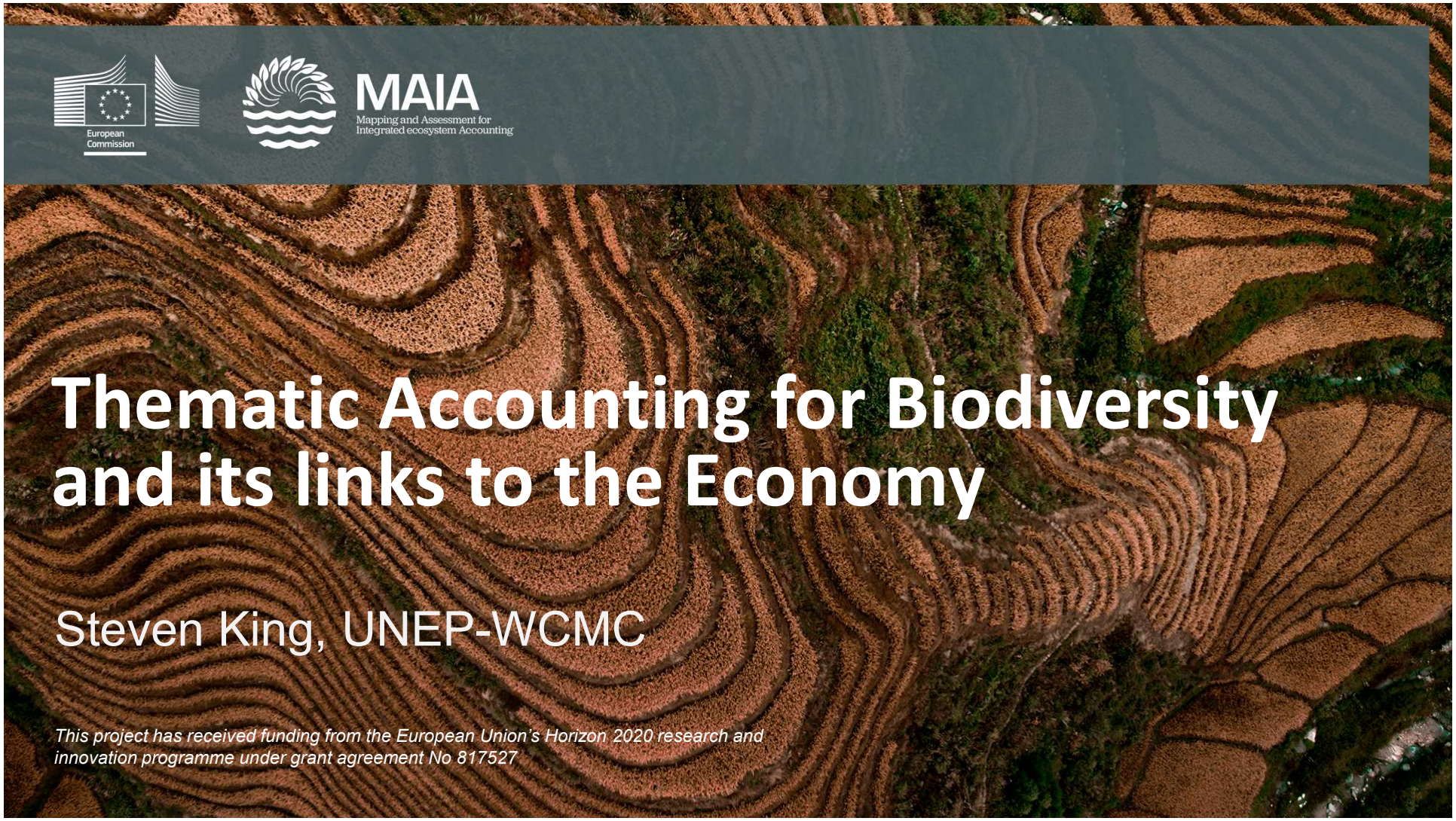

Thematic Accounting for Biodiversity and its links to the Economy

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817527

Presentation Outline

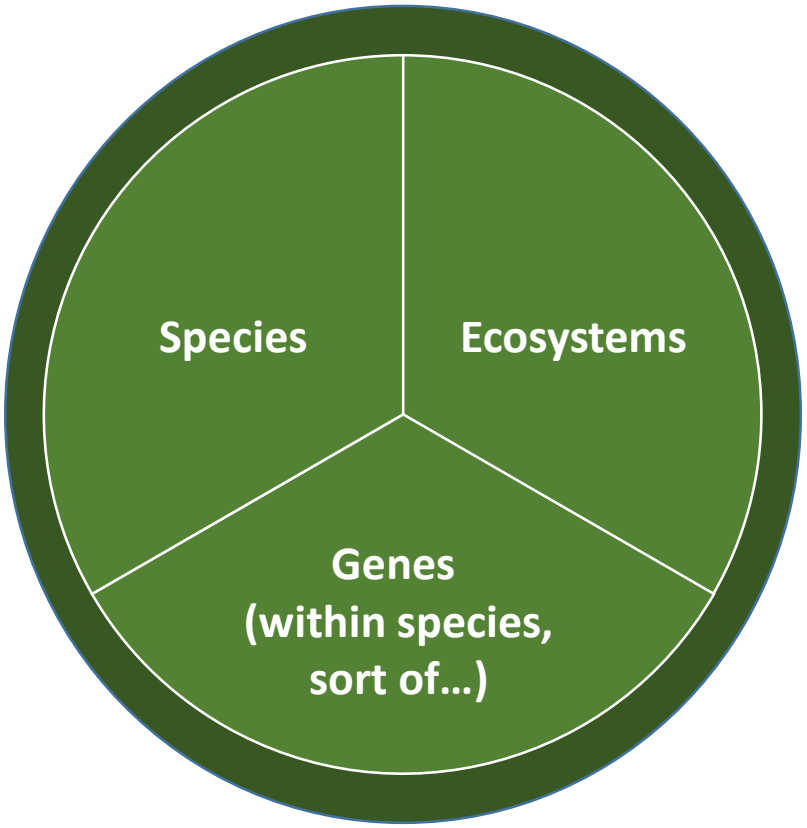
- **Biodiversity in the SEEA EA** - Reflections on thematic sub chapter 13.3
- **Accounting for Species**
- **Relevant Accounts** - Building a coherent picture links between biodiversity and the economy
- **Accounting for (Bio)Diversity**

Biodiversity in the SEEA EA

SEEA EA adopts CBD Definition

"Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems"

Accounting for components of biodiversity



SEEA EA Accounts for Decisions

Account	Indicator / Aggregate	Relevance to supporting decision-making
Extent	Extent of Ecosystems	Trends in the extent of ecosystems important for biodiversity can be used to infer habitat loss and implications for species
Condition	Biotic characteristic indicators	Distinguishing EAs of higher biodiversity value. For example, with high values for species-based indicators. Identify where biodiversity is threatened, based on indicators of poor condition (e.g., invasive species abundance).
Condition	Abiotic characteristic indicators	Track where pressures on biodiversity may be manifesting (e.g., where pollutant concentrations are increasing).
Services	Physical Supply and Use	Aggregates for provisioning services can identify where overexploitation of biodiversity is occurring (e.g., where sustainable yields are being exceeded).

