Session | Advancing Environmental Science through Integrated Research Infrastructures

Convener: Anna Santoro | Co-conveners: Gustavo Naumann, Quertenmont Pierre, Elena Garbarino

Towards a comprehensive user strategy for Integrated Research Infrastructures advancing environmental science: Insight from the ITINERIS project

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Poster on site | Attendance Mon, 28 Apr, 16:15–18:00 (CEST) | Display Mon, 28 Apr, 14:00–18:00 | Hall X4

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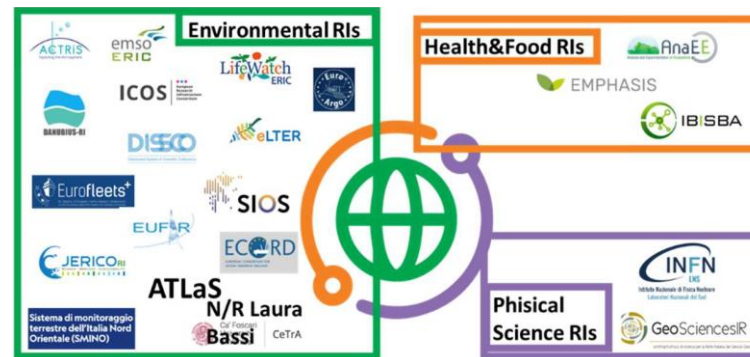
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Research Infrastructures (Ris) play a pivotal role in addressing interconnected environmental-socio-economic challenges by fostering innovation, advancing science, and providing high-quality research services.

To maximize their societal and scientific impact, a dynamic, **user-driven strategy** is essential for effectively engaging a broad and diverse user community.

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ITINERIS brings together the Italian nodes of **22 RIs** relevant to environmental research into a thematic network, enabling the observation and analysis of interconnected processes across European system domains: atmosphere, marine, terrestrial biosphere, and geosphere.

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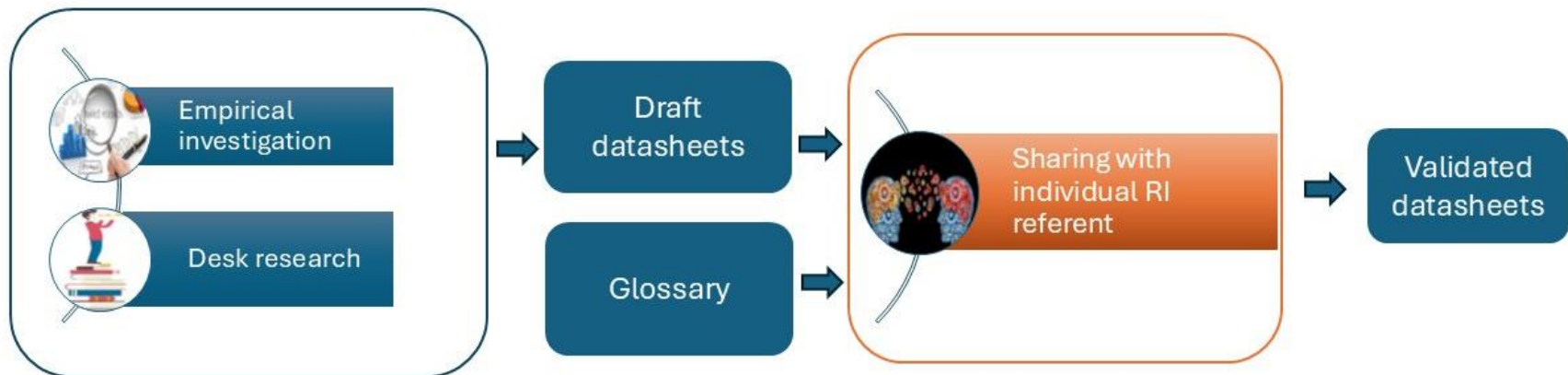
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The ITINERIS user strategy aims **to engage a broad-community-scientists, private sector, and the public-by offering high-quality, integrated environmental data, access to research platforms, tailored services, and training opportunities**.

