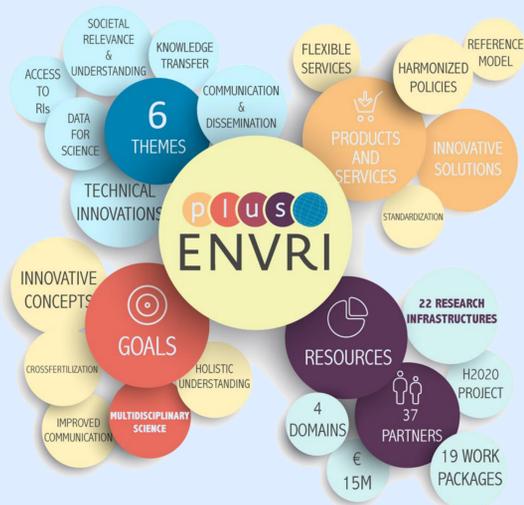


The ENVRIplus Project

ENVRIplus is a Horizon 2020 project bringing together Environmental and Earth System **Research Infrastructures (RIs)**, projects and networks with technical specialist partners to create a more coherent, interdisciplinary and interoperable cluster of Environmental Research Infrastructures across Europe (<http://www.envriplus.eu/>).



One theme of the project deals with the **societal relevance and understanding**, and within that theme an entire work-package (WP13) aims at developing an ethical framework for RIs.

Objectives of the WP13 are:

- increase the awareness of both the scientists and the public on the importance of ethical aspects in Earth sciences;
- establish a shared ethical framework of reference, to be adopted by RIs governing bodies;
- increase the awareness of RIs management and operational levels and of the individual involved scientists on their social role in conducting research activities and research work environment;
- assess the ethical and social aspects related to the results achieved and deliverables released within the project.

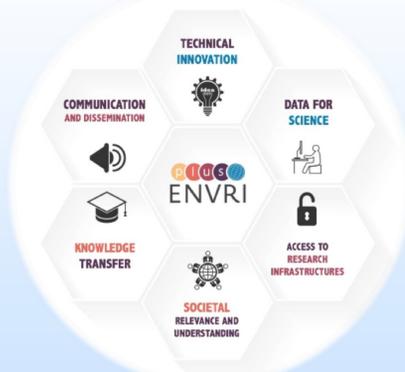
Activities completed

- **State of art** on ethical issues useful for the goals of the project (collection and analysis of materials already existing within scientific organizations, institutions all over the world).
- Survey through an “ad-hoc” **questionnaire** to investigate how each RI participating in ENVRIplus faces ethical issues in relation to its activities, and so to understand the level of perception that researchers and technicians involved in the project have on the ethical implications of their scientific activities.

Ongoing activities

include:

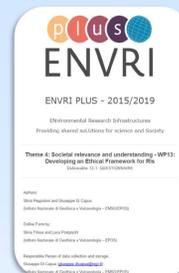
- definition of **ethics guidelines** to be used by partners for building their policies and their own codes of conduct;
- elaboration of an **ethical label template** to characterize each product of the project, that partners will be able to use in order to give essential information about the ethical and social implications of their products;
- **dissemination** of all the results of the previous activities on websites and social networks, so that they are suitable for the public.



Envri Plus themes

QUESTIONNAIRE:

“What do you know about ethics in geosciences?”



The questionnaire, available online at <https://form.jotformeu.com/61223684182353>, is composed by the following 4 sections:

- Interviewee’s information** (general information on the person).
- PART A - General inquiry** (general aspects related to ethics applied to geosciences, research integrity and misconduct, values involved in the scientific activity, behaviours in the working environment).
- PART B – Inquiry on specific aspects related to the own Research Infrastructure (RI) and Institute/University** (to investigate the state of organization of RIs and Institutes/Universities to which interviewees belong, and which policies, initiatives, and activities these organizations have developed to face ethical and social issues).
- Conclusion** (general opinion of the interviewee on the ethical matter related to his/her work)



Main results

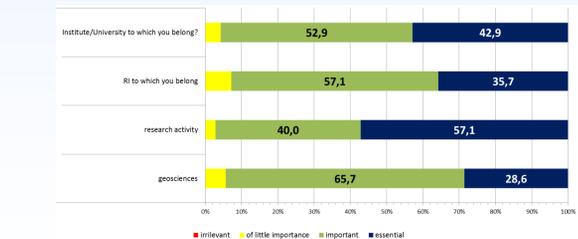
The questionnaire has been sent to all the 270 participants in the ENVRIplus project. 70 of them (**about 26%**) have participated in the survey.

Part A - Questions from 1 to 14

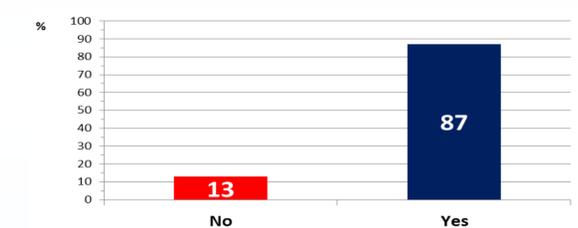
1) Have you ever heard about ethics applied to geosciences?



