

D2.5

National reports with a review and synthesis of the collated information

Austria





Document information

Project acronym: INSPIRATION
Project full title: INtegrated Spatial Planning, land use and soil management Research ActTION
Project type: Coordination and Support Action (CSA)
EC Grant agreement no.: 642372
Project starting / end date: 1st March 2015 (month 1) / 28th February 2018 (month 36)
Website: www.inspiration-h2020.eu
Document status / date: Final version as of 01/03/2016
Deliverable No.: D2.5
Responsible participant: DELTARES (participant number 14)
Due date of deliverable: 01/03/2016
Actual submission date: 01/03/2016
Dissemination level: X PU - Public
PP - Restricted to other programme participants*
RE - Restricted to a group specified by the consortium*
CO - Confidential, only for members of the consortium*
(* = including the Commission Services)

Authors: Pia Minixhofer, Sophie Zechmeister-Boltenstern, Rosemarie Stangl, Andreas Baumgarten, Martin Weigl, Peter Tramberend, Jos Brils, Linda Maring, Stephan Bartke

Contact: INSPIRATION Coordinators Detlef Grimski (UBA): detlef.grimski@uba.de
or Stephan Bartke (UBA): stephan.bartke@uba.de

To be cited as:

Minixhofer et al. (2016): National reports with a review and synthesis of the collated information - Austria. Final version as of 01.03.2016 of deliverable 2.5 – section on Austria – of the HORIZON 2020 project INSPIRATION. EC Grant agreement no: 642372, UBA: Dessau-Roßlau, Germany.

Disclaimer:

This document's contents are not intended to replace consultation of any applicable legal sources or the necessary advice of a legal expert, where appropriate. All information in this document is provided "as is" and no guarantee or warranty is given that the information is fit for any particular purpose. The user, therefore, uses the information at its sole risk and liability. For the avoidance of all doubts, the European Commission has no liability in respect of this document, which is merely representing the authors' view.



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

1. Introduction	4
1.1 About INSPIRATION	4
1.2 This report	5
1.3 The INSPIRATION conceptual model and its themes	8
1.4 Guide to the reader: outline of the country chapters	9
1.5 Annexes	11
2. Austria	20
2.1 Executive Summary	20
2.1.1 English version	20
2.1.2 German version	22
2.2 Methodology followed	26
2.3 Research and Innovation (R&I) needs	27
2.3.1 Societal challenges and needs	27
2.3.2 Topics / research needs to include in the SRA	28
2.4 Experiences regarding connecting science to policy/practice	38
2.4.1 Use of knowledge	38
2.4.2 Possibilities to set the agenda	38
2.4.3 Science – policy – practice	40
2.5 National and transnational funding schemes	43
2.5.1 Funding schemes and possibilities for research funding	43
2.5.2 Gaps in financial resources for research	48
2.6 Other remarks made by interviewees	49
2.7 Annexes	50



1. Introduction

1.1 About INSPIRATION

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

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

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

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

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

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



1.2 This report

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

1. **Austria**,
Pia Minixhofer, Sophie Zechmeister-Boltenstern, Rosemarie Stangl, Andreas Baumgarten, Martin Weigl, Peter Tramberend,
2. **Belgium** (including some information for **Denmark** and **Luxemburg**),
Nele Bal, Bavo Peeters,
3. **Czech Republic**,
Petr Klusáček, Stanislav Martinát, Bohumil Frantál,
4. **Finland**,
Antti Rehunen, Teija Haavisto, Ritva Britschgi, Outi Pyy, Jari Rintala, Petri Shemeikka,
5. **France**,
Marie-Christine Dictor, Samuel Coussy, Valérie Guerin, Corinne Merly,
6. **Germany**,
Uwe Ferber, Stephan Bartke, Detlef Grimski,
7. **Italy**,
Matteo Tabasso, Sarah Chiodi, Giulia Melis,
8. **Poland**,
Anna Starzewska-Sikorska,
9. **Portugal**,
Thomas Panagopoulos, Vera Ferreira, Dulce Antunes
10. **Romania**,
Mihail Dumitru, Sorin Liviu Stefanescu, Andrei 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 1st year of the INSPIRATION project (month 1 – 12), i.e. in the period from March 2015 to February 2016. In the WP2 project description, the final task executed in this period is described in the following way:

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

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

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

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

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

research topics. The workshop thus aimed to check, verify and enrich, and in some cases also already prioritize the suggestions provided by the NKS;⁴

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.

