

## D2.5

# National reports with a review and synthesis of the collated information

France





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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 countries<sup>1</sup>. 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](http://www.inspiration-h2020.eu) and follow us on twitter: [@inspiration4eu](https://twitter.com/inspiration4eu).

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<sup>1</sup> 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 Vranceanu, Valentina Voicu, Nicoleta Vranceanu,*
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 1<sup>st</sup> 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 objectives<sup>2</sup> – 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.<sup>3</sup> 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):

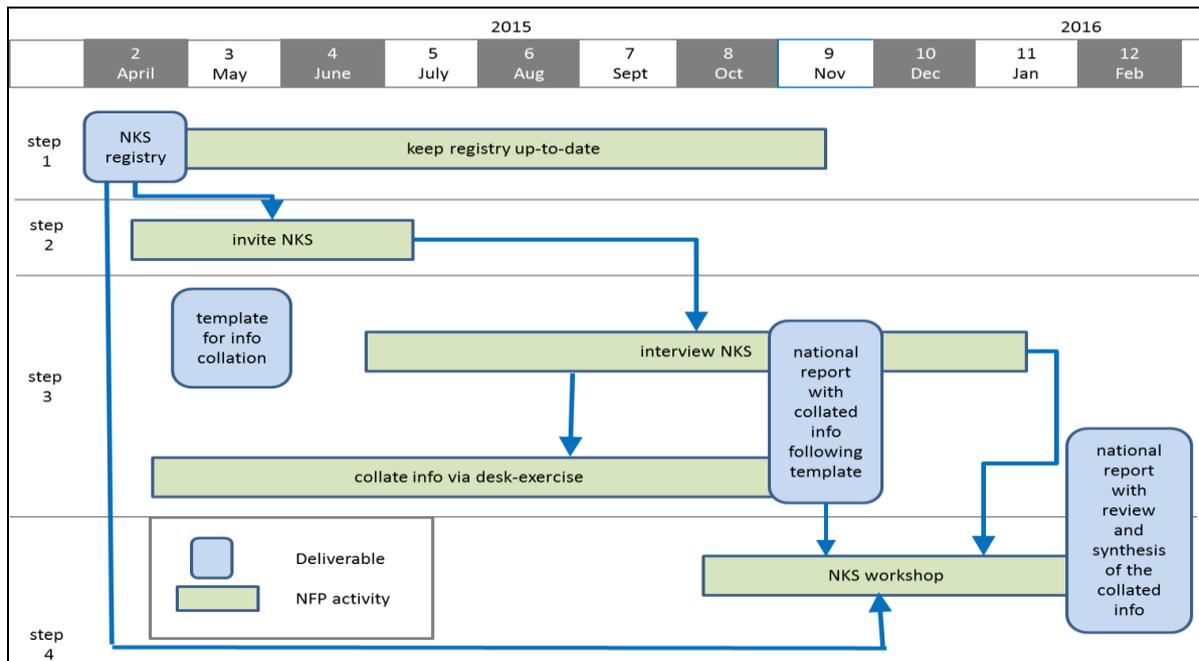
1. In each country, national key stakeholders (NKS) have been identified (in a way to ensure broad representation of soil and land-use/management topics and affiliations in research funding / end-use / science or policy making);
2. Interviews (structured according to a common template: see Annex I and 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;<sup>4</sup>

<sup>2</sup> See section 1.5 for a description of topic a-d.

<sup>3</sup> 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.

<sup>4</sup> 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?

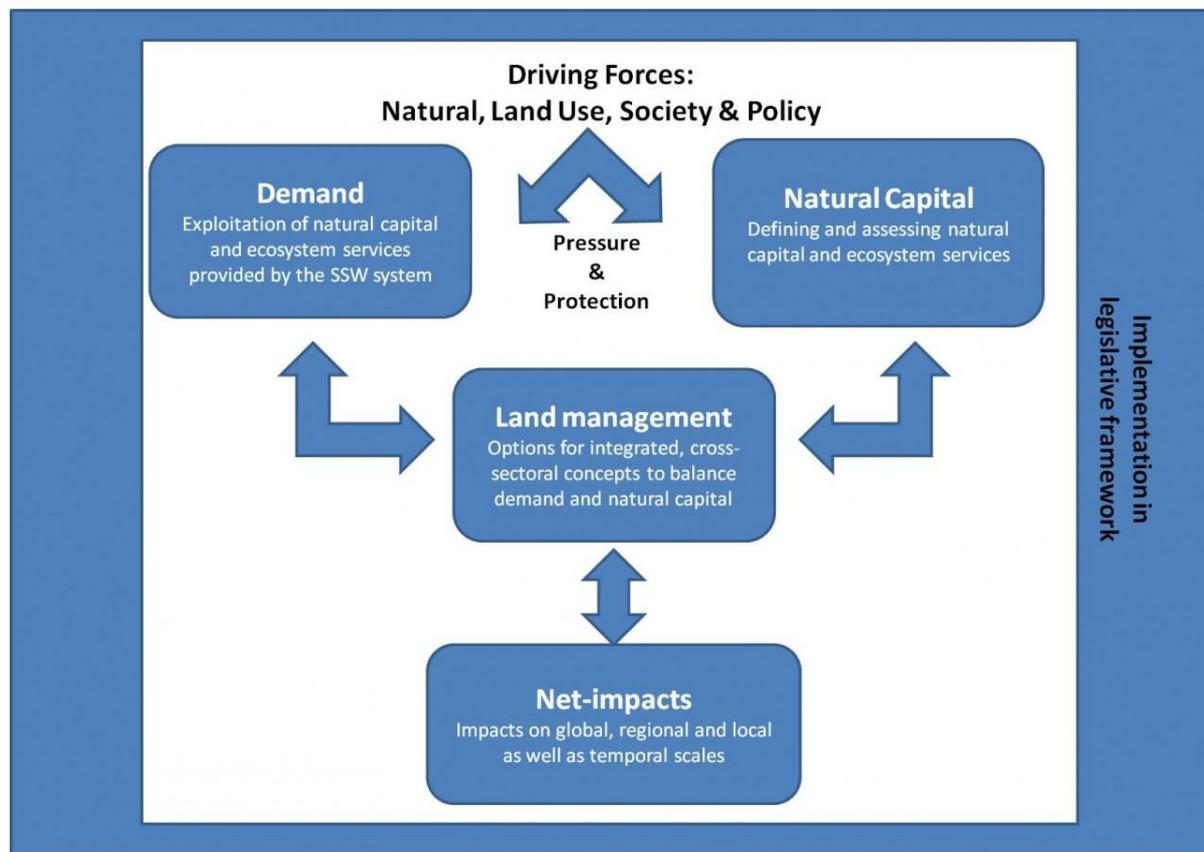


Figure 2: INSPIRATION's conceptual model.

## 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 22<sup>nd</sup> – 23<sup>rd</sup> 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

Country:

Name of INSPIRATION researcher:

Date of Interview:

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.*

*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]*

### 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

1. Name of NKS interviewed:

2. Institution:

3. Role:

4. Are you a (multiple answers possible):

- National-regional-local authority
- University/research institute
- Small or Medium sized Enterprise (SME, i.e. < 500 employees) / consultant
- Business and industry
- Non-Governmental Organisation (NGO)
- Network representative / leader
- Other, specify: ...

5. Fields of expertise (multiple answers possible): *[Ask to specify background regarding the selected item(s) in order to understand expertise background of interviewee]*

- Soil
- Water
- Sediment
- Urban / spatial planning
- Landscape design
- Land management
- 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  
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## Annex II: NKS hand-out: INSPIRATION interview at a glance

### INSPIRATION interview at a glance

#### Aim of INSPIRATION:

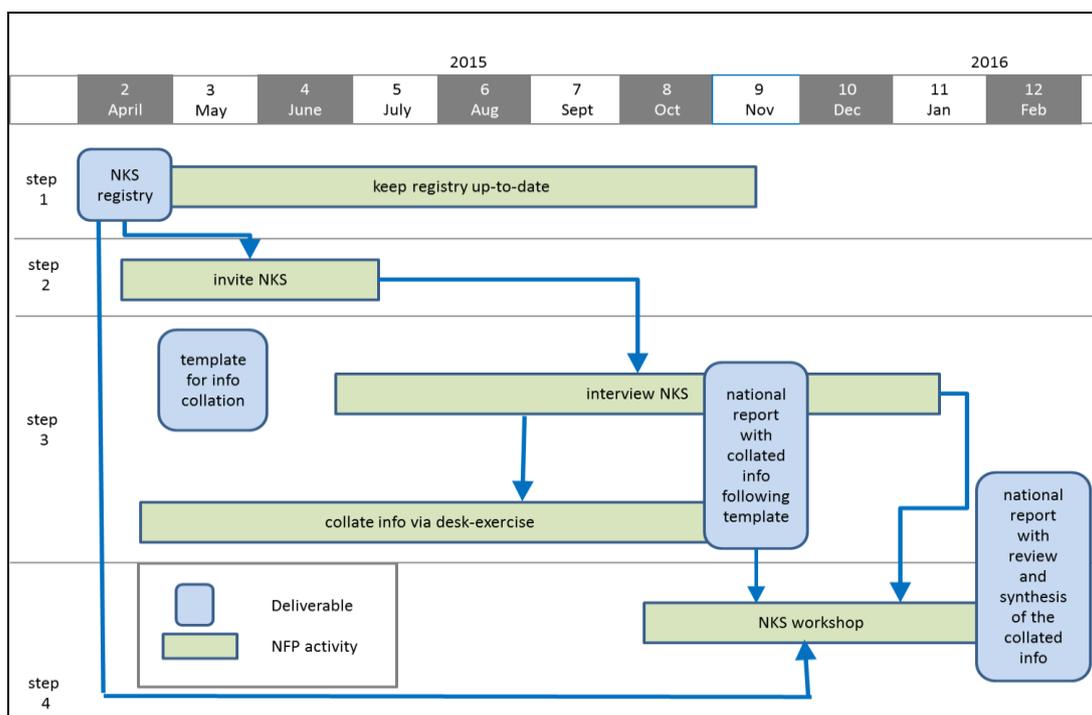
The main purpose of the EC-funded INSPIRATION project is to formulate an end-user driven strategic research agenda (SRA) for land-use, land-use changes and the related, impacted compartments of the Soil-Sediment-Water (SSW) system in order to meet current and future societal challenges and needs. Next 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](http://www.inspiration-h2020.eu)

Contact the National Focal Point:	Contact the general project coordination:
<b>See the INSPIRATION website for contacts</b>	Stephan Bartke <a href="mailto:stephan.bartke@uba.de">stephan.bartke@uba.de</a>

## 2. France

Report by Marie-Christine Dictor, Samuel Coussy, Valérie Guerin, Corinne Merly

### 2.1 Executive summary

#### 2.1.1 English version

At the end of discussions, revealing more than 60 ideas of research programmes, priority is given to societal challenges: Ensure secure supplies for water resource, contribute to food security and food safety and ensure an efficient use of natural resources. Nevertheless, transverses questions in several challenges show a wish to concentrate on functions of soil and on multifunctional services which they produce, with a need to sensitise the society in these functions and a need of indicators / data depositories to evaluate soil functional type which can't be generic due to soil diversity in France

The questions of research raised both during individual or collective interviews and during the national workshop were gathered in 5 great priority sets of themes:

- i. Allocation of land: A real need for tools for arbitration including indicators of city planning (conflicts between wellness and services, like the food production) in low density areas, for the ecological state or quality standards of the soil, the maps of vulnerabilities in link with the use of the soil for a better management of the contaminated sites, the development of tools for the management of the urban soils to be integrated in the documents of territorial planning, the creation of observatories of the urban soils allowing the follow-up of their temporal evolution, the development of evaluation methodologies of the effectiveness of treatment techniques including the concept of real risk vs possible hazard.
- ii. Agricultural production and climate: for a better apprehension in the management of the soils on various scales, the emergent subjects are to redefine the methodology of the determination of the useful water reserve of the soils under various pedoclimatic conditions; to build a soil mapping on a scale compatible with a decision making on the local level, predictive scenarios of evolution building,...); for a better management of storage capacities and transfer of the substances in the soils in link with the monitoring of long-term experimental sites, the raised problems relate to organic carbon fluxes, the contributions of organic nitrogen and phosphorus, the substitutes of phytosanitaires products, nanoparticles; the need of a new agricultural model with the development of alternative practices, taking into account of the macro- and micro-biodiversity in soil management, a better knowledge of processes and factors controlling carbon fluxes in contrasted landscapes.
- iii. Knowledge on the functions, distribution, and evolution of the soils: distribution and evolution of the soils in an integrated predictive approach (model integrating the various compartments of the critical zone); knowledge on the health risk of the new molecules present in groundwaters; development of sites of demonstration of innovating technologies and observatories with the long-term monitoring of the critical zone (new tools/methods of follow-up, definition of a set of generic biogeochemical parameters) in a space and temporal dynamics; the development of a network multi-actors for the data collections on the soils.



- iv. Monitoring on soil: with technological as well as methodological developments expected with capitalization of measure tools for a better knowledge of genetic inheritance, growth of the plants and its requirements in nutrients, soil conditions and its evolution, characterization and monitoring of the effects of the restoration of the system soil-water-sediments contaminated (in situ sensors, bioaccessibility / biodisponibility).
- v. Soil functions and services: the development of a methodology of evaluation of the soil functions and services associated in the agricultural, forest ecosystems,...; an integrated modeling in order to optimize the management of the landscapes in link with the agrosystems; the refonctionnalisation of the degraded sites according to their urban, suburban or rural future use, the need for reconciling the impacts on the wetlands and the associated ecosystemic services; the development of strong indicators to evaluate the impact of the practices with an objective of low impacts on the soils under various pedoclimatic conditions.

The improvement of the use of knowledge could be done on 2 levels: (i) on the level of a project by implying the stakeholders (including end-users) over the duration of the project (from the offer until the operational stages), by encouraging the building of multi-actors projects and by strongly associating the civil society, (ii) on the level of a program, the creation of networks with multi-actors must be encouraged with the development of management tools of information and knowledge in order to facilitate interface between the scientific knowledge, the policies and the civil society (specific tools/organizations). Innovating methodologies and funding mechanisms allowing an approach bottom-up must be developed. A particular point relates to the funding of the monitoring of the sites of observation and demonstrations on the long-term which must be secured. Places of meetings/debates between the various actors of a territory are necessary in order to lead to a common vision of the soil and in agreement with the development of the territory in the present and the future.

The national funding as well as the main European funding, in the opposite to the regional funding, are well-known by the interviewee. Among the proposals to increase the added-value in R&I and an increased accessibility towards the end-users, the set-up of demonstrators making possible the validation of technologies was mainly quoted as well as immersions of researchers in the companies for a better adequacy between the need in R&I for the companies (short-term) and the capacity of research to answer. Nevertheless, some sets of themes (soil-sediment-water system in an integrated approach, interface health-environment, pedogenesis, urban development) are not financed at the present time on high scales of technology readiness level. Funding of actions to the long-term (higher than 3 years) was stated in a recurring way during interviews and during the national workshop, in particular for the observatories long-term with the implication of multidisciplinary teams.



### 2.1.2 French version

A l'issue des entretiens, révélant plus de 60 idées de programmes de recherches, la priorité est donnée aux défis sociétaux suivants : sécuriser l'approvisionnement à la ressource en eau, contribuer à la sécurité et sûreté alimentaire et assurer une utilisation efficiente des ressources naturelles. Néanmoins, des questions transverses à plusieurs défis font apparaître un souhait de se concentrer sur les fonctions des sols et sur les services multifonctionnels qu'elles produisent, avec un besoin de sensibiliser la société civile à ces fonctions.

