

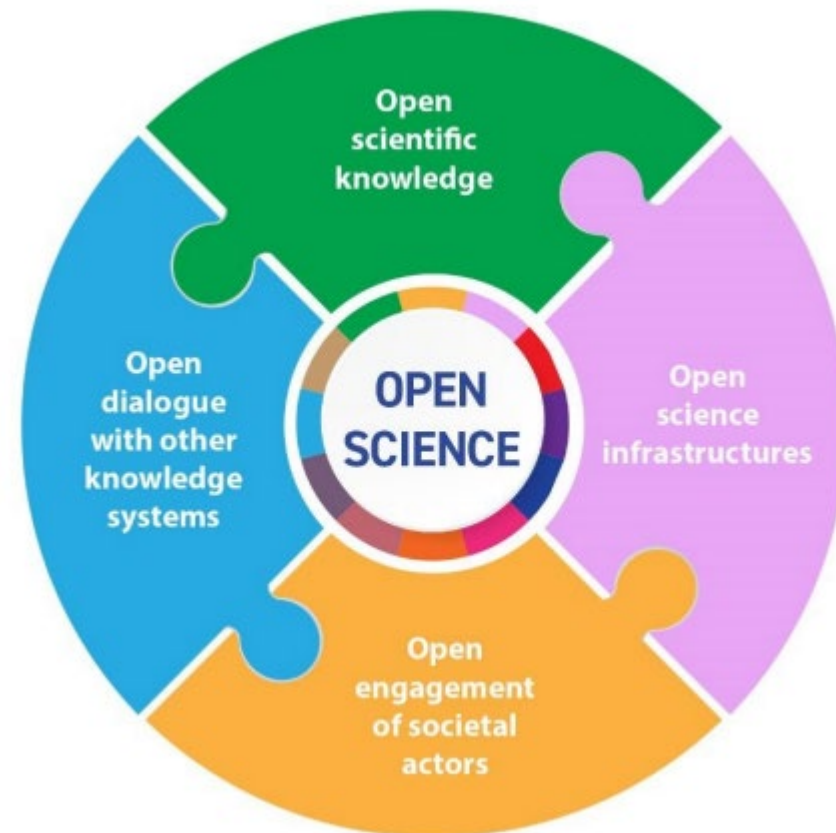
Why open science matters for agriculture

Daniel Albertsson, Swedish University of Agricultural Sciences (SLU)

Presented at *LIBSENSE-RUFORUM Webinar: Understanding Open Science and Research Data Management: International and Local Perspectives*, 2023-02-28

Open science?

- Open publications
- Open methodology
- Open source
- Open peer review
- Open educational resources
- Open data
- Calls for open science
 - Global: e.g. UNESCO
 - Regional: e.g. EU, Plan S
 - National: Governments, funders
 - "Organisational": policy documents



Source: UNESCO, CC-BY-SA

Why open science matters (for agriculture)?

