D13.2
ETHICAL LABEL TEMPLATE

WORK PACKAGE 13 – DEVELOPING AN ETHICAL FRAMEWORK FOR RI

LEADING BENEFICIARY: ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

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Deliverable type: REPORT

Dissemination level: PUBLIC

Deliverable due date: 30.4.2018/M48

Actual Date of Submission: 06.8.2018/M48

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654182

ABSTRACT

This deliverable refers to the "Ethical Label" (EL) template implemented by WP13. The EL template is provided in Appendix A.

The EL will identify and highlight ethical and social peculiarities of "activities, products, and data" (deliverables) undertaken within and/or resulting from the ENVRIplus project.

This implies that authors of ENVRIplus deliverables are asked to use the EL in order to give essential information about the ethical and social implications of their project output.

The specificity of the EL template is to provide additional information to the description of the technical-scientific characteristics usually associated to deliverables.

The EL template is structured as a user-friendly tool, with different tables related to: "type of product", "field affected", "accessibility", "end-users", "potential impact", "area concerned", "potential misuse". The table "summary" groups information selected in the previous sections of the table into a simple format, useful to tag a deliverable.

Finally, a procedure to approve the EL associated to an ENVRIplus deliverable is suggested. The procedure should be managed by the coordination office of ENVRIplus, in order to accomplish the following steps: compilation, verification, modifications, approval.

Project internal reviewer(s):

Project internal reviewer(s):	**Beneficiary/Institution**
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Document history:

Date	**Version**
23.4.2018	Draft for comments
30.4.2018	Corrected version
07.5.2018	Accepted

DOCUMENT AMENDMENT PROCEDURE

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PROJECT SUMMARY

ENVRIplus is a Horizon 2020 project bringing together Environmental and Earth System Research Infrastructures, projects and networks with technical specialist partners to create a more coherent, interdisciplinary and interoperable cluster of Environmental Research Infrastructures across Europe. It is driven by three overarching goals: 1) promoting cross-fertilization between infrastructures, 2) implementing innovative concepts and devices across RIs, and 3) facilitating research and innovation in the field of environment for an increasing number of users outside the RIs.

ENVRIplus aligns its activities to a core strategic plan where sharing multi-disciplinary expertise will be most effective. The project aims to improve Earth observation monitoring systems and strategies, including actions to improve harmonization and innovation, and generate common solutions to many shared information technology and data related challenges. It also seeks to harmonize policies for access and provide strategies for knowledge transfer amongst RIs.

ENVRIplus develops guidelines to enhance transdisciplinary use of data and data-products supported by applied use-cases involving RIs from different domains. The project coordinates actions to improve communication and cooperation, addressing Environmental RIs at all levels, from management to end-users, implementing RI-staff exchange programs, generating material for RI personnel, and proposing common strategic developments and actions for enhancing services to users and evaluating the socio-economic impacts.

ENVRIplus is expected to facilitate structuration and improve quality of services offered both within single RIs and at the pan-RI level. It promotes efficient and multi-disciplinary research offering new opportunities to users, new tools to RI managers and new communication strategies for environmental RI communities. The resulting solutions, services and other project outcomes are made available to all environmental RI initiatives, thus contributing to the development of a coherent European RI ecosystem.

TABLE OF CONTENTS

1. INTRODUCTION 5

2. FUNCTION OF THE ETHICAL LABEL 5

3. METHOD AND STRUCTURE 5

3.1 Type of product 6

3.2 Field affected 6

3.3 Accessibility 7

3.4 End-users 7

3.5 Potential impact 8

3.6 Area concerned 8

3.7 Potential misuse (warnings) 8

4. POSSIBLE PROBLEMS FOR THE COMPILER *9*

5. SUGGESTED PROCEDURE FOR AN ETHICAL LABEL APPROVAL *9*

6. EXAMPLE OF COMPILATION 10

7. TIMING OF DELIVERABLES AND REVIEW 10

8. CONCLUSIONS 11

9. IMPACT ON THE PROJECT 12

10. IMPACT ON STAKEHOLDERS 12

REFERENCES 12

APPENDICES 12

ETHICAL LABEL TEMPLATE

REPORT TEXT

1. INTRODUCTION

The results of the survey through the online questionnaire "**what do you know about ethics in geosciences?**" described in the Deliverable 13.1 (http://www.envriplus.eu/wp-content/uploads/2015/08/D13.1.pdf) has clearly shown the general recognition by interviewees on the importance of ethical and social aspects involved in own research and technological activities, but at the same time identified a general lack of awareness on what this concretely means. In addition, even if problems related to internal dynamics of the research working environment seem to be known or at least perceived, what one's own work can mean for the benefit of society seems not so clear, and ethical and social implications related to activities are perceived as quite difficult to be analyzed.