Les questions de recherche soulevées lors des entretiens individuels ou collectifs ainsi que lors de l'atelier national ont été regroupées en 5 grandes thématiques prioritaires :

- i. Affectation des terres : Un réel besoin d'outils d'arbitrage incluant des indicateurs de planification urbaine (conflits entre bien-être et les services, comme la production alimentaire) en zone de faible densité, des critères de qualité des sols ou d'état écologique, des cartes de vulnérabilités en lien avec l'usage des sols pour une meilleure gestion des sites contaminés, le développement d'outils pour la gestion des sols urbains à intégrer dans les documents de planification territoriale, la création d'observatoires des sols urbains permettant le suivi de leur évolution temporelle, le développement de méthodologies d'évaluation de l'efficacité des techniques de traitement incluant la notion de risque réel vs risque potentiel.
- ii. Production agricole et climat : pour une meilleure appréhension dans la gestion des sols à différentes échelles, les sujets émergents sont de redéfinir la méthodologie de la détermination de la réserve utile des sols dans différentes conditions pédoclimatiques ; de bâtir une cartographie des sols à une échelle compatible avec une prise de décision au niveau d'une localité, scénarios prédictifs d'évolution, ... ; pour une meilleure gestion des capacités de stockage, de transfert des substances dans les sols en lien avec le suivi à long-terme de sites, les problématiques soulevées portent sur le carbone organique, les apports en azote et en phosphore, les substituts aux produits phytosanitaires, les nanoparticules,...; l'élaboration d'un nouveau modèle agricole avec le développement de pratiques agricoles alternatives, la prise en compte de la biodiversité macro- et microbienne dans la gestion des sols, les connaissances accrues sur les processus et facteurs contrôlant les flux de carbone dans des paysages contrastés).
- iii. Connaissances sur les fonctions, la distribution, l'évolution des sols : la distribution et l'évolution des sols dans une approche prédictive intégrée (modèles intégrant les différents compartiments de la zone critique) ; connaissances sur le risque sanitaire des nouvelles molécules présentes dans les eaux souterraines ; développement de sites de démonstration de technologies innovantes et d'observatoires à long-terme de la zone critique (nouveaux outils / méthodes de suivi, définition d'un jeu de paramètres biogéochimiques génériques) dans une dynamique spatiale et temporelle ; le développement d'un réseau multi-acteurs pour une centralisation des données sur les sols.



- iv. Suivi et métrologie appliquée aux sols : avec des développements technologiques et méthodologiques attendus d'outils de mesure et de capitalisation des connaissances du patrimoine génétique, de la croissance des plantes et de ses besoins en nutriments, des conditions du sol et de son évolution, de caractérisation et de suivi des effets de la restauration du système sol-eau-sédiments contaminé (capteurs in situ, bioaccessibilité / biodisponibilité).
- v. Fonctions des sols et services associés : le développement d'une méthodologie d'évaluation des fonctions du sol et services associés dans les écosystèmes agricoles, forestiers,... ; une modélisation intégrée afin d'optimiser la gestion des paysages en lien avec les agrosystèmes ; la refunctionalisation des sites dégradés en fonction de leur usage urbain, périurbain ou rural ; la nécessité de concilier les impacts sur les zones humides et les services écosystémiques associés ; le développement des indicateurs pour évaluer l'impact des pratiques avec un objectif de limitation des impacts sur le sol sous différentes conditions pédoclimatiques

L'amélioration de l'utilisation de la connaissance pourrait être réalisée à 2 niveaux : (i) au niveau d'un projet en impliquant les parties prenantes (dont les utilisateurs) sur la durée du projet (depuis l'offre jusqu'aux étapes opérationnelles), en encourageant le montage de projets multi-acteurs et en associant fortement la société civile, (ii) au niveau d'un programme, la création de réseaux multi-acteurs doit être encouragée avec le développement d'outils de gestion de l'information et du savoir afin de faciliter l'interface entre la connaissance scientifique, les politiques et la société sous forme d'outils / organisations spécifiques. Des méthodologies et des mécanismes de financements innovants permettant une approche bottom-up doivent être développés. Un point particulier concerne le financement du suivi des sites d'observation et démonstrations sur le long terme dont le financement doit être pérennisé. Des espaces de rencontres / débats entre les différents acteurs d'un territoire sont nécessaires afin d'aboutir à une vision du sol commune et en accord avec le développement du territoire présent et futur.

Les financements nationaux ainsi que les principaux financements européens, contrairement aux financements régionaux sont bien connus de personnes interrogées. Parmi les propositions pour augmenter la valeur ajoutée en R&I et une accessibilité accrue vers les utilisateurs finaux, la mise en place de démonstrateurs permettant de valider des technologies a été majoritairement citée ainsi que des immersions de dans les entreprises pour une meilleure adéquation entre le besoin des entreprises (court –terme) et la capacité de la recherche à y répondre. Néanmoins, certaines thématiques (la composante sol-sédiment-eau dans une approche intégrée, l'interface santé-environnement, pédogénèse, développement urbain) ne sont financées pas à l'heure actuelle sur des échelles TRL élevées. Le financement d'actions à long-terme (supérieur à 3 ans) a été évoqué de manière récurrente lors des entretiens et lors de l'atelier national, notamment pour les observatoires long-terme avec l'implication d'équipes pluri-disciplinaires.



## 2.2 Methodology followed

This national report (i.e. INSPIRATION deliverable 2.5) reports the information collated for France. The information was collated in accordance with INSPIRATION D2.3 “Template for national information collation”. In France, 25 NKS were interviewed. In France, In addition to one-to-one interview, two workshops were carried out. One was organised as a phone conference (involvement of 3 persons). The 2 other ones were organised as workshops. The first one was undertaken in collaboration with the regional cluster “Axelera” (composed of researchers, end-users and regional policy makers) during their regular soil workgroup on soils held in September 2015. The second one was performed in October 2015 in collaboration with the research program “Pollusols” involving researchers, end-users on urban soils topic. 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.

The national workshop was held the 15&16 October 2015 in Paris. The agenda is provided in Annex III. Eighteen persons attend to the 2-day workshop (16 on the first day and the second day). Participants were divided into 4 groups according to their affiliation (end-users (2 x 4), researchers (4), funders / policy makers (4) for the first day of the NW. Each group discussed about the 4 following questions: (1) What are the challenges ahead for the soils?, (2) propositions of structuration of research subjects issued from the interviews, (3) Which tools and skills can we develop to link science and Policy?, (4) What are the ideal financing tools ?. For the second day, participants were divided into 3 mixed groups and each group brainstormed on the following 2 questions: (1) Integrated approaches in research in communicating between actors (researchers, policy makers, end-users, ...) and in maximising resources? (2) How do you facilitate the link between State and regional authorities? Four additional interviews were performed to address the specific recommendations held during the national workshop.

The D2.5 in a draft version was sent to the interviewees and workshop participants for a validation of the content. Five of them report back to NFP with some comments that were included in the final version of the D2.5, mainly on the Chapter 2 Research and Innovation needs (2 funders, 2 researchers, 1 end-user).



## 2.3 Research and Innovation (R&I) needs

### 2.3.1 Societal challenges and needs

For the majority of the national actors interviewed (60 to 70%), the priority is given to the 3 following societal challenges:

- Ensure secure supplies for safe drinking water,
- Contribute to food security and food safety,
- Ensure efficient use of natural resource.

Then, societal challenges such as “contribute to climate change and societal adaptation”, “contribute to a healthy environment”, “secure energy supply and distribution” and “reduce raw material and resource consumption” arrived in second importance during the conversations. It appears as well as the prioritization of certain societal challenges is different from a group of NKS of another one.

The relevance of the societal challenges was discussed and some of them were proposed. The question of soils deserves to be more visible and is transverse in the other challenges. Furthermore, the question of compatibility between challenges was approached: for example, food production vs. water resource protection. The notion of ecosystemic services and critical zone do not appear explicitly in the actual societal challenges and need to be more visible. The objectives of the sustainable development of the United Nations could be used as a reference: par exemple, “protect and restore soils” (obj 15), “live healthy” (obj 3).

During the national workshop, societal challenges have been prioritized differently according to participant typology: (i) for knowledge end-users, main societal challenges were related to secure risks due to pollution heritage en close link with soil use, need to heighten awareness of civil society to soil (soil heritage value, soil culture of soil respect,...), (ii) for researchers, the main societal challenge were related to climatic change and increased pressures on population migration, land allocation use conflict between energetic and non-energetic biomass production, , erosion degradation, water fluxes regulation, biodiversity, (iii) for the funders, importance of the objective zero degradation by 2030.

All participants agree on the importance to focus on soil functions more than soil services, with a need to sensitize civil society to theses soils functions and need of indicators / data depositories to evaluate soil functional type which can't be generic due to soil diversity in France.

### 2.3.2 Topics / research needs to include in the SRA

Soil is a natural and non-renewable resource that must be protected and managed and is one of pillars of sustainable and multifunctional ecosystem management. A proper land and land-use management is one of condition to maintain functioning ecosystem meeting various expectations on long term period. Metropolitan France form a major ecological crossroad within 4 of the 5 main biogeographic zones of Western Europe: Atlantic, continental, Mediterranean and alpine, which place France as the most diverse country of European Union in front of Spain and Italy.



### FR-1: Allocation of Land

The pressure on land increases in urban areas but also in rural zones. In France, the growth rate of artificialized soils between 2006 and 2012 is + 0.49% per year. It is significantly lower than the rate observed between 2000 and 2006 (+ 1.30% per year). In comparison, the population growth is 0.53% per year. The rural areas are more concerned by soil artificialization, because free space is more easily available. Between 2006 and 2012, more than 87% of newly artificialized territories were taken over agricultural soils. In 2012, agricultural soils represent 60% of the metropolitan area, vs 3% for artificialized soils. In 2006-2012, 1.2% of the territory has changed of use (0.8% in 2000-2006). The conversion and re-functionalization of artificialized soils is a more limited phenomenon (CGDD, 2015). In this context, the question of allocation of land is of particular interest. It involves important societal challenges such as concurrence on land use (e.g. biomass production for energy production vs food production), as well as the need of space for human development. For instance, the biomass production for energy sector represents about 60% of renewable energy in France, and should remain stable until 2020. This is the main sector of production of renewable energy according to the French Ministry of Ecology Phenomena linked to climate change (increase of pressure on land due to climate change and population migration) is also addressed by the question of allocation of land.

Specific research questions (following the conceptual model of INSPIRATION)

#### Demand

- - Increase in research type questions on landscape planning about trade-offs between wellbeing and cost of services in low density areas, carbon foot print of commuting, and more specifically for soil about trade-offs between wellbeing and food supply (it's cheaper to build settlements on flat areas, which are also those with the higher crop potential).

Why: To answer to the huge demand from society for houses with garden in well-connected areas.

#### Natural capital

- Assessment of ecological state or soil quality by choosing specific criteria, in relation with French policy (law on biodiversity). Focusing on compensation structures.

Why: Policy is emerging on this topic and not yet entirely validated by scientific studies.

#### Land management

- Management of contaminated sites with vulnerability soil map related to its use, re-functionalization of low contaminated sites, land use cartography at a relevant scale for local planners.

Why: there is a need to make available planning tools at a local scale to address urbanism questions.

- Study and understand phenomena such as “land take” and “soil sealing” into order to prevent urbanisation (need for decision-making tools allowing to make judgements on the choices/actions).



Why: it is necessary to arbitrate between several potential land uses in a context of pressure on land.

- Better management of urban soils, with an integration of the specific objectives in strategic documents of territorial planning. Observatories adapted to different scales should allow carrying out the monitoring of urban soils. Other tools would be the promotion urbanization projects consuming less space, facilitated use of brownfields, implementation in appropriate fiscal tools and integration of the reuse of excavated land.

Why: the main objective is to reduce urban sprawl and the net increase in soil artificialization.

### Net impacts

- Develop evaluation methodology to compare the efficiency of treatment techniques, evaluate the real risk vs. potential risk of soil contaminated for the environment.

Why: this is a societal need because actual data from risk assessment studies on polluted sites are anxiety producing for the society.

### **FR-2: Agricultural production and climate**

Agriculture plays an important role in the environmental evolution at a global scale; it contributes to GES emissions together to potential carbon storage. Numerous pressures such as pesticides use, fertilizers use, and tillage have an impact on soil and groundwater quality, on its productivity. Organic matter and in particular organic carbon improve soil fertility and its stability and contribute also to control atmospheric carbon emissions. In France, organic carbon content decrease of 9 % in agricultural soil due to ecosystems evolution, conversion of grassland to arable land, agricultural practices changes (CGDD, 2015). Agricultural practices such as tillage, affect mostly some microfauna and fauna classes (microscopic fungi, earthworms) which are essential to soil functioning toward its structuration. Mean excess of nitrogen is estimated to 902 000 tons en 2010 en France with significant disparity between regions and crop type. Nowadays, forest soil management involve the adaptation of silvicultural objectives to the local context in order to preserve soils by limitation practices impacts to an acceptable goal because practices changes and wood demand does not allow, in some cases, a sustainable management without input or compensatory works. Compaction risk mapping of French soils show that that compaction mainly due to agricultural and forestry mechanisation and is very high in 15 % of agricultural soil under wheat crop and one third of French agricultural soil has a high risk of soil compaction with again high spatial disparities. One of the specificities of France is the opportunity to access to different areas with wide range of climate, soil type, crop type, biodiversity, and local constraints (metropolitan France and French overseas). Proper functioning of agricultural, forest and natural's soils will be ensure by providing to the relevant managers, knowledge and decision making tools to allow them to adapt relevant practices for a better preservation of soil and to improve soil state, using indicative political or economic instruments

Specific research questions (following the conceptual model of INSPIRATION)



## **Demand**

- Need to review methodological approach for the determination of water retention in soil under various pedo-climatological context and various scales (from the plot to the territory).

Why: It is necessary for a better management of soil.

- Development of soil mapping at the local scale.

Why: for the development of strategic tools better adapted to local diversity, complex development operations, but also to changes in the time of their territory.

- Develop prospective approaches, modelling for scenarios of evolution building, mechanisms involved

Why: to be able to support change, inform decision to be taken for changing practice patterns.

## **Natural capital**

- Understand soil carbon dynamic in the critical zone, biogeochemical mechanisms involved using integrated approaches and new tools.

Why: To improve carbon storage in soils (4 per 1000 program launch by French Ministry of Agriculture) and to better understand how climate change impacts soil organic carbon dynamics.

- Need to research substitution solutions to conventional herbicides, insecticides and fungicides, antibiotics.

Why: To limit in the future further pollution of surface water and groundwater, soils and food.

- Need to research alternative solution to inorganic nitrogen and phosphorus fertilization.

Why: To limit the cost of treatment of contaminated environment (such as water).

## **Land management**

- Develop a new agricultural model, with an evaluation of alternatives cultural practices developed at a local scale to be translated at a national scale, taking into account territorial specificities for cultural practices implementation.

Why: There is a societal challenge for an agriculture turned toward research of new practices and production systems more efficient on economic, environmental and social aspects.

- Integrate microbial biodiversity preservation in soil management to maintain essential soil function (carbon and nitrogen cycles).

Why: Need to preserve biodiversity and soil functions.

- Need for knowledge about processes and factors controlling organic matter storage and fluxes in contrasted landscape.



Why: to be implemented in management strategies of organic matter at agricultural landscape scale (equilibrium between carbon storage and nutrients availability for plants).

### Net Impact

- Understand nitrogen impacts under its various forms in order to quantify involved processes and spatial interactions implied in the nitrogen cascade, based on long term monitoring sites.
- Why: There is a need for innovative mitigation strategies of nitrogen loss and agricultural production system adaptation. Most long term experiments show that nitrogen surplus generates high emissions of N<sub>2</sub>O in the atmosphere (with high warming potential).
- Need to understand mechanisms controlling natural nanoparticles reactivity in order to predict their transfer along the critical zone.

Why: Reduce the exposure risk potential for humans and animal.

- Develop innovative technologies of soil tillage and evaluate the gain in terms of biodiversity preservation, efficiency, soil compaction.

Why: There is a societal challenge to be addressed in order to facilitate re-use of treated soils in planning for and managing urban development.

- Requirement of decision making indicators to evaluate and adapt practices which could impact fertility of forest lands.

Why: To improve knowledge for a better management of forests soils in relation to climate change.

- Requirement of decision making tools to adapt forest to climate change: need to know soil capabilities (especially available water storage capacity) and autecology of forest species in the aim to have a good adequation between environmental characteristics and selected species ecology to adapt to current impacts of a changing climate.

Why: To prevent forest species vulnerability to climate change and in particular to water scarcity.