ITINERIS
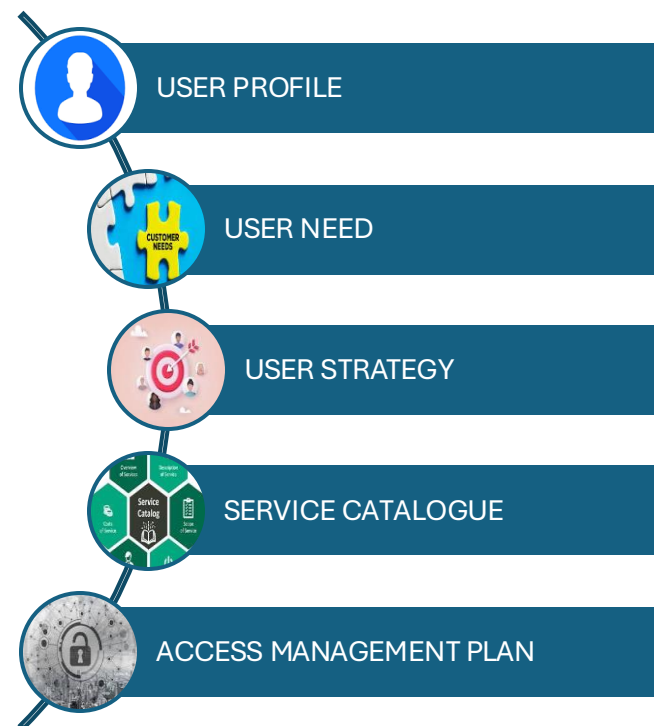
IR0000032 - ITINERIS- Italian Integrated Environmental Research Infrastructures System (D.D. n. 130/2022 - CUP B53C22002150006) Funded by EU - Next Generation EU PNRR Mission 4 "Education and Research" - Component 2: From research to business" – Investment 3.1: "Found for the realization of an integrated system of research and innovation infrastructures"

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Methodology

The analysis of ITINERIS's current and potential user community begins with the user base of each participating research infrastructure—examining user categories, origins, and size. It then identifies specific needs ITINERIS can meet, using dedicated tools and processes (shown in **Figure 1)** to build a user-driven strategy.

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Tools

To describe each research infrastructure's user base, the study used an email survey (outlined in **Table 1**) and desk research focused on key user components (shown in **Figure 2**).

TITLE OF THE SECTIONS	
INFRASTRUCTURE	USERS' ATTRACTION
ACCESS MODALITY (PHYSICAL, REMOTE, HYBRID)	ETHICAL ASPECTS
SELECTION PROCEDURES	POST-ACCESS PROVISIONS
USERS' PROFILE	GENERAL ASPECTS

- USER PROFILE
- USER NEED
- USER STRATEGY
- SERVICE CATALOGUE
- ACCESS MANAGEMENT PLAN

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The analysis of the *11 RIs* responses revealed a *wide range of maturity levels* among the participating RIs, as well as *significant differences in access approaches and the types of services offered*—often influenced by the domain and whether the RI is single-site or distributed.

The desk research, conducted considering as main source the institutional websites of the involved RIs and the most updated official documents, led to the implementation of *22 sheets containing the 5 user components*, which were shared with and validated by the representatives of the 22 RIs.
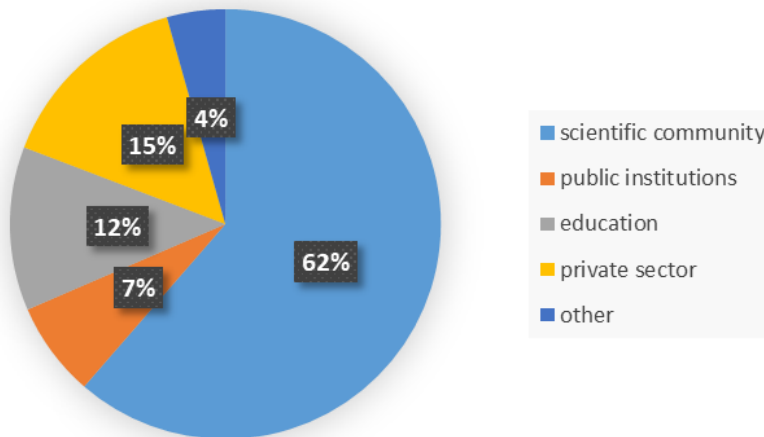
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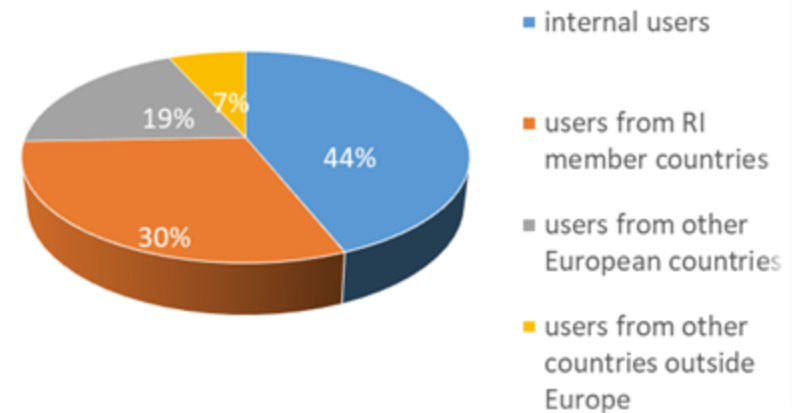*CNR - Institute of Methodologies for Environmental Analysis (IMAA), Tito, Italy*

