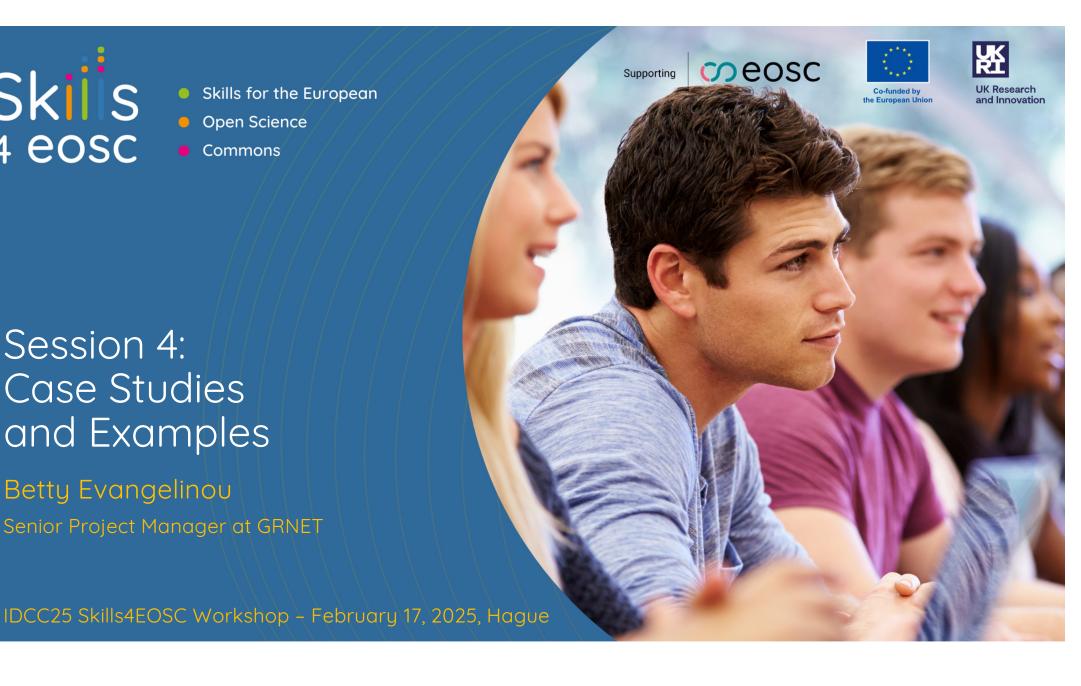


- Skills for the European
- Open Sciencé
- Commons

Session 4: Case Studies and Examples

Betty Evangelinou

Senior Project Manager at GRNET





# Tailored Training for specific professional profiles

#### **Policy Makers**

Researchers

Undergraduates

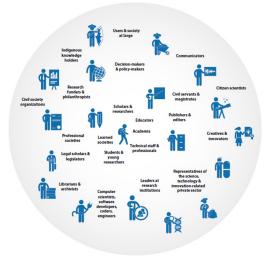


Image: UNESCO - Open Science Outlook 1 https://doi.org/10.54677/GIIC6829

**Data Stewards** 

**Ethics Advisors** 

**Civil Servants** 

**Masters Students** 



**Legal Experts** 

**RI Professionals** 

Honest/Knowledge Brokers













# Tailored Training for specific professional profiles

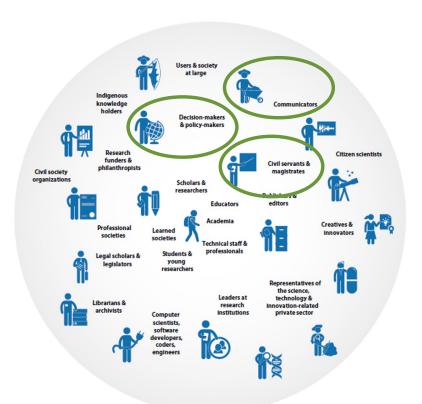


Image: UNESCO - Open Science Outlook 1 https://doi.org/10.54677/GIIC6829









# Train of Trainers Course on Open Science and Evidence-Informed Decision Making

#### **Course Audience:**

- Master Trainers in Skills4EOSC Competence Centers
- Trainers in the field of Open Science related to Decision Making
- Professionals in the field of Decision Making
- Researchers collaborating with Decision Makers
- Open Science Advocates
- Anyone interested in Open Science and Decision Making