### **FR-3: Knowledge, functions, distribution and evolution of soils**

In its report of 13 February 2012 on the implementation of the strategy (COM 2012 46 final), the European Commission deplores that "knowledge on the status and quality of soils remains fragmented and that the protection of soil is not assured in an efficient and consistent way in all states members." (CGEDD, 2015). In France, it remains several scientific, methodological or instrumental barriers concerning knowledge on functioning and spatio-temporal dynamics of soil (White book on soils 2013-2015, CNRS). For this purpose a major transverse axis adopted in the French "proposals for a national sustainable soil management framework" (CGEDD, 2015) covers the theme "Improve knowledge on soils". Moreover, the French Environment and Energy Management Agency (ADEME) has counted about 100,000 ha of sites with historical pollutant activities in urban areas in 2014. Thus, a



critical and socially sensitive issue of knowledge on soils deals with the behaviour of pollutants in these sites. Knowledge in line following Technology Readiness Levels (TRL) is a way to ensure knowledge transfer to operational actors. This is the role of scientists to ensure such transfer since they are responsible for knowledge and methodology (Synthesis and recommendations for contaminated soil research (ADEME, 2015).

Specific research questions (following the conceptual model of INSPIRATION)

### **Demand**

-

### **Natural capital**

- Better knowledge of natural environment, kinetics of pollutants transfer in soils (in particular urban soils), development of models integrating all the critical zone compartments (biological, mineral, atmosphere, hydrosphere).
- Why: the spatial diversity of soils in France is strength to improve and federate knowledge on soils. In situ monitoring is a way to acquire data for this purpose.
- Characterization and evaluation of the hazard of new pollutants (emerging / persistent) especially in groundwater. Characterization of diffuse pollution: on line monitoring, in situ metrology, integrative/passive sampling.

Why: there is a sanitary challenge to understand the behaviour of these pollutants in soils and groundwater.

### **Land Management**

- Demonstration sites to accelerate technological developments, verify the efficiency of treatment techniques and their validity in term of user's expectations; It could be also a communication channel to prove innovation realty to end-users.

Why: beyond the technology improvements addressed by this topic, it responds also to a societal need of knowledge on the sensitive question of polluted soils.

### **Net impacts**

Long-term observatories of the critical zone, allow the study of the spatial and temporal dynamics of the processes (ecosystem resilience, retroaction of the biological organisms on soil-sediment-water system and climate), facilitate inter-disciplinary approaches and promote exchanges among local authorities.

Why: general knowledge on long-term behaviour of the critical zone can support various local policy options.

- Improve knowledge on soils, particularly from a national scheme of soil data (to develop), networking of data producers and managers, pooling methods and development tools, as well as facilitate access to data.

Why: knowledge on soils remains fragmented.



### **FR-4 Monitoring on soils**

During the French national workshop, the need of indicators and data repositories to assess the functional behaviour of soils has been considered as a real societal challenge. In France, data repositories cannot be generic because of the diversity of soils on the domestic territory. Thus, new metrologies of soil characterization and numerical mapping should be developed (White book on soils 2013-2015, CNRS). Utility of observation systems to gather information on soil uses practices over long periods has been confirmed by a large number of scientists. Moreover, in the context global change, metrology of carbon stocks in soils is the first step to contribute to the reduction of greenhouse gases (Proposals for a national sustainable soil management framework, CGEDD, 2015).

#### **Demand**

- Need for sensors for monitoring plant growth and soil needs (carbon, nitrogen, phosphorus ...).

Why: the spatial diversity of soils in France involves various soil needs.

#### **Natural capital**

- Set up monitoring devices of soil conditions, the balance genesis vs erosion, the carbon content and carbon stock and the GHG emissions using instrumentation at different scales.

Why: the special diversity of soils in France, as well as the context of global change requires improving knowledge on soils by in situ measures.

#### **Land management**

- Need for metrology and measuring devices for both characterisation and restoration of contaminated soil-sediment-water system (geophysical techniques, -omics tools, geostatistical approaches ...), in-situ sensors to decrease soil heterogeneity, bioaccessibility of pollutants.

Why: to guarantee the level of restoration of a derelict land.

#### **Net impacts**

-



## FR-5 Soil functions and services

Relationships between ecosystems, their functions and derived services are often complexes. Each ecosystem assures several functions and each service merged numerous ecological functions merged from different ecosystems. From these links arise the close dependency between good health of ecosystems as a whole and the quality and sustainability of ecological services. For France, the issue of water arises mainly through the problematic of the quality of drinking water and sanitation. The problem is worsening background pollution from persistent pollutants and a risk reduction of water volumes actually. Forests are critically important for maintaining vital ecosystem functions and the services required for sustainable development. For example, in France, 3.9 Mha of forest stands present a water loss due to climate change (Mediterranean area) or to low soil water reservoir and particularly exposed to erosion. Only 5 % of the French forest (0.7 Mha) are located in area with an excess of water and are highly productive. Even if the wetland area considered as remarkable are well identified and protected (Natura 2000), common wetland area received less attention. Cumulative effects of small wetland degradation have severe effects in particular with the provision of ecosystemics services. Moreover, composition of the plant community influence physical and chemical soil-root matrix and deep root systems can influence subsurface ecosystem services.

### Demand

-

### Natural Capital

- Develop an evaluation methodology for soils functions and ecosystem services, with values and suitable indicators, relationship between economy (services produced by the Earth and manufactured by the humans) and ecosystem functioning (agriculture and forest), indicators as a function of the future use of the treated soil.

Why: There is a societal challenge by the consideration of the soil as an heritage vs expected .services.

- Develop knowledge about the interactions of the symbiotic relation between plant and N- fixing microorganisms.

Why: to nitrogen and phosphorus availabilities in soils especially for forest soil.

### Land Management

- Need for integrated assessment modeling for the modulation of landscape mosaics to optimize landscape services under various agro-systems.

Why: to help decision-making and find a comprise decision between ecosystemics services (such as biomass production, water production, soil preservation) acceptable by socio-economics actors.

- Develop feasibility studies and remediation strategy for refunctionalisation of degraded sites (brownfields, polluted soils) for rural, periurban or urban use.

Why: To establish soils vulnerability maps (Geological Information System) coupled to soil use, to consider



## Net impact

- Define strong indicators to evaluate and adapt practices for a lower impact on soil fertility, especially for forest soil.

Why: for a better preservation of biodiversity and a higher valorisation of soil functions and associated ecosystemic services.

- Assess the long term impacts of management practices in the different soils and under the various climate conditions that exist in France and link them with long term assessments performed in Europe.

Why: long term effects are often very different from short term ones and the trade-offs between the various functions fulfilled by agricultural soils differ in the long term.

- Develop useful diagnostic tools to evaluate soil potential and soil sensitivity under various pressures (soil depletion and soil compaction,...) and management practices taking into account knowledge on potential reversibility of past and current impacts. A very simple tool can be found here: <http://knowsoil.catch-c.eu/KnowSoil/>

Why: Develop an engineering service of forest soils from prevention to feasibility and estimation of the cost and benefits of measures of restoration/remediation operations.

- Need to evaluate management and practices impacts on wetland area in order to reconcile biodiversity, regulation services (water resources, mitigation and clean-up from metallic and organic pollutions, ...), production services (in particular of agricultural products) and cultural services (cultural heritage, landscape, leisure activities, ...).

Why: need to measure biodiversity erosion taking into account adaptative and evolutionary capacities of biological systems.

- Upgrading biological monitoring of soils during remediation process in a view of future ecosystemic services.

Why: There is a high demand on the future use of the treated soil by the stakeholders.

Among the answers related with important/relevant documents, research agendas, research programmes underpinning these topics, the interviewed NKS cited also National Research Strategy, Generic Call of the French National Agency, White book on Soil from the French National of Scientific Research Centre, Sciences Academy on Soil prospective, thematic book from National Research Agency, pluri-annual intervention program of public land establishment (Nord pas de Calais territory), Chevassus-au-Louis report “economic approach of biodiversity and ecosystem services”.



## 2.4 Experiences regarding connecting science to policy/practice

### 2.4.1 Use of knowledge

#### Current French Status

The scientific knowledge can be defined as knowledge arisen from one community and validated by the peers. It is not absolute, being an interpretation of reality in one place and time and in constant evolution.

Scientific knowledge is used at various levels and for diverse objectives.

- First of all, it has a science / technical role as it enables to gain understanding on the soil-water-sediment system and on its interactions with human activities (resources, impacts, etc.). It is used to establish the state of the art, to give answer to technical issues and it enables to define future research needs and subjects.
- Second, scientific knowledge is used as one of the pillars of decision making and can be a driver for some regulatory frameworks. It has also a predictive and warning objective, as it enables the emergence of new subjects.
- Third, it is the building stone for both larger use through up-scaling and industrialisation or for innovation. It can convey to innovation development in response to final users (e.g. land managers) demands.

The main sources of scientific knowledge for the NKS are conferences, scientific publications, reports, colleagues, databases, web site of research organisms. Funders and end-users read professional papers. And 38 % of the NKS interviewed were involved in research projects.

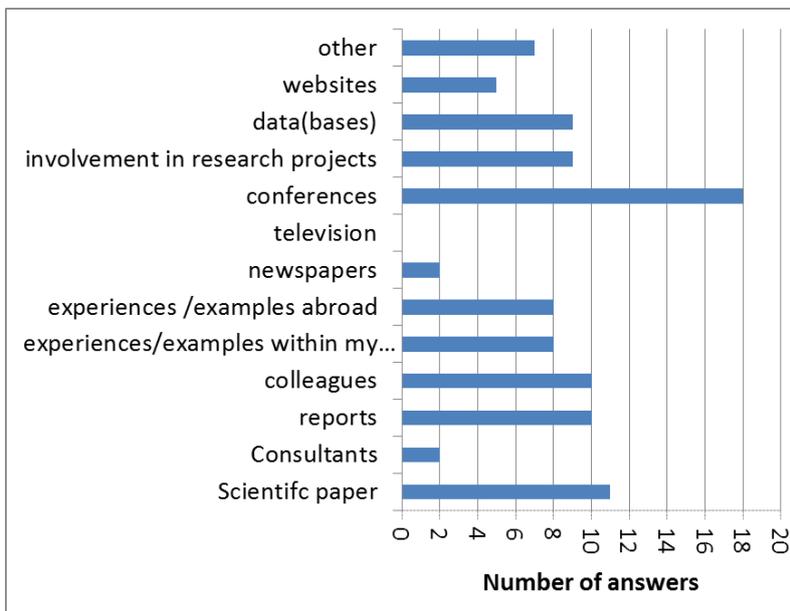


Figure: Sources of scientific knowledge cited by NKS (FRANCE)

For some stakeholders, scientific information was considered to be used only sporadically by lack of time or lack of confidence in the results.



### *Improvements for the use of Knowledge*

The up-take of knowledge could be enhanced by improving communication of scientific results to a wide range of stakeholders. In order to reach that goal, several recommendations and propositions of actions were put forwards.

**Adapt communication strategy and material to the targeted audience was deemed necessary:** communication documents and their diffusion means shall be proposed and developed according to the demands and needs of the stakeholders and their level of (non)technicity. As an example, to widen-up communication, it is important to provide knowledge which is understandable and accessible by a large number of stakeholders. This can be undertaken through **science popularisation** and issuing flyers, website and information on social networks. Some stakeholders raised the need for **organisation dedicated to transferring information** to potential users.

There is a need to develop **tools to better preserve and manage the knowledge**. There is a real demand on having long-lasting tools (eg intelligent databases) which provide validated and up-dated knowledge, which include data, report and guidelines at various temporal and spatial scales. In addition, such tool have to be user friendly and may combine information on soils for all land-use types (urban, agricultural, and others).

Soil or sediment related knowledge being only a part of the information used by the stakeholders in their decision making process, it is important to show how it is related to the other environmental compartments and to their demands (social, economic and political aspects) in developing **integrated tools**. The up-take of knowledge in decision making may be improved by providing **decision making tools** combining information on various themes (such as water, wastes, urban planning) at local or regional levels, and enabling to relate scientific knowledge and decision-makers demands. Such tools could propose various types and levels of information adapted to the type of stakeholders and their demands.

The use of knowledge will be enhanced by **raising soil usefulness and resources awareness** among actors. This could be undertaken by providing meeting opportunities for all types of soil related actors. **Multi-actors** (including multi-disciplinary sciences, but also policy and society actors) **networks** may be created or enforced. **Training** on land and soil could be proposed to actors. Increase of **demonstration cases** to illustrate pilot or field applications of research and gain confidence on its further use was also suggested. In order to promote dissemination of demonstration case studies to a wide-range of stakeholders, it was suggested to enlarge demonstration sites proposers / providers to all type of stakeholders (more specifically site could be provide by local authorities and land managers which could then act as **exemplary driver**).



In order to favour use of knowledge, it is necessary for researchers' community to **shift from scientific recognition to societal usefulness**. At the moment, scientists in France are evaluated on the number of peer-reviews publications they achieved, and on the impact factor of their publications. As a consequence, they focus on providing good science, and short term results that are quicker and easier to publish. A shift to long term assessments and societal usefulness could be achieved with the following elements:

- Some research calls would gain interest for the society if they include funding for demonstrators, public involvement, building easy-to-use tools for decision making, and if they rated projects on these points too (not only on the peer-reviewed publications).
- **Stakeholders (and more specifically users) involvement** at all stages of the research process (offer to production). Public participation for collecting research data is already common in the biodiversity field and could be widely applied to soil issues.
- There is a need to **develop specific skilled human resources** such as “scientific translators” and “integrator” to facilitate the use of knowledge, and also translate society requirements into research questions.

**To sum-up**, in order to improve the use of knowledge, the following actions could be included in the SRA:

At a project level,

- Stakeholders (including users) involvements throughout the overall research project process (from the bidding to operational stages), multi-actors project and public participation shall be further developed.
- Subjects on integrated tools, decision-support tools, intelligent soil database systems and demonstration cases shall be proposed.
- Communication and dissemination through communication adapted to stakeholders' demands and science popularisation shall be promoted.
- Project award must be based on scientific excellence as well as societal impacts of the project.

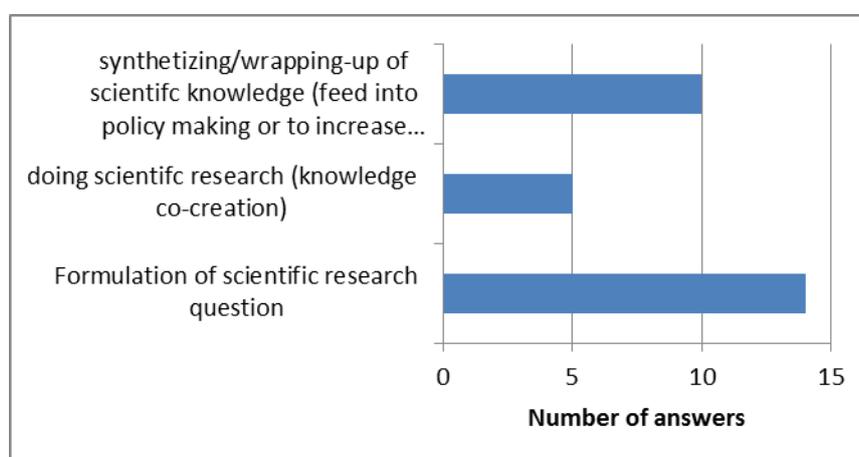
At a programme level,

- Multi-actors network and training (through demonstration) shall be encouraged.
- Information & knowledge management tools shall be promoted.
- To facilitate interfacing between science and policy /society, specific skills (such as “translator”, “interfacer” and “integrator”) and specific organisation shall be developed.

## 2.4.2 Possibilities to set the agenda

### Current French Status

The stakeholders issued from the business and policy sector (non-academic sector) reported that they were for most of them involved in formulation of scientific research questions at national level (elaboration of the action plan of the National Research Agency and mainly for the French societal challenge 1 – Efficient resource management and adaptation to climate change) - and at European level (Water JPI, Eranet Waterworks). For some of them, they also synthesize and wrap-up scientific knowledge: this is particularly the roles of the competitive clusters and networks of actors (researchers (namely those involved in ALLENI), end-users, policy-makers ...). Only a few of them take part in knowledge co-creation (Figure ).



