

D2.5

National reports with a review and synthesis of the collated information

Spain



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D2.5: National reports with a review and synthesis of the collated information – Spain

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1. Introduction

1.1 About INSPIRATION

The aim of INSPIRATION is to establish and promote the adoption of a strategic research agenda for land use, land-use changes and soil management in the light of current and future societal challenges. Main objectives are:

- **Formulate, consult on and revise an end-user oriented strategic research agenda (SRA);**
- **Scope out models for implementing the SRA;**
- **Prepare a network of public and private funding institutions willing to commonly fund the SRA.**

The proposed methodology is based on a multi-stakeholder, multi-national and interdisciplinary approach that covers the variety of stakeholders (public bodies, business, scientific community citizens and society) and the variety of relevant funders. The vehicle to engage with relevant stakeholders across the Member States is a National Focal Point (NFP) in 17 countries¹. Between March 2015 and March 2016 The NFP's interviewed National Key Stakeholders (NKS), performed a desk study and organized workshops with national stakeholders of funders, end-users and researchers across the various soil and land management disciplines. The goal of these exercises was to gather information and support the main objectives as stated above.

The collated results will be structured along four integrative themes: 1) resources demand and efficiency; 2) natural capital stewardship; 3) land management; 4) net impact on global, EU and local scale (see section 1.3) and merging into thematic knowledge needs to satisfy the as yet unmet societal challenges and to ensure that knowledge contributes primarily to enable meeting these challenges. Based on these results, a cross-border and cross-discipline dialogue will subsequently be organized among the relevant user communities, funding bodies and scientific communities in Europe in order to reach a trans-national, prioritized SRA as well as a model for execution of this SRA. Thus a SRA will be produced which will give national funders confidence that for each Euro they spend, they will get multiple Euros worth of knowledge in return in order to address their national societal challenges.

Learn more about the INSPIRATION coordination and support action on the project's website: www.inspiration-h2020.eu and follow us on twitter: [@inspiration4eu](https://twitter.com/inspiration4eu).

¹ The Swedish Geotechnical Institute (SGI) with support of Formas is currently mirroring the INSPIRATION approach in Sweden. SGI has proposed to act as Swedish National Focal Point and to become a full member of the INSPIRATION consortium. This has been welcomed by the consortium. Currently formal negotiations are in place between SGI, the consortium and the EC to effectively implement this collaboration. This report furthermore contains some information for Denmark and Luxemburg – representatives of both countries joined the Belgium workshop – and for the Republic of Ireland – representatives joined the UK workshop – see below.)

1.2 This report

This country report is an excerpt from the INSPIRATION Deliverable 2.5 “National reports with a review and synthesis of the collated information”, which integrates 17 national reports. These 17 countries, in alphabetical order, and respective report authors are:

1. **Austria**,
Pia Minixhofer, Sophie Zechmeister-Boltenstern, Rosemarie Stangl, Andreas Baumgarten, Martin Weigl, Peter Tramberend,
2. **Belgium** (including some information for **Denmark** and **Luxemburg**),
Nele Bal, Bavo Peeters,
3. **Czech Republic**,
Petr Klusáček, Stanislav Martinát, Bohumil Frantál,
4. **Finland**,
Antti Rehunen, Teija Haavisto, Ritva Britschgi, Outi Pyy, Jari Rintala, Petri Shemeikka,
5. **France**,
Marie-Christine Dictor, Samuel Coussy, Valérie Guerin, Corinne Merly,
6. **Germany**,
Uwe Ferber, Stephan Bartke, Detlef Grimski,
7. **Italy**,
Matteo Tabasso, Sarah Chiodi, Giulia Melis,
8. **Poland**,
Anna Starzewska-Sikorska,
9. **Portugal**,
Thomas Panagopoulos, Vera Ferreira, Dulce Antunes
10. **Romania**,
Mihail Dumitru, Sorin Liviu Stefanescu, Andrei Vrinceanu, Valentina Voicu, Nicoleta Vrinceanu,
11. **Slovakia**,
Maros Finka, Maria Kozova, Zita Izakovicova, Lubomir Jamecny, Vladimir Ondrejicka,
12. **Slovenia**,
Boštjan Cotič, Barbara Mušič, Ina Šuklje Erjavec, Matej Nikšič,
13. **Spain**,
Pierre Menger, Gemma Garcia-Blanco, Efren Feliu,
14. **Sweden**,
Yvonne Ohlsson, Lisa van Well, Kerstin Konitzer,
15. **Switzerland**,
Regula Brassel, Marco Pütz,
16. **The Netherlands**,
Linda Maring, Jos Brils
17. **The United Kingdom** (including some information on **the Republic of Ireland**),
Paul Nathanail, Matt Ashmore.

Deliverable D2.5 concludes the activities of INSPIRATION Work Package (WP) 2 “**Demands of research from industry, end-users and funders (State-of-the-art at national levels)**”, task 2.5 “**Review and synthesis of the collated information**”.

The WP2 activities were executed in the 1st year of the INSPIRATION project (month 1 – 12), i.e. in the period from March 2015 to February 2016. In the WP2 project description, the final task executed in this period is described in the following way:

“The NFPs will organize at national level a 2-day workshop, where the collated information (task 2.4) will be reviewed and synthesized and prioritized under guidance of the NFP by the NKSs. The WP-leader will prepare – in consultation with the INSPIRATION core group – a generic outline for the agenda of the 2-day national workshops. That outline will then be tailored to specific national situations by the NFPs. The results of the workshop – i.e. reviewed and synthesised information regarding topic a-d as mentioned under the WP2 objectives² – will be described in a national report (in English) by the NFPs. Before finalizing these reports, the NKSs as well as the International Advisory Board (IAB) will be given the opportunity to review the draft report. In these cases where English is not the native language, the national reports will also contain an executive summary (policy brief) of the report in the native language.”

(INSPIRATION Grant Agreement - Description of Action - DoA).

Deliverable D2.5 describes the results of NKS interviews and of the desk-exercise as performed in participating countries aimed at collecting national research demands, science-policy-interface experiences and funding options. This report builds up on the interim results presented in Deliverable 2.4.³ The methodologies followed for the information collation and synthesis are presented in more detail for each country below. In general, the following approach was applied (see also Figure 1):

1. In each country, national key stakeholders (NKS) have been identified (in a way to ensure broad representation of soil and land-use/management topics and affiliations in research funding / end-use / science or policy making);
2. Interviews (structured according to a common template: see Annex I and II) with circa 20 NKS per country have been conducted in order to collect national research needs as well as information on science-policy-interface and financing options (with interim result presented as D2.4);
3. In each country, a national workshop with NKS was conducted. Basis for the workshops was the input provided in the NKS interviews before the workshop. It was presented in order to synthesize the collated info, discuss and review the key national research topics. The workshop thus aimed to check, verify and enrich, and in some cases also already prioritize the suggestions provided by the NKS;⁴

² See section 1.5 for a description of topic a-d.

³ Brils, J. et al. (2015): National report on collated information following the template. Final version as of 01.12.2015 of deliverable 2.4 of the HORIZON 2020 project INSPIRATION. EC Grant agreement no: 642372, UBA: Dessau-Roßlau, Germany.

⁴ In several countries besides the NKS interviewed also more stakeholders were invited (i.e. it were open events), and participated and contributed to the workshops.

4. The results of the interviewing plus workshop process were documented in a report to become the respective final national reports. A draft version was to be send nationally to the NKS for review;
5. The national reports were aggregated in a combined document, on which the International Advisory Board (IAB) of INSPIRATION was asked to give feedback, too;
6. The D2.5 report has been finalised taking into account the IAB recommendations.

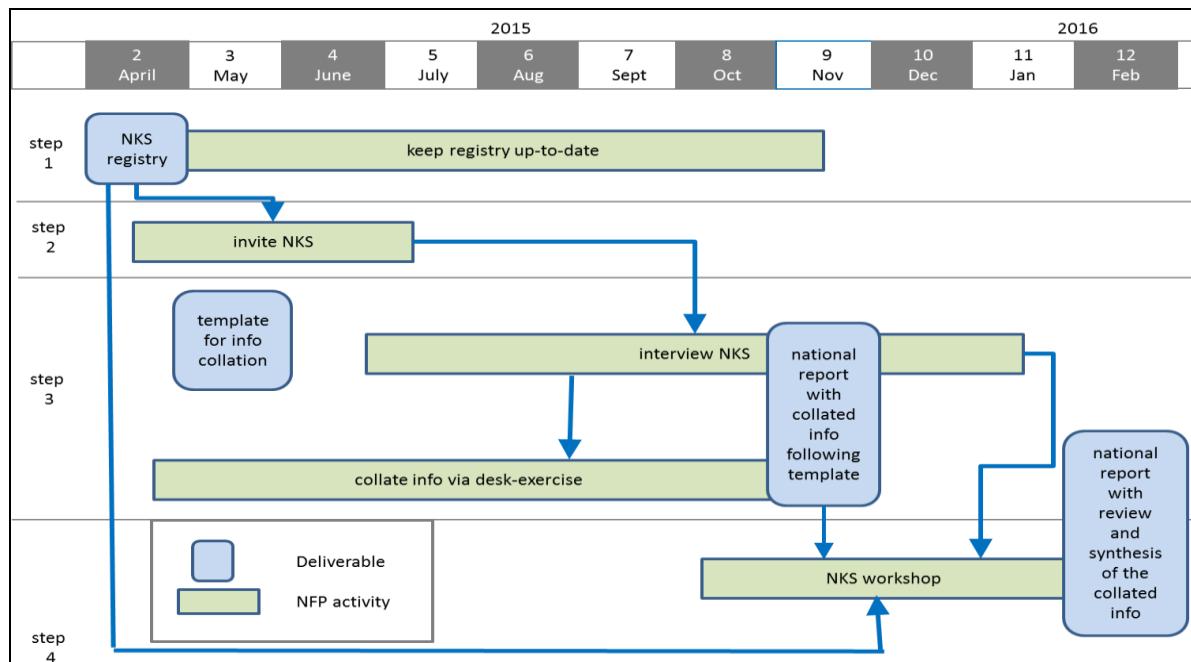


Figure 1: INSPIRATION's WP2 workflow.

The information collated in this report feeds into WP3 “Transnational commons aggregated under integrated themes”. According to the INSPIRATION DoA, the main objectives of WP3 will be to:

1. Achieve an overview of the transnational shared demands and experiences grouped under common themes based on the national state-of-the-art reports as produced by WP2,
2. Prioritise and elaborate the topics that could be included in the SRA (to be developed by WP4) under specific themes,
3. Elucidate the opportunity to match (to be done under WP4) individual stakeholders (as funders) to specific SRA topics that could be shared transnationally.” (INSPIRATION Grant Agreement - Description of Action - DoA).

Visit the INSPIRATION website for the up-coming deliverables of the network!

1.3 The INSPIRATION conceptual model and its themes

In order to identify cross-country and cross-sectorial knowledge gaps and research questions, the national Research and Innovation (R&I) needs will be analysed along four overarching themes identified in the INSPIRATION conceptual model. This model is presented in figure 2. It has been used to structure the information presented in this report on R&I needs following these guiding key-questions for each theme:

- **Demand:**

What does society demand from natural capital and ecosystem services including the SSW-system?

- **Natural capital:**

What has nature, including the Soil-Sediment-Water (SSW)-system, to offer and which determinants sustain the system?

- **Land management:**

What are options for an integrated, cross-sectorial land management to balance societal demands and natural capital?

- **Net-impacts:**

What are the impacts of different options of managing natural capital, including the SSW-system on global, regional and local as well as temporal scales?

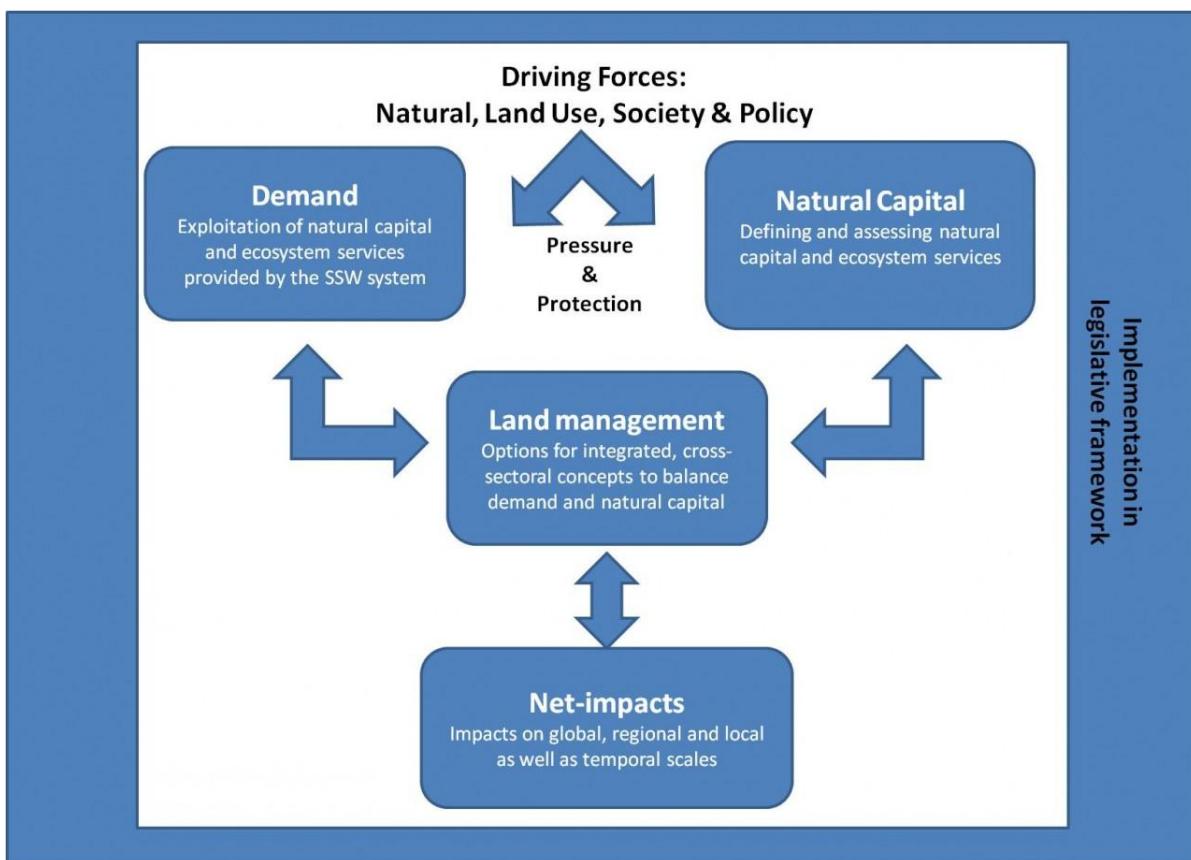


Figure 2: INSPIRATION's conceptual model.

1.4 Guide to the reader: outline of the country chapters

Each country chapter in Deliverable D2.5 follows a comparable outline:

Section X.1- Executive summary

This section provides an executive summary in English (X.1.1) as well as in the national language (X.1.2).

Section X.2 - Methodology followed

This section describes the methodology followed in the respective country including information on the stakeholder engagement (see also section 1.4).

The subsequent sections give a review and synthesis of the main results of the topics as mentioned under the WP2 objectives (see section 1.2).

Section X.3 Research and Innovation (R&I) needs

- **Topic a: Demand-driven*** suggestions for the Strategic Research Agenda (SRA), i.e. suggestions from the perspective of industry, end-users and funders.
Related key question to be answered: What (new) knowledge do these parties need to tackle societal challenges including the increase of job opportunities?
- * **Demand-driven** in INSPIRATION means focusing on the demands of those who are responsible or feel committed to tackle the societal challenges related to the INSPIRATION scope and themes, i.e. industry, end-users and funders. These parties could improve their business opportunities and/or take better informed decisions on what measures to take and execute in order to tackle other societal challenges if they would (be enabled to) use the knowledge as resulting from execution of the INSPIRATION SRA.

This section is divided in the sub-sections:

- Societal challenges and needs (X.3.1);
- Topics / research needs to include in the SRA (X.3.2).

The research questions under the topics in the X.3.2 sub-sections are divided by themes of the INSPIRATION conceptual model as described in section 1.3 of this chapter.

Section X.4 - Experiences regarding connecting science to policy/practice

- **Topic b:** Experiences regarding the exploitation of scientific knowledge to improve business opportunities and/or tackle other societal challenges.
Related key question to be answered: Where to improve the science-policy interface so that (new) knowledge can and will be more effectively exploited by the demand side?

This section is divided in the sub-sections:

- Use of knowledge (X.4.1);
- Possibilities to set the agenda (X.4.2);
- Science – policy – practice (X.4.3).

Section X.5 National and transnational funding schemes

- **Topic c:** Predominant, current as well as promising alternative funding schemes / mechanisms / programs for knowledge production and dissemination.
Related key question to be answered: How to get with one Euro of national/regional funding a multitude of Euro's (from all sources) worth of knowledge in return contributing to EU and national demands? Or even how to get with one euro of EU funding a multitude of euro's (from national, regional, local, and private sector) worth of knowledge in return contributing to the R&I demands on Land and the Soil-Sediment-Water systems.
- **Topic d:** Experiences regarding the use of any trans-national, common budget for scientific knowledge production related to the scope of INSPIRATION.
Related key question to be answered: How to set up/govern the appropriate funding option(s) resulting from INSPIRATION – based on previous learning experiences – so that: (1)the above demands will be fulfilled, (2) knowledge resulting from implementation of the SRA will be taken up and used and (3) funders experience that their invested, national Euros are indeed multiplied?"

This section is divided in the sub-sections:

- Funding schemes and possibilities for research funding (X.5.1);
- Gaps in financial resources for research (X.5.2).

Section X.6 - Other remarks made by interviewees

This section is optional and is not taken up in all national reports. It contains remarks, points of attention and recommendations for INSPIRATION as given by the NKS.

1.5 Annexes

Annex I: NKS questionnaire template

This is the updated version of the questionnaire - reflecting inputs from the IAB and discussions at the NFP training in Vienna on 22nd – 23rd June 2015.

Note: this questionnaire template is meant to help National Focal Points (NFPs) to facilitate the interview/conversation with the National Key Stakeholders (NKS). Some questions are relevant to one NKS, other questions to another NKS. Hence, not all questions are relevant to each single NKS. The NFPs are required to adapt the template accordingly – keeping in it as many as possible of the issues to be addressed. If needed, the NFPs also translate the questionnaire into their national language.