Additional SEEA CF and SNA Accounts are also very relevant to Thematic Accounting for Biodiversity.
See Table 13.2 of SEEA EA. https://seea.un.org/ecosystem-accounting

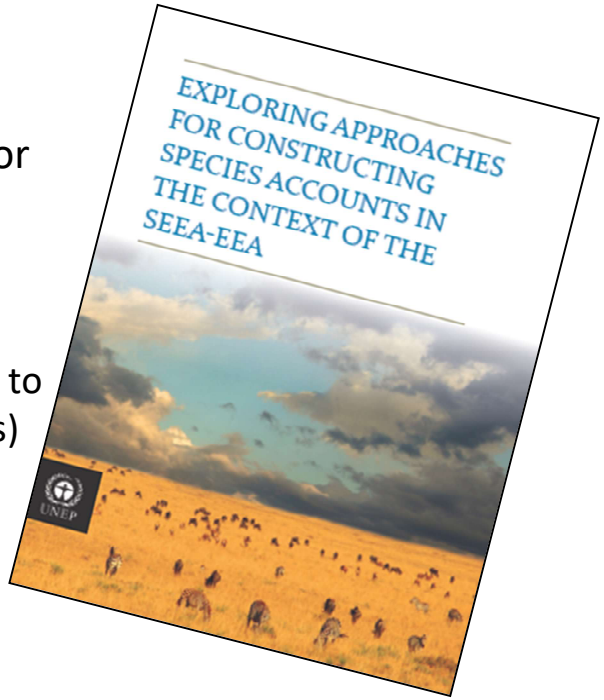
Approaches to Accounting for Biodiversity

- **Geographical scope:** Focus on targeted Ecosystem Accounting Areas where biodiversity is a concern (e.g., Protected Areas – Anyone doing this?)
- **Accounting entities:** Accounts for additional biodiversity relevant entities (e.g., species – next section)
- **Relevant accounts:** Organise a set of accounts in one place to communicate a picture of the relationship between biodiversity and economy to decision-makers (towards the end of the personation)

Accounting for Species

Accounts for Species (more entities!)

- Provide a more coherent picture on different components of biodiversity
- Measure changes in species stocks (e.g., abundance), distribution or status / extinction risk over an accounting period:
  - Understand sustainability of provisioning and regulating ecosystem services flows (e.g., fish provisioning, pollination)
  - Provide indicators for cultural ecosystem services that are challenging to measure (e.g., with respect to conservation associated non-use values)
  - Potentially inform on ecosystem condition
- Development of Species Accounts
  - Proposed these are compiled at flexible scales (e.g., for EAAs or ETs within EAAs)
  - Further proposals for compilation are briefly provided



http://wcmc.io/Species_Accounting

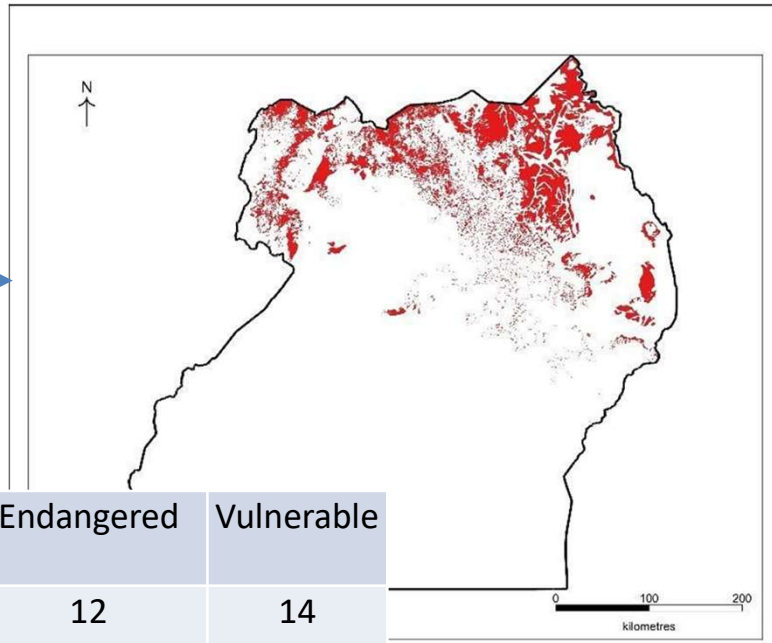
Species Account (Table 13.1)