*Figure* : Involvement of formulation, knowledge co-creation and synthesizing of scientific knowledge.

From the results of all types of stakeholders consulted, the influence on the agendas and research policies happens at different levels:

- at the regional level, stakeholders are involved in regional instances, such as: Smart Specialization Strategy, Social environmental and economic regional council, River Basin committees, and implementation of regional patterns of ecological coherence.
- at the national level, stakeholders are involved as permanent board members of research organisations (INERIS, IFREMER, INRA, IRSTEA, IRD, BRGM), specific alliances of research (Allenvi, Ancre, Allisten) or funding agencies (eg ANSES, ADEME), as participants of strategic steering committees of the National Research Agency ANR; as responsible bodies for state organisations (such as CEREMA, IFSTTAR, IGN) or as invited guests of boards of director (eg ONEMA or in a near future foundation for research on biodiversity).
- At the European level, their presence in the program committees of H2020, as members of Era-Net programs, in groups of Joint Programming Initiative, as part of French delegations which are at the interface science and international policies (IPBES, global partnership soil).



- Some French teams are involved in the international Belmont forum programme but they are not represented in the national workshop (CIRAD, IRSTEA, IRD, Universities).

Research agendas reflect only partially the needs of stakeholders. In some cases specific structures were created.

The need for a targeted and interdisciplinary research was stressed.

### *Opportunities to improve participation in research agenda elaboration*

At local scale, some research foundations were set up to respond adequately (due time and space) to stakeholders demands. In order to favour promptness and effectiveness of research in some circumstances, these initiatives consisting in creating a public-private partnership based on a research programme may be encouraged and supported. Feedback from such initiatives (administrative and science results) shall be shared and feed-in each other's for optimisation and experience mutualisation. **Promotion of local-initiatives and inter-local initiatives/projects** across Europe are questions worth asking.

The need to breakdown spatial and scale barriers has been firmly expressed. Indeed, local or regional stakeholders (even if defining local and regional programmes) are lacking influence on research agenda mostly defined at the national level. **Methodologies and fundings to ease bottom-up approach** need to be developed.

In order to increase opportunity for more integrated research, decompartmentalisation of actors and communication between research communities and among stakeholders must be achieved. Soil and sediment related actors will then have the capacity to formulate a strong integrated research demand. Communication can be enhanced through **development of multi-actors networks and enlargement of stakeholders' project involvement**.

The need to include research actions to provide solutions for **long-term soil and land management** was emphasized. As long term effects assessments require research and demonstration plots that last several decades, there is a need for more permanent well monitored research plots, and thus long term research funding on these plots.

Bridging the gap between the "rural world" (where soil is considered as a productive resource) and the "urban world" (where soil is considered as a property entity) was also expressed. **Societal debate** is deemed necessary to develop **soil vision with respect to territory development and future**. Debate shall enable to discuss value related to its scarcity and to take into account all the possible uses of soil according to the various actors of a territory and according to a common vision for developing a territory.



### 2.4.3 Science – policy – practice

#### **Current French Status**

In this section, the interactions between science & policy and science & society are discussed.

As for Science – Policy, stakeholders' participations to the various strategic boards and working groups enable better recognition of the state of the art in public policy especially concerning contaminated land management as well as for the law on biodiversity.

Stakeholders cited national Science-Policy interface documents as follows: National Research Strategy, Generic Call of French National Agency, Strategic Agenda of ADEME, Conferences synthesis, Soil state in France, GESSOL program, Annual report on agro-ecology.

Nevertheless, stakeholders stressed the lack of political foresight on soils at both national and European level.

As for Science – Society interaction, stakeholders' points of view were divided. For some of the NKS, the societal impact does not exist or is difficult to quantify. For others, societal impact exists and is measurable by:

- Technical indicators such as scientific publications, patents, transfer of licenses, the establishment of technological platforms, environmental database available to the public, the elaboration of methodological guides of good practices, certification issued by the ministries and indicators issued from urban planning.
- Financial indicators such as number of start-up, numbers of jobs created.

A methodology has been published by The French National Agronomic Institute (INRA) called "impacts analysis of public agronomic research (ASIRPA) and appears to be a methodology to evaluate the economic, political, environmental and societal impact of research projects.



### ***Improvement for Science-Policy practice***

Formulation of policy was seen either as direct product of research, either from a product which needed to be established from research results. In the second case, the need for **resources dedicated to translation of science in policy** was expressed.

In order for science to play its full role in giving relevant information to policy making, it was considered important to have people having **both science and policy educations**. These persons could then act as translator or communicator between the science and the policy worlds. Moreover, it was suggested to **offer earth science training** to politicians to raise their soil awareness. In addition, **training on soil challenges such as soil protection and preservation** shall be included in educational programme (and not solely in the agricultural field). **Awareness on soils challenges** shall be raised for land managers or workers (such as municipalities, earthwork and infrastructure companies and land developers). Soil is part of an overall environmental system, which related to many stakeholders and actors. Soil regulatory requirements are scattered in many regulatory frameworks and soil regulation depending on the situation falls under environmental, water, waste, biodiversity and others regulatory frameworks. This makes the compliance on soil regulations and soil management complex and sometimes non practical as it requires multi-disciplinary skills and as the aims of the different regulatory frameworks can be diverging. With a view to simplification, stakeholders expressed their need for **decompartmentalisation of policies** and/or **homogenisation of soil regulatory framework**. Moreover, as soil processes are rather slow and difficult to monitor at low cost, there is an urgent need of **consensual indicators to be used in policy impact assessments**.

Increase of regulators and society involvement in research projects shall also promote communication and exchange. It is deemed important **to enlarge multi-disciplinary projects to multi-actors projects**, by including authorities, society representatives (public, Non-Governmental Organisation) in the project.

Overall science–society-policy interface may be improved by encouraging **positive communication** on soils. Soil(s) as an opportunity and as resources shall be conveyed to raise the importance of this resource for all stakeholders and especially policy makers and society. **Incentive for soil taking care** and soil stewardship, such as **soil label or award** may be promoted at local, regional, national, international level.

Better communication between soil communities and society will result in a **better awareness** of soil issues and opportunities by the **society** and in some case recall the importance of the relationships between human beings and the natural world. This could in turn act as **a positive driver** for societal, political and economic shifts with respect to soil.



## 2.5 National and transnational funding schemes

### 2.5.1 Funding schemes and possibilities for research funding

#### State of knowledge of the actual funding schemes

Regarding regional funding schemes the main funds identified are FUI, INNOV'R, PhD fund, INRA department PhD funds.

Only 40% of interviewees NKS have responded to the question which denotes a certain ignorance of these regional funds. The interview analysis highlights the inequalities in the level of fund allocation in the different Regions. However, it allows own research by companies.

100% of NKS interviewed have responded to the question about the national funding schemes. Calls to projects that were cited are those of the national funding agencies (ANR, ADEME, ONEMA), “investing for the Future” (IA). Most national funding windows are well known even if some are cited by a low number of NKS: Some initiatives, SOERE, LABEX and EQUIPEX, and Carnot specific call could provide funds for research on soils but they are open to associate teams only.

Different types of European funding have been identified by the majority of the researchers group. H2020 (Era-Net, JPI, COST, LIFE,...), INTERREG funds were cited by the great majority of NKS.

Regarding international financing schemes, they are mainly known by funders and researchers. Era-Net COFUND NORFACE, Belmont Forum, program 4 per thousand, UN<sup>5</sup>, Hubert Curien Partnership were cited among the sources of financing by these actors.

Knowledge on existing financial funds, their position in the TRL<sup>6</sup> scale, the size of the project (money) and typology of actors were defined during the national workshop and were available in annex IV (see below).

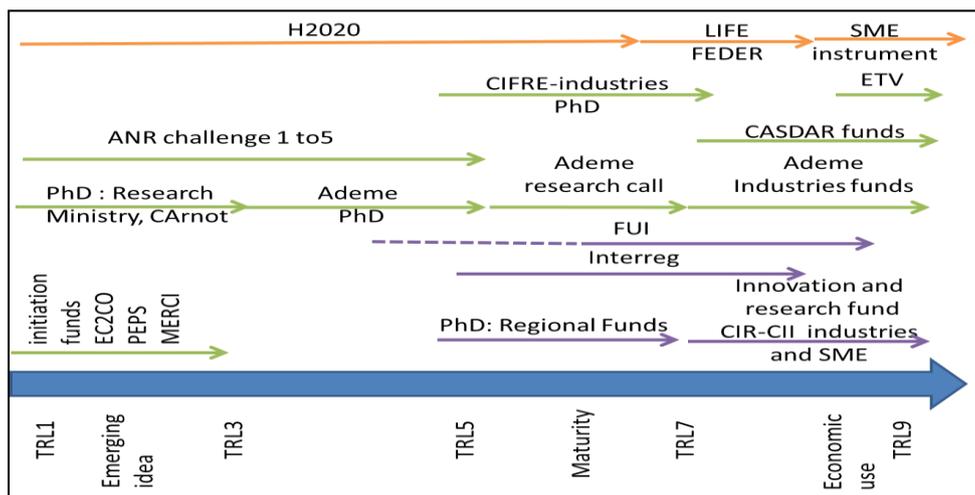


Figure: Synthesis of different funding schemes at a national level by the French NKS (national workshop).

<sup>5</sup> UN : United Nations

<sup>6</sup> TRL : Technology Readiness Level



### ***Increasing value of research and innovation***

Several tracks have been proposed to increase added value in research and innovation such as:

- The set-up of demonstrators will improve the visibility and impact of research outputs at a trans-European level. They would be seen as a catalyst for socio-economic world.
- The need of more flexibility from regulator for full scale demonstrators.
- To accelerate and decrease the time to market, several ideas were introduced such as:
  - projects with industrial-innovative SMEs<sup>7</sup> partnership,
  - need for a more flexible regulation to use the innovations,
  - enabling the end users requirements more fully into account when preparing Research & Innovation programmes,
  - research actions with SMEs should be with a shorter time- frame than the PhD time-frame,
  - and opportunity for a researcher to spend an immersion in a French or foreign company during his professional carrer.
- Promote the hiring of PhDs in SMEs and facilitate co-hiring of researcher in university and private companies.

Researchers must solicit companies earlier to better address their need and to promote the exploitation of research results. Intellectual Property must also be discussed very early.

In France a strong expectation is expressed by the NKS with regards to Poles of competitiveness to be a facilitator due to their good knowledge of regional calls for tenders and their ability to bring together companies and research laboratories.

There is a need for feedback, to bring to knowledge, to better show the skills acquired during regional and/or interregional project and to benefit others (at national and European level).

### ***What could be an ideal funding for an idea***

To move from a research idea to its use on the market it takes at least 10 years (see below).

This requires to successfully manage and mobilize different funds at different stages of research. It often begins with the realization in parallel and successively of several PhD integrated in successive projects funded by French Agency before finding the most promising path. Its applicability can then be demonstrated through the use of European funds. The final demonstration of the industrialization of the idea can then be carried out by seed funding or private funds.

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<sup>7</sup> SME: Small and Medium Enterprise





Main funders in France are National Agency such as ADEME and ANR which develop their own Research Agenda (RA):

- For example, ADEME (French Environment and Energy Management Agency) has its agenda planned for year 2014-2020. The process to build the next RA will start in 2018. ADEME, as part of its RDI Strategy (2014-2020) identified five major research programs: sustainable cities and territories; sustainable production and renewable energy; agriculture, soil and forest biomass; air quality, impacts on health and the environment; energy, environment and society. ADEME has an annual budget of about € 30 million used through three instruments: the call for research projects, contracts in OTC and PhD grants.
- French National Research Agency (ANR) has an annual action plan (Generic Call) built in compliance with National Research Strategy (SNR). The action plan includes, in the societal challenge part, main research priorities defined in SNR document and take into account contribution of the 5 Research Alliance, CNRS et Research ministry request. A specific line about the research needs on the critical zone and one about the research needs on the health-environment link have been integrated as specific lines since 2014 into the challenge (1) “Efficient resource management and adaptation to climate change”. The 2016 Work Programme's Generic Call for Proposals lists nine of the ten societal challenges as well as the Other-knowledge challenge (1) Efficient resource management and adaptation to climate change; (2) Clean, secure and efficient energy, (3) Industrial renewal, (4) Life, health and well-being, (5) Food security and demographic challenges, (6) Sustainable mobility and urban systems, (7) Information and communication society, (8) Innovative, inclusive and adaptive societies, (9) Freedom and security of Europe, its citizens and its residents, "Other-knowledge challenge". Financial instruments are Collaborative research projects (PRC), Collaborative research projects involving enterprises (PRCE), Young researchers (JCJC) instrument, Collaborative research projects – International (PRCI). Every year, the Generic Call is revised in February for a call launch in July. The next call will be in July 2016.

### ***Future opportunities identified***

A call is announced on the Work Programme “Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy”. RUR 03 « Towards 2030 - policies and decision tools for an integrated management of natural resources » where some ideas highlighted in NSPIRATION might be funded.



## 2.5.2 Gaps in financial resources for research

### *Topic non covered by funding*

Some areas of research and innovation are not enough covered by a scheme of funding as natural capital, soil-sediment-water component in an integrated approach, the health-environment link (interface between several challenges), observation of the critical zone, services provided by soils (basic knowledge, pedogenesis, ...), urban development. The lack of funding targets mainly the upper part of TRL research (or very applied research) as ANR generic call, which could finance these topics, is only dedicated to low TRL levels.

### *Needs and opportunities for funding*

The allocation of supplementary financial resources could be found in co-fund, cash in kind, the joint mobilization of public and private funding, support from professional federations. The creation of a soil tax like the one set up on water to support research was also proposed.

In France, a public and private funding (INNOVASOL) was initiated, which offers a 5 years visibility to the researchers and a research that respond to the need of the private companies. The difficulty is on the constitution of this type of structure.

The need of adjustments on call modalities of projects calls were cited by industrials and SME: need of calls on limited themes corresponding to priority themes for stakeholders, need to have financing possibilities along the year, in order to match with time scales of industrial needs (those are not necessarily in phase with tenders and topics), a need to decrease the size of European project.

Continuous calls may give more chances to seize certain opportunities (e.g. temporary pilot site to address a specific question.)

A need for small grants to initiate and foster interdisciplinary subjects was also highlighted at national level.

During the course of the interviews, the need to **fund long-term actions was a recurrent theme** with the need to create long-term observatories that allow the meeting of different communities of researchers. This will also favour integrated research which was the other recurrent theme.

It is necessary to better define the "Chain of time" on a scientific topic: how the different projects fit together? How fast do knowledge that will solve the issue, progress? This will help to project selection and to define the necessary funding time.

There is a lack in France in funds for interregional projects (nonetheless, some funds exist at ONEMA on water).

For some research project the objectives are the increase in knowledge and not direct valuable result. Is there a need to evaluate the knowledge in terms of money to value this type of research for funders/civil society?

The Strategic Research Agendas must be built from societal issues (the needs of civil society) which must then be translated into research question. This highlights the importance of Prospective Workshop (ARP) which integrates representatives of civil society. The time for this process must not be underestimated.



The coming law on biodiversity could be an opportunity to highlight lacks/gaps of knowledge that must be filled by research. Those needed research (ecological restoration and evaluation of the ecological value, ecological equivalence, recognition or even certification of returned ecosystemic services) will need interdisciplinary research projects. Those projects may possibly be financed by the French Agency on Biodiversity which will be created soon.

### ***What to avoid***

Several comments have emerged from the interviews and the workshop: a need for balance between basic research funding and applied research funding, a need for flexibility in the execution of projects. Currently, the time dedicated to the design and monitoring of research projects is judged too large compared to the time dedicated to research. There is thus a need for administrative simplification and more confidence in the control of the project execution.

The decreasing financing rates on some calls make them non-eligible for certain actors.

On some subject the time allocated by research call from the emergence to the industrial transfer is not sufficient. Some subjects are funded and suddenly financing stops even if the research is not ended. The funding time must be variable according to the themes, objectives, geographical scales.



## 2.6 Other remarks made by interviewees

Further to the stakeholders' workshop first day outcomes, it was decided to focus last discussions on two topics: the integrated approach and the Region-State relationship.