The questionnaire (see next pages) has the following outline:

- A. **Interview information:**
To be filled out by the interviewer
- B. **Introduction:**
That the interviewer can use to start the NKS interview
- C. **Background information of the NKS interviewed:**
Mostly ‘tick-boxes’
- D. **Strategic Research Agenda (SRA):**
NKS preferred topics, overarching themes and scope for the SRA and national state-of-the-art on research agendas that the NKS is aware of
- E. **Science-Policy-Interface:**
NKS experiences regarding the exploitation of scientific knowledge to: improve business opportunities; tackle other societal challenges; assist policy-implementation and/or policy revision
- F. **Funding:**
Predominantly used as well as promising alternative funding schemes / mechanisms / programs for knowledge production and dissemination that the NKS is aware of
- G. **Other:**
At the end there is some time advised to let the NKS give us their advice, some nice quotes (that we can use anonymously in our communications), examples etc.
- H. **Ending the interview:**
Explain follow up and if/how NKSs will be involved in the next steps of INSPIRATION

Questionnaire template

A. Interview information
<p>Country:</p> <p>Name of INSPIRATION researcher:</p> <p>Date of Interview:</p> <p>How does the NKS wish to be referred to: [Anonymous, personal opinions, company's opinion. Choose when it is a good time to discuss this. In the beginning or later on.]</p> <p>SHOW the interviewed NKS the ENGAGEMENT CONSENT FORM and ask him/her to fill it out. Please introduce the engagement consent form (available in 'D2.1 MoU' and editable by yourself) and hand a copy to the interviewee to read and fill in – make sure that you take this away with you and keep for your own records]</p>
B. Introductions
[Please introduce your selves, the project and the purpose of the interview. You can use the handout as provided at the end of this template. This can also be sent beforehand to the NKS. Agree on a time span: approximately one and a half hour.]
C. Background information on the interviewee
<ol style="list-style-type: none"> 1. Name of NKS interviewed: 2. Institution: 3. Role:
<ol style="list-style-type: none"> 4. Are you a (multiple answers possible): <ul style="list-style-type: none"> <input type="checkbox"/> National-regional-local authority <input type="checkbox"/> University/research institute <input type="checkbox"/> Small or Medium sized Enterprise (SME, i.e. < 500 employees) / consultant <input type="checkbox"/> Business and industry <input type="checkbox"/> Non-Governmental Organisation (NGO) <input type="checkbox"/> Network representative / leader <input type="checkbox"/> Other, specify: ...
<ol style="list-style-type: none"> 5. Fields of expertise (multiple answers possible): [Ask to specify background regarding the selected item(s) in order to understand expertise background of interviewee] <ul style="list-style-type: none"> <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Sediment <input type="checkbox"/> Urban / spatial planning <input type="checkbox"/> Landscape design <input type="checkbox"/> Land management <input type="checkbox"/> Other, specify:

6. Does your organisation provide external research funding?

- Yes. Please specify: ...
[e.g. as programme holder, public, private, ...]
- No

D. SRA

7. Which societal challenges do you regard as important?

[If needed, you can use the European Commissions (EC) list of societal challenges here. These EC themes are:]

- Contribute to food security and food safety;
- Ensure secure supplies of safe drinking water;
- Secure energy supply and distribution;
- Reduce raw material and resource consumption, Ensure efficient use of natural resources;
- Contribute to climate change mitigation and societal adaptation;
- Contribute to a healthy living environment;
- Ensure secure infrastructure

[Explain that these challenges may be used as bases for defining of the overarching themes for aggregating the research topics of our SRA.]

- a. If applicable, what additional, other or alternative challenges would you suggest/prefer?

[When needed, you can mention challenges as nature conservation, sustainable use of ecosystem services, halting the loss of biodiversity]

8. Starting with your own experience: which specific topics (research needs) should be included in the SRA?

[For each single topic mentioned by the NKS, use the following follow-up questions. The a, b and c sub-questions are mandatory. The other sub-questions are optional]:

- a. Explain – elaborate the topic

- Who will be affected?
- Who is responsible?
- Is it a topic of concern of your organisation / department
- Is it only a national topic, or a shared topic by multiple countries?
- Where are we now, where do we want to be in x years (point on the horizon)?
- How can the newly gained knowledge be effectively used?

- b. Priority:

1. High priority
 2. Some priority
 3. Neutral priority
 4. Low priority
 5. No priority
- What is the urgency, i.e. what goes wrong if we do nothing?

c. Who wants to/should fund this kind of research?

[Optionally: check the following WP3 key-words for relevance, i.e. if they raise any additional topics by the NKS. The key-words can be used as support / check list]

Be sensible as interviewer if this is needed.]

- *Assessment of land resources*
- *Potential productivity of land and soils*
- *Demand for soil/land resources, imports and exports*
- *Competition between land uses (land-use conflicts)*
- *Concepts to identify and quantify relevant impacts*
- *Instruments to avoid / minimize impacts (feedback to decision-making process)*
- *Opportunities of innovative land-use technologies*
- *Resource-oriented land management systems]*
- *Soil regeneration*
- *Soil and groundwater remediation*

9. Linked to topics mentioned by the NKS:

- a. What are the important / relevant documents, research agendas, research programmes underpinning these topics? (state-of-the-art)
- b. Related to these agendas and programmes: what are timelines of programming and windows-of-opportunities to influence agendas / programmes?

[Note: question 9b is input for work package 5]

E. Science-Policy-Interfacing (SPI)

10. How would you define ‘scientific knowledge’?

11. For what do you use scientific knowledge in your job?

12. Which sources of (scientific) knowledge do you use for doing your job?

[Open question and you can mention some of the sources underneath as examples]

- | | |
|--|---|
| ○ <i>scientific paper</i> | ○ <i>newspapers</i> |
| ○ <i>consultants</i> | ○ <i>television</i> |
| ○ <i>reports</i> | ○ <i>conferences Involvement in research projects</i> |
| ○ <i>colleagues</i> | ○ <i>data (bases)</i> |
| ○ <i>experiences /examples within my own country</i> | ○ <i>websites, such as:</i> |
| ○ <i>experiences /examples abroad</i> | ○ <i>other, specify:</i> |

13. To what extent do you use most recent/new scientific knowledge (i.e. state-of-the-art scientific insights/findings) for doing your job?

14. To what extent are you able to influence (and how) the setting of scientific research policies/agendas in our country?

15. To which extent do our national policies/agendas reflect your specific needs and priorities?
16. To what extent has been made use of the state-of-the art in scientific research for the formulation of existing policies in our country?

[Questions only for NKS from the non-science sector (business and policy):]

17. Have you ever been involved in:
- a. the formulation of scientific research questions?
 - b. doing scientific research (i.e. knowledge co-creation)?
 - c. synthesizing/wrapping-up of scientific knowledge, e.g. to feed into policy making or to increase business opportunities?

[When yes: Follow-up questions]

- How successful/satisfying was this, on a scale of 1-5?
 1. Very successful/satisfying
 2. Successful /satisfying
 3. Neutral
 4. Unsuccessful/unsatisfying
 5. Very unsuccessful/unsatisfying
- What went well
- What could be improved?
- What to avoid/not to do?
- Additional remarks?

[Question only to NKS who are likely to have insights here (e.g. research funders)]

18. (How) is the societal impact of scientific research related to the scope of INSPIRATION being assessed in our country?

[If they know: Follow-up questions:]

- How successful/satisfying is this, on a scale of 1-5?
 1. Very successful/satisfying
 2. Successful/satisfying
 3. Neutral
 4. Unsuccessful/unsatisfying
 5. Very unsuccessful/unsatisfying
- What indicators are used?
- What goes well?
- What can be improved?
- What to avoid/not to do?
- Additional remarks?

19. Which national Science-Policy-Interface documents do you know of / can you recommend?

F. Funding

20. Which experiences and expectations in funding schemes (public / private) do you have in your own field that could offer opportunities for future research on land-use and -management and related impacts to Soil-/Sediment-/Water-systems:

- Sub-nationally/regionally?
- Nationally?
- European? [e.g. H2020, Interreg, multi-lateral such as the Joint Programming Initiatives]
- International? [e.g. Belmont Forum, Foundations.]

[For all R&I questions aiming at achieving policy targets in the Land & SSW related system (like e.g. Sustainable Development Goals on soils, existing EU directives such as the Environmental Liability Directive, etc.) consider all Public and Private funding sources. Please ask to provide details and give most important references (documents, website) that could be relevant for explaining the answer]

21. How to increase the added value of different financial resources (i.e. achieve a multiplier) for doing research that contributes to EU and national demands, in particular to the R&I demands on Land and the SSW-system?

[CONSTRUCTIONS that (could) work. PP, PPI, etc. Just ask for, as open as possible for suggestions, ideas, experiences, good examples]

22. Are there areas of research and innovation (R&I) that you are aware of that are not (yet) covered by current funding mechanisms and which would need new/different funding schemes / infrastructures?

23. Integrated approaches (necessary for addressing particular societal challenges related to the use and management of land and related impacts to SSW systems) are usually difficult to fund / get recognized by the research funding communities. What would be necessary to improve this?

24. Based on previous learning experiences that you are aware of: how to best set up / govern funding option(s), so that societal demands will be fulfilled, knowledge resulting from execution of the SRA will be taken up and used; and funders experience that their invested, national Euros are indeed multiplied? [if they know: follow-up questions]

- How successful/satisfying was this, on a scale of 1-5?
 1. Very successful/satisfying
 2. Successful/satisfying
 3. Neutral
 4. Unsuccessful/unsatisfying
 5. Very unsuccessful/unsatisfying
- What went well?
- What could be improved?
- What to avoid/not to do?
- Additional remarks?

G. Other (remarks, suggestions, examples):

H. Ending the interview

Thank you for taking the time to participate in this interview:

- Would you like us to keep you updated about INSPIRATION progress?
- Would you suggest anyone else who we should be interviewed by us?
- Do you have further questions arising from this interview, or would you like to add anything else?
- What information are you interested in, and willing to give feedback on?

[Discuss the feedback mechanism and if they have expressed their opinions as a person or as a representative of their organisation/network. Checklist:]

- a. Information to exchange / willingness to give feedback on:

- (complete interview, not recommended)
- summary of main conclusions
- national report, national contribution to D2.4
- complete D2.4, all countries

- b. Preferred level of feedback:

- no feedback
- informal feedback
- formal feedback (e.g. on behalf of represented organisation)

[Check: have you discussed consent form / how to refer to interviewee]

INSPIRATION acknowledges the received funding from the
European Community's HORIZON2020 Framework Programme
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Annex II: NKS hand-out: INSPIRATION interview at a glance

INSPIRATION interview at a glance

Aim of INSPIRATION:

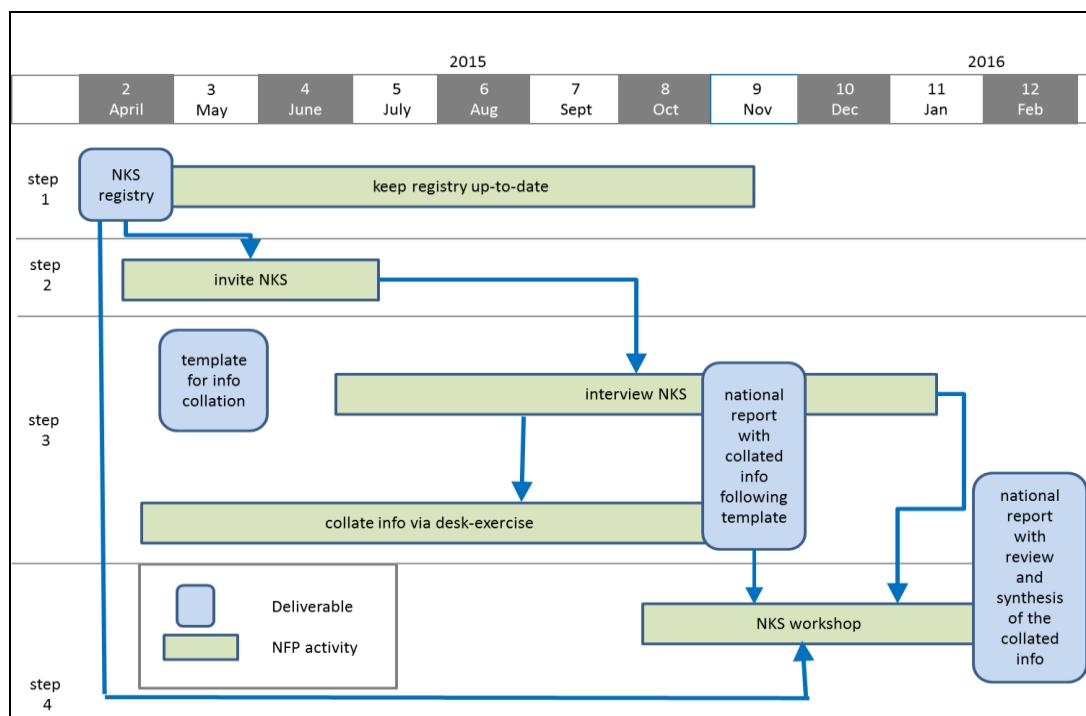
The main purpose of the EC-funded INSPIRATION project is to formulate an end-user driven strategic research agenda (SRA) for land-use, land-use changes and the related, impacted compartments of the Soil-Sediment-Water (SSW) system in order to meet current and future societal challenges and needs. Next to that, the project aims to scope out models of implementing the SRA and to prepare a network of public and private funding institutions willing to commonly fund the execution of the SRA.

National Key Stakeholders (NKS):

In a series of NKS interviews across EU nations the “National Focal Points (NFP) gather for nations individually information related to the INSPIRATION scope (land and SSW-system use and management) on:

- Research and Innovation (R&I) needs
- Experiences regarding connecting science to policy/practice
- National and transnational funding schemes

In the interviews we focus at NKS – like you – positioned at a strategic level, i.e. leading persons in their field of profession; with a good overview on opportunities; a clear vision on, and insight in knowledge demands (short, middle and long-term). Furthermore, these NKS are well positioned and participate in relevant professional network(s) and may also have potential to become an ambassador for INSPIRATION. We selected NKS to represent different disciplines and institutional backgrounds including: land-use planners; managers; soil, sediment and water experts; researchers, funders and regulators/policy makers.



Workflow in the first year of INSPIRATION

This interview:

Collecting input from you – an expert in your field – is crucial for the project in order to help us describing the state-of-the-art in our country as input into the European research agenda. In the interview we will go through a series of topics and questions: The interviews of NKS (ca. 20 per nation), together with a desk study on research needs and funding possibilities will be synthesized to a 'national report'. This synthesis will be reviewed in a national workshop, to prioritize the topics for the suggested Strategic Research Agenda (SRA) from our country's point of view. The national reports will finally be used as input for elaborating the European SRA and cross-nation matchmaking (matching research needs to possible funding).

Example questions:

Research and Innovation (R&I) needs

- Which societal challenges do you regard as important?
- Starting with your own experience: which specific topics (research needs) should be included in the SRA?

Experiences regarding connecting science to policy/practice

- How would you define 'scientific knowledge'?
- To what extent has been made use of the state-of-the art in scientific research for the formulation of existing policies in our country?

National and transnational funding schemes

- Does your organisation provide external research funding?
- Which experiences and expectations in funding schemes (public / private) do you have in your own field that could offer opportunities for future research on land-use and -management and related impacts to Soil-/Sediment-/Water-systems

Your benefits from participating:

- A chance to influence the European SRA on land and SSW management in the light of societal challenges and needs;
- Being able to make use of the results of the project: overview of research need and of existing and promising funding schemes on different levels (sub-national, national, European, international) and opportunities for a better connection between science and policy/practice;
- Use the matchmaking opportunity to get in contact with other networks in- and outside our country, and countries learn which shared challenges can be taken up jointly.

Contact and further information:

For general information on the INSPIRATION project visit our website: www.inspiration-h2020.eu

Contact the National Focal Point: See the INSPIRATION website for contacts	Contact the general project coordination: Stephan Bartke stephan.bartke@uba.de
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2. Spain

Report by Pierre Menger, Gemma Garcia-Blanco, Efren Feliu

2.1 Executive summary

2.1.1 English version

As an outcome of the interviews and debates undertaken with Spanish National Key Stakeholders, it seems that there is a consensus on 4 of the suggested EU societal challenges, which have been recognized as particularly relevant in the context of the INSPIRATION SRA, even though priorities may vary greatly depending on the interests of the organizations, i.e. thematic fields,:

These challenges are, without an order of priority, the following:

- Food security and safety
- Secure supplies of safe drinking water
- Reduce raw material and resource consumption, Ensure efficient use of natural resources;
- Contribute to climate change mitigation and societal adaptation; (nuances can be found in the sense that some NKS may prioritize mitigation, others adaptation). It is commented that adaptation may entail major needs of R&I than mitigation

Beyond the above mentioned priorities, the Spanish NKS have also emphasised the need to consider other societal challenges that were not explicitly reflected in Societal Challenges of the EU. These challenges could be summarized as follows:

- Protection of biodiversity and ecosystem services, to contribute to healthy environment and resilience
- Society empowerment and co-responsibility in issues such as soil conservation, land management, and spatial planning.
- More balanced and equitable relation between rural and urban realities, towards improvement of cohesion and reduction of socio-economic inequities.
- New culture of territory which would englobe, on top of the above, innovative governance structures and democracy models, global awareness, and participatory planning, etc, resulting in a more sustainable territorial planning and management.
- Prospective planning (anticipation) as a mean to prevent rather than cure problems, especially in a world with fragile balance and instability
- Applying the “polluter’s pays” principle: importance of taking into account positive and negative externalities but also plan and design the procedures for assessment, evaluation and imputation to those who generate externalities.

Being conscious about the competitive strengths of Spain in specific sectors (i.e. biosphere reserves, National Parks, Water Management techniques in agricultural and market gardening sectors under semiarid conditions) due to its regional specificities and willing to maintain its leadership as ground for generating wealth and resilience in Europe, the Spanish NKS identified a series of issues under specific R&I priorities aligned with INSPIRATION themes. These were grouped in 4 overarching themes under which specific R&I needs could be formulated.

Innovation in science communication and awareness

Given the complexity of the soil-water-sediment system and its integration within spatial planning, improved and innovative means for knowledge diffusion are needed, working in a bidirectional way among the key actors of the R&I value chain, decision makers, scientists and citizens. This implies research on innovative dissemination methods and tools as well as tailored communication instruments for example on communication of risk and uncertainty, with transparency and in democracy, in order to achieve effective assimilation by- and empowerment of stakeholders. Given the fact that in Spain over 90% of companies are SMEs it seems crucial adapting the R&I system to such reality, creating the necessary incentives and support structures .

New governance, instruments and management mechanisms

Research on inclusive decision making and social empowerment is needed. R&I should explore new or improved ways to achieve real participation of society in decision making including (academia, general public, NGO, experts, practitioners and other actors with interest in land use and resource management).

Inclusive decision making may require improved governance structures and management mechanisms. Hence, there is still perceived the need for research on innovative governance structures, finding coherence between concepts, approaches and policies, and finding also methods capable to integrate the different roles of various parts of society, from technical experts (consultants and academia), politicians or decision-makers to the general public. Beyond the integration of stakeholders and interest groups, integration must seek consideration of legislative frameworks in place or under construction as outlines (i.e. Soil Framework Directive, Coastal Zone Management, Air etc.).

Integrated analysis and management

Spatial planning is considered *per se* an inclusive discipline aiming at the coordination of practices and policies affecting spatial organization, addressing population demands, resources management and environment, and infrastructures under a single research field. Despite progress made so far in the field there is still a need to value the interaction between two aspects: sustainability and planning. Given these premises, specific R&I topics were identified contributing to integrated analysis and integrated management, as follows: life cycle thinking applied to land use, ecological footprint and its relationship to bio-capacity, integrated approach to water, energy, soil, ecosystems and territory, mal-adaptation and its relation to the trinomial water-energy-territory, better understanding the impacts of simultaneous and multiples stressors, new technologies development and the territorial model, positive externalities of agroforestry uses, innovative territorial models, multifunctional approach to land uses and poli-functionality in the urban context, strengthen the relation between spatial planning and urbanism, adaptation to climate change, relationship between climate change and tourism, soil quality in relation to health and quality of life, green infrastructure, innovative and alternative metrics.

Specific technologies

Specific technologies were identified in support of the challenges and R&I priorities and themes mentioned above. These represent on the one hand the most relevant Spanish expertise but they also reveal great development opportunities. These technologies were grouped under the following headings:

- **Soft technologies hybridizing with traditional engineering -i.e. Implementation of nature-based solutions mainstreamed into spatial planning; ecosystem based adaptation actions to climate change)**
- **ICT knowledge applied to the development of early warning systems:** need of improving methodologies in land use planning and management with better consideration of risk parameters, i.e. vulnerability and risk due to impacts of climate change, floods, fire, and landslides
- **Water technologies:** Capture and storage of water from tillage and conservation, Water productivity and reducing water footprint impact, i.e.ICT applied to precision irrigation, deficit irrigation and wastewater reclamation, land use under a semi-arid or arid conditions, genetic adaptation of crops to increase productivity-and adapt to the availability of water, towards food security
- **Energy technologies:** Distributed energy generation and consumption/use, offshore wind power generation, and marine energy, potentials in terms of complementing installed capacities on land and reduce land needs for energy generation.