### Training Material Preparation Approach Following FAIR-by-design Methodology













# The experience of developing the training material

- Experts from different organisations were included in discussions
- Experts with different backgrounds and expertise provided different views on the material
- Experts closely collaborating with policy makers provided their views on how to approach the audience and the necessary skills that are needed in the specific professional profiles
- Experienced trainers provided their contribution on specific approaches and activities
- Science Communicators provided their point of view on the material and the way to organise the necessary skills
- Individual discussions and interviews were conducted about the overall training material with people related to policy
- Research on necessary skills and competences of the targeted professional profiles
- Trial and Error Pilots performed to gather feedback on the first version of material
- Several updates based on feedback, not only for the actual material, but also for the structure of the trainings









# MVS for the 3 profiles: Policy Maker

Prepare



# Research Policy/Decision Maker Facilitating OS

**Associated function titles:** Research Policy Maker, Science Policy Facilitator, Strategic Policy Advisor

#### Essential skills and competences

- In-depth understanding of science practice, OS and FAIR principles and practices.
- Expertise in establishing appropriate strategies, frameworks and courses of action to foster and enhance OS.
- Ability to relate OS practices to the interests of Research Performing Organisations, Funders, and other stakeholders.
- Ability to assess the financial sustainability of policy outcomes.
- Knowledge about Intellectual property rights and nonpersonal data management.
- Knowledge of the **Ethical principles**, frameworks and codes of conduct applicable to research.
- Knowledge of legal issues related to data governance including data use agreements and personal data regulations.

# Evidence-informed Policy and Decision Maker

**Associated function titles:** Policy Designer, Open Science Data Analyst, Policy Advisor

#### Essential skills and competences

- Basic understanding of OS/ FAIR principles.
- Knowledge of OS services, resources and research practices that produce evidence relevant to the decision-making context.
- Expertise in **applying evidence** from OS to the decision-making context, considering the opportunities, limitations, and constraints.
- Knowledge management: synthesising outputs of research and consultation, identifying their relevance to specific issues and stakeholders.
- Policy evaluation: ability to monitor and evaluate existing policies relevant to the decision-making context, including their implementation and outcomes.
- Basic knowledge of **research integrity principles**, frameworks and ethical codes.
- Knowledge of the responsible use of data-driven technologies.











# MVS for the 3 profiles: Policy Maker



### Research Policy/Decision Maker Facilitating OS

#### Main activities

- Promotes and supports OS.
- Engages all the appropriate target audiences & key stakeholders.
- Identifies actions to advance national policies on FAIR and OS.
- Understands the importance of addressing gaps in provision of **digital skills** for FAIR and OS.
- Promotes digital skills for data intensive science transferable across different sectors.
- Sets up policies or a strategic framework which serve to promote a preferred course of action and could include financial support research.

# Evidence-informed Policy and Decision Maker

#### Main activities

- Identifies available OS **outcomes** relevant to an issue that requires a policy.
- Collaborates with expert communities for elicitation, review and evaluation of data and design of a policy.
- Deploys appropriate policy outcome monitoring and evaluation designs based on OS evidence.
- Ensures **inclusiveness** in evidence's production and evaluation.
- Promotes and supports OS as a source of evidence.

#### Soft/Transversal Skills

- Negotiating with stakeholders to articulate rights and responsibilities for policy implementation.
- Advocating policy measures by addressing the audiences needed to mobilise key enablers and other human resources.
- Mobilising and managing financial and material resources, demonstrating trustworthiness.
- Complying with regulations and respecting confidentiality obligations.
- Using initiative to formulate policy implementation strategies.
- Applying systemic thinking to critically evaluate evidence and its sources.