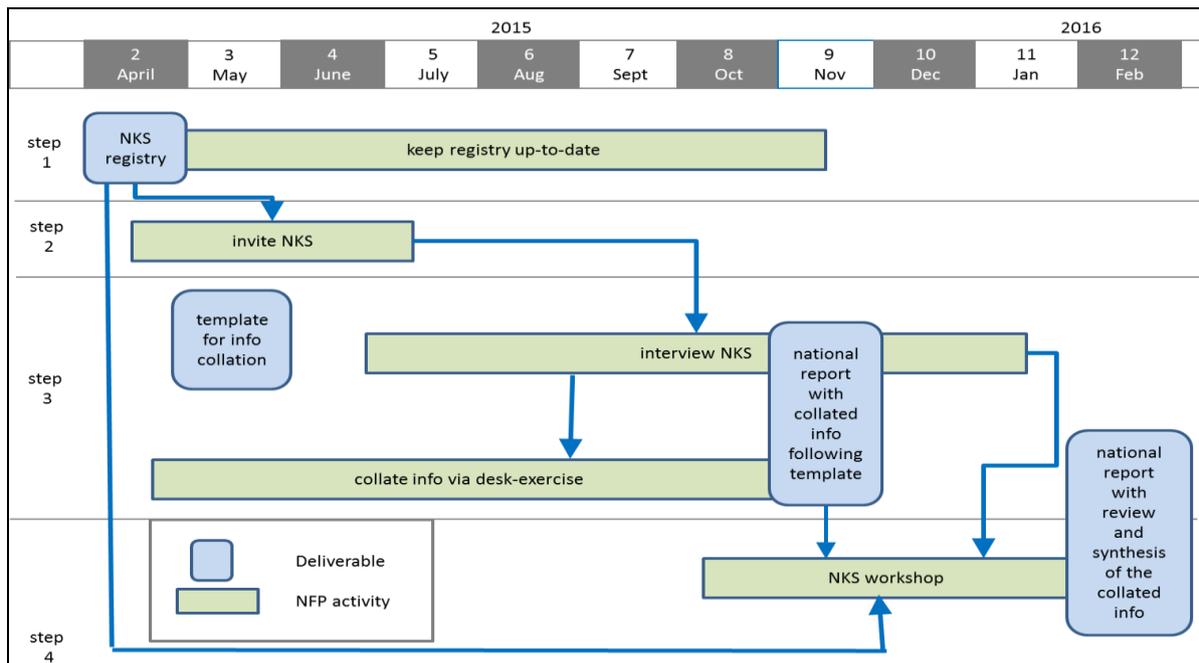


Figure 1: INSPIRATION's WP2 workflow.

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!

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

1.3 The INSPIRATION conceptual model and its themes

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

- **Demand:**
What does society demand from natural capital and ecosystem services including the SSW-system?
- **Natural capital:**
What has nature, including the Soil-Sediment-Water (SSW)-system, to offer and which determinants sustain the system?
- **Land management:**
What are options for an integrated, cross-sectorial land management to balance societal demands and natural capital?
- **Net-impacts:**
What are the impacts of different options of managing natural capital, including the SSW-system on global, regional and local as well as temporal scales?

