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Abstract

This document is an update of the First Intermediate Evaluation and Adaptation report (D4.4.1). It presents the updated results of the data collected from all pilots during the next four months, after the submission of D4.4.1 report to the EC (M17). The final evaluation report of these results will be described after two months at the D4.5 Final evaluation report.

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List of participants:

No	Partner	Acronym	Country
1	Draxis Environmental SA	DRAXIS	Greece
2	KRITI	CRETE	Greece
3	Aristotle University of Thessaloniki	AUTH	Greece
4	Planetek Italia SRL	Planetek	Italy
5	AGENZIA REGIONALE PER LA PROTEZIONEAMBIENTALE	Arpa Puglia	Italy
6	STELLA Consulting SPRL	STELLA	Belgium
7	EVROGEOMASTIKA d.o.o.	EGEO	Serbia
8	Opstina Indjija	INDJIJA	Serbia
9	Niğde Belediyesi	NIĞDE	Turkey
10	Sampas Bilisim Ve İletisim Sistemleri Sanayi Ve Ticaret A.S.	SAM	Turkey
11	Oikon - Institute for Applied Ecology	Oikon	Croatia
12	Krapinsko-zagorska županija	KZZ	Croatia
13	ÇED, İzin ve Denetim Genel Müdürlüğü	ÇEDTR	Turkey
15	Ministry of Environment and Urban Planning of Turkey	NCEDTR	Turkey
16	ETAM SA	ETAM	Greece

¹ Please use a new number for each new version of the deliverable. Add the date when this version was issued and list the items that have been added or changed. The 'what's new' column will help the reader in identifying the relevant changes. Don't forget to update the version number and date on the front page and the header.

² A deliverable can be in either of these stages: "draft" or "final". For each stage, several versions of a document can be issued. *Draft*: Work is being done on the contents. *Final*: All chapters have been completed.

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Executive Summary

The main objective of the eEnviPer project is to provide and test a multi-purpose cloud platform that supports environmental permit procedures for the benefit of permitting authorities, enterprises, environmental engineers and civil society.

In this respect, the eEnviPer system is tested and evaluated in five different EU countries in terms of the following assessment criteria:

- Productivity
- Cost reduction
- Accessibility
- Participatory
- Usability
- Sustainability

The evaluation is based on both quantitative and qualitative data retrieved from online questionnaires, short surveys and discussions with the main stakeholders.

Four months ago we submitted to the EC the first evaluation report (D.4.4.1) of the pilot execution of eEnviPer. The first results were very positive and promising for the future establishment of eEnviPer in the market.

Among the most important findings was eEnviPer potential to:

- Increase the productivity of the public sector and the Engineers/consultants.
- Reduce bureaucracy and improve transparency.
- Reduce operational and ICT costs.
- Enable the submission of EIA studies in a quick and efficient manner.
- Increase users' accessibility to public services and active participation in decision making.

Although the pilot testing of eEnviPer is still running in the five different EU countries, this report aims to present updated information and report the intermediate results of the evaluation process in relation to the assessment criteria presented above. This report is the Intermediate Evaluation and Adaptation Report (D.4.4.2) covering a period of 4 months and being developed in M22.

It includes a summary of the evaluation results in relation to the main assessment criteria and a short review of eEnviPer benefits for its users. It also presents the evaluation results per each pilot country as well as success stories presenting the added value of eEnviPer for the main stakeholders. In particular, the success stories provide an insight on the permitting process before and after eEnviPer providing information about the required time about the whole permitting process, the required human resources etc.

The main findings of the intermediate evaluation phase provide strong evidence about eEnviPer benefits for all users group and at the same time encourage the consortium to move forward and plan the establishment of the service in the market.

1 Introduction

1.1 Aim

The eEnviPer platform is being piloted in Greece, Italy, Croatia, Serbia and Turkey for a whole year. During this period, the feedback from all end users categories is analysed and reported three times, after 6 months (D4.4.1), after (10) ten months (D4.4.2) the current report), and at the end of the project (D4.5).

The Deliverable D4.4.1 First Intermediate Evaluation and Adaptation Report, presents the overall evaluation methodology of the project, the activities done by pilots towards the user engagement and validation, and the initial evaluation findings and lessons learnt. This document, aims to update the information on the previous report, according to the actions taken and data received during the period M17-M22.

1.2 Structure

Chapter 2 provides a summary of the evaluation results, as they have been analysed after ten months of pilot execution.

Chapter 3 presents in detail the validation and user engagement activities, as well as the evaluation results, per pilot. It also presents success stories from the use of eEnviPer and provides information for the added value of the solution for the main stakeholders.

Chapter 4 provides an overview of this report summarising the basic conclusions.

1.3 Indented audience

This deliverable aims to be used internally by the consortium members, especially by the persons who are involved locally, in the pilot execution. Additionally, this report is the reference document that presents the entire rationale and logic of eEnviPer pilot evaluation.

2 Summary of Evaluation results

2.1.1 Evaluation criteria

The main objective of this chapter is to provide updated information and present in brief the main evaluation results for all pilot countries. The evaluation results are presented in six distinct categories – productivity, cost reduction, accessibility, participatory, usability and sustainability, which also stand for the main evaluation criteria used for assessing eEnviPer solution. A description of each evaluation criterion is presented below:

- **Productivity:** Refers to the efficiency of the platform during the administrative procedures when issuing an environmental permission. It includes the reduction of the needed time for finding specific information, the option to handle a large number of users/ applications, the service integration and the fact that different processes are concentrated under one system.
- **Cost reduction:** Includes the reduction in both operational and technological costs. Operational costs include the cost of resources required for the operational execution of the Environmental Impact Assessment (EIA) process. Technological costs include platform installation, additional technology integration, etc.
- **Accessibility:** Includes the ability of the cloud platform to provide easy access to information for all related stakeholders, and connect the environmental licensing steps under a simplified licensing procedure.
- **Participatory:** Measures whether eEnviPer platform supports citizens not only to be informed, but also to be involved actively in the decision making process.
- **Usability:** It is evaluated in terms of the overall service, being:
 - More efficient to use, as it takes less time to accomplish a particular task with less and not severe errors, that you can easily recover
 - Easier to learn, operation can be learned by observation and accomplish basic tasks the first time they encounter the design
- **Sustainability:** It's directly linked with the willingness of potential customers to pay for this solution and the potential to be widely available in the market.

2.1.2 Evaluation profile

The compilation of results was based on the analysis of the replies received from the online questionnaires, the surveys and the discussions between the pilot partners and other potential users. Among the respondents were different groups of users such as public administrations, citizens, NGOs, enterprises and environmental engineers. The following figure presents the user groups that contributed to the evaluation of eEnviPer through their replies in the online questionnaires and quick surveys.

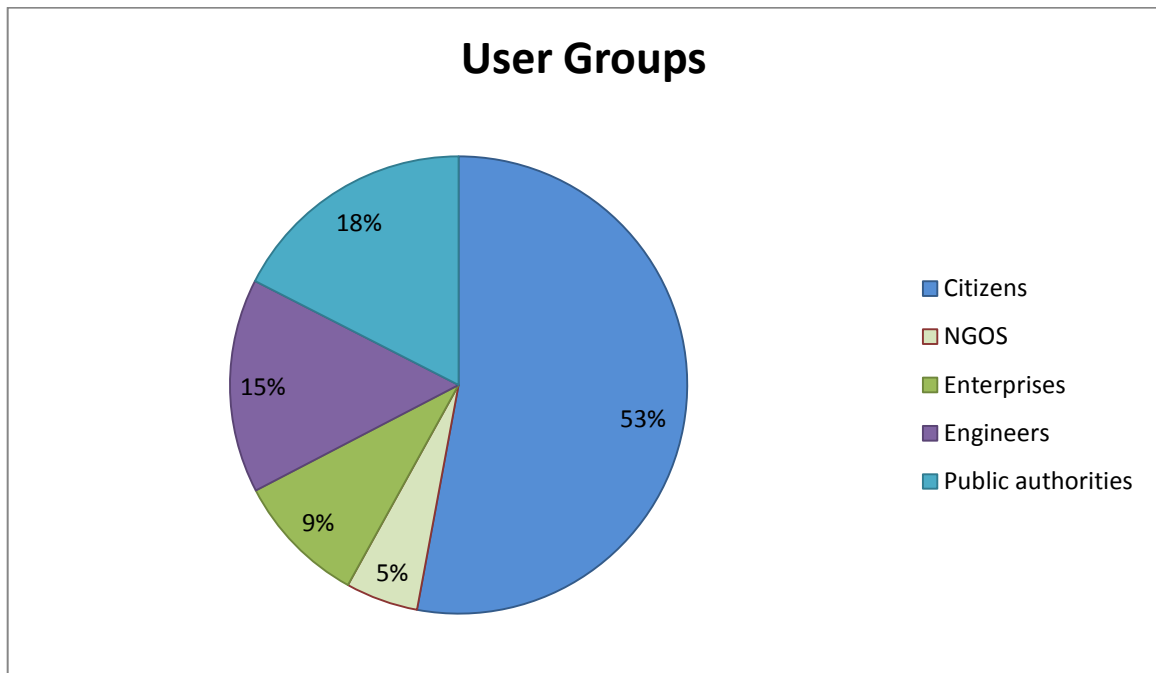


Figure 1: User groups

Based on the replies from the online questionnaires and the feedback received during discussions and interviews, below it is presented a synthesis of the main evaluation findings.

2.1.3 Productivity

MAIN EVALUATION RESULTS:

*The vast majority of respondents indicated that eEnviPer can increase **productivity** both in the **public** and the **private sector** (engineers/consultants) given that:*

- ✓ *It facilitates and speeds up the administrative procedures for issuing an environmental permission.*

In particular, it is indicative that 9 out of 10 users claimed that eEnviPer can reduce the time needed to find the required information for issuing an environmental permission.

Moreover, most of the respondents stated that eEnviPer can help them to handle in one application, the environmental permitting process that until now was managed through different applications and processes.

It should also be mentioned that 9 out of 10 users found the overall environment user friendly, with no significant requests for changing the overall interface.

Regarding the interactive maps of eEnviPer, almost all of those surveyed indicated that they are a helpful tool that makes them feel more productive. Only a small percentage (0.63%) felt that interactive maps are not helpful or useful.

In response to the question about eEnviPer ability to reduce compliant bureaucratic problems and delays in Environmental Permitting Procedures, the overall response was very positive with the majority (8 out of 10 users) commented that eEnviPer can reduce problems and delays, through:

- Transparency by monitoring the whole process and the overall environmental impact to the local area,
- Optimisation, by improving the whole process and especially compliance (e.g. autopsies, audits, etc.),
- The overall simplification of licensing procedures.

As presented in the following figure, users have a positive feeling about eEnviPer potential to increase productivity.

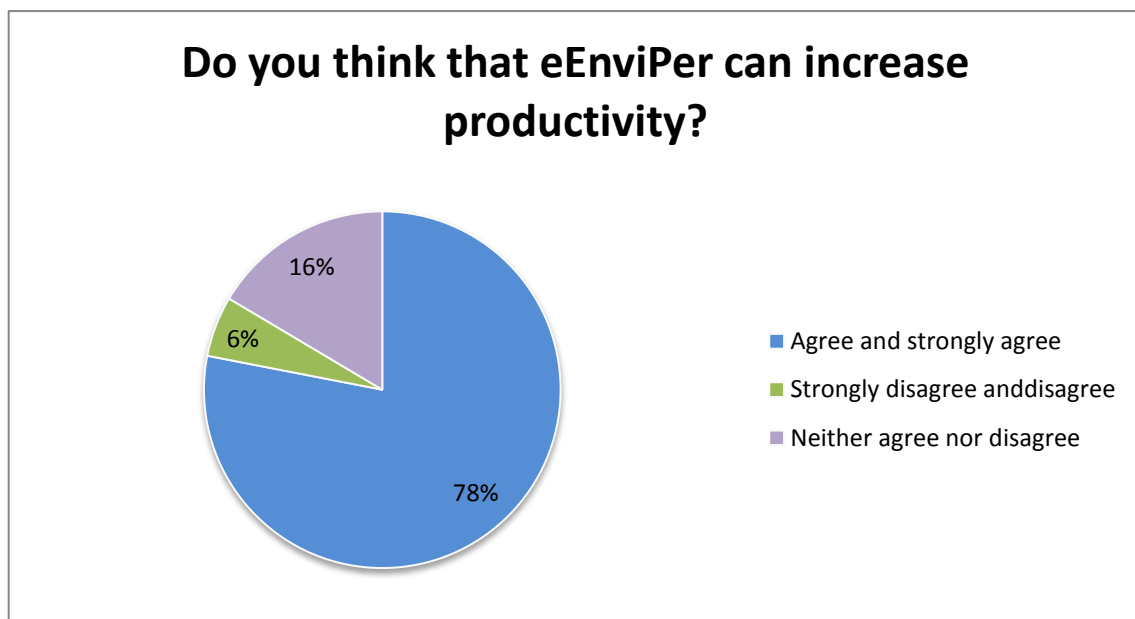


Figure 2: Productivity

BENEFITS FOR POTENTIAL USERS:

- Turning now to the view of the **private sector**, it was quite clear that eEnviPer offers a unique solution that can bring several benefits to its users. It is indicative that most of the interviewees expressed the belief that eEnviPer can reduce significantly the required time for setting up a business given that it facilitates the environmental permitting procedures. It also helps SMEs to integrate EIA services into their business portfolio given that due to the eEnviPer solution the whole procedure becomes simple, quick and effective. The enterprises which are active in the specific field can collect the needed documents from the competent

Authorities in due time and receive constant notifications about the status of their application.

- **Public authorities** using the eEnviPer platform can increase their productivity as it provides them the opportunity to offer an effective one-step procedure for issuing an environmental permission.

2.1.4 Costs reduction

MAIN EVALUATION RESULTS:

*The results from the online questionnaire and survey showed that there is a significant positive correlation between the use of eEnviPer and cost reduction. This **cost reduction** is mainly related to the:*

- ✓ Reduction of costs for **ICT expenditures** (e.g. in software and hardware)
- ✓ Reduction of **operational costs** (e.g. cost for personnel, consumables, transportation and communication)

It is indicative that in the respective question regarding the operational costs the majority of the respondents as presented in the below figure, stated that eEnviPer can reduce them.

