



D3.3

An ENVRI landscape report for National Stakeholders

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Deliverable abstract

The ENVRI landscape report for National Stakeholders summarizes the outcomes of the interviews that were conducted with five different national stakeholders within the environmental domain in Europe. The report addresses awareness of the ENVRI work and activities in different countries and particularly the ways the national ENVRIs are organized and coordinated currently. Most importantly, the report sums up how countries see the significance of aligning national strategies with the strategies at European level, and what are the related challenges and means of improving the alignment.



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DOCUMENT AMENDMENT PROCEDURE

Amendments, comments and suggestions should be sent to the Project Manager at manager@envri-fair.eu.

GLOSSARY

A relevant project glossary is included in Appendix A. The latest version of the master list of the glossary is available at <http://doi.org/10.5281/zenodo.4471374>.

PROJECT SUMMARY

ENVRI-FAIR is the connection of the ESFRI Cluster of Environmental Research Infrastructures (ENVRI) to the European Open Science Cloud (EOSC). Participating research infrastructures (RI) of the environmental domain cover the subdomains Atmosphere, Marine, Solid Earth and Biodiversity / Ecosystems and thus the Earth system in its full complexity.

The overarching goal is that at the end of the proposed project, all participating RIs have built a set of FAIR data services which enhances the efficiency and productivity of researchers, supports innovation, enables data- and knowledge-based decisions, and connects the ENVRI Cluster to the EOSC.

This goal is reached by: (1) well defined community policies and standards on all steps of the data life cycle, aligned with the wider European policies, as well as with international developments; (2) each participating RI will have sustainable, transparent, and auditable data services, for each step of data life cycle, compliant to the FAIR principles. (3) the focus of the proposed work is put on the implementation of prototypes for testing pre-production services at each RI; the catalogue of prepared services is defined for each RI independently, depending on the maturity of the involved RIs; (4) the complete set of thematic data services and tools provided by the ENVRI cluster is exposed under the EOSC catalogue of services.

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D3.3 – An ENVRI landscape report for National Stakeholders

1 Introduction

One of the aims of task 3.1 was promoting the national and European development of the environmental RI landscape together with national stakeholders and ESFRI. Liaising with the national stakeholders, especially funding agencies is key for sustainable development of environmental research infrastructures.

The original plan for achieving this aim, was to organise a high-level meeting between Environmental Research Infrastructures (ENVRI) and some of their national Stakeholders. The aim was to learn from countries about their national strategies to strengthen and optimise the environmental RI landscape, and to discuss the impact of national strategies on the European level RI landscape and how to increase alignment of ENVRI strategies with national approaches.

As the COVID-19 pandemic stopped all in-person meetings for approximately 2,5 years, it was decided that instead of round-table discussions, a set of individual interviews would be set up to gain information from the national stakeholders.

The interviews focused especially on how the national RI landscape is organised currently in the countries, and on what is the position of the countries on the importance of aligning national strategies with the strategies at European level. In addition, interviewees' perspectives on challenges foreseen related to e.g., access policies for data access and distribution were welcomed. Furthermore, as many countries are participating in a number of research infrastructures, the views of the national stakeholders on the future development of European landscape of research infrastructures were discussed.

2 National stakeholders interviewed

Altogether five stakeholders from five different countries were interviewed (see Table 1).

Table 1. Stakeholders that were interviewed within the national stakeholder liaison came from France, Finland, Germany, Romania and Norway.

Stakeholder Name	Affiliation and country
Nicolas Arnaud	Director of the National Institute for Earth Sciences and Astronomy at CNRS, France
Riitta Majjala	Vice president for research at Academy of Finland, Finland
Nicolas Villacorta	Delegate for the research area Matter, Research infrastructures in the EU, Germany
Viorel Vulturescu	Director at the European and International Partnership Directorates, Ministry of Research, Innovation and Digitalisation, Romania
Odd Ivar Eriksen	Special Adviser, The Research Council of Norway, Norway

3 Questions

The stakeholders were asked to share their perspectives on five different questions (see below).

Question 1:

ENVRI (through the different projects in FP6 (ENVRI), and H2020 (ENVRIplus and ENVRI-FAIR) coordinates joint activities between RIs in the Environmental domain. In your position with national responsibilities, are you aware of the work done as part of the ENVRI projects?

Question 2:

Is there, in your organization and/or in your country, any initiative to better connect the different national ENVRI, i.e., joint management of data (like in ENVRI-FAIR), of access, of policies? Would you see an added value of implementing a National ENVRI, coordinating activities of different national RIs on specific issues? Which difficulties do you foresee to organize a National ENVRI initiative, if you believe this would be strategic?

