ThinkORRI – ORRI Workshop Thinking Tool

CORIB (Collaborative Open Research and Innovation for the Balkans)

The CORIB project is an EU-funded initiative aimed at strengthening the integration of Open and Responsible Research and Innovation (ORRI) principles within the Croatian and wider Balkan research ecosystems. Coordinated by STEMwise and the Center for Technology Transfer at the University of Zagreb, the project addresses critical gaps in researchers' understanding and implementation of ORRI by offering training, mentoring, stakeholder engagement, and international collaboration opportunities. Through a series of practical workshops, strategic matchmaking events, and policy-oriented activities, CORIB seeks to build capacity for ethical, inclusive, and impact-driven research. This toolkit—including the ORRI Thinking Tool and workshop scenarios—was developed as a key output of the project to support researchers in applying ORRI principles across diverse disciplines. It is also integrated into the broader REINFORCING OSS platform, contributing to the EU's mission of fostering open science, responsible innovation, and stakeholder co-creation in research and innovation systems across Europe.

ThinkORRI- ORRI Workshop Thinking Tool

This interactive workshop thinking tool is designed to support academic researchers and research managers in understanding and applying the principles of Open and Responsible Research and Innovation (ORRI).

We have created five different case scenarios, each with instructions on how to implement ORRI principles during the early-stage project proposal development. Each scenario includes potential hurdles and requires active engagement to design a project proposal that incorporates ORRI principles. Thinking Tool aims to empower participants to apply this approach to their own future project proposals and research. ThinkORRI comes with step-by-step instructions on how to structure and facilitate the ORRI Workshop for both in-person and online setting. This tool includes written instructions as well as a graphic manual.

Five project scenarios are created to stimulate collaborative problem-solving and ethical reflection. Each scenario presents real-world research challenges that require thoughtful integration of ORRI principles:

Public Health Mobile App – Focuses on balancing data privacy, transparency, and public trust in digital epidemiology tools that use AI and sensitive user data.

International AI in Healthcare Project – Tackles ethical alignment and open collaboration across borders in the development of machine learning tools for cancer detection.

Climate Change and Coastal Communities – Emphasizes participatory research and citizen engagement in environmental monitoring and local decision-making.

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Biotechnology and Intellectual Property – Explores tensions between open data sharing and commercial interests in developing biotech solutions for water purification.

Sustainable Agriculture – Highlights the importance of open science, public involvement, and adoption of environmentally friendly farming methods.

Each scenario is accompanied by guiding questions and key ethical dilemmas, encouraging participants to develop responsible strategies aligned with ORRI principles such as openness, inclusiveness, transparency, sustainability, and responsiveness.

The workshop thinking tool fosters active learning by prompting users to consider diverse stakeholder perspectives and real-life implementation issues. By working through these exercises, researchers can strengthen their capacity to design and conduct research that is both scientifically robust and socially responsible.

How to use the ThinkORRI - ORRI Workshop Thinking Tool

This ORRI Thinking Tool is designed to help facilitators engage academic researchers and research managers in structured, thought-provoking discussions about the principles of Open and Responsible Research and Innovation (ORRI). It includes five fictional but realistic project scenarios, each representing common challenges across different disciplines.

Purpose of the scenarios

Each scenario serves as a case study for exploring how ORRI principles—openness, responsibility, inclusiveness, transparency, and responsiveness—can be applied in diverse research contexts. Participants are encouraged to reflect critically on ethical, social, and practical aspects of research design and implementation.

Who can use ThinkORRI

activities focused on responsible research and innovation. No prior expertise in ORRI is required, though basic familiarity with the concepts will help in facilitating the discussion.

Step-by-step guide for facilitators

Workshop organiser or a facilitator can follow this easy 7 step-by-step guide for a successful workshop organisation.

1. **Select 1–3 scenarios**
   Choose scenarios most relevant to your audience's disciplinary background or interests. Alternatively, let participants choose the one that resonates most with them.

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2. **Form small groups**
   Divide participants into teams (4–6 people work well). Each team works on one scenario.