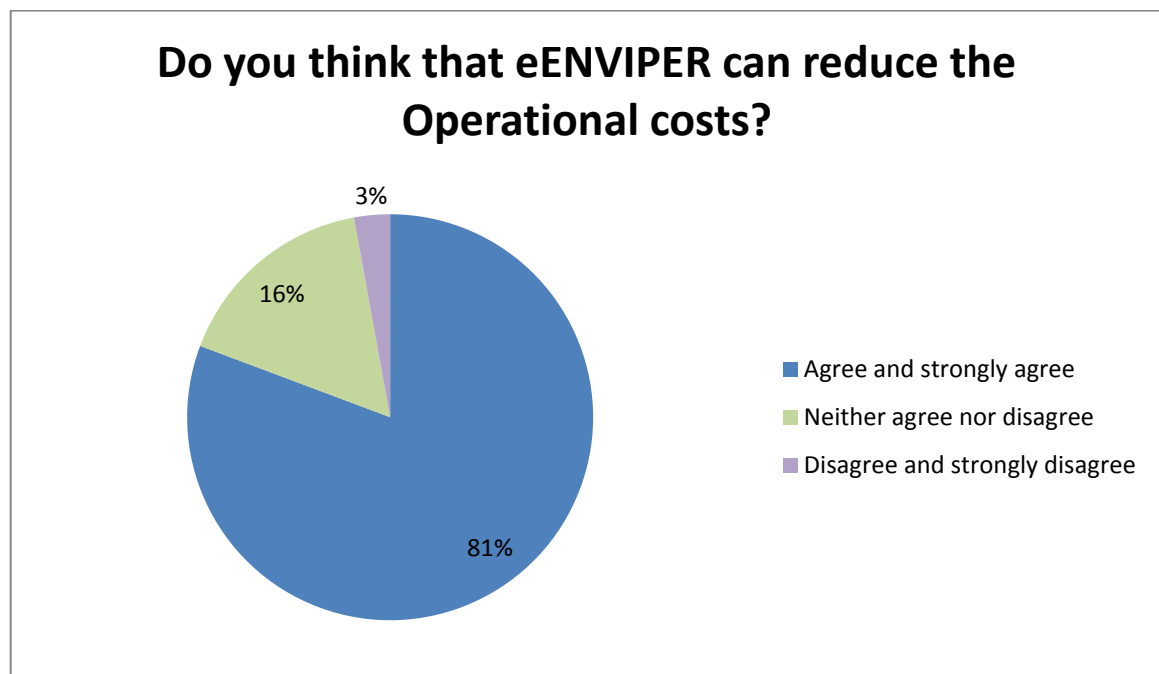


Figure 3: Operational costs

Concerning the **operational costs**, it was striking that the vast majority of users agreed that eEnviPer can reduce the operational costs, especially because it simplifies the EIA

process. Given that less personnel is needed for monitoring and assessing environmental permits and due to the fact that it substitutes the paperwork and thus reduces the costs for consumables, transportation and communication. The operational costs are also reduced because eEnviPer is provided as a Software as a Service (SaaS) and its web-service based integration and interoperability policy helps in creating a really affordable model with value for money services for public organizations but also for operators (i.e. SMEs and professionals) and for citizens free of charge.

In terms of **ICT expenditure**, whereas sophisticated ICT systems that simultaneously handle issues such as process of transactions, decision making support, public participation and content provision require large upfront investments in equipment and software licenses, eEnviPer offers for a low cost service. In this respect, it was indicative that most of the respondents (7/10) believe that the integrated environment and cloud capabilities of eEnviPer service are expected to reduce technological costs, as the platform is hosted on a cloud platform and the PA do not have to spend resources to establish the infrastructure, manage the complex server environments and provide high-tech system administrators to manage the platform. Moreover, the public authorities do not need to purchase additional computer hardware or software licenses.

BENEFITS FOR POTENTIAL USERS:

Among the stakeholders that can be directly benefited by the adoption of eEnviPer are:

- The **public authorities** which can take advantage from the reduction in technological and operational costs. It is very interesting that most of the public administrations that processed transactions through eEnviPer cloud service seem to have significant financial benefits compared to those processes through local software applications and data centers. It should also be mentioned that all the involved stakeholders agreed that through the use of eEnviPer they expect to have less technological and operational costs than before, given that in the pilot countries there wasn't any similar technological infrastructure to assist Environmental permitting processes. Moreover the majority of respondents (8/10) stated that eEnviPer rationalises their overall costs because both the service and the EIA process runs smoothly with no problems in performance and functionality and can easily be adopted and used.
- **Citizens and enterprises/engineers** who expressed their view that eEnviPer through the simplified environmental permitting process can also bring financial benefits for them as it can save their money in the form of faster, easier and more convenient service. Thus it's evident that the appropriate use of eEnviPer may contribute towards an enabling environment for social and economic growth.

2.1.5 Accessibility

MAIN EVALUATION RESULTS:

eEnviPer connects the different procedures for issuing an environmental permission under an integrated e-service platform. As a result it improves users accessibility to public services because:

- ✓ It **simplifies** licensing procedures
- ✓ It **reduces bureaucracy**
- ✓ It facilitates **communication** between the different administrative agencies.
- ✓ It provides **easy access to information** for all stakeholders through the cloud

Regarding the simplification of the whole process most of the respondents (7/10) agreed that eEnviPer contributes significantly to the simplification of environmental permitting and they also noted that simplification can be enhanced by issuing permissions faster, by setting time limits for public authorities responses, by asking for less certificates, and by improving internal communication between administrative units.

Over half of those surveyed (7/10) stated that eEnviPer facilitates the communication between the administrative units involved in the specific process in terms of sharing information and combining various types of data from different sources whereas the majority of the respondents as presented in the below figure, noted that they managed to find new information that was not available online and they also gained easier access to this information.

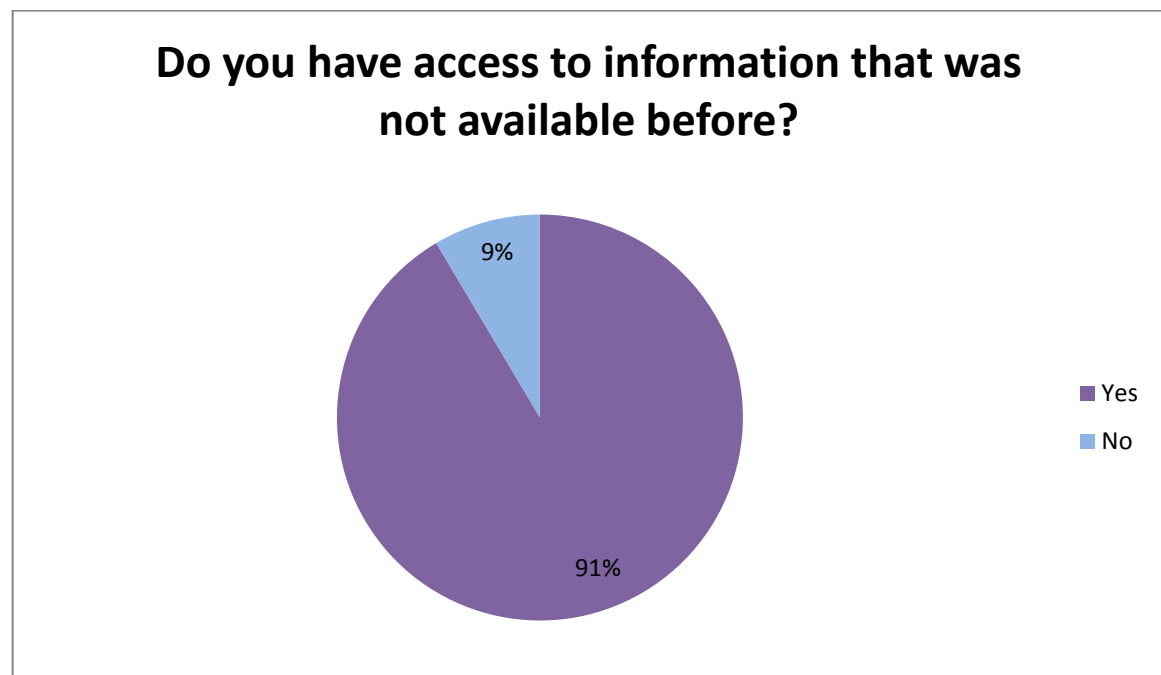


Figure 4: Access to information

BENEFITS FOR POTENTIAL USERS:

The improvement of accessibility is beneficial for all stakeholders. Particularly:

- **Enterprises and environmental engineers** take advantage of the simplified environmental permission process and the easier access to information. eEnviPer offers a common interoperable platform for the communication and joint processing of applications accelerating thus all required procedures through the interactive digital services and the interconnection of the different administrative units or agencies that are involved in the process.
- **Citizens** also stated that eEnviPer is a useful tool because it enables administrative units to share with the rest stakeholders many different types of data and information from different databases and sources. But the most interesting was that they claimed that with the use of eEnviPer they managed to access information that wasn't available before.
- For **Public Administrations** eEnviPer could be translated as an improved environmental permitting procedure which is facilitated by the interconnection of the different administrative units that are involved in it. Representatives from the specific stakeholder group also stated that the adoption of eEnviPer and the easy access to information will improve staff's technical capacity and enhance their knowledge in terms of environmental legislation and relevant procedures.

2.1.6 Participatory

MAIN EVALUATION RESULTS:

According to the evaluation results eEnviPer has the potential to increase citizens active participation in decision making and improve transparency in environmental decisions and planning given that eEnviPer enables:

- ✓ **Access to information** for all stakeholders
- ✓ **Online review** of applications
- ✓ **Participation in consultations** with decision makers

One of the most important features of eEnviPer is the **Participation System**. Based on the evaluation results it was striking that the majority of users stated that the participatory approach of eEnviPer, in the public consultation aspect of environmental planning, can make them feel more confident and active.

Did eEnviPer make you feel confident about the environmental permitting policy of your local government using online public services?

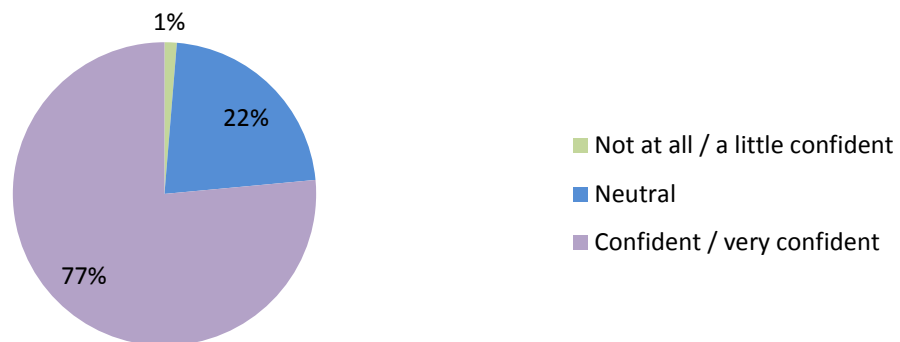


Figure 5: Confidence about the environmental permitting policy

Regarding **transparency**, it's worth mentioning that most of the respondents (8/10) stated that they found the system transparent in terms of monitoring the process and the progress of the applications.

It is generally acknowledged that citizens demand not only to be informed (transparency) but also to be involved (participation) in the decision making process especially when it comes to important issues such as the environment which may have a direct impact in their lives. In this framework, it was apparent from the evaluation results that eEnviPer has the potential to realize both objectives.

BENEFITS FOR POTENTIAL USERS:

Regarding the stakeholders that are mostly benefited from the improvement in transparency and participation are:

- Mainly the **citizens and the NGOs** as well as the enterprises who may feel confident to use eEnviPer as they can have a say during the planning and decision making process.
- The **public authorities** that can take advantage from the wider benefits of an eGovernment tool like eEnviPer. It is widely accepted that e-Government has great potential for public sector transformation. One aspect of this transformation is the improvement of decision making process. To this end eEnviPer supports decision making and enables a better understanding of the multifaceted challenges of eGovernment. Additionally, eEnviPer offers an architecture that is compatible with most ICT systems of public authorities that issue environmental permissions

in Europe and includes Geographic Information Services, that are critical, since the decision making process of all stakeholders is dominated by information with a clear spatial dimension.

2.1.7 Usability - User acceptance

MAIN EVALUATION RESULTS:

The evaluation results have shown that eEnviPer proved to be successful in terms of usability and user acceptance given that it is:

- ✓ **More efficient to use.** It takes less time and resources to accomplish a particular.
- ✓ **Easier to learn.** eEnviPer can be learned by observation. Specialized knowledge is not required.

Users that participated in the evaluation seem to be satisfied by the eEnviPer service since:

- The majority of those surveyed stated that they liked the whole design of the platform, as it was pleasant to use. Moreover, as presented in the following figure most of the respondents stated that the overall system information was clear and understandable.

