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## ENVRINNOV-WP3 MS3.3 Capacity building needs & gaps and available resources

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## ENVRINNOV-WP3

### Task 3.2 Capacity Building strategy for Innovation

#### MS3.3 Capacity building needs & gaps and available resources

Prepared by Ariane Dubost and Flamine de Quatrebarbes, CNRS - December 2024

#### Introduction

The Horizon Europe-funded project "ENVRINNOV – ENVironment Research Infrastructures Innovation Roadmap," coordinated by CARE-C at The Cyprus Institute, *is working towards developing a common Innovation Roadmap for the environmental research infrastructures (ENVRIs) community*. To ensure that all components of the project have a shared understanding of concepts such as Innovation, Technology Transfer, and Industrial Approach, ACTRIS-FR (CNRS), as part of ENVRINNOV-WP3-T3.2 "Capacity Building strategy for Innovation", evaluated the needs and gaps of the community related to their knowledge on innovation.

To do so, ACTRIS-FR conducted a survey and a consultation to assess the current training landscape and evaluate training needs in parallel to desk research to list relevant trainings.

The results and analysis of these initiatives help us define the types of training that ENVRI participants need, how they prefer the training to be delivered, and how we can maximize the impact of the training.

#### Survey to ENVRI community

##### Methodology and Biases

A quantitative survey was designed in collaboration with WP3 partners. It was launched online via Microsoft forms in July 2024 and open until the end of September 2024.

The survey targeted two main user groups: RI head office staff (including communications officers & IILO/ICOs) and Central laboratory staff.

The survey followed the GDPR (General Data Protection Regulation) and no individual data will be shared, only aggregated results.

The survey was notably circulated through ENVRINNOV and ENVRI (community of 26 Environmental Research Infrastructures) communication channels – mailing lists, newsletter, social media channels (X and LinkedIn). Individual RIs also shared the survey link to their mailings notably to their central laboratories which are in direct link with innovation and technology development.

Targeted reminder emails to individual RIs communication officers and/ or DGs have also proven efficient to gather further inputs.

In total, 47 answers from 14 ENVRIs were collected. We note an uneven representation: The responses do not represent all Research Infrastructures (RIs) or domains evenly, as the RIs are not evenly distributed across domains:

- Terrestrial Ecosystem/Biodiversity: 5 RIs, 3 responses (2 RIs)
- Solid Earth: 1 RI, 0 responses
- Marine: 4 RIs, 3 responses (2 RIs)
- Atmosphere: 7 RIs, 13 responses (2 RIs)
- Multi-domain: 10 RIs, 28 responses (7 RIs)

All RIs involved in ENVRINNOV replied and forwarded the survey further.

### Survey analysis

Regarding user profile, 57% of answers come from people involved in the Head offices of RIs (including 11% of Industry liaison or contact officers), 19% are RIs national contact points, 17% are involved in central facilities or laboratories and 6% come from the national facilities.

### Knowledge of Innovation:

While knowledge of innovation and the creation of new services is relatively strong, respondents are less familiar with Technology Transfer, Technology Development, and moderately familiar with collaboration with industry as illustrated in Figure 1 below.

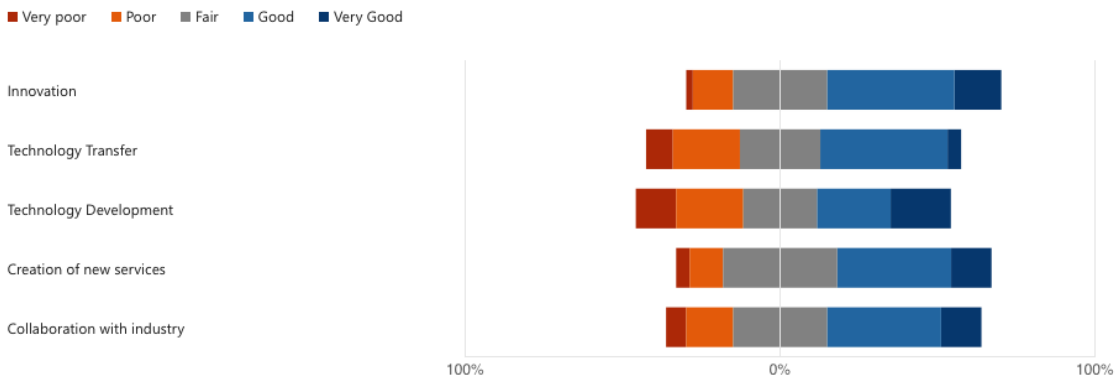


Figure 1 : Knowledge on the innovation topics

Furthermore, specific questions were asked to understand better the innovation landscape within RIs/ RPOs.:

- 51% of respondents indicated that there is an innovation support officer/program or similar structure to encourage innovation.
- 91% responded that their RI has initiatives related to innovation.
- 87% said their institute is working on developing new products or services.
- 85% are improving existing processes or methods.