### 2.6.1 Integrated approach

Following the first day of the French workshop the question of integrated projects appears as an important subject. Thus a world café on day 2 of the National Workshop was dedicated to this subject.

Some modalities were discussed for enhancing such integrated research:

- The need to recruit researchers who are in ability to respond to environmental issues rather than very sharp in their discipline, enhancement of new mixt profiles (with large spectrum and wide size of skills)
- Better integrate the humanities and social sciences in calls :
  - Increase training opportunities for the environment;
  - Find a balance between Social and Humanities Sciences (SHS) and the hard sciences in project leadership porting, especially when hard sciences need to be more visible to non-specialist public;
- Bring together research communities on urban soils and agricultural soils ;
- Stronger involvement of civil society players in research projects.

To initiate and foster interdisciplinary subjects it was important to have small project just to get to know each other's. Otherwise, one field is often only the "stooge" of the others. And the tender is not really an integrated one.

Multidisciplinary integrated approach needs an authority allowing multidisciplinary approaches, the creation of places involving different types of structures, need of a super-structure over existing ones that are focus on too narrow topics. ANR is regularly pushing this kind of integrated projects with an attractive budget, but the building of this kind of projects is often very complex and the assessment of the quality of such project is also a very delicate task inside a process of selection.

#### ***Lack of visibility of soils***

The decline in research funding, as well as the lack of teachers on soil in numerous educational courses, a sector-based approach via regulatory codes (environment, water, urban planning) will not favour integrated research on soil.

We must reach an understanding of the strategic role of soils in land development and to consider the services provided by the land as a common good.

Territories management solutions (urban recycling, freeze non urbanized land...) face the legal aspect and some emerging solutions are thus non applicable: how to prepare convincing pre-normative scenarios for helping to push legislation.



## 2.6.2 Relationship between regional and national level

### ***Current French status***

The Regions and State actions are either collaborative or competitive. Regional actors and stakeholders are often in competition when bidding. There are currently no database gathering regional research projects and enabling a search by key word (theme, actors, fundings, etc.): the visibility of regional research outcomes remain low. More important, there is no working linkage between Regions for soil research, which could have enabled sharing their costs. Nevertheless, we have to note the real improvement of inter-visibility thanks to the action of the “Poles of compétitivité”. Stakeholders question the need to re-inforce Region-State relationship and to make regional projects more visible as these fields were considered very competitive by some.

Thematic fields and research objectives were considered in most case specific to regional or national scale.

Regional actions enabled to report local issue at national level.

There are existing financial schemes which enable to carry out regional / national projects. These schemes include CPER (State-Region programme contract) which amount decrease over the years, FEDER and LIFE fundings which support Europe / Region relationships and Interreg programme which support interregional projects. Bidding for European and Interregional calls was considered to be uneasy due to their administrative complexity and to their temporality which does not necessarily fits with the temporality or the research demands. Moreover, as no call covers all costs of a research project, there is a need for the research teams to apply to complementary research calls (Europe and Region for example), because the costs of soil sampling and analysis on long term projects is so high that no team can afford sharing them out of complementary grants.

### ***Future development for the Region-State relationship***

Added value of re-enforcement of Region-State link

Regional projects are for most of them financed by FEDER funds. The development of regional projects database was thought necessary to clearly identify the funded projects, to optimize funding sources, to exchange information and results at the national scale, to promote experience sharing and lessons learnt and to evaluate whether or not some projects are worth being duplicated in other region or being extended or generalised.

It was deemed necessary to perform listing and mapping of soil actors and to describe their skills in order to promote synergy and collaboration.

Need for clarification of various funding schemes and their specificities was expressed. Consistency of funding schemes to enable or not various scales integration was also mentioned. The development of funds available in the existing State-Region programme was proposed to encourage local project support.



At regional and national scale, the flagship common themes include:

- Methods for urban recycling, land use planning avoiding green use development;
- Tools to include heterogeneity of territory (various types of soils and climate conditions);
- Development of demonstrator (platforms or pilot) to accelerate time to market of technologies and associated services, to share feedback.

French leadership themes identified during the national workshop are the following:

- Soil biosphere ;
- The diversity of ecosystems present on our territories (including overseas areas);
- How to plan long-term use and management of soil/Land. 4D and soil functions;
- Soil characterization and management in France and abroad (Africa).



## 2.7 Annexes

### Annex Ia: NKS interviews in France

Date de l'entretien	Organisation	Entretien en	Finance	Utilisé	Chercheur	régionale / nationale	locale	Recherche	Organisme de	Université /	Consultants	Industriels	ONG	Réseau	Autres	Sol	Sédiments	Eau	territoires	Gestion des sols
2-sept.-15	EPF-NDC	Marc KASZYNSKI & Guillaume LEMOINE		1		1														1
28-juil.-15	ALLENVI	Christian VALENTIN			1	1								1		1	1	1		1
14-sept.-15	DREAM	Anne-Gaëlle DELBOY	1	1	1						1	1		1		1	1	1		1
10-sept.-15	AXELERA	Laure HUGONET & Aurélie OHANNESSIAN	1	1		1						1		1		1	1	1		1
5-oct.-15	TEAM2	Tristan DEBUIGNE		1	1						1	1		1						1
8-juin-15	ANR	Christine KING	1			1										1				1
18-sept.-15	MENESR	Christelle MARLIN	1			1														1
21-sept.-15	ADEME	Frédérique CADIÈRE	1			1										1	1	1		1
9-sept.-15	AFTRP	Emilie MAHEUT		1		1														1
16-sept.-15	COMU Lille	Ludovic DEMEYER		1		1														1
26-août-15	PEXE	Florence JASMIN		1							1			1		1	1	1		1
27-août-15	IRSTEA	Patrick FLAMMARION			1				1							1		1		1
25-sept.-15	INRA	Isabelle COUSIN & Catherine HENAUULT			1				1							1				1
9-sept.-15	UPGE	Patrice VALANTIN		1	1						1	1		1						1
4-sept.-15	INNOVASOL	Jean-Louis CRABOS & Olivier ATTEIA		1	1				1			1				1		1		1
2-oct.-15	MEDDE	Jurgis SAPIJANSKAS	1			1										1				1
9-sept.-15	GESSOL	Claire CHENU			1				1					1		1		1		1
18-sept.-15	FNE	Solène DEMONET		1	1								1			1		1		1
5-oct.-15	POLLUSOL	POLLUSOLS																		
2-oct.-15	RENAULT	Nathalie GUISERIX		1								1				1		1		1
30-sept.-15	Adjointe Maire	Raphaëlle LEGUEN		1		1											1	1		1
12-nov.-15	MAAF	Corinne BITAUD	1			1										1				1
2-nov.-15	IRD	Sébastien BAROT			1				1							1				1

## HORIZON2020 CSA INSPIRATION

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



9-nov.-15	ONF	Noémie POUSSE	1		1	1							1			1
12- nov. 15	CR RHA	GAFFIOT Frédéric	1			1										1
			<b>9</b>	<b>13</b>	<b>11</b>	<b>13</b>	<b>5</b>	<b>4</b>	<b>6</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>17</b>	<b>7</b>	<b>12</b>	<b>23</b>

## Annex Ib: NKS questionnaire template

### Questionnaire template translate in French

A. Informations générales	
1.	Nom de la personne consultée :
2.	Organisme :
3.	Fonction :
4.	Êtes-vous (plusieurs réponses possibles): <ul style="list-style-type: none"> <li><input type="radio"/> Autorité nationale / régionale/ locale</li> <li><input type="radio"/> Université / Organisme de recherche</li> <li><input type="radio"/> Petites et Moyennes entreprises (SME, i.e. &lt; 500 employés) / consultant</li> <li><input type="radio"/> Industriel</li> <li><input type="radio"/> Organisation non gouvernementale / Association</li> <li><input type="radio"/> Représentant / Coordinateur d'un réseau</li> <li><input type="radio"/> Autre, préciser : ...</li> </ul>
5.	Domaine de compétence (plusieurs réponses possibles): <ul style="list-style-type: none"> <li><input type="radio"/> Sol</li> <li><input type="radio"/> Eau</li> <li><input type="radio"/> Sédiment</li> <li><input type="radio"/> Aménagement urbain</li> <li><input type="radio"/> Urbanisme</li> <li><input type="radio"/> Gestion des terres</li> <li><input type="radio"/> Autre, préciser : .....</li> </ul>
6.	Est-ce que votre organisation finance de la recherche? <ul style="list-style-type: none"> <li><input type="radio"/> Oui. Préciser : ...</li> <li><input type="radio"/> Non</li> <li><input type="radio"/></li> </ul>
B. Agenda Stratégique de Recherche	
<p>- Quels sont les défis sociétaux importants à vos yeux?</p> <p><b>[Liste des challenges sociétaux de l'Union Européenne] :</b></p> <ul style="list-style-type: none"> <li><input type="radio"/> Contribuer à la Sécurité alimentaire et sureté alimentaire,</li> <li><input type="radio"/> Sécuriser les ressources en eau potable,</li> <li><input type="radio"/> Sécuriser l'apport et l'alimentation en énergie;</li> <li><input type="radio"/> Réduire la consommation en ressources primaires,</li> <li><input type="radio"/> Assurer une utilisation efficiente des ressources naturelles,</li> <li><input type="radio"/> Contribuer au développement de stratégie d''adaptation de la société,</li> <li><input type="radio"/> Contribuer à un environnement plus sain,</li> <li><input type="radio"/> Sécuriser les infrastructures.</li> </ul> <p><i>[Ces défis peuvent être utilisés comme une base pour définir les thèmes permettant de constituer les sujets de recherche de l'Agenda Stratégique de Recherche.]</i></p> <p>- Selon les cas, quel(s) défi(s) supplémentaire(s), alternatif pourriez-vous suggérer / préférer ?</p>	

<p>7. En partant de votre propre expérience : quels sont vos sujets principaux (besoins en recherche) qui pourraient être inclus dans l’agenda de recherche stratégique?</p> <p>d. Expliquer – Développer le sujet</p> <ul style="list-style-type: none"> <li>- <i>Qui sera concerné?</i></li> <li>- <i>Qui est responsable?</i></li> <li>- <i>Est un sujet d’intérêt pour votre organisme / département</i></li> <li>- <i>Est-ce un sujet d’intérêt national uniquement ou bien un sujet partagé par plusieurs pays?</i></li> <li>- <i>Où en est-on maintenant, où voulons nous être dans X années ?</i></li> <li>- <i>Comment l’acquisition de connaissances nouvelles pourrait-elle être utilisée de manière efficace?</i></li> </ul> <p>e. Priorité :</p> <p><i>Priorité haute</i></p> <p><i>Priorité moyenne</i></p> <p><i>Priorité</i></p> <p><i>Priorité faible</i></p> <p><i>Pas de priorité</i></p> <ul style="list-style-type: none"> <li>- <i>Quelle est l’urgence, i.e. qu’est qui tournerait mal si l’on ne faisait rien?</i></li> </ul> <p>f. Qui veut / devrait financer ce type de recherche?</p> <p>○</p>		
<p>8. <u>En fonction des sujets soulevés :</u></p> <p>a. Quels sont les documents pertinents / important, les agendas stratégiques, les programmes de recherche qui couvrent les sujets? (état de l’art)</p> <p>b. En fonction des agendas et des programmes : quelles sont les dates de l’élaboration de la programmation et des opportunités pour influencer les agendas / programmes ?</p>		
<p><b>C. Interface Science - Politique (SPI)</b></p>		
<p>9. Comment définiriez-vous la « connaissance scientifique »?</p>		
<p>10. Dans quel cadre utilisez-vous la connaissance scientifiques dans votre travail ?</p>		
<p>11. Quelles sont les sources de connaissances (scientifiques) que vous utilisez dans le cadre de votre travail ?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>○ <i>Publication scientifique</i></li> <li>○ <i>consultants</i></li> <li>○ <i>rapports</i></li> <li>○ <i>collègues</i></li> <li>○ <i>expériences / exemples dans votre pays</i></li> <li>○ <i>expériences / exemples à l’extérieur</i></li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>○ <i>journaux</i></li> <li>○ <i>télévision</i></li> <li>○ <i>conférences</i></li> <li>○ <i>implication dans des projets de recherches</i></li> <li>○ <i>données (base de données))</i></li> <li>○ <i>sites web, lesquels : .....</i></li> <li>○ <i>autre, préciser : .....</i></li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>○ <i>Publication scientifique</i></li> <li>○ <i>consultants</i></li> <li>○ <i>rapports</i></li> <li>○ <i>collègues</i></li> <li>○ <i>expériences / exemples dans votre pays</i></li> <li>○ <i>expériences / exemples à l’extérieur</i></li> </ul>	<ul style="list-style-type: none"> <li>○ <i>journaux</i></li> <li>○ <i>télévision</i></li> <li>○ <i>conférences</i></li> <li>○ <i>implication dans des projets de recherches</i></li> <li>○ <i>données (base de données))</i></li> <li>○ <i>sites web, lesquels : .....</i></li> <li>○ <i>autre, préciser : .....</i></li> </ul>
<ul style="list-style-type: none"> <li>○ <i>Publication scientifique</i></li> <li>○ <i>consultants</i></li> <li>○ <i>rapports</i></li> <li>○ <i>collègues</i></li> <li>○ <i>expériences / exemples dans votre pays</i></li> <li>○ <i>expériences / exemples à l’extérieur</i></li> </ul>	<ul style="list-style-type: none"> <li>○ <i>journaux</i></li> <li>○ <i>télévision</i></li> <li>○ <i>conférences</i></li> <li>○ <i>implication dans des projets de recherches</i></li> <li>○ <i>données (base de données))</i></li> <li>○ <i>sites web, lesquels : .....</i></li> <li>○ <i>autre, préciser : .....</i></li> </ul>	
<p>12. Jusqu’à quel point utilisez-vous la connaissance scientifique récente / nouvelle (état de l’art) pour votre travail ?</p>		

13. Jusqu'à quel point êtes-vous capable d'influencer (et comment) la mise en œuvre des agendas / politiques de recherche scientifique dans votre pays?
14. Jusqu'à quel point les agendas / politiques nationales reflètent vos besoins particuliers et vos priorités?
15. Jusqu'à quel point l'utilisation de l'état de l'art en matière de recherche a-t-elle été implémentée dans la formulation des politiques existantes de votre pays?
<p><i>[Questions à destination de parties prenantes issues du domaine non-académique :]</i></p> <ul style="list-style-type: none"> <li>- Avez-vous déjà été impliqué dans : <ul style="list-style-type: none"> <li>o la formulation de questions de recherche scientifique?</li> <li>o la réalisation de recherche scientifique (co-crédation de connaissance)?</li> <li>o La synthèse / regroupement de connaissance scientifique, e.g. pour nourrir les politiques publiques ou pour augmenter les opportunités de marché?</li> </ul> </li> </ul> <p><i>[Si oui:]</i></p> <p>Jusqu'à quel point ceci a été satisfaisant / profitable sur une échelle de 1 à 5?</p> <ul style="list-style-type: none"> <li>- 1-Très satisfaisant / Profitable</li> <li>- 2-Satisfaisant / Profitable</li> <li>- 3-Neutre</li> <li>- 4-Non satisfaisant / profitable</li> <li>- 5-Très insatisfaisant</li> <li>- Cela a-t-il bien fonctionné ?</li> <li>- Comment pourrait-il être amélioré ?</li> <li>- Qu'est-ce qu'il doit être évité / à ne pas faire ?</li> <li>- Remarques complémentaires?</li> </ul>
<p><i>[Question à destination des parties prenantes qui ont des commentaires à faire (financeurs de la recherche)]</i></p> <p>16. Comment l'impact sociétal de la recherche scientifique en lien avec l'objectif d'INSPIRATION peut-il être mesuré dans votre pays?</p> <p><i>[Si oui:]</i></p> <p>Jusqu'à quel point ceci a été satisfaisant / profitable sur une échelle de 1 à 5?</p> <ul style="list-style-type: none"> <li>- 1-Très satisfaisant / Profitable</li> <li>- 2-Satisfaisant / Profitable</li> <li>- 3-Neutre</li> <li>- 4-Non satisfaisant / profitable</li> <li>- 5-Très insatisfaisant</li> <li>- Cela a-t-il bien fonctionné ?</li> <li>- Comment pourrait-il être amélioré ?</li> <li>- Qu'est-ce qu'il doit être évité / à ne pas faire ?</li> <li>- Remarques complémentaires?</li> </ul>
17. Quels sont les documents à l'interface Sciences –Politique que vous connaissez et que vous nous recommanderiez?