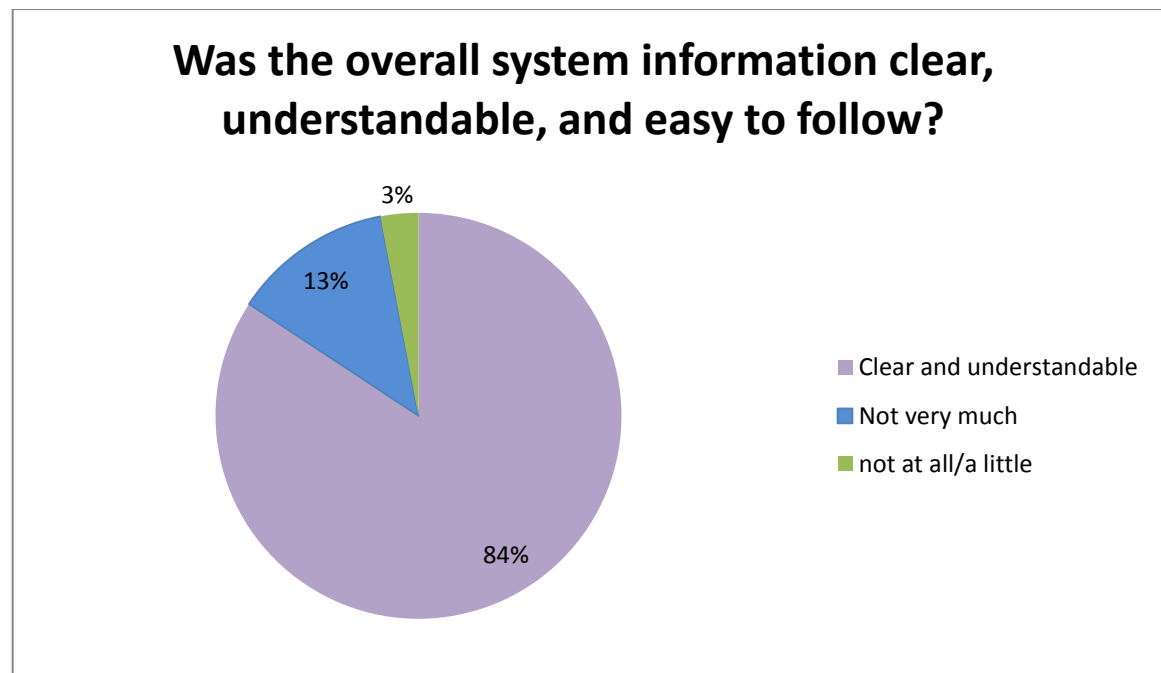


Figure 6: Easy to follow and understandable information

- Many of the respondents also claimed that they found the information to get started very satisfactory and they also noticed that it was easy to learn how to use eEnviPer and that no assistance was requested, while the operation was learned by observation and basic tasks were accomplished even the first time they used the system.
- Finally over the half of those surveyed reported that they didn't face any problem when using the platform (in terms of performance and functionality).

BENEFITS FOR POTENTIAL USERS:

- **Public authorities:** The public authorities using an efficient and easy to learn system like eEnviPer can successfully achieve their objectives, with less effort and resources. Moreover, it enables the effective coordination among the different authorities and contributes to an effective collaboration between them. It's indicative that users commented that the main advantage of eEnviPer platform is its flexibility to run at any public administration, to adapt any kind of Environmental process based on a framework as well as its content that can be easily updated.
- **Citizens, NGOs, enterprises/environmental engineers:** The usability of eEnviPer in combination with the cloud technology on which it is based, comprise a very user-friendly platform which allows users to personalize the services and their level of involvement in the environmental licensing procedure. Moreover, given the fact that it doesn't require specialized knowledge or specific IT skills it is a system that can be used by all.

2.1.8 Sustainability

MAIN EVALUATION RESULTS:

In terms of sustainability, the evaluation results have showed that eEnviPer has a good potential in entering the market.

- ✓ The users expressed their interest in **using eEnviPer in their daily EIA activities.**

As presented below, it was interesting and quite promising that the vast majority of the respondents stated that they would recommend the use of eEnviPer to other people interested in environmental permitting.

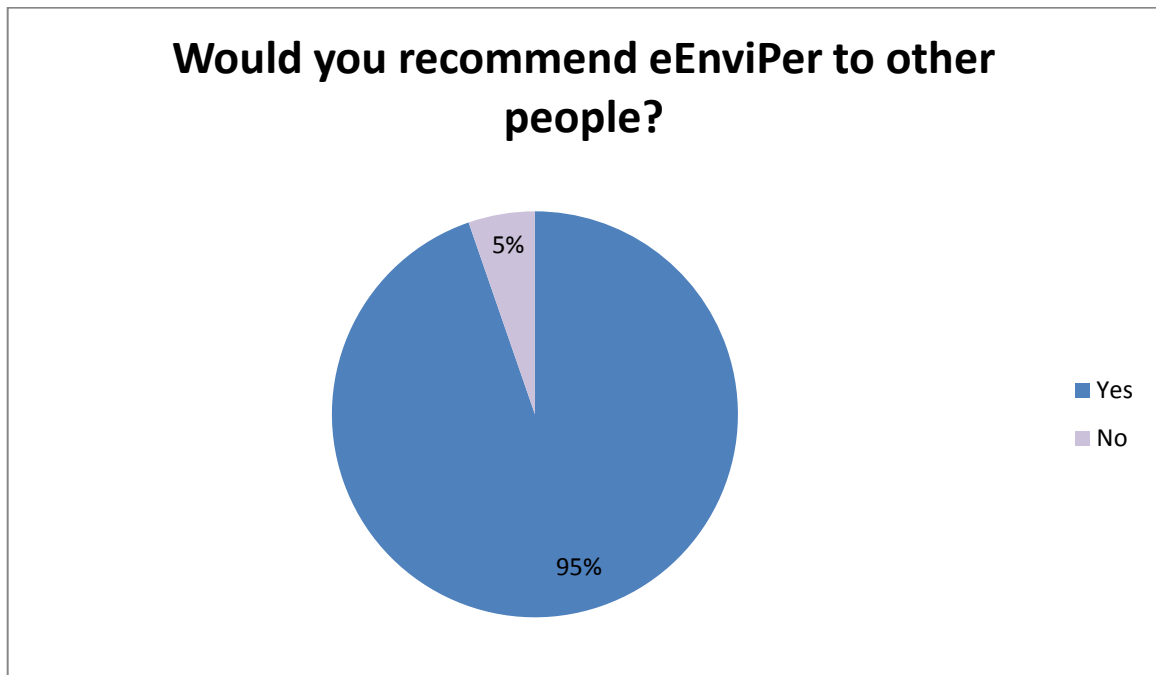


Figure 7: Recommend the service

It was also striking that many of them stated that the use of the eEnviPer platform should be expanded to all public Authorities and should be used for providing various services. According to the users, the most important advantages of eEnviPer are:

- a) The possibility for the citizens to actively participate to the process and express their opinion.
- b) The quick and easy access to information related to environmental permitting applications.
- c) The technological innovation it brings.
- d) The fact that it speeds up administrative procedures.

BENEFITS FOR POTENTIAL USERS:

As already mentioned, eEnviPer can bring great benefits for all the potential users.

Increase in productivity, cost reduction, more transparency and green economy are only some of its advantages that can have a positive impact in the daily activities of all stakeholders. To this end, its sustainability after the end of the project is essential and seems to gather users' acceptance. In particular:

- **The public authorities, engineers and enterprises** expressed their interest in using the eEnviPer service after the end of the project. What is important is that they claimed that they are willing to pay a normal fee for that because it saves

them a lot of time, it reduces bureaucracy and in general makes them more productive.

- On the other hand, **citizens** claimed that they prefer using eEnviPer for free given that issuing an environmental permission is a service that should be provided by the public sector.

3 Evaluation results per pilot

3.1 Greece/ Crete Region

3.1.1 Pilot Profile

In the frame of the Kalikratis plan³ that has been put into action from 2010, prefectural governments have been dismissed and incorporated into 13 new regional governments, which match the geographical borders of the 13 administrative regions. As far as eGovernment is concerned, newly formed administrations have to address the challenge of interconnecting existing systems and providing E-services under tight budget restrictions with respect to upfront investments in ICT infrastructures. On parallel the strategic focus of the O.P. “Digital Convergence” with respect to eGovernment has been updated to include the adoption of cloud computing and SaaS for public administration in its core objectives. Therefore the execution of the eEnviPer pilot in the Region of Crete will be a pioneering project that will pave the way for corresponding E-Government initiatives on behalf of the central government and promote the entrepreneurial benefits of this new “Ubiquitous E- Government” approach to the local ICT market.

Pilot Case	Country: Greece
Description	<p>The Regional Authority of Crete has been selected to implement this pilot case both due to its institutional aptitude to issue environmental permits and its ability to mainstream the pilot results into the regional policy on ICT and entrepreneurship by mobilizing structural funds.</p> <p>The pilot case will cover the entire life cycle of the environmental permitting process, involving all stakeholders according to the legal framework and administrative practices applied in Greece.</p>
Pilot Scenarios	<p>Case 1. An Environmental Scientist uses the system during the carrying out of an Environmental Impact Assessment (EIA) for a new project. He finds the relevant legislation in the knowledge base, he uses the applications of the GIS tool to create maps and he downloads the templates that he needs from the section “Documents”.</p> <p>Case 2. The Environmental Scientist submits the EIA to the competent Environmental Authority on behalf of the new project’s investor, following the submission procedure.</p> <p>Case 3. The EIA is assigned to a technical staff member, who follows the evaluation procedure. The knowledge base and GIS tool are used and other competent Authorities are asked to express their opinion on</p>

³ Law 3852/2010

	<p>the EIA.</p> <p>Case 4. An environmental Non-Governmental Organization submits some comments on the EIA, to draw attention to the protection of a sensitive ecosystem located nearby the plot of the new project.</p> <p>Case 5. The Authority issues the Approval of Environmental Terms (environmental permission), after the evaluation of the whole data.</p>
<p>Expected impact in Final Users</p>	<p>The pilot deployment of eEnviPer in Crete will clearly lower the cost of transactions and simplify the procedures for issuing environmental permits by reducing the required administrative procedures and shortening the total time and the cost of the permit issuing process.</p> <p>Contrary to traditional procedures that require the physical presence of the applicant in various stages of the application process, eEnviPer in Crete will offer more effective and efficient administrative services, easy access to environmental information and more effective participation in the decision making processes.</p>

3.1.2 Activities

A series of user engagement and validation activities were organized by the Region of Crete from October 2013 to January 2014. These activities were addressed to various target groups.

- The eEnviPer pilot phase was presented at the International Conference on open access, opens data and e-government, entitled «Towards Common European Policies for Innovative Reuse of Public Sector and Scientific Information», and organized by the National Documentation Centre of Greece in October 2013.
- Personal letters were sent through e-mail to the Presidents of the Cretan Departments of the Technical and Geotechnical Chambers and of the Scientific Union of Technical Education of Engineers. These letters informed the Presidents of the above-mentioned organizations about eEnviPer and its use and asked them to forward the message to their members, so that they get to know the platform, to sign-up and to take advantage of its implementation.
- Through a series of in-office meetings, eEnviPer platform was presented to various Authorities of the Region of Crete and to the Municipality of Iraklion, which constitutes the largest Municipality of Crete. In addition, there was also a meeting with the President of the Technical Chamber of Greece, who visited Crete in November 2013.
- On 22nd October 2013 there was a press release, so that the citizens of Crete could be informed about the progress of the pilot testing phase.

- The lecturer of Environmental Impact Assessment of the Democritus University of Thrace contacted the Region of Crete, after having read an eEnviPer brochure. A teleconference was organized, during which the platform was presented.
- The eEnviPer coordinator of the Region of Crete was appointed as a member of the Program Committee of the World Wide Web Consortium (W3C) conference, as a representative of the eEnviPer project. The conference is entitled “Linking Geospatial Data” and will take place in Campus London, Shoreditch, 5th – 6th March 2014 (website: w.w3.org/2014/03/lgd/).

All dissemination activities focused on the benefits of the eEnviPer for each user’s group and included an open invitation to explore the platform, to subscribe, to use in real cases and to evaluate the system through the online survey and questionnaire. The above-described dissemination activities are also briefly presented in the following table.

Activities	Date	Group of people (category)	Group of people target (No of people)
Personal communication through e-mails	7.10.2013 & 6.11.2013	(1) Technical Chamber of Crete, (2) Geotechnical Chamber of Crete, (3) Scientific Union of Technical Education of Engineers (4) Authority responsible for the National Strategic Reference Framework (NSRF) 2007 - 2013	Estimated number: ~1,500 people
Presentation at the International Conference «Towards Common European Policies for Innovative Reuse of Public Sector and Scientific Information», organized by the National Documentation Centre of Greece	16.10.2013	National and European Authorities for open data, open access and e-government, researchers and representatives of the private sector.	142 people in the hall. The event was also live streaming and 500 people were watching the event online.
In-office meetings	17.10.2013, 24.10.2013, 29.10.2013 and 1.11.2013	Authorities of the Region of Crete and of Municipality of Iraklion and the President of the Technical Chamber of Greece	~ 45 people
Press release	22.10.2013	Citizens of Crete	

Teleconference	30.10.2013	Professor of Environmental Impact Assessment at the Dimokritos University of Thrace	1 person, in order to inform the students of the University
Participation in Program Committee of the W3C conference, as a representative of the eEnviPer project. Conference title: “Linking Geospatial Data”, Campus London, Shoreditch, 5th – 6th March 2014	January – March 2014	International scientific community on data sharing and linking	Currently unidentifiable

3.1.3 The use of eEnviPer system

The table below shows for the period April 2013-January 2014, how many Environmental permits have been applied through the traditional way visiting the public authorities (1st column) and how many through the eEnviPer system (3rd column).

Environmental Permits categories	Number of Environmental Permits submitted offline	Number of Environmental Permits submitted through the eEnviPer system
Environmental Impact Assessments for projects and activities of B Category	15	4
Declaration of Standard Environmental Commitments for projects and activities of B Category	1	1

3.1.4 Success stories

The following success stories are two examples of successful implementation of eEnviPer in the Region of Crete during the pilot testing phase.

Profile of the enterprise

Food company based in Athens, with also operates in the city of Iraklion in Crete.

The choice of eEnviPer

The Environmental Engineer of the company, also based in Athens, called the Directorate for Environment and Spatial Planning of the Region of Crete to ask about the procedure in order to have the Standard Environmental Commitments issued for the company's premises in Iraklion. During the phone call, the Engineer mentioned that a company's representative would travel to Crete from Athens with a company's authorization, in order to apply and to bring the necessary documents for the environmental permission. That is when he first heard about eEnviPer and about the ability it offers to apply and to follow the whole procedure online. He was very content and surprised about this innovation and immediately decided to apply and follow the whole procedure online.

Implementation of application

When the Environmental Engineer of the food company heard about eEnviPer, he exclaimed *"This was really unexpected! A public Authority implements an e-Government service! I have to see how it works!"* After the successful use of the system, the Environmental Engineer said *"I am really impressed by the effectiveness of the system and I will let my colleagues know about it! The public sector should definitely adopt such a system!"*

In fact, the eEnviPer implementation was fully successful and the environmental permitting was issued two working days after the application was submitted. The benefits for the enterprise were multiple; cost-effectiveness, because no representative had to travel to Crete, immediate and easy process of the application by the environmental authority and immediate issue of the permitting.