In relation to science policy interface in the Spanish context, the NKS highlighted that the interrelation between the 2 spheres is rather weak and if ever existing does seem not to have the impact that could be expected. Poor transposition of science outcomes into policy making or the non-alignment of R&I programs with the needs of researchers or end-users (i.e. industry, citizens, practitioners etc.) are examples of such weaknesses. Regardless to the specific bottlenecks for better interrelation between policy and science it is believed the interplay and communications means between all key actors, namely policy makers, universities, R&I / RTO centres, practitioners, private sector, NGOs and also citizens should be improved and incentivised at multiple levels. Improving the interrelation between policy and science would require the development of specific instruments for exchanging and communicating, setting priorities for R&I, evaluating R&I outcomes but also specific financial and human resources dedicated to develop solutions that would respond to the expectations of both communities.

Despite rather large experience with R&I funding mechanisms reported by NKS, there is a shared view on the need for: greater simplification of R&I procedures, especially in the European context (i.e. less emphasis and focus on administrative specifications and requirements and more focus on R&I value) and better visibility in terms of funding opportunities (i.e. mapping of funding opportunities). In terms of expectations, it is generally believed improved impacts of R&I funding could be achieved if R&I demand would be better assessed from start, meaning adequate instruments for information collection and transfer are urgently needed. This would imply the creation of specific instruments supporting the involvement of the private sector into R&I funding as it is believed R&I outcomes would find their way to markets more efficiently. All in all, independently of the development of new funding instruments, better governance systems based on improved integration of funding institutions and programs (horizontal integration) and organizational level (from EU to regional scale, i.e. vertical integration) are required.

2.1.2 Spanish version

Como resultado de las entrevistas y debates realizados con los NKS españoles, existe un consenso en torno a 4 de los retos de la sociedad de la UE sugeridas, que han sido reconocidos como particularmente relevantes en el contexto de la SRA de INSPIRATION, a pesar de que las prioridades pueden variar mucho en función de los intereses de las organizaciones, es decir, campos temáticos.

Estos retos son, sin un orden de prioridad, los siguientes:

- La seguridad alimentaria
- Suministro seguro de agua potable
- Reducir el consumo de materia prima y de recursos, asegurar el uso eficiente de los recursos naturales;
- Contribuir a la mitigación del cambio climático y la adaptación de la sociedad; (mártices se pueden encontrar en el sentido de que algunos NKS pueden dar prioridad a la mitigación, otros a la adaptación). Se comenta que la adaptación puede implicar mayores necesidades de I+D que la mitigación.

Más allá de las prioridades mencionadas anteriormente, los NKS también han hecho hincapié en la necesidad de considerar otros retos de la sociedad que no se reflejaron de manera explícita en los retos sociales de la UE. Estos retos se podrían resumir de la siguiente manera:

- Protección de la biodiversidad y los servicios de los ecosistemas, para contribuir a un medio ambiente sano y a la resiliencia
- Potenciación de la sociedad y co-responsabilidad en cuestiones tales como la conservación y la gestión de suelos y la ordenación del territorio.
- Relación más equilibrada y equitativa entre las realidades rurales y urbanas, hacia la mejora de la cohesión y la reducción de las desigualdades socio-económicas.
- Una nueva cultura del territorio que englobe, además de lo anterior, estructuras innovadoras de gobernanza, nuevos modelos de democracia, una conciencia global y la planificación participativa. Se estima estas innovaciones resultaría en una planificación y gestión territorial más sostenible.
- Planificación prospectiva (anticipación) como un medio para evitar problemas en lugar de tratar problemas, especialmente en un mundo con frágil equilibrio e inestabilidad
- Aplicación del principio "quien contamina, paga": importancia de tener en cuenta factores externos negativos y positivos, sino también planificar y diseñar los procedimientos para la evaluación y la imputación a los que generan externalidades.

Conscientes de las ventajas competitivas de España en sectores específicos (i.e. reservas de la biosfera, parques nacionales, técnicas de gestión del agua en los sectores agrícolas y huertos en condiciones semi áridas) debido a sus especificidades regionales y dispuestos a mantener su liderazgo como base para la generación de riqueza y para la capacidad de recuperación en Europa, los NKS españoles identificaron una serie de temas específicos bajo prioridades de I+D alineados con los temas de INSPIRATION. Estos temas se asociaron en 4 grupos principales bajo los cuales se pudieron formular necesidades específicas de I+D.

Innovación en la comunicación de la ciencia y concienciación

Dada la complejidad del sistema suelo-agua-sedimento y su integración dentro de la ordenación del territorio, se necesitan medios innovadores y mejorados para la difusión del conocimiento entre los actores clave de la cadena de valor de la I+D, i.e. decisores, científicos y ciudadanos. Esto implica el desarrollo de métodos y herramientas de difusión innovadores así como instrumentos de comunicación adaptados, por ejemplo, en la comunicación del riesgo y la incertidumbre, con transparencia y democracia, con el fin de lograr la asimilación efectiva de los resultados de la I+D por las partes interesadas. Teniendo en cuenta el hecho de que en España más del 90% de las empresas son pymes parece fundamental la adaptación del sistema de I+D a dicha realidad, con la creación de los incentivos y estructuras de apoyo necesarios.

Nueva gobernanza, nuevos instrumentos y mecanismos de gestión

Se estima necesaria I+D en procedimientos de toma de decisiones abiertos y apoderamiento social. La I+D debería explorar formas nuevas o mejoradas para lograr la participación real de la sociedad en la toma de decisiones (incluidos los círculos académicos, el público en general, ONG, expertos, profesionales y otros actores con interés en la gestión de suelos y la gestión de recursos).

Es probable que sistemas de toma de decisiones abiertos exigieran una mejora de las estructuras de gobernanza y los mecanismos de gestión existentes. Por lo tanto, se estima necesaria investigación sobre estructuras innovadoras de gobernanza, buscando la coherencia entre los conceptos, enfoques y políticas, y buscando también métodos capaces de integrar las diferentes funciones de los diversos sectores de la sociedad, desde expertos técnicos (consultores y académicos), políticos o decisores hasta el público en general. Más allá de la integración de los actores y grupos de interés, la integración debe buscar la consideración de los marcos legislativos vigentes o en construcción (i.e. Directiva Marco de Suelo, gestión de zonas costeras, Aire, etc.).

Análisis y gestión integrada

La ordenación del territorio se define por sí como una disciplina integradora con el objetivo de coordinar prácticas y políticas que afectan a la organización espacial, frente a las demandas de la población, la gestión de los recursos y el medio ambiente, las infraestructuras y bajo un único campo de investigación. A pesar de los progresos realizados hasta la fecha en el campo todavía hay una necesidad de valorar la interacción entre dos aspectos: la sostenibilidad y la planificación. Teniendo en cuenta estas premisas, temas específicos de I+D capaces de contribuir a la gestión y el análisis integrado se identificaron bajo los títulos siguientes: enfoque de ciclo de vida aplicado al uso del suelo; huella ecológica y su relación con bio-capacidad; enfoque integrado para la gestión del agua, la energía, el suelo, los ecosistemas y el territorio; mal-adaptación y su relación con el trinomio agua-energía-territorio; comprender mejor los efectos simultáneos de estresores múltiples en suelos; las nuevas tecnologías y sus impactos en el modelo territorial; externalidades positivas derivadas de usos agroforestales; modelos territoriales innovadores; enfoque multifuncional de usos del suelo y poli-funcionalidad en el contexto urbano; fortalecer la relación entre la ordenación del territorio y el urbanismo; adaptación al cambio climático; investigar la relación entre el cambio climático y el turismo; entender la relación entre la calidad del suelo, la salud y la calidad de vida; infraestructuras verdes; métricas alternativas e innovadoras.

Tecnologías específicas

Se identificaron tecnologías específicas en apoyo a los retos, prioridades y temas de I+D mencionados anteriormente. Por un lado estas tecnologías representan la experiencia española más relevante y por otro lado revelan grandes oportunidades de desarrollo. Las tecnologías se agruparon bajo los siguientes epígrafes:

- **Tecnologías soft hibridándose con ingeniería tradicional** -i.e. implementación de soluciones basadas en la naturaleza incorporadas en la planificación espacial; acciones de adaptación al cambio climático basadas en los ecosistemas
- **TICs aplicadas al desarrollo de sistemas de alerta temprana**: necesidad de mejorar las metodologías de planificación y gestión del uso del suelo con una mejor consideración de los parámetros de riesgo, i.e. vulnerabilidad y riesgo debido a los impactos del cambio climático, inundaciones, incendios y derrumbes
- **Tecnologías del agua**: Captura y almacenamiento de agua de cultivos y conservación, productividad del agua y reducción de la huella hídrica, i.e. TICs aplicadas al riego de precisión, riego deficitario y recuperación de aguas residuales, gestión del uso del suelo bajo condiciones semiáridas o áridas, adaptación genética de cultivos para aumentar la productividad y adaptarse a la disponibilidad de agua, seguridad alimentaria
- **Tecnologías de energía**: generación y consumo / uso distribuido de energía, generación de energía eólica en alta mar, energía marina, posibilidades de complementar las capacidades instaladas en tierra y reducir las necesidades de suelo para la generación de energía.

En relación con la interfaz política-ciencia en el contexto español, los NKS destacaron que la interrelación entre las 2 esferas es más bien débil y parece no tener el impacto esperado. La mala transposición de los resultados de la ciencia en la formulación de políticas o la no alineación de los programas de I+D con las necesidades reales de los investigadores o usuarios finales (i.e. industria, ciudadanos, profesionales, etc.) son algunos ejemplos de tales debilidades. Independientemente de los cuellos de botella específicos para una mejor interrelación entre política ciencia se estima que los medios para la interacción y comunicación entre todos los actores clave, i.e. políticos, universidades, centros de I+D y centros tecnológicos, profesionales, el sector privado, las ONG y los ciudadanos deben ser mejorados e incentivados en múltiples niveles. La mejora de la interrelación entre política y ciencia requeriría el desarrollo de instrumentos específicos para el intercambio y la comunicación, el establecimiento de prioridades para la investigación y la innovación, nuevos modelos de evaluación de los resultados de la I+D y recursos financieros y humanos específicos dedicados al desarrollo de soluciones que respondan a las expectativas de ambas partes.

En base a la extensa experiencia con diversos mecanismos y programas de financiación por gran parte de los NKS, existe una visión compartida sobre la necesidad de una mayor simplificación de los procedimientos de participación, especialmente en el contexto europeo. Se espera menos énfasis y enfoque en las especificaciones y requisitos administrativos y mayor enfoque en el valor añadido de la I+D. En cuanto a expectativas, se estima generalmente que los impactos de I+D podrían ser mejorados si la demanda de I+D fuera evaluada de forma más precisa desde principio. Eso demuestra que se necesitan instrumentos adecuados para la recolección y transferencia de información. Estos desarrollos implican la creación de instrumentos específicos de participación del sector privado en la financiación de la I+D ya que se cree que de esta forma los resultados de la I+D llegarían a los mercados de manera más eficiente. Independientemente del desarrollo de nuevos instrumentos de financiación, se necesitan mejores sistemas de gobernanza basados en una mejor integración de las instituciones y de los programas de financiación (integración horizontal) y de los diferentes niveles de organización (desde la UE hasta la escala regional, es decir, la integración vertical).

2.2 Methodology followed

This national report (i.e. INSPIRATION deliverable 2.5) reports the information collated for Spain. The information was collated in accordance with INSPIRATION D2.3 “Template for national information collation”. In Spain, 20 NKS were interviewed, though in total 33 potential NKS were identified and contacted. For lack of specific interest, lack of availability or absence of any feedback, 13 organizations did finally not participate in this stage of data collection through interviews. A list of these 13 organizations is given in Annex Ia. In January 2016 a national workshop with NKS was held in Madrid in order to present results of collated information and jointly elaborate contributions to D2.5 for Spain. The agenda is provided in Annex IV. In total, 16 NKS had initially confirmed assistance for workshop but due to last minute agenda obligations finally 11 NKS attended the workshop. After the workshop a draft D2.5 report was sent to all 20 interviewed NKS for them to review it and send their comments. All in all, 6 NKS gave feedback (positive, giving approval to the draft document) and send some minor comments to be included in the final D2.5 draft version. Details on NKS are provided in Annex I. The desk study was based on documents as suggested by NKS. These are listed in Annex II.

2.3 Research and Innovation (R&I) needs

2.3.1 Societal challenges and needs

As expected, the priorities and issues of interest, related to the suggested societal challenges⁵ vary greatly depending on the NKS background, i.e. professional activity, field of expertise, etc. However, it seems there would be a consensus on 4 societal challenges which have been recognized by the Spanish NKS as the most relevant ones in the context of this SRA:

These challenges are, without an order of priority, the following:

- Food security and safety
- Secure supplies of safe drinking water
- Reduce raw material and resource consumption, Ensure efficient use of natural resources;
- Contribute to climate change mitigation and societal adaptation; (nuances can be found in the sense that some NKS may prioritize mitigation, others adaptation). It is commented that adaptation may entail major needs of RTD than mitigation

Beyond the above mentioned priorities, the Spanish NKS have also emphasised the need to consider other societal challenges that were not explicitly reflected in the suggested ones. These challenges could be summarized as follows:

- Protection of biodiversity and ecosystem services, to contribute to healthy environment and resilience
- Society empowerment and co-responsibility in issues such as soil conservation, land management, and spatial planning.
- More balanced and equitable relation between rural and urban realities, towards improvement of cohesion and reduction of socio-economic inequities.
- New culture of territory which would englobe, on top of the above, innovative governance structures and democracy models, global awareness, and participatory planning, etc, resulting in a more sustainable territorial planning and management.
- Prospective planning (anticipation) as a mean to prevent rather than cure problems, especially in a world with fragile balance and instability
- Applying the “polluter’s pays” principle: importance of taking into account positive and negative externalities but also plan and design the procedures for assessment, evaluation and imputation to those who generate externalities.

⁵ Societal Challenges as presented in the EU policy priorities of the Europe 2020 strategy

2.3.2 Topics / research needs to include in the SRA

Contextualizing research needs from the Spanish perspective

Spain is a pioneering example of a successful establishment of National Parks and Biosphere Reserves (being the 2nd country in the world with more biosphere reserves) and their involvement in climate change.

Spain is internationally recognized as a front runner in the development and implementation of new technologies in the fields of water management (i.e. reverse osmosis processes, water capture and storage from tillage and conservation, deficit irrigation, integrated water resource management (IWRM), land use in semiarid regime); this expertise finds its roots in the particularly hard climatic semiarid conditions Spain is submitted and the water demand related to its traditional strong agricultural and market gardening sectors. We believe such context makes Spain particularly interested maintaining such a leadership through sustained focused R&I especially under the growing threats of global warming and climate change. As overarching and transversal aim, it is considered as of high priority seeking territorial resilient systems facing global uncertainty (i.e. economic, social, environmental and particularly global warming). Other sectors in which Spain is frontrunner are: alternative energies (i.e. smart-grids, wind power generation, offshore/ marine energy, and photovoltaic solar energy) and high-speed rail transportation.

That is why it is utterly important to strengthen efforts in RTD on these sectors in which Spain is already well positioned, also to value the advances in specific technologies and to exploit the regional specificities and assets in southern EU (Barcelona Convention), so Spain could contribute to the increase of the productivity and resilience of Europe as a whole.

Two ideas were repetitively highlighted, during the interviews, and also during the workshop, as overarching issues to be added as backbones in the SRA:

- The consideration of soil as a limited resource and so, a key element to be protected and its conservation promoted. It is argued that soil is the forgotten part of natural sciences. Society is still lacking awareness about its utter relevance for enabling live (plants, animals, humans), and sustaining economy.
- The consideration of energy and its close link with water, soil and land management. In particular it has been argued that water availability, is highly dependent on energy. The technology for desalination or reuse of waste water for instance, is ready for market uptake already. However, an integrated approach and better understanding of this binomial is still required. One particular NKS highlighted that. “The earth is not lacking water; the problem is that there is too much salt”.

Having in mind the societal challenges referred in the previous section, the major topics and research needs identified by the Spanish NKS are described below. They have been structured hierarchically as agreed during the workshop, under 4 spheres (hereafter labelled with ES#), from the more general topics to a more specific and problem- oriented research needs.

ES-1. Innovation in science communication and awareness

Decision makers and stakeholders from different sectors of economy and society, need to be aware of the reality of the problems in order to make responsible and effective decisions (i.e. resources at risk, risk due to degraded/contaminated land, impacts due to depletion of natural resources, biodiversity loss, dealing with uncertainty, etc...).

Specific research questions

- There is a need for developing culture of information dissemination from and towards decision makers, scientists and citizens so that awareness about issues of concern is facilitated. Such development would need the design of corresponding instruments (i.e. ICT, forums etc.) to enable such multidirectional and simultaneous dissemination and awareness rising.
- There is a need for research on innovative methods and tools for knowledge diffusion and tailored communication instruments for risk and uncertainty communication, with transparency and in democracy, to enable effective assimilation and empowerment.
- This implies the development of instruments *ad hoc* for different kind of actors and stakeholders, from policy and decision makers to general public and citizens. Here is remarkably important to incorporate SMEs in the RTD system, particularly in countries such as Spain with a highly specialized productive fabric and small and medium size enterprises.

Why: Better informed stakeholders and actors at all levels, which would enable supporting sound decision making (i.e. in participative processes) and avoid possible conflicts in the course of projects.

Overarching theme INSPIRATION: we estimate this issue is transversal across the INSPIRATION themes of the conceptual model

ES-2. New governance, instruments and management mechanisms

There is still perceived the need for research on new governance structures, finding coherence between concepts, approaches and policies, and finding also methods capable to integrate the different roles of various parts of society, from technical experts (consultants and academia), politicians or decision-makers to the general public. Beyond the integration of stakeholders and interest groups, integration must seek consideration of legislative frameworks in place or under construction as outlines; i.e. Soil Framework Directive, Coastal Zone Management, Air etc.).

Although, there are a number of successful experiences, public participation is still a pending issue in the Spanish context, in particular in relation with spatial planning and land use management.

Specific research questions:

- There is a need for research on inclusive decision making and social empowerment, exploring new or improved ways to achieve real participation of society in the decision including (academia, general public, NGO, experts, practitioners and whatever other actor with interest in land use and resource management).

Why: Research with respect to governance (including multi-level and multistakeholder approach to decision making and public participation) is seen crucial towards the efficiency in the provision of services, specially with regard to common/shared needs and services from micro-municipalities and for better managing land use conflicts.

Overarching theme INSPIRATION: we estimate this issue is transversal across the INSPIRATION themes of the conceptual model

ES-3. Integrated analysis and management

There is a general consensus on the importance of focusing great RTD efforts on understanding “state of the art” or “initial diagnostic / starting point” of a given issue/problem and its continuous update (i.e. soil, water, biodiversity, ecosystem health etc.), considering also the scale of assessment in every single concept, method, approach, process, etc. Only when the initial diagnostic is solid, may the correct decisions been taken and the impacts been measured and understood.

Spatial planning is considered *per se* an inclusive discipline aiming at the coordination of practices and policies affecting spatial organization, addressing population demands, resources management and environment, and infrastructures under a single research field. Spatial planning is seen as a key element for decarbonization and dematerialization, enabling reduced consumption of energy and natural resources and allowing the advance of society towards a territory and more sustainable way of life.

However, there is still a need to value the interaction between two aspects: sustainability and planning.

Integrated analysis and integrated management is required. Research in this area is linked mainly to the competences associated with the public sector and the following research topics have been identified:

ES-3.1: Life cycle thinking applied to land use.