ENVRIplus is aimed at providing shared solutions for science and society. The questionnaire developed not only helped to learn more about ethical matters with respect to scientific work, but also raised with its distribution recipients' (ENVRIplus project participants) awareness for ethical and societal aspects of their research activities. The EL aims to continue these efforts by supporting researchers to clarify the potential ethical, societal, and scientific impact of their activities. Moreover, filling the EL can constitute a useful internal project training on developing a critical thinking in ethics in science and in science-society interactions.

2. FUNCTION OF THE ETHICAL LABEL

The EL provides information about the ethical, social and environmental implications and impact of a deliverable or other project results, thereby adding value to the usual technical-scientific focused description of any project outcome.

The EL represents a schematic and simplified information, in tabular form, as a support of the introductory part of every outcome of the project, which orients the end-user to better identify concepts and aspects that describe the function of that product, with particular reference to its impact on the scientific community, society and the environment.

3. METHOD AND STRUCTURE

The EL has been structured as an easy, user-friendly tool considering the wide range of types of products (deliverables) that will be released within the ENVRIplus project, involving topics ranging from biological processes/life to solid Earth dynamics and technological advances.

The EL template consists of different tables capable to characterize the product according to a limited number of categories: "type of product", "field affected", "end-users", "accessibility",

"potential impact", "area concerned", "potential misuse". Each table contains a set of predefined choices to select from.

The particular choices provided in the tables were identified after analyzing the types of deliverables expected within the ENVRIplus project.

The final table "summary" depicts the actual EL, grouping the information selected in the previous tables into one comprehensive format that then can be used to tag every product.

In order to fill in the "summary" table representing the EL for the considered product, editors are asked to provide information by selecting answers in the previous tables as follows:

- Classification of the type of product (deliverable) in the ENVRIplus project.
- Indication of the field, where the product aims to have an impact.
- Identification of end-users that might use the product.
- Information on the accessibility (public or restricted) of the product.
- Indication of the thematic sectors potentially affected by the product.
- Evaluation of the scientific and technological areas concerned.
- Analysis of the potential for misuse in case the product is not managed properly.

Initially, editor names, deliverable number and date of compilation of the EL need to be indicated.

The following section describes each table in detail.

3.1 Type of product

The table provides a list of product types to be released within the ENVRIplus project. The list includes: "Questionnaire", "Classification tools", "Database", "Dataset", "Software", "System design", "Services", "Website", "Report", "Methods and strategies", "Procedures, protocols, standards, guidelines", "Technological device", "Technological facility", "Dissemination materials", "Training course, educational activity/tool", "Prototype".

Multiple choices are possible to best describe the type of product.

3.2 Field affected

Each product has to be referred to the fields it might have an impact on. These pre-defined fields are listed in the table: "Knowledge", "Methods", "Dataset", "Training and education", "Dissemination (outreach)", "Social well-being", "Environment", "Sustainability", "Risk prevention and resilience", "Safety", "Professional skills", "Technological innovation".

Some products contribute to enrich our scientific and technological knowledge, such as those illustrating conceptual analyses or permitting to understand the level of knowledge for some specific topics, through analyses of data collected with questionnaires.

Other products propose methods, such as procedures adopted for data collection, processing, and storing; classification tools, standards or other ways to elaborate information and to arrange

experiments; strategies, guidelines, recommendations and protocols to be followed to harmonize analyses and techniques in different study areas.

In other cases, products consist of datasets or databases, to be used for different objectives.

Educational platforms, courses, tutorials, training programs and learning materials can be included in the field “Training and education”.