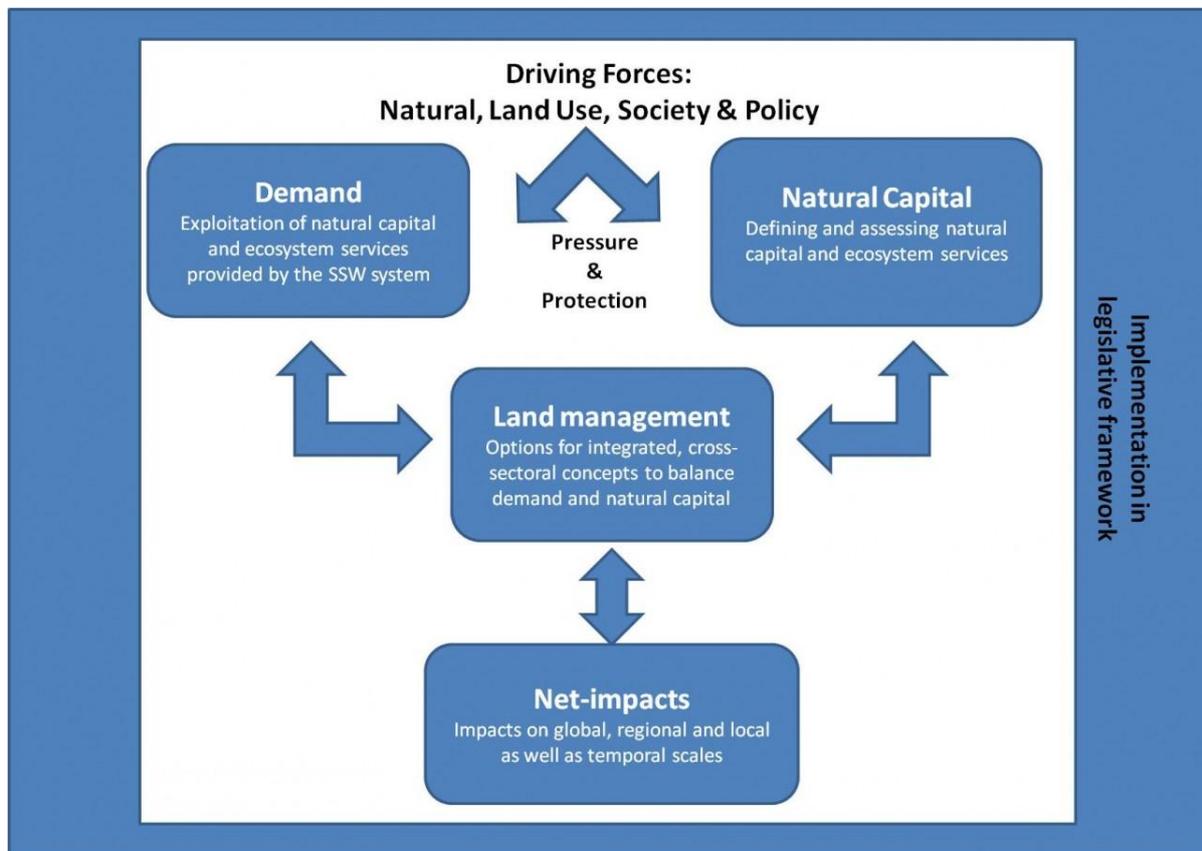


Figure 2: INSPIRATION's conceptual model.

1.4 Guide to the reader: outline of the country chapters

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

Section X.1- Executive summary

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

Section X.2 - Methodology followed

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

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

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

➤ **Topic a: Demand-driven*** suggestions for the Strategic Research Agenda (SRA), i.e. suggestions from the perspective of industry, end-users and funders.
*Related key question to be answered: **What (new) knowledge do these parties need to tackle societal challenges including the increase of job opportunities?***

* **Demand-driven** in INSPIRATION means focusing on the demands of those who are responsible or feel committed to tackle the societal challenges related to the INSPIRATION scope and themes, i.e. industry, end-users and funders. These parties could improve their business opportunities and/or take better informed decisions on what measures to take and execute in order to tackle other societal challenges if they would (be enabled to) use the knowledge as resulting from execution of the INSPIRATION SRA.