It relates to the efficient use of resources, i.e. the consideration of the 4Rs concept (reduce, reuse, recover, recycle) to non-marketable products such as land, and minimizing generation of waste and emissions).

- Need to develop a holistic approach in soil remediation and regeneration with an integral vision of all affected and interrelated compartments, (i.e. consideration of water, groundwater, bedrock, soil use, ecosystems)
- Interim use of brownfields needs better risk assessment and adapted regulation – need from municipalities – efficient use of soils, recycling of sites and brownfields, agile regulation and security for users
- Life cycle thinking cradle to cradle in the field of brownfield and contaminated land regeneration. Need for integral project planning taking into account wastes, end of life, risks, energy, landscape – Develop indicators for selection of BATNEEC techniques
- Assess opportunities for implementing soft re-use techniques (in the Spanish context there is a specific opportunity for valorizing bio-waste (among which compost) produced in excess)

Why: Land-use needs to be understood as a process with inputs and outputs. Land-use must be made more sustainable form a perspective of LCA thinking and taking long term developments into consideration

Overarching theme INSPIRATION: we estimate these issues above concern Demand, exploitation of natural capital

ES-3.2: Ecological footprint and its relationship to bio-capacity and especially its derivatives:

R&I topics

- Develop the concept of water footprint and implications on the types of crops to be seeded,
- Develop framework for linking footprint and biodiversity, i.e. footprints as a mean to measure externalities of biodiversity
- urban footprint unbound to population growth.

These issues are also closely linked to the disclosure and governance.

Overarching theme INSPIRATION: we estimate the issues above concern net-impacts,

ES-3.3: Integrated approach to water, energy, soil, ecosystems and territory.

This has been already highlighted as a backbone to be incorporated into the SRA.

R&I topics

- Need to improve the knowledge about water resources' fluctuations in relation to seasons, climate change, land uses and consumption from different sectors; i.e. agriculture, industry, services and homes
- Decentralized generation and use of alternative energy

Overarching theme INSPIRATION: we estimate these issues concern Natural Capital

ES-3.4: Mal-adaptation and its relation to the trinomial water-energy-territory.

R&I topics

- A holistic approach is necessary, to have the entire lifecycle of a particular action which could have unwanted derived negative impacts. This could be illustrated for instance in the case of water desalination and the associated increase of energy consumption and on carbon emissions and its contribution to climate change.

ES-3.5: Better understanding the impacts of simultaneous and multiples stressors

(i.e. climate change, contamination, flood, drought, salinization, soil sealing etc.) on ecosystem services (special emphasis on soil ecosystem services)- objective is to improve risk assessment and management practices

R&I topics

- Assessment of multiple stressors on soil systems. Degradation of soils occurs rapidly, we need support for a better design of prevention and response strategies. In the field of environmental and especially soil ecosystem impacts there is yet not much knowledge about the understanding and evaluation of effects of multiple stressors or sources of perturbation, their interactions and interdependencies and their overall impact on biodiversity, functions of ecosystems and the resilience of these against multiple and simultaneous stressors. Generally impacts are assessed for a specific perturbation (i.e. contamination) but not for the overall impact of multiple sources of perturbation

- (i.e. simultaneous effects of contamination, drought, compaction, defertilization etc.).
- Linked with the above, there is a need for developing multiple (i.e. hybride) risk assessment methods as support for better management of soil resources and better design and prioritization of corrective actions
- Resilience capacities of soil systems need to be better understood and evaluated in order to integrate natural responses as part of the solution

Overarching theme INSPIRATION: we estimate the issues above concern net-impacts

ES-3.6: New technologies development and the territorial model:

R&I topics

- Need of RTD to understand and explore the potentialities of new technologies development and their impact on the territorial model: associated to demographic changes and migratory processes, to urban- rural relationships and mobility.

Overarching theme INSPIRATION: we estimate the issues above concern Land management

ES-3.7: Positive externalities of agroforestry uses.

R&I topics

- It is important to investigate on the potential impacts of the extensive land uses and practices on the availability of resources (i.e. water, environmental services, etc.) at regional level and its economic valuation in relation to climate change adaptation and water cycle management.
- Need for developing new agricultural models and practices environmentally friendly and capable of limiting impacts like erosion, salinization, contamination etc.).
- From a more territorial equilibrium perspective, need to investigate and assess the structuring impact of rural activities and rural world
- Need for developing knowledge about the impacts of forestry sector on water resources – Need to develop good management practices in forestry sector for creating positive externalities on water resources
- Need for RTD to set monitoring strategies to better understand the influence of land management on the continental hydrological cycle, and therefore on the generation and availability of water resources of sufficient quality and quantity – special focus could be directed on better managing areas of land where river basins are recharged in water

Overarching theme INSPIRATION: we estimate these issues concern net-impacts

ES-3.8: Innovative territorial models.

Some concepts and approaches could be further explored in order to find new territorial models. These concepts and approaches are not new, but they require further research to be applied to the new challenges. i.e Integrated Coastal Management, Landscape analysis and planning, living areas (population and labour catchment areas), agro-ecology and urban agriculture, among others.

R&I topics

- In particular landscape planning and management is an ambitious concept. Considering all its components (diagnosis, evaluation, planning, and management, with a social, environmental, economic, institutional perspective) and its integrated approach to territory, is a topic/ research area, capable to enclose/encompass and cope with most of the EU societal challenges. The European Landscape Convention is the reference framework at EU level. At regional level, there is a wide range of applied research on landscape planning although complementary research is still needed, particularly the linkages with management and the design of adequate management instruments and definition of determinations.
- Integrated approach to food sovereignty and the role of urban and peri-urban agriculture with implications in resources management soil-land-water and in societal challenges. From a whole range of disciplines— geography, agronomy, spatial planning, urbanism, landscape design, social sciences.
- Development of more comprehensive approaches for restoring ecosystems (estuaries, coastal) development of common indicators (or harmonized) for estuaries of a geographical area – this would entail the development of methods for evaluating the effects of global change (climate change, invasive species, air pollution) on the ecosystems of coastal areas, estuaries.

Overarching theme INSPIRATION: we estimate these issues concern Land management

ES-3.9: Multifunctional approach to land uses and poli-functionality in the urban context.

R&I topics

- It relates to circular economy in the sense that it aims at the optimization of land uses and urban processes, avoiding zoning and in favour of multi- and poli-functionality.
- This also relates to local agro-food policies and spatial/ and urban policies that include and reflect the multifunctional uses of land (i.e. urban food production) and have specific actions and resources to make it operational
- It implies the empowerment and utilization of public spaces and abandoned or disused spaces, in a multifunctional way.
- It requires the **consideration of public space as research topic in itself**, in the long term, being a community space of general interest

ES-3.10: Strengthen the relation between spatial planning and urbanism.

R&I topics

- There is need to investigate the relation among the strategic perspective at regional level and urbanism (zoning) at the local level.

Overarching theme INSPIRATION: we estimate these issues concern Land management

ES-3.11: Adaptation to climate change

To better inform and support the development and implementation of adaptation policies and related action programs at international, European and Member State level. It is well known that the local effects of climate change and the costs and benefits of adaptation vary greatly. Policy makers need to better integrate strategies for dealing with climate change into their development plans, rather than leaving them isolated as stand-alone policies and projects.

R&I topics

- Formulate criteria on mitigation and adaptation for its integration y spatial planning Hence, improve capacities for assessing vulnerability of specific systems, i.e. water resources, coastal zones, marine resources and ecosystems, terrestrial ecosystems and urban areas to climate change in relation with climate scenarios and support decision making (i.e. for example in the area of spatial planning)
- Investigate the links between climate change and the formation, depletion and exploitation of natural reserves of biotic and abiotic resources
- Understand better the role of ecosystem services as both mitigation (i.e. carbon uptake and storage) and adaptation (i.e. nature based solutions as measures for storm and flood regulation, impacts on water supply and food production) means.

ES-3.12: Relationship between climate change and tourism:

R&I topics

- This is a critical issue in coastal areas in particular and more research is required in terms of adaptation (beach defences, adaptation in residential areas)

Overarching theme INSPIRATION: we estimate these issues concern Land management

ES-3.13: Soil quality in relation to health and quality of life,

Must be explored.- This is particularly relevant when considering the close co-existence of people and degraded/contaminated land in highly populated and industrialized areas.

R&I topics

- Better understanding of the cause-effect relationship between soil degradation and health/quality of life would enable decision makers to manage land with more security on short medium and long term. Clear understanding and low uncertainty on health impacts would favor swift decisions and flexibility in delivering permits for specific uses on land for limited periods (interim use of land) and (if necessary) under specific servitudes.

Overarching theme INSPIRATION: we estimate these issues concern net-impacts

ES-3.14: Green infrastructure

As an integrated and multilevel concept/ approach and instrument which allows alongside governance, a better land management and resilience.

Overarching theme INSPIRATION: we estimate these issues concern Land management

ES-3.15: Innovative and alternative metrics

R&I topics

- It is true that metrics and evaluation mechanisms exist nowadays, linked to precise rules and legislation as water, soil, and so on. But still there are important gaps in relation to the up-take of research results in decision making and to reduce uncertainty.
- New metrics are required in response to new challenges i.e. climate change adaptation, ecosystem services). There is a need to better understand and monitor the relation between policies and soils uses and the derived impacts for resources, environment (i.e. ecosystem services) and society – i.e. climate change policies
- Need for developing a whole new “value” framework, enabling better balance of benefits vs costs (i.e. valuation of benefits on the long term are difficult to assess and are more often underestimated; i.e. “bank rate”, so that actual costs and benefits do prevail vs future benefits. CBA alike tools should give more weight to health and environment parameters vs economic parameters. Valuation frameworks should also take ethic parameters into account.
- There is a need for further research on the development indicators that better respond to regional specificities. This could be illustrated in the context of the WFD and the assessment of ecological state of water bodies. The regional specificies of certain water bodies and systems may require the development of specific indicators.
- New metrics are required which allows the objective evaluation of intangibles, and qualitative assessment
- Very important to include society in monitoring- land uses, state of soil/water in order to acknowledge the territorial reality.

Overarching theme INSPIRATION: we estimate these issues are transversal accross the INSPIRATION themes of the conceptual model

ES-4. Specific technologies

Specific technologies in relation to/ in support to the key issues mentioned above result in the following R&I topics:

- **Soft technologies hybridizing with traditional engineering** In the context of spatial planning there is an opportunity for research on soft technologies hybridizing with traditional engineering such as Nature-Based Solutions and Ecosystem Based Adaptation actions to climate change. RTD is needed to find out how and under which circumstances the best balance between soft and engineered solutions can be reached.
- **ICT knowledge applied to the development of early warning systems.** It relates to the need of improving methodologies in land use planning and land-use management with better integration/consideration of risk parameters, i.e. vulnerability and risk due to impacts of climate change, floods, fire, landslides, summer tourism peaks, depopulation etc. need of RTD for developing key indicators and associated metrics and threshold values. Need for short-medium and long term indicators depending on risk parameters

Overarching theme INSPIRATION: we estimate these issues concern Land management

- **In the context to water** the following technologies have been identified as the priority ones in need for further research and support:
 - Capture and storage of water from tillage and conservation –
INSPIRATION theme: demand
 - Integrated water resource management-
INSPIRATION theme land management
 - Water productivity and reducing water footprint impact, i.e.ICT applied to precision irrigation, deficit irrigation and wastewater reclamation –
INSPIRATION theme: land management
 - Land use under a semi-arid or arid conditions –
INSPIRATION theme: land management
 - Genetic adaptation of crops to increase productivity-and adapt to the availability of water, towards food security –
INSPIRATION theme: land management
 - Reverted osmosis for water desalination -
INSPIRATION theme: demand
 - Waste water treatment in micro-municipalities- water treatment infrastructures should be designed in such a way as to provide services for multiple municipalities (i.e. shared services) and thus optimize the efficiency of public investments -
INSPIRATION theme: demand
 - Research and development of aquaculture techniques as guarantee of secure food supply -
INSPIRATION theme: demand
 - During flood events, water treatment plants' capacities can be exceeded so that water surplus needs to be directly deviated to water courses without treatment. Procedures and methods for estimating the impacts of such practices on the

environment (i.e. soil, water bodies, biodiversity etc.) need to be developed in order to design possible mitigation and regeneration measures.

INSPIRATION theme: Net-impacts

- **In the context of energy**, there are several technologies in which Spain is a front runner and there is a need for further research and demonstration for the benefit of EU productivity and resilience:
 - Distributed energy generation and consumption/use..-
 - INSPIRATION theme: land management
 - Offshore wind power generation, and marine energy, have great potentials in terms of complementing installed capacities on land and reduce land needs for energy generation –
INSPIRATION theme: land management
 - Photovoltaic energy production

2.3.3 Documents, research agendas and programmes underpinning these topics

At European level

- The European Territorial Strategy (ETE), seems to be nowadays an interesting umbrella with regard to land use and spatial planning issues, which unfortunately has not been able to be transferred into tangible policies
- The European Landscape Convention (ELC) addresses all transversal societal challenges defined by the European Commission.
- Horizon 2020, the EU Framework Programme for Research and Innovation (still lacking an appropriate coverage of environmental as well as demographic and social research themes).
- Water JPI – 2nd SRIA (under review, will be presented in May 2016)
<http://www.waterjpi.eu/>
- FACCE-JPI; <https://www.faccejpi.com/>
- POCTEFA (Program for Territorial Cooperation INTERREG V-A ESPAÑA-FRANCIA-ANDORRA <http://www.poctefa.eu/>)
- SUDOE – the Programme supports regional development in southwestern European countries, giving financial support to transnational projects through the FEDER funds.
<http://www.interreg-sudoe.eu/inicio>
- MED: <http://interreg-med.eu/en/home/>, Partner States from 13 countries are working together in the transnational European Cooperation Programme for the Mediterranean area, The Interreg MED Programme 2014-2020. The transnational setup allows them to tackle challenges beyond national borders, such as the rise of low carbon economy, the protection of natural and cultural resources and the strengthening of innovation.
- European Environmental Agency –
- Territorial Agenda of the European Union 2020,
http://ec.europa.eu/regional_policy/sources/policy/what/territorial-cohesion/territorial_agenda_2020.pdf

At National and Regional levels

- MINECO: National Program of R&I oriented towards Societal Challenges within the State Plan for Technical and Scientific Research 2013-2016. This Program contains several sub-programs. As an example, one of these sub-programs is oriented towards the food quality and security, sustainable agricultural practices, natural resources, marine and maritime research
- INIA: National Institute for Agronomic and Food Research and Technologies. Inside the national fundamental research program, INIA manages the subprogram of fundamental oriented research project in the field of agronomic resources and technologies y coordination with autonomic regions and complementary actions.
- RECUPERA 2020 Initiative: <http://www.recupera2020.csic.es/>, RECUPERA 2020 arises from the joint effort of nearly 40 research groups belonging to 9 CSIC centers located in Andalusia and the CSIC. The project will mobilize five million euros from CSIC, together with the twenty million that will be provided by the Ministry of Economy and Competitiveness, under the formula of a repayable advance of European FEDER funds, making a total of 25 million funding.
- Spanish Strategy for Climate Change and Clean Energy 2007-2020:
http://www.magrama.gob.es/es/cambio-climatico/publicaciones/documentacion/est_cc_energ_limp_tcm7-12479.pdf
- At the level of the Basque country NKS signal the importance of the newly developed PCTI (Plan de Ciencia Tecnología e Innovación 2020, i.e. Plan for Science, Technology and Innovation of the Basque Country 2016-2020).
- Environmental Framework Program 2020,
<http://www.ingurumena.ejgv.euskadi.eus/informacion/programa-marco-ambiental-2020/r49-5832/es/>
- Basque Strategy for Climate Change 2050,
http://www.euskadi.eus/contenidos/plan_programa_proyecto/klima2050/es_def/adjuntos/LineasEstrategicasEconomicasBasicasEVCC.pdf
- Planes de gestión del riesgo de inundación de la Demarcación Hidrográfica del Cantábrico Occidental y de la parte española de la Demarcación Hidrográfica del Cantábrico Oriental. 2016; <https://www.boe.es/buscar/doc.php?id=BOE-A-2016-606>

2.4 Experiences regarding connecting science to policy/practice

2.4.1 Use of knowledge

Scientific knowledge is defined as knowledge produced by scientific methodology. It is also conceived as a “dynamic process” which implies collection of data, analysis, methods but also ways of working, validation and contrasting, sharing, interacting and discussing with others. In relation to sources of scientific knowledge, all options are often considered by interviewed stakeholders. Obviously, knowledge generators may have greater interest in consulting exclusively scientific publications, but other sources are not excluded. Among decision makers and end-users, a wide range of sources are used.

The use made of scientific knowledge varies greatly depending on the nature of the NKS; i.e. it could be used for incrementing foreground needed to support further developments and new generation of knowledge, helping providing responses to specific societal questions and challenges. Further, scientific knowledge is used for the development of communication materials (to experts and non-expert public), technical guidance, legislation and eventually policies and other instruments (i.e. establishing limits/thresholds, design taxation systems etc.).

In relation to the extent to which state of the art scientific research is used for the formulation of policies, answers may vary greatly, depending on the perspective of the interviewed NKS, hence, if the NKS rather represents a knowledge producer or user/financer. From the perspective of knowledge producers it is generally believed the uptake of knowledge and its valorisation for policy making is quite weak and it is estimated there is a gap to be addressed. It is estimated improving the up-take of scientific knowledge for policy making would require the involvement of all key actors, namely policy makers, universities, RTD centres, practitioners, private sector, NGOs and also citizens. Despite this rather negative valuation of science transfer for policy making, it is estimated that most transfer and use of scientific knowledge has been made in rather conservative contexts, i.e. in which risks for end-users were rather small. This is believed is due to the nature of the Spanish productive tissue, generally composed of SMEs not really inclined in taking risks.

Other NKS highlighted some successful experiences in the use of scientific knowledge in the areas of soil (i.e. development of a contaminated soil law at national level through the Law 22/2011 of July 28th, on waste and contaminated soil and at Regional level (i.e. Basque Country through the Law 4/2015, of June 25th, for the prevention and correction of soil contamination). To some extend spatial planning policies have benefited from scientific knowledge valorisation (example of the Territorial Observatory of Navarra). However, despite the fact that scientific knowledge has been used to develop certain policies in soils, it has also been argued that Spain lacks strategic and holistic approaches for example to address the issue of contaminated land management (or more generally sustainable land use planning), thus giving non-scientific drivers (i.e. speculative – economic drivers, politics etc.) more opportunities to influence policy making. As a result, unsustainable land-use practices have been developed in the past. The sector of renewable energy is taken as example of the Spanish context to describe how little the scientific knowledge has been used for defining policies. The lack of scientific fundaments for the definition of policies seems to highlight a great gap in linkages between the policy makers and the scientific community in general.

2.4.2 Possibilities to set the agenda

Among the interviewed NKS, there seems to be a balanced representation of organizations that have the possibility to influence scientific research policies/agendas and those which have less opportunity to do so. Occasionally the different grade of influence may be related to the geographic scale; hence a regional organization may essentially influence RTD agendas at local level and will not have great influence at national level. Further, it has also been reported that the participation process for the elaboration of RTD agendas and programmes has not always been transparent from beginning to the end, meaning that final decisions are taken without having the opportunity to participate in that phase. This later point means that the grade of influence may also differ along the process, i.e. being strong at the beginning of the process (i.e. through consultation) and rather weak at the end, i.e. little opportunity to be involved in the decision making.