Software is considered as “technological innovations”, as well as devices, facilities, and system design.

Contents addressed to websites and social media, or promotional materials, can be included in the field “Dissemination (outreach)”.

Multiple choices are possible while identifying the fields of each product. For example, a dataset composed by data related to an environmental process can be related to at least two fields: “dataset” and “environment”. Similarly, a course for citizens involved in seismic monitoring activities should be included at least in the fields “Training and education” and “Risk prevention and resilience”.

3.3 End-users

The table lists 16 types of potential end-users of the product. The list comprises: “Universities/academic institutions”, “Researchers (scientists)/Technicians”, “Research infrastructures”, “Government agencies”, “Local authorities”, “Public officers”, “Teachers” and “Students”, “Industry”, “Public companies”, “Private companies”, “Decision makers” and “Law makers”, “Professionals”, “Media”, “Citizens”.

Multiple choices are possible, since the same product could be of interest for more than one end-user.

3.4 Accessibility

As previously mentioned, products are addressing different users. This implies that each product can have different conditions of accessibility. Accessibility is public, in case a product is available without any restriction. On the contrary, some limitations to the accessibility could apply to protect ongoing scientific studies or to avoid any kind of misuse of scientific and technological data. Limitations could also apply to protect industrial secrets or any other confidential information related to project activities. In this case, the accessibility is restricted and editors have to indicate in the specific column, which categories of users can have access to the product, by using the list of end-users.

3.5 Potential impact

Products can have different potential impacts based on ambits directly involved and/or indirectly

influenced. This table comprises 7 choices: “Project management”, “Social”, “Educational”, “Political”, “Scientific”, “Environmental”, “Industrial”, and “Economical”. A product can impact one or more aspects, so multiple choices are possible.

For example, a course on the use of a new software for remote environmental observations by citizen scientists will have social, educational, scientific, and environmental impacts.

In another case, guidelines to manage procedures within a research infrastructure will affect project management aspects.

3.6 Area concerned

In order to identify the scientific fields for which the product has been created, editors are asked to choose one or more areas among the following: “Natural hazard/risk”, “Climate change”, “Environmental monitoring”, “Data acquisition, storage, elaboration and management”, “Science education and communication”, “Natural resources usage”, “Energy supply”, “Pollution and waste storage”, “Ecosystem and biodiversity conservation”, “Working environment”, “Research integrity”.

For example, best practices on data transmission/handling are related to the area “Data acquisition, storage, elaboration and management”. A dissemination strategy on science information will be marked as “Science education and communication”.

3.7 Potential misuse (warnings)

An easy and wide diffusion of scientific and technological results of project activities among specialists and no-specialists (media and science amateurs) through the internet has greatly increased the potential for misuse of scientific information. This is particularly true as often results of research projects, while available online and open access, are not clearly explained in a language understandable by non-specialists (media included).

In other cases, public-funded research activities might be used secretly by industries for their own profit or speculations without agreements that guarantee the respect of copyrights or licenses.

Results of the ethical questionnaire survey (D13.1: http://www.envriplus.eu/wp-content/uploads/2015/08/D13.1.pdf) showed that project participants consider “media scoops” and “scientific controversies” the main issues concerning potential misuse of scientific results.

For all these reasons, the table “potential misuse (warnings)” has to be considered as an important added value for describing a product, because it gives homogenous indications regarding potential misuse, capable to undermine the credibility of scientific results achieved in the project and consequently of the scientific community who produced them.

Regarding the “Potential misuse” of a specific deliverable, editors of the EL can choose among the following items: “Manipulation”, “Conflict of interest”, “Underestimation of uncertainties”, “Negligence in using the product”, “Terrorism and crime”, “Industrial espionage”, “Financial

speculations", "Controversial media coverage", "Ideological matters", "Scientific controversies", "Other", "None". In the case of "Other", editors can provide an additional reason for misuse to be considered in addition to the ones already listed.

Multiple choices are possible in case the product could be affected by different types of misuse.

For example, without exhaustive warnings, a dataset on atmospheric parameters might be manipulated for ideological purposes in order to confirm or reject a specific forecasting model. Moreover, uncertainties associated to those data could be underestimated leading to wrong conclusions about the evolution of some ongoing natural/anthropogenic processes.