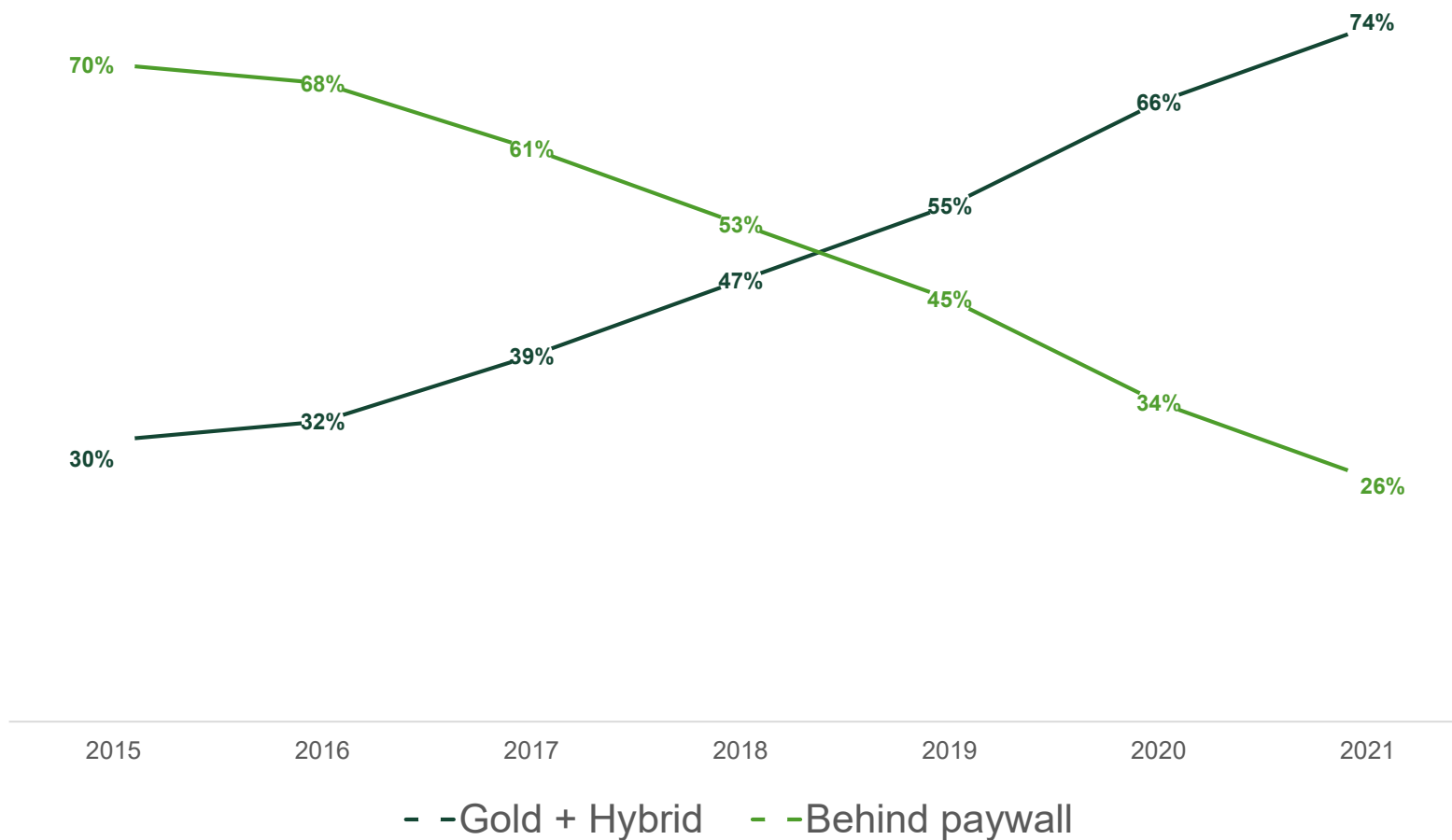
- 1. Efficiency
 - Increased access to publications and journals can reduce the duplication of research and the cost of creating and reusing data. It allows others to build and expand on prior work without repeating the same information.
- 2. Quality
 - Due to a wider evaluation, open science makes research more reproducible, allowing for more replications and validations of data. This helps alleviate the issue of manipulation of data.
- 3. Innovation
 - Open science provides individuals with an increased access to research, which in turn, leads to more innovation of new products and ideas.
- 4. Collaboration and Societal Benefits
 - Increased access to research and publications allows for an increase in national and global collaboration. This speeds up the transfer of knowledge and assists in addressing issues that require a wider range of attention and collaboration.

