



STI DATA FOR ADMINISTRATIVE AND STATISTICAL PURPOSES: BUILDING NEW SYNERGIES THROUGH THE OECD MARIAD GROUP

euroCRIS Conference
2nd December 2022

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About OECD and our work on STI policy and data

- International organisation based in Paris working with 38 member countries, EU and partners for “Better policies for better lives”
 - Internationally comparable evidence and analysis
 - Collaborative work to co-define best practices through consensus
 - Support to countries in their policy reform journeys
- Science, technology and innovation (STI) a core feature since its creation
 - And driven by STI data -> NESTI @60





SCIENCE AND INNOVATION GOING DIGITAL



Four distinct facets of digitalisation in science. Lessons from the OECD ISSA Survey 2018



Adoption of digital sci. productivity and collaboration tools (Productivity paradigm)



Practices for the curation and diffusion of data and code/workflows (Open science paradigm)



Use and development of advanced and data-intensive digital tools (Data intensive research paradigm)



Digital identity and online communication of scientific work (Visibility paradigm)



OECD Science, Technology and Industry Working Papers
2020/03

Charting the digital transformation of science:
Findings from the 2018
OECD International Survey
of Scientific Authors (ISSA2)

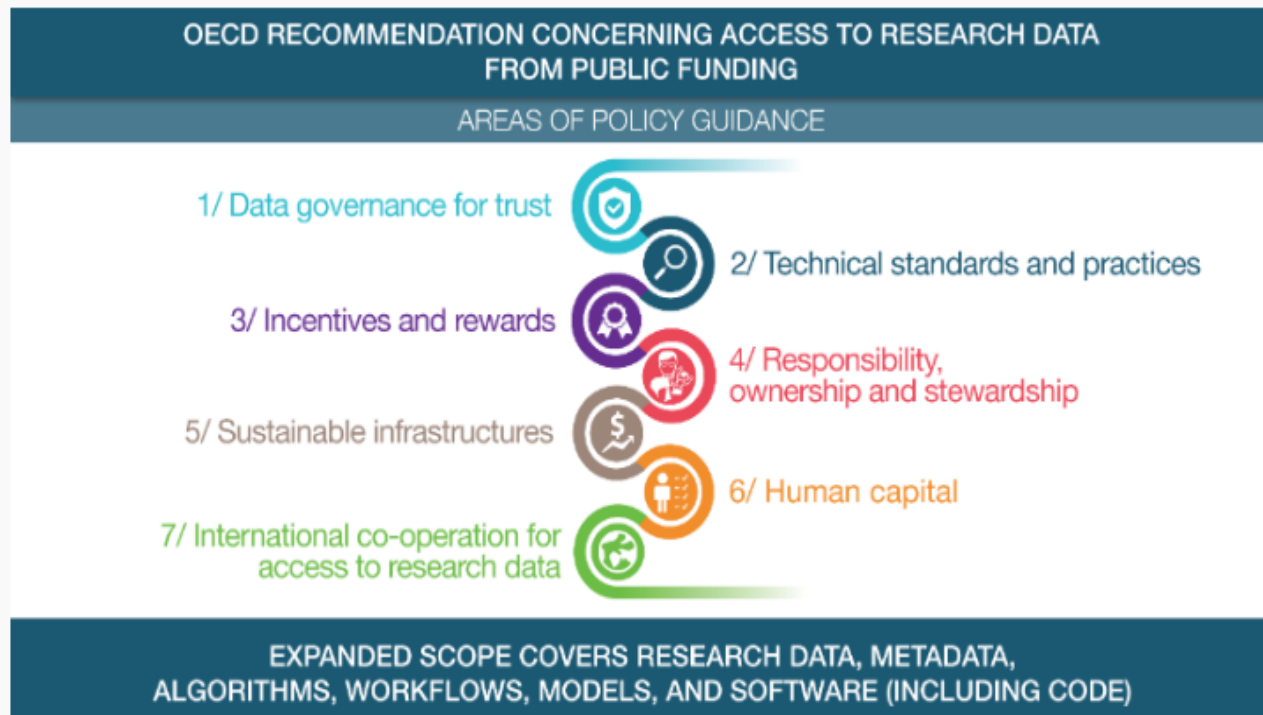
Michela Bello,
Fernando Galindo-Rueda

<https://doi.org/10.1787/1b06c47c-en>

OECD policy recommendations for data in the STI space

20 January 2021 - revised

[Recommendation concerning Access to Research Data from Public Funding](#)



6 October 2021 – new [OECD Recommendation on Enhancing Access to and Sharing of Data](#) (EASD), under the aegis of the Committee on Digital Economy Policy (CDEP), the Committee for Scientific and Technological Policy (CSTP), and the Public Governance Committee (PGC).