The added value of eEnviPer

Environmental permitting process before and after eEnviPer		
	Before eEnviPer	After eEnviPer
PUBLIC AUTHORITY		
Required time (in days) for the whole permitting process	30	2
Required human resources and effort (person months)	1.36	0.10
Estimation of other operational costs		

Paper (<i>cost for the specific permitting process</i>)	0.33 €	0.03 €
Printing (<i>cost for the specific permitting process</i>)	4.00 €	0.50 €
Transportation (<i>cost for the specific permitting process</i>)	36.00 €	4.00 €
APPLICANT (Studios, investors)		
Required time (<i>in days</i>) for the whole permitting process	50 (incl. carrying out of the EIA)	12 (incl. carrying out of the EIA)
Required human resources and effort (<i>person months</i>)	1.64	0.41
Required communication (<i>contacts for the specific process</i>)	7 phone calls	Not required
Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	15.50 €	3.55 €
Printing (<i>cost for the specific permitting process</i>)	69.00 €	17.60 €
Transportation (<i>cost for the specific permitting process</i>)	25.00 €	2.00 €
PUBLIC PARTICIPATION		
Citizen (<i>number of people involved</i>) participation to the public consultation	0	10 (asked for more information suggested environmental terms to be considered)
Citizens complaint submissions (<i>number</i>)	0	0

Profile of the enterprise

A company which packs and exports traditional Cretan products.

The choice of eEnviPer

The Environmental Engineer of the company visited the premises of the Directorate for Environment and Spatial Planning of the Region of Crete in order to be informed about the procedure of the company's environmental permission. He was informed by the staff of the Authority about eEnviPer and immediately decided to use the system, because he needed the permission to be issued within a short period of time, as soon as possible, so that the company is able to start working.

Implementation of application

According to the manager of the company, *"eEnviPer was a very useful innovation, which helped us follow the environmental permitting process of our business easily, effectively and in a short time"*. The Environmental Engineer of the company said *"It is remarkable that I could submit the environmental permitting request and the attached files online. The system is very easy-to-use and reliable. I will definitely use it to submit all my requests from now on"*.

The Engineer was impressed by the fact that he got informed about the progress of the application's processing and that he was informed through e-mail immediately that some additional data was needed. Both the Engineer and the company's owner were fully satisfied by the easiness and the effectiveness in terms of costs and time, of the eEnviPer platform.

The added value of eEnviPer

Environmental permitting process before and after eEnviPer		
	Before eEnviPer	After eEnviPer
PUBLIC AUTHORITY		
Required time (in days) for the whole permitting process	35	2
Required human resources and effort (person months)	1.60	0.10
Estimation of other operational costs		
Paper (cost for the <i>specific</i> permitting process)	0.33 €	0.03 €
Printing (cost for the <i>specific</i> permitting process)	4.00 €	0.50 €
Transportation (cost for the <i>specific</i> permitting process)	36.00 €	4.00 €
APPLICANT (Studiars, investors)		

Required time (in days) for the whole permitting process	65 (incl. carrying out of the EIA)	12 (incl. carrying out of the EIA)
Required human resources and effort (person months)	2.95	0.55
Required communication (contacts for the specific process)	10 phone calls	Not required
Estimation of other operational costs		
Paper (cost for the <i>specific</i> permitting process)	17.00 €	3.70 €
Printing (cost for the <i>specific</i> permitting process)	106.40 €	39.70 €
Transportation (cost for the <i>specific</i> permitting process)	25.00 €	2.00 €
PUBLIC PARTICIPATION		
Citizen (number of people involved) participation to the public consultation	0	12 (asked for more information suggested environmental terms to be considered)
Citizens complaint submissions (number)	0	0

3.1.5 Findings and lessons learnt

Below is presented the impact of eEnviPer for each different stakeholder category.

3.1.5.1 Productivity

All types of users agree that eEnviPer is able to increase productivity, each one from the point of view of their role in environmental permitting processes.

Citizens are able to find all environmental information on a single platform, they are able to apply online and to be informed about their application's processing in real time. They can also take part in the consultation phase when Environmental Impact Assessments are published.

NGOs have the chance to get informed about the Environmental Impact Assessments (EIAs) of medium- and large-sized infrastructures, projects and activities, which are exposed to public consultation. They have easy access to them and they are able to express their opinion directly.

Enterprises ensure their productivity increase through the implementation of eEnviPer, because they can achieve a significant decrease in the time needed to have their environmental permitting issued.

Engineers' productivity is benefited by eEnviPer in two ways; firstly they can refer to eEnviPer during the carrying out of EIAs and secondly, the procedure of environmental permitting they are responsible for is absolutely simplified and abbreviated.

Public administrations can handle a large number of applications at the same time and cooperate with each other online, instead of exchanging documents.

3.1.5.2 Costs reduction

Citizens: The use of eEnviPer does not presuppose any additional technological costs for the citizens, because the platform is easily accessible through any type of computer. Operational costs reduction for citizens is also ensured in case of applying at the environmental authority.

NGOs are involved in the environmental permitting process with less costs, because EIAs and public consultation are available online and all environmental information is gathered on one single website.

Enterprises experience a significant reduction of operational costs, because their environmental permitting is integrated in short time and following a simplified procedure. In addition, there are no additional technological costs, because eEnviPer can be used through any type of computer.

Engineers, similarly to their clients, experience a significant reduction of operational costs, without any additional technological costs. Apart from the direct net profit, the implementation of eEnviPer allows them to be more competitive in the market.

Public administrations need a relatively low-cost investment in technology, to maintain and update the platform, but they would experience a very significant decrease in operational costs, which would be stable and continuous.

3.1.5.3 Accessibility

Citizens ensure easy access to environmental information, to the processing of their applications and to the public consultation, regardless of administration's working hours.

NGOs: Similarly to the citizens, NGOs have easy access to environmental information and are able to express their opinion in a direct manner.

Enterprises: Real-time monitoring and information on the progress of the procedure is ensured. Simplified process and all information gathered on a single platform.

Engineers: Easy access to environmental information required to carry out EIAs, as well as step-by-step monitoring of the applications' evaluation procedure.

Public administrations: Better organized work for each staff member and for each administration unit. Simultaneous processing of a large number of applications.

3.1.5.4 Participatory

Citizens are able to follow and monitor the processing and to participate in the consultation phase.

NGOs: eEnviPer ensures more effective participation in the decision making process.

Enterprises, through the consultation process, have the opportunity to be informed about citizens' and NGOs' opinions regarding their projects and EIAs that they have submitted.

Engineers: The consultation phase is also easier for this type of stakeholders, because they are able to gather citizens' and NGOs' questions and to answer them after the consultation phase is over.

Public administrations: The consultation phase is organized in a simplified way and the communication is easier with all stakeholders.

3.1.5.5 Usability - User acceptance

Citizens: Friendly environment, easy-to-use, offers a series of environmental permitting services and allows direct access to the consultation phase.

NGOs: A simple tool for those who need updated information on new projects and activities with significant environmental impact.

Enterprises: More efficient and much less time-consuming, eEnviPer offers direct contact with every step of the environmental permitting procedures.

Engineers: Easier to learn and to use. It allows direct communication with the public authorities.

Public administrations: eEnviPer offers a friendly working environment, where every step of the procedure is clear and well-organized, for an effective operation.

3.1.5.6 Sustainability

Citizens would like that such e-government tools and services are largely integrated in the public administration.

NGOs firmly believe that clever e-government solutions have a general positive impact which leads to a decrease in resources and energy consumption.

Enterprises would be willing to pay for a solution such as eEnviPer.

Engineers would be willing to pay for a solution such as eEnviPer.

Public administrations would be willing to pay for a solution such as eEnviPer.

3.1.6 Risks and contingency actions

No risks have been identified.

3.1.7 Graphical representation of pilots outcomes

Short Online Questionnaire: See Annex A.

3.2 Italy / Apulia Region

3.2.1 Pilot Profile

The Strategy of the Development of Electronic Government in Italy is led by the plan named *E-gov 2012*. It is a plan that defines objectives which have to be achievable, traceable, and commensurate with the resources available; it fosters the commitment towards the spread of network services for accessibility and transparency of public administration in order to bring it closer to the needs of citizens and businesses.

The system that ARPA Puglia has in place as support of internal processes, aims to facilitate electronic permitting process for environmental initiative, but there is a lack of participatory tool for public consultation and of an integrated workflow system able to provide digital services to enterprises and service providers (engineers) during the application processes with a GIS decision support system that empowers public administration in issuing permits, organizing monitoring activities and enforcing the regional, national and European environmental legislation.

Moreover, as in Italy the permitting process for environmental initiative involves technical bodies connected to the Regional Governments - in fact the Regional Agency for Environmental Prevention and Protection (ARPA Puglia) is a technical body of Apulian Regional Government responsible of controlling activities on chemical, biological and physical risk factors which could affect all environmental matrices also with the objective of preventing harmful effects for human beings -, for the Italian pilot, the presence of systems operated by two distinct - even if strictly connected - administrative entities, can better highlight the advantage of on-line integration of respective services and optimization of the electronic process.

Pilot Case	Country: Italy
Description	<p>The pilot case will cover the ARPA competence within the environmental permitting process, involving all the related stakeholders according to the legal framework and administrative practices applied in Apulia region.</p> <p>Two different workflows have been implemented into the eEnviPer framework; they are related to the following procedures:</p> <ul style="list-style-type: none"> • IPPC at national level, regarding facilities related to large industrial activities (large combustion plants, integrated steel mills of the first merger, refineries, large chemical plants); the competent authority is the Ministry of Environment, after consulting the Ministry of the Interior and other Institutions. ARPA and ISPRA are technical body involved in the investigation process of releasing the EIA IPPC, through their representatives appointed to the IPPC Commission, and, subsequently, in the execution of the control phase. • MAH licensing (application of Seveso law), whose competent

	<p>authority is the Region, which engages the ARPA technicians for the evaluation of the compliance with the environmental legislation.</p>
<p>Pilot Scenarios</p>	<p>Case 1. Elaboration of an Environmental Impact Study: An environmental Engineer uses eEnviPer framework to download templates and to gather all required information to conduct the Environmental Impact Assessment Study</p> <p>Case 2. Submission of an Environmental Impact Assessment Study. An environmental Engineer submits the EIA study on behalf of an enterprise and follows up the procedure by submitting additional documents.</p> <p>Case 3. Evaluation of the Environmental Impact Assessment Study. The evaluation commission (IPPC Commission or MAH workgroup) is established through the system by the Ministry, which assigns the study to the commission, whose members uses the eEnviPer frameworks to access relevant information to evaluate the compliance of the study with environmental legislation.</p> <p>Case 4. NGO participation in public consultation. The EIA is published in Regional Authority Portal for public consultation and an environmental NGO participates in the dialogue, using data and documents made available by the eEnviPer system.</p> <p>Case 5. Issue of Environmental Permit. The permitting Authority decides to issue the environmental permit based on reports received from eEnviPer.</p>
<p>Expected impact in Final Users</p>	<p>The pilot deployment of eEnviPer in Apulia will simplify the procedures for issuing environmental permits by reducing the required administrative procedures and shortening the process period thus lowering the cost of the permit issuing process. All the users' categories involved will benefit from the establishment of the system; below the impacts envisaged for each categories are described:</p> <ul style="list-style-type: none"> • investors: Speed up the permit release, simplify the interaction with the authorities both in the application and in the operation phases • Citizens: become part of the decision making process and be encouraged to express their opinion. • Authorities: increase efficiency and quality of the evaluation work, share easily the information with the wide public. • Environmental engineers: provide advanced tools easing their day-by-day work.

3.2.2 Activities

Apulia region designed and implemented several user engagement and validation activities. It participated in specific events where through dedicated presentations and discussions motivated the users to register and test the eEnviPer service. In particular, eEnviPer was presented to the Planetek network and to the Ecomondo Fair. Various meetings with NGOs, enterprises and public authorities have taken place as well. More information about the user engagement activities are presented below:

Activities	Date	Group of people (category)	Group of people target (No of people)
Presentation to the Planetek network	01/10/2013	Citizens	40
Bilateral meeting with PeaceLink NGO	03/10/2013	NGOs	2
Bilateral meeting with AltaMarea NGO	04/10/2013	NGOs	1
Bilateral meeting with the managerial staff of Eni refinery	07/10/2013	Enterprise	2
Setup of a stand at Ecomondo Fair	From 06/11/2013 to 09/11/2013	Citizens Environmental Engineers	80
Bilateral meeting with Friuli Venezia Giulia Region	19/11/2013	Public Administration	2
Presentation to the Planetek network	17/01/2013	Citizens	30
Internal presentation to the ARPA Puglia staff	27/01/2013	Citizens Environmental Engineers	400

3.2.3 The use of eEnviPer system

The table below shows for the period April 2013-January 2014, how many Environmental permits have been applied through the traditional way visiting the public authorities (1st column) and how many through the eEnviPer system (3rd column).

Environmental Permits categories	Number of Environmental Permits submitted offline	Number of Environmental Permits submitted through the eEnviPer system
IPPC at national level	9 (4)	1
MAH licensing	6	1

3.2.4 Success stories

Profile of the enterprise

Eni, formerly the National Hydrocarbon Corporation (ENI), is a multinational corporation created by the Italian government as a public entity in 1953 and converted into a limited company in 1992.

Active in more than 90 countries with more than 78,000 employees in 2013, under the symbol of the six-legged dog, Eni is active in the petroleum, natural gas, petrochemicals, electricity production, engineering and construction. It is the world's sixth largest oil group by turnover, and the first Italian company and 17th in the world by revenue.

The Taranto refinery, whose IPPC application has been used as eEnviPer case study, processes most of the oil produced in Eni's Val d'Agri fields carried to Taranto through the Monte Alpi pipeline (in 2012 were processed 2.26 million tons). With a balanced primary refining capacity of 120 thousand barrels / day and a conversion rate of 72%, this refinery is able to process a wide variety of crude and other feedstock.

The choice of eEnviPer

The managers of the Eni refinery located in Taranto were asked by the ARPA engineers responsible for the on-site inspection for their availability to use the eEnviPer system for the renewal of their EIA – IPPC permit and the management of the integration requests received by ARPA. They did not hesitate to show their availability to use the system, because they were curious to verify how they could benefit from this new application management approach.