3. **Q-helix representation**
   When organizing a workshop, if possible, try to include representatives from the entire Quadruple Helix (academia, industry, governance and civil society).

4. **Distribute the scenario texts**
   Give each group their scenario (printed or digital). Ask them to read carefully and highlight key challenges and dilemmas.

5. **Discussion & problem solving (30-45 min)**
   Ask teams to analyse the scenario and answer the discussion questions provided. Encourage them to propose concrete strategies that align with ORRI principles.

6. **Group presentations (10-20 min)**
   Each group presents their reflections and solutions. Facilitate discussion between groups to compare approaches and insights.

7. **Wrap-up and reflection**
   Close with a collective reflection on key lessons, cross-cutting challenges, and how participants can apply what they've learned in their own work.

Tips for effective facilitation

- Emphasize there are no "correct" answers—ORRI involves navigating trade-offs and ethical tensions.
- Encourage participants to think from multiple perspectives (e.g. researchers, communities, policymakers).
- Adjust the session length and scenario complexity depending on your audience (academic level, field, experience).

How to use the ThinkORRI - ORRI Workshop Thinking Tool in online setting

This ORRI Thinking Tool can be easily adapted for virtual or hybrid delivery. It enables facilitators to engage academic researchers and research managers in meaningful discussions about Open and Responsible Research and Innovation (ORRI) from anywhere. The five scenario-based exercises are ideal for breakout rooms, collaborative digital workspaces, and online reflection.

What you'll need

- A reliable video conferencing platform (e.g. Zoom, MS Teams, Google Meet)
- Breakout room functionality
- A shared document or platform (e.g. Google Docs, Miro, Padlet) for collaborative notetaking
- Digital copies of the scenarios (PDF or text-based)

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Step-by-step guide for online facilitation

Online setting requires certain adjustments. When ORRI Workshop is organised online, consider following this additional step-by-step guide.

1. **Prepare and Share Materials**
   Send participants a brief overview of ORRI principles in advance. Upload the five scenarios to a shared folder or platform where all participants can access them during the session.

2. **Introduce the Workshop (10–15 min)**
   Start with a brief live presentation explaining ORRI principles, the goals of the session, and how the scenario-based activity works.

3. **Divide into Breakout Groups (4–6 participants per room)**
   Assign each group a scenario or let them choose one collaboratively. Share the relevant file and a set of discussion questions.

4. **Group Work in Breakouts (45–60 min)**
   Participants read the scenario, discuss the ethical challenges, and develop a strategy aligned with ORRI principles. Encourage one person per group to take notes in a shared document.

5. **Team Presentations (20–30 min)**
   Return to the main room. Each group presents their insights (5 minutes per group), followed by open discussion or Q&A.

6. **Wrap-Up & Reflection (15 min)**
   Use a digital tool (e.g. Mentimeter) to gather feedback and key takeaways. Encourage participants to reflect on how they can apply ORRI thinking in their own research.

Tips for online success

- Assign a facilitator or observer per breakout group, if possible, to keep discussion focused.
- Use timers and broadcast messages to help groups stay on track.
- Offer technical support at the beginning for participants unfamiliar with the platform.
- Record the session (if appropriate) for post-workshop reflection or documentation.

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Workshop scenarios

Mobile Application for public health

Detailed scenario description:
Your team is developing a mobile application for tracking symptoms of infectious diseases within a community. The goal of the app is early detection and prevention of outbreaks by allowing users to report their symptoms, while the system analyses the data and identifies potential hotspots.

To be effective, the app will collect sensitive user data, including:

- User location (to identify potential contact with infected individuals)
- Health data (symptoms, diagnoses, infectious disease testing)
- Social contacts (anonymous registration of encounters between users)

The app will utilize artificial intelligence and big data analytics to identify trends and alert public health institutions of potential outbreaks. Additionally, it can recommend testing, notify authorities, or provide users with personalized guidance. However, this system raises serious ethical and security challenges.
Key challenges to address:

- Public trust – Will citizens voluntarily use the app?
- Privacy and data protection – How to ensure data isn't misused?
- Data access – Who can use the information and for what purpose?
- Social equity – How to make the app accessible to all, without discrimination?
- Long-term use – What happens to the data once the pandemic is over?