A META-CHALLENGE FOR STI POLICY

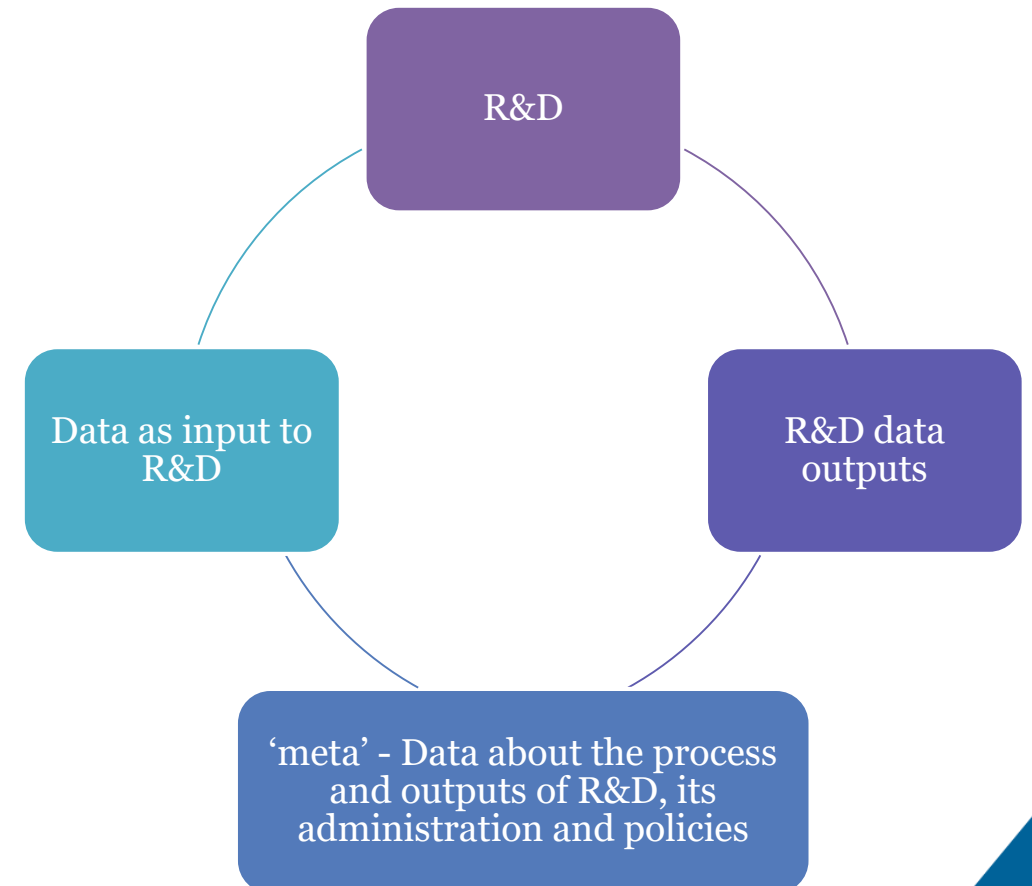
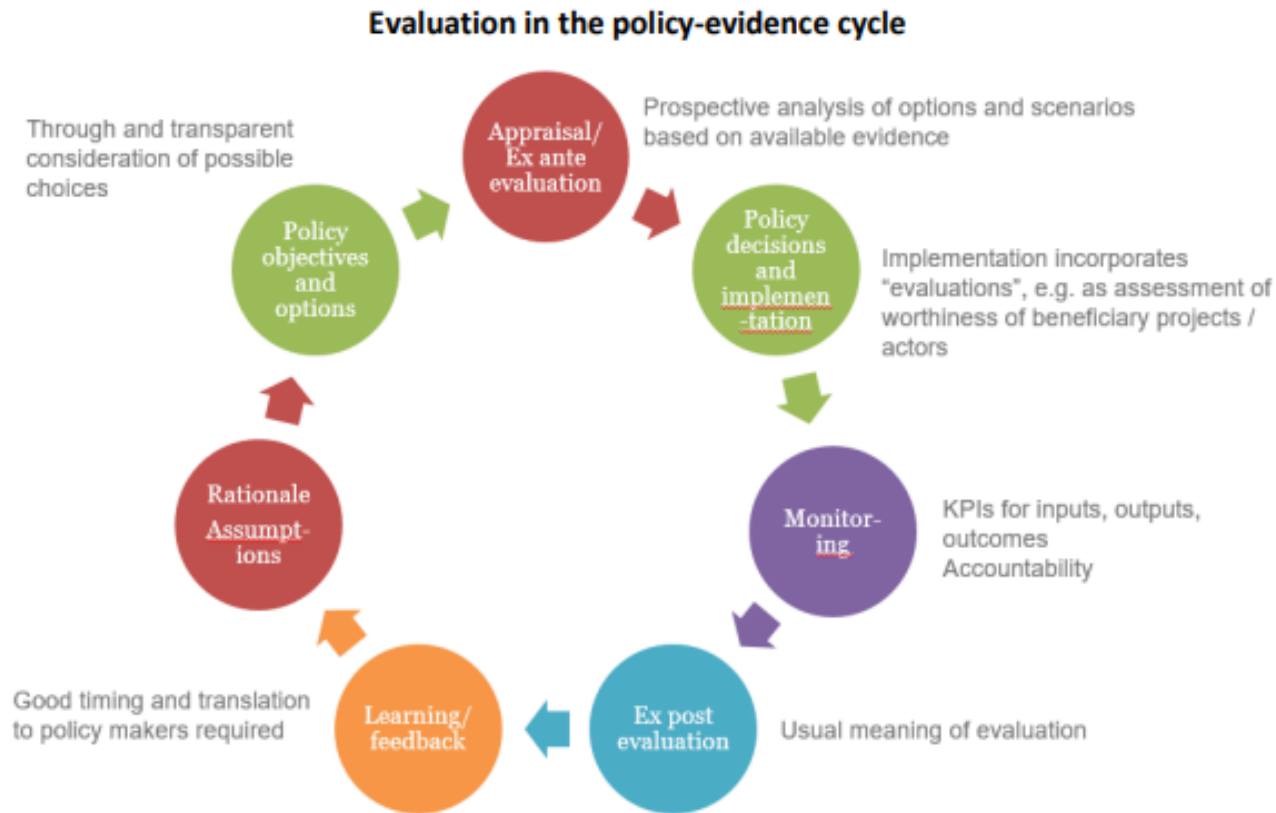
*main driver for establishing the National Research Information System was a recognition that **S&I data is not of high quality**, there is **little reuse of data**, and **data is not shared or linked**. We are not able to answer **quite basic questions**, such as public investment in particular areas of research, the outputs generated by the system, collaboration statistics and outcome measures such as earnings and productivity of spin-off companies.*

