

*Stakeholder insights and emerging recommendations from the workshop "AI Digital Policy for Just Health – How to Value and Deliver Innovation" held in Kraków, 21–22 May 2025.*

*This document consolidates shared priorities, conditions, and expectations expressed by MISTRAL partners, regional representatives, experts, and board members, exploring how AI, Big Data, and participatory approaches can support equitable health governance in industrially impacted territories across Europe.*

## Context and Challenge

Across Europe, regions facing environmental pressures often confront interconnected social and ecological vulnerabilities. Industrial emissions, air pollution, urban heat, and socio-economic fragility combine to create **environmental-health inequalities**.

The **MISTRAL project** addresses these systemic challenges by testing how AI-driven predictive modelling, federated data sharing, and participatory methods can support a *Just Health* approach—where environmental and health policies are jointly designed and implemented with strong citizen and stakeholder participation.

To capture the diversity of European environmental-health realities, MISTRAL works across **three complementary case-study territories** that reflect different “faces” of the Just Transition challenge:

- **Taranto (Apulia, Italy)** – a coastal industrial area with a long legacy of emissions and profound health inequalities.
- **Rybnik (Silesia, Poland)** – a coal-dependent basin with chronic air pollution and socio-economic vulnerability.
- **Hasselt (Flanders, Belgium)** – part of a region with advanced environmental monitoring and innovation capacity, offering a contrasting context where mitigation and adaptation policies are more mature.

These territories mirror the typologies described in Just Transition literature: **regions burdened by environmental injustice, regions in active industrial transition, and regions with strong institutional capacity but uneven social vulnerability**.

Working across this gradient enables MISTRAL to examine:

- how different governance capacities manage environmental-health risks,
- how communities with different histories of trust or mistrust respond to AI-generated evidence,
- and how science, technology, and participation can be aligned to strengthen **social-ecological resilience**—a central requirement of a just transition.

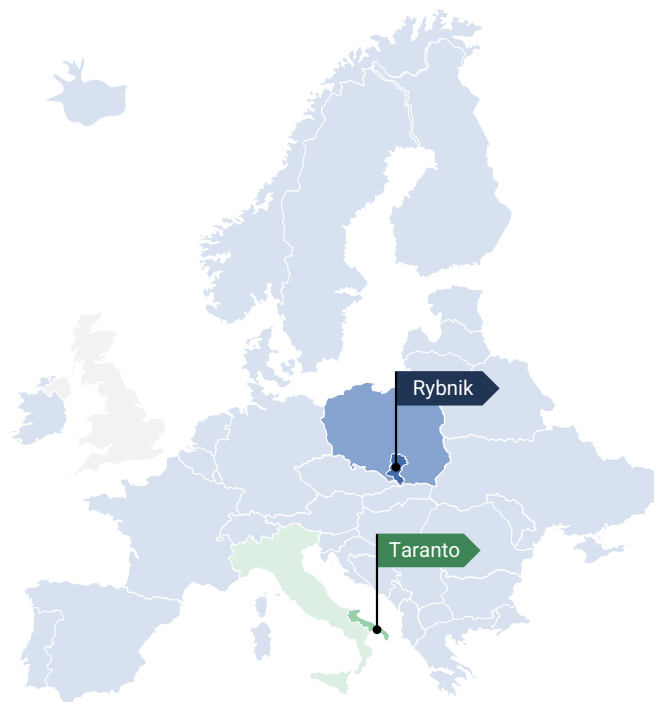
## Introduction

The workshop entitled *“AI Digital Policy for Just Health – How to Value and Deliver Innovation”*, hosted in Krakow by the AGH University of Krakow as a partner of the MISTRAL Project, constituted the initial step in a broader roadmap aimed at integrating artificial intelligence into Just Health governance. It launched a structured dialogue with territorial authorities, beginning with representatives from Apulia (Taranto) and Silesia (Rybnik), on how technological innovation and participatory approaches can contribute to more equitable and evidence-based environmental health decision-making.

The event convened MISTRAL project partners, regional public authorities, scientific experts, and members of the Scientific Advisory Board to examine how AI tools, predictive models, and citizen engagement methodologies can be responsibly deployed within public health governance frameworks in regions affected by environmental pressures.

Discussions incorporated insights from MISTRAL’s **two core case-study regions**:

- **Apulia Region (Italy)** – focusing on the industrial area of **Taranto**, characterised by long-standing exposure to industrial emissions and significant health inequalities.
- **Silesian Region (Poland)** – focusing on **Rybnik**, a coal-heavy industrial basin with persistent air pollution challenges and socio-economic vulnerability.



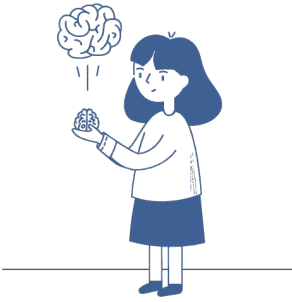
The perspectives of these two regions—each with distinctive environmental-health profiles but similar structural challenges—were crucial to understanding how innovation can be integrated into public administration workflows, planning instruments, and community engagement strategies.

The recommendations below reflect stakeholder priorities and will inform the ongoing valorisation roadmap. They are **not a policy brief**, but a **stakeholder-driven synthesis** emerging directly from the workshop process.

