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Open Science & Evidence-Informed Decision Making

TRAINING COURSES

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Workshop: **Open Science and Evidence-Informed Decision Making**

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 01 - OPEN SCIENCE IS THE NEW NORM

MODULE 01: **FUNDAMENTALS OF OPEN SCIENCE**	LECTURE 01: **OPEN SCIENCE VALUES AND PRINCIPLES**
	LECTURE 02: **FAIR PRINCIPLES AND THEIR ROLE IN OPEN SCIENCE**
MODULE 02: **OPEN SCIENCE AND SOCIETY**	LECTURE 01: **SOCIETAL AND ECONOMIC IMPACT OF CITIZEN SCIENCE FROM GALILEO TO POST-TRUTH POPULISM**
	LECTURE 02: **SOCIETAL IMPACT OF OPEN SCIENCE - REAL-LIFE EXAMPLES**
MODULE 03: **OPEN SCIENCE IS ESSENTIAL FOR ADVANCING RESEARCH AND INNOVATION**	LECTURE 01: **OPEN SCIENCE: BENEFITS FOR SCIENTIFIC PROGRESS**
	LECTURE 02: **OPEN SCIENCE IN PRACTICE (OPTIONAL)**
MODULE 04: **OPEN SCIENCE VS. CLOSED SCIENCE**	LECTURE 01: **CLOSED SCIENCE - A HISTORICAL PERSPECTIVE AND NEGATIVE CONSEQUENCES**
	LECTURE 02: **CHALLENGES AND ETHICAL DILEMMAS IN CLOSED SCIENCE**
	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 02 - ELSI AND DATA GOVERNANCE

MODULE 06: **LEGAL AND ETHICAL FRAMEWORKS AND CONSIDERATIONS IN OPEN SCIENCE**	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**
MODULE 07: **OPEN SCIENCE UNDER THE EU DATA REGULATORY FRAMEWORK**	LECTURE 01: **OPEN SCIENCE: BENEFITS FOR SCIENTIFIC PROGRESS**
	LECTURE 02: **PERSONAL DATA IN OPEN SCIENCE**
	ADDITIONAL READING: **GUIDELINES FOR WRITING A PRIVACY POLICY IN RESEARCH PROJECTS**
MODULE 08: **DATA GOVERNANCE AND LEGISLATIVE STRATEGIES FOR FAIR RESEARCH**	LECTURE 01: **PLANNING THE FAIRIFICATION OF DATA**
	LECTURE 02: **IDENTIFYING PRACTICAL "HOW TO" TOOLS TO GO FAIR**

Training Course 03 - INTRODUCTION TO EVIDENCE-INFORMED DECISION-MAKING

MODULE 09: **OPEN SCIENCE AND 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**
MODULE 10: **EVIDENCE–INFORMED DECISION MAKING – OUTPUTS AND TOOLS**	LECTURE 01: **OPEN SCIENCE OUTPUTS IN DECISION-MAKING**
	LECTURE 02: **DATA SCIENCE ALGORITHMS IN PRACTICE**
	LECTURE 03: **INTERPRETING STATISTICS FOR INSIGHTS**

Training Course 04 - OPEN SCIENCE STAKEHOLDERS AND COLLABORATION STRATEGIES

MODULE 11: **OPEN SCIENCE AND ITS STAKEHOLDERS**	LECTURE 01: **OPEN SCIENCE STAKEHOLDERS**
MODULE 12: **COLLABORATION STRATEGIES FOR 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 05 - EMPOWERING THE FUTURE OF RESEARCH WITH OPEN SCIENCE

MODULE 13: **INVESTING IN OPEN SCIENCE**	LECTURE 01: **THE ROLE OF FUNDING IN PROMOTING OPEN SCIENCE PRACTICES**
MODULE 14: **CAPACITY BUILDING AND TRAINING PROGRAMS IN OPEN SCIENCE**	LECTURE 01: **UNDERSTANDING CAPACITY BUILDING IN OPEN SCIENCE**
	LECTURE 02: **INSTITUTIONAL SUPPORT FOR CAPACITY BUILDING – CHALLENGES AND BEST PRACTICES**
MODULE 15: **OPEN SCIENCE AND ARTIFICIAL INTELLIGENCE**	LECTURE 01: **INTRODUCTION TO AI**
	LECTURE 02: **AI AND OPEN SCIENCE**
	LECTURE 03: **AI IN EVIDENCE-INFORMED DECISION MAKING**

Training Course 06 - OPEN SCIENCE POLICIES SUPPORT OPEN SCIENCE PRACTICES

MODULE 16: **OPEN SCIENCE POLICIES**	LECTURE 01: **INTRODUCTION TO OPEN SCIENCE POLICIES**
MODULE 17: **OPEN SCIENCE POLICIES SUPPORT OPEN SCIENCE PRACTICES**	LECTURE 01: **OPEN SCIENCE POLICIES SUPPORT OPEN SCIENCE PRACTICES: STAKEHOLDERS**
	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 07 - IMPLEMENTING OPEN SCIENCE POLICIES

MODULE 18: **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**
MODULE 20: **OPEN SCIENCE POLICIES ADAPTATION**	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

INDIVIDUAL ASSIGNMENTS AND GROUP ACTIVITIES

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.
	TYPE: 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 AI, DISCUSS REGULATION, AND PROPOSE STRATEGIES AT THE EU LEVEL.

INDIVIDUAL ASSIGNMENTS AND GROUP ACTIVITIES

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.
REFLECTING ON KEY CHALLENGES OF HONEST BROKERS	**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.
OPEN DATA SCIENCE TUTORIAL	**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.

INDIVIDUAL ASSIGNMENTS AND GROUP ACTIVITIES

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.
GUIDELINES FOR COMMUNICATION WITH POLICY MAKERS	**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.

INDIVIDUAL ASSIGNMENTS AND GROUP ACTIVITIES

ADVOCATING FOR OPEN SCIENCE	**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.
SHARING BEST PRACTICES AND CHALLENGES IN OPEN SCIENCE CAPACITY BUILDING	**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.

INDIVIDUAL ASSIGNMENTS AND GROUP ACTIVITIES

ANALYSING AN OPEN SCIENCE POLICY	**MAIN GOAL:** DEVELOP THE ABILITY TO CRITICALLY ANALYSE OPEN SCIENCE POLICIES, AND ASSESS THEIR STRENGTHS AND WEAKNESSES.
	TYPE: 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.
BARRIERS TO OPEN RESEARCH	**MAIN GOAL:** IDENTIFY AND PROPOSE SOLUTIONS TO BARRIERS HINDERING OPEN SCIENCE PRACTICES.
	TYPE: 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.

INDIVIDUAL ASSIGNMENTS AND GROUP ACTIVITIES

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.
EVALUATING KEY PERFORMANCE INDICATORS (KPIS) IN OPEN SCIENCE	**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.

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