This section is divided in the sub-sections:

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

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

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

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

This section is divided in the sub-sections:

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



Section X.5 National and transnational funding schemes

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

This section is divided in the sub-sections:

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

Section X.6 - Other remarks made by interviewees

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



1.5 Annexes

Annex I: NKS questionnaire template

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

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

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

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

Questionnaire template

A. Interview information

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?



<p>c. Who wants to/should fund this kind of research?</p> <p><i>[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</i></p> <p><i>Be sensible as interviewer if this is needed.]</i></p> <ul style="list-style-type: none"> ○ <i>Assessment of land resources</i> ○ <i>Potential productivity of land and soils</i> ○ <i>Demand for soil/land resources, imports and exports</i> ○ <i>Competition between land uses (land-use conflicts)</i> ○ <i>Concepts to identify and quantify relevant impacts</i> ○ <i>Instruments to avoid / minimize impacts (feedback to decision-making process)</i> ○ <i>Opportunities of innovative land-use technologies</i> ○ <i>Resource-oriented land management systems]</i> ○ <i>Soil regeneration</i> ○ <i>Soil and groundwater remediation</i> 		
<p>9. <u>Linked to topics mentioned by the NKS:</u></p> <p>a. What are the important / relevant documents, research agendas, research programmes underpinning these topics? (state-of-the-art)</p> <p>b. Related to these agendas and programmes: what are timelines of programming and windows-of-opportunities to influence agendas / programmes?</p> <p><i>[Note: question 9b is input for work package 5]</i></p>		
<p>E. Science-Policy-Interfacing (SPI)</p>		
<p>10. How would you define ‘scientific knowledge’?</p>		
<p>11. For what do you use scientific knowledge in your job?</p>		
<p>12. Which sources of (scientific) knowledge do you use for doing your job?</p> <p><i>[Open question and you can mention some of the sources underneath as examples]</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> ○ <i>scientific paper</i> ○ <i>consultants</i> ○ <i>reports</i> ○ <i>colleagues</i> ○ <i>experiences /examples within my own country</i> ○ <i>experiences /examples abroad</i> </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> ○ <i>newspapers</i> ○ <i>television</i> ○ <i>conferences Involvement in research projects</i> ○ <i>data (bases)</i> ○ <i>websites, such as:</i> ○ <i>other, specify:</i> </td> </tr> </table>	<ul style="list-style-type: none"> ○ <i>scientific paper</i> ○ <i>consultants</i> ○ <i>reports</i> ○ <i>colleagues</i> ○ <i>experiences /examples within my own country</i> ○ <i>experiences /examples abroad</i> 	<ul style="list-style-type: none"> ○ <i>newspapers</i> ○ <i>television</i> ○ <i>conferences Involvement in research projects</i> ○ <i>data (bases)</i> ○ <i>websites, such as:</i> ○ <i>other, specify:</i>
<ul style="list-style-type: none"> ○ <i>scientific paper</i> ○ <i>consultants</i> ○ <i>reports</i> ○ <i>colleagues</i> ○ <i>experiences /examples within my own country</i> ○ <i>experiences /examples abroad</i> 	<ul style="list-style-type: none"> ○ <i>newspapers</i> ○ <i>television</i> ○ <i>conferences Involvement in research projects</i> ○ <i>data (bases)</i> ○ <i>websites, such as:</i> ○ <i>other, specify:</i> 	
<p>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?</p>		
<p>14. To what extent are you able to influence (and how) the setting of scientific research policies/agendas in our country?</p>		