Outcomes

The study provides a detailed analysis of **five user components**, combining survey data with qualitative insights from desk research. **User profiling** (**Figure 3)** reveals that most individuals involved in knowledge creation belong to the scientific community (62%), followed by the private sector (15%), education (12%), public institutions (7%), and others (4%).

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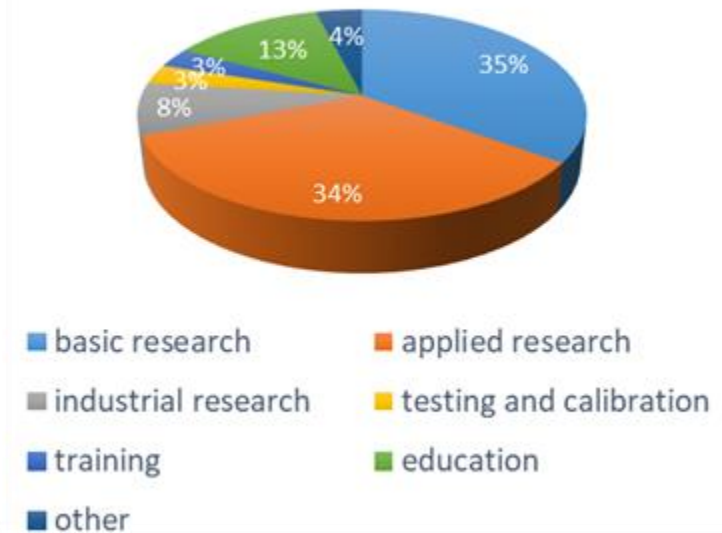
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User Need

The data shows that users mainly aim to conduct fundamental research (35%) and applied research (34%), followed by education and training (13%). Secondary goals include industrial research (8%), as well as testing, calibration, and additional training (each 3%).

Main objectives pursued by users

- basic research
- applied research
- industrial research
- testing and calibration
- training
- education
- other

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Almost all Research Infrastructures (RIs) have a **Service Catalogue**, but only a few currently meet the glossary standards. Most plan to update their catalogues soon, while four RIs have not yet developed one.

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A formal **Access Management Plan (AMP)** are rare among the RIs; only ACTRIS has a complete, publicly available one. Usually, access practices are inferred from strategic or periodic documents, which are mostly public, though some have restricted sections. One RI also has a specific access policy alongside its AMP.