# MVS for the 3 profiles: Civil Servant



#### **Civil Servant**

Associated function titles: Public Policy Advisor, Government Analyst, Administrative Officer, Policy Coordinator, Regulatory Specialist

#### Main activities

- Clarify and shape **OS strategy** and priorities for the national and international interest
- Involve and engage the right stakeholders and partners in making recommendations or decisions on OS
- Shape strategies and plans which help put into practice OS (give a long-term direction)
- Develop the **capabilities** in OS **of the staff**
- Engage in the **open research process**
- Ensure compliance with ethical, legal and regulatory criteria
- Communicate / actively promote OS
- Facilitate the engagement of different stakeholders in cocreation actions

#### Essential skills and competences

- Good understanding of OS principles and practices, open data, open research and open access
- Developing policies and guidelines that promote OS
- Solid understanding of OS research ethics
- Being familiar with **technology and tools** used to support OS practices
- Managing projects related to OS
- Providing **training and education** to researchers, policymakers, and public citizens about OS practices
- Evaluating the impact of OS practices and make recommendations for future improvement
- Good understanding of (personal and non-personal) data management, including data storing, analysis and sharing according to the FAIR and OS principles
- Good understanding of the regulatory framework (national, regional and international) concerning intellectual property rights (eg., copyrights and trade secrets) and other non-personal data (eg. research data and data held by Public Sector bodies). As an example, in the regional level, this may include, but not be limited to, the Open Data Directive, the Data Governance Act, and the Soft well and Secrets in the EU.

Communication, Collaboration, Leadership, Citizen Engagement skills, Negotiation and diplomacy, Innovative thinking, Strategic and analytical skills, Teamwork, Adaptability to changes









# MVS for the 3 profiles: Knowledge Broker



#### **Knowledge Broker**

**Associated function titles:** Honest Broker, Research Liaison, Information Specialist, Policy Advisor, Evidence Synthesis Expert, Science Communicator, Stakeholder Engagement Coordinator

#### Main activities

- Bridge the interface between science and policy
- Ensure **mutual understanding** among these parties
- Ensure alignment between the needs of the policy community and the evidence synthesis provided
- Ensures that the policy community have a good understanding of the implications of the evidence proffered
- Ensure the quality and transparency of evidence synthesis
- Ensure the evidence synthesis had appropriate **expert inputs**
- Identify options and **providing advice** from a scientific viewpoint
- Identify constraints, uncertainties and caveats
- Contextualise the FAIR and OS principles of specific domains
- Identify strengths and weaknesses in how OS is applied

guresall actors are engaged in co-creation actions

• Identify **needs of change** in OS policy or practice in relevant research domains

#### Essential skills and competences

- Being familiar with policy making practices and procedures
- Understanding of open, ethical and responsible research principles
- Managing considerable amount of information related to OS practices
- Searching, retrieving, appraising and synthesizing evidence
- Developing and maintaining network of researchers, policymakers, and other stakeholders to help promoting and implementation of OS practices and to support co-creation activities
- Providing training and education to researchers, policymakers, and public citizens about OS practices
- Evaluating research findings and identify potential conflicts of interest
- Tailoring resources to local needs and assessing the context of implementation

#### Soft/transversal skills

Communication, Collaboration, Leadership, Self-confidence, Citizens and stakeholders engagement skills, Influencing skills, Mediation skills, Negotiation and diplomacy, Team building and teamwork, Problem-solving skills, Innovative thinking, Analytical and research skills, Adaptability to changes, Networking skills, Interpersonal skills, Stakeholder management and influencing skills, Mentoring skills, Facilitation skills, Change management skills, Improvement skills, IT skills



4 eosc









# Key Messages



- 1. Open science is essential for **advancing research and innovation**
- 2. Open science is the **new normal**
- 3. Open science is a multi-stakeholder endeavour
- 4. Open science leads to more transparency, reproducibility, reliability and accountability
- 5. There are **challenges** to implementing open science, but there are **ways to overcome** them
- 6. Policy plays a critical role in supporting open science
- 7. What can Policy Makers do for Open Science to succeed
- 8. Policy Makers need to **invest in new competencies** in Open Science and related professional profiles and careers
- 9. There are **costs associated with not supporting** open science and FAIR management of research outputs
- 10. Policy makers/civil servants/knowledge brokers can make use of OS outputs for evidence-based decisions
- 11. There are many successful examples on real-life scientific topics with high societal impact of use OS in policy making.
- 12. Public organizations should develop strategies for implementing open science policies
- 13. Scientists' engagement is key to effective and equitable evidence-informed decision-making
- 14. Ethical, Legal and Societal issues are central to support Open Science.
- 15. Open Science-positive policies can become the catalyst for change in reward and hiring practices, as well as responsible research assessment