<p>15. To which extent do our national policies/agendas reflect your specific needs and priorities?</p>
<p>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?</p>
<p><i>[Questions only for NKS from the non-science sector (business and policy):]</i></p> <p>17. Have you ever been involved in:</p> <ul style="list-style-type: none"> 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? <p><i>[When yes: Follow-up questions]</i></p> <ul style="list-style-type: none"> - How successful/satisfying was this, on a scale of 1-5? <ul style="list-style-type: none"> 1. <i>Very successful/satisfying</i> 2. <i>Successful /satisfying</i> 3. <i>Neutral</i> 4. <i>Unsuccessful/unsatisfying</i> 5. <i>Very unsuccessful/unsatisfying</i> - What went well - What could be improved? - What to avoid/not to do? - Additional remarks?
<p><i>[Question only to NKS who are likely to have insights here (e.g. research funders)]</i></p> <p>18. (How) is the societal impact of scientific research related to the scope of INSPIRATION being assessed in our country?</p> <p><i>[If they know: Follow-up questions:]</i></p> <ul style="list-style-type: none"> - How successful/satisfying is this, on a scale of 1-5? <ul style="list-style-type: none"> 1. <i>Very successful/satisfying</i> 2. <i>Successful/satisfying</i> 3. <i>Neutral</i> 4. <i>Unsuccessful/unsatisfying</i> 5. <i>Very unsuccessful/unsatisfying</i> - What indicators are used? - What goes well? - What can be improved? - What to avoid/not to do? - Additional remarks?
<p>19. Which national Science-Policy-Interface documents do you know of / can you recommend?</p>

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?
- Do you have further questions arising from this interview, or would you like to add anything else?
- What information are you interested in, and willing to give feedback on?

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

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

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

b. Preferred level of feedback:

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

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

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





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

INSPIRATION interview at a glance

Aim of INSPIRATION:

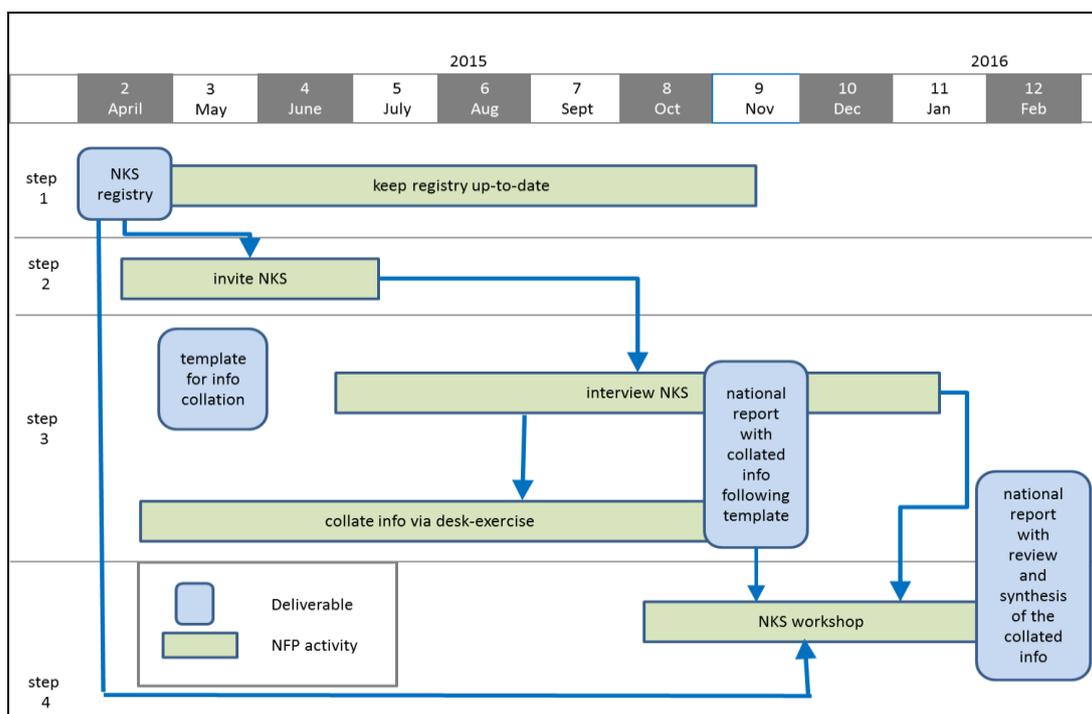
The main purpose of the EC-funded INSPIRATION project is to formulate an end-user driven strategic research agenda (SRA) for land-use, land-use changes and the related, impacted compartments of the Soil-Sediment-Water (SSW) system in order to meet current and future societal challenges and needs. Next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