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User strategy

Adopting a **comprehensive User Strategy** is vital for fostering research and innovation, while also generating positive socio-economic impacts at both local and global levels. Such a strategy must integrate a broad array of tools, competencies, services, and procedures (**Figure 6**). For ITINERIS, this poses a considerable challenge given the diversity across its 22 Research Infrastructures (RIs).
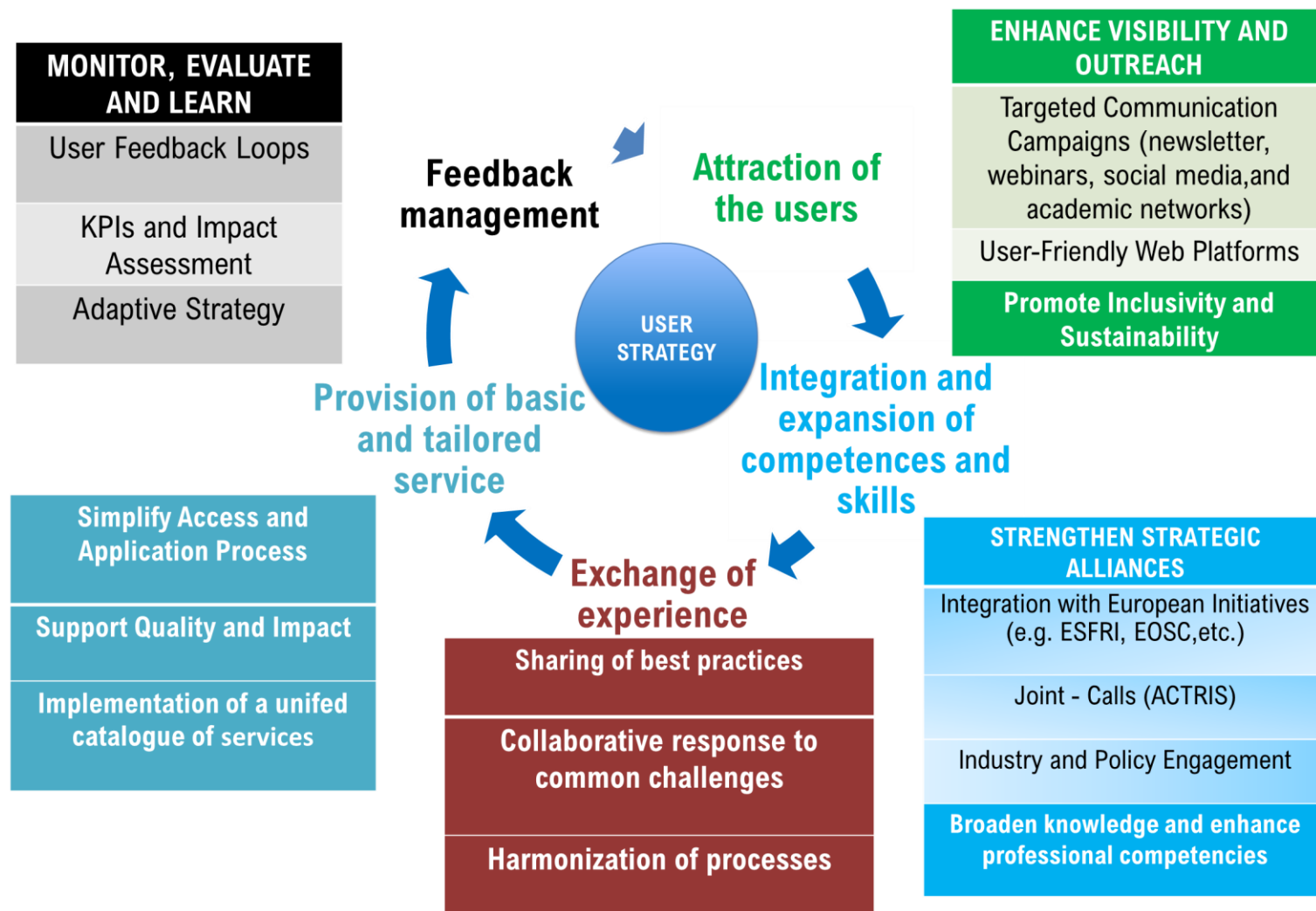
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Figure 6 shows the five pillars of an effective user strategy with the corresponding main strategies

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The course "Innovative Environmental Monitoring and Territorial Transformation Analysis" focused on the role of research infrastructures in supporting planning processes.
The seminar highlighted how technological advances and collaborative research—particularly through initiatives like ITINERIS—can foster sustainable urban regeneration, improve spatial monitoring, and support the development of decision-making tools and planning strategies.

ACTRIS Italy, with ITINERIS and RI-URBANS, held a stakeholder event in Rome on the new EU Air Quality Directive. The meeting highlighted how research infrastructures support its implementation, engaging national and regional agencies to bridge science and policy, and drawing interest from local authorities and businesses.

In the framework of ITINERIS project ACTRIS and Lifewatch, around 40 children aged 10–14—growing up in contexts of educational poverty—embarked on a journey of discovery. From exploring biodiversity to observing the sky, they experienced how science can inspire, include, and empower. These moments planted seeds of curiosity and opened doors to knowledge, inclusion, and hope.

Thank you