Transformative agreements

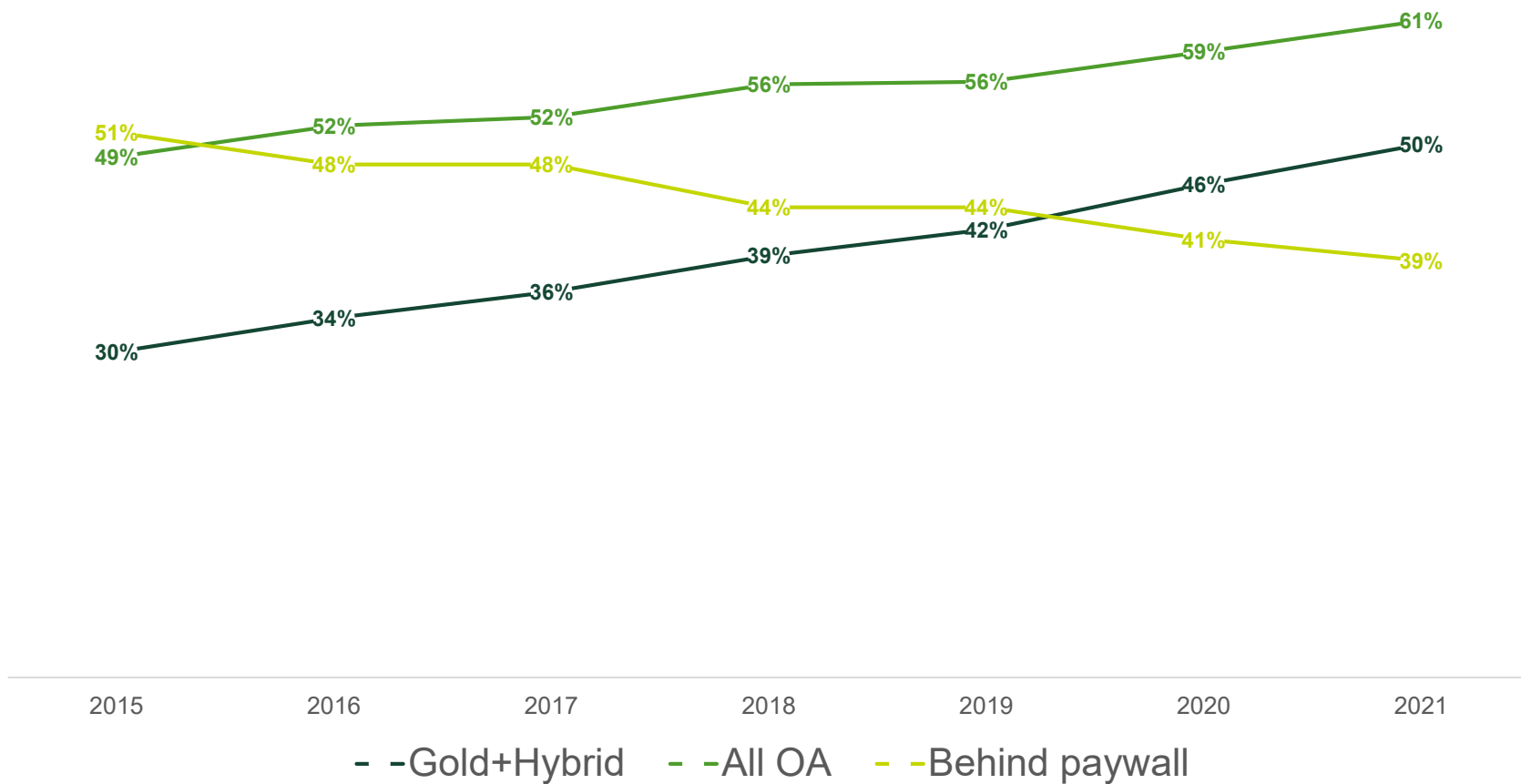
- Milestones: Springer Compact, 2016, and cancellation of Elsevier July 2018
- 2018: Plan S and immediate open access
- From Read & Publish to something more grand
- Goal: transform the publishing landscape before end of 2024
- Sweden has over 20 such agreements now
- So, how are we doing?



