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Deliverable 8.2. Evaluation plan

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Short abstract	The present document describes the evaluation plan of the case studies defined in Deliverable 8.1.		
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COOPERATION

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1. Summary

The intended audience of this report, although of public nature, is in the first place the lenvis project team, because the findings here contained will be used for further development of the system and user involvement throughout the project. The deliverable will be publicly available for future refinement, if needed, throughout the project development.

This report is deliverables 8.2 of work package 8 of lenvis.

The present document is intended to define the evaluation plan of the case studies of the lenvis project. The case study were defined in Deliverable 8.1. For each case study a testing strategy has been defined. The testing strategy is the base for the evaluation plan.

A list of indicators for evaluation along with main questions to be answered in order to quantify these indicators is given in this report.

2. Introduction

The main goal of lenvis project is to develop an innovative collaborative decision support network for exchange of location-based environmental and health services between all stakeholders, for enhanced capacity to assess population exposure and health risks, and better management of the concerned ecosystems. lenvis will include health indicators as integral part of the environmental management.

Lenvis project has 9 work packages devoted to integrate environmental and health information and create a novel decision support network, capable to support stakeholders and citizens in their activities. This report is the deliverables 8.2 of work package 8 of lenvis.

The present document is intended to define the evaluation plan of the case studies of the lenvis project. The case study were defined in Deliverable 8.1. For each case study a testing strategy has been defined. The testing strategy is the base for the evaluation plan.

2.1. Objective of the deliverable

The report contributes to task 8.2 Evaluation Plan (IHE, HL, IST, PA, AT, PNB, MB) and is Deliverable 8.2 of lenvis.

2.2. Intended audience

The intended audience of this report, although of public nature, is in the first place the lenvis project team, because the findings here contained will be used for further development of the system and user involvement throughout the project. The deliverable will be publicly available for future refinement, if needed, throughout the project development.

2.3. Description of the deliverable

The present report is structured in 5 main parts. First a summary of the content of the report are presented in Section 1. Section 2 presents the rationale, objectives and intended audience of the report. Section 3 presents the testing activities as defined in Deliverable 8.1. Section 4 gives the overview of the evaluation strategy and defines the indicators to be considered for evaluation.

Finally, a list of references can be found in Section 5.

3. Testing activities for case studies

In Deliverable 8.1 each case study defined the testing strategies for their case studies. These testing strategies are reproduced, here below, because they are the bases for the Evaluation framework.

3.1. Testing activities Italy

WP8 will be dedicated to functional testing and validation by end-users, with focus on getting the users experience in using lenvis in real life situations or at least in simulated conditions that are as close as possible to real life.

A distinction between professional users and common citizens is foreseen, as each group will contribute in a different way to the validation process.
Professional users are expected to validate the BI toolset and modeling functionalities of the lenvis network as they will use such services as support for their daily activities and decision making.

Citizens will mostly validate the lenvis services providing data and simulation/forecast results, and will use feedbacks and collaboration services to contribute to the network with their own data, information and opinions. Citizens validation will provide very useful feedbacks on lenvis services usability and on the technologies that have been chosen for services access.

3.2. Testing activities Portugal

The services and tools developed for the Portuguese case study will be validated during WP8 by testing them during a whole bathing season, where monitoring of the bathing water quality will occur and warnings will be issued, even if a pollution event does not occur.

Professional users from the established user group will use the modelling tools developed for lenvis and will validate them according to their accuracy, suitability and functionality in helping them assess conditions and make decisions. As for public users (surf schools), they will also help to validate the communication tools by using them to delivering data and test how it will be integrated into the system, but also by analyzing the suitability of the information that it is put up on the system or that they receive, and they will also be a fundamental link in testing the early warning system.

3.3. Testing activities in The Netherlands

The lenvis services will be tested by a group of 20 citizens for a summer period of 3 months in the final year of the project. Then both the air and water quality functionalities can be tested.

In case of the air quality events (particular smog) end-user feedback functionalities will be tested by the province and the group of citizens, in that the citizens can report their own observations and related health indicators, and report back whether they found the received data and health risk warnings appropriate.