# Challenges and solutions in developing the training courses



Challenges	Mitigation Measures/Solutions
<b>No relevant existing courses</b> related to the specific target profiles and Open Science	Identified the main Key Messages and Learning objectives, identified related material and adapted it to the specific target profiles – developed a lot of new material – reused parts of existing material, in new context
A <b>big team of trainers</b> needs to be managed in specific timeframes	Regular structured meetings and additional technical support is necessary, during the implementation of the training material and course structure. Clear guidelines and preparation of supporting material for different development phases is much appreciated from the trainers.
A <b>wide range of material</b> to be developed in order to cover the MVS competences for the 3 profiles	Identified <b>existing expertise in the team</b> of authors/trainers and <b>matched the expertise</b> to specific <b>material/interests</b> .
Existing material <b>could not be reused</b> (copyrights)	Created new material, in different formats based on targeted learning objectives
Additional "Trending Topics" were relevant	Identified the trending topics and the necessary expertise in the pool of trainers/authors
<b>Evaluation/Certification</b> of the acquired knowledge	Create activities and assignments in form of essays and personal experience
Students Engagement during the courses	Live Sessions including Interactive Activities, most usually group activities and interactive polls
<b>Busy Schedules of Students</b> – Difficulties in commitment	Used a <b>Combined learning approach</b> , with both <b>self-paced and short live sessions</b> for each course, to avoid long-day online sessions
Train of trainers Course/Material <b>reusability</b>	Provided <b>different formats</b> of the training material, including <b>video presentations, ppt, pdf</b> version as well as <b>narrative and instructors notes</b> for each presentation. Instructions on how to facilitate each activity are also a big asset.









# Pilot Development and Feedback (3 pilots implemented)



#### **Quality Assurance and Content Validation:**

- Ensures that course materials, quizzes, and assignments align with the intended learning outcomes.
- Helps identify gaps, redundancies, or inconsistencies in the content.

#### **Testing Learning Experience and Engagement:**

- Assesses whether the course structure, format, and tools are engaging and meet learner expectations.
- Identifies whether activities, quizzes, and assignments are at the right difficulty level.

#### **Refining Instructional and Facilitation Approaches:**

- Helps trainers refine their delivery techniques, ensuring clarity, engagement and time management.
- Allows for testing different interactive strategies, such as polls, case discussions, and group activities.

#### **Gathering Participant Feedback for Course Improvement:**

- Early participants provide valuable insights on course clarity, difficulty, and effectiveness.
- Feedback collected through surveys, focus groups, or direct discussions informs necessary adjustments.









# Open Science and Evidence-Informed Decision Making Training Course in detail



#### **Learning Path details:**

Training Course 1: "Open Science is the new norm"

Training Course 2: "Ethical, Legal and Societal Implications (ELSI) and Data Governance"

Training Course 3: "Introduction to Evidence-informed Decision-making"

Training Course 4: "Open Science Stakeholders and Collaboration Strategies"

Training Course 5: "Empowering the Future of Research with Open Science"

Training Course 6: "Open science policies support open science practices"

Training Course 7: "Implementing Open Science Policies"



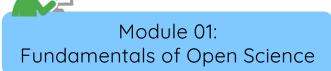


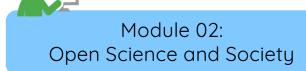


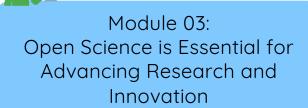




# Training Course 1: "Open Science is the new norm"







- Lecture 01: Open Science values and principles
- Lecture 02: FAIR Principles and their role in Open Science
- Lecture 01: Societal and Economic impact of Citizen
  Science from Galileo to post-truth populism
- Lecture 02: Societal Impact of Open Science Reallife examples
- Lecture 01: Open Science: Benefits for scientific progress
- Lecture 02: Open Science in Practice (optional)