*This is **problematic for securing funding** from the Treasury and for gaining ongoing **support from the public**. The Ministry also recognised that research information was not scoring well against the government's stated information and **data management principles**.*



Infrastructures for R&D information matter:

Thinking about the metadata dimension for policy and administration

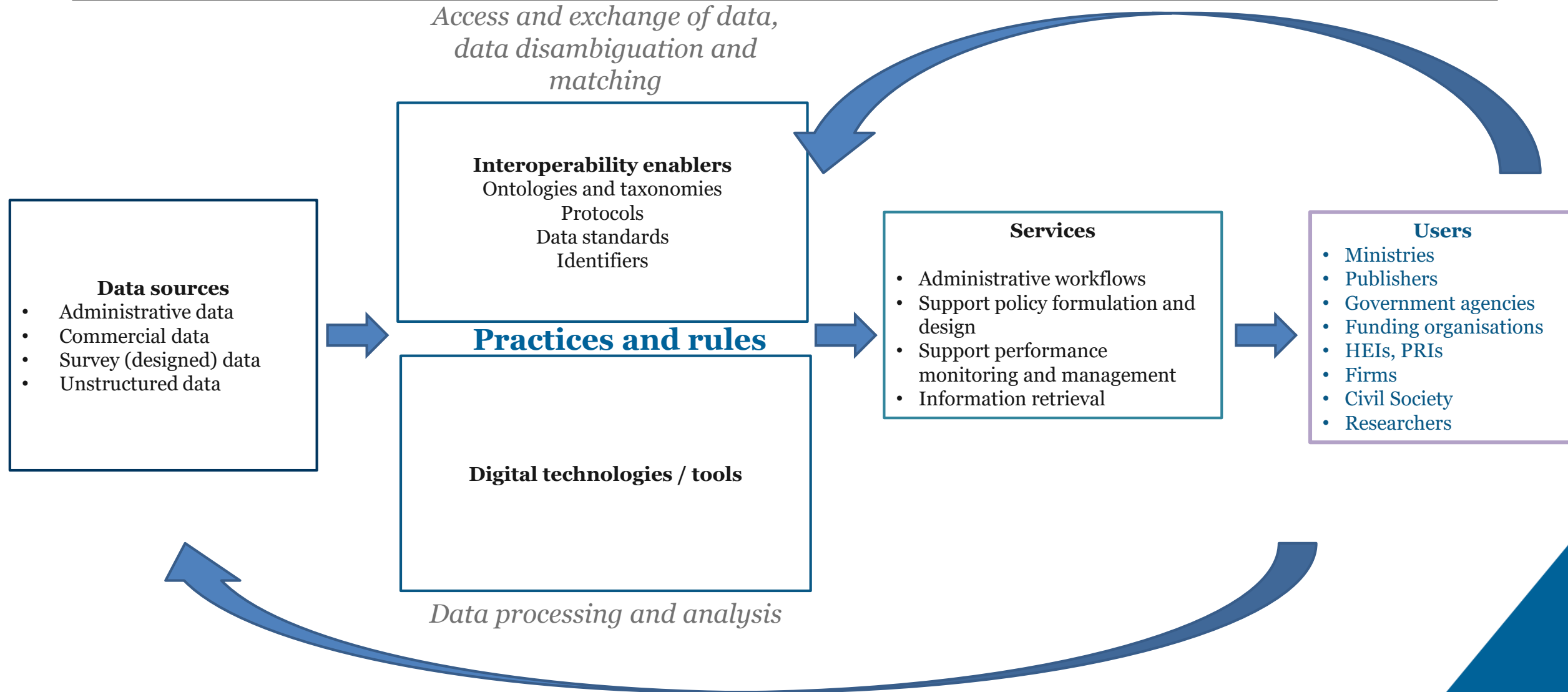


Source: OECD adaptation of the ROAMEF cycle

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf



A stylised conceptual view of admin data in the provision of STI policy and administration solutions





Analysis of national STI data landscapes : In depth OECD case study of Norway

- Produced on request of Norwegian Ministry of Education and Research
- “First of a kind” project.

OECD *publishing*

OECD CASE STUDY OF NORWAY'S DIGITAL SCIENCE AND INNOVATION POLICY AND GOVERNANCE LANDSCAPE

OECD SCIENCE, TECHNOLOGY
AND INDUSTRY
POLICY PAPERS

July 2020 No. 89



<https://doi.org/10.1787/20f80fa1-en>



Key delivery actors and roles in Norway's STI digital landscape

Ministries



- Education & research
- Industry
- Health
- Local govt and modernisation

Funding agencies



- STI Statistics (business and aggr)
- **Full STI data clearinghouse (stat and admin)**
- Research and STI policy evaluation

Statistical data infrastructures

Administrative data infrastructures



Publications

Research and consultancy support on STI



CRISTIN

Current Research Information System in Norway

NIFU

Nordic Institute for Studies in Innovation, Research and Education

Data archives / Projects repositories



Difi

Agency for Public Management and eGovernment



Universities



Research institutes

Industry



patent trademark design
Norwegian Industrial Property Office



NORWEGIAN REGISTER FOR SCIENTIFIC JOURNALS



WHY CREATE THE OECD EXPERT GROUP ON MANAGEMENT AND ANALYSIS OF RESEARCH AND INNOVATION ADMINISTRATIVE DATA (MARIAD)?