- 87% are already collaborating with external partners.

The training needs can be found in Figure 2 below. Innovation management and technology transfer are the most chosen options followed by collaboration with industry.

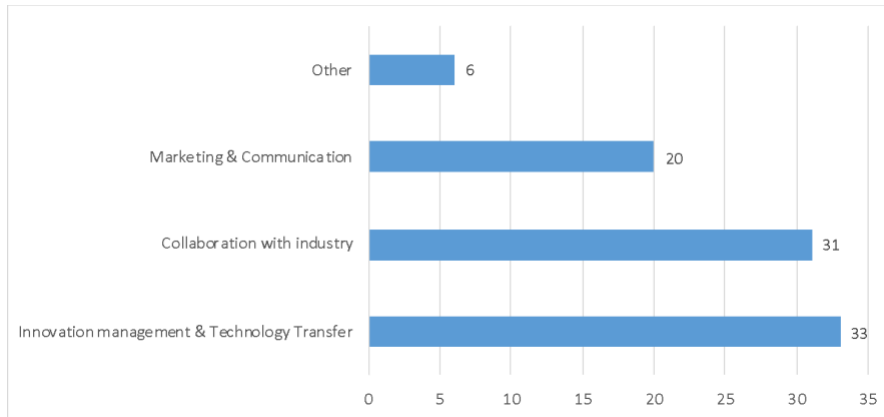


Figure 2: training needs on innovation

Going more in-depth in the analysis, the top three topics of interest were:

- Commercializing Research (Market analysis, opportunity scoping, and business model development) – selected by 30 respondents
- Engagement with the private sector – selected by 26 respondents
- Negotiating Collaboration Agreements and Contracts (including IPR) – selected by 24 respondents

In addition to the multiple choices, some respondents suggested the development of a course for ENVRI officers that covers the structure of the industry sector, various market segments, relevant industrial associations, and the PERIIA<sup>1</sup> network, including contact information and inquiries. They advocate for in-person interactions with industry representatives to better understand their needs and effective engagement strategies. The importance of conveying messages to industry partners, potentially through co-design methods and design thinking approaches or conducting a scoping survey aimed at smaller organizations and SMEs, rather than focusing primarily on large research-active universities, to enhance collaboration with industry were also mentioned.

The last part of the survey focussed on the format training preferences. A topic of interest and the quality of the trainer(s) would be the main motivation for respondents to attend a training on innovation as shown in Figure 3.

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<sup>1</sup> Pan-European Research Infrastructure Industry Liaison Officer Association

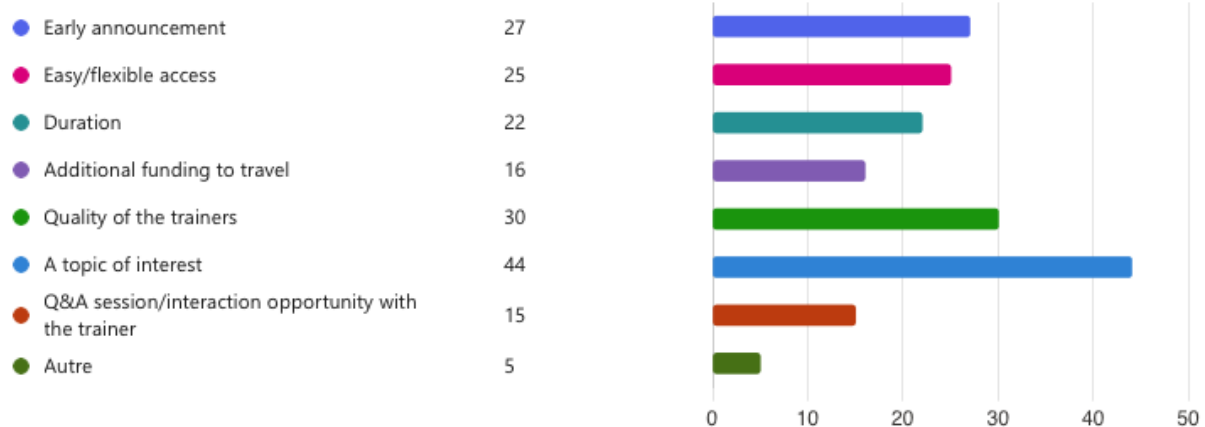


Figure 3: Interest in attending a training on innovation

As for the format of the training, we note a preference for short training sessions on a specific topic rather than large events with multiple topics. There is no strong preference for physical or remote trainings, but participants expressed their willingness to attend small-group training sessions with longer sessions lasting from one day to two days.