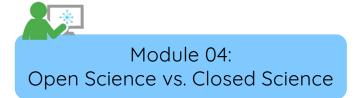








# Training Course 1: "Open Science is the new norm"



- Lecture 01: Closed Science A Historical Perspective and Negative Consequences 🕜
- Lecture 02: Challenges and Ethical Dilemmas in Closed Science 6 (3)
- Lecture 03: The Economic Impact of Closed Science vs Open Science 🕜
- Lecture 04: Building a Culture of Openness 🕜



Module 05: Accountability and Transparency in Open Science

Lecture 01: Fostering Research Integrity and Reproducibility 🤣









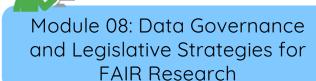


# Training Course 2: "ELSI and Data Governance"

Module 06: Legal and Ethical Frameworks and Considerations in Open Science



Module 07: Open Science under the EU Data Regulatory Framework



- Lecture 01: Overview of the legal regulatory framework on Personal Data, Non-Personal Data and Intellectual Property
- Lecture 02: Landscaping Ethical Issues in Open Science



- 🔹 Lecture 02: Personal Data in Open Science 🌮
- Additional Reading: Guidelines for Writing a Privacy Policy in Research Projects
- Lecture 01: Planning the FAIRification of data



 Lecture 02: Identifying practical "how to" tools to go FAIR



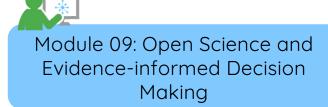




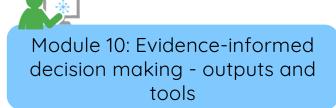




# Training Course 3: "Introduction to Evidence-informed Decision-making"



- Lecture 01: Policy, Evidence and Evidence-Informed Decision Making 🎻
- Lecture 02: Stakeholders involved in Evidence-Informed Decision Making 🕢 🔝
- Additional Reading: Guidelines and Best Practices for Honest Brokers 🞾



Lecture 01: Open Science Outputs in Decision-Making 🚱



- Lecture 02: Data Science Algorithms in Practice 💞
- Lecture 03: Interpreting Statistics for Insights 🕜 🔝









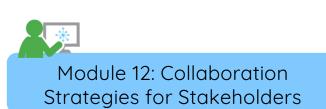






# Training Course 4: "Open Science Stakeholders and Collaboration Strategies"





Lecture 01: Open Science Stakeholders



Lecture 01: Creating a Collaborative Culture 🕜



Lecture 02: Collaboration Impact 🕜



- Lecture 03: Case studies of successful collaboration on Open Science 🕢
- Lecture 04: Role of open science in fostering collaboration among researchers, practitioners, and the public 🔝
- Lecture 05: Communicating Uncertainty 🕜 💽



- Lecture 06: Data Visualisation and Storytelling 🕜













# Training Course 5: "Empowering the Future of Research with Open Science"





- Lecture 01: Understanding Capacity Building in Open Science
- Lecture 02: Institutional Support for Capacity Building
  Challenges and Best Practices



- Lecture 01: Introduction to AI
- 🔹 Lecture 02: Al and Open Science 💔
- Lecture 03: Al in evidence-informed decision making



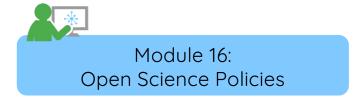






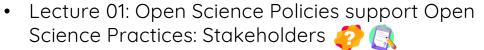


# Training Course 6: "Open science policies support open science practices"





Lecture 01: Introduction to Open Science Policies 🔝



- Lecture 02: Open Science policies support Open Science Practices: Impact 🕢
- Lecture 03: Challenges of Implementing and Barriers to adopting Open Science 🚱 🔝
- Lecture 04: Cultural Changes required for Open Science Adoption 🙆
- Lecture 05: Responsible Research Assessment Movement 🥏
- Lecture 06: Open Science Infrastructures 🕜





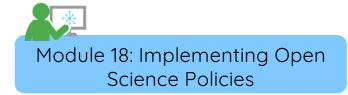








# Training Course 7: "Implementing Open Science Policies"



Lecture 01: Open Science Workflows 💽



Module 19: From developing to evaluating Open Science policies

Lecture 01: Designing Open Science policies in practice (



Lecture 01: Adapt policies based on new evidence and changing circumstances 👩









# The importance of Training Evaluation: Activities and Quizzes

#### Quizzes: 🚱

- Help learners **recall information** from the presentations
- Quick self-evaluated exercises (multiple choice, polls, T/F, etc) ideal for self-paced learning
- Help gauge how well learners grasp key concepts from the course.
- Help learners recognize what they know and what they need to review.