	Species or Species Group 1	Species or Species Group 2	Species or Species Group 3	Species or Species Group 4	Species or Species Group 5	Species or Species Group 6	Species or Species Group 7	Species or Species Group 8	Species or Species Group 9	Species or Species Group 10
UNITS OF MEASURE										
Opening measure										
Additions										
Natural										
Managed										
Upward reapprisals										
Reductions										
Natural										
Managed										
Downward reapprisals										
Net change										
Closing measure										

Species Accounts Examples

Uganda Shea Butter Nut Tree Accounts (1990 to 2015). The red areas in the map represent the closing stock of Shea Butter Nut Tree suitable habitat in 2015

https://www.sciencedirect.com/science/article/pii/S1462901120313769



	Extent (ha)
Opening Stock (1990)	2,706,485
Net change	-605,561
Closing Stock (2015)	2,100,924
Protected Stock (2015)	442,466
Unprotected Stock (2015)	1,658,458

	Regionally Extinct	Critically Endangered	Endangered	Vulnerable
2000	2	0	12	14
2005	2	1	13	15
2010	2	1	13	18
2015	2	5	14	17
Net change	0	5	2	3

Endangered Species Account for the Central Highlands (species listed under the Environmental Protection and Biodiversity Conservation Act 1999).

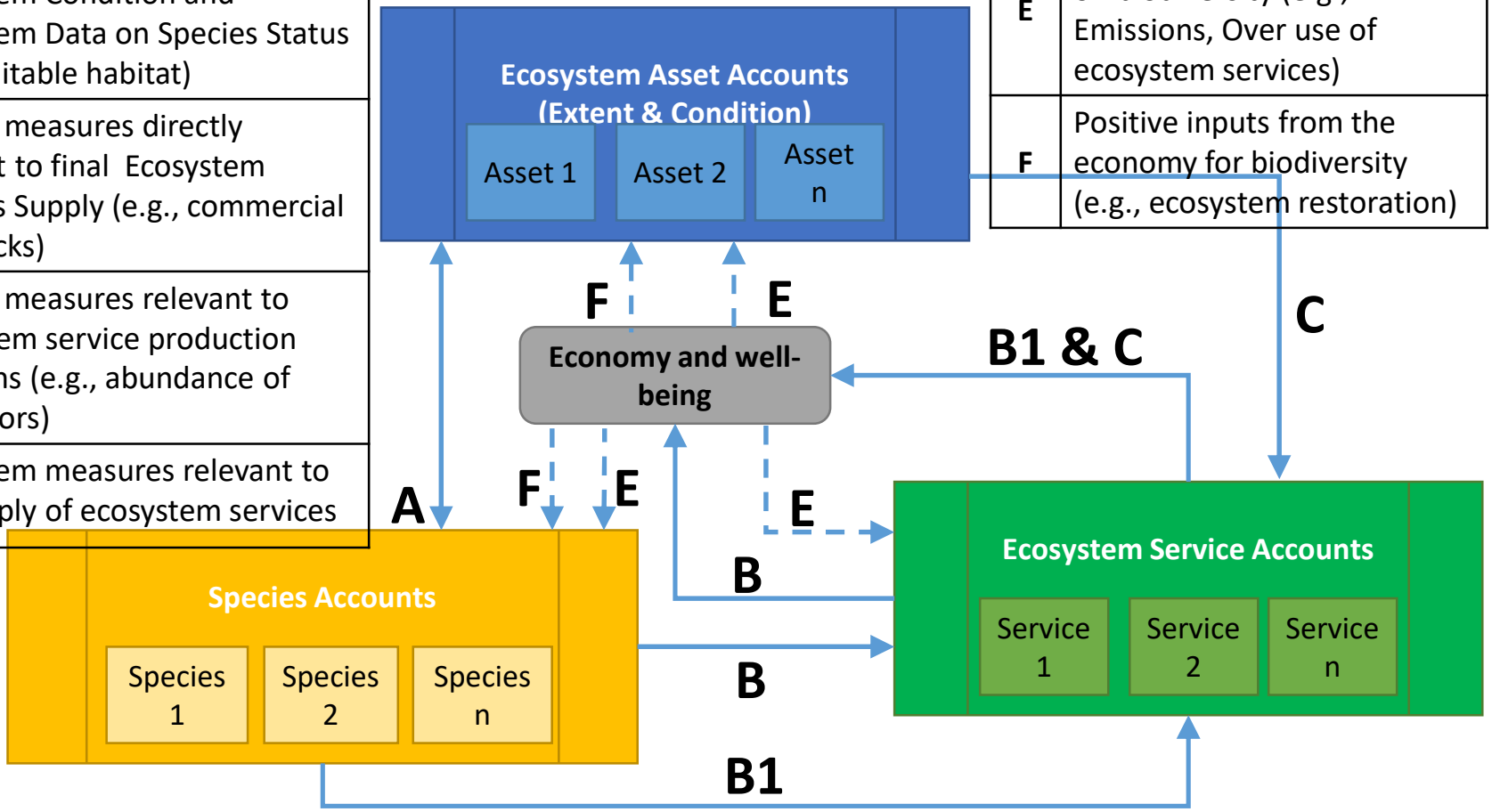
Relevant Accounts: Building a coherent picture of the links between biodiversity and the economy