Similarly to the above capacity to influence RTD agendas, the global perspective of NKS is that RTD gaps still exist, meaning that policies/agendas do only partly respond to needs. Besides the fact that some NKS estimate this is partly due to effects of temporal trends in RTD priorities, it is also interpreted as the result of communication gap between policy makers on one side and RTD end-users / knowledge generator communities on the other side, i.e. a “system failure” which impedes RTD demands to reach policy makers. Possible reasons for such a valuation are manifold. Some of these have been gathered during interviews and have been commented during the national workshop. The workshop has been the occasion for NFP and NKS to synthetize major barriers and drivers for better synergy between RTD needs and RTD agendas/policies.

Given the complexity and variety of issues (i.e. drivers and barriers) identified among NKS, a consensus was found to organize these under 4 key items directly linked with the different steps of an RTD project life cycle. We believe these items could also fit to the level of RTD agenda/programmes as these are very similar:

1. Establishment of project's specifications – defining the call (i.e. what issues need to be solved?)

Issue of concern – improvement suggestions

- Call outlines are not aligned with end-users' specific needs. End-users should be involved in the whole elaboration process.
- Insufficient means for prospecting RTD needs: Financial resources should be dedicated towards forecast studies in order to better asses end-user needs for RTD
- There is little communication (i.e. transparency) on the definition of calls – means should be developed for media (i.e. also social media?) politics and scientists to meet and communicate on the call development process
- The object of RTD and its use are not always clear – Politics (i.e. policy makers) should explicitly inform about **WHAT** RTD they want to support and **HOW** (for what purpose) they will use the knowledge generated
- Relevance and valuation (i.e. possible impacts in €) of programmes are not assessed before final decision. There would be a need to set a validation step of calls and programmes in which a broad range of key participants could have room to participate.

2. Project development

Issues of concern – improvement suggestions

- Some key stakeholders (i.e. decision makers, end-users, society), are still not taking part in project developments. Means should be created for these stakeholders to be involved in all steps of project development in order to favour transparency and future knowledge transfer
- Projects with demonstration and pilots for testing and optimizing processes are strong communication tools, these should be promoted in RTD projects if possible
- High level consulting services are efficient in terms of impacts as outcomes are responding to very specific demands of RTD from specific “clients”. Such types of project should be more often developed and promoted
- Integrated project approach: regular information milestones with all interest groups (i.e. not only those linked to project contract) at beginning, during development and project closure should be scheduled. This would favour participative processes and make a broader group of stakeholders as part of future possible end-users of generated knowledge

3. Evaluation of outcomes and evaluation of RTD organizations

Issue of concern – improvement suggestions

- The evaluation of project outcomes should undergo a rigorous process so that results are taken as reliable and transparent. More participative processes would be recommended in order to improve transparency and reception among end-users.

4. Communication – Transfer of RTD outcomes to end-users and transfer of RTD needs to policy makers

Issue of concern – improvement suggestions

- RTD outcomes transfer processes and transfer objectives should be integrated in the project's objectives more frequently
- Generally no incentive for RTD centres to dedicate huge resources for transfer of RTD outcomes beyond dissemination through scientific publication. It is estimated specific resources should be dedicated to transfer processes. Further, some NKS have commented the evaluation system of RTD centres may need to be reviewed and adapted in such a way that knowledge transfer activities are more widely incentivised, supported and recognised. It has been commented the academic barrier can hardly be overcome, meaning “non-purely academic” activities are not promoted.
- Experts for knowledge transfer are needed. These experts would be trained for communicating RTD outcomes towards different target groups; i.e. policy and decision makers, different end-users (i.e. industry, interest groups, society etc.)
- RTD on communication is needed (i.e. how to present outcomes of RTD projects). This would include specific issues like communication on uncertainties
- Exchange platforms between politics, scientists and society (in its widest meaning, also including media like TV, radio, newspapers, social networks etc.), networks or groups organized per fields of interest are missing, these should be created as support for dissemination but also as support for assessing specific needs of RTD.

Horizontally to the issues and items discussed during the workshop, it is estimated that **clear responsibilities** in each step of project/programme/agenda setting and evaluation should be established and entail formal consequences if objectives/compromises would not be achieved. It is generally assumed that agreements between science and policy should be relying on stability of RTD policies on the long term, which would in turn enable to build high profile researchers and high level RTD outcomes. While public governance, i.e. knowledge transfer from academia towards end-users in the areas of land use and planning is rather accepted, it seems public-private partnerships could be a mean to improve interventions in areas such as mitigation and adaptation to climate change. The living lab concept is believed to be an adequate “platform” for scientists and politicians to meet and both finetune RTD demands and needs, especially in areas related to land planning.

At the margin of the above discussions and during the interviews with NKS, it has been estimated that there is room for some specific needs to be addressed through fundamental non-oriented research programs. However, specific needs may not be specifically identified in program calls so that the relevance of specific topics must be well formulated (i.e. justified) by the bidder in order to convince evaluators of the needs and benefits of addressing specific topics.

Specific shortcomings in national policies/ agendas have been reported i.e. National Parks, Ministry of Economy and Competitiveness- Secretary of Research, Development and Innovation, INIA-National Institute of Food and Agriculture Research and Technology, where it is estimated resources and topics are directed towards obsolete fields. It has been commented key themes are included in calls or outlines of policies as key words but are barely visible in their implementation: i.e. quality of life, healthy environment, climate change, cohesion, etc. It is believed interest groups (i.e. lobbies) take advantage of the undefined determinations in the policies. The uncontrolled urbanisation processes and unprecedented irresponsible use of resources in the last decades, has been consequence of this blur and lack of definition.

2.4.3 Science – policy – practice

NKS interviewed have experience in the formulation of scientific research questions and in synthesizing scientific knowledge (both 65% of NKS). Almost all NKS (85%) have been involved in some form in activities of knowledge (co-)creation, either as core research organization or as stakeholder (end-user) involved indirectly in the project.

As it has been commented above under section 3.2, the transfer of RTD outcomes to policy sphere and economy is clearly a weakness in the Spanish system, as academic staff is not incentivised to participate in such activities. It is believed the academic system should be more supported to help transferring knowledge towards end-users and policy makers. Science/Communication experts would greatly help to such successful transfer.

In relation to the means for assessing societal impacts of scientific research there seems to be a shared estimation that this is unfortunately very weak in Spain. Although potential social impacts are addressed at the time of elaborating project proposals, these are not assessed systematically afterwards. Some may stress, the absence of impact assessment may be explained by the absence of sound diagnostic of the starting point situation. There are no ex-ante evaluations of social objectives neither are there ex-post social impacts evaluations. Even though it has been commented mechanisms and methodologies for

measuring impacts do exist it is believed political willingness is often lacking to implement these. Punctually it has been commented that existing methods for impact assessment may use indicators that are not of major relevance for citizens or society (i.e. indicators are related to growth and capital).

Nevertheless, besides this general situation, some experiences and indicators of assessment have been mentioned: these refer for example to the monitoring of publications, congress outcomes, spin-off creation, Intellectual Property Right, i.e. patents etc. In some case specific impact assessments have been mentioned, this concerns for example the economic impact of eco-innovation in the Basque Country (Impacto económico de la eco-innovación en Euskadi. Una aproximación cuantitativa, 2014) or the economic impact of the Basque Climate Change Strategy (2014). Even though the focus of the impact assessment was not directly related with INSPIRATION issues, the concept may be transferable.

In relation with existing science-policy-interface references, the analysis is rather negative. Several NKS report on the lack of such platforms and if they are aware about some, these are estimated as insufficient in order to enable efficient dialogue and transfer of needs and objectives in both directions. Hence, stronger platforms with clear structures need to be developed. In the case some experiences could be mentioned, these are for example consisting in working groups organized by ministries and specific departments of ministries, i.e. MINECO (Ministry of Economy and Competitiveness) and CDTI (Centre for Technological Industrial Development), MAGRAMA (Ministry of Agriculture and Environment) for example during the implementation phase of Directives. Working groups can be organised at national and/or at regional level, i.e. for example by URA (Regional Water Agency) for the definition of water management plans.

Despite this rather mitigated perception about the impact of existing exchange forums, at national scale some platforms offer politics and scientists the opportunity to meet and exchange on progress and needs in RTD; i.e. PTEA (Plataforma Técnologica Española del Agua: Spanish Technological Platform for Water: <http://www.plataformaagua.org/>), PLANETA (<http://www.pt-planeta.es/>) about environmental technologies; BIOPLAT (<http://www.bioplat.org/main.html>) about biomass technologies. Other platforms were cited in the areas of rural zones, i.e. plataforma rural (<http://www.plataformarural.org/>), which encompasses the most critical views in the areas of agronomy and ecology, land stewardship platform as new ways for land and water management (<http://custodia-territorio.es/>). One of the NKS refers himself as possible platform between Science and Policy (this has been directly commented by BC3), however, its day to day work reveals this role is yet not completely assumed even though it is recognised such figures are crucially missing in the Spanish landscape.

Some NKs makes reference to instruments aimed at boosting innovation by creating demand for specific innovative solutions from the public sector, i.e. public innovative procurement. Such instruments i.e. linked to a project and hence a place where different stakeholders meet can be seen as a mean of science-policy interface.

2.5 National and transnational funding schemes

2.5.1 Funding schemes and possibilities for research funding

Overall, NKS report about large experience in the participation in funded RTD projects at EU, national and regional scale. References of funding schemes as identified through NKs and desktop work are collated in Annex III.

Current perceived constraints:

- **Complexity of the procedures with regard to participation in funded EU projects:** The NKS highlighted the need for easy the procedures for participating in EU projects so that resources could be invested more in knowledge generation and not that much in administrative tasks.
- **Lack of clear overview on EU funding opportunities:** local authorities as end-users may not always have a clear overview about EU funding opportunities for supporting RTD projects which could be particularly relevant for them. Hence, it was mentioned more information and essentially centralized information about EU and also national financing opportunities would be helpful for local authorities.
- **Underestimation of private funding on RTD:** Drivers for encouraging private enterprises to collaborate with academia have not been sufficiently investigated: Some NKS have commented on success experiences in funding of R & D in cases in which private companies and industry as research drivers have been considered (i.e. creating demand). This means the efficiency of private financing should not be underestimated. It is commented private companies have traditionally been responsible for much of the research that has been conducted at the university. But given a paradoxical situation privately funded research does not account for the academic and scientific curriculum, as would publicly funded research through official calls
- **Lack of research on Science-Policy interface:** So far, no or little funding for science– policy interface has come to light. It seems academic issues are well addressed in RTD calls, however, the development of interface instruments to facilitate the transfer of RTD needs and RTD outcomes is yet not subject of financial support.
- **Private-Public-Partnerships in RTD:** In the context of Spain, PPP financing schemes of R&I may not be valued as an attractive instrument especially for SMEs rather unwilling in taking risks in funding innovation. However, bigger companies like banks, insurances, construction and companies from the energy sector are believed to be more willingly involved in PPP funding schemes.

Solutions/ initiatives/ Suggestions for improvement:

- **Fundamental vs applied research:** It is commented public funding should generally be maintained for fundamental research support whereas for applied research other complementary funding instruments like Innovative Public Procurement should be enhanced with a participation of end-users essentially through time resources rather than money (i.e. co-financing with end-users). The Spanish Technology Platform for Water believes that among other instruments, Public Procurement for Innovation

mechanisms (or early innovative procurement) have capacity to drive innovation in the water sector; a special working group is dedicated to financing instruments (<http://www.plataformaagua.org/index.php/grupos-de-trabajo/grupo-de-trabajo-5>).

- **More strategic design of the funding schemes:** It is believed R&I strategies with perspectives of short to medium term returns should become more attractive to private sector with support of more PPP schemes whereas R&I with longer term returns should essentially be driven by administration and foundations (non-profit organizations) with indirect participation of private sector. It is suggested in the case of short term return a consensus should be found on how distributing benefits among beneficiaries, but with a compromise in returning part of the benefits into R&I funding. In order to simplify the establishment of PPP and trusting such funding schemes will develop further in the future it has been commented Spanish Public Research Organizations (OPI – Organismos Públicos de Investigación) may need some simplification of their structures and greater flexibility in their activities and objectives as those are often valued as complex and conservative.
- **RTD steered by managers and decision makers:** In terms of expectations, many comments from NKS address the need for decision makers and the knowledge generators to have better information on RTD needs from key stakeholders, i.e. end-users such as industry but also the society. This suggests, the financial resources for RTD should be steered by managers/decision makers on those R&I themes responding to real needs of end-user communities as it has been commented too often R&I funding ends up on projects lacking any way out to markets nor giving response to any specific need/demand. Financing programs must be designed in a way to give support to RTD specifically needed by industry and society. Funding programs and research projects in which government (managers, politicians, research institutions etc.), companies (consulting, technology centers, industry etc.) and society participate since the beginning should be promoted. Companies and society should not only be considered as recipients of the results but as actors in knowledge generation. Following trends worldwide on the emergence of alternative funding schemes, i.e. crowdfunding, philanthropy, it is believed such models could represent complementing instruments and a mean to involve society and private sectors on voluntary basis. Eventually such schemes could be incentivized by administration.
- **RTD service provision for specific RTD demand:** It is believed RTD service provision for specific RTD demand would offer better success for knowledge transfer. A solution is believed could be public funding to support customers requesting specific services to research centers. Another solution could be to encourage "high level consulting contracts" in which customers pay directly for research and thus would be interested in the results generated.
- **Cooperation** and willingness to share and collaborate are in the hands of the different stakeholders concerned. It seems to be essentially a problem of culture and political readiness to address issues from a different approach, i.e. more collaborative approach, including participative mechanisms.

- **Boost interaction between academia and politics:** Any ideas / initiative aimed to break the boundaries / barriers (i.e. ideological barriers, cultural, administrative, etc.) between academic and political worlds (also the company) would be useful: hence flexibility in determining indicators of success, of knowledge transfer, of mobility of people i.e. from academia towards industry and vice versa would be needed. The motivation for research institutions to generate impacts on markets is limited by lack of appropriate incentives (i.e. the academic evaluation system does not value). The indicators used to assess R & D follow the same patterns, i.e. they do not promote the coming together of academic and market indicators. Considering these circumstances, financing programs and economic instruments should be developed in order to create incentives for both “worlds” to get closer.
- **Improved RTD financing instruments** It has been commented RTD financing instruments should help to find a better equilibrium between purely market driven indicators and more social driven indicators. Hence, progressively, social sciences and impact indicators need to be developed and implemented; these indicators should reflect the value and importance of this parameter. If social dimension is left over, it is estimated RTD will become purely economically driven, which is believed would be a mistake that could have severe consequences for society.
- **More effective and impartial/fair evaluation process.** In the process of **evaluating** projects, emphasis should be put on the real impact that the project will have on the ground in relation to the defined objectives. On many occasions projects or parts of projects that have no real impact on the issues to be solved are equally financed. Such an assessment should also be made once the project is finished, depending on the results and their application and use by society.
- **Evaluation and control instruments need to be flexible and non-coercive.** The control should be applied especially in achieving the objectives. In relation to evaluation it was also commented that alternatively to projects as recipients of funding, research centers could become directly financed as experiences in the USA have shown ([Michigan Research Council](#)). It is estimated, the funding of research centers would leverage administrative controls as those performed in projects and give research centers a longer term perspective and hence more economic security compared to rather short term project funding schemes. In the area of natural sciences, medium or long term perspective is often required in order to fully understand and monitor impacts of actions and policies.
- **Project presentation in 2 phases should be more generalized;** this would save great resources by the R&I centers and associated partners. Further, some organizations despite their technical qualities are lacking experience in the preparation of EU projects often considered as administratively very heavy; support would be needed for them to prepare EU proposals.

- **Demonstration projects are crucial.** It is estimated added value could be increased through the promotion and dissemination of pilot or demonstration projects which are still much underrepresented in the Spanish context, and so the corresponding funding instruments. It was commented, the outcomes of funding programs (i.e. impacts) should be systematically measured with relevant and transparent indicators. It is suggested the non-compliance with pre-established objectives, should lead implications for program managers and performers of the projects. It is yet not clear what type of incentives should be applied, this would be subject for more debate among key actors. Questionnaire feedback and workshop debates indicated some ideas that could help incentivize public and/or private sector financing RTD and contributing to a better uptake of RTD outcomes in markets:
 - Creation of a bonus-malus system (i.e. taxation?) to which research and technology centers could be subject. This system would be linked to the degree of success of R & D project and the impact of the results on the market (i.e. companies).
 - Promotion of venture capital is also mentioned in the financing of R & D as an incentive to generate more value (i.e. R & D more market-oriented). The knowledge generated (i.e. assets, products) should be accompanied by business plans in the longer term.
 - Fiscal instruments could be developed in order to stimulate private sector investments in RTD
 - Creation of innovative taxes on specific products or services which could be redirected towards the financing of RTD (i.e. taxes on luxury products, high performance vehicles etc..)
 - Structural change of funding programs (i.e. greater involvement of private funds from banks and venture capital) and a cultural change within government and its relationship / partnership with the private sector and civil society is needed.
- **Governance of RTD funding** has been largely debated during interviews and the workshop. It is generally accepted that there is a great need to improve the governance and a need for designing new models. The backbone of governance should target better collaboration between funders, centers of knowledge generation and local administrations and companies. As an example of possible developments, the idea of an inter-regional office that could act to integrate the needs of various local authorities and materialize a demand for R & D was mentioned. Such entities would act as intermediates between the demand side and provider side of RTD. This would serve as driver for R & D economic activity GDP growth and social and economic impacts. Close to this idea, the following initiatives were mentioned during interviews and could serve as examples of drivers for stimulating RTD outcomes transfer to markets

- As an example for illustrating successful experience for knowledge transfer and added value generation, the COPIT program was commented. The COPIT Programme (Cooperation between Industrial and Technology Parks) is an initiative of the Ministry of Industry, Tourism and Trade) has the support of the EOI Foundation, the Association of Science and Technology Parks of Spain (APTE), the Spanish Coordinator Polygons industrial (ECE) and ENISA. The COPIT program aims at articulating a network to promote business cooperation between companies and other institutions that generate technology in the environment of science and technology parks and companies located in industrial estates and clusters members of the Spanish Coordinator of Industrial Estates ECE.
- The concept of Business Improvement District can be an interesting way to facilitate the transfer of knowledge from the generators to users. A BID is a partnership between public and private entities in which the businesses of a defined area pay a bond or increase in their taxes in return for agreed improvements in the area (i.e. adapted legislation, taxation, transfer etc.). In some cases, the transfer of know-how and access to research results are part of the services agreed between the entities that compose them.
- **Promote and enhance researchers' exchange programs** between Spain and EU and the rest of the world. This would favor exchange of knowledge but also some exchange of culture and good practices in technical sphere as well as in governance systems (exchange on what you and how you do things).
- **Creation of fees:** for example associated with “polluter’s pays principle” Fiscal policies could include taxation schemes for certain industrial and economic activities that would pay specific differentiated fees exclusively dedicated to research funding
- **Alignment across policies, moratorium in construction sector:** links between research policies and other policies could be important and should be explored. For instance, immigration and refugees hosting initiatives could be a source of incorporating additional research capacities for certain countries. Another example is that research priorities should be coherently aligned to national structural economic development policies, e.g. avoiding conflicts if funding research in the construction sector when this sector should be losing importance and weight in the Spanish GDP after the economic crisis.

2.5.2 Gaps in financial resources for research

Based on the outcomes of interviews and debates during the workshop, it could be generally accepted that funding resources exist for the majority of R&I areas. Some gaps may exist for the following issues; i.e.:

- Environmental psychology and perception (i.e. developing communication procedures and instruments as well as language for transmitting RTD outcomes to citizens and society. Especially developing knowledge around the perception of environmental problems and its integration into decision making procedures)
- Basic funding is needed for the generation of basic knowledge on soils, which currently is not fancy: this should address cartography, soil properties, hydrological cycle monitoring and other aspects such as erosion and sediment transport. Water resources: source zones where the water enters river basins, i.e. areas of mountains are not analyzed. (ICONA before had more territorial approach to the management of water) river basin management does not exist today because skills are compartmentalized at more local levels.
- efficient use of water in agriculture (water saving)
- from the perspective of regional financing opportunities, all issues not valued as priority in the RIS3 strategy (i.e. often related to natural resource, microbiologic biodiversity in soils)
- R&D&I on landscapes
- Innovation in the evaluation and interpretation (i.e. value for end-users) of RTD results
- The transfer of R&I outcomes and design of innovative instruments for promoting collaboration among key actors of R&I needs special attention and financial support, either through subventions or incentives of different kinds (fiscal advantage, rewards for academia etc...).

