

BOOK OF ABSTRACTS

This Book of Abstracts provides a comprehensive overview of the session content and is structured into three main sections:

- I. **Session Description** – an introduction to each session, including its objectives and expected outputs
- II. **Session Program** – a detailed schedule for each session, including speakers and timing
- III. **List of Abstracts** – a complete compilation of all accepted abstracts

I. SESSION DESCRIPTION

ID: T17e

Ecosystem Accounting for economy and finance: setting the framework for use and usability

Hosts:

	Name	Organisation	E-mail
Host (s):	Alessandra La Notte	European Dynamics SA	alessandra.la-notte@ext.ec.europa.eu
Co-host(s):	Domenico Pisani	Joint Research Centre of the European Commission	domenico.pisani@ec.europa.eu
	Catherine Farrell	Trinity College Dublin	farrec23@tcd.ie

Abstract:

The use of ecosystem accounts in economy and finance can fulfil multiple roles from a variety of perspectives. In the context of 'greening finance', they can, for example, assist economic stakeholders in evaluating the transformation of their business models or their exposure to nature-related risks. In the context of "green financing", they can serve as a valuable source of information, supporting restoration projects through cost-benefit analyses and nature/biodiversity credit markets, among other opportunities. There is significant demand for metrics and indicators in this area, where the number of applications is growing exponentially. Nevertheless, use and usability of ecosystem services accounts in economy and finance still remain underdeveloped and need to be explicitly explored and for which functional solutions should be provided.

Goals and objectives of the session:

This session aims to gather as many applications as possible of the use of natural capital accounts in economy and finance. The purpose is to begin creating a framework that places users and their needs at the heart of future developments in the implementation of natural capital accounting.

Planned output / Deliverables:

The proposed outcome of this session is to compile relevant contributions into a JRC technical report that presents the users' perspective on ecosystem accounting, focusing on users from the economic and financial sectors.

Related to ESP Working Group:

[TWG 17 – ES Accounting & Greening the economy](#)

II. SESSION PROGRAM

Room: B1

Date of session: Tuesday, 19 May 2026

Time of session: 11:00 – 12:30

Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
11:00 -11:10	Catherine	Farrell	Trinity College Dublin	Applying the UN SEEA EA to align reporting frameworks across public and private sectors
11:10- 11:20	Jacob	Bedford	UNEP-WCMC	Nature Information Pathways- applying ecosystem accounting principles to streamline data for business decision making.
11:20- 11:30	Domenico	Pisani	EC Joint Research Centre	Ecosystem Services Accounting meta-description reporting: a supporting tool for the users of environmental metrics
11:30- 11:40	Francesco	Sica	Sapienza University	Ecosystem Services within the ESG Taxonomy: An Integrated Framework for Corporate Risk and Natural Capital Assessment
11:40- 11:50	Caterina	Gilli	Basque Centre for Climate Change	Evaluating Coastal Protection Ecosystem Services: A Population-Based Assessment of Nature-Related Risks
11:50- 12:00	Alexandre	Altman	University of Sheffield	Mainstreaming Green Finance for Natural Capital in the EU–MERCOSUR Trade Agreement
12:00- 12:15	Alessandra	La Notte	European Dynamics SA	How to connect investments in Nature-based Solutions with benefits for the socio-economic systems. An exploratory exercise related to the mitigation of flooding events
12:15-12:30			Questions and Answers to all speakers	

III. LIST OF ABSTRACTS

The first author is the presenting author unless indicated otherwise

1. Applying the UN SEEA EA to align reporting frameworks across public and private sectors

First author: Catherine Farrell

Other author(s): Martha O'Hagan Luff, Jane Stout


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The UN SEEA EA has been applied at a number of scales and through a number of perspectives in Ireland. While much of the work to date has been led by research there is a growing number of public and private sector use cases that could leverage the SEEA EA framework. In this paper we outline immediate and potential use cases for the SEEA EA and highlight ways to support its wider application in Ireland and across the EU.

At national level ecosystem accounts are actively being developed by the Central Statistics Office. These accounts integrate available land cover data as a proxy for ecosystem types, building condition and ecosystem service accounts based on information gathered by a range of natural resource management and environmental agencies. Under the Nature Restoration Regulation, national restoration plans could leverage ecosystem accounting to underpin reporting against habitat and ecosystem restoration targets. Under the Corporate Sustainability Directive, businesses in scope could also report using the SEEA EA framework, which has been developed to align with other nature reporting frameworks such as the Task Force on Nature-related Financial Disclosures.

With these three use cases identified, there is significant scope and potential to align reporting across public and private levels to amplify collective action for nature and avoid duplication of effort. This can be supported by developing tailored guidance and building capacity across both public and private sector entities to facilitate translation of the required data inputs and methodologies for the SEEA EA. Furthermore, research is required to develop ways to apply the SEEA EA outputs to inform decision making both through national and local governance perspectives, as well as business levels.