Administrative data *for* STI indicators and analysis

- Are STI administrative data worlds apart from official statistics? Latter draw on:
 - Principally on statistical surveys of STI actors, designed with specific ag. indicator purposes
 - Sometimes use data that exists for admin purposes as complement – strict conditions
- Statistical/administrative paths are very closely intertwined:
 - STI actors responding to official surveys draw on data they hold for management and admin purposes.
 - Administrative data structures can be guided by same design considerations as official statistics and face similar challenges.
 - Administrators use stat surveys to track some of their activity, struggle for response.
- Significant space of STI policy analysis for which official STI stats is not sufficient, requiring the use of all possible/relevant data sources and tools – but how?
 - Need “spaces” – for dialogue and work

Gross domestic expenditure on research and development, UK: 2020

Annual estimates of research and development performed and funded by business enterprise, higher education, government, UK Research & Innovation and private non-profit organisations.

This is the latest release. [View previous releases](#)



Contact:
Cecil Prescott

Release date:
22 November 2022

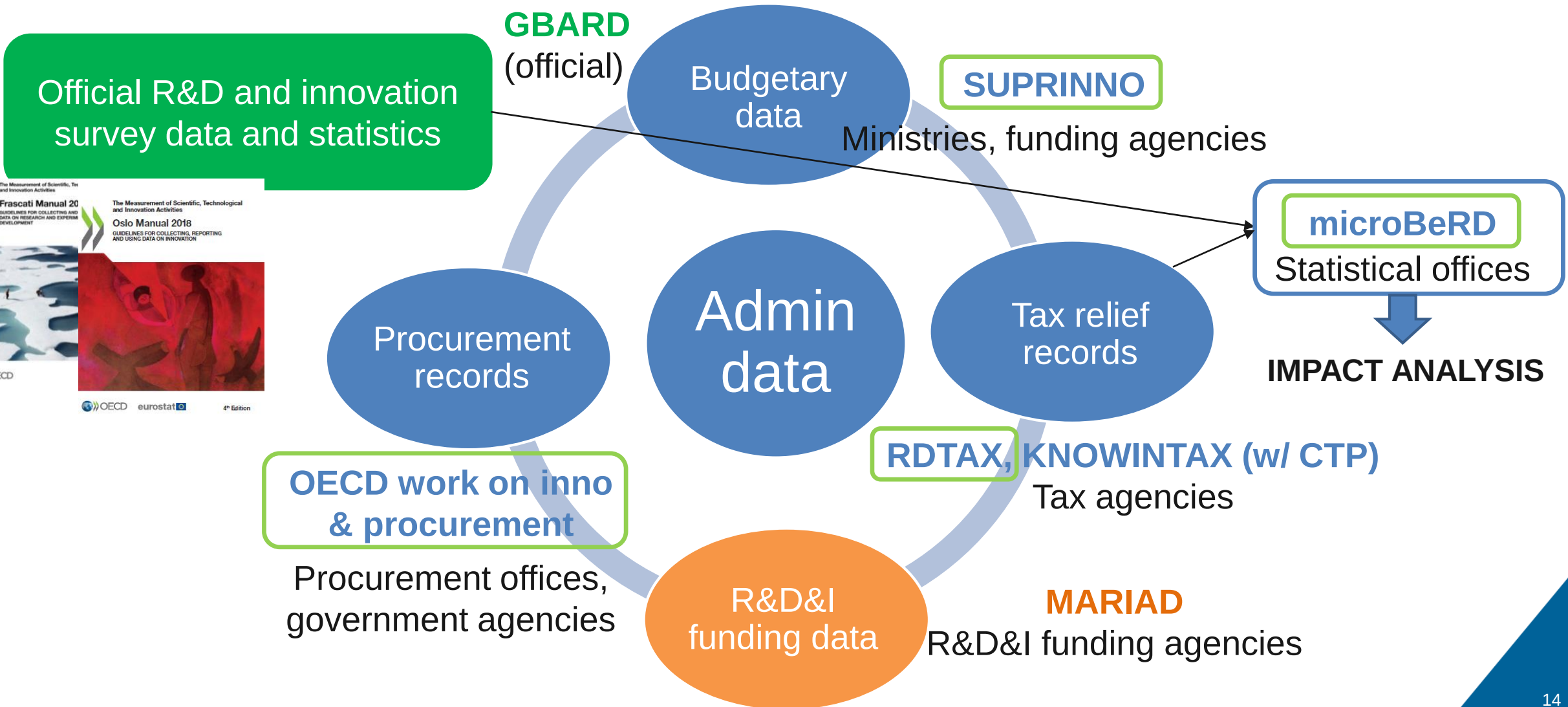
Next release:
To be announced

Higher education sector

In this release we have improved the measurement of R&D performed in the higher education sector by introducing a new data source, the [Transparent Approach to Costing \(TRAC\)](#). This data source was developed to help cost activities within the higher education sector.