D. Financement
<p>18. Quelles expériences et attentes dans les schémas de financement (public / privé) avez-vous dans votre propre domaine qui puisse offrir des opportunités de recherche dans la gestion et l'utilisation des sols et des impacts sur le système sol / eau / sédiment ?</p> <ul style="list-style-type: none"> <li>- À l'échelle régionale?</li> <li>- À l'échelle nationale?</li> <li>- A l'échelle européenne?</li> <li>- A l'échelle internationale?</li> </ul>
<p>19. Comment augmenter, selon vous, la valeur ajoutée des différentes ressources financières pour mener des recherches qui vont répondre à des besoins nationaux et européens, en particulier sur les besoins en R&amp;I sur les sols et le système sol/eau/sédiments ?</p>
<p>20. Avez-vous connaissance de domaines de recherche et innovation (R&amp;I) qui ne se retrouvent dans aucun mécanisme de financement et qui nécessiteraient des schémas ou des infrastructures nouveaux/différents ?</p>
<p>21. Les approches intégrées (une nécessité pour le système sol-eau-sédiment) sont difficiles à financer et à évaluer par les communautés scientifiques. Quelles sont selon vous les améliorations à apporter dans ce domaine ?</p>
<p>Sur la base des expériences antérieures dont vous avez connaissance : comment mettre en œuvre les options de financements de manière optimale afin que : les besoins sociétaux soient remplis, qu'il y ait une appropriation et une utilisation des nouvelles connaissances produites à partir de l'agenda de recherche stratégique, qu'il y ait une multiplication des euros investis par les financeurs (retour sur investissement):</p> <p><i>[Si oui:]</i></p> <p>Jusqu'à que point ceci a été satisfaisant / profitable sur une échelle de 1 à 5?</p> <ul style="list-style-type: none"> <li>- 1-Très satisfaisant / Profitable</li> <li>- 2-Satisfaisant / Profitable</li> <li>- 3-Neutre</li> <li>- 4-Non satisfaisant / profitable</li> <li>- 5-Très insatisfaisant</li> <li>- Cela a-t-il bien fonctionné ?</li> <li>- Comment pourrait-il être amélioré ?</li> <li>- Qu'est-ce qu'il doit être évité / à ne pas faire ?</li> </ul> <p>Remarques complémentaires?</p>
E. Divers (Remarque, suggestions, exemples)



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

### **Entrevues menées dans le cadre d'INSPIRATION :**

#### **Inspiration en bref:**

Le projet INSPIRATION (INtegrated Spatial Planning, land use and soil management Research AcTION) est l'un des projets retenus en 2014 dans le cadre de l'appel H2020 sur le challenge sociétal «Changement Climatique, Environnement et gestion efficace des ressources et matières premières).

Le projet "Inspiration" (programme "Horizon 2020"), qui regroupe 21 institutions de 16 pays, vise à développer un agenda stratégique de recherche (ASR/SRA) pour une gestion des sols et une utilisation du territoire respectueuse de l'environnement, socialement acceptable et économiquement abordable.

Quatre thèmes et 8 questions transversales ont été retenus, c'est à travers ces prismes que seront analysés les conclusions des ateliers nationaux et que sera formulé l'agenda de recherche.

L'agenda sera construit sur la base d'un inventaire de l'état de l'art et en consultant les chercheurs, les utilisateurs finaux et les organes de financement dans tous les pays partenaires, lors d'ateliers nationaux.

Le projet vise également à imaginer des modèles de mise en œuvre de l'ASR et d'identifier les institutions de financement publics et privés prêtes à financer l'exécution de ce dernier.

Plus d'information sur le site web du projet : [www.inspiration-H2020.eu](http://www.inspiration-H2020.eu)

#### **Interlocuteurs nationaux clé (INC/NKS) :**

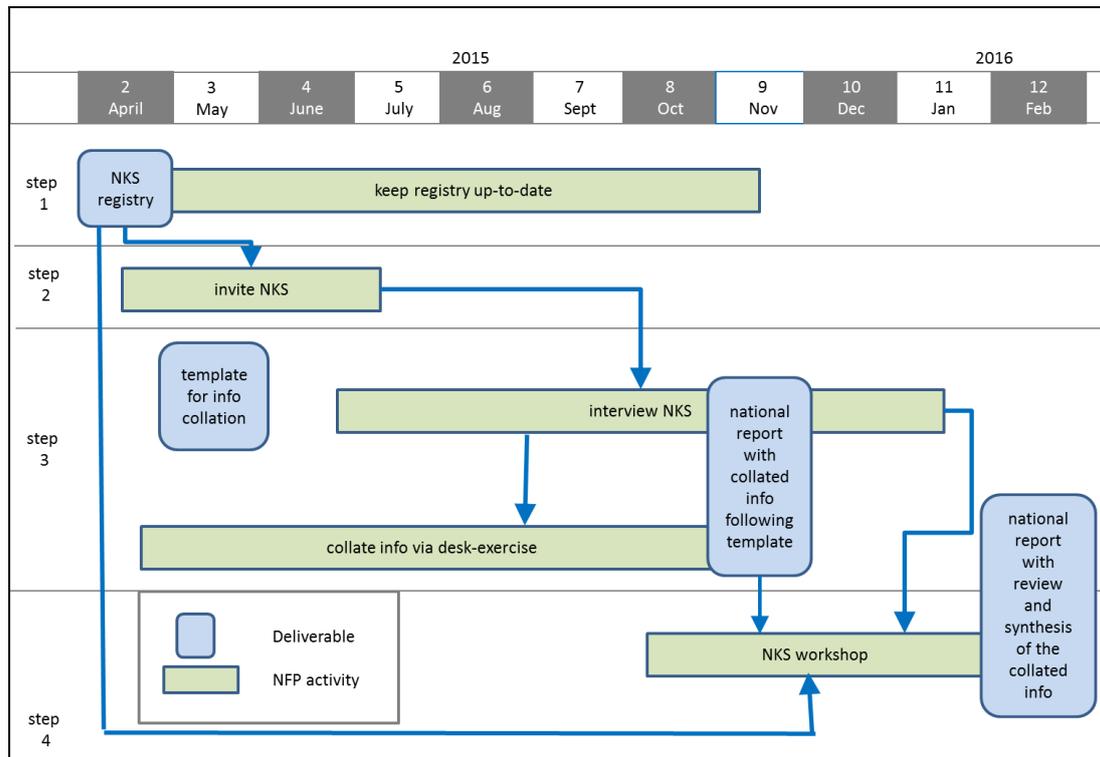
Une série d'entrevues d'interlocuteurs clés sélectionnés sera menée dans chaque pays sous la direction de "Points focaux nationaux » (PFN). L'objectif de ces entrevues est de rassembler pour la France :

- les besoins de la recherche et de l'innovation (R & I)
- les retours d'expériences concernant la connexion entre la science d'une part et les politiques/société civile et économique d'autre part,
- les schémas de financement nationaux et transnationaux existants et à inventer.

Les interlocuteurs retenus possèdent une bonne vue d'ensemble et une vision claire des besoins de connaissances à court, moyen et long terme dans leur domaine professionnel. Ces interlocuteurs viennent de différentes disciplines et horizons. Ainsi on y retrouve : des gestionnaires ; des chercheurs/experts dans les domaines des sols, sédiments et d'eau ; des financeurs et des décideurs...

#### **Les entrevues :**

La collecte de vos retours / expériences est cruciale pour le projet afin de nous aider à décrire l'état de l'art dans notre pays (les programmes de recherche nationaux en cours, les lacunes de connaissance, les priorités de recherche) comme entrée du futur agenda européen de recherche. Lors de l'entrevue, nous allons passer en revue une série de sujets et de questions. Ces entrevues seront au nombre d'une vingtaine minimum par pays. L'ensemble des données collectées lors des entrevues seront synthétisées dans un «rapport national». Cette synthèse sera examinée lors d'un atelier national qui permettra de hiérarchiser les sujets que la France souhaitera pousser/porter dans l'agenda stratégique de recherche (ASR/SRA). L'ensemble des rapports nationaux produits seront finalement utilisés comme entrée pour l'élaboration d'un SRA européen et faire correspondre les besoins de recherche avec les financements possibles, notamment transnationaux.



Le déroulé de la première année du projet INSPIRATION est décrit ci-dessous

### Exemple de questions :

#### Besoins en Recherche et Innovation (R & I)

- Quels sont les défis sociétaux important à vos yeux?
- A partir de votre propre expérience : quels sujets spécifiques (besoins de recherche) devraient être inclus dans le SRA?

#### Expériences en matière de connexion entre la science et les utilisateurs

- Comment définiriez-vous les «connaissances scientifiques»?
- Dans quelle mesure l'état de l'art de la recherche scientifique est/a été utilisée pour la formulation des politiques existantes dans notre pays?

#### Modalités de financements nationaux et transnationaux

- Est-ce que votre organisation financement de la recherche?
- Quelles sont vos expériences et vos attentes dans les modalités de financement (public / privé) votre propre domaine ? Quelles opportunités de financement/ modèle de financement pour de futures recherches identifier vous ?

### L'intérêt de participer:

- Une chance d'influencer l'agenda stratégique de recherche européen sur la gestion des terres et du système sol/sédiment/eau à la lumière des défis et des besoins de la société;
- Disposer des résultats du projet: connaissance des besoins de recherche exprimés ; aperçu des modèles de financement prometteurs aux différentes échelles (sous-national, national, européen, international) et identification des opportunités pour une meilleure connexion entre la science et les utilisateurs des résultats de la recherche : société civile, politique, monde économique;
- Utilisez la possibilité d'entrer en contact avec d'autres réseaux dans et en dehors de notre pays, et identifier les pays partageant les mêmes défis que nous.



## Annex II: Documents used for the FR desk study

A. Rivière et H. Hervieu (2015) – Transition (s) vers une économie écologique. Collection « Etudes et documents » de la Délégation au développement durable (DDD) du Commissariat Général au Développement Durable (CGDD), N° 129, 45 pages.

ADEME (2015) – 3<sup>ème</sup> Rencontres nationales de la recherche sur les sites & sols pollués. Synthèse et recommandations pour la recherche, 56 pages.

Agriculture et Foncier (2014) – Concurrences entre usages des sols et entre usagers des sols agricoles : la question foncière renouvelée. Cahier Demeter.

ANR (2015 – Plan d'action 2016, 176 pages.

Bellec P., Lavarde L., Madignier M.L. (2015) – Propositions pour un cadre national de gestion durable des sols. Rapport CGEDD n°010068-01, CGAAER n°14135, 135p.

CNRS (2015) – Livre blanc « Les sols » 2013-2015 - Rapport du Réseau Thématique pluridisciplinaire « sols » juillet 2013 – juillet 2015, 67 pages.

De Deyn, G. B. and W. H. Van der Putten. 2005. Linking aboveground and belowground diversity. Trends in Ecology.

Evaluer les écosystèmes et les services écosystémiques (2014) - Séminaire du 9 décembre 2014, EFESE (l'Evaluation française des écosystèmes et des services écosystémiques).

F. Jasmin et G. Aymé (2014) – Sites et sols pollués : Etude sur le panorama des financements disponibles en France pour la recherche et la mise en place de solutions innovantes – Rapport ADEME, 21 pages.

Fondation pour la recherche sur la biodiversité (2015) -Prospective scientifique pour la recherche française sur la biodiversité. Série FRB, Réflexions stratégiques et prospectives. Ed. Jean-François Silvain et Flora Pellegrin, 56 pp.

Hooper, D. U., D. E. Bignell, V. K. Brown, L. Brussaard, J. M. Dangerfield, D. H. Wall, D. A. Wardle, D. C. Coleman, K. E. Giller, P. Lavelle, W. H. Van der Putten, P. C. De Ruiter, J. Rusek, W. L. Silver, J. M. Tiedje, and V. Wolters. 2000. Interactions between aboveground and belowground biodiversity in terrestrial ecosystems: patterns, mechanisms, and feedbacks. BioScience 50:1049-1061.

Ministère de l'Agriculture, de l'agroalimentaire et de la forêt (2014) – Agricultures produisons autrement, Rapport Annuel sur l'agro-écologie, 26 pages.

Sols et environnement, Chiffres clés (2015) – Repères, novembre 2015, CGDD, service de l'observation et des statistiques, p104.

Stratégie Nationale de Recherche – rapport de propositions et avis du conseil stratégique de la recherche, 2015-2020.

Water JPI (2014) – Strategic Research & innovation agenda, 69 pages.

## Annex IIIa: National Workshop Agenda



HORIZON2020 CSA INSPIRATION



### Atelier National FRANCE

Paris, 15 – 16 octobre 2015

Hausmann Saint Lazare, 92 rue Saint-Lazare, Paris 9

### Agenda

**15 octobre 2015**

13:00	Café d'accueil	
13:30 - 13:45	<b>Ouverture de l'atelier</b> Tour de Table	M-C. Dictor
13:45 - 14:00	Présentation du projet Inspiration	M-C. Dictor
14:00 - 14:15	Objectifs de l'atelier national	M-C. Dictor
14:15 - 14:30	Résumé des entretiens  Challenges identifiés Sujets de recherches Lien entre Science-politique-société Schéma de financement	M-C. Dictor
14:30 – 16:05	World Café™ sur :  Challenges et Sol Sujets de recherche pour l'Agenda Lien entre Sciences / Politiques-Société Schéma de financement	Tous Rotation d'une table à l'autre (4 groupes), ¾ d'heure / table (5 minutes pour changer de table)
16:05 - 16:20	Pause	
16:20 – 18:00	Suite du World Café™	Tous Rotation d'une table à l'autre (4 groupes), ¾ d'heure / table (5 minutes pour changer de table)
19.00 - 21.00	Diner Brasserie Mollard	

**16 octobre 2015**

<b>8:45 - 9:00</b>	<b>Café d'accueil</b>	
9:00 - 9:30	<b>Résumé du premier World Café™</b>	Modérateurs des tables
9:30 - 11:45	Second World Café™ –approfondissement de 3 sujets du premier World Café™	Tous Rotation d'une table à l'autre (3 Groupes mixte)
<b>11:45 - 12:00</b>	<b>Pause</b>	
12:00 - 12:30	<b>Résumé du second World Café™</b>	Modérateurs des tables
12:30 - 13:00	Clôture et prochaines étapes	M-C. Dictor
<b>13:00 - 14:00</b>	<b>Déjeuner – Brasserie Le Printemps</b>	



### Annex IIIb: Participants to French National Workshop

Nom	Fonction	Au titre d'INSPIRATION	Organisme
BESNARD Chloé	Chef de projet	POLLUSOLS	Gestion administrative, coordination financière et communication du projet POLLUSOLS
CADIERE Frédérique	Correspondante recherche du service friches urbaines et sites pollués	ADEME	8 ingénieurs sur gestion des SSP, animation de l'activité recherche, Ademe participe à l'organisation des journées SSP
CHAMBON Sophie	Chargée de mission	UPDS	Association ; intérêt pour thématique de financement
CRABOS Jean-Louis	Directeur Programmation et Développement	INNOVASOL	Fondation de droit privé créer depuis 5 ans ; coordinateur du réseau SAPHIR
DEBUIGNE Tristan	Coordinateur du pôle eau-sédiments – coordinateur du projet CEAMaS	TEAM2/CD2E	Eco-transition des entreprise du Nord pas de Calais, réutilisation des matières pollués des déchets des sédiments ; coordinateur du projet CEMAS
DELBOY Anne-Gaëlle	Chargée de mission Projets Eau & Environnement	DREAM	Protection des ressource, réduction impact sur l'eau et les milieux connexes ; traitement sol et eux et métrologie
DEMEYER Ludovic	Chargé de mission friches industrielles	Métropole Européenne de Lille - MEL	Architecte-urbaniste, en démarche de redéveloppement de friche, avec une démarche à l'échelle du territoire, chainage entre différents acteurs : redéveloppement de la ville sur elle même
DEMONET Solène	Chargée de mission, Coordinatrice du réseau risques et impacts industriels	Animatrice du groupe de réflexion sur les sols au sein de la FNE	GT sites et sols pollués du GCRT, souhait d'élargir la thématique des sols à FNE sur tous types de sols
FEIX Isabelle	ADEME	Expert national Sol	EPIC
HENAUULT Catherine	DU Science du sol	INRA	Organisme de recherche public
GOFFAUX Robin	chargé de mission pour RGscope	FRB	Bio-indicateur, suivi des observatoires
GUISERIX Nathalie	Référente sites et sols pollués	RENAULT	Industriel en début de travail de recherche ; participe au groupe de travail CPRT