SHARE OF IMMEDIATE OPEN ACCESS (GOLD+HYBRID) ARTICLES WITH AT LEAST ONE SLU AUTHOR, 2015-2021

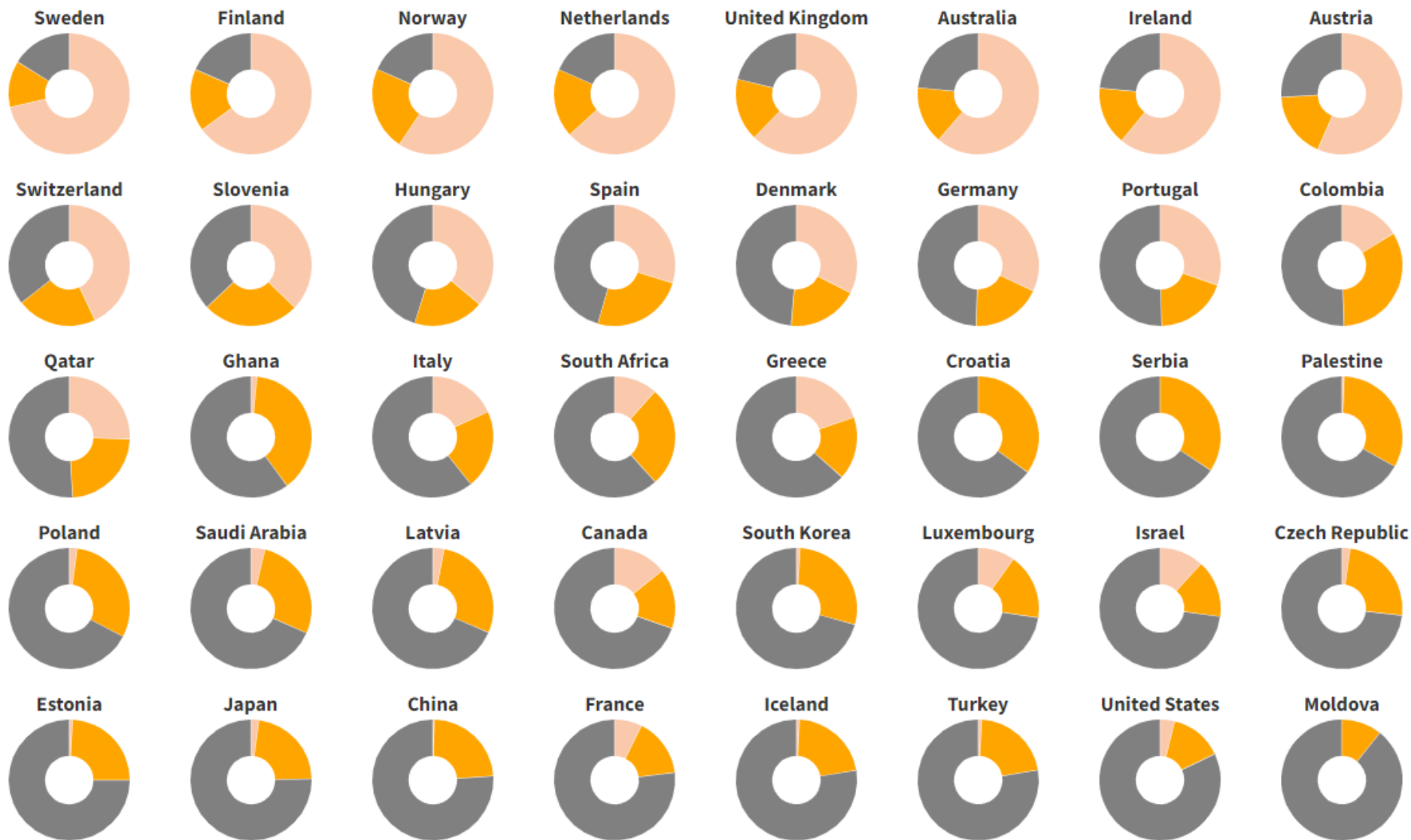


SHARE OF OPEN ACCESS TYPES FOR ARTICLES WITH AT LEAST ONE SUB-SAHARAN AUTHOR, 2015-2021



Ratio of corresponding authored papers published immediate open access

■ Transformative agreement
 ■ Fully OA journal
 ■ Hybrid/Closed



Challenges we face

- Transformation: little to none!!
- Only journal articles supported
- Rising costs
- Locked in: legacy publishers
- Ethical dilemmas: movement of corresponding authors to rich countries