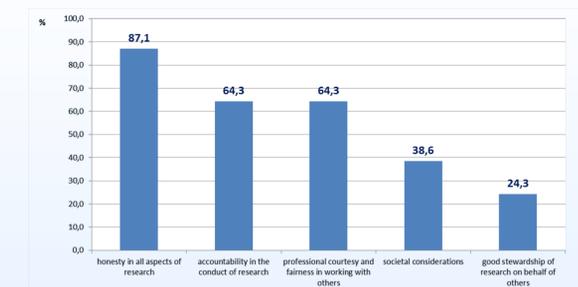
3) How much ethics is important for ...



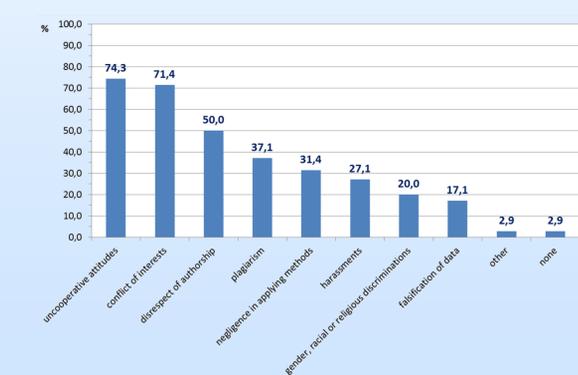
5) Have you ever heard about research misconduct?



6) When doing research what are the most important values of reference for you among the following?



9) Have you ever heard about some of the following behaviours within your working environment?



OF THEIR ACTIVITIES? THE EXAMPLE OF THE EUROPEAN PROJECT ENVRI PLUS

and Florian Haslinger^{2,3}

³ IAPG - International Association for Promoting Geoethics

silvia.peppoloni@ingv.it
giuseppe.dicapua@ingv.it
florian.haslinger@sed.ethz.ch



Part B - Questions from 15 to 68

The analysis of the Part B “Specific inquiry” has shown differences in organizations, policies and activities/initiatives between RIs and Universities/Institutes.

Table 1. Percentages relative to the presence of **different kinds of offices**, respectively within Universities/Institutes and RIs. Values in red are higher than those in blue.

Offices	Universities/Institutes	Research Infrastructures
Ethical Board	40.0%	28.6%
Communication Office	91.4%	48.6%
Geo-Education Office	48.6%	10.0%
Anti-Corruption Office	21.4%	4.3%
Guarantee Committee for equal opportunities	54.3%	10.0%

Policies	Universities/Institutes	Research Infrastructures
Code of conduct/ethics	51.4%	22.9%
Data policy	37.1%	64.3%
Access policy to laboratories	40.0%	34.3%
Publication policy	40.0%	22.9%
Policy about inclusivity and access for personnel with disabilities	61.4%	10.0%
Gender balance policy	54.3%	32.9%
Policy to limit the environmental impact of activities	32.9%	21.4%

Table 2. Percentages relative to the existence of **different kinds of policies**, respectively within Universities/Institutes and RIs. Values in red are higher than those in blue.

Conclusion - Questions from 69 to 71

Only a small percentage of choices (less than 3%) refers to “not positive” nouns for describing ethics in geosciences, as *bureaucracy*, *ideology*, *manipulation*, *doubtfulness*, or *vagueness*. *Research integrity*, *data management* and *environmental monitoring* are considered the most relevant themes for ENVRI PLUS. Also *sustainability*, *communication*, *climate change*, *relationships between scientists and other components of society* (media, decision-makers, citizens, industry) represent important themes of the project. Less importance has been given to issues like *natural resources*, *resilience*, *inclusivity policy*, *conflicts of interest*, *gender balance*, *geoheritage enhancement*.



Cloud of the most frequent words used by participants in the survey, to define ethics in geosciences (in red “negative” words).

Conclusions

- The importance of ethical and social aspects of scientific activity is recognized by the most of the interviewees.
- The actual perception of these issues and the knowledge of the instruments to face them seems to be not adequate, especially with regard to society.
- Considering that the ENVRIplus project is aimed at providing shared solutions for science and society, it becomes a priority to increase the ethical awareness and the social responsibility of the RIs' community.



This goal can be promoted by developing an ethical framework that supports scientists in their work and can make the science-society interface more effective, in order to translate results of scientific activity in tangible benefits.

- It is indispensable to strengthen the cooperation among colleagues, to improve the institutional communication within each RI regarding activities and organizational structure, to face and reduce some unethical practices like misconduct, uncooperative attitudes, conflicts of interest and discrimination, in order to improve the quality of the working environment, which is the fundamental prerequisite for doing excellent science.

Based on these results, the next task of the WP13, which will be dedicated to the definition of Ethical Guidelines for RIs, will be of great importance and usefulness.



Environmental Research Infrastructures Providing Shared Solutions for Science and Society



The first European project in which ethics applied to geosciences finds space as a fundamental issue, at the base of scientific activities