Implementation of application

The first submission of the EIA – IPPC application for the ENI refinery dates back to 2006. Due to the importance and complexity of the plant, the evaluation process took a long time and the final permit was issued in May 2010, with some prescriptions, some of

⁴ Just one related to a new application; all the others are modifications / integrations for permits already issued.

which are under discussion, because the Eni managers produced counterarguments.

Furthermore, in June 2013, the Taranto major asked the Ministry to restart the evaluation process of the environmental impacts of the refinery because of a regional decree that commanded to restore the quality of the air in the surrounding district.

After that, all the public documentation related to this application, has been inserted into the system. Meanwhile the application has been under review, and recently, the IPPC commission, which involves some ARPA engineers, has produced new prescriptions, which have also been inserted into the system.

It is worth to report here some quotes of the environmental engineers who used the eEnviPer system for the environmental application assessment phase: *“I think that eEnviPer is a great tool for managing environmental permits, potentially able to streamline the entire process of assessment and issuance of permits due to greater simplicity in both the participation and consultation and access to acts.”.....” eEnviPer is a good e-government application for the management and consultation of environmental permits, because it makes the process of environmental licensing more transparent, accessible and effective for all stakeholders (public authorities, investors and citizens). It is hoped that the platform is implemented as much as possible in European in order to make possible the sharing of knowledge and information about permissions on industrial sites throughout Europe”.*

The added value of eEnviPer

Environmental permitting process before and after eEnviPer		
	Before eEnviPer	After eEnviPer
PUBLIC AUTHORITY		
Required time (in days) for the whole permitting process	420	150
Required human resources and effort (person months)	20	12
Estimation of other operational costs		
Paper (cost for the <i>specific</i> permitting process)	30€	10€
Printing (cost for the <i>specific</i> permitting process)	60€	20€
Transportation (cost for the <i>specific</i> permitting process)	300€	100€
APPLICANT (Studiers, investors)		
Required time (in days) for the whole permitting process	420	150
Required human resources and effort (person months)	18	15

Required communication (<i>contacts for the specific process</i>)	10	2
Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	10€	3€
Printing (<i>cost for the specific permitting process</i>)	20€	6€
Transportation (<i>cost for the specific permitting process</i>)	300€	100€
PUBLIC PARTICIPATION		
Citizen (<i>number of people involved</i>) participation to the public consultation	2	5
Citizens complaint submissions (<i>number</i>)	0	5

3.2.5 Findings and lessons learnt

Below is presented the impact of eEnviPer for each different stakeholder category.

3.2.5.1 Productivity

Citizens: Possibility of limiting the scope of the search to the own area of interest.

NGOs: Possibility to send observations on-line after registration.

Enterprises: more immediate communication with the authority and track of all the documents sent.

Engineers: availability of information already organized in order to ease the impact analysis.

Public administrations: It is generally accepted the concept that eEnviPer can increase productivity, because it allows an efficient management of different applications and all the related documentation, and makes the available information more easily accessible and searchable.

3.2.5.2 Costs reduction

Citizens: no time wasted for searching the target application

NGOs: reduction of the time spent for the analysis of the on-going applications

Enterprises: Fast interaction with the process

Engineers: No need to setup tools for the analysis of the information layers involved. No need to move to the authority office for delivering the documentation.

Public administrations: The reduction of costs is mainly related to the operational costs, because of the increase of productivity.

3.2.5.3 Accessibility

Citizens/NGOs: the automatic publication of the public documents, and the activation of the notification about the update, would avoid any delay in the consultation

Enterprises: it simplifies the licensing procedures

Engineers: easy access to information layers useful for the analysis

Public administrations: it would allow optimizing the process, because all the involved documentation would be kept under control

3.2.5.4 Participatory

Citizens: a more dynamic and transparent process would stimulate their interest and keep high the level of awareness about the PA efforts for the protection of the environment

NGOs: similarly, the increased transparency and timeliness of the process would reduce the fights with the institutions

Enterprises: they are promptly informed about citizens' and NGOs' opinions regarding their projects and EIAs that they have submitted.

Engineers: they are allowed to gather new evaluation elements in the case relevant and knowledgeable observations are submitted

Public administrations: the increased transparency and the clarity of the information would reduce complaints

3.2.5.5 Usability - User acceptance

Citizens/NGOs: it takes little time finding the information of interest

Enterprises: submitting the application and following the process does not require a particular training on the system, it is straightforward

Engineers: there is room for improvement in the usability of the GIS tool

Public administrations: easy to understand the workflow-driven process without a deep regulatory knowledge.

3.2.5.6 Sustainability

Citizens: they will feel part of the process more than before, and this will increase their understanding towards public spending and the need to pay taxes

NGOs: they will claim for the maintenance of this solution as it eases their interaction with the authorities

Enterprises: enterprises may accept the payment of an administrative surcharge if the uptake of the eEnviPer system could speed up the authorization process.

Engineers: they would pay a license fee to access the service for their study, if the system makes available relevant layers that would really ease their job

Public administrations: it is worth to pay for eEnviPer due to the possibility for the citizens to actively participate to the process and express their opinion and the quick and easy access to the information related to the environmental permitting applications and related processes

3.2.6 Risks and contingency actions

No risks have been identified.

3.2.7 Graphical representation of pilots outcomes

Short Online Questionnaire: See Annex A.

3.3 Serbia/Municipality of Indjija

3.3.1 Pilot Profile

The Strategy of the Development of Electronic Government in the Republic of Serbia 2009-2013 identifies the issue of establishing electronic public services as a core implementation pillar. With a vibrant and fast growing ICT sector (with a two-digit annual growth in the years prior to the crisis⁵) the local E-Government market has still a strong potential for new services offered on the cloud, especially due to the fact that almost 9 out of 10 of Serbian municipalities possess limited ICT infrastructure⁶. The Municipality of Indjija has been chosen on the basis of its leading role in adoption of E-Government services in Serbia. The Municipality of Indjija is a pioneer local government organization in terms of introducing E-Government Services such as the municipal web GIS system, the E-Government portal “System 48” and the full personalization of e-services approach adopted through the use of electronic signature. According to the Minister of Telecommunications and Information Society of the Government of the Republic of Serbia Jasna Matic, “*the Municipality of Indjija is the most advanced municipality in Serbia when it comes to information technology*”⁷.

Pilot Case	Country: Serbia
Description	<p>The Municipality of Indjija has been selected to implement the pilot case due to its well-developed e-government services comparing to the rest of Serbian municipalities as well as because of a high rate of industrialisation and urbanization which consequently significantly increases applications for environmental permits.</p> <p>The pilot case will cover the entire life cycle of the environmental permitting process, involving all stakeholders according to the legal framework and administrative practices applied in Serbia.</p> <p>The pilot will aggregate services offered through four applications, three of them developed by the Municipality (GIS portal, e-government of Indjija and Official Web site of the Municipality) and one developed and maintained at national level (geoSrbija).</p>
Pilot Scenarios	<p>Case 1. Elaboration of an Environmental Impact Assessment Study: An environmental Engineer uses e-government of Indjija to download templates and GIS portal of Indjija and geoSrbija to gather all required</p>

⁵ ICT in Serbia at a glance, Jan 2011,
http://www.vojvodinaictcluster.org/Images/ICT_in_Serbia_At_a_Glance_2011.pdf

⁶ Stoimenov et al (2010), Development of E- Government Services in Serbia and Bosnia and Hercegovina, ICEST 2010, Orhid, Macedonia

⁷ <http://dev.mtid.gov.rs/aktivnosti/aktuelno.601.html>

	<p>information to conduct the Environmental Impact Assessment Study.</p> <p>Case 2. Submission of an application for environmental permit Applicant submits the application for environmental permit with required EIA study through e-government of Indjija following up the procedure.</p> <p>Case 3. Communication of the local administration with the applicant, other institutions and the public concerned: Local administration responsible for environmental protection prepare draft permit and informs other public institutions involved, citizens and NGOs about the application, EIA study, draft permit and receives feedback from them through GIS portal of Indjija and Web site of the Municipality.</p> <p>Case 4. Evaluation of the application: Technical commission formed by the local administration evaluates the application taking into account EIA study, draft permit, environmental legislation, opinion of the public concerned and other public institutions. The commission uses GIS portal, e-government, web site of the Municipality and geo Srbija to access relevant information to prepare the report.</p> <p>Case 5. Participation of the public. Citizens and NGOs participate in the process through several applications available on the official Web site of the Municipality acquainted with the relevant data and information from GISportal. geoSrbija and other sources.</p> <p>Case 6. Issue of Environmental Permit. The permitting Authority decides to issue the environmental permit based on report from the Technical commission and opinion of the public concerned.</p>
<p>Expected impact in Final Users</p>	<p>The pilot deployment of eEnviPer in the Municipality of Indjija will make the complex process of issuing environmental permits much more efficient and transparent by establishing clear communication and information channels between the stakeholders involved through the services.</p> <p>Local administration will be able to make decisions faster. Environmental engineers will have good access to environmental datasets necessary for Environmental Impact Assessment Study elaboration and automatic administration procedures which will significantly simplify their work.</p> <p>Citizens and NGOs will experience more transparent process with real power to influence on the environmental issues and with easy access to necessary environmental related information that are presented in a convenient spatial visualisation environment on Web. They will also be encouraged to use the services on a larger scale.</p>

3.3.2 Activities

The effort made to engage the users to register and test the eEnviPer service was primarily based on presentations and demonstrations of the platform during different events. Some of the events were particularly dedicated to eEnviPer project and some others were just a good opportunity to disseminate eEnviPer results and to approach wider groups of users. We have used the media to attract people's attention in the events implemented, to raise awareness regarding the significance of eEnviPer project as well as to invite users to get involved in the service evaluation. Also, to exploit the power of popular social networks; specific actions on user engagement were undertaken through eEnviPer Serbia facebook page. A very effective method to gather user's feedback was the Users' group testing, where several users from different users' groups were assisted to try and test the service. After providing their feedback, brief interviews were conducted.

Activities	Date	Group of people (category)	Group of people target (No of people)
Presentation of eEnviPer on NRC land cover meeting in EEA, Kopenhagen	8.10.2013.	Environmental experts	15
Demonstrations of eEnviPer platform for students of Department for geodesy and geoinformatics, University of Belgrade	21.10.2013. and 23.10.2013.	GIS experts	90
eEnviPer Workshop within the scope of TR36035 national project in IAUS	25.10.2013.	Environmental engineers	20
Presentation and demonstration of eEnviPer during a cross-border project event "Na kafu sa susedom"	22.11.2013.	Public authorities, media	30

eEnviPer Info day-presentation and service demonstration	28.11.2013.	Public authorities, NGOs, citizens, media	50
Call for registration and participation in testing on eEnviPer Serbia Facebook page	02.10.2013.	Citizens	NA
Call for registration and participation in testing on Indjija Facebook page	03.10.2013.	Citizens	NA
Users' group testing	13.11.2013.	Citizens, NGO, investors	5
Users' group testing	12.12.2013.	Citizens, NGO, investors	5
Users' group testing	18.12.2013.	Citizens, NGO, investors	5
Users' group testing	27.12.2013.	Citizens, NGO, investors	5

3.3.3 The use of eEnviPer system

The table below shows for the period April 2013-January 2014, how many Environmental permits have been applied through the traditional way visiting the public authorities (1st column) and how many through the eEnviPer system (3rd column).

Environmental Permits categories	Number of Environmental Permits submitted offline	Number of Environmental Permits submitted through the eEnviPer system
One phase only procedure	12	0
Full, 3-phases procedure	3	1

3.3.4 Success stories

Profile of the enterprise:

Agrounija is a company whose primary field of business is agriculture, namely crop farming, fruit growing, gardening and stock- farming. To a lesser extent, the company deals with transportation. Founded in 1963 as a company in social ownership, it has been acquired by a private owner in 2005.

The choice of eEnviPer:

Agrounija approached EIA procedure in a traditional, paper- based manner, and went a few steps along that road. After a conversation with the Municipality staff and a brief presentation of eEnviPer platform, Agrounija decided to give this new eEnviPer approach a try. Interested in e-government, Agrounija agreed to proceed with the procedure via eEnviPer platform.

Implementation of application:

Agrounija is interested to see in which way the eEnviPer will improve the procedure and benefit Agrounija as an investor. Agrounija expects the procedure to go smoother, uploaded documents to be simplified and communication to be easier through the use of eEnviPer messaging system.

Agrounija staff experienced minor problems regarding data upload, but since this approach is a new thing for the company employees, it is simply a matter of them being unaccustomed to e-Government services. It is expected that, as eEnviPer is being more used, this kind of problems will occur less and less.

So far, Agrounija praises the ease-of-use of the system and the Municipality's resolution to implement new concepts into its services. According to the company's staff in charge that have been interviewed during the EIA procedure, *"..eEnviPer service is a valuable service that facilitates communication between a company applying for "environmental permit" and the public authority...It shortens time needed for the communication and enables the applicant to be aware of the current stage of the procedure and the steps to come, it simply enables transparency, and that helps a lot."* Furthermore, *"..it is technically demanding in the beginning, in terms of learning how to use, digitizing all the documents etc., but advantages are becoming visible"*

The added value of eEnviPer

Environmental permitting process before and after eEnviPer

	Before eEnviPer	After eEnviPer
PUBLIC AUTHORITY⁸		
Required time (in days) for the whole permitting process	aprox. 100 days	Estimated reduction for up to 30%
Required human resources and effort (person months)	0.8 MM estimated	Estimated reduction for up to 30%
Estimation of other operational costs		
Paper (cost for the <i>specific</i> permitting process)	aprox. 100 pages	Estimated reduction for up to 90%
Printing (cost for the <i>specific</i> permitting process)	aprox. 100 pages	Estimated reduction for up to 90%
Transportation (cost for the <i>specific</i> permitting process)	NA	NA
APPLICANT (Studiers, investors)		
Required time (in days) for the whole permitting process	aprox. 100 days	Estimated reduction for up to 30%
Required human resources and effort (person months)	1 MM estimated	Estimated reduction for up to

⁸ These quantitative indicators of added value are given as estimations under conditions that the current legislation is changed to be more e-Government friendly. Namely, the national legislation is not completely adapted to e-Government services in this domain, public authorities still need to have all the documents also in paper form (meaning that all the electronic documents that come from investors, citizens, etc. through eEnviPer, public authority must print and store), which also influences process duration and cost. It is, however, expected that this legal requirement will be changed in the near future. In this sense, we can consider eEnviPer project as a driving force in making pressure on the national authorities to establish legal environment for full utilization of e-Government services.