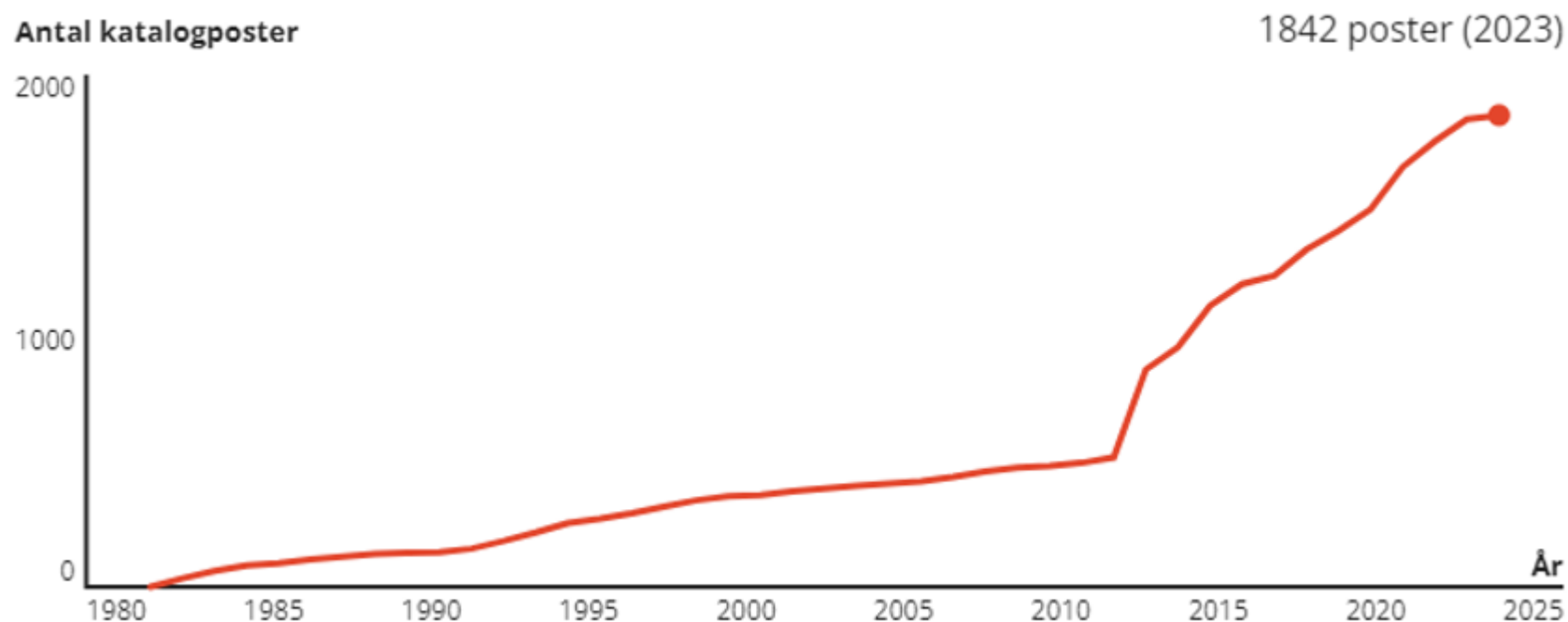


Next step for open science: open data

- Archival laws and the principle of publicity in Sweden
- EU and national goals: open data by 2026
- Funders demanding research data management plans
- Challenges: research projects with commercial interests