In relation with Spanish R&I priorities and key challenges mentioned under section 2.2. above, it is worth mentioning the breach sometimes identified between these priorities and those (maybe more generic) established in some Research and Innovation Strategies for Smart Specialization (RIS3) at national/regional level. Indeed, some NKS have shared the impression that RIS3 strategies may “favor” traditional industrial sectors (i.e. production, also including agriculture and market gardening) as potential key vectors for employment and growth, leaving sometimes those sectors closer to natural sciences, nature conservation, biodiversity and ecosystems etc. aside. As it seems Funding opportunities through FEDER funds will strongly depend on RIS3 priorities set al MS level, there is concern some R&I priorities not directly linked with RIS3 might struggle getting funded through regional and/or FEDER mechanisms.

Poor support from funding communities for integrated approaches is generally interpreted as a structural as well as cultural problem in the Spanish context.

Spatial planning projects that are funded often have a still very sectoral approach. Multidisciplinary and transdisciplinary projects have been marginalized by lack of knowledge and political will to understand the importance and relevance of integrated approaches particularly in the issues addressed by INSPIRATION.

The landscape could be the solution in terms of funding integrated approaches and an answer on how to manage land use, soil -water-sediments system

It is estimated that public funding models and administration organization foster compartmentalization of research in sectors and disciplines, thus impeding transversal and integrative approaches on complex issues. It is estimated that an approach from the perspective of the company or companies that take into account the demands and needs of society would address the investigation from a more transversal and integrated perspective and enable to respond to specific problems. Co-participation of different private and public institutions from different sectors and disciplines would be necessary.

It is believed demand of RTD should be integrated as a request to give support to solve integrated problems. An example of integration comes from Integrated Environmental Permits. In relation to the areas covered by INSPIRATION, it is estimated a more integrated soil-water system approach is missing. Water management is limited to the channels and the area of hydraulic domain. Hence, it is necessary to understand the whole problem from a holistic perspective in order to formulate a holistic problem and associated R&I need. It is suggested technical, social and economic dimensions should be considered.

To address all these dimensions, it would be very helpful to create forums where the scientific community together could have the chance to debate with funding institutions on the RTD priorities and the complexity of the system.

2.6 Other remarks made by interviewees

In general, the NKS appreciate very much this type of consultation as they feel that they are taking part in an ambitious objective which definitely requires the involvement of multiple actors from different fields of expertise and from different countries. The mix of scientific, policy and financial issues addressed is appreciated as these need to be integrated in order to maximize the impacts of the RTD generated at national and international level.

The NKS remarked the importance of contextualizing the RTD in relation to the peculiarities of the spatial planning systems as well as the policy landscape and specific regulation in each country, which could represent a constraint for the realization of certain initiatives. Unlike other EU countries, the land in Spain has a speculative value, recognized by the Land Use Law that any capital gain/added value goes the owner and not to the society, which has and will have an impact when launching any kind of initiative and making the urban procedures so complex.

Finally, the fact that there are not networks for soil monitoring in Spain has been identified as a big gap for designing any ambitious RTD program to enable the measurement of the impact of contamination and human activity.



2.7 Annexes

Annex Ia: NKS interviews in Spain

Date of interview	Organisation	Interview	funder	end user	knowledge provider	Nat.reg.loc. authority	Univ./ research inst	SME /consultant	business & industry	NGO	network	other	soil	sediment	water	land use-management
22-07-15	NEIKER	Dr. Carlos Garbisu			1		1						1	1	1	
01-10-15	IHOBE	Ana Alzola, Ignacio Quintana	1	1		1					1		1	1		
12-11-15	OCT	Dr. Verónica Hernández									1					1
17-11-15	OTN	Dámaso Munárriz	1	1		1										1
27-11-15	IDOM	Anonymous		1						1	1		1		1	1
12/01/16	Bilbao Council	Enrique Rincon		1		1							1			1
18/01/16	CIEMAT	Rocio Millan Gomez			1		1						1	1		
09/12/15	MCRIT	Andreu Ullied		1						1						1
19/01/16	CSIC	Santiago Beguería Portugués			1		1						1	1	1	
15/12/15	CSIC	José Enrique Fernández Luque			1		1						1	1	1	
14/12/15	OECC	Jose Ramon	1		1	1							1	1	1	1

HORIZON2020 CSA INSPIRATION

Deliverable D2.5 –
National reports with a review and synthesis
of the collated information



		Picatoste																
2/12/15	MAGRAMA	Antonio Callaba		1		1								1	1			
18/12/15	SPRILUR	Jose Miguel Artaza		1	1					1				1		1	1	
22/01/16	AZTI	Javier Franco		1			1								1	1	1	
8/01/16	BC3	Ibon Galarraga			1			1						1		1	1	
21/01/16	URA	Iñaki Arrate																
4/12/15	FUNDICOT	Antonio Serrano											1		1		1	1
17/12/15	Independent – Formerly University of Madrid	Domingo Gómez Orea		1	1			1					1	1		1	1	
1/12/15	University of Valencia	Joaquin Farinós Dasí			1			1										1
21/01/16	CEDEX	Fernando Segues			1			1										1

Further contacted organizations

Organization name
Fundación Biodiversidad
Spanish Federation of Municipalities and Provinces (FEMP)
School of Geography University of Granada
Geography Department of the University of Alcala de Henares
Climate research foundation
Government of Andalucia
Government of Galicia - Land planning Department
Government of Navarra
Catalan Landscape Observatory
AGBAR (corporation)
TRAGSATEC
Comunidad de Madrid
Puertos del Estado – Harbours of the State

Annex Ib: NKS questionnaire template

Questionnaire template in Spanish – Answers to questionnaire have been transcript on paper in Spanish language – they are available on request

A. Información entrevistas
<p>País:</p> <p>Nombre de la persona representando INSPIRATION:</p> <p>Fecha de entrevista:</p> <p>Como desea el entrevistado ser citado?: <i>[Anónimo, opinión personal, opinión de la empresa/organización].</i></p>
B. Introducciones
C. Información sobre el NKS
<p>1. Nombre-Apellido:</p> <p>2. Nombre legal de la Organización:</p> <p>3. Cargo/posición en la organización:</p> <p>4. Tipo de organización (múltiples respuestas posibles)</p> <ul style="list-style-type: none"> <input type="radio"/> Autoridad nacional – regional - local <input type="radio"/> Universidad / Centro de Investigación <input type="radio"/> PYME (i.e. < 500 empleados) / consultora <input type="radio"/> Industria <input type="radio"/> ONG <input type="radio"/> Representación de una red <input type="radio"/> Otro - especificar: <p>5. Áreas de expertise (múltiples respuestas posibles): <i>[preguntar por experiencia específica en los diferentes temas]</i></p> <ul style="list-style-type: none"> <input type="radio"/> Suelo <input type="radio"/> Agua <input type="radio"/> Sedimentos <input type="radio"/> Planificación urbana / planificación territorial-espacial <input type="radio"/> Diseño de paisajes <input type="radio"/> Gestión del suelo – gestión del territorio <input type="radio"/> Otros, especificar: <p>6. Vuestra organización financia investigación a terceros?</p> <ul style="list-style-type: none"> <input type="radio"/> Si. Por favor, especificar: ... <i>[e.g. como gestor del programa, público, privado, ...]</i> <input type="radio"/> No

D. SRA

7. Cuáles son los retos de la sociedad que usted valora como importantes?

[retos de la sociedad definidos por la Comisión Europea. Estos son:]

- Contribuir a la seguridad alimentaria
 - Asegurar un suministro seguro de agua potable
 - Asegurar un suministro y distribución de energía seguros
 - Reducir el consumo de recursos y materias primas
 - Asegurar el uso eficiente de los recursos naturales
 - Contribuir a la mitigación del cambio climático y la adaptación de la sociedad
 - Contribuir a un entorno de vida saludable
 - Asegurar infraestructuras seguras.
-

[estos retos servirán para definir los temas estratégicos que servirán para agregar los topics de investigación de la futura SRA.]

a. Si aplica, cuáles serían otros retos sociales importantes a considerar?

[i.e. conservación de los espacios naturales, uso sostenible de los servicios de los ecosistemas, mitigar la pérdida de biodiversidad etc.]

8. En base a vuestra experiencia: qué temas específicos (necesidades de I+D) deberían ser incluidos en la SRA?

[Para cada tema, seguir con las sub-preguntas a. b. y c. Estas sub-preguntas son mandatorias, las demás sub-preguntas son opcionales.]:

a. Explicar la razón de incluir este tema

- Qué ámbitos estarían afectados? Quién estaría afectado (en la sociedad)?
- Quién sería responsable de llevar este tema adelante?
- Sería este tema de interés para vuestra organización / departamento?
- Se trata de un tema fundamentalmente de interés nacional o sería este tema de interés para varios países?
- En qué punto se encuentra la ciencia en este tema – estatus quo- cuáles serían los objetivos a medio/largo plazo?
- En qué/como podría el conocimiento generado ser utilizado eficientemente?

b. Prioridad:

Prioridad muy alta

1. *Prioridad alta*
2. *Prioridad media*
3. *Prioridad baja*
4. *Poca/ninguna prioridad*

<p>5. Cuál es la urgencia de trabajar en este tema? i.e. qué pasaría si este tema siguiera siendo ausente/minoritario en los programas de I+D?</p> <p>c. c. Qué instituciones se deberían responsabilizar de financiar la investigación en este tema?</p> <p><i>Otros temas adicionales ¿</i></p> <ul style="list-style-type: none"> ○ <i>Estimación de los recursos de suelo</i> ○ <i>Productividad potencial del suelo</i> ○ <i>Demanda de recursos suelo/terrenos, importación and exportación</i> ○ <i>Competencia entre usos de suelo (conflictos en usos de suelo)</i> ○ <i>Conceptos para identificar y cuantificar impactos relevantes</i> ○ <i>Instrumentos para mitigar/evitar impactos (útiles en procesos de toma de decisión)</i> ○ <i>Oportunidades para nuevas tecnologías de gestión de usos de suelo</i> ○ <i>Sistemas de gestión de suelos orientados a la gestión de recursos</i> ○ <i>Regeneración de suelos</i> ○ <i>Recuperación de suelos y aguas subterráneas</i>
<p>9. <u>En relación a los temas mencionados por los NKS:</u></p> <p>a. Cuáles son los documentos importantes / relevantes, agendas de I+D, programas de I+D que sostengan estos temas? (estado del arte)</p> <p>b. En relación a estas agendas y programas: cuales son las cronologías de los programas y las oportunidades de poder influir en estas agendas / programas?</p>
E. Interrelación Ciencia-política - Science-Policy-Interfacing (SPI)
<p>10. Cómo definiría usted “conocimiento científico”?</p>
<p>11. Con qué fines utiliza usted el conocimiento científico en su trabajo?</p>
<p>12. Qué fuentes de conocimiento (científico) utiliza usted en el marco de su trabajo? <i>[Pregunta abierta, se pueden mencionar las fuentes siguientes como ejemplos]</i></p>
<ul style="list-style-type: none"> ○ <i>Publicaciones científicas</i> ○ <i>consultores</i> ○ <i>informes</i> ○ <i>colegas</i> ○ <i>experiencias / ejemplos en mi país</i> ○ <i>experiencias/ejemplos en otros países</i> ○ <i>periódicos</i> ○ <i>televisión</i> ○ <i>conferencias, participación en proyectos de investigación</i> ○ <i>bases de datos</i> ○ <i>páginas web, por ejemplo:</i> ○ <i>otros, especificar:</i>
<p>13. En qué medida utiliza usted conocimiento científico puntero para el desempeño de vuestro trabajo? (estado del arte en ciencia, descubrimientos etc.)</p>
<p>14. En qué medida tiene usted la posibilidad de influir (precisar de qué forma) en la definición de políticas/agendas de investigación en vuestro país?</p>
<p>15. En qué medida nuestras políticas y programas nacionales de investigación reflejan vuestras necesidades específicas de I+D y prioridades?</p>

16. Según vuestras experiencias, en qué medida se ha aprovechado el conocimiento científico para la definición de las políticas existentes en España?

[Preguntas para NKS ajenos a instituciones científicas, i.e. sectores políticos, industria/mercado]

17. Alguna vez ha sido usted implicado en:

- a. La formulación de preguntas/programas científicos?
- b. Investigación científica? (i.e. co-creación de conocimiento)?
- c. síntesis/compilación de conocimiento científico? , e.g. para alimentar procesos de elaboración de políticas, crear y mejorar oportunidades de negocios?

[Si la respuesta es “SI”: preguntas adicionales]

- Qué grado de éxito ha tenido el proceso? Qué satisfacción ha tenido usted de esta experiencia? Especificar en una escala de 1-5?
 - 1. *Muy exitoso / muy satisfactorio*
 - 2. *exitoso / satisfactorio*
 - 3. *Neutral*
 - 4. *Sin éxito / sin satisfacción*
 - 5. *Muy mala experiencia*
- Cuales han sido los aspectos más exitosos/positivos?
- Cuales han sido los aspectos mejorables?
- Qué se debería evitar?
- Otros comentarios?

[Preguntas para NKS que pueden tener entendimiento/conocimiento en el área, i.e. finanziadores de la investigación]

- En qué forma está evaluado el impacto social de la investigación en los temas de interés de INPIRATION en nuestro país?

[Si pueden responder a la pregunta anterior; preguntas adicionales]

- Qué grado de éxito tiene el sistema de evaluación en una escala de 1-5?
 - 1. *Muy exitoso / muy satisfactorio*
 - 2. *exitoso / satisfactorio*
 - 3. *Neutral*
 - 4. *Sin éxito / sin satisfacción*
 - 5. *Muy mala experiencia*
- Qué indicadores se utilizan?
- En qué aspectos el sistema parece ser muy eficiente?
- Qué aspectos podrían ser mejorados?
- Qué se debería evitar?
- Otros comentarios?

18. ¿Existen a nivel nacional referencias y/o instrumentos de apoyo (documentos escritos, webs, grupos de soporte, plataformas etc.) enfocados en las interrelaciones “ciencia-política”? Podría usted recomendar alguna referencia?

F. Financiación

19. Qué experiencias y qué expectativas tiene usted en relación a esquemas de financiación (públicos/privados) en vuestro área de especialización y que podrían ofrecer oportunidades de investigación en temas de uso y gestión del suelo y los impactos en el sistema suelo-sedimento-agua:

- A nivel sub-nacional / regional?
- A nivel nacional?
- A nivel Europeo? [e.g. H2020, Interreg, multi-lateral como el Joint Programming Initiatives]
- Internacional? [e.g. Belmont Forum, Fundaciones etc.]

[Para todas For all R&I questions aiming at achieving policy targets in the Land & SSW related system (like e.g. Sustainable Development Goals on soils -to be adopted at UN level in September 2015-, existing EU directives such as the Environmental Liability Directive, etc.) Consider all Public and Private funding sources. Please ask to provide details and give most important references (documents, website) that could be relevant for explaining the answer]

20. Como mejorar el valor añadido generado por los resultados/impactos de diferentes programas de financiación (i.e. aumentar el efecto multiplicador) para una investigación que responda a las necesidades nacionales y de la Unión Europea, en particular las necesidades en I+D en los temas relevantes en INSPIRATION (i.e. territorio, y el sistema suelo-sedimento-agua)

[ejemplos podrían ser: PP, PPI, etc. ...preguntar de forma abierta, sugerencias, ideas, experiencias, buenas prácticas etc.]

21. Sabe usted si existen áreas de I+D+i que no estén todavía contemplados en los esquemas de financiación actuales y para los cuales nuevos y diferentes mecanismos de financiación deberían estar puesto en marcha?

22. Enfoques científicos integrados (especialmente relevantes para abordar los retos de la sociedad vinculados con el uso y gestión del suelo y el sistema suelo-sedimento-agua) son generalmente difícil de financiar o ser reconocidos por parte de las comunidades de financiadores de la investigación. Qué acciones/programas serían necesarios para mejorar esta situación?

23. En base a experiencias previas de programas de financiación, cuáles serían las buenas prácticas para diseñar y gobernar/gestionar instrumentos de financiación de tal forma que i) los resultados de la I+D pudieran satisfacer las necesidades de la sociedad, ii) el conocimiento generado por la ejecución de la SRA sea absorbido y utilizado en la economía y iii) el dinero invertido por los financiadores/inversores sea remunerado (con efecto multiplicador)

[si se proporcionan respuestas a la pregunta anterior: preguntas adicionales]

- Qué grado de éxito tiene el sistema de evaluación en una escala de 1-5?
 1. *Muy exitoso / muy satisfactorio*
 2. *exitoso / satisfactorio*
 3. *Neutral*
 4. *Sin éxito / sin satisfacción*
 5. *Muy mala experiencia*
- Cuales son los elementos positivos de estos programas, i.e. en qué aspectos el sistema parece ser especialmente eficiente?
- Qué aspectos podrían ser mejorados?
- Qué se debería evitar?
- Otros comentarios?

G. Otros aspectos (comentarios, sugerencias, ejemplos):

H. Finalizar la entrevista

Hay interés para recibir información sobre los avances de INSPIRATION?

Sugerencias para entrevistar otras personas?

Preguntas / comentarios relativos a la entrevista?

En qué tipo de información está interesado y estaría dispuesto a dar Feedback?

- a. Tipo de información e interés para dar feedback
 - Entrevista completa
 - Resumen de las conclusiones más relevantes
 - Informe nacional, contribución nacional a D2.4
 - Informe completo D2.4, con las aportaciones de todos los países
- b. Tipo/Nivel de feedback:
 - no feedback
 - feedback informal
 - feedback formal (e.g. por parte de la organización representada)

INSPIRATION acknowledges the received funding from the European Community's HORIZON2020 Framework Programme under grant agreement no 642372



Annex Ic: NKS hand-out: INSPIRATION interview at a glance

INSPIRATION interview at a glance – (Spanish version) ***Información y antecedentes del proyecto INSPIRATION***

Objetivo de INSPIRATION:

El objetivo principal del proyecto INSPIRATION es la formulación de una agenda de investigación estratégica (SRA) definida a partir de las necesidades de los usuarios finales. La SRA estará enfocada en los ámbitos del uso del suelo y los compartimentos afectados con cambios de uso, i.e. el sistema suelo-sedimentos-agua. La SRA persigue el objetivo de sentar las bases de las respuestas a los retos y necesidades de la sociedad actual y futura⁶. Además, el proyecto tiene como objetivo de definir los modelos de aplicación de la SRA y preparar una red de instituciones públicas y privadas de financiación dispuestas a financiar comúnmente la ejecución de la SRA.

Agentes Claves Nacionales – (i.e. National Key Stakeholders -NKS):

En una serie de entrevistas con agentes claves nacionales (i.e. en inglés National Key Stakeholders .- NKS) los "Puntos Focales Nacionales (i.e. en inglés National Focal Points, NFP) socios de INSPIRATION colectan información nacional relacionada con el alcance de INSPIRATION (i.e. uso y gestión del suelo, sistema suelo-sedimentos-agua) desde las perspectivas siguientes:

- Necesidades de Investigación e Innovación (I + i)
- Experiencias en relación con la conexión entre ciencia y política/práctica
- Planes de financiación nacionales y transnacionales

Las entrevistas están dirigidas a personas que tengan una visión general sobre oportunidades y demandas de conocimiento (a corto, medio y largo plazo). Se valora que los NKS estén participando en redes profesionales pertinentes, idealmente con el fin de poder actuar como embajadores de INSPIRATION en el futuro.