Similarly, new technologies implemented in the project could be subjected to industrial espionage, or remote sensing images with free-access could be used for by terrorists to plan their attacks.

Obviously, misuse can be partially controlled through a restricted user-dependent access policy. In any case, this table on "potential misuse (warnings)" can be also a way to highlight possible problems that can arise if the use of a product is not properly managed by the project coordination office.

4. POSSIBLE PROBLEMS FOR THE EDITOR

ENVRIplus is a large project involving many different scientific disciplines and technological activities. This translates into significant difficulties to design and provide one comprehensive tool capable to describe results/products with few items despite all variables and differences within the project and research infrastructures involved.

Each EL editor should carefully choose from the options provided in the table of the EL template, taking into account that simplifications are necessary to assure common descriptions for all project products. So, even if the choices listed in the tables cannot be considered as exhaustive, the allow to tag a product easily.

5. SUGGESTED PROCEDURE FOR AN ETHICAL LABEL APPROVAL

The EL can become the output of a sort of "approval/awarding" procedure that a group responsible for a project product might wish to achieve in order to increase the level of transparency of information related to that product.

The stages of the procedure should be: compilation, control, revision, approval, release.

The EL should be considered as a "mark" to be assigned to the product.

The EL should be compiled by authors of the product and the quality control of the EL prepared might be provided by the internal project coordination office, that know more than others contents and details of each project product. The coordination office should review the EL in order to approve it or to send it again to editors requesting for clarifications.

The final approval would lead to mark the product as “ethically & socially labelled in conformity with ENVRIplus standards”.

6. EXAMPLE OF COMPILATION

In this section, an example of a completed EL is shown. It isrelated to the Deliverable D13.1 “Questionnaire to analyse the ethical and social issues and assessment report on questionnaire answers”, already released and downloadable at http://www.envriplus.eu/wp-content/uploads/2015/08/D13.1.pdf).

Ethical Label of the Deliverable D13.1:

Editor	Giuseppe Di Capua, Silvia Peppoloni
Deliverable	ENVRIplus - D13.1
Date	20 April 2018
Type of product:	Questionnaire, Report
Field affected:	Knowledge, Dissemination (outreach), Social well-being
End-users:	Universities/academic institutions, Researchers (scientists)/Technicians, Research infrastructures
Accessibility:	Public
Potential impact:	Project management, Scientific
Area concerned:	Working environment, Research integrity
Potential misuse (warnings):	None

7. TIMING OF DELIVERABLES AND REVIEW

As these reports are important for the stakeholders (RIs) and to the overall project review, we will conduct internal reviews of the documents. Each document thus has three additional persons besides the team, which has written the deliverable, going through the document before it is submitted to the Commission by the project office. Table 1 shows the roles of these persons.

TABLE 1 ROLES OF THE DELIVERABLE REVIEW

Role	Task	Appointed by

Mairi Best **(Technical expert)**	Technical, editorial and scientific review of the document – done by internal expert.	WP leader
Laura Beranzoli **(RI expert)** *Consultation* in Activecollab	User community (RI) representative who mainly analyzes the usability of the deliverable for Stakeholders.	WP leader
Silvia Peppoloni **(usually WP leader)**	Decision that the reviewer comments are sufficiently well taken care and the deliverable quality is acceptable	Theme leader

8. CONCLUSIONS

The EL created in ENVRIplus is an innovative tool to provide additional, harmonized information about project products (deliverables).

The mid-term review of ENVRIplus project has highlighted the great importance and contribution of the WP13 deliverable D13.1 (online ethical questionnaire and results of the survey), to the ENVRIplus project), since the work done "has already substantially increased sensitivity to and engagement with relevant ethical issues".

The questionnaire has highlighted that most of the interviewees recognize the importance of ethical and social aspects in scientific and technological activities. They are also aware of the fact that neglecting those aspects is problematic, especially if activities are concerned that might have societal implications.

So now that the questionnaire has raised the awareness of scientific community involved in the ENVRIplus project, the EL aims to improve the way in which that community communicates its scientific and technological achievements, since the EL can easily characterize a project product, by putting in evidence its ethical and societal issues, to be released both to specialist and not-specialist end-users.