#### **Activities/Assignments:**



- Promote critical thinking require learners to analyse, synthesize and evaluate information
- Allow learners apply concepts to real-world scenarios and develop practical skills
- Encourage learners to reflect on what they have learned.
- Group activities enhance communication, collaboration, and inclusion
- Allow personalised and contextual learning











Exploring the Impact of Open Science

- Main Goal: Communicate the real-world benefits of Open Science
- **Type:** Reflection Exercise (Self-paced)
- **Short Description:** Participants select and analyze examples from the course, then craft a narrative to convey their impact to a target audience.

Case Study on Ethical Dilemmas in Closed Science

- Main Goal: Analyze ethical challenges in closed science
- **Tupe:** Case Study (Self-paced)
- **Short Description:** Participants examine real-world cases where lack of transparency led to ethical concerns and discuss possible solutions.

I, AI - Ethical Debates and Policy Decisions for the EU In the light of the Development of Conscious AI

- Main Goal: Debate policy solutions for emerging AI challenges
- **Type:** Scenario-Based Group Discussion (Live session)
- **Short Description:** Participants engage in a futuristic scenario to assess the implications of conscious Al, discuss regulation, and propose strategies at the EU level.











Exploring the Role of Honest Brokers in Real-Life Decision Making





- **Main Goal:** Examine the challenges faced by honest brokers in science-policy interactions.
- **Type:** Case Study & Reflection Exercise (Self-paced)
- **Short Description:** Participants study a real-world case on knowledge brokerage in environmental decision-making, reflect on key challenges, and reflect on how Open Science could improve the process.
- **Main Goal:** Explore the challenges faced by Honest Brokers in science-policy mediation and identify strategies to address them.
- **Type:** Group Discussion & Reflection (Live session)
- **Short Description:** Participants discuss in groups challenges like time constraints, consensus-building, and trust, then reflect on challenges and strategies.
- **Main Goal:** Learn basic data analysis techniques to understand and predict outcomes in real-world scenarios.
- **Type:** Hands-on Data Exploration (Live session)
- **Short Description:** Participants work with a sample dataset to explore trends, find connections between data, and make predictions using simple statistical methods.







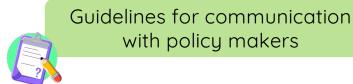






Organise a "Coffee with Open Science" Session

- **Main Goal:** Develop skills in stakeholder identification and policy discussion facilitation in Open Science.
- Type: Scenario Planning & Reflection (Live session)
- **Short Description:** Participants organize a "Coffee with Open Science" session in groups, by selecting a relevant topic, identifying key stakeholders, and justifying their participation in policy discussions.



- Main Goal: Practice crafting effective messages for policymakers.
- **Type:** Scenario-Based Communication Exercise (Self-paced)
- **Short Description:** Participants select a policymaking scenario, develop a key message for the target group, and apply communication strategies to engage policymakers effectively.

Focus on... Verbal communication of uncertainty in practice

- Main Goal: Develop skills to communicate research uncertainty effectively to different audiences.
- Type: Roleplay Exercise & Reflection (Self-paced, Live)
- **Short Description:** Participants take on different stakeholder roles to practice verbal communication strategies for conveying research uncertainty.

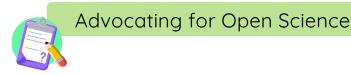












- **Main Goal:** Strengthen advocacy and communication skills by crafting arguments to promote Open Science to funders.
- Type: Collaborative Role Play & Reflection (Self-paced, Live)
- **Short Description:** Participants learn to identify funder priorities and craft compelling arguments for Open Science, with a live role-play session where groups pitch to different types of funders.



