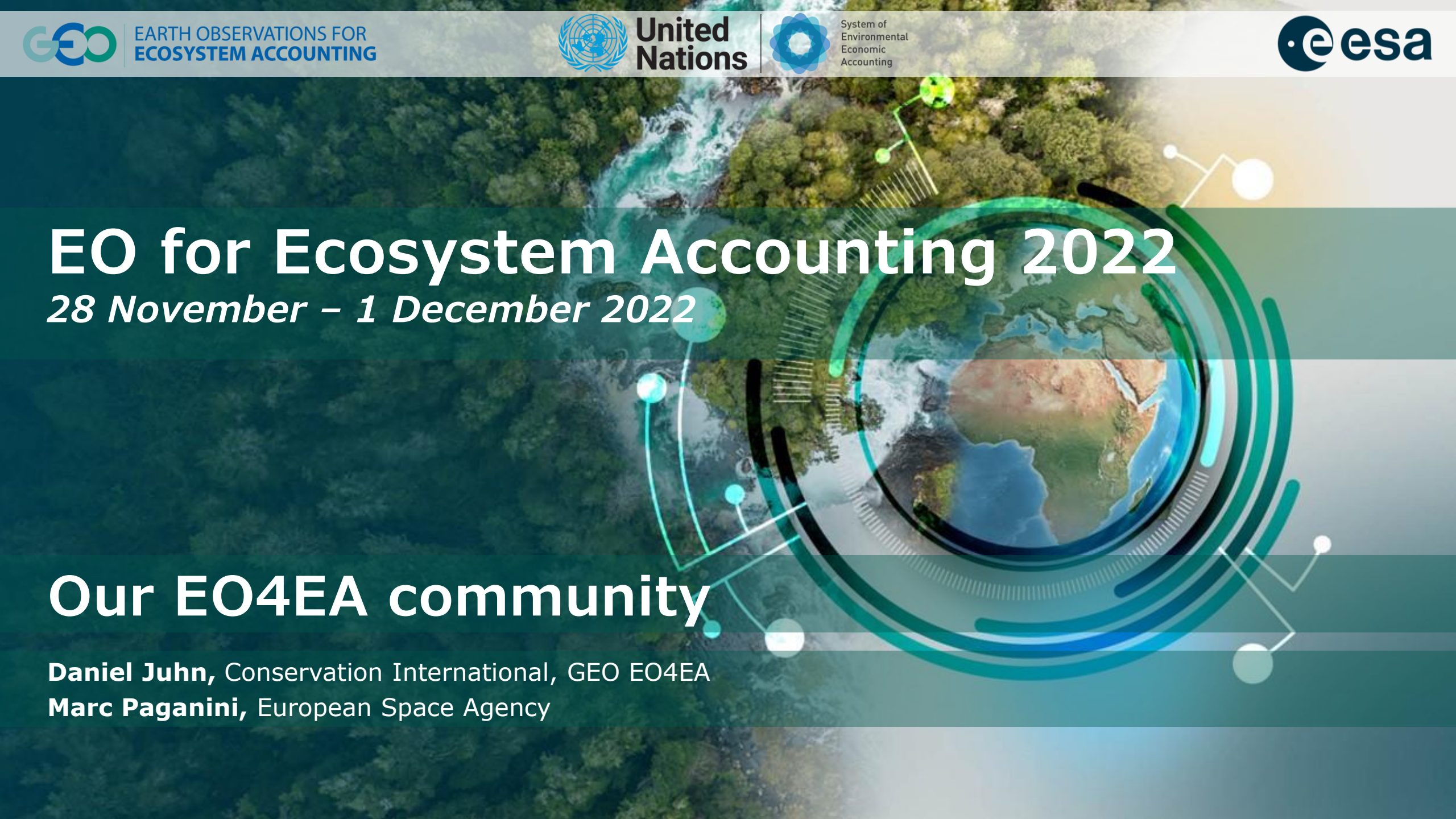


EO for Ecosystem Accounting 2022

28 November – 1 December 2022

Our EO4EA community

Daniel Juhn, Conservation International, GEO EO4EA
Marc Paganini, European Space Agency

GROUP ON EARTH OBSERVATIONS (GEO)

earthobservations.org

Envisions a future where decisions and actions for the benefit of humankind are informed by coordinated, comprehensive and sustained Earth observations.

- Comprised of 114 National Governments and 143 Participating Organizations, GEO is an intergovernmental partnership that improves the availability, access and use of Earth observations for a sustainable planet.
- GEO promotes open, coordinated and sustained data sharing and infrastructure for better research, policy making, decisions and action across many disciplines.
- The GEO community focuses on the triple planetary crisis of climate change, biodiversity loss and pollution.

Full and open access to Earth observation data, information and knowledge is crucial for humanity as it faces unprecedented social, economic and environmental challenges.