Question 3:

Developments in ENVRI-FAIR are mostly improving common policies for access to data and digital tools from the different ENVRI in line with the EOSC strategy. The so-called ENVRI-Hub, under-development, would be a central gateway to environmental data and services offered by the ENVRI. The data offered through the hub will be interoperable across the Earth system disciplines and therefore easy to use for interdisciplinary environmental research. What is your position on the development of the ENVRI-Hub and do you see any issue related to aligning national strategies with the strategies at ENVRI level?

Question 4:

Is there any recommendation you would like to make to improve alignment of ENVRI strategies with national approaches, in particular related to development of EOSC at the national level? What kind of challenges do you foresee related to access policy for data and countries' participation in many Research Infrastructures?

Question 5:

ENVRI-FAIR will Terminate in 2023. Do you see the need for continuing a European coordination of ENVRI? If so, do you have any recommendations to make?

4 Outcomes

The results of the interviews are summarised under five different themes (presented below in the next chapters): 1) Awareness on ENVRI projects among the stakeholders, 2) Initiatives or actions to better connect the different ENVRI at national level, 3) Development of ENVRI-Hub and alignment with national strategies, 4) Recommendations and challenges on improving the alignment of ENVRI strategies with national approaches, 5) Need to continue European coordination of ENVRI after the ENVRI-FAIR project ends.

4.1 Awareness on ENVRI projects among the stakeholders

The first question mapped the awareness of the interviewees of ENVRI, and the work done within the ENVRI projects.

The respondents were well aware of the concept of ENVRI, ENVRI Community and the related activities. ENVRI was known for being in the forefront of exchanging data between the RIs and providing the data to the external users as well. Further, they considered the themes of the projects timely and relevant to the environmental research infrastructures. It was pointed out that particularly climate related RIs seem to be aware of the ENVRI efforts, but more national level communication could be done at the ecosystem side RIs about the work conducted in ENVRI. The stakeholders have encouraged the national organisations to be part of ENVRI activities, and follow the work of ENVRI-FAIR project, which was considered as an important contribution to the field. The need to be part of these processes has been seen important in RPO level as well.

The national stakeholders also recognised the importance of the ENVRI-FAIR project and connections of the European Open Science Cloud (EOSC). The national stakeholders were also curious on knowing what kind of continuous connections ENVRI has towards EOSC organization and construction of the EOSC, and how the interaction between RIs and EOSC construction could be facilitated.

It was brought up that ENVRI could promote itself more at national and regional level towards funding research agencies, researchers and other data users (e.g., small cities and towns).

4.2 Initiatives or actions to better connect the different ENVRIs at national level

The countries have different strategies towards coordination on environmental research infrastructures. In some countries the different research infrastructures are closely linked with each other, and this is encouraged or requested by the funding agencies. In other countries the research infrastructures are more self-standing, and no close coordination between the RIs is required.

However, it is recognised that it is up to the research infrastructures to develop the best possible collaboration modes and networks at national level, and the RPOs are independent on their contribution to the research infrastructures based on their strategic goals. Most countries involved have a national roadmap in place, setting the national priorities for research infrastructures, and cooperation between the different ENVRIs. In some countries, initial efforts have already been taken to build small ENVRI like consortiums, particularly due to the recognition that cooperation on lifecycle for the data between the different RIs was not seen sufficient. It was mentioned that RIs should complement each other, while find the unique selling points at the same time.

Actions towards better connections between the research infrastructures included for example increasing the interoperability and coordination on data storage and curation at the national level. It was also noted that there are increasing expectations on reusing data and interoperability of the data, and this is increasing the costs and causes a strong need for increased funding. There is more and more pressure towards the funding agencies due to this development.

4.3 Development of ENVRI-Hub and alignment with national strategies

All interviewees considered any joint actions to develop and support easy access to data essential, to increase the interoperability and sustainable access to data. It was brought up that there is presently a good moment to bring people together and construct tools for data exchange and avoid duplicating systems since people are quite well aware of construction of EOSC and ENVRI work on data access. It was addressed that there is currently room for discussion and advancing on data sharing.

A single-entry point, no matter what the domain is, was considered as a crucial point, to improve the availability of the data, not only for science but also for supporting the decision making. Hence, the concept of ENVRI-Hub was considered interesting, and important initiative to move from silos to a broader concept of environmental data. ENVRI-Hub was seen as an example illustrating the RIs cooperation, and something that could be recognized and taken up at the national strategies. Having ENVRI-Hub in place may facilitate similar efforts at national level. Related to this, the harmonisation of the data format was considered as one important aspect.