		30%
Required communication (<i>contacts for the specific process</i>)	aprox. 5 direct commun.	1 direct commun.
Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	aprox. 50 pages	Almost nothing
Printing (<i>cost for the specific permitting process</i>)	aprox. 50 pages	Almost nothing
Transportation (<i>cost for the specific permitting process</i>)	NA	Almost nothing
PUBLIC PARTICIPATION		
Citizen (<i>number of people involved</i>) participation to the public consultation	1-5	Significant increase is expected, however it depends on the level of citizens' awareness
Citizens complaint submissions (<i>number</i>)	only 2 complaints from 2006	Significant increase is expected due to very convenient public participation tools

3.3.5 Findings and lessons learnt

Below is presented the impact of eEnviPer for each different stakeholder category.

3.3.5.1 Productivity

The evaluation results related to productivity aspects can be summarised as follows:

- 72% of the respondents strongly agree (and 25% agree) that the time to find the information is reduced.
- 67% of the users strongly agree (and 29% agree) with the statement that the system can handle a large number of users/applications,
- 64% of the participants strongly agree (and 36% agree) that the service successfully integrates different processes under one system.

Citizens: Productivity is not the primary concern for citizens; however they expressed their understanding regarding the importance to increase productivity in permitting activities given the positive impact on investments and economy. Generally, they find eEnviPer concept positive in that sense.

NGOs: Similar feedback as in case of citizens.

Enterprises: Primary concern for enterprises is to complete permitting process in a most efficient and easy way possible. In that sense, they strongly support eEnviPer concept since they find it a good solution. However, they usually hire environmental experts to deal with the technical part of the application.

Engineers: Engineers (expert users) noticed that they could significantly reduce the time needed for gathering information about specific EIA and environmental permitting procedures (9 out of 10 users). Also, experts have noticed that integration of services within one system/under one platform could enable automation of informing about the status of application, up-to-date changes on territory of EIA etc.

Public administrations: Users from public administration concluded that interactive maps within eEnviPer could be very helpful in EIA processes and environmental permitting procedures (almost 95% of users from public administration). Also 9 out of 10 users from public administration noticed that eEnviPer could increase productivity through reduction of time needed for information-seeking. On the other hand, public administration departments where eEnviPer is used for issuing environmental permissions have increased their technical capacity of environmental procedures and local legislation. Also 8 out of 10 have noticed that permissions could be issued faster by setting the time limits. The specific user's category identified the advantages of eEnviPer to integrate all processes and information in one single system, which make their work easier. The main problem identified regarding the productivity aspect is that authorities in Serbia are still forced to have all documents backed-up in paper format due to the national legislation not supporting thus e-Government services, which doubles the job and decrease the efficiency.

3.3.5.2 Costs reduction

Results related to the cost reduction aspect of eEnviPer have shown that:

- 32% of the participants strongly agree and 44 % agree that eEnviPer can reduce costs for IT expenditures while 24% of the answers were neutral

- 28% of the participants strongly agree that eEnviPer can reduce operational costs with 64% that agree with the statement and 8% neutral

Citizens: This is not the primary concern of citizens, as well. Implicitly, they support any cost reduction that could save money from the Municipality budget.

NGOs: Similar feedback as in the case of citizens.

Enterprises: Investors recognise the value of eEnviPer solution.

Engineers: Engineers have indicated that eEnviPer platform could reduce overall costs in IT sector and decrease operational costs (9 out of 10 users). Also, eEnviPer platform could harmonize the transactions process, support and stimulate decision-making, and introduce AHP method within EIA which significantly reduce initial EIA and environmental permission costs.

Public administrations: Users from public administration have noticed that eEnviPer helps in service integration and concentration of different processes within the same system (almost 10 out of 10 users). Also, they have noticed (9 out of 10) that the implementation of eEnviPer platform could reduce cost for IT infrastructure and services.

3.3.5.3 Accessibility

Three specific questions were asked to address eEnviPer in terms of accessibility:

- 94% of participants said “yes” when they were asked if they had access to information that was not available before.
- 51% of participants strongly agree that eEnviPer enables transparency during the whole procedure and 42% agree.
- 36% of participants strongly agree that eEnviPer simplifies licensing procedure, 29% agree, and 33% are neutral.

Citizens: Citizens were satisfied that they could access the relevant information on one place.

NGOs: Similar feedback as in the case of citizens.

Enterprises: Investors strongly support the easy access to information, but they are not so sure that the procedure itself is really simplified. They rather feel that the procedure actually becomes more efficient and easier to complete.

Engineers: 9 out of 10 experts (engineers) have noticed that eEnviPer platform (application) could provide relevant information and up-to-date legislation which is needed for EIA application and environmental permitting procedures.

Public administrations: 8 out of 10 users from public administration have found the system transparent in terms of monitoring the specific cases and their application. Also, 9

out of 10 users from public administrations have noticed that eEnviPer platform directly enables communication of administrative units involved in procedure.

3.3.5.4 Participatory

Citizens: Citizens generally see the possibility to participate as the major benefit of eEnviPer solution from their point of view. Low degree of e-literacy is, however, identified as the main obstacle for many citizens making it difficult to use participatory functionalities. Citizens also generally feel secure with the idea to run the EIA procedure through an online service, with 42% that strongly agree, 33% agree and 25% neither agree nor disagree

NGOs: This is the primary issue for environmental NGOs. 10 out of 10 users found the eEnviPer solution provides good environment for public participation.

Enterprises: This is not the primary concern of investors. They are satisfied with the fact that eEnviPer system will not allow defamation and insulting in the public participation.

Engineers: Public participation enables engineers (experts) to access information not available in the past, which can be important not only in platform-improvement, but also in conducting EIA for specific territory. 9 out of 10 users have also noticed that eEnviPer platform provides support of decision making for better functioning of local government, and also provides opinions of different stakeholders involved in issuing environmental permissions. 10 of 10 engineers noticed that eEnviPer platform could include all stakeholders in all stages of permitting process

Public administrations: 9 out of 10 users (almost 93%) from public administration have noticed that transparency of eEnviPer platform directly enable successful public participation in every phase of the process. Also, results have shown consensus among users from public administration in the context of the environmental permission issuing. 9 out of 10 users feel positive about public consultation aspect of environmental planning which could make them feel more confident and active.

3.3.5.5 Usability - User acceptance

Statistics related to usability assessment shows the following findings:

- 36% participants strongly agree that it was easy to find the information on the use of eEnviPer, 38% agree, 24% are neutral and 3% doesn't agree
- 32% of participants strongly agree that the information received from the system were clear and easy to follow, 53% agree, 14% are neutral and 1% don't agree
- 38% of the participants find that it was very easy to learn how to use eEnviPer, 44% think it was easy, 15% are neutral and 3% find it difficult
- When making an error, for 27% of participants it was very easy to solve the problem, for 42% it was easy, 23% had neutral experience and 5% experienced difficulties

- 65% of participants strongly agree that didn't experienced any problems in terms of performance and functionality, 27% agree, 4% is neutral and 5% don't agree
- When it is up to the use of interactive maps in eEnviPer, 72% of participants strongly agrees that it is an useful service, 23% agree, 4% are neutral and 1% strongly don't agree
- 49% of participants strongly like the design of eEnviPer, 44% like, 6% is neutral and 1 participant doesn't like at all

Citizens: Although the response to eEnviPer when it comes to usability is generally positive, there is a high percentage of citizens reserved about the eEnviPer usability. One of the reasons is the low computer skills of some participants. Still, from some comments we can learn that citizens require more graphical design and less textual content, more clear and graphical instructions. For most of the citizens it is very difficult to use the GIS service.

NGOs: Similar feedback as in the case of citizens. The low level of e-literacy could be a risk for using the service, thus trainings would be necessary.

Enterprises: The participants from this target group showed high level of satisfaction with the eEnviPer functionalities. The primary reasons for that are the facts that they can easily submit applications and monitor their cases in all stages of the procedure. The most serious complain regarding the functionalities of the service is that it is not possible to submit additional documents (e.g. in case they missed to do that when requested) after a stage is over, but they must wait on the request from the authority which prolong the process. Also, the satisfaction with the service is related to the e-literacy level of the users as a number of them need some level of additional support (e.g. training, consultations).

Engineers: 8 out of 10 experts (engineers) replied that they found introductory information very useful and satisfactory and also easy-to-follow. 3 out 10 users had small problem the first time they used the eEnviPer platform, but these problems are connected with their technical illiteracy. Experts also have noticed that there is a need for additional layers in GIS, more metadata within platform and better explanation of the procedure for issuing environmental permission. Experts have also noticed some technical disadvantages e.g. GIS tools have lack of functionalities and precision, the platform should contain more information (rules, more examples of conducted studies, new methodologies, best-practice solutions etc.), there is no possibility for full testing of the service due to missing of all stakeholders form process on platform etc. Also, one of the biggest disadvantages for experts is the fact that the map of Serbia is very poor. Based on the feedback the main conclusion is that eEnviPer GIS functionalities are actually not enough for an advanced user.

Public administrations: Users from public administrations (3 out of 10) have noticed that the full explanation of the procedure should be easy-to-understand for non-technical users. Users from public administrations have also noticed lack of space for writing comments, etc. They found the design user-friendly and easy to run in any public enterprise.

3.3.5.6 Sustainability

Citizens: The majority of the interviewed citizens support the idea that their Municipality spends money from the budget to pay for eEnviPer service, but this is not signed as the high priority expenditure.

NGOs: NGOs strongly supports investing public money in the solution.

Enterprises: Investors are a driving force for any business related to e-Government solutions that could make their business easier and more efficient. They are not potential customers of eEnviPer platform, but they are very important users of the service.

Engineers: 10 out of 10 experts (engineers) would recommend eEnviPer platform to their colleagues and other stakeholders, but after minor (9 out of 10) or major improvements (2 out of 10). It should be enriched in up-to-date legislation, rules, case studies, methodologies, best practice solutions, and also improved by adding new metadata, simplifying the procedure of data-input, improving existing maps etc.

Public administrations: Also, 9 out of 10 users from public administration would recommend the platform to all stakeholders within the municipality and will also recommend it to their colleagues in other public enterprises. They find it user-friendly, and transparent. They have also noticed that the implementation of eEnviPer platform could reduce costs for IT infrastructure and services and can make the issuing of an environmental permission more efficient and effective,

3.3.6 Risks and contingency actions

There were several risks identified during the evaluation process:

- Most of the participants weren't patient enough to fill in the online questionnaire. Therefore, we conducted some interviews where the users expressed their opinion verbally.
- Most of the biggest national environmental NGOs that were invited to participate didn't show interest. In the following period, more direct contacts with them are foreseen.
- It was very hard to involve enterprises in the evaluation process. Only 12 investors registered on the system. To overcome this situation, we are going to have direct contact with the Chamber of economy of Srem and the Chamber of commerce and industry of Serbia.

3.3.7 Graphical representation of pilots outcomes

Short Online Questionnaire: See Annex A.

3.4 Croatia – Prefecture of Krapina - Zagorje County

3.4.1 Pilot Profile

Various benchmarking studies that have been conducted in Croatia indicate a distinctive progress in online availability of public services during the last five (5) years, 43.12% in services for citizens and 55.12% in business services. This remarkable increase has enabled Croatia to take the leading position among other Western Balkans non-EU countries but when comparing the availability of public services on the Internet in Croatia and EU countries, a significant gap still exists⁹. Furthermore, according to the Global Information Society Watch¹⁰, the participation of citizens in decision-making via web or other ICT technologies is minimal. While both central and local governments regularly hold public online discussions, they are not held via web and the process is also not developed in a way that allows for maximum participation of all stakeholders.

The most effective means of ensuring environmental democracy (as defined by the first 2 pillars of Aarhus convention) is for public authorities to publicise the information in immediate terms through the creation of automated information webs that will be piloted on county level. The same communication channel will be used for the involvement of the public in decision-making on matters concerning the environment that further streamlines the stakeholders' participation process.

To this extent, and due to the fact that the Croatian public sector remains the Single largest buyer on the ICT marketplace, the Croatian pilot is expected to allow local ICT providers to offer services bridging the gap described above and benefit from the upcoming comprehensive reform of public administration.

Pilot Case	Country: Croatia
Description	Krapina-Zagorje county has been selected to implement the pilot case due to its size, its location (close to the Croatian Capital Zagreb) and the development potential that offers possibilities for thorough testing of all types of environmental licence requests. The pilot case will cover the entire life cycle of the environmental permitting process, involving all stakeholders according to the legal framework and administrative practices applied in Croatia.
Pilot Scenarios	Case 1. Elaboration of Environmental Impact Study (EIS). An Environmental consultant or engineer uses municipality portal to download permit application templates and relevant spatial and non-spatial data necessary to prepare EIS

⁹ Gusev, Armenski (April 2006): *Gap Analysis of eGovernment in Western Balkans.*

¹⁰ http://giswatch.org/sites/default/files/gisw_croatia.pdf

	<p>Case 2. Submission of application for environmental permit. Investor/Applicant submits the application for environmental permit with required EIS study using county portal</p> <p>Case 3. Stakeholder involvement. Necessary two-way communication between all interested parties is enabled using collaboration features of the eEnviPer system. Status information about permitting process is available on county portal.</p> <p>Case 4. Evaluation of application and permitting process finalisation. Technical Commission (TC) formed by the local administration evaluates the application taking into account the EIS, relevant legislation and the feedback from other stakeholders. The commission uses the eEnviPer system modules and the county portal to retrieve necessary information and to submit its findings and recommendations as TC Report. The permitting process ends with the issuing of permit or rejection based on TC Report and stakeholders' opinion. The outcomes are communicated to all involved via county portal.</p>
<p>Expected impact in Final Users</p>	<p>The major objective of the pilot deployment of eEnviPer in the Krapina-Zagorje county is to make the permitting process transparent and inclusive for all participants. In addition, using the eEnviPer system modules and other available technology, the whole process will become more efficient and effective. Time delays will be indicated in workflow roadmaps (not hidden under proverbial "red tape") providing means to speed-up the process. Spatial and non-spatial data will be available electronically from one location reducing the disk space and unnecessary printed copies and enabling easier decision making.</p>

3.4.2 Activities

As the main objective of the Croatian pilot is to enhance public involvement by participating in the permitting process, the validation activities were mostly focused on citizen user group. Still, the focus of planned activities is not on general public, but the population that has dual role to play in permitting process, being citizens and environmental or IT experts, economists and potential investors and students that might end up being future users of the platform in any of the roles, from public servants to consultants and NGOs.