- **Main Goal:** Reflect on Open Science capacity-building initiatives and identifying transferable strategies and challenges.
- Type: Reflection Exercise on personal experiences (Self-paced)
- **Short Description:** Participants will share examples of Open Science capacity-building initiatives from their own contexts, analyze outcomes, and identify strategies for improvement and scaling up initiatives.







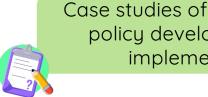


Analysing an Open Science Policu

Main Goal: Develop the ability to critically analyse Open Science policies, and assess their strengths and weaknesses.

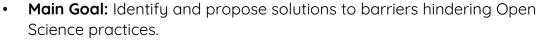
**Tupe:** Reflective Analysis (Self-paced)

Short Description: Participants select and analyse an Open Science policy, comparing it against a reference document on key Open Science elements.



Case studies of Open Science policy development and implementation

- Main Goal: Analyze real-world Open Science policy case studies to identify stakeholders, key topics, and implementation challenges.
- **Type:** Reflective Analysis & Collaborative Discussion (Self-paced, Live)
- **Short Description:** Participants select and reflect on a case study of Open Science policy, then engage in group discussions to analyze stakeholders, topics, and implementation challenges.



- **Tupe:** Reflection & Collaborative Discussion (Self-paced, Live)
- **Short Description:** Participants explore barriers to Open Science in areas like competitive advantage, publication, and data reuse, proposing solutions.



Barriers to Open Research





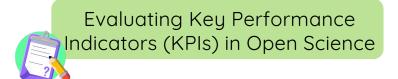






Designing an Open Science Workflow

- **Main Goal:** Design Open Science workflows to explore the integration of Open Science practices in varying research scenarios.
- **Type:** Reflection & Design Exercise (Self-paced)
- Short Description: Participants design three research workflows (ideal, difficult, and easy) incorporating Open Science practices across seven research steps, followed by a reflection on their choices and implementation feasibility.



- Main Goal: Critically evaluate Key Performance Indicators (KPIs) to understand their practical relevance and impact in Open Science.
- **Type:** Reflection (Self-paced)
- **Short Description:** Participants review examples of KPIs in Open Science, reflect on the most significant and feasible ones, and discuss how to measure their effectiveness in real-world contexts.









#### Final Courses format and tools

Verify

The final set of courses in the **Open Science and Evidence-Informed Decision-Making curriculum** follows a structured approach that **combines self-paced learning with interactive live sessions** to ensure an **engaging and comprehensive learning experience**.

#### **Self-Paced Component**

- Delivered through Moodle, allowing learners to progress at their own pace.
- Includes pre-recorded lectures, readings, and interactive activities (e.g., quizzes, case studies).
- Different formats of material were provided (Video presentations with voiceover, PPTs to facilitate reuse, PDFs to facilitate navigation and sharing, Instructor's notes and narrative for easier understanding of the narrated video)
- Participants complete knowledge checks before moving to the live session.

#### **Live Interactive Sessions**

- Conducted online via platforms such as BigBlueButton integrated into Moodle.
- Features recaps, interactive discussions, and Q&A to clarify concepts from the self-paced section.
- Uses Wooclap for icebreakers and interactive polling to engage participants.
- Includes group activities, case discussions, and role-playing for practical application.











### Other relevant material developed within the course

#### **Booklets:**

- "Guidelines & Best practices for Honest Brokers"
  Link: <a href="https://zenodo.org/records/14712238">https://zenodo.org/records/14712238</a>
- "Science4Policy kit for Competence Centers" Link: <a href="https://zenodo.org/records/14751412">https://zenodo.org/records/14751412</a>
- "Guidelines for Writing a Privacy Policy in Research Projects"
- "Advancing evidence-based policymaking through Open Collections and Open Science Principles"

Link: https://www.nhm.at/en/publications/978-3-903096-78-3

• "Guidelines and FAQs on ELSI aspects for Civil Servants and Policy Makers" (booklet in progress - Full deliverable here: <a href="https://zenodo.org/records/14797142">https://zenodo.org/records/14797142</a>)











#### Workshops:

Science 4Policy - Bridging the gap between research and decision-making















- Skills for the European
- Open Science
- Commons



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# Thank you! Questions?

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