Linking Biodiversity into National Economic Accounting:

https://www.sciencedirect.com/science/article/pii/S1462901120313769

A	Species Data to inform on Ecosystem Condition and Ecosystem Data on Species Status (e.g., suitable habitat)
B	Species measures directly relevant to final Ecosystem Services Supply (e.g., commercial fish stocks)
B1	Species measures relevant to ecosystem service production functions (e.g., abundance of pollinators)
C	Ecosystem measures relevant to the supply of ecosystem services

E	Pressures from the economy on biodiversity (e.g., Emissions, Over use of ecosystem services)
F	Positive inputs from the economy for biodiversity (e.g., ecosystem restoration)



Insights for decision-making

- Revealing ecological and ecosystem service returns on environmental expenditure
- Understanding biodiversity conservation in terms opportunity costs (e.g., Not proceeding with timber harvesting)
- Revealing the multiple benefits of biodiversity for different objectives:
  - Nature based solutions / Ecosystem based adaptation / climate change mitigation
- Presenting information on species, ecosystems and associated ecosystem services to inform social objectives:
  - Employment in related sectors (e.g., tourism and fisheries subsectors)
  - Poverty incidence (e.g., to inform investment in ecosystem based livelihoods)
- Mainstreaming the values of biodiversity into economic planning
- Economic planning that recognises the multiple benefits biodiversity provides, shares investment and mitigates economic impacts across sectors