In terms of notification, newsletter information or personal invitation were the most chosen choices.

### Available resources

A question of the survey was dedicated to the trainings attended by the RIs staff. Respondents were asked to detail the available resources they have in their work and research environment regarding innovation, technology transfer and industrial approach and to list the trainings related to innovation they already attended. 54% of respondents said they can access training through their institute.

These answers, combined with desk research, will be included in the [ENVRI Innovation toolbox](#) developed in Task 3.1.

### ACTRIS community's perception of innovation

To get more direct feedback and interaction with potential trainees, a study of the ACTRIS community's interest in innovation-related issues was carried out by the ACTRIS-ERIC And ACTRIS-FR (CNRS).

Thus, a survey aimed at finding out the perception of innovation in the European ACTRIS community was organized via the Slido tool during the ACTRIS Week 2024 (annual meeting of ACTRIS stakeholders) held in November 2024 in Matera, Italy. Each question attracted over a hundred responses, the main ones of which are developed below (Figure 4).

Technological development, particularly the development of new instruments, was cited most often by the respondents. We also note the aspect of novelty and progress - in technologies or measurement

techniques. Artificial intelligence is also one of the most cited concepts. Artificial intelligence will play an increasingly important role in IR instrument and data developments over the next few years.

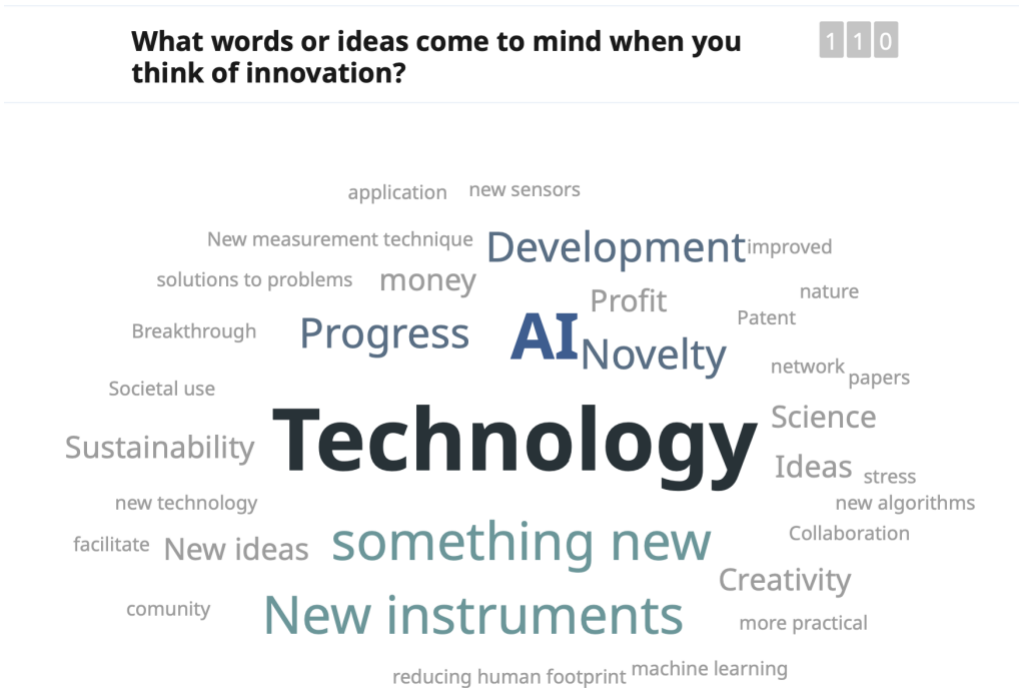


Figure 4 : Word cloud to define innovation in the ACTRIS community

The audience was then asked to rate their knowledge of innovation. This question obtained a score of 2.9 / 5 for 120 survey participants, as shown in Figure 5 below. Thus, very few community members consider themselves experts on the question, but many consider themselves to have some knowledge of