Our expectations are that the EL could become a standard output of the ENVRIplus project and the Research Infrastructures, but if officially adopted, an "approval/awarding" procedure should be implemented as described previously.

While during the ENVRIplus project ethical labels assigned to products should be approved by an internal entity of the project (for example by the coordination office), it would be necessary guaranteeing that the EL lives beyond the end of the ENVRIplus project. This implies that a different responsible entity capable "to certify" the ethical labels should be created/identified.

Finally, the EL should be marked as an ENVRI branding.

9. IMPACT ON PROJECT

In line with objectives of the ENVRIplus project the EL template is a tool to be used by research infrastructures, useful to integrate outputs of RIs with additional information and to improve knowledge transfer and communication amongst RIs and outside RIs, in relation to ethical and social issues of research and technological activities.

Surely the EL will improve the quality of services offered both within single RIs and at the pan-RI level, offering new opportunities to end-users in order to easily understand which ethical and social aspects should be considered for each product.

10. IMPACT ON STAKEHOLDERS

Regarding the usability of the Deliverable for the RIs, as already written, the EL should be adopted to mark scientific and technological products, not without having assured an internal office capable to verify the correctness of the compilation and the rightness of items selected to describe the ethical and social aspects of the product. The compilation of the label should remain in the hands of product's authors, because compiling the label is also a way to make the ENVRI community aware of their ethical and social obligations towards themselves, colleagues the environment and society.

REFERENCES

ENVRIplus website, Submitted deliverables. http://www.envriplus.eu/ (accessed 20 April 2018)

Peppoloni S., Di Capua G., Haslingher F. (2017). D13.1 – Questionnaire to analyse the ethical and social issues and assessment report on questionnaire answers + Appendix A and B, p.72. ENVRIplus project, http://www.envriplus.eu/wp-content/uploads/2015/08/D13.1.pdf.

APPENDICES

Appendix A: Ethical Label template

Appendix A - Ethical Label template

TABLE OF CONTENT

Editor: _____

Deliverable: _____

Date: _____

Note: Each choice has to be marked with "X". Multiple choices are permitted except for "Accessibility". If the "accessibility" is restricted, which end-users are allowed has to be indicated. In the "summary" table editors have to report, for each field, choices selected in the previous tables.

Type of product	Questionnaire	
	Classification tools	
	Database	
	Dataset	
	Software	
	System design	
	Services	
	Website	
	Report	
	Methods and strategies	
	Procedures, protocols, standards, guidelines	
	Technological device	
	Technological facility	
	Dissemination materials	
	Training course, educational activity/tool	
	Prototype	

Field affected	Knowledge	
	Methods	
	Dataset	
	Training and education	
	Dissemination (outreach)	
	Social well-being	
	Environment	
	Sustainability	
	Risk prevention and resilience	
	Safety	
	Professional skills	
	Technological innovation	

End-users	Universities / academic institutions	
	Researchers (scientists)/Technicians	
	Research infrastructures	
	Government agencies	
	Local authorities	
	Public officers	
	Teachers	
	Students	
	Industry	
	Public companies	
	Private companies	
	Decision makers	
	Law makers	
	Professionals	
	Media	
	Citizens	

Accessibility	public	
	restricted to	

Potential impact	Project management	
	Social	
	Educational	
	Political	
	Scientific	
	Environmental	

	Industrial	
	Economical	

Area concerned	Natural hazard / risk	
	Climate change	
	Environmental monitoring	
	Data acquisition, storage, elaboration and management	
	Science education and communication	
	Natural resources usage	
	Energy supply	
	Pollution and waste storage	
	Ecosystem and biodiversity conservation	
	Working environment	
	Research integrity	

Potential misuse (warnings)	Manipulation	
	Conflict of interest	
	Underestimation of uncertainties	
	Negligence in using the product	
	Terrorism and crime	
	Industrial espionage	
	Financial speculations	
	Controversial media coverage	
	Ideological matters	
	Scientific controversies	
	Other	
	None	

Summary (Ethical Label)

Type of product	
Field affected	
End-users	
Accessibility	
Potential impact	
Area concerned	
Potential misuse	