Discussion questions:

- How will you ensure transparency in data usage?
- How will you protect user privacy?
- How will you provide open access to anonymized data for research?

Your team's task is to analyze this scenario and design responsible and ethical strategies for implementation in line with ORRI principles.

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International artificial intelligence project

Detailed scenario description:
Your team is participating in an international research project developing an AI model for early cancer detection. The model uses machine learning and large amounts of medical data to improve diagnostics and enable earlier and more accurate detection. The project includes multiple countries, each with its own laws and regulations regarding patient privacy, health data processing, and AI in medicine. Ethical standards and research practices may differ among partners, complicating collaboration and transparency.
Additionally, there are challenges regarding public perception – some people are skeptical about AI in healthcare, concerned about data privacy and the potential for algorithmic bias.
Your main task is to ensure the project applies ORRI principles and to devise strategies for addressing key challenges.

Key challenges to address:

- Different ethical standards in partner countries
- Need for open collaboration across nations
- Public perception of AI use in healthcare

Discussion questions:

- How will you ensure ethical consistency in international cooperation?
- How will you communicate about the project to the public?
- How will you apply open science principles in this project?

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Local community in climate change research

Scenario description:
Your team leads a scientific project investigating the impact of climate change on coastal communities. The goal is to collect data on environmental changes (e.g. sea-level rise, shoreline erosion, ecosystem shifts) and analyze how these changes affect local life and the economy. But the project must not remain confined to academic circles – it's crucial for the local community to actively participate and for results to be transparent, understandable, and useful to citizens.
Therefore, you will use participatory methods and open science principles to: involve citizens in data collection, ensure the research reflects their needs, communicate results transparently and enable the community to use the research for decision-making.

Key challenges to address:

- Motivating community involvement – How to convince citizens of the research's value? How to encourage their active participation?
- Transparent communication – How to present data in a clear and accessible way? How to prevent misinformation?
- Engaging citizens as collaborators – How to empower locals to contribute to research? How to foster long-term cooperation?

Key questions for discussion:

- How will you attract the local community to actively participate in the project?
- What open science methods will you use to ensure transparent communication?
- How will you ensure research results are useful to the community?

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Innovation in biotechnology an intellectual property

Scenario description:
Your team is developing an innovative biotechnological product for water purification that could significantly improve water quality and provide a safer, eco-friendly filtration method. This product uses advanced biotechnology, such as microbial filters, enzymes, or bio-nano materials, to remove pollutants, heavy metals, and pathogens. Development requires close cooperation with an academic institution conducting fundamental research, as well as private companies providing funding and commercialization.

Key challenges to address:

- Balancing open data access and intellectual property protection
- Ethical responsibility to the community and future users
- Collaboration between academia and the private sector

Discussion questions:

- How will you ensure transparency without compromising business interests?
- How will you balance open data access with the need to protect innovation?
- How will you maintain public and research community trust?

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Sustainable agriculture and public engagement

Scenario description:
Your team leads a research project developing new methods for sustainable agriculture that reduce pesticide use and improve soil health. The aim is to create eco-friendly and economically viable farming practices that are easy for farmers to adopt. The project is based on open science, meaning all data, methods, and results are publicly available.
For successful implementation, it's crucial to involve farmers and the broader public throughout all stages – from planning to applying the results. This requires transparent communication, method adaptation, and stakeholder education. However, the project faces several challenges.

Key challenges to address:

- Resistance from farmers toward new methods
- Transparency of research methods and data
- Open access to research results

Discussion questions:

- How will you communicate the benefits of new methods to farmers?
- How will you engage the public in the research process?
- How will you ensure the accessibility of research findings?

Your team's task is to analyse this scenario and design responsible and ethical strategies for implementation in line with ORRI principles.

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