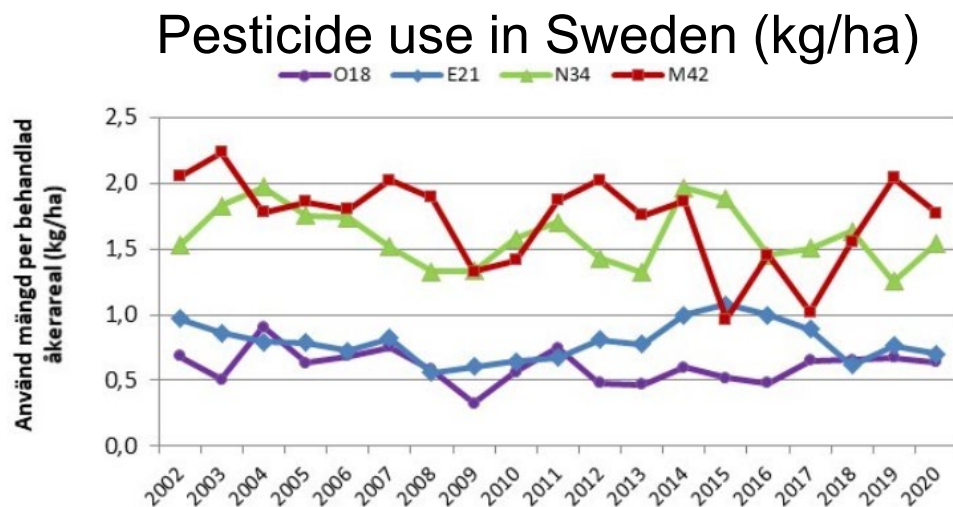
Swedish National Data Service, growth of catalogue entries since 1980



Examples of agricultural open data at SLU

Summary of our environmental, water and agricultural data:

- Nr. of samples: 1 020 638
- Datapoints: 16 491 267
- Stations: 53 512



Välj produkt

Åkermark och gröda

Välj undersökning

Mark- och grödoinventeringen

Välj ett provtagningsmedium

Matjord

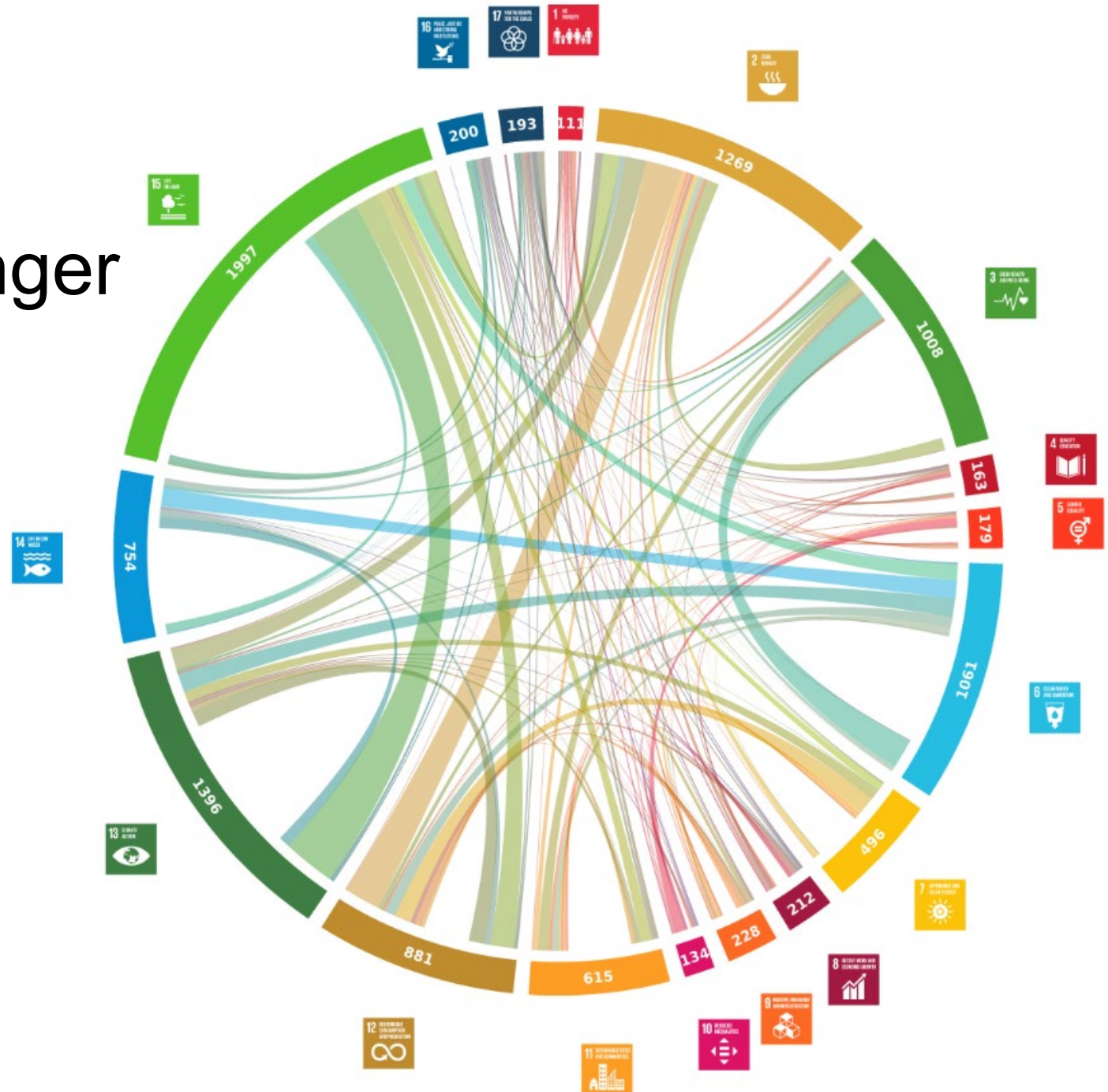
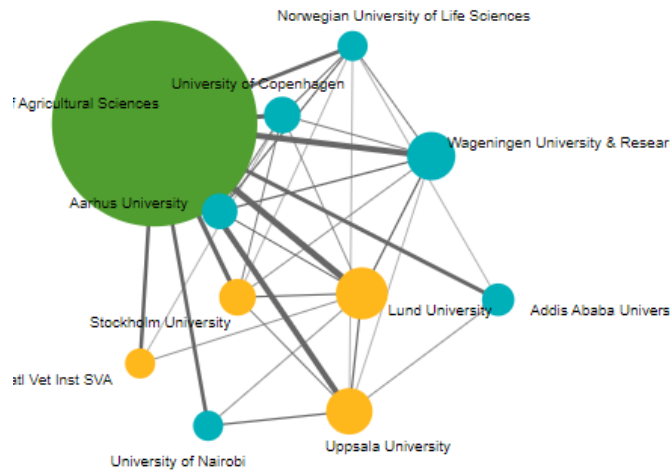
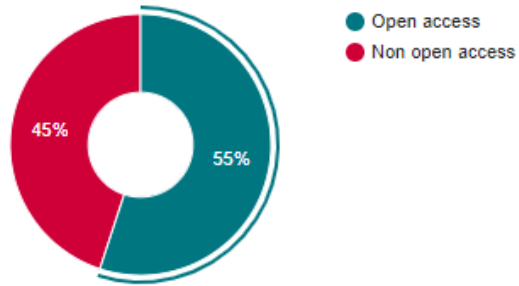
Välj parameter (frivilligt val)

Järn-AL

- ☒ Alla
- ☒ pH H2O
- ☒ Aluminium-AL
- ☒ Järn-AL
- ☒ Kalium-AL
- ☒ Fosfor-AL
- ☒ Fosformättnadsgrad
- ☒ Kalium-HCl
- ☒ Fosfor-HCl
- ☒ Kalcium utbytbar
- ☒ Kalium utbytbar



SDG 2 – Zero Hunger



Thank you for your attention!

Contact:

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Links of interest:

ESAC Market-Watch: <https://esac-initiative.org/market-watch/>

Discovering international data (link collection): <https://snd.gu.se/en/find-data/international-data>

SLUs publications and Agenda 2030:

<https://www.slu.se/en/collaboration/international/slu-global/agenda-2030/SLU-publications/>