Keywords: UN SEEA EA, ecosystem accounting, Nature Restoration Regulation, Corporate Sustainability Reporting, public policy and governance

2. Nature Information Pathways- applying ecosystem accounting principles to streamline data for business decision making

First author: Jacob Bedford

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The perceived complexity of assessing corporate impacts and dependencies on nature in a spatially explicit way has created concerns over the reporting load for businesses, and challenges in businesses navigating available data. As a part of the Horizon Europe project A-Track, we are developing a simple framework, 'Nature Information Pathways', to facilitate and harmonize data collection, organisation and transformation for multiple business applications. This framework is centred around organizing data through UN SEEA ecosystem accounting principles to maximize interoperability and comparability. We demonstrate the generation of metrics using this framework through example cases from the mining and agricultural sectors, and delve into the challenges and opportunities associated with generating extent and condition indicators for small private sites from public Earth Observation (EO) data, including those that are part of product life cycle management. We identify the main needs that underlie a common data structure and assess the opportunities for further mainstreaming the use of ecosystem accounting in the private sector.

3. Ecosystem Services Accounting meta-description reporting: a supporting tool for the users of environmental metrics

First author: Domenico Pisani

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The growing interest in ecosystem service (ES) accounting led to the expansion of ES accounts and to the development of various metrics. As a result, ecosystem services are no longer solely of interest to environmental experts; businesses, financial institutions, and statistical offices are increasingly seeking reliable metrics with which associate ES valuation to their own area of interest. However, identifying the most appropriate metric for one's own needs, and understanding how well it aligns with the principles of ES accounting, remains challenging.

To address this need, a tool that collect and structure, ES accounting information needs to be complemented by a user friendly and easily accessible reporting system to help potential users choose the metrics that best suit their needs. Its main objective is to support both compilers and users by ensuring clearer communication and easier interpretation. The reporting outputs include graphical, tabular, and descriptive summaries. A central component of the tool is the summary table, which evaluates six key dimensions of ES accounting and assigns scores based on their alignment with the accounting pillars and the SEEA EA guidelines. This assessment is complemented by a spider diagram that visually displays the performance across dimensions, together with a descriptive narrative that summarizes the information provided by the compiler.

This study tests the Ecosystem Services Accounting standardized reporting system on the JRC-INCA accounts to provide concrete examples of how it works and what it can deliver. Specifically: crop, timber and fish provision, carbon sequestration, crop pollination, on-site soil retention, flood control, water purification, nature-based tourism.

A standardized reporting system enhances the comparability and transparency of ES metrics. This enables potential users to better understand the methodological foundations of available accounts and to identify the metrics that best match their specific needs.


Keywords: Ecosystem Services, Natural Capital, Integrated Accounting System, Ecosystem Accounting, Natural Resources

4. Ecosystem Services within the ESG Taxonomy: An Integrated Framework for Corporate Risk and Natural Capital Assessment

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The ESG taxonomy is a core pillar of the European sustainable finance strategy, providing a classification system for economic activities based on their environmental (E), social (S), and governance (G) impacts. While it encourages firms—particularly small and medium-sized enterprises—to integrate natural capital considerations into corporate decision-making and nature-related risk assessments, a persistent methodological gap remains between conventional financial evaluation tools and the assessment of corporate impacts and dependencies on Ecosystem Services (ES).

This paper proposes an integrated framework that embeds ecosystem services within ESG-aligned corporate risk and natural capital assessment. The framework conceptualises the functional relationship between firms and ES by identifying key thematic categories along corporate value chains and operationalising them through an Ecosystem Services Risk–Opportunity (ESRO) matrix. The ESRO matrix captures both dependency-related risks, linked to changes in ecosystem service provision, and impact-related risks, reflecting corporate pressures on ecosystem functioning.

The ESRO matrix is structured as a set of analytical “single windows” that support the implementation of cost–benefit analysis (CBA) by integrating ecosystem service values with conventional financial costs and benefits. Within this framework, the Social Discount Rate (SDR) is treated as a strategic decision variable and differentiated according to the type of entrepreneurial activity, the intensity of natural capital use, and the magnitude and reversibility of ecosystem impacts. Activities characterised by high ecosystem dependency and long-term or irreversible effects are associated with lower discount rates, reflecting intergenerational equity and sustainability objectives, whereas less nature-intensive activities may justify higher rates within clearly defined ecological thresholds.

The framework is empirically tested through a green finance project focused on the regeneration of the industrial district of San Cesareo (Italy), where the ESRO matrix is calibrated to account for heterogeneous production activities and their differentiated interactions with ecosystem services, thereby supporting nature-positive and ESG-consistent financial decision-making.

Keywords: Ecosystem Services; ESG Taxonomy; Integrated Framework; Corporate Risk; Natural Capital Assessment

5. Evaluating Coastal Protection Ecosystem Services: A Population-Based Assessment of Nature-Related Risks

First author: Caterina Gilli

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Ecosystem service accounting frameworks are well established, yet significant gaps remain in the treatment of risk-related services. A key limitation is that ecosystem services are often deemed “used” only when benefits are directly realised, whereas the value of protective services lies in preventing adverse outcomes. This poses a challenge for accounting disaster risk reduction services, such as coastal protection.