### How would you rate your knowledge on innovation ?

1 2 0

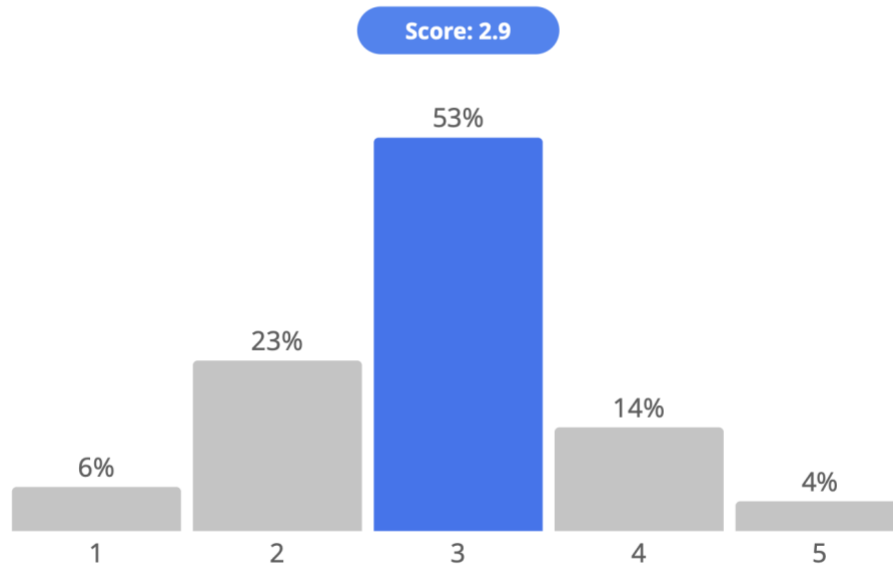


Figure 5 : ACTRIS community's perception of its knowledge of innovation

The final question on the survey (results presented in Figure 6) focused on innovation-related training needs. Aspects related to technology transfer (including contracts and intellectual property rights) and the differences in interacting at public and private levels were the proposals that emerged the most.

The exchange of questions that followed the survey enabled a discussion between researchers, members of the ACTRIS National and Central facilities and the Head Office about expectations. Part of the community doesn't necessarily feel concerned by these issues, which come on top of their scientific, technical and administrative tasks. Organising an information session on the importance of fostering innovation within ENVRI to demonstrate the tools that can be made available to the community to promote an innovative ecosystem as a first step should be envisaged.

## What kind of training would you prefer?

1 2 6

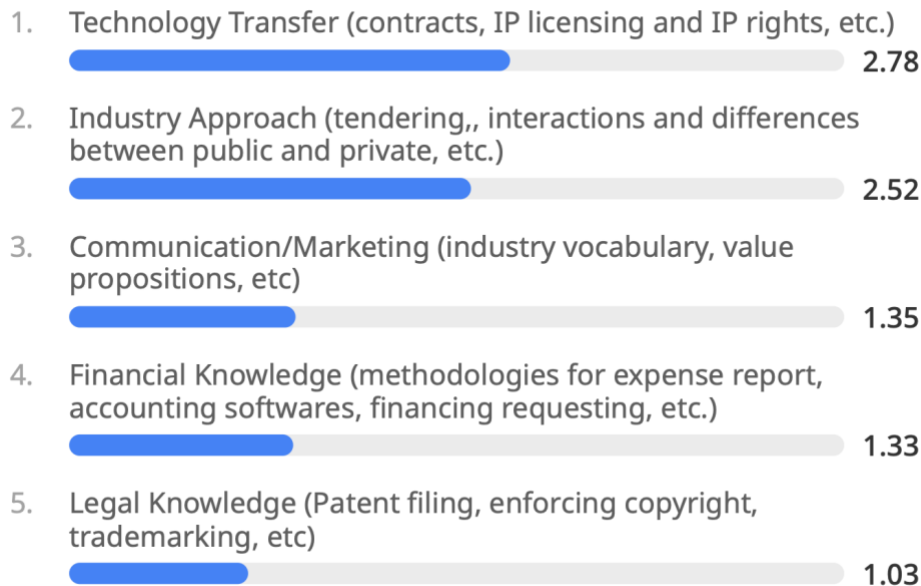


Figure 6: Innovation training preferences

### Next steps in the design of the innovation training programme

A first training session will be organized during [EGU 2025](#) as a splinter session on Thursday 1<sup>st</sup> May 2025.

This session aims to:

- Provide a general introduction to the concept of innovation in the context of ENVRI, and how it can benefit RIs and the ecosystem.
- Demonstrate how the ENVRINNOV project can support ENVRI in their innovation process.
- Explore ways of enhancing communication and collaboration between ENVRI and the private sector as a means to accelerate innovation.

We warmly invite all members of the ENVRI community, as well as anyone interested in innovation in environmental research infrastructures, to participate in this interactive and engaging pilot training session. Feedback from this first session, will help shape further training to be made available to the community.

More in-depth training on specific subjects linked to commercialization or technology transfer will be organized in the upcoming months.