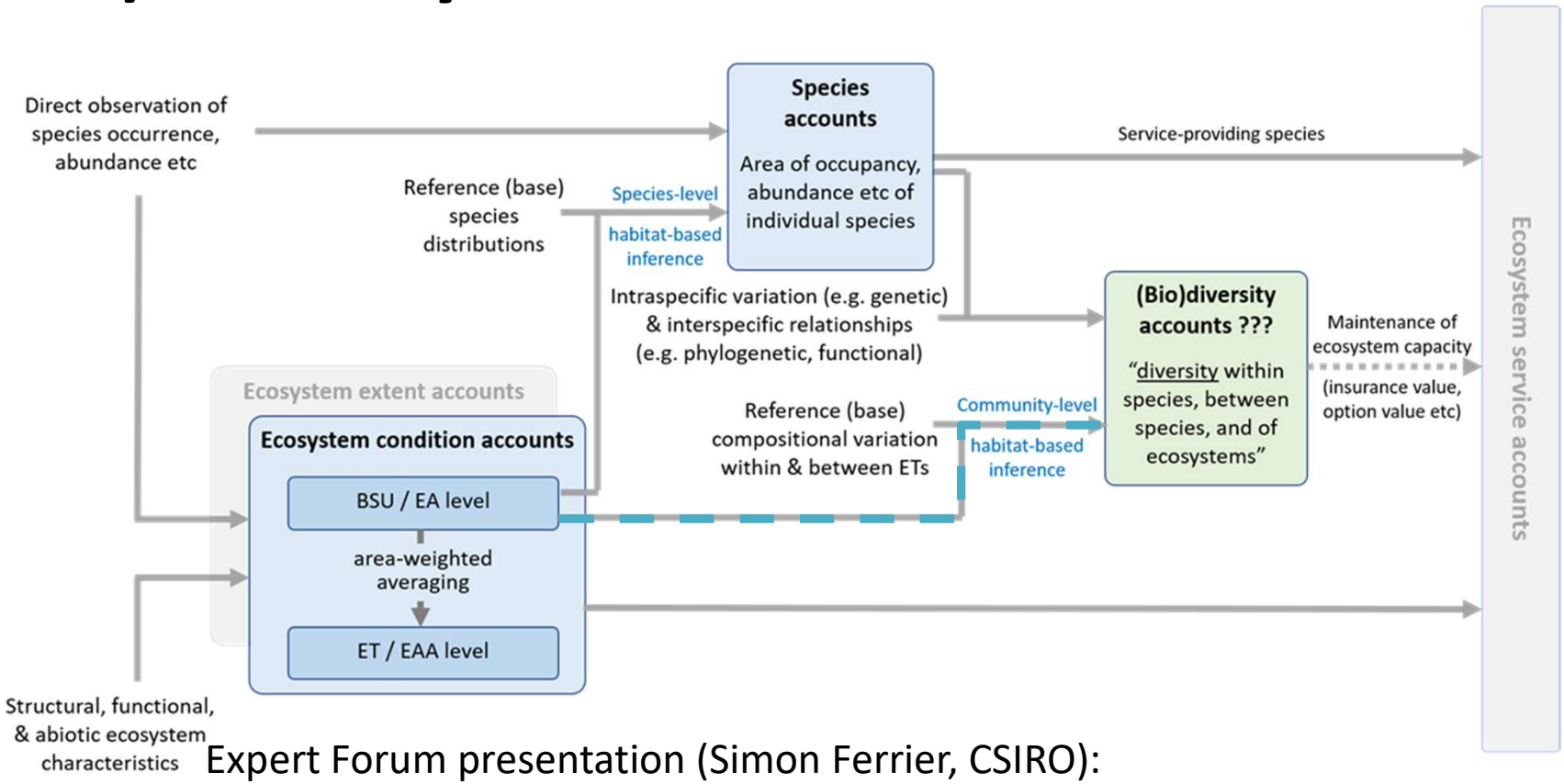
Accounting for (Bio)Diversity

The CBD emphasis on variability (or diversity)

Accounting for (Bio)Diversity

- Ecosystem Condition Account for species diversity within Ecosystem Assets (i.e., local diversity)
- There is no account for diversity between Ecosystem Assets and species assemblages (i.e., at EAA or landscape scale)
- All of the components of biodiversity and the way in which they interact across scales underpins both current and future ecosystem services supply
  - Important for achieving multifunctional and resilient landscapes
  - Maintaining capacity of Ecosystem Assets for Ecosystem Services Supply.
  - Maintaining options for future Ecosystem Services
- See Section 3.2 and example for Peru at: https://www.sciencedirect.com/science/article/pii/S1462901120313769

(Bio)Diversity Accounts



Expert Forum presentation (Simon Ferrier, CSIRO):
https://seea.un.org/sites/seea.un.org/files/ferrier_-_seea-eea_expert_forum_.pdf

MAIA
Mapping and Assessment for Integrated ecosystem Accounting

Mapping & Assessment for Integrated ecosystem Accounting

http://maiaportal.eu/

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