NCA in Germany:
From Research to National Statistics

LUH	Sabine Lange, Benjamin Burkhard
IOER	Karsten Grunewald, Sophie Meier, Ralf-Uwe Syrbe
BfN	Burkhard Schweppe-Kraft, Beyhan Ekinci
Destatis	Simon Felgendreher, Simon Schürz, Johannes Oehrlein, Jonathan Reith, Stephany Coronado-Wuth, Marius Bellingen
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Introduction   **The Institutions**

Leibniz University Hannover (LUH)

Leibniz Institute of Ecological Urban and Regional Development (IOER)

Thünen Institute of International Forestry and Forest Economics

Federal Agency for Nature Conservation (BfN)

German Federal Statistical Office (Destatis)

.... & **more**

Introduction   The Institutions

Leibniz University Hannover (LUH)

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Federal Agency for Nature Conservation (BfN) [1]

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Introduction   The Institutions

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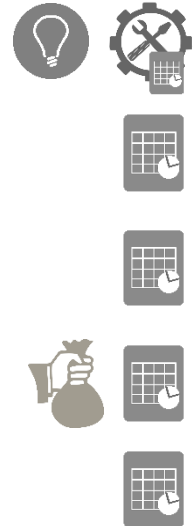
Thünen Institute of International Forestry and Forest Economics

Federal Agency for Nature Conservation (BfN) [1]

German Federal Statistical Office (Destatis)

…. & **more**

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Mapping and Assessment for
Integrated ecosystem Accounting

European
Commission

Introduction **Timeline Ecosystem Accounting progress**

2016/2017
- Launch initial EA/ EA-like research projects (such as Accounting I and ReWaLe)

2018
- Launch of MAIA project

2019
- Request by the Green party to the Federal Government

2020
- Launch of Accounting II project
- 1. National Ecosystem Accounting Conference
- Launch of the EA at Destatis

2021
- Adoption of SEEA EA by UN Statistical Commission
- Publication of first official national ecosystem extent account
- 2. National Ecosystem Accounting Conference

2022
- MAIA project and Accounting II project end

Additional involvement (e.g. Destatis, BfN, LUH) in expert panels/ groups, as
- London Group on Environmental Accounting and UN Committee of Experts on Environmental-Economic Accounting (UNCEEA)
- Forum of Experts on SEEA Ecosystem Accounting
- SEEA (E)EA Revision process
- Eurostat Taskforce EA

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Ecosystem Accounting - **Research**

- Foundation: Diverse MAES DE activities (BfN/BMUV supported, IOER, LUH, Thünen institute, **…**)
- First accounting efforts in initial research projects (such as Accounting I and ReWaLe project)

Ecosystem Accounting - **Research**

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    → Executed by Leibniz Institute of Ecological Urban and Regional Development (**IOER**)

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- Compilation of various ecosystem accounts; currently being improved + extended

- Building upon extensive (national and international) scientific experiences on MAES

- "**Pioneering**"/ Development of a scientific foundation on ecosystem accounting in Germany

- Exploration of different methods and approaches

    → Room for the implementation of **experimental** methods

1. The LUH and BfN are official MAIA partner.

2. Participation in various MAIA activities (e.g. workshops, webinars, compilation of deliverables and country fact sheets).
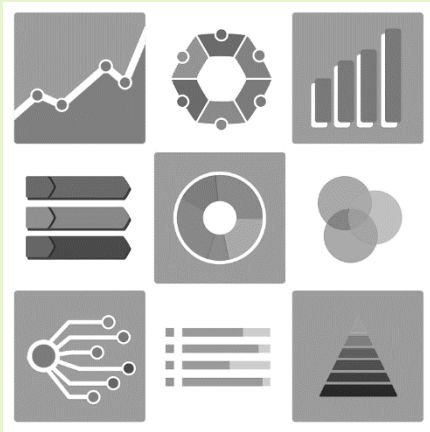
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Ecosystem Accounting - **Research**

Account	Ecosystem Types / Ecosystem Services	Link to research
Ecosystem extent account	All ecosystems	Grunewald et al., 2020
Ecosystem condition account	All ecosystems	
Ecosystem monetary asset account		
Ecosystem services account - physical terms	Diverse	Grunewald et al., 2021a,b; Syrbe et al., 2018 and 2022; Meier et al., 2021; Hermes et al., 2018; Ekinci et al., 2022; Schweppe-Kraft et al., 2020; Grunewald et al., 2021b; Elsasser et al., 2020 and 2021
Ecosystem services account - monetary terms	Diverse	Grunewald et al., 2021a,b; Schweppe-Kraft et al., 2020; Ekinci et al., 2022b; Elsasser et al., 2020 and 2021
Thematic account	Biodiversity	Schweppe-Kraft et al., 2020