In case of water quality the end-user feedback functionalities concern the citizens to acquire real-time qualitative observations to complement available real-time recording data. The monitoring and modelling services will be tested continuously for out-standing warnings about bathing health risks.

4. Evaluation framework

4.1. Purpose of the evaluation

The purpose of this evaluation is to determine the effectiveness of the implementation of the lenvis project and what are the lessons learned from which the project can improve its deliverables in the future use of the lenvis system .

The evaluation team will work as the case studies are going on and will offer ongoing feedback to lenvis. One of the strengths of the case studies is that it has multiple sources of data.

The evaluation framework does not have as a gal , the evaluation of the quality of data coming from data providers, for example water quality at a certain location, but it has a s a purpose the assesment of the public and professionals reaction to the use of lenvis system.

In order to assess the lenvis services from the user point of view the evaluation plan will be carried out by questionnaires and interviews conducted on the pilot sites.

The evaluation will run from Month 20 to months 33 of lenvis project. An intermediate report with the evaluation of the case studies and recommendations for further improvement of the system will be issued on Month 24 of the project.

4.2. User groups

User groups considered for the evaluations are the same as the ones defined in Deliverable 1.2. A distinction between professional users and common citizens has been made, as each group will contribute in a different way to the validation process.

Professional users are expected to validate the lenvis toolset and modeling functionalities of the lenvis network as they will use such services as support for their daily activities and decision making.

Citizens will mostly validate the lenvis services providing data and simulation/forecast results, and will use feedbacks and collaboration services to contribute to the network with their own data, information and opinions. Citizens validation will provide very useful feedbacks on lenvis services usability and on the technologies that have been chosen for services access.

4.3. Indicators considered for evaluation

To meet the specific needs of users, assessment have to be carried out in different ways, for different purposes and at different levels of depth.

The indicators for lenvis evaluation are defined in terms of assessment of the system, as follows:

1. Technical assessment (system performance, reliability);
2. User acceptance assessment (users' opinions, preferences, willingness to pay for a service);
3. Impact assessment (user behaviour);
4. Socio-economic evaluation (benefits and costs of system implementation);
5. Market assessment (demand and supply);

6. Financial assessment (initial and running cost of the system, rate of return, payback period)

Different assessment categories may be inter-related: for instance, to perform a socio-economic evaluation requires the results of an impact assessment, while results of a user acceptance assessment would be an important input to a market assessment. Moreover, it is necessary for any assessment to use experimental tools, e.g. field trials, user surveys, simulation and modelling, for data collection and measurement of indicators.

Indicators 4, 5 and 6 are not part of this evaluation strategy. Those indicators will be evaluated in the framework of Workpackage 9, where dissemination and market strategy of the project is defined. However questionnaires which will be developed during this evaluation, can contain questions which can be of importance for the evaluation of those indicators.

4.4. Indicators and questions guiding the evaluation

The question and indicators which are guiding the evaluation activities and analysis are defined here below:

a) technical evaluation:

- Indicator: Effectiveness of the implementation of the lenvis system/Syestem performance/Relyability
- Main Questions to be addressed :
    - Are the data, models and materials transforming the working habbits of professionals?
    - Is the information given by lenvis transforming the way citizens looks for information?
    - Is the information what the users are looking for?
    - Is implementation leading to higher expectations of professionals about citizens understanding of the system?
    - To what extent is the implementation depending on the capacity of individuals to provide information?

b) User acceptance evaluation:

- Indicator: User acceptance and future use of the system/Willingness to pay for such a service
- Main Questions to be addresed :
    - Is the information given by lenvis usefull
    - Is the information up to date (in real time?)
    - Will the users pay for such services?

c) Impact assesment:

- Indicator: User behaviour
- Main Questions to be addressed:
    - Do users consider lenvis systems easy to learn/adapt?
    - Are the users willing to use lenvis systems?
    - Will the users pay for such services?

This indicators will be evaluated in a intermediary session and then recommendations for improving the system will be made before the end of the project. A final user survey will be done in a Seminar at the end of the project.

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