embed this process** in and highlight its added value to the broader processes/tendencies of:
   - increased standardization of reporting/disclosure of corporate NC performance – including stricter requirements
   - increased harmonization of NCA, e.g. E-GAAP.

8. **Follow up events**. Following up on the scoping workshop, additional workshops will need to be organized providing opportunities for expanding the community, sharing experiences, etc.
   - A first workshop is planned to take place in Yale (18 – 20 March 2019)

9. **Communication**. The topic of improving alignment between national and corporate NCA should be promoted during events and workshops with the target audience. This is already happening but needs to be a continuous exercise:
   - Presentation during Capitals Collaboration Day on 6th November 2019, Madrid
   - Presentation during European Business & Nature Summit on 8th November 2019, Madrid
   - Presentation (remotely) during Impact Valuation Roundtable meeting on 28th November, 2019, Lausanne
   - Presentation during MAES[10] High Level Conference on 13th December 2019, Helsinki

In terms of timing, objectives and deadlines, things need to be further discussed and clarified.
In the weeks and months after the workshop, a more solid and coherent roadmap will be built.

[10] MAES ('Mapping and Assessment of Ecosystem Services') is a large EU initiative promoting Member States efforts to map and assess ecosystems extent and condition, and ecosystem services economic values; see https://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm

ANNEX 1: LIST OF PARTICIPANTS

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