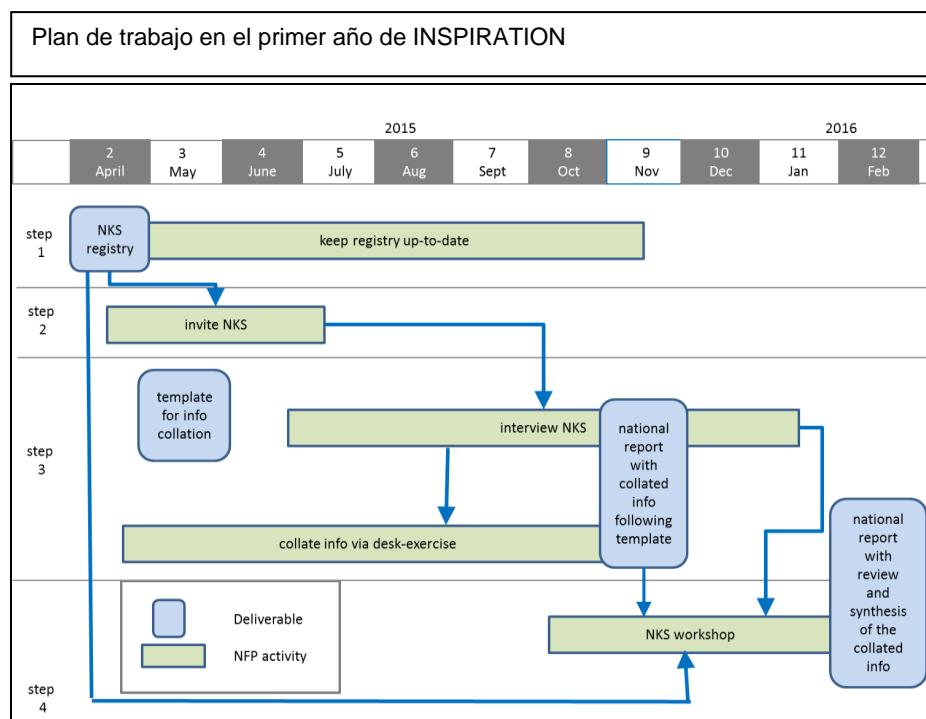
Los NKS elegidos representan diferentes disciplinas y procedencias institucionales, incluyendo: gestión del uso del suelo, planificadores; gerentes; expertos de suelos, sedimentos y agua; investigadores, financiadores y reguladores / responsables políticos

⁶ En el contexto de INSPIRATION, reconocemos los retos de la sociedad tal como se define en el contexto del programa HORIZONTE 2020. INSPIRATION derivará una SRA para abordar estos retos a través de usos del suelo más sostenibles y eficientes y una gestión basada en una comprensión más profunda de los compartimentos afectados del sistema Suelo-sedimento-agua (SSA). Estos retos son los siguientes:

- Contribuir a la seguridad alimentaria;
- Asegurar un suministro seguro de agua potable;
- Asegurar un suministro y distribución de energía seguros;
- Reducir el consumo de recursos y materias primas;
- Asegurar el uso eficiente de los recursos naturales;
- Contribuir a la mitigación del cambio climático y la adaptación de la sociedad;
- Contribuir a un entorno de vida saludable;
- Asegurar infraestructuras seguras.

Las entrevistas:

Vuestras contribuciones son una parte clave para la ejecución del proyecto ya que permitirán describir el estatus quo en materia de I+D en nuestro país y sentar las bases de una nueva agenda de investigación europea. Las entrevistas se estructuran en una serie de temas y preguntas: Los resultados de las entrevistas de NKS (aproximativamente 20 por país) y de la recopilación de bibliografía sobre las necesidades de investigación y las posibilidades de financiación serán sintetizados en un "informe nacional". Esta síntesis será objeto de revisión en el marco de un taller nacional que se celebrará en el cuarto trimestre de 2015. El objetivo de este taller nacional será de identificar los temas prioritarios para ser considerados en la Agenda Estratégica de Investigación sugerido (SRA) desde el punto de vista de España. Los informes nacionales servirán de base para la elaboración de la SRA Europea y puesta en común entre las naciones para identificar sinergias en necesidades de I+D y posibles mecanismos de financiación.



Ejemplos de preguntas:

Necesidades de I+D

- Cuáles son los retos sociales que consideréis como importantes?
- Empezando por vuestra propia experiencia: cuales son los temas (necesidades de I+D) que deberían estar incluidos en la SRA?

Experiencias relacionadas con conectar ciencia y política/práctica:

- Cómo definiría usted “conocimiento científico”?
- Según usted, en qué medida la formulación de políticas se basa en los resultados y el estado del arte de la ciencia en nuestro país?

Esquemas de financiación nacionales y transnacionales

- Vuestra organización financia I+D? (no internamente, pero a terceros)
- Qué experiencias y expectativas tenéis en términos de esquemas de financiación (publicos / privados) en vuestro campo de expertise que podrían ofrecer oportunidades para una futura investigación en los temas de uso y gestión del suelo y el sistema suelos-sedimentos-agua.

Vuestros beneficios en participar en el proyecto:

- Una oportunidad para influir en la SRA Europea sobre la gestión del territorio y del sistema suelo-sedimento-agua en relación con las necesidades y los retos de la sociedad
- Una información directa sobre los avances y resultados del Proyecto para su valorización: visión global sobre las necesidades de I+D así que sobre mecanismos de financiación existentes y futuros en diferentes niveles (i.e. sub-nacional, nacional, europeo e internacional); conocimiento sobre mejores prácticas y oportunidades de vinculación entre ciencias y políticas/practica/mercado
- Aprovechar la dimensión internacional del proyecto para entrar en contacto con otras redes y organizaciones e identificar retos comunes para compartir esfuerzos y crear alianzas.

Contactos e información:

Para información general del proyecto INSPIRATION consulte la pagina web:
www.inspiration-h2020.eu

<p>Contacto del Punto Focal Nacional</p> <p>TECNALIA Parque Tecnológico de Bizkaia c/ Geldo, edificio 700 E-48160 Derio Bizkaia</p> <p><i>Pierre Menger</i> pierre.menger@tecnalia.com</p> <p><i>Gemma Garcia Blanco</i> gemma.garcia@tecnalia.com</p> <p><i>Efrén Feliu</i> efren.feliu@tecnalia.com</p>	<p>Contacto del coordinador de proyecto:</p> <p><i>Stephan Bartke</i> FG I3.5 – Coordination INSPIRATION Federal Environment Agency Woerlitzer Platz 1 06844 Dessau-Rosslau Germany</p> <p>stephan.bartke@uba.de</p>
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Annex II: Documents used for the Spanish desk study

Basque Strategy for Climate Change 2050. Basque Government (2015).

http://www.euskadi.eus/contenidos/plan_programa_proyecto/klima2050/es_def/adjuntos/KLIMA2050_es.pdf

Belfer Center: <http://belfercenter.ksg.harvard.edu/>

Boletín Oficial del Estado (B.O.E.) Nº21 – 25 de Enero 2016 - Official State Bulletin - MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD Resolución de 30 de diciembre de 2015, de la Secretaría de Estado de Investigación, Desarrollo e Innovación, por la que se aprueba la convocatoria de tramitación anticipada del año 2016, para la concesión de las ayudas correspondientes a la convocatoria Retos-Colaboración del Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación 2013-2016.

CICEP - <http://www.cicero.uio.no/en/posts/projects/centre-for-international-climate-and-energy-policy-cicep>

Estrategia española de I+D+i del sector agua 2011. Spanish Strategy for R&I in the Water Sector 2011. http://www.plataformaagua.org/images/doc_pdf/Agenda_Estrategica_Aqua.pdf.

Feem: <http://www.feem.it/getpage.aspx?id=18&sez=Research>

Framework Environmental Program - Programa Marco Ambiental 2020:

<http://www.inqurumena.ejgv.euskadi.eus/informacion/programa-marco-ambiental-2020/r49-5832/es/>

Guía sobre la Compra Pública Innovadora – Guidance on Innovative Public Procurement. MINECO (Ministry of Economy and Competitiveness).

http://www.idi.mineco.gob.es/stfls/MICINN/Innovacion/FICHEROS/Politicas_Fomento_Innv./Guia.CPI.pdf

Grantham Institute: <http://www.lse.ac.uk/GranthamInstitute/>

Impacto económico de la eco-innovación en Euskadi. Una aproximación cuantitativa. Alberto Ansuategi, Marta Escapa Universidad del País Vasco / Euskal Herriko Unibertsitatea, Ibon Galarraga, Mikel González-Eguino, Basque Centre for Climate Change, BC3. Ekonomiaz N.º 86, 2º semestre, 2014.

INIA Strategic Plan 2014-2017

Integrated water resources management in the 21st century: revisiting the paradigm / edited by Pedro Martinez-Santos, Maite M. Aldaya, Ramón Llamas (2014). ISBN 978-1-138-00143-5. TC409.I5585 2014

La gestión del agua en España, análisis de la situación actual del sector y retos futuros. – Water Management in Spain, analysis of the current situation of the sector and future challenges. PwC, 2014.

http://www.accion.com/legacyMedia/1226705/informe_gestion_agua.pdf

National Hydrologic Plans: <http://www.magrama.gob.es/es/agua/temas/planificacion-hidrologica/planificacion-hidrologica/planes-cuenca/>

National Program of R&I oriented towards Societal Challenges:

<http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.7eeac5cd345b4f34f09dfd1001432ea0/?vgnnextoid=a2b1453bb9a8c310VgnVCM1000001d04140aRCRD>

Plan for Science, Technology and Innovation of the Basque Country 2016-2020. (PCTI Plan de Ciencia Tecnología e Innovación 2020)

Planetary boundaries: Guiding human development on a changing planet Will Steffen et al. 2015. Science Express. <http://www.sciencemag.org/content/early/recent>

Programa de actuación anual 2015 - Plan Estatal De Investigación Científica y Técnica y De Innovación 2013-2016. Annual Action Program 2015. State Plan for Scientific and Technical Research and Innovation 2013-2016:

<http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.7eeac5cd345b4f34f09dfd1001432ea0/?vgnnextoid=83b192b9036c2210VgnVCM1000001d04140aRCRD>

Retos de Colaboración 2016 – Ministerio de Economía y Competitividad – Collaboration Challenges 2016, Ministry of Economy and Competitiveness.

RIS3 Strategy 2020, Basque Country, 2014:

https://www.irekia.euskadi.eus/assets/attachments/4632/lineas_estrategicas201404_pcti_euskadi_2020.pdf?1400573199

Science for Environment Policy. IN-DEPTH REPORT Soil Contamination: Impacts on Human Health Environment.

http://ec.europa.eu/environment/integration/research/newsalert/pdf/IR5_en.pdf

Spanish Strategy for Climate Change and Clean Energy - Estrategia Española de Cambio Climático y Energía Limpia: <http://www.magrama.gob.es/es/cambio-climatico/publicaciones/documentacion/estrategia-espanola-de-lucha-contra-el-cambio-climatico/>

Spanish Strategy for Science and Technology and Innovation 2013-2020. Estrategia Española de Ciencia y Tecnología y de Innovación 2013-2020. MINECO MINECO (Ministry of Economy and Competitiveness)

State Plan for Technical and Scientific Research 2013-2016

Waste and Contaminated Land Law 22/2011 - Ley 22/2011, de 28 de julio, de residuos y suelos contaminados. <https://www.boe.es/buscar/act.php?id=BOE-A-2011-13046>

Annex III:R&I Funding programs

International and European programs

	Name*	Research and Innovation funder**	What and/or whom do they fund?***	More info****
1	ERANET M-ERA.NET	Network of 36 public funding organisations from 25 European countries: https://www.m-era.net/partners	M-ERA.NET is an EU funded network which has been established to support and increase the coordination of European research programmes and related funding in materials science and engineering.	https://www.m-era.net/
2	ERANET EUROTRANSBIO ANSBIO	EuroTransBio consists of organizations from 13 European countries and regions: https://www.eurotransbio.eu/index.php?index=9	EuroTransBio (ETB) is an international funding initiative supported by European program owners. It has established itself as the preferred funding instrument for small and medium sized enterprises (SMEs), collaborating in the area of modern biotechnology.	https://www.eurotransbio.eu/
3	BIODIVE RSA ERA-Net	19 European Union Member States & 32 partner organisations http://www.biodiversa.org/11	The European partners in the BiodivERsA/FACCE-JPI network have joined efforts to organize and fund a pan-European call for research projects on "promoting synergies and reducing trade-offs between food supply, biodiversity and ecosystem services".	http://www.biodiversa.org/
4	JPI Climate	16 Member Countries http://www.jpi-climate.eu/programe/membercountries	JPI Climate members are countries – EU members or associated states – that have formally declared their commitment and willingness to actively contribute to JPI operations (with their work force, financial resources, and existing research and innovation investments, etc.) by signing a Letter of Intent.	http://www.jpi-climate.eu/home

5	FACCE JPI (Agriculture, Food Security and Climate Change)	21 countries	The Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE-JPI) brings together 21 countries who are committed to building an integrated European Research Area addressing the interconnected challenges of sustainable agriculture, food security and impacts of climate change. FACCE-JPI provides and steers research to support sustainable agricultural production and economic growth, to contribute to a European bio-based economy, while maintaining and restoring ecosystem services under current and future climate change.	http://www.faccejpi.com/
6	ERA-NET Cofund WaterWorks	20 partner countries & 4 observer countries	The ERA-NET Cofund initiative WaterWorks2015, a collaboration of Water JPI and FACCE JPI, will set up a programme on sustainable water use in agriculture to increase water use efficiency and reduce soil and water pollution. This theme is common to the Str	http://www.waterjpi.eu/
7	ERANET BESTF2	The principal objective of the BESTF call is to fund public-private projects that de-risk bioenergy technologies at demonstration scale and to encourage further private exploitation.	The entities eligible for CDTI's funding are companies established and carrying out R&D activities in Spain. Universities and Research Institutions can participate as subcontractors of Spanish companies. Eligible expenditure in R&D projects: Personnel, Instrument and Material, Contractual research, Technical knowledge and Patents consulting and	http://eranetbestf.net/

			<p>equivalent services intended exclusively for the research activity. Other operating expenses derived from the research project.</p> <p>Length of the project: The length of these projects may be from 12 to 36 months.</p>	
8	H2020	European Commission	Horizon 2020 is the new EU funding programme for research and innovation running from 2014 to 2020 with a €80 billion budget.	https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/master_calls.html
9	LIFE+ The LIFE (the Financial Instrument for the Environment and Climate Action)	Directorate General for the Environment, European Commission	LIFE is the EU's financial instrument supporting environmental, nature conservation and climate action projects throughout the EU.	http://ec.europa.eu/environment/life/about/index.htm#life2014
10	Climate-KIC	European Institute of Innovation and Technology (EIT)	Climate-KIC is a world-class network focused on meeting the global challenge of climate change. Our core purpose is to create opportunities for innovators to shape the world's next economy. We create new partnerships to integrate research, business and technology to transform innovative ideas into new products, services and jobs.	http://www.climate-kic.org/

11	The Research Programme of the Research Fund for Coal and Steel (RFCS)	The programme is managed by the European Commission, Directorate-General for Research and Innovation (Directorate D – Key Enabling Technologies)	Steel and coal remain key areas for the continuous sustainable economic development of Europe and the RFCS programme is fully in line with the scientific, technological and political objectives of the European Union. This includes the general aim of contributing to sustainable development, clean and safe production, protection of the environment, conservation of resources, health and safety aspects as well as improvement of working conditions.	https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/rfcs/calls/rfcs-2015.html
12	COST Actions	COST is an intergovernmental framework consisting in 36 Member Countries and a Cooperating State: http://www.cost.eu/about_cost/cost_countries	COST funds pan-European, bottom-up networks of scientists and researchers across all science and technology fields. These networks, called 'COST Actions', promote international coordination of nationally-funded research.	http://www.cost.eu/
13	Interreg EUROPE (antes Interreg IVC)	30 countries, 28 EU Member States, Switzerland and Norway	INTERREG IVC programme (2008-2013) will continue as Interreg Europe. Discover what the new programme offers for European regions on Research & innovation, Competitiveness of SMEs, Low-carbon economy and Environment & resource efficiency.	http://www.interregeurope.eu/

14	Interreg Med Program me 2014-2020	57 regions divided among 10 EU Member States and 3 IPA countries. http://interreg-med.eu/en/cooperation-area/	The main objective of the Interreg MED Programme is to promote sustainable growth in the Mediterranean area by fostering innovative concepts and practices and a reasonable use of resources and by supporting social integration through an integrated and territorially based cooperation approach.	http://interreg-med.eu/en/med-working-fields/
15	Interreg POCTEFA 2014-2020	L'autorité de gestion du programme est la Communauté de Travail des Pyrénées (CTP); un consortium de huit territoires: Aquitaine, Midi-Pyrénées, Languedoc-Roussillon, Euskadi, Navarre, Aragon, Catalogne et d'Andorre. INTERREG VA ESPAGNE-FRANCE-Andorre (POCTEFA 2014-2020), est un programme de coopération transfrontalière européenne visant à promouvoir le développement durable de la zone frontalière entre les trois pays	<p>Le budget alloué au POCTEFA 2014-2020 s'élève à 189,3 millions d'euros provenant du Fonds Européen de Développement Régional (FEDER). De cette somme, 177 980 913 millions d'euros seront alloués au développement de projets transfrontaliers. Le budget restant est employé afin de couvrir les dépenses de l'assistance technique du Programme.</p> <p>Quels types de dépenses sont éligibles? En général, voici les catégories de dépenses : frais de personnel, frais de bureau et frais d'administration, frais de déplacement et d'hébergement, frais liés à expertise et services externes, dépenses d'équipements, d'infrastructures et dépenses de préparation.</p>	http://www.poctefa.eu/fr/programme/axes-priorites/

16	Interreg SUDOE 2014-2020	Le Programme Interreg Sudoe soutient le développement régional dans le sud-ouest de l'Europe en finançant des projets transnationaux par le biais du Fond Européen de Développement Régional (FEDER).	Les projets approuvés doivent être organisés par des partenaires publics ou privés de régions de différents pays du sud-ouest européen. Les régions éligibles sont toutes les Communautés autonomes espagnoles (sauf les Iles Canaries), les six régions du sud-ouest de la France, les régions continentales du Portugal, le Royaume-Uni (Gibraltar) et la Principauté de l'Andorre.	http://www.interreg-sudoe.eu/proyectos/primera-convocatoria
17	EUREKA EUROSTAR	Eurostars is a joint programme between EUREKA and the European Commission, co-funded from the national budgets of 34 Eurostars Participating States and Partner Countries and by the European Union through Horizon 2020.	Eurostars applies a decentralised funding procedure; participants do not receive funding directly from the EUREKA Secretariat or the EU.	https://www.eurostars-eureka.eu/

18	EUREKA EUROGIA 2020, the EUREKA low- carbon energy technolog y cluster	<p>EUROGIA2020 is a cluster of the EUREKA network, a decentralized intergovernmental initiative started in 1985 to enhance European competitiveness by supporting businesses, research centers and universities that take part in trans-national projects.</p> <p>EUROGIA2020 is the EUREKA Cluster for low carbon energy technologies. It covers the entire energy value chain from all forms of primary energy sources through transportation and distribution. It also includes transverse technologies such as materials, IT or manufacturing technologies that support the energy system.</p>	<p>EUREKA unites 40 member countries and also counts the European Union as its 41st member. Together, they promote international, market-oriented research and innovation through the support they offer to small and medium-sized enterprises, large industry, universities and research institutes. Through EUREKA, these organizations are introducing new products, processes and services to market, helping make Europe economically strong and socially sound.</p>	www.eurogia.com
19	EUREKA ACQUEAU	<p>ACQUEAU is one of the 7 clusters of the EUREKA network. We are</p>	<p>ACQUEAU Open Call supports projects with the potential of developing breakthrough innovations in the water sector.</p>	http://www.acqueau.eu/