We proposed a population-centric approach to accounting for coastal protection services, operationalizing ecosystem-mediated hazard reduction as avoided population exposure at a global scale. By framing hazard and exposure in terms of affected populations rather than composite metrics, this method enhances interpretability for economic decision-making and aligns with contemporary risk assessment practices.

The methodology assesses susceptibility to coastal flooding under baseline conditions and under different scenarios in which specific coastal ecosystems are absent. We focus on four protective ecosystems: mangroves, saltmarshes, coral reefs, and seagrasses. By comparing flooding susceptibility with and without each ecosystem, we quantify ecosystem-specific reductions in hazard (Δ Hazard). Areas with positive Δ Hazard delineate the spatial extent of the protection service. Within these areas, we estimate the population benefiting from Δ Hazard, stratified by socioeconomic vulnerability.

A case study from Indonesia illustrates the framework’s application, defining demand as baseline flood-exposed population and supply as the subset experiencing reduced hazard due to ecosystem presence. In Sulawesi Tenggara, demand is estimated at 422,000, of which approximately 81,000 are classified as the protected population due to the presence of ecosystems. The resulting spatially explicit supply-demand accounts provide a population-based assessment of nature-related risk mitigation. By assessing vulnerable populations that benefit from ecosystems, this approach offers stakeholders a transparent basis for evaluating nature-related risks and making informed financial decisions regarding ecosystem restoration and investment, with potential for integration into cost–benefit and population-based valuation frameworks, such as those using values of statistical life.

Keywords: ecosystem service, coastal flooding, hazard reduction, vulnerability, natural capital accounting

6. Mainstreaming Green Finance for Natural Capital in the EU–MERCOSUR Trade Agreement

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International trade agreements increasingly acknowledge the importance of biodiversity conservation, ecosystem services, and climate action. The EU–MERCOSUR Trade Agreement, signed in December 2024 after more than 25 years of negotiations, establishes one of the world’s largest free trade areas, covering approximately 750 million people and nearly a quarter of global GDP. While the Agreement includes sustainability and environmental commitments, it lacks a coherent legal and institutional framework capable of mobilising and directing financial resources towards the protection and enhancement of natural capital and ecosystem services.

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We argue that the EU–MERCOSUR Agreement represents a significant yet underutilised opportunity to mainstream green finance in support of ecosystem services and biodiversity conservation. MERCOSUR countries possess extensive natural capital that underpins critical ecosystem services related to climate regulation, agricultural productivity, and ecological resilience. However, green finance policies and instruments explicitly targeting ecosystem services remain underdeveloped across the region. In contrast, the European Union has established regulatory frameworks, financial instruments, and sustainability taxonomies that could support nature-positive investments beyond the current dominance of technology-centric climate solutions.

Drawing primarily on environmental law and sustainability governance perspectives, we examine how a dedicated legal framework within the EU–MERCOSUR Agreement could facilitate the alignment of trade liberalisation, environmental protection, and green finance. Particular attention is given to ecosystem services linked to climate adaptation and mitigation, sustainable agriculture, and biodiversity conservation, and to the governance conditions required to translate sustainability commitments into credible, investable nature-based initiatives. The analysis highlights the importance of regulatory coordination, transparent measurement, and accountability mechanisms to ensure that green finance effectively supports natural capital outcomes.

By situating green finance within an ecosystem services framework, the research contributes to debates on trade governance and sustainable development, demonstrating how international trade agreements can move beyond aspirational sustainability language towards practical mechanisms that protect and enhance ecosystem services across regions.

Keywords: Green finance, Natural Capital; Ecosystem Services; EU-Mercosur Trade Agreement


7. How to connect investments in Nature-based Solutions with benefits for the socio-economic systems. An exploratory exercise related to the mitigation of flooding events

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Integrated accounting systems provide an effective means of supporting coherent and effective policies by addressing the interdependencies between nature, the economy and society. They should function like a Green Sudoku, where accounts related to the ecosystem and its services, as well as pollutant emissions and natural resource extraction, drive production and consumption accounts. These, in turn, are the building blocks of the economic indicators that show a country's health. While some of the Green Sudoku direct and indirect connections have already been identified, further work is required on others, as well as applied research. One of the major connections that could greatly support the Ministries of Economy and



Finance when addressing funding and investment decisions is that of Nature-Based Solutions (NBS). NBS are considered to be one of the most important means of generating positive financial flows from nature

This work aims to present a conceptual exercise that explores the application of the Green Sudoku approach to connect investments in Nature-based Solutions with reducing hazards to people and the economy, focusing on the 'flood control' service. The approach integrates the System of Environmental-Economic Accounting (SEEA) and the Global Disaster-Related Statistics Framework (G-DRSF) to establish a causal link between Nature-based Solutions and the resulting reduction in risks. The presentation discusses the role of ecosystem services accounting, disaster risk assessment, and expenditure accounting in establishing this connection, and highlights the potential of the Green Sudoku approach to provide a comprehensive accounting system for Nature-based Solutions.

Keywords: Ecosystem Services, Nature-based Solutions, Disaster Risk Assessment, Prevention investments, Mitigation investments, Green Sudoku, Flood control, Natural Capital Accounting