State of development
Finished
Ongoing
None ongoing or published

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Ecosystem Accounting - **Statistical office**

- Established Ecosystem Accounting team
- Compilation of nationwide, spatially and temporally consistent ecosystem accounts
- Standardized requirements for input data sets and methodology
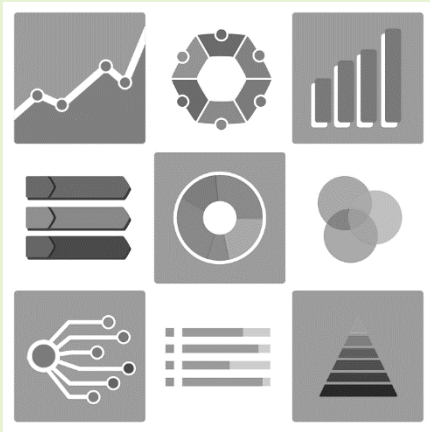- Focus on automated accounting process

Ecosystem Accounting - **Statistical office**

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- Standardized requirements for input data sets and methodology
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- Building on the broad experience and knowledge base of ecosystem research in Germany and the SEEA EA framework
- Favorable opportunities for collaboration with specialized institutions (research and governmental)
- Extensive international exchange (participation in expert panels/ groups such as the London Group on Environmental Accounting and UN Committee of Experts on Environmental-Economic Accounting (UNCEEA))
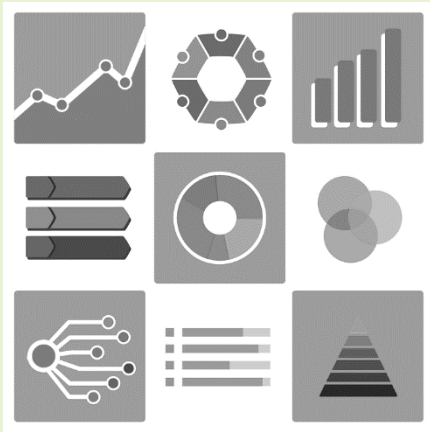
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1. Participation in various MAIA activities (e.g. workshops, webinars, compilation of deliverables and country fact sheets).
2. Personalized support from LUH as MAIA partner.
3. Expert exchange through MAIA network.

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Ecosystem Accounting - **Statistical office**

Account	Ecosystem Types / Ecosystem Services	Link to research
Ecosystem extent account	All ecosystems	Destatis, 2021
Ecosystem condition account	All ecosystems	
Ecosystem monetary asset account		
Ecosystem services account - physical terms	Diverse	
Ecosystem services account - monetary terms	Diverse	
Thematic account		

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Practical Example
Ecosystem extent account (Destatis, 2021)
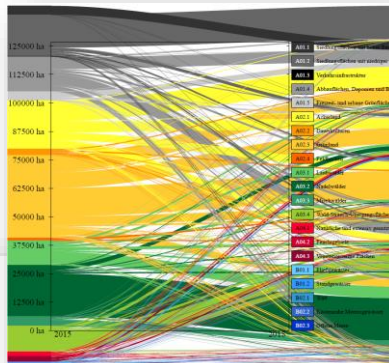
3.1 Bundesweite Flächenbilanz der
   Ökosysteme in der Abteilung

A02 Agrarland

Angaben in Hektar (ha),

wenn nicht anders spezifiziert

Ökosystem-Bilanzierung	Ökosystem-abteilung A02 Agrarland	Davon Ökosystemgruppen				
		A02.1 Ackerland	Darunter Ökosystemklassen	A02.2 Dauerkulturen	Darunter Ökosystemklassen	
			A02.11 Nicht bewässertes Ackerland		A02.21 Weinbauflächen	A02.22 Obst- und Beerenobst-bestände
	1	2	3	4	5	6
Anfangsbestand (2015)	19 036 804	12 225 039	12 225 039	395 263	118 753	89 411
Zunahme	9 134	4 490	4 490	1 020	25	268
Abnahme	41 771	17 126	17 126	2 157	145	185
Zunahme + Abnahme ('Turnover')	50 905	21 616	21 616	3 177	171	453
Stabiler Bestand						
Anfangsbestand - Abnahme	18 995 033	12 207 913	12 207 913	393 106	118 608	89 226
in % des Anfangsbestandes	99,8	99,9	99,9	99,5	99,9	99,8
Nettoveränderung [1]						
Zunahme - Abnahme	- 32 637	- 12 636	- 12 636	- 1 137	- 120	83
in % des Anfangsbestandes	-0,2	-0,1	-0,1	-0,3	-0,1	0,1
‹ Mindestgröße	- 3 860	9 584	9 584	434	214	80
Endbestand (2018)	19 000 306	12 221 987	12 221 987	394 559	118 847	89 574