## 2. Key Issues Identified by Stakeholders

### 2.1 Need for transparency and reliability in AI for public health

Participants, including representatives from Apulia and Silesia, stressed that the usefulness of predictive tools in real-world policy depends on:



- Clear documentation of data provenance, model uncertainty, and methodological limitations.
- Continuous monitoring and recalibration of models.
- Avoidance of opaque “black box” systems.

For regions like **Taranto** and **Rybnik**, where public trust can be fragile, transparency is essential to ensure that AI-driven evidence is accepted by both policymakers and communities. This aligns with concerns captured in the MISTRAL exploitation roadmap and Advisory Board guidance.

### 2.2 Strengthening civic participation in data collection and interpretation

Both Apulia and Silesia highlighted the importance of citizen engagement:



- In **Taranto**, civil society groups have a long history of advocating for environmental justice, making citizen science a powerful tool for legitimacy.
- In **Rybnik**, community involvement is seen as essential for strengthening awareness around air quality and health risks.

Thus, stakeholders agreed on the value of:

- Structured citizen science initiatives;
- Partnerships with schools, hospitals, and associations;
- Strengthened digital and environmental literacy.

Citizen participation is not a communication add-on: it is central to co-producing knowledge that resonates with local lived experience.

### 2.3 Challenges in integrating innovation into regional planning processes

Regional authorities from Apulia and Silesia reported similar obstacles when attempting to embed MISTRAL tools in existing planning frameworks:



- In **Apulia**, integrating MISTRAL indicators into the Regional Prevention Plan and Active Ageing strategy requires methodological clarity and operational workflows.
- In **Silesia**, municipal authorities noted gaps between local planning needs and the availability of harmonised environmental-health indicators.

Both regions stressed the need for **practical guidance**, templates, and capacity-building to turn innovation into “routine governance”.

## 2.4 Innovation as a multidimensional process: scientific, technological, social

Stakeholders from both case-study regions agreed on the importance of integrating:



- **Scientific evidence** (models, indicators, analyses),
- **Technological tools** (AI architectures, federated systems, dashboards),
- **Social innovation** (citizen science, co-design, communication strategies).

The workshop strongly validated MISTRAL's multidimensional innovation model, emphasising that success in places like Taranto and Rybnik depends not only on scientific excellence but also on social legitimacy and technological usability.

## 3. Stakeholder Recommendations

The recommendations below reflect inputs from participants, including representatives of the Apulia and Silesian case study regions.

### 3.1 For transparent and reliable AI governance

1. Consistently document **uncertainty, limitations, and data quality** for all models, especially when used in high-stakes contexts such as Taranto's industrial health planning or Rybnik's air quality mitigation initiatives.
2. Establish **continuous monitoring protocols** to update models with new environmental and health data.
3. Prioritise the use of **interpretable and auditable models** to strengthen institutional trust.

### 3.2 For a participatory, community-centred data ecosystem

4. Embed **citizen science** activities into environmental-health monitoring, building on Taranto's strong civic networks and Rybnik's emerging educational initiatives.
5. Co-design educational programmes involving schools, health institutions, and community groups in both regions.
6. Support **local engagement networks** for sustained participation and social validation of AI-generated evidence.

### 3.3 For effective territorial uptake of innovation

7. Align MISTRAL models and indicators with regional planning instruments in Apulia and Silesia (e.g., PRP, Active Ageing strategies, environmental risk assessments).
8. Produce **operational guidelines** that clarify how predictive tools can be integrated into the decision-making cycle of regional and municipal authorities.
9. Provide **targeted capacity-building** for Apulian and Silesian public officials on data interpretation, AI governance, and environmental epidemiology.

### 3.4 For innovation sustainability and responsible scaling

10. Explore **certification pathways** for predictive tools to support adoption by regional authorities.
11. Promote **public-private partnerships** for maintaining and scaling AI tools, relevant for industrial contexts like Taranto and Rybnik.
12. Use **federated learning approaches** to enable collaboration between Apulia, Silesia, and future replication sites without centralising sensitive data.

#### 4. Implications for MISTRAL's Next Steps

The workshop made clear that Apulia and Silesia offer two highly complementary environments for innovation:

- **Taranto** highlights the urgency of trusted evidence for addressing long-standing industrial health burdens.
- **Rybnik** demonstrates the importance of strengthening local data ecosystems where air quality is a persistent concern.

These case studies provide real-world reference points for shaping MISTRAL's final valorisation strategy.

The recommendations gathered here will inform:

- The **Policy & Innovation Roadmap**,
- The development of practical guidelines for regional authorities,
- The refinement of predictive tools and participatory methods.

Stakeholders expressed strong interest in continuing to collaborate as MISTRAL transitions into the consolidation phase.

#### 5. Conclusion

This Stakeholder Recommendations Document synthesises key insights from the Krakow workshop, enriched by the experience and priorities of the **Apulia/Taranto** and **Silesian/Rybnik** case studies.

It reflects a shared understanding of how AI, Big Data, and civic participation can support more equitable, transparent, and sustainable health governance in European regions facing environmental pressures.

These stakeholder-driven orientations will guide MISTRAL's future work on valorisation and shape the project's final strategic outputs.