The validation activities done in the period from 1/10/2013 until 30/1/2014 included the participation on one of the two day workshop of EU funded STEP project (Support for Transposition of Environmental Policies) with participants being involved in permitting process in NGO, authority, citizen and self-government roles. The platform was presented and testing offered to the attendees of the PMI Croatia conference. The activities in 2014 started with info days and testing of the platform on 2 faculties that have curricula related

to the permitting process in capacity of potential investors or environmental experts and permitting authorities employees.

Activities	Date	Group of people (category)	Group of people target (No of people)
Participation on EU STEP project workshop, Karlovac	24-25.10.2013	NGOs, authorities, public	35
PMI Forum, Zagreb	14.11.2013	Citizens (IT experts, investors, environmental consultants, public servants)	190
Info day and testing – Faculty of Economy, Zagreb	7.1.2014	Citizens	45
Info day and testing – Geotechnical faculty, Varaždin	13.1.2014	Citizens	35

3.4.3 The use of eEnviPer system

Due to the reduction in EIA applications in the pilot area (Krapina-Zagorje County) and the distribution of responsibility within permitting authorities on national and county level, as defined by Croatia bylaws, additional permitting application procedures were included as workflows in eEnviPer platform. The functionality of the platform supports now 5 procedures:

1. EIS review
2. EIA Screening
3. EIA Scoping
4. Appropriate Assessment Screening
5. Main Assessment

Environmental Permits categories	Number of Environmental Permits submitted offline	Number of Environmental Permits submitted through the eEnviPer system
EIS	0	0
EIA screening	6	1
EIA scoping	0	0
Appropriate Assessment	5	1
Main Assessment	1	1

3.4.4 Success stories

Profile of the enterprise:

In the period from April 2013 to December 2013, there were only 12 applications that were submitted, not single one related to environmental impact assessment process. All applications were submitted offline through the existing procedure. The aim of testing three applications through eEnviPer platform was to compare the procedure in real life situation and assess if any positive or negative difference occur. The applications were entered by eEnviPer pilot team members that were involved in permitting process on KZZ county level.

The application of Croatian waters was the most complex procedure that started and finished in 2001, that enabled the parallel running of traditional and eEnviPer driven process.

Croatian water's department that looks after waterways management in upper Sava catchment area needed to check if EIA is necessary for the intended betterment of the banks of Krapinica river in the municipality Sveti Križ Začretje and within the boundaries of city of Krapina.

The choice of eEnviPer:

It was not the applicant's decision to use the eEnviPer system. It was the responsible for permitting county department that decided to run the EIA screening application in parallel with the traditional application process.

Implementation of application:

The process included the submission of the application by the permitting authority employee after the application has been submitted in hardcopy by the authorized environmental consultancy Hidroprojekt-consult d.o.o. The public was notified through the county web, public information boards in municipality building in S.Križ Začretje

and county premises in Krapina and in eEnviPer system and was asked to submit written comments within a participation period of one month.

The county officials responsible for the application needed to ask other agencies about the need for EIS: The Water management Directorate of the Ministry of agriculture, the State Institute for Nature Protection, the Public institution for the management of protected areas of nature in the KZZ county, the Directorate for Nature protection from the Ministry of environment and nature protection and the municipality of Sveti Križ Začretje and the mayor of city of Krapina. As they did not have objections, it was decided that the EIS and the main assessment were not needed. The public was notified through the county web and in eEnviPer system. The comments were received by the Public institution for the management of protected areas of nature in the KZZ county.

The major objective of the pilot deployment of eEnviPer in the Krapina-Zagorje county was to make the permitting process transparent and inclusive for all participants. Stakeholders that were pleased with the project and supported the implementation were representatives from NGOs and citizens. According to the comments that we received during the interviews and the workshops as well as from the questionnaires, the following positive feedback was gathered:

- “I really like the transparency of the process, the possibility to trace the status of the application.”
- “The system is very user friendly and provides the means to be part of the process without attending very short public hearings where it becomes difficult to express your opinion. Online commenting is so good.”
- “It is really bold decision to offer permitting through the cloud.”

Investors found it useful to have one-stop-shop when it comes to finding out about regulations, placing the application and monitoring the status of the application on-line.

What public authorities commented was the added value in controlling the process and evenly distributing workload.

The added value of eEnviPer

Environmental permitting process before and after eEnviPer		
	Before eEnviPer	After eEnviPer
PUBLIC AUTHORITY		
Required time (<i>in days</i>) for the whole permitting process	6 months	6 months ¹¹

¹¹ To be able to reduce permitting proces duration, we need to change by-laws. It is now defined that the permitting EIA takes 6 months, and testing of eEnviPer was done in paralel using the same rules and regulations as defined in by-laws, however it is obvious that the process duration can be reduced by at least 30%.

Required human resources and effort (<i>person months</i>)	2	2 ¹²
Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	N/A	N/A ¹³
Printing (<i>cost for the specific permitting process</i>)	N/A	N/A ¹⁴
Transportation (<i>cost for the specific permitting process</i>)	N/A	N/A
APPLICANT (Studios, investors)		
Required time (<i>in days</i>) for the whole permitting process	6 months (work effort of human resources – 30 days)	Possible reduction: less than 30 days
Required human resources and effort (<i>person months</i>)	2m/m	Possible reduction: at least 30%
Required communication (<i>contacts for the specific process</i>)	5 in average	Can be streamlined by at least 30% with the use of commenting and workflows within eEnviPer

¹² Required human resources are the same because they had to run the applications in parallel. It is highly unlikely that the number of human resources would decrease. Resources could become more efficient. Additional problem with the workflow is that other agencies that were part of the permitting process (State Institute for Nature Protection, Croatian waters,...) were not included, so human resources were needed for that communication as well.

¹³ There were no measurable paper savings as yet because eEnviPer was used in parallel with the traditional process. However, a significant reduction in paper is possible when switching to electronic documents distribution for citizens, advisory board and other institutions involved in the permitting process.

¹⁴ Although we do not have any estimates on printing costs, however, significant savings can be achieved if we move away from distributing paper materials and replacing them with digital materials that can be distributed through the eEnviPer platform.

Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	N/A	N/A ¹⁵
Printing (<i>cost for the specific permitting process</i>)	N/A	N/A
Transportation (<i>cost for the specific permitting process</i>)	N/A	N/A
PUBLIC PARTICIPATION		
Citizen (<i>number of people involved</i>) participation to the public consultation	In traditional process 15 people on average were involved	It is expected that the number citizens will increase exponentially, especially for controversial applications.
Citizens complaint submissions (<i>number</i>)	5 in average	No change probably due to lack of information about the availability of eEnviPer platform to wider audience

3.4.5 Findings and lessons learnt

3.4.5.1 Productivity

Citizens: The citizens find it useful to have the possibility to place comments on-line.

NGOs: They find eEnviPer platform an effective and efficient tool to provide appropriate stakeholder participation.

¹⁵ It is expected that the most paper and printing cost comes from printing maps. The observations of our pilot team were such that most users print maps and GIS content.

Enterprises: They expect transparent and efficient application management through the platform.

Engineers: Have concerns related to GIS use - consider it useful for presentation purposes. Have concerns related to increase in public comments they have to manage.

Public administrations: They expect better coordination within the authority and better control of application handling. The productivity gain is not that big because all handling of other agencies involvement still needs to be managed outside eEnviPer workflows (only permitting authority was included in pilot testing).

3.4.5.2 Costs reduction

Citizens: Most expect cost reduction in human and technical resources needed in comparison to the existing practice.

NGOs: Expect operational and technological cost reductions.

Enterprises: Expect operational and technological cost reductions as well.

Engineers: Expect operational and technological cost reductions as well.

Public administrations: They actually see the need for additional funds, at least in the beginning, related to system set-up and training. They do not expect reductions related to IT cost as they do not have any system in place (only web site that informs public about the legislation, application requests and the decisions) and would need to budget funds for the eEnviPer usage. They see the reductions after 2-3 years after the implementation.

3.4.5.3 Accessibility

Citizens: They find the system as true participation tool for all interested parties.

NGOs: They find the system as true participation tool for all interested parties as well.

Enterprises: They find internet access to application status and other information extremely useful.

Engineers: They find internet access to application status and other information extremely useful, as well.

Public administrations: They find accessibility of information very useful for better permitting process coordination and control. Although most expect easier licencing, they do not consider that that important in comparison to other benefits platform provides.

3.4.5.4 Participatory

Citizens: They find the system as true participation tool for all interested parties.

NGOs: They find the system as true participation tool for all interested parties as well.

Enterprises: They have concerns that more comments from the public would slow down the permitting process.

Engineers: They have concerns that more comments from the public will bring much more work for them that will not be paid by investors.

Public administrations: They find the system as true participation tool for all interested parties.

3.4.5.5 Usability - User acceptance

Citizens: Apart from GIS that took some getting-used-to all user groups found the platform user friendly and rather intuitive to use.

NGOs: Apart from GIS that took some getting-used-to all user groups found the platform user friendly and rather intuitive to use.

Enterprises: Apart from GIS that took some getting-used-to all user groups found the platform user friendly and rather intuitive to use.

Engineers: Apart from GIS that took some getting-used-to all user groups found the platform user friendly and rather intuitive to use.

Public administrations: Apart from GIS that took some getting-used-to all user groups found the platform user friendly and rather intuitive to use.

3.4.5.6 Sustainability

Citizens: Citizens expect the cost to be covered by the Government.

NGOs: Citizens expect the cost to be covered by the Government that has obligations as per Aarhus convention.

Enterprises: Although investors expect easier and quicker application handling using the platform, they were not inclined to cover fraction of the cost of the solution, considering that as service provision that authorities must provide at no additional cost.

Engineers: Engineers expect bigger work load coming from more intensive public participation that is not likely to be paid additionally. They consider the platform bringing most benefits as a tool for authorities and citizens and that tool should be paid by authorities only.

Public administrations: They consider the platform useful as productivity tool that has the associated cost that needs to be budgeted.

3.4.6 Risks and contingency actions

Delay in responses from requested parties was the only risk identified. It actually did happen and the permitting authority needed to send official reminders to speed-up the process

3.4.7 Graphical representation of pilots outcomes

Short Online Questionnaire: See Annex A.

3.5 Turkey/Municipality of Niğde

3.5.1 Pilot Profile

It is widely acknowledged that the rapid development of e-government in Turkey owes a lot to the EU impetus¹⁶. With respect to on-line public services delivery, nowadays Turkey does not rank far from the European average in terms of both sophistication (EU 27+:76%, Turkey: 69%) and full on-line availability (EU 27+: 58%, Turkey 55%)¹⁷. Regarding services towards businesses, Turkey has surpassed the EU+ average by scoring 86% for sophistication and 75% for full online availability. However, with a sophistication of 57% and full online availability of 42% for services towards citizens, Turkey considerably lags behind the EU averages, which are already quite low compared to services for businesses¹⁸. Furthermore income-generating services score highest in general (The EU average is 94.2%, while Turkey has scored 100%.), due to the fact that the Turkish government pay close attention to develop such services. By combining services for both businesses and citizens and by introducing value added income generating services, the Turkish pilot will leverage the strengths of the Turkish E-Government to contribute in a wider increase of the trust of citizens in public on line services, bridging the gap between the commercial and public online worlds and promote services that efficiently fulfill the needs of citizens with respect to participation in the decision making process.

¹⁶ OECD (2007) OECD e-Government Studies TURKEY.

¹⁷ Capgemini (2007a) The User Challenge, Benchmarking the Supply of Online Public Services, 7th measurement, September, http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/egov_benchmark_2007.pdf

¹⁸ Capgemini (2007b) Mutual Learning: Benchmarking eGovernment Service Delivery in Turkey and Europe. Web Based Survey on Electronic Public Services, October, <http://www.bilgitoplumu.gov.tr/eGov%20survey%20Turkey%202007%20v1.pdf>

Pilot Case	Country: Turkey
Description	<p>Niğde Provincial Directorate of the Ministry of Environment and Urbanization & Niğde Municipality has been selected to implement this pilot case due to their ability to mainstream the pilot results into the regional policy on ICT.</p> <p>The pilot case will cover the entire life cycle of the environmental permitting process, involving all stakeholders according to the legal framework and administrative practices applied according to Turkey regulations.</p> <p>Applications such as SoaGIS is expected to aggregate its services so as to provide integrated support to Environmental Engineers, Public Administration Users and Citizens, during the environmental permitting process in both application and public consultation procedures.</p>
Pilot Scenarios	<p>Case 1. Elaboration of an Environmental Impact Study: An environmental Engineer uses the provided templates and SoaGIS to gather all required information to conduct the Environmental Impact Assessment Study.</p> <p>Case 2. Submission of an Environmental Impact Assessment Study. An environmental Engineer submits the EIA study on behalf of an enterprise and follows up the procedure by submitting additional documents.</p> <p>Case 3. Evaluation of the Environmental Impact Assessment Study. The evaluation of the Study is assigned to a public sector employee via the workflow system. The public sector employee uses SoaGIS to access relevant information to evaluate the compliance of the study with environmental legislation.</p> <p>Case 4. NGO participation in public consultation. The EIAS is published in the Directorate Portal for public consultation and an environmental NGO participates in the dialogue, using data and evidence from SoaGIS.</p> <p>Case 5. Issue of Environmental Permit. The permitting Authority decides to issue the environmental permit based on reports derived from the provided system.</p>
Expected impact in Final Users	<p>The pilot deployment of eEnviPer in the Municipality of Niğde will clearly lower the cost of transactions and simplify the procedures for issuing environmental permits by reducing the required administrative procedures and shortening the total time and the cost of the permit issuing process.</p> <p>Furthermore, the simultaneous deployment of E-Government Services with private sector content provisioning services on a SaaS basis (i.e.</p>

	<p>the existing ENIASS system) is expected to attract a large number of Environmental Engineers that operate in the Region. These professionals will benefit both in terms of automatic transactions and environmental content management services that will speed and simplify the Environmental Impact Assessment Study elaboration workload.</p> <p>Finally individual citizens and civil society groups (NGOs) will benefit from the advanced Web 2.0 participation features provided by the Municipal Portal that will empower transparency and structured social dialogue in environment-related issues, provided in a map based user friendly user interface. The critical issue of having access on environmental legislation and reliable information will addressed by the content provided by ENIASS.</p>
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3.5.2 Activities

The Municipality of Niğde has conducted a set of communication and public engagement actions in order to test the eEnviPer service and highlight its benefits for the main stakeholders. In particular, the municipality presented eEnviPer in the World Intelligent Cities Summit, and also in several information days targeting university students and the civil society. The following table presents a more detailed description of the user engagement activities that has been undertaken during this period.