NESTI work on R&D performance and R&D funding





MARIAD, established 2021

OECD Expert Group on the Management and Analysis of R&D and Innovation Administrative Data (MARIAD)

- Established by NESTI in 2021 as a **level 3 group**
- Serves as forum **for officials in charge of data management and analysis within R&D and innovation financing** and sponsoring bodies to **exchange practises, challenges and co-ordinate common approaches** [...]
- Meets an expertise gap, and a collective need
- Co-exists with informal groups and activities, key aim to find synergies across different perspectives.



OECD Expert Group on the Management and Analysis of R&D and Innovation Administrative Data

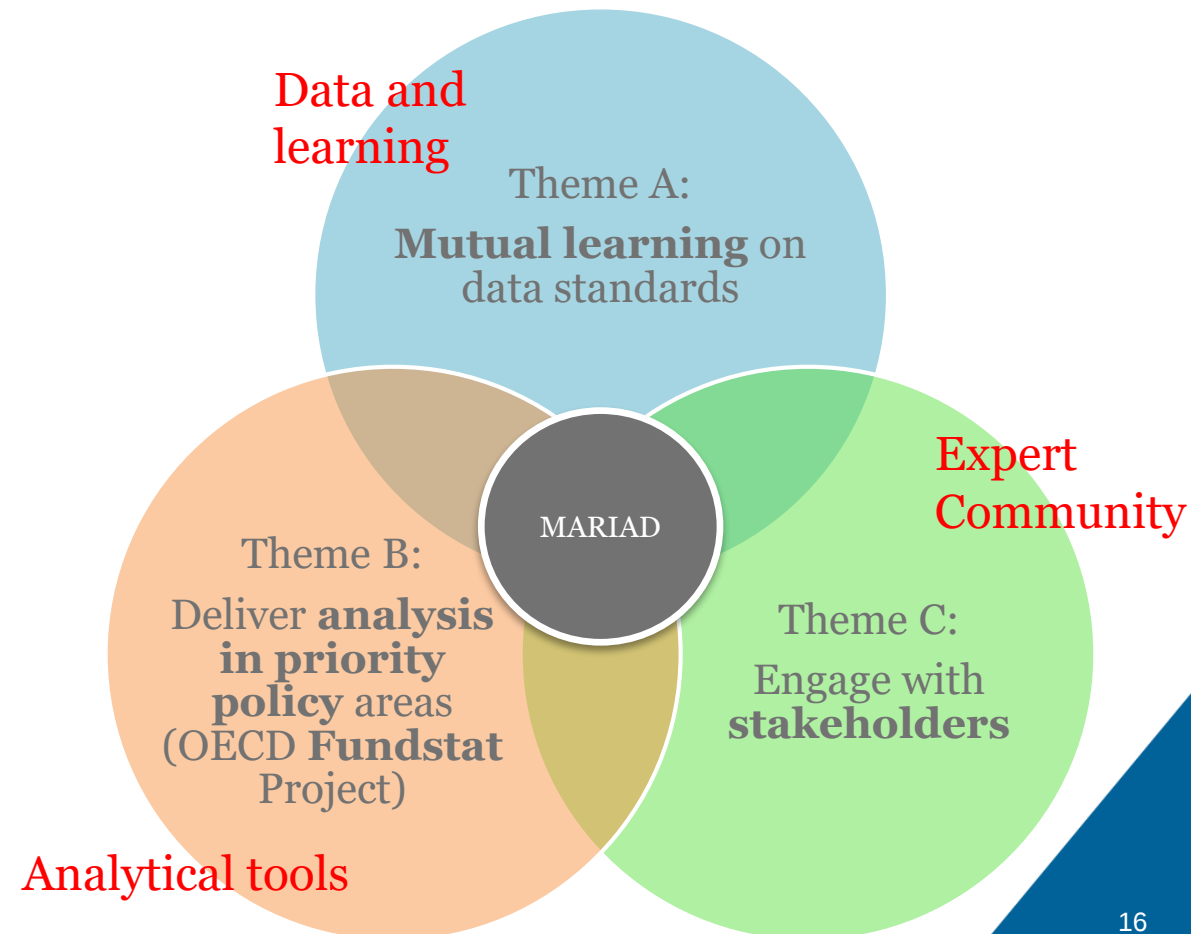


Action plan operationalises the MARIAD objectives

Objectives

- Examine, promote and help develop technical **standards**
- Explore and promote the multilateral **exchange of data and information**
- Coordinate the implementation of **OECD analytical activities**
- Promote **mutual learning** and **peer-based capability building**

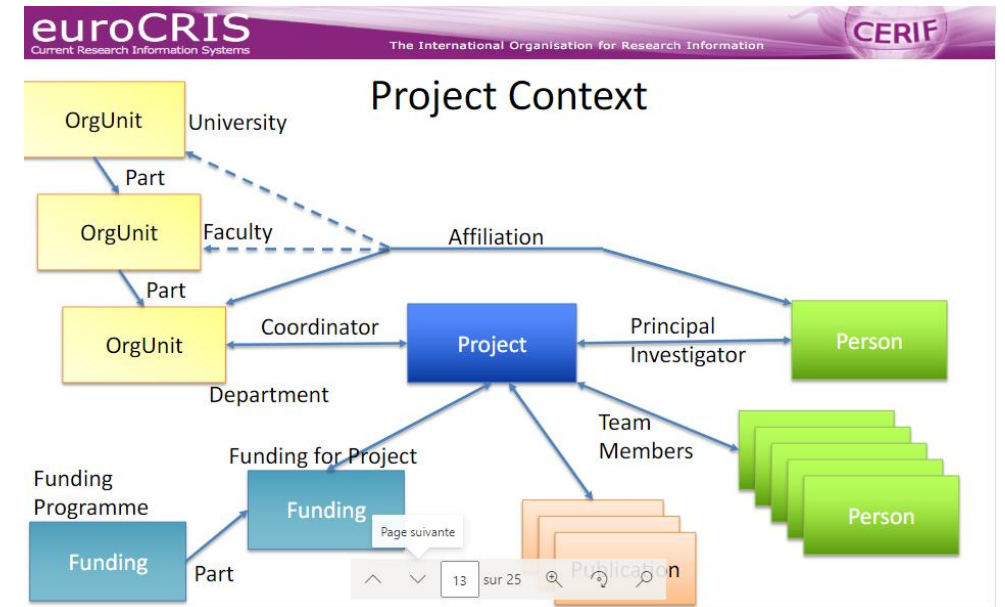
Action Plan





OECD Fundstat initiative: *Projects as objects of analysis*

- R&D projects in FM2015
- Projects as objects of analysis – data sources
 - Connection with funding/financing actions
- (Partial) Availability of data on R&D (and other) projects





'Living' set of policy priorities for analysis

Cross cutting perspectives

- Thematically **mapping** the entire R&D funding **portfolios**
- **Directionality, impact** and application **relevance** of R&D funding

Specific priority thematic areas

- **Green / net zero - Sustainable development goals**, and SDG-related topics (i.e. energy and mobility, e-health etc.)
- **Digitalisation** and digital innovation, i.e. AI, cybersecurity and deep tech
- **COVID-19 (under completion)**

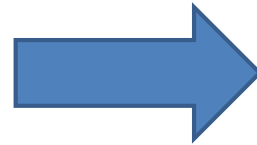
Types of indicators

- Indicators of project and funding distribution
- Indicators of R&D outputs that can be attributed to funding
- Collaboration networks and inter-disciplinarity



Mutual learning (and support)

- Purposes and uses
- Standards
 - including identifiers
- Analysis tools – esp. NLP
- Data sources



Asses potential
scope for OECD-
level
recommendations
where consensus
is possible



Engagement

- MARIAD created by the NESTI as a mechanism for systematic engagement between with R&D funders
- Explore synergies at official level with
 - National statistical offices
 - Diverse range of officials working with STI admin data
- Beyond the official level
 - Research information community
 - Academia – diverse fronts
 - ...





Thank you

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