KING Christine	Responsable scientifique de programme Défi 1	ANR	ANR membre de l'IAB d'INSPIRATION ; en tant que membre aide à l'établissement du panorama de la recherche
OHANNESSIAN Aurélie	Animatrice GT sol	Axelera	Chimie- environnement - Projet Friche : Ademe, BRGM, Axelera, Durapole, AMI Innovation, organisation de journées technique autour de la thématique
SAPIJANSKAS Jurgis	Chargé de mission biodiversité, forêt et sol	MEDDE/CGDD/DRI	Interface sciences /politiques, ne finance plus de recherche directement, lien vers acteurs de la réglementation, s'intéressent à tous les types de sols
SIMMONOT Marie-Odile	Professeur de génie des procédés	GISFI	Effort de projet interdisciplinaire ; LoRver redéveloppement de site industriels pour culture énergétique et récupération des matières
TURPIN Nadine	Chargée de recherche dans l'UMR METAFORT	IRSTEA	Economiste de l'environnement ; gestion durable des sols agricole, Bio, sécurité alimentaire, rendement, gaz à effet de serre. Levier et barrière pour les agriculteurs Projet Catch-C
VALENTIN Christian	Directeur Adjoint UMR iEES, IRD, Paris	Animateur du sous-groupe "Sol" du GT "Agroécologie et Sols" d'ALLEVI	Pédologue, co-anime une réflexion sur la recherche sur les sols : livre blanc sur les sols (CNRS /INSU) ; Académie de l'Agriculture, journée sol des villes/sols des champs



## Annex IV: R&I funding options in France

	Research and Innovation funder**	Name of the programme*	What do they fund?***	Whom do they fund?***	More info****	TRL
<b>Regional</b>						
1	French Public Investissement Bank (BPI)	Single Inter-Ministry Fund (FUI) - Regional cluster	collaborative R & D projects to the emergence of processes, innovative products or services, with a potential of placing on the short- or medium-term market (3 years max. after the end of the project).	<u>Consortium</u> At least two companies and a public research institution or training. The carrier is necessarily a company able to demonstrate managerial and unifying qualities. Funds Min 750k€ of subsidies	<a href="http://competitivite.gouv.fr/les-financements-des-projets-des-poles/les-appels-a-projets-de-r-d-fui-375.html">http://competitivite.gouv.fr/les-financements-des-projets-des-poles/les-appels-a-projets-de-r-d-fui-375.html</a>	7to9
2	Régional council	French Regional Innovation Strategies		<u>Consortium</u> Individual aid to companies, the Region supports investments, including environmental and R & D programs through regional support schemes for investment and Innov 'Region <u>Funds</u> Grants and repayable advances <ul style="list-style-type: none"> <li>• to a maximum of 45% of the project budget for SMEs</li> <li>• 30% for ETI less than 2,000 employees,</li> <li>• 100% of the marginal costs or 40% of full costs for research organizations.</li> </ul>	<a href="http://www.europe-en-france.gouv.fr/Centre-de-ressources/Etudes-rapports-et-documentation/Synthese-des-Strategies-Regionales-de-l-Innovation-en-vue-de-la-specialisation-intelligente-des-regions-francaises">http://www.europe-en-france.gouv.fr/Centre-de-ressources/Etudes-rapports-et-documentation/Synthese-des-Strategies-Regionales-de-l-Innovation-en-vue-de-la-specialisation-intelligente-des-regions-francaises</a>	8to9
		Calls for research projects of regional interest	Depending on the Region, soils is clearly identified only in some regions : Region Aquitaine is the founder and funder member of the foundation Innovasol (www.innovasol.org) ; Region Champagne-Ardenne FREC (Fonds Régional Environment Climate), common stock of the Region with ADEME; Région Haute-Normandie : Large Search network "Environment Risks Agronomy Territory" (GRR TERA) Région poitou-charentes : "natural environments and environmental risks". Région Pays de loire ; biodiversity, The Plan of competitiveness and resilience of farms (PCAE) of the Loire 2015-2020		<a href="http://www.paysdelaloire.fr/service-s-en-ligne/appels-a-projets/">http://www.paysdelaloire.fr/service-s-en-ligne/appels-a-projets/</a> <a href="http://www.regioncentre-valdeloire.fr/accueil/les-services-en-ligne/appels-a-projets/recherche-et-innovation.html">http://www.regioncentre-valdeloire.fr/accueil/les-services-en-ligne/appels-a-projets/recherche-et-innovation.html</a>	5to7

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			financing and co-financing of doctoral grants, and investment and operating grants			
		Appel à projets Coopération et mobilité internationales Rhône Alpes (CMIRA) Val de Loire (Studium Loire Valley )...	Home of experienced international researchers in the laboratories of the region Centre-Val de Loire		<a href="http://www.ens-lyon.eu/international/appe-a-projets-cmira-acceuil-pro-explora-pro-2015-16-245093.kjsp?RH=ENS-LYON-FR">http://www.ens-lyon.eu/international/appe-a-projets-cmira-acceuil-pro-explora-pro-2015-16-245093.kjsp?RH=ENS-LYON-FR</a> <a href="http://www.lestudium-ias.com/news/call-applications-smart-loire-valley-programme-campaign-20162017">http://www.lestudium-ias.com/news/call-applications-smart-loire-valley-programme-campaign-20162017</a>	1to6
3	French water agency					
<b>National</b>						
1	Caisse des Dépôts et Consignations (CDC)	Investissement d'avenir "territoire à énergie positive"	<p>Territorial integrated projects for the energy transition</p> <p>loans to SMEs wishing to develop projects on territories (212) winners of the call for projects "Territories positive energy for green growth" following themes:</p> <ul style="list-style-type: none"> <li>• alternative management of the water cycle,</li> <li>• innovative systems for reducing health risks,</li> <li>• modeling and simulation of environmental dynamics,</li> <li>• digital tools for design and monitoring of urban projects,</li> <li>• Planning and exemplary in terms of energy transition and biodiversity.</li> </ul>	<p>SME</p> <p><u>Funds</u></p> <p>The minimum loan amounts to EUR 300 000. And, it is at most 50% of total financing need made as a loan. Financing under the project loan form must be at least 600,000 euros.</p>		7to9
2	Caisse des Dépôts et Consignations (CDC)	Biodiv PME (Investissements d'Avenir)	<p>Development to market of products or services on the horizon from 6 to 15 months</p> <p>4 following axes:</p> <ul style="list-style-type: none"> <li>• Develop the observation systems, knowledge technologies, measurement and understanding of ecosystems</li> <li>• Prevent and limit the impacts of developments and human activities on biodiversity and restore degraded environments</li> <li>• Innovate in partnerships, design and financing of</li> </ul>			8to9

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			<p>projects in favor of biodiversity</p> <ul style="list-style-type: none"> <li>• Use sustainable ecosystem services</li> </ul>			
3	Government	Investissement d'avenir "Qualité de l'eau et gestion de la rareté"	<p>Marketing of products or services on the horizon of 2 to 5 years</p> <p>4 following axes:</p> <ul style="list-style-type: none"> <li>• The treatment plant of the sustainable city</li> <li>• The water desalination plant</li> <li>• Smart water networks</li> <li>• Intelligent resource management</li> </ul>			7to9
4	Private compagnie : VEOLIA		Innovative solutions for online measurement of sulfides in waste water	startups and SME		
5	Ademe	appel à candidatures Thèses 2016	<p>Five main programs: 1. sustainable cities and territories, 2. Sustainable production and renewable energy, 3. agriculture, forestry, soil and biomass, 4. air quality, impacts on health and the environment and energy 5., environment and society.</p>	<p><u>Consortium</u> Associate a candidate, a host laboratory and a co-financing partner (public or private)</p> <p><u>Funds</u> ADEME is co-financing up to 50% of the remuneration of the doctoral student.</p>	<p><a href="http://www.ademe.fr/recherche-innovation/appels-a-projets-recherche">http://www.ademe.fr/recherche-innovation/appels-a-projets-recherche</a></p>	1to5
		Bioressources (BIP)	<p>Background: biomass, renewable resource, can be valued for the production of raw materials for chemistry and materials, the production of liquid and gaseous biofuels, the production of heat or electricity, etc. In the short term, given the competing uses and limited areas, the development of bioenergy and biobased products required to maximize the use of biomass and diversify exploitable bioresources.</p> <p>Projects were required to enroll in at least one of the two themes detailed in the call for projects text: Biorefineries, biobased products for chemistry and materials, biofuels and production of renewable and clean energy from biomass.</p>	<p>Four types of projects can be financed:</p> <ul style="list-style-type: none"> <li>• Research new knowledge,</li> <li>• support for eco-innovation (dedicated SME)</li> <li>• Industrial Research,</li> <li>• experimental development.</li> </ul> <p>Funding method ADEME participates financially to the tune of 25% to 100% of eligible expenditure. The maximum amount of aid, mostly paid in the form of a grant of 250 k €.</p>		5to7
		Integrated Management of contaminated sites (GESIPOL)	<p>2 priorities have been identified:</p> <ul style="list-style-type: none"> <li>- Axis 1: innovate and improve processing techniques applied to soil and groundwater and evaluate their performance;</li> <li>- Axis 2: develop the technical re-functionalization of degraded soils left in place</li> </ul>			

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		<p>Modeling and assessment for the actors of the cities and territories of tomorrow (MODEVALUR B)</p>	<p>This call is interested in evaluation issues of health impacts, environmental urban forms and their performance modeling (in particular energy). assessment, urban modeling and forecasting and is divided into four themes: Area 1: Health and Environmental Impacts and comfort of urban forms Axis 2: Energy efficiency of urban forms Axis 3: Planning Factor 4 and articulation between planning and strategic direction of the energy-climate areas Priority 4: Urban and Digital Practices</p>			
		<p>Climate change mitigation by agriculture and forest (REACTIF)</p>	<p>This call aims firstly to improve knowledge of the contribution of agriculture and forestry to the struggle against climate change and secondly to identify obstacles and levers to allow stakeholder s' commit to energy and ecological transition. Four research themes were identified: 1.Flux gas emissions and carbon stocks (soil, crops, livestock, forests) Agricultural and forestry 2.Filières, production mobilization 3.Construire strategies across territories 4.Mettre implement the ecological transition: social and economic approaches</p>			

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		<p>Energy Environment Society program</p> <p>The Energy Environment Society program is dedicated to social science research, economic and social to enable better integration of the environment into individual and collective decisions. It is closely linked with the programs "Sustainable cities and territories", "Sustainable production and renewable energy", "Agriculture, Forestry, Soils and Biomass" and "Air quality, health and environmental impacts." The expected results are: Sunrise locks and identify the levers of change and diffusion of new technologies in environmental terms virtuous and characterize the economic, political, institutional, legal and sociological (cultural, psychological ...). ; Know and analyze social innovations and "new" economies, making their assessment and identify emergency conditions; Supporting public policies and speculate on possible future; Infléchir consumption patterns.</p>			
	<p>Systemic approach to urbain refresh (Eco-Frais)</p>	<p>The call is in particular the knowledge development of socio-economic issues associated with the ecosystem approach to refresh, and how to enroll in an evolving political dynamic adaptation to climate change ("adaptation pathways") and reduction greenhouse gas emissions. The call includes two axes: Socioeconomic 1.Evaluation an ecosystem approach to urban refreshment; 2.Développement evolutionary strategies of urban refresh integrating an ecosystem approach. Biodiversity is excluded</p>			
	<p>Organic Waste- return to soils (DOSTE)</p>	<p>The research concerns the desired chain from upstream (organization of the management of organic matter on a territory), until treated (composting, anaerobic digestion and mechanical biological sorting) and development (material and energy). Research will be multidisciplinary and conducted at several levels (design offices, laboratories, experimental sites, in situ</p>			

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		treatment plants, ...).			
Ademe + Ministry of Environment +French Association for Biodiversity + private funders	Transport infrastructure Land, Ecosystems and Landscapes (ITTECOP).	<p>Four research areas are open:</p> <ul style="list-style-type: none"> <li>• 1. Linear transport infrastructure: dynamic landscapes and biodiversities</li> <li>• 2. Dynamics of biodiversity and management of linear transport infrastructures and their rights of way (LTI)</li> <li>• 3. Operational research in support of the design / design and adaptation of biodiversity to develop ILTE there</li> <li>• 4. Reversible LTI</li> </ul>	<p>Three possible types of answers are open in this appeal:</p> <ul style="list-style-type: none"> <li>• research projects</li> <li>• the "exploratory" projects</li> <li>• A state of the art / summary of the facts proven on "infrastructure and biodiversity"</li> </ul>		
Ademe (+ commissariat général à l'investissement)	Appel à Manifestations d'Intérêt – Industrie et agriculture éco-efficientes (AMI INDU)	<p>Four priority areas covered: Agriculture and wood industry, Agro-Food Industry, Chemical and paperboard, metal industries, industrial and construction materials.</p>	<p><u>Consortium</u> AMI is intended for OEMs and manufacturers, manufacturers of agricultural inputs but also to design offices and engineering firms, installers and operators, as well as industrial users and farmers, able to disseminate technological offer in France and abroad. Next closing 29/02 / 2016- Intermediate Fencing: 02/29/2016.</p> <p><u>Funds</u></p> <ul style="list-style-type: none"> <li>•either repayable advances</li> <li>• either partially grants: consist of one fifth of grants and repayable advances four fifths. The refund will be based on the progress and commercial success of the project grant</li> <li>•Either: reserved for small amounts, such aid is calculated with aid rate minuss</li> </ul>	<a href="https://appelsaprojets.ademe.fr/aap/AMI%20INDU2014-75">https://appelsaprojets.ademe.fr/aap/AMI%20INDU2014-75</a>	7to9
Ademe	ETV : Environmental Technology Verification	<p>Verify performance claims, as required by involving Structures testing.</p> <p>4 areas are included in the national experimental program (others than the EU ones):</p> <ul style="list-style-type: none"> <li>- Monitoring and air treatment,</li> <li>- Monitoring of soil and groundwater remediation of polluted soil</li> </ul>	Enterprises	<a href="http://www.verification-etv.fr/">http://www.verification-etv.fr/</a>	8to9

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			<ul style="list-style-type: none"> <li>- Environmental technologies in agriculture,</li> <li>- Process and virtuous productions.</li> </ul>			
	Ministry and ADEME	Environmental soil functions and mangement of natural soil capital (GESSOL)	Background: The soil is a nonrenewable resource on the human scale, which fulfills a multitude of functions essential to life, but is also subject to threats growing (contamination, urban sprawl ...) affecting the functions of soil and generate significant negative externalities. The APR aims GESIPOL the fight against industrial pollution, degradation of soil environments, air, groundwater and biosphere and the valuation of land resources constituted by the contaminated land. Projects should be targeted on the "applied research" and rely on concrete experiences and initiatives on field	This call for proposals is open to research organizations (public or private) to study Business and office involved in the field of polluted sites, clients, communities and the actors of development.	ended in 2015, future unknown	
7	French National Agency for Water and Aquatic Environments (ONEMA)	"Innovations and changes in practices: Fight against micropollutants in urban water"	<p>2 questions:</p> <ul style="list-style-type: none"> <li>What solutions to identify and prioritize micropollutant to be of interest?</li> <li>What solutions and change practices to avoid or reduce their discharges to networks and their effects on water resources?</li> </ul> <p>Changes in practices of users and professionals, targeted waste collection, retention or treatment before discharge into collective networks, urban development for the management of rainfed and network overflows, substitute products, measurement methods of micropollutants and their flows , etc ...</p>	Local authority, service provider, research laboratory, enterprises Multipartnership leading by public authorities	<a href="http://www.onema.fr/Appel-a-projets-Micropolluants-dans-les-milieus-aquatiques">http://www.onema.fr/Appel-a-projets-Micropolluants-dans-les-milieus-aquatiques</a>	
8	French Agency for Food, Environmental and Occupational Health & Safety (ANSES)	Health-Environnement and Health-Work (PNR EST)	This call aims to lead the scientific communities to produce data useful to the different phases of the analysis of health risks and thus to bring research and scientific expertise. The call for projects in 2015 relates to the assessment and analysis of environmental risks to human health in the general		<a href="https://www.anses.fr/fr/content/ap-pel-%C3%A0-projets-de-recherche-du-pnr-est-2015-sur-les-th%C3%A8mes-sant%C3%A9-environnement-et-sant%C3%A9">https://www.anses.fr/fr/content/ap-pel-%C3%A0-projets-de-recherche-du-pnr-est-2015-sur-les-th%C3%A8mes-sant%C3%A9-environnement-et-sant%C3%A9</a>	