The connections towards the EOSC were mentioned also as an important aspect for developing the ENVRI-Hub, as many countries are active towards EOSC, and see it strategically important. It was also pointed out that steering mechanisms need to be developed in national and international cooperation to streamline the processes for data management and the collection, processing, and utilization of relevant data.

The ESFRI clusters in general and cluster projects were also considered as an important means to increase the weight and visibility of the environmental research infrastructures. Also, it was pointed out that the already available data, existing from many years, that is actively used by science communities, should

be recognised in relation to the environmental research infrastructures. The scientific community in these fields has been existing far longer than the now established research infrastructures.

4.4 Recommendations and challenges on improving the alignment of ENVRI strategies with national approaches

Environmental research infrastructures should keep in mind that the EOSC has a very important role in enhancing the collaboration and supporting the harmonisation of the access policies. Enhancing change of knowledge and developing joint activities can significantly increase the quality of operations and support the collaboration. However, it was pointed out that work needs to be done to build linkages between the research infrastructures and EOSC. European countries have made significant investments on the research infrastructures, and this needs to be acknowledged in developing the EOSC. One challenge seen in structuring the EOSC was that the policies and tools that are required for the environmental data differ from those of physics data. The way to facilitate building EOSC could be done particularly through the national to European ENVRI connections.

The environmental research infrastructures have a long tradition and experience in sharing data and making data interoperable, so no specific challenges were seen in this respect, as in some other fields like health, where the national goals can be very different. Any challenges would be more on the technical level, and it is still a big effort to actually have fully FAIR data within the environmental cluster, which will take some time still. Aligning the data policies at different levels at the same time (community, RI and political level) was seen vital.

The FAIRness of the data is of crucial importance, and especially the acknowledgement of the data producers, and this work should be continued also in future. Being part of a European Research Infrastructure is of huge importance also in this respect. More effort could be put in aligning the national policies with European research infrastructures.

In the European and international landscape, the international research infrastructures could share more broadly their plans to develop and update the access policies. This could support many research infrastructures to develop their own best practices to best suit for the users.

In many countries the landscape of research infrastructures is still fragmented with many different interests, which can be seen as a challenge in aligning the ENVRI strategies with national approaches. Another challenge comes from the limited public funds and personnel resources that can be allocated in research infrastructures, dependent on the national priorities.

ENVRI was encouraged to be active and form one proposal to enhance the RI landscape in the future. In that, the national perspective will also play a role when making access to data comparable from country to country.

4.5 Need to continue European coordination of ENVRI after the ENVRI-FAIR project ends

The interviewees shared the view on the importance to continue the ENVRI work towards the fairness of the data, and accessibility of the data. Some also specifically mentioned the importance to continue the funding of such topics through Horizon Europe, and also through national funding opportunities. The efforts at the European level should be complemented at national level.

It was highlighted that environmental voice is needed in the EOSC construction. ENVRI activities was seen the way to do that, and the community should continue the efforts. While recognising the importance to continue the work, it was noted that it is the role of the research infrastructures to find out and develop the best possible collaboration modes and networks supporting their operation and ability to provide services.

It was also pointed out that there is a need to go beyond clusters, cross-cluster needs of data, combining e.g. health data with environmental data, or combine food related problems with environmental observations and so forth.

It was brought up that ENVRI RIs could think if they could take more steps towards industry and citizen users (e.g., in the area of material sciences and health), which might open new funding opportunities. Some new openings could emerge also from RIs partnerships with biodiversity, agriculture, and forestry side.

5 Conclusions

It was unfortunate that it was not possible to organise in-person round table discussions within this task. However, the individual interviews gave good insight to the national policies and strategies towards the European research infrastructures.

The five interviews held showed that ENVRI developments and activities are well recognized at national level. The interviews illustrated clearly that liaison with the national stakeholders is crucial for the ENVRI Community. The ENVRI-FAIR project gained an insight on the national RI policies and strategies. At the same time the interviewees were very interested in receiving information at the ENVRI cluster level.

For the further development, fostering the interoperability and availability of the data seemed well received by the interviewees, and the need for easily accessible data via single entry point was welcomed at the general level. On the other hand, it was pointed out that it is the task of the ENVRI Community to find the best ways to enhance the fairness and interoperability of data distribution within the community. However, the development of interoperability and coordinated actions were welcomed also from the perspective of wise use of resources, as the funding will remain constrained also in the coming years.