HORIZON2020 CSA INSPIRATION

Deliverable D2.5 –
National reports with a review and synthesis
of the collated information



		<p>a market and industry driven initiative, joined by more than 26 countries and 100 companies across Europe and beyond. Our goal is to promote transnational collaboration for developing innovative projects in water technologies.</p>	<p>ACQUEAU Open Call supports projects in water sector twice per year (Autumn session and Spring Session)</p>	
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National programs

Nº	Name*	Research and Innovation funder**	What and/or whom do they fund?***	More info****
1	Programa INNFLUYE	Ministry of Economy and Competitiveness	Aid to Technology Platforms on Dissemination actions; Forums to share information or work; Actions aimed at promoting cooperation between institutions for the development of projects; Actions of dissemination and analysis. Participants: Technology PLatforms	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=51f713074cca5410VgnVCM100001d04140aRCRD
2	Subprograma Torres Quevedo.	Ministry of Economy and Competitiveness	Recruitment of research personnel. Participants:SMEs, Research Centers, Public Bodies	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=3b85d6a0840b1510VgnVCM100001d04140aRCRD
3	Programa INNCORPORORA_Titulados Universitarios	Ministry of Economy and Competitiveness	Aid for the recruitment and training of technologists University Graduates. Participants: SMEs, Research Centers, SMEs Business Associations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=c85df068a1bbf210VgnVCM100001d04140aRCRD
4	Subprograma NEOTEC	CDTI (Center for Industrial Technology Development)	Support for the creation and consolidation of new technology-based companies in Spain. Participants: EIBTs	https://www.cdti.es/index.asp?MP=7&MS=651&MN=3
5	Research challenges - Retos de Investigación	Ministry of Economy and Competitiveness	Basic Research. Participants: Research Centers, Public Bodies, Universities, Non profit organisations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=437732ee7af1e410VgnVCM100001d04140aRCRD&vgnextchannel=33f85656ecfee310Vgn

				VCM1000001d04140aRCRD
6	Subprograma de Personal Técnico de Apoyo	Ministry of Economy and Competitiveness	Recruitment of Technical Support Staff. Participants: Research Centers, Public Bodies, Universities, Non profit organisations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=5033d9ac3f761510VgnVCM100001d04140aRCRD
7	Subprograma Juan de la Cierva	Ministry of Economy and Competitiveness	Recruitments of junior PHD. Participants: Research Centers, Public Bodies, Universities, Non profit organisations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=a7fd498e15861510VgnVCM100001d04140aRCRD
8	Subprograma Ramón y Cajal	Ministry of Economy and Competitiveness	Recruitments of senior PHD. Participants: Research Centers, Public Bodies, Universities, Non profit organisations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=68f8d9ac3f761510VgnVCM100001d04140aRCRD
9	INNVIERT E	CDTI (Center for Industrial Technology Development)	Venture capital for startups. Participants: EIBTs, SMEs	https://www.cdti.es/index.asp?MP=7&MS=656&MN=4
10	Biodiversidad foundation	Biodiversity foundation	Development of activities in the field of terrestrial biodiversity, marine and coastal biodiversity, climate change and environmental quality. Participants: companies, public bodies and non profit organisations	http://fundacion-biodiversidad.es/sites/default/files/media/archivos/convocatorias_ayudas_2015_0.pdf
11	Grants for projects of scientific research in the National Parks Network. -	Ministry of Agriculture, Food and Environment.	Grants for projects of scientific research in the National Parks Network. Participants: Public universities, public research bodies, research centers	http://www.magrama.gob.es/es/parques-nacionales-oapn/programa-investigacion/

	Proyectos de investigación científica en la Red de Parques Nacionales			
12	Collaboration challenges - RETOS COLABORACIÓN	Ministry of Economy and Competitiveness	Collaborative R&D&i projects, sharing risks and results. Participants: Companies, public research organizations, public and private universities, research, other public and private R + D + i and business associations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=6030ce7e72a32510VgnVCM100001d04140aRCRD
13	Research challenges - RETOS INVESTIGACIÓN	Ministry of Economy and Competitiveness	Collaborative R&D&i projects more focused on basic research. Participants: public or private non-profit organisations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=437732ee7af1e410VgnVCM100001d04140aRCRD&vgnextchannel=33f85656ecfee310VgnVCM1000001d04140aRCRD
14	R&I projects of INIA - INIA PROYECTOS DE I+D+I	National Institute for Agricultural Research and Experimentation (INIA)	INIA R&D&i projects. Participants: Researchers in the public R + D + i of agricultural or food research dependent on Regions and/or INIA	http://www.inia.es/IniaPortal/goUrlDinamica.action?url=http://wwwsp.inia.es/IDi/ProgramasInria
15	Grants for projects financed by CDTI (Center for Industrial Technology Development)	CDTI (Center for Industrial Technology Development)	Grants for projects financed by CDTI (Center for Industrial Technology Development). Participants: companies	http://www.cdti.es/index.asp?MP=7&MS=20&MN=3&r=1600*900

	ent) - Subvenciones para proyectos financiados por CDTI.			
16	Strategic projects CIEN - Proyectos Estratégicos CIEN	CDTI (Center for Industrial Technology Development)	Grants for strategic projects financed by CDTI (Center for Industrial Technology Development). Participants: companies	http://www.cdti.es/index.asp?MP=7&MS=766&MN=4
17	Programa _FEDER-INNTERCONECTA	CDTI (Center for Industrial Technology Development)	Grants to promote public-private stable cooperation in research and development (R & D). Participants: companies	http://www.cdti.es/index.asp?MP=7&MS=577&MN=3
18	Proyectos "Explora Ciencia" y "Explora Tecnología"	Ministry of Economy and Competitiveness	Basic Research (limit of knowledge frontiers). Participants: public or private non-profit organisations	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.bc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=fe0db3320c687410VgnVCM1000001d04140aRCRD

Regional programs

Nº	Name*	Research and Innovation funder**	What and/or whom do they fund?***	More info****
1	Incentive program for the promotion of Innovation and entrepreneurial development - Programa de Incentivos para el Fomento de la Innovación y el Desarrollo Empresarial	Junta de Andalucía	EIBT creation and R & D collaborative projects. Participants: SMEs	http://www.agenciaidea.es/programa-innovacion-y-desarrollo-empresarial
2	Program of incentives for the sustainable development of energy - Programa de incentivos para el desarrollo energético sostenible	Junta de Andalucía	R&D projects on energy efficiency, energy recovery facilities, energy studies and dissemination and improved energy infrastructure. Participants: Companies	http://www.juntadeandalucia.es/servicios/ayudas/detalle/76819.html
3	Program if incentives for the promotion of innovation and entrepreneurial development- Programa de Incentivos para el Fomento de la Innovación y el Desarrollo Empresarial	Junta de Andalucía	Research, development and innovation projects. Participants: SMEs	http://www.agenciaidea.es/ayudas
4	IDEA	Junta de Andalucía	Setting up of EBTs. Participants: EIBTs, universities	http://www.agenciaidea.es/programa-innovacion-y-desarrollo-empresarial

5	Grants in the frame of Innovation Strategy - Subvenciones en el marco de la Estrategia de Innovación	Gobierno de Aragón	a) R&D&i projects b) Mobility of researchers c) Cooperative innovation projects of a cluster or business association and interclusters or business interassociations. Participants: Companies, clusters, business associations	http://www.ayudaempresarial.es/archivos/1319191211.pdf
6	Aid for the execution of R&I projects - Ayudas para la ejecución de proyectos de I+D+i	Principado de Asturias	R&D&i projects. Participants: Companies	http://www.idepa.es/sites/web/idepaweb/servicios/ayudas/buscadorficha.jsp?resource=/system/idepa/contents/ayudas/ayuda1174404159103.xml
7	Aids for the creation and development of innovative businesses with technological basis - Ayudas para la creación y desarrollo de empresas innovadoras de base tecnológica	Principado de Asturias	Support for the creation and development of innovative technology-based companies. Participants: EIBTs	http://www.idepa.es/sites/web/idepaweb/servicios/ayudas/buscadorficha.jsp?resource=/system/idepa/contents/ayudas/ayuda1174465213572.xml
8	Grants for innovative projects in the frame of INNOVA-IDEPA program - Subvenciones para proyectos innovadores, dentro del programa INNOVA-IDEPA	Principado de Asturias	Innovative projects. Participants. Companies	http://www.idepa.es/sites/web/idepaweb/servicios/ayudas/buscadorficha.jsp?resource=/system/idepa/contents/ayudas/ayuda1175245547650.html
9	Programa Asturias	Principado de Asturias	Aid for technological centers and support centers for technological innovation. Participants: Research Centers	https://sedemovil.asturias.es/portal/site/Asturias/menutem.46a76b28f520ecaaf18e90dbb30a0a0/?vqnextoid=ef4483cb035d8210VgnVCM10

				000097030a0aR CRD&i18n.http.la ng=es
10	Programa INNOEMPRESA	Cabildo de Canarias	R&D&i projects. Participants: SMEs	http://www.gobiernodecanarias.org/boc/2013/056/009.html
11	INNOVA grants - Subvenciones INNOVA	Gobierno de Cantabria	R&D&i projects. Participants: Companies	http://www.cantabria.es/i-d-i
12	Plan Adelanta	Comunidad de Castilla León	Investment and business creation program. Participants: SMEs	https://www.tramitacastillayleon.jcyl.es/web/jcyl/AdministracionElectronica/es/Plantilla100Detalle/1251181054765/1284157420848/Propuesta
13	Plan Adelanta	Comunidad de Castilla León	R&D&i projects. Participants: Companies	https://www.tramitacastillayleon.jcyl.es/web/jcyl/AdministracionElectronica/es/Plantilla100Detalle/1251181054765/1284157420848/Propuesta
14	Ayudas reembolsables destinadas a financiar Proyectos de Inversión, I+D+i y las necesidades de capital circulante.	Comunidad de Castilla León	Refundable aid to finance investment projects, I + D + i and working capital requirements. Participants: SMEs	http://www/ayudas.net/Ayudas_financiar_inversiones_empresariales_gastos-13150BT1ERP15O1PQ.htm
15	Refundable aid to finance investment projects, I + D + i and working capital requirements. Participants: SMEs - Ayudas reembolsables para proyectos de inversión, y de I+D+i.	Comunidad de Castilla León	Refundable aid for investment projects, and R & D + i. Participants: companies	http://www/ayudas.net/Castilla_Leon_pone_marcha_ayudas-10756NportadaT1P.htm

16	Promotion of R&I in the agro-food sector - Fomento de I+D+i en el sector agrario y alimentario	Generalitat de Catalunya	Aid to promote the approach and the drafting of research, development and innovation (R + D + I) for the development of new technologies, products and processes in agriculture and food. Participants: agricultural, forestry and food companies	http://pae.gencat.cat/es/noticies/8061_ovt_ajuts-projectes-rdi-sector-agrari-alimentari
17	Grants for innovative projects for the development of new technologies, products and processes from the climate-change and support renewable energy, water management and biodiversity. Participants: agricultural, forestry and food companies - Ayudas para proyectos innovadores para el desarrollo de nuevas tecnologías	Generalitat de Catalunya	Grants for innovative projects for the development of new technologies, products and processes from the climate change and support renewable energy, water management and biodiversity. Participants: agricultural, forestry and food companies	http://pae.gencat.cat/es/noticies/9387_ovt_ajuts-projectes-pilot-innovadors-noves-tecnologies-productes-processos
18	Entrepreneurship plan - Plan de emprendimiento	Generalitat Valenciana	Program to support the growth of innovative start-ups. Participants: SMEs, EIBTs	http://www.impiva.es/index.php?option=com_remository&Itemid=124&func=select&id=220&lang=es
19	Entrepreneurship plan - Plan de emprendimiento	Generalitat Valenciana	Creation of technology based companies. Participants: EIBTs	http://www.impiva.es/index.php?option=com_remository&Itemid=124&func=select&id=220&lang=es
20	Business R&I plan - Plan de I+D Empresarial	Generalitat Valenciana	Research and Technological Development for SMEs. Participants: SMEs	http://www.impiva.es/index.php?option=com_remository&Itemid=100124&func=select&i

				d=221&lang=es
21	Business R&I plan - Plan de I+D Empresarial	Generalitat Valenciana	R & D Colaborative projects. Participants: companies	http://www.impiva.es/index.php?option=com_remository&Itemid=100124&func=select&id=221&lang=es
22	Aids for business activities in R&I - Ayudas a la actividad empresarial en I+D+i	Gobierno de Extremadura	Industrial research and / or experimental development and technological innovation. Participants: companies	http://cicytex.gobex.es/es/convocatorias/2/fomento-de-la-actividad-empresarial-en-i-d-i-ayudas-para-el-fomento-de-investigacion-desarrollo-tecnologico-e-innovacion-en-actividad-emprendedora-y-empresarial-de-las-pequenas-medianas-ygrandes-empresas
23	Ayudas para investigación, desarrollo tecnológico y la innovación de las Pymes y grandes empresas	Gobierno de Extremadura	Technological innovation projects. Industrial research and / or experimental development projects. Participation in national and / or Community calls, in industrial research, experimental development and innovation. Creation and consolidation of R & D units in companies. young innovative technology companies. Participants: SMEs	http://ayudaspri.gobex.es/portal/ayudas
24	Programa INNOEMPRESA	Xunta de Galicia	R&D&i projects. Participants: SMEs	http://gain.xunta.es/artigos/388/programa+innoempresa+igape+gain

25	Development of R&I projects (aids for EU project preparation) - Realización de proyectos de investigación y desarrollo, I+D (Actuación 1)	Gobierno de La Rioja	R&D&i projects. Participants: Companies	http://www.ader.es/ayudas/ayudas-por-areas/i-d/idd-realizacion-de-proyectos-de-investigacion-y-desarrollo-i-d/
26	Programa Innoempresa	Comunidad de Madrid	Innovation Support for SMEs. Participants: SMEs	http://www.madrid.org/cs/Satellite?buscador=true&cm_Contenidos=CM_ConvocaPrestac_FA&cid=1142536944768&languaje=es&página=Comunidad_Madrid%2Festructura
27	Aids for R&I projects Ayudas para proyectos de I+D+i	Gobierno de Navarra	Incentives to increase research and development. Participants: SMEs, research Centers, Public bodies	http://www.navarra.es/home_es/servicios/ficha/5559/Ayudas-a-empresas-para-realizar-proyectos-de-I-D-2015
28	Development of action plans for landscape - Elaboración de Planes de acción del paisaje	Gobierno Vasco	Developing action plans landscape. Participants: public bodies	http://www.inぐurnena.ejgv.euska-di.eus/bopv2/datos/2015/07/1503285a.pdf
29	Knowledge generation for the conservation of Natural Heritage - Generación de conocimiento en la conservación del Patrimonio Natural	Gobierno Vasco	Generation of knowledge in the conservation of Natural Heritage: Participants: Non profit organisations, Foundations, companies	http://www.euskadi.eus/gobierno-vasco-/ayuda_subvención/2014/generación_conocimiento/
30	ELKARTEK, formerly ETORTEK	Gobierno Vasco	Strategic R & D projects. Participants: non profit organisations registered in Basque network of R&D, foundations, companies	http://www.spri.eus/euskadiinnova/es/portada-euskadiinnova/ayudas/ayudas-destinadas-

				<u>investigacion-colaborativa-areas-estrategicas-elkartek-2015/20150649.aspx</u>
31	Programa IKERKETA	Gobierno Vasco	Aid for research, development and technological innovation in agriculture, fisheries and food sectors. Participants: companies	<u>http://www.euska-di.eus/gobierno-vasco/contenidos/ayuda_subvencion/3813/es_4657/3813.html</u>
32	Programa HAZITEK	Gobierno Vasco	Support Programme for R & D Companies. Participants: companies	<u>http://www.euska-di.eus/gobierno-vasco-/ayuda_subvencion/2015/programa-de-apoyo-a-la-i+d-empresarial-hazitek-2016/</u>

Annex IV: National workshop agenda and participants

Day 1 – January 26th, 2016 – 14:00 – 18:00

Time	Activity	Moderator
13.00	Catering	
14.00	Welcome and presentation of workshop objectives	TECNALIA – Efrén Feliu
14.10	Participants roundtable	
14.25	INSPIRATION: (re)introduction to the Project	TECNALIA – Pierre Menger
14.40	Synthetic presentation of interview results	TECNALIA – Pierre Menger – Gemma Garcia
15.00	Identification of R&I needs	
	Setting the context of R&I needs <ul style="list-style-type: none"> • Consider the challenge • Key issues, drivers, barriers, pressures • Defining the problem/gap→ • Identification of benefits (impacts) 	Participants 20' for appointing ideas on post-its individually. Debate between participants – identificación de sinergias, identificación de beneficios
16.00	Café	
16.30	Identification of R&I needs	
	Setting the context of R&I needs (continue) ----- Starting setting priorities - clustering	30' Debate - ----- 60' - prioritization - clustering
18.00	End of day	

Day 2 – January 27th, 2016 – 9:00 – 14:00

Time	Activity	Moderator
09.00	Introduction– Objectives of the workshop	TECNALIA – Pierre Menger
09.10	Finalizing debate on priority setting and clustering	TECNALIA — Efrén Feliu – Gemma Garcia, Pierre Menger
10.15	Roadmap for realizing the R&I agenda 2 themes: <ul style="list-style-type: none">• Science-policy Interface<ul style="list-style-type: none">○ Identifying barriers for implementing and realizing R&I agenda	TECNALIA – Efren Feliu
11.15	café	30'
11.45	<ul style="list-style-type: none">• Financing<ul style="list-style-type: none">○ Identification of bottlenecks and needs○ How to improve added value of R&I investments○ Alternative governance systems for funding R&I	TECNALIA – Efren Feliu
12.45	Elevator pitch for all participants – key message	
13.30	Conclusions and next project milestones	TECNALIA – Pierre Menger
13.45	Workshop closure	
	CATERING	

Workshop Participants:

1. Spanish Office for Climate Change - OECC
2. University of Valencia – Department of Geography
3. CSIC – Zaragoza – Spanish National Research Council
4. CSIC – Sevilla – Spanish National Research Council
5. MAGRAMA Ministry of Agriculture and Environment
6. SPRILUR – Regional Industrial Parks Development Agency
7. OCT – Observatory of Territorial Culture
8. FUNDICOT – Interprofessional Association of Land use Planning
9. Independent consultant – Formerly Professor at University of Madrid
(Environment and Land use planning)
10. Navarra Territorial Observatory
11. IHOBE – Basque Environment Agency

Annex V: Eg. Complete list of societal challenges and related questions as mentioned in the interviews

- Contribute to food security and food safety;
- Ensure secure supplies of safe drinking water;
- Secure energy supply and distribution;
- Reduce raw material and resource consumption,
- Ensure efficient use of natural resources;
- Contribute to climate change mitigation and societal adaptation. (It is commented the major potentials of RTD developments are in the field of adaptation rather than mitigation).
- Contribute to a healthy living environment;
- Sustainable spatial planning,
- Sustainable management of ecosystems
- Soil as a resource must be protected and its conservation promoted. soil is the forgotten part of natural sciences. society is lacking awareness about its importance

HORIZON2020 CSA INSPIRATION

Deliverable D2.5 –
National reports with a review and synthesis
of the collated information





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