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			population or at work.			
9	ANR	Generic project	Projects must fit into the themes of "grand societal challenges" defined by the ANR in connection with the themes of the Horizon 2020 program.	<u>Consortium</u> At least 2 separate structures in a public research organization. <u>Funding method</u> subsidies SMEs: up to 45% of eligible expenditure No SME: from 25 to 30% EPIC: 50% Laboratories: 100% of the marginal costs (except in special cases) The amount of aid granted to projects are generally between 100 and 800 k € for a period of 24-48 months, depending on the type of consortium, the number of partners involved and the scientific ambitions of the project.	<a href="http://www.agence-nationale-recherche.fr/Appels">http://www.agence-nationale-recherche.fr/Appels</a>	1to5
		Chaires industrielles	The program is open to all research themes on topics defined jointly by the parties concerned, with 3 objectives: 1.conduct research in priority and strategic areas for public and private actors involved in the pulpit via a strong and lasting partnership. 2.doing training through research quality by adding vision, methodologies and experience of economic actors to the home of doctoral or post-doctoral students in public research laboratories of high level. 3.allow teachers and researchers, French or foreign, on the move or not, develop their skills in an ambitious research service.	<u>Fund:</u> Funding will be granted for a maximum period of 48 months. The contribution of the ANR is the same as the one from the private companies (cash contribution paid to the host institution).	<a href="http://www.agence-nationale-recherche.fr/financer-votre-projet/appels-ouverts/appel-detail0/chaire-industrielles-2016/">http://www.agence-nationale-recherche.fr/financer-votre-projet/appels-ouverts/appel-detail0/chaire-industrielles-2016/</a>	5to9
		European or International Scientific Networks (MRSEI)	Aims to facilitate the access of French researchers in the European funding programs (including 2020) and / or international. Scientific network, covering topics from all disciplines. These requests must meet European or international large-scale projects, with a major impact on scientific,	<u>Funds</u> 30k€ for a period of 18 months. The aid received will fund exclusively any means that will define the scientific and economic interests leading to the installation of a European or international project. 2 calls per year	<a href="http://www.agence-nationale-recherche.fr/financer-votre-projet/construction-de-l-espace-europeen-de-la-recherche-et-attractivite-internationale-de-la-france/mrsei-montage-de-reseaux-">http://www.agence-nationale-recherche.fr/financer-votre-projet/construction-de-l-espace-europeen-de-la-recherche-et-attractivite-internationale-de-la-france/mrsei-montage-de-reseaux-</a>	1

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			technological or societal.		<a href="#">scientifiques-europeens-ou-internationaux/</a>	
	ANR +Ministry of Industry	Investissement d'avenir Carnot PME	Project must be in line with the 14 defined industrial sectors	<u>Consortium:</u> Reserved for the Carnot label Research Institute; obligation of submission of a consortium of several institutes		3to9
1 0	Banque Publique d'investissement (BPI)	«Projets industriels d'avenir (PIAVE)»	R & D and industrialization to strengthen the competitiveness of French strategic sectors. Ex: call for thematic projects "Innovative products for safe, healthy and sustainable - functional foods and tailored"! Project that will produce business and job opportunities: • corresponding to one or more solutions of New France industry, particularly in the implementation part of a roadmap endorsed by the Steering Committee 9 solutions. These projects are carried individually by a company and can involve other companies, laboratories or research institutions. • corresponding to one of the objectives of a strategic sector committees. The project may alternatively be carried by a structure uniting several companies or a representative entity of the sector companies (such as a trade association, a GIE, an association ...).	<u>Consortium</u> Submit a project with a minimum expenditure of € 3 million. <u>Fund</u> The support provided by the state in projects is in the form of State aid consisting of mixed way of recoverable grants and advances. Selection is an ongoing process.	<a href="http://www.bpifrance.fr/Vivez-Bpifrance/Agenda/Appel-a-projets-PIAVE-9657">http://www.bpifrance.fr/Vivez-Bpifrance/Agenda/Appel-a-projets-PIAVE-9657</a>	8to9
		Crédit impot recherche	fund for reasearch whatever the subject is	Private compagnies	<a href="http://www.entreprises.gouv.fr/politique-et-enjeux/credit-impot-innovation">http://www.entreprises.gouv.fr/politique-et-enjeux/credit-impot-innovation</a>	8to9
		crédit impot innovation	fund for innvation whatever the subject is	Private compagnies	<a href="https://www.service-public.fr/professionnels-entreprises/vosdroits/F23533">https://www.service-public.fr/professionnels-entreprises/vosdroits/F23533</a>	8to9
1 1	Ministère de la recherche	PhD in university	all subjects			1to5
		Ph in a private société : CIFRE	all subjects	Association with a private compagnie which can have financial deduction	<a href="http://www.enseignementsup-recherche.gouv.fr/cid22130/les-">http://www.enseignementsup-recherche.gouv.fr/cid22130/les-</a>	3to5

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					<a href="#">cifre.html</a>	
1 2	CNRS	Projets Exploratoires Premier Soutien (PEPS) de site	Thematic result of discussions between the CNRS and local stakeholders (universities, schools, territorial and industry representatives). designed to support exploratory interdisciplinary projects. The procedure is very reactive to facilitate a quick start of the winning projects.	<u>Fund:</u> 10 k€	<a href="http://www.cnrs.fr/mi/spip.php?article8">http://www.cnrs.fr/mi/spip.php?article8</a>	1
1 3	coordonné par le CNRS-INSU : Financed by : INSU, InEE, InC, ANDRA, BRGM, CNES, IFREMER, IFSTTAR, INRA, IRD, IRSTEA, Fondation Coopération Scientifique ROVALTAIN, Météo France, Mission pour l'Interdisciplinarité du CNRS.	EC2CO : Initiative Structurante Ecosphère continentale et côtière	4 thematic actions (AT), each have its Scientific Committee: • BIOHEFFECT: biogeochemistry, hydrology and ecosystem function • ECODYN: ecotoxicology, ecodynamics of contaminant • MICROBIAL: Environmental Microbiology • DRIL: Dynamics and Reactivity of Littoral Interfaces The evaluated projects must demonstrate their innovative role to test original and risky issues and structuring for example through the use of networked monitoring systems (SO, SOERE, test site, ...)	<u>Fund</u> 20k€ over 2 years	<a href="http://www.insu.cnrs.fr/ec2co">http://www.insu.cnrs.fr/ec2co</a>	1
1 4	Etat	CASDAR	This call for projects aims to promote applied research quality, allowing in particular to value the achievements of basic research, conducted in partnership between public research and private operators, responding to the ambition to contribute to the development of varieties of seeds and plants for sustainable agriculture.	<u>Consortium</u> The projects must necessarily include a partnership between public research and private research. <u>Fund</u> The subsidy rate allocated to eligible projects is capped at 60% of the total project cost, excluding salaries of the civil service. The projects have a maximum duration of 3 years and 6 months.	<a href="http://agriculture.gouv.fr/appele-projet-casdar-2015-developper-des-varietes-des-semences-et-des-plants-repondant-lambition-dune">http://agriculture.gouv.fr/appele-projet-casdar-2015-developper-des-varietes-des-semences-et-des-plants-repondant-lambition-dune</a>	7to8
<b>trans National</b>						
1	SNOWMAN	SNOWMAN is a transnational group of research funding organizations and	Call in the field of soil sustainable management in Europe.	calls, open for applicant from participating countries	<a href="http://snowmannetwork.com/">http://snowmannetwork.com/</a>	

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		administrations				
2	ANR	Generic project	accords de « lead agency » avec l'Allemagne (DFG), l'Autriche (FWF) et la Suisse (FNS). Les propositions de Projets de Recherche Collaborative – International (PRCI) avec ces pays doivent ainsi être déposées auprès de ces agences, en respectant les modalités de soumission en vigueur dans ces pays respectifs.			1to5
<b>European</b>						
1	EU	Horizon 2020 (and before EU Framework Programmes).	COLLABORATIVE PROJECTS.	A consortium must present a project based on notices published in the work programs defined by the European Commission. 2-3 projects are selected by subject, with defined budgets. <u>Funds</u> subsidies • up to 100% for R & D projects / research • 70% (+ 25% of indirect costs) for projects with work areas close to a market purpose (tests, prototypes, demos ..).	<a href="https://ec.europa.eu/programmes/horizon2020/">https://ec.europa.eu/programmes/horizon2020/</a>	1to9
		SMEs INSTRUMENT		The purpose of this device is to focus on economic growth in contributing to the development of technologies with a level of maturity enabling placing on the market quickly. Eligible subjects are varied and are left to the initiative of the promoters. Funding method Grants up to 70% of eligible expenditure (25% of indirect costs).	<a href="https://ec.europa.eu/programmes/horizon2020/en/h2020-section/sme-instrument">https://ec.europa.eu/programmes/horizon2020/en/h2020-section/sme-instrument</a>	7to9
		ETV : Environmental Technology Verification	trois domaines technologiques : - Surveillance et traitement de l'eau, - Matériaux, déchets et ressources, - Technologies de production de l'énergie.		<a href="http://ec.europa.eu/environment/etv/index.htm">http://ec.europa.eu/environment/etv/index.htm</a>	8à9
		European structural funds	Structural Funds play a substantial role to help all regions build research and innovation capacities corresponding to their situation and priorities.		<a href="http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=structural_funds">http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=structural_funds</a>	

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		Revolving funds	different funds. Examples: 1* some european structural funds, eg JESSICA (Joint European Support for Sustainable Investment in City Areas)	Labelled money. The investment should give revenues. The difference with an investment fund is that it should serve a public goal.	1* <a href="http://ec.europa.eu/regional_policy/index.cfm/en/funding/special-support-instruments/jessica/">http://ec.europa.eu/regional_policy/index.cfm/en/funding/special-support-instruments/jessica/</a>	
		European subsidies	Eg. for agricultural sector, European rural development programs			
		LIFE +	instrument under Horizon 2021	EU's financial instrument supporting environmental, nature conservation and climate action projects throughout the EU	<a href="http://ec.europa.eu/environment/life/funding/life2015/">http://ec.europa.eu/environment/life/funding/life2015/</a>	
		Wetsus, European centre of excellence for sustainable water technology	Wetsus is part of WaterCampus Leeuwarden. Wetsus is a facilitating intermediary and creates an environment and strategic cooperation for development of profitable and sustainable state of the art water treatment technology.	Infrastructure / research facilities are provided. Companies and research institutes from all over Europe that want to innovate join. Also the city and region participate (stimulating economic development of the region)	<a href="https://www.wetsus.nl/home/what-is-wetsus">https://www.wetsus.nl/home/what-is-wetsus</a>	
2	JPI	JPI - Joint Programming Initiatives	Member States commit to Joint Programming Initiatives (JPIs)	open for consortia of the contributing member states	<a href="http://ec.europa.eu/research/era/joint-programming_en.html">http://ec.europa.eu/research/era/joint-programming_en.html</a>	
		JPI OCEANS				
3	Interreg		financed by the European Regional Development Fund	helps regions of Europe share knowledge and transfer experience to improve regional policy	<a href="http://www.interreg4c.eu/">http://www.interreg4c.eu/</a>	5to8
4	ERANET - European Research Area Network	instrument under Horizon 2020 ENSUF : ERA-NET Cofund Smart Urban Futures	Three call topics are defined: -Concepts and strategies for smart urban transformation, growth and shrinkage -New dynamics of public services -Inclusive, vibrant and accessible urban communities	instrument to support public-public partnerships in their preparation, establishment of networking structures, design, implementation and coordination of joint activities as well as topping up of single joint calls and of actions of a transnational nature	<a href="http://ec.europa.eu/research/era/era-net-in-horizon-2020_en.html">http://ec.europa.eu/research/era/era-net-in-horizon-2020_en.html</a>	
		ERA-net Industrial Biotechnology (ERA-IB)	12 partner countries a joint call for research projects on biotechnology applied to purpose: "Industrial Biotechnology for Europe: an integrated approach". IWT (Flanders Belgium), Dasti (Denmark), ADEME (France), FNR (Germany), BMBF (Germany), NWO (Netherlands), NCR (Norway), NCBIr (Poland), FCT (Portugal), UEFISCDI (Romania), FASIE (Russia), MINECO (Spain), TUBITAK (Turkey), TSB (UK) and BBSRC (UK).	Les consortia doivent être constitués d'au moins 3 équipes de 3 pays participants différents (précédemment cités) jusqu'à un maximum de 8 partenaires. La participation d'un partenaire industriel est obligatoire. Cet appel à projets se déroule en 2 étapes :	<a href="http://www.era-ib.net/">http://www.era-ib.net/</a>	

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		Partnership for Research and Innovation in the Mediterranean Area (PRIMA)	<p>The goal of the Initiative is “To develop innovative solutions and promote their adoption for improving the efficiency and sustainability of food productions and water provision, in order to support an inclusive well-being and socio-economic development in the Mediterranean Area, within the framework of a reinforced Euro-Mediterranean co-operation”, with the following objectives:</p> <ol style="list-style-type: none"> <li>1.To enhance knowledge and unlock its innovation potential for food security and water availability through end user-friendly solutions in a context of ecological, demographic and climatic change</li> <li>2.To advance existing knowledge and innovations for water and food quality and safety.</li> </ol>		<a href="http://www.eranetmed.eu/index.php/prima-initiative">http://www.eranetmed.eu/index.php/prima-initiative</a>	
		ARIMNet is an ERA-Net supported and funded by the 7th Framework Programme from 2008. The current second phase of ARIMNet will run from 2014 to 2017.	Use and management of natural resources, Mediterranean basin		<a href="http://www.arimnet2.net/">http://www.arimnet2.net/</a>	
5	Baltic Organizations Network for Funding Science EEIG’s	Joint Baltic Research Programme BONUS	<p>BONUS brings together the research communities of marine, maritime, economical and societal research to address the major challenges faced by the Baltic Sea region. A full understanding of the Baltic Sea system is needed. This requires sound knowledge that is scientifically first-rate and relevant for society.</p> <p>The EU framework provides mechanism for combining national research funding and for using this in the work aiming to meet the challenges of today.</p>		<a href="http://www.bonusportal.org/">http://www.bonusportal.org/</a>	

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International					
	BELMONT forum		<p>The Belmont Forum is a group of the world's major and emerging funders of global environmental change research. It aims to accelerate delivery of the environmental research needed to remove critical barriers to sustainability by aligning and mobilizing international resources. It pursues the goals set in the Belmont Challenge by adding value to existing national investments and supporting international partnerships in interdisciplinary and transdisciplinary scientific endeavors.</p>	<p><u>Consortium</u> International consortia of researchers, consisting of partners from at least three of the participating countries, may apply for funding. Consortia should bring together natural scientists, social scientists, and research users (policy makers, regulators, NGOs, communities, and industry).</p> <p><u>Fund</u> Under the Belmont Forum CRA Memorandum of Understanding, each Belmont Forum member funds researchers from their own country. Researchers from countries not participating in the Call may participate in a research project at their own expense.</p>	<p><a href="http://www.belmontforum.org/">http://www.belmontforum.org/</a></p>

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