- Mexico City Ministerial Declaration, November 2015

GEO GROUP ON EARTH OBSERVATIONS

RATIONALE

- **There is a need to align the way that we manage our ecosystems with economic systems to ensure resilience and sustainable development**

- **There is a growing momentum (desire) among statistical agencies to incorporate ecosystem accounting**; and that the EO community will play a critical role in operationalizing and scaling up

- **Ecosystem accounting enables better decision making** and can support international framework conventions (SDGs, Paris, Sendai, GBF) by quantifying the role of ecosystems toward these goals

- **GEO is uniquely positioned to support ecosystem accounting**.

GEO'S EO4EA INITIATIVE

PURPOSE

- further the development and use of Earth Observations for natural capital accounting (NCA) consistent with the set of standards and guidelines put forth by the UN-SEEA, and specifically the Ecosystem Accounts (EA).

MISSION

- document, pioneer, develop, and test the methods and tools that will allow earth observation technology to more effectively enable the widespread adoption of ecosystem accounting.

NASA

GEO EARTH OBSERVATIONS FOR ECOSYSTEM ACCOUNTING

EO4EA MEMBERSHIP

- Membership include national governments, academic institutions, intergovernmental organizations, and NGOs.
- Secretariat housed at Conservation International and funded by NASA

secretariat@EO4EA.org

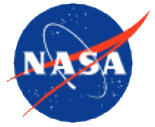
EARTH OBSERVATIONS FOR ECOSYSTEM ACCOUNTING

CORE GOALS FOR 2023 – 2025 PROGRAM

- Data development and platform harmonization – technical activities
  - Developing EO data standards for accounting
  - Supporting interoperability of models and platforms
  - Providing technical assistance in the EO components of ecosystem accounting

- Communication and amplification – engagement activities
  - Ensuring that ecosystem accounting is integrated within GEO activities
  - Community of practice/trainings around the application of EO for accounts
  - Connect the EO <-> EA communities around common goals

- Development and execution of the roadmap



EO opportunies & challenges in SEEA-compliant Ecosystem Accounting

Ecosystem Accounts are inherently spatial accounts
that strongly depend on the **availability of spatially explicit datasets**, including **Earth Observations**.

The emergence of **EO data streams at appropriate scales** combined with **advances in digital technologies** offer **unprecedented opportunities for countries** to efficiently monitor the **extent** and **conditions** of their ecosystems, determine **ecosystem services** and implement their **national ecosystem accounting**.

EO in Statistical Accounts

- Requires a **change of mindset in NSOs** to use Earth Observation and Big Data more widely.
- Requires integration of **many strands of expertise** including statisticians, ecologists, national mapping agencies, geo-spatial and EO experts.
- Needs to have spatially explicit accounts **consistent in space and in time.**
- Importance to have a **precise estimation of the uncertainties** for officially statistics.
- Need to have **regularly updated accounts** that allows to track the “intrinsic” variations of the subject accounts.

EO Enabling Elements

- Need to adopt a **data flow strategy** similar to the SDGs.
- Request from the statistical community to have **“Accounts Ready Data”** which can simplify their integration into official statistics.
- Need for **practical methodological guidelines** (datasets, tools and models) **with operational examples** to help countries integrating EO within their national systems on ecosystem accounting.
- The importance to have **adequate infrastructures (data factory following FAIR principles)** to enable country appropriation of EO technology in ecosystem accounting.

EO opportunies & challenges in SEEA-compliant Ecosystem Accounting

Ecosystem Extent Account

- Classification is the **backbone of ecosystem accounts.**
- Need **reliable and comprehensive mapping of ecosystem types** (EO need to go beyond LC/LCC and support EUNIS/IUCN typology classification).
- How to explore the large quantity and variety of detailed **information available in MS** on ecosystem types?
- To which level can EO support the production of ecosystem extents for **terrestrial, freshwater and marine ecosystems**?
- Strong need to **automate the production** of ecosystem extent classification

Ecosystem Condition Account

- derivation of **reliable EO-based metrics on ecosystem conditions** and of their **distance from a reference condition.**
- Need for condition indicators in terms of **biotic and abiotic characteristics** and for **ecosystem structure, function and composition**.
- Importance to monitor the conditions of ecosystems **outside of protected areas** (less reference information).
- Needs to find a **compromise between simple and rapid assessment** based on remote sensing products wrt **accuracy needed for statistical accounting.**

Ecosystem Services Account

- Ecosystem Service and thematic Accounts are a **priority for most countries** (needed in multiple policy frameworks such as UNFCCC)
- Conceptual Framework for Ecosystem services (provisioning, regulating and cultural services) well established but **use of EO is still marginal**.
- need to **integrate EO data with other spatial datasets in spatial ES modelling** to derive flows of ecosystem services .
- **How to leverage the use of modelling tools and platforms** (e.g. ARIES for SEEA) to estimate reliable ecosystem services accounts.

2022 WORKSHOP ON EARTH OBSERVATION FOR ECOSYSTEM ACCOUNTING
NOV 28 – DEC 1, 2022

THANK YOU

MARC PAGANINI
MARC.PAGANINI@ESA.INT

DANIEL JUHN
SECRETARIAT@EO4EA.ORG
DJUHN@CONSERVATION.ORG

MAX WRIGHT
SECRETARIAT@EO4EA.ORG
TWRIGHT@CONSERVATION.ORG

EO4EA.ORG

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