National Ecosystem Groups

- Recreational and urban green areas
- Settlement areas with high building density
- Settlement areas with low building density
- Transport infrastructure
- Mining areas, dumpsites and construction sites
- Arable land
- Permanent cropland
- Pastures
- Hedgerows
- Broadleaf forests
- Coniferous forests
- Mixed forests
- Transitional wood- and shrubland
- Natural or extensively used grassland
- Wetlands
- Sparsely or non-vegetated areas
- Water courses
- Lakes
- Tidal flats
- Coastal waters
- Open sea

Scale: 1:3.500.000   Projection: Lambert Azimuthal Equal Area, ETRS89 © Federal Statistical Office Germany, Wiesbaden (2021)

Ecosystem Accounting - **Overview**

Research

- Diverse research *projects*

- Building upon extensive scientific experiences on MAES

- Compilation/ improvement of several ecosystem accounts

- "***Pioneering***"/ Development of a scientific foundation on ecosystem accounting in Germany

- Exploration of different methods and approaches

  – Incl. **experimental** methods

Statistical office

- Established Ecosystem Accounting team

- Compilation of nationwide, spatially and temporally **consistent** ecosystem accounts

- Building on ecosystem research in Germany and the **SEEA EA framework**

- **Standardized requirements** for input data sets and methodology

- Focus on automated accounting process

- Favorable opportunities for collaboration with specialized institutions

- Extensive international exchange

Challenges & future opportunities

- Successful collection of fair selection of important datasets

  - However, continuous and nationwide **data** sources still pose some issues due to accuracy, quality, scope and regularity of surveys and data collections

- **Aggregation** of data and information

- Application of EA in monetary terms

  - Conceptualization

  - Diversity of methods → Agreement on appropriate monetary valuation methods
    (to support decision-making + to ensure the political acceptance of EA is not jeopardized)

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- Application of EA in monetary terms
  - Conceptualization
  - Diversity of methods → Agreement on appropriate monetary valuation methods
  (to support decision-making + to ensure the political acceptance of EA is not jeopardized)
- Obtain and maintain sufficient **resources**
- Ensure close **cooperation** between the different organizations/agencies
  - Also maintain international cooperation between the MAIA MS and beyond
- Improve the **knowledge transfer** between the statistical/scientific communities
- Improve knowledge transfer between EA experts and **policy makers**

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Ecosystem Accounting **Outlook**

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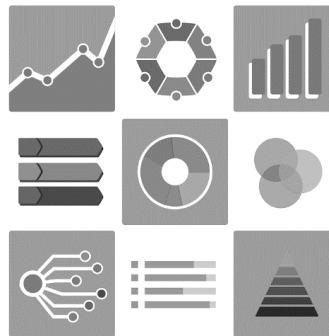· Launch of the EA at Destatis

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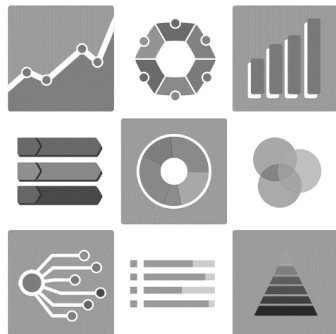· 2. National Ecosystem Accounting Conference

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Outlook

Practical outlook – Statistical office

- ❖ Publication of the gridded **geodata**
- ❖ Publication of first official national **ecosystem condition account** in 2023
- ❖ Compilation of various official national ecosystem service accounts (in biophysical and monetary terms)
- ❖ **Actualization** of all accounts in a three-year cycle

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Other outlook perspectives

❖ Amendment to the regulation on European environmental accounts

❖ Convention on Biological Diversity COP-15: Post-2020 Global Biodiversity Framework

❖ Ongoing national and international initiatives/ research projects (Bio-Mo-D, Selina)

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- ❖ Ongoing national and international initiatives/ research projects (Bio-Mo-D, Selina)

- ❖ Strengthen Science-Policy Interface

- ➢ Enable easy access to information for political and corporate decision-making processes

- ➢ Opportunities for using participatory processes to identify priorities

- ❖ Development of a communication strategy to increase public awareness

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...FYI: Top Tip

.... Interested in more technical details and specifics on
Ecosystem Accounts in Germany (and all other MAIA countries)?

→ Check out the MAIA Deliverable D3.3

- Country-specific overview on Ecosystem Accounting progress and

- Technical reporting on all MAIA-**supported*** ecosystem core accounts

*MAIA-supported = MAIA contributions such as funding, personalized support/consultancy from a MAIA partner/ MAIA network

Relevant references

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Thanks a lot for your attention!

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