Activities	Date	Group of people (category)	Group of people target (No of people)
World Intelligent Cities Summit	27-28. 11.2013	Mayors, Government Agencies, Academia, NGO's, Business	500+
Info Day for Students	20.12.2013	Niğde University, Environment Engineering Students- First Year Students	40
Info Day for Students	20.12.2013	Niğde University, Environment Engineering Students- First Year Students	44
Info Day for Students	26.12.2013	Niğde University, Environment Engineering Students- First Year Students	59
Info Day for	27.12.2013	Niğde University,	46

Students		Environment Engineering Students- First Year Students	
Info Day for Citizens at the Niğde Municipality	24.12.2013	NGO's and Citizens	100+

3.5.3 The use of eEnviPer system

The table below shows for the period April 2013-January 2014, how many Environmental permits have been applied through the traditional way visiting the public authorities (1st column) and how many through the eEnviPer system (3rd column).

Environmental Permits categories	Number of Environmental Permits submitted offline	Number of Environmental Permits submitted through the eEnviPer system
Annex II -Environmental Impact Assessment	26	3

3.5.4 Success stories

Profile of the enterprise:

Bakkalbaşıoğlu Süt Ürünleri Sanayi ve Ticaret A.Ş is one of the biggest enterprises established in Niğde, producing dairy products since 1958. In 1991, they set up their first factory producing 100 tons of milk in 9000m² field. Following this, they open a new settlement, 18.000 m², in 2012, producing dried milk and dried milk products. They are serving customers both national and international under their registered trademarks BAKSUT and NIĞSÜT.

The choice of eEnviPer:

As Bakkalbaşıoğlu is a well-known company in Niğde with their investments, they have close relations with the Niğde Municipality and Niğde Province Directorate of Environment and Urbanism. Therefore, Bakkalbaşıoğlu's high level managers were invited to the launch event of eEnviPer in June. They showed great interest in the platform at that time due to its online capabilities and workflow monitoring feature. They were eager to test the platform for their next application. During the event, engineers from the Environmental Firm who work with BİLİM MÜH. ÇEV. TEK. VE ÖLÇÜM HİZM. İNŞ. TİC. SAN. LTD. ŞTİ, which operates in the neighbor city Kayseri, were also ready. The firm representatives were fascinated by the platforms GIS tool and knowledge base function and share the same interest in testing the platform.

Following the launch event, Bilim Mühendislik engineers were given a detailed brief by the Province Directorate staff on how to apply EIA via the eEnviPer platform.

In December 2013, Bakkalbaşıoğlu decided to increase their production capacity and open a new facility in Niğde. With the collaboration of Bilim Mühendislik engineers and NCEDTR staff, the first real application was made via the eEnviPer Platform.

Implementation of application:

Following the launch event of eEnviPer both the Environmental Firm Bilim Mühendislik and the investor Bakkalbaşıoğlu were registered to the platform. As described above, they volunteered to test the platform for better evaluation and comparison.

Although a new online system for EIA procedures called “e-CED” has been put into use by the Ministry in some cities, NCEDTR is still taking applications offline. Therefore, environmental firm representatives need to be present at the Directorate to submit their applications. In our case, we run the procedures simultaneously.

One of the engineers of Bilim Mühendislik travelled to Niğde from Kayseri, 2 hours by bus, in order to bring the necessary documentation to the Directorate, meanwhile another engineer of the firm initiated the application through eEnviPer. At the time of the engineer’s arrival to Niğde, the application made via eEnviPER platform was already in the evaluation process. Mr.Abdurrahim Ayhan Birim, Quality Manager of Bakkalbaşı, stated that *“Even at this stage, we have saved time and money”*.

Upon the submission of the application via eEnviPer, NCEDTR officials checked the submitted documents and found out that one of the licenses were missing. With one click, NCEDTR required “additional information” from the environmental firm while the other engineer was on his way back to Kayseri.

It took two minutes to upload the missing document and so that NCEDTR has started the evaluation of the application. During the application process, Bakkalbaşıoğlu officials were monitoring the firm and the process. They were able to see the status of their application and also the queries of the NCEDTR from the environmental firm. Mr. Birim was fascinated on how he was able to monitor the application. He said that he could report the status of their application quickly to his manager without waiting information from the firm.

Thanks to the GIS tool of the platform, the evaluation process ended within ten days with the good news for the investor, *“EIA is not required”*. This timing was quite surprising in comparison to the existing systems. In general, NCEDTR completes the evaluation, even in the easy cases, within 2-6 months. With e-CED, this time drops to 45 days but with eEnviPer it took them just 15 days.

As an overall, Mr. Birim highlighted the benefits of the platform as:

“Easy to access, transparent, highly cost and time effective, updated information source and participatory”.

The added value of eEnviPer

Environmental permitting process before and after eEnviPer		
	Before eEnviPer	After eEnviPer
PUBLIC AUTHORITY		
Required time (<i>in days</i>) for the whole permitting process	60	15
Required human resources and effort (<i>person months</i>)	3	1
Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	20TL	5TL
Printing (<i>cost for the specific permitting process</i>)	100 TL	20 TL
Transportation (<i>cost for the specific permitting process</i>)	-	-
APPLICANT (Studios, investors)		
Required time (<i>in days</i>) for the whole permitting process	60	15
Required human resources and effort (<i>person months</i>)	2	1
Required communication (<i>contacts for the specific process</i>)	4	1
Estimation of other operational costs		
Paper (<i>cost for the specific permitting process</i>)	20 TL	5TL
Printing (<i>cost for the specific permitting process</i>)	100TL	20TL
Transportation (<i>cost for the specific permitting process</i>)	500TL	150TL
PUBLIC PARTICIPATION		
Citizen (<i>number of people involved</i>) participation to the public consultation	-	-
Citizens complaint submissions (<i>number</i>)	-	-

3.5.5 Findings and lessons learnt

Below is presented the impact of eEnviPer for each different stakeholder category.

3.5.5.1 Productivity

Citizens: All users agreed on the platforms productivity and stated that the knowledge base feature and search options improves the efficiency and makes the platform beneficial and easy to use.

NGOs: NGO representatives find the platform efficient in terms of its knowledge base feature .They also mention that as the platform provides latest updates on the status of the applications; they can easily follow the processes and get involved when it is necessary. They also stated that they were looking forward to see the details of the applications and more information/content sharing by the government authorities and found the system essential for covering these missing points.

Enterprises: The investors who participated to the evaluation favours the platforms productivity as platform speeds up the application procedures and allows investors to monitor the status of their application.

Engineers: In comparison to the existing system, eEnviPer platform allows the engineers to submit applications quicker and access all related information from one place. By doing so, the platform simplifies the business processes.

Public administrations: The Platform enables the access to all related data and information. The platform's GIS tool helps them to analyse their data faster and easier.

3.5.5.2 Costs reduction

Citizens: The platform saves time in reaching the necessary information both on the application and the documentation.

NGOs: The platform saves time in reaching the necessary information both on the application and the documentation. Also saves money by reducing the number of travels and phone calls.

Enterprises: As the platform simplifies the procedures and offers access to all related information from one platform, it reduces the time consultants spend for the applications.

Engineers: Spending less time for the applications and being able to track the process from the platform saves energy and other costs.

Public administrations: PA's are using cloud technologies to lower the costs of the hardware investments and also for reducing other operational costs. Surveys show that all the PA staff considers the platform as cost beneficial and strongly believes that it is going to reduce the hardware, software and also operational costs. It is also expected that the quick analyses of GIS data, the reduction of the time for field surveys, the access to all information and the faster decision making, will lower the costs in general.

3.5.5.3 Accessibility

Citizens: Citizens identified that the platform simplifies the procedures for EIA, provides easy access to the information and reduces bureaucracy with its workflow, document management and knowledge management capabilities. In contrast to the existing EIA system, this platform is transparent and allows citizens to access all related information through one citizen to access GIS data and analysis of the PA's decisions. .

NGOs: Similar to citizens, NGO representatives agree that the platform's main feature is the accessibility. In particular, the platform's notifications on the status of the applications and the new applications enable them to be up to date and engaged with the processes.

Enterprises: Within the existing offline system, investors are only obtaining information regarding their applications via the environment agencies they are working with. EEnviPer allows them to access and track their applications. In addition to that, they can obtain detailed information on the workflow and the steps of the process.

Engineers: The majority of engineers appreciate the platform's simplicity and user friendly approach. It is important for them that they are able to follow the status of their application and get quick feedbacks related to their applications.

Public administrations: The platform provides all necessary components of EIA procedures from one point, applications, comments, legal base, announcements, and documentation. It is easily accessible and simplifies the procedures. This will definitely help in reducing the time of decision making and analysing and also cause an increase in users' accessibility to EIA procedures. It will definitely decrease the calls they are taking related to the application status and information enquiries from stakeholders. It has an impact on the decision making as it provides easy access to location based information which overlaps with the GIS data and to the location based analysis.

3.5.5.4 Participatory

Citizens: As Turkey has not signed the Aarhus Convention related article, citizens do not have a role in the decision making of the EIA procedures. However, it is important to leave a comment for the applications knowing that this will be considered by the PA during the evaluation process.

NGOs: Platforms provides access to applications and also allows monitoring the whole process. *“Within the existing system, we are submitting our comments directly to the Province Directorate; however eEnviPer platform will help us to share our comments with different stakeholders.”*

Enterprises: The participation of citizens will help them to better analyse the environment and make the right investments.

Engineers: The participation of citizens will help them to better analyse the environment and make the right investments.

Public administrations: Although it is not mandatory to receive comments or feedbacks from citizens and NGO's, they found it very crucial. All comments received will assist them when taking decisions. Therefore, they believe that this feature will be useful in the future.

3.5.5.5 Usability - User acceptance

Citizens: Citizens found the information to get started very satisfactory, found the overall system very clear to follow and very easy to use. New features such as GIS tool, participation and knowledge base are helping them to analyse the applications.

NGOs: Similar to citizens, NGO's find the platform usable and satisfactory. However, some of them stated it needs to be improved in terms of content. New layers need to be added to the GIS portal and the integrations with the government services need to be completed.

Engineers: The platform offers many options and features which boosts the usability for environmental engineers. The GIS tool is very useful when preparing the applications and for accessing the new rules and regulations of the Environment Law regulations from the same platform. Workflow's simplicity is another factor which stimulates the usability.

Public administrations: The platform allows them to handle the EIA procedures easier and faster with its GIS tool and also to update the knowledge base. However, usability was the main concern of the PA staff. Although the system is easy to use, its future usability depends on the integration with the existing e-government services and the Ministry's system. In particular, e-signature applications or modules need to be integrated to the system.

3.5.5.6 Sustainability

Citizens: It is regarded by the citizens that this system has to be offered for free by the PA. Therefore, citizens are not willing to pay for it.

NGOs: As in the current offline system, PA's are not charging any fee to the NGO's for using the services they offer. Therefore, they do not want to pay any fee for using the platform.

Enterprises: They state that their will mainly depends on the PA's policy. If the PA asks fee for the platform usage and if they certainly believe that they will benefit from the system they are willing to pay a reasonable membership fee if the benefits are more.

Engineers: Similar to the investors, they are willing to pay a reasonable membership fee if the benefits are more for them.

Public administrations: By 2014, they have started to use the newly implemented e-CED (online EIA) system. So, there is no need for an online platform to be fully implemented. On the other hand, they stated that the Ministry may be interested in the

modules which are not included in the new system. In this case, the investment will be made if they think that eEnviPer adds value to the system. It is foreseen that the GIS module and the participation tools are those modules that will be paid.

3.5.6 Risks and contingency actions

No risks have been identified.

3.5.7 Graphical representation of pilots outcomes

Short Online Questionnaire: See Annex A.

4 Conclusions

The eEnviPer system is piloted in five European countries. The pilot partners for gathering feedback from users have organised and participated in several events such as workshops, info days, personal meetings and training sessions. Based on specific evaluation questions eEnviPer has been assessed in terms of productivity, cost reduction, accessibility, participatory, usability – user acceptance, and sustainability.

The most obvious benefit from the adoption of eEnviPer is the improvement of the environmental permitting service to people. Evidence from the intermediate evaluation demonstrates that eEnviPer has:

- Delivered enhanced service availability and quality (increased efficiency of the respective administrative procedures and reduced bureaucratic delays)
- Reduced the cost of interacting with government, in the form of faster, easier and more convenient service. Reduced operational and technology costs of the public authorities.
- Established a greater level of transparency, citizen participation and access to public services.

Finally, it should be highlighted that all the success stories presented in this report provide a clear insight on the added value of eEnviPer both for the public authorities and the other potential users of the system. In particular the success stories provide evidence that through eEnviPer the whole permitting process:

- needs less time to be completed
- needs less human resources and effort
- needs less operational costs (expenses for paper, printing, transportation, communication)

The evaluation of eEnviPer will continue up to the end of the project and a final evaluation report will be produced in order to provide evidence for the effectiveness and efficiency of the system.

ANNEX A

Due to the length of ANNEXA (60 pages), we accompany it as a separate file. This file presents the graphical representation of responses gathered from online questionnaires, by the five pilots.