<p>Contact the National Focal Point:</p> <p>See the INSPIRATION website for contacts</p>	<p>Contact the general project coordination:</p> <p>Stephan Bartke stephan.bartke@uba.de</p>
---	---



2. Austria

Report by Pia Minixhofer, Sophie Zechmeister-Boltenstern, Rosemarie Stangl, Andreas Baumgarten, Martin Weigl, Peter Tramberend

2.1 Executive Summary

2.1.1 English version

Sustainable land use and soil management is an urgent topic in light of climate change and finite soil resources. The same area can potentially fulfil a high variety of needs. It is essential to prioritise and adapt to changing societal and environmental conditions. Therefore, the EU societal challenges should be seen as equally important.

Austria is a country with high environmental standards. However, at the moment, awareness of soil protection and sustainable spatial planning is not achieved on a satisfying level neither in Austrian politics, nor in the general public. This is astounding as in mountainous countries fertile soil is particularly scarce and valuable. A national agenda specific to the scope of INSPIRATION is not known for Austria. It is very difficult to protect soil and land nationwide with the current jurisdiction. Due to the principle of separation of competences, laws and regulations for soil and spatial planning are in the responsibilities of the counties and not of the state. To obscure the problem even further, a distinct gap exists between the conception of soil in spatial planning and in soil sciences, as soil quality is not a recognized factor in spatial planning. The lack of uniform laws inhibits the possibility to regulate soil and land use consistently and secure co-operation over all levels.

Overarching funding schemes are generally missing. Currently, research agendas are mostly disciplinary, societal challenges are only tackled on a short term basis and many long-term projects have reduced financial support. The current financing and funding systems are adverse to innovation, policy needs and sustainable implementation.

Research and Innovation Needs

The participants of the Austrian workshop conclude that there is a significant discrepancy between basic and applied research, which leads to a gap between science and civil society. Decision-makers are focussed on the implementation of scientific findings, whereas research experts are mostly oriented on analytical and methodological aspects. However, implementation research alone will neither be sufficient nor realistic. Researchers have to be able to explore research questions on the basis of their expertise without the pressure of implementation and societal benefit.

Future research questions should tackle ways of sustainable land management, its contribution to food security, re-cultivation of abandoned areas, demographic changes and its implications for e.g. urban sprawl or infrastructure, digitalisation possibilities, methods to address natural hazards, protection of soil and landscape diversity, Alpine concerns, public participation, political regulations and involvement and impact assessment of project implementation. A high potential for the alignment of existing knowledge is apparent. Consolidation of knowledge should happen in light of cultural differences.



Science-Policy-Interface

Scientific research policies cannot be influenced easily without political support. However, the opportunities for researchers to influence political decision-making are rather scarce. To approach wide acceptance and secure best multiplication, it is critical to involve the civil society and all stakeholders (e.g. spatial planners, soil scientists, society, land owners, politicians) as early as possible and to keep them involved throughout the project period.

Participation of relevant stakeholders would lead to long-term partnerships and implemented research results. The dialogue between scientific and policy-making communities needs to be strengthened, to improve linkages between policy needs and research programmes, as well as to enhance the accessibility of scientific knowledge to policy makers. It is of key importance to provide information for the non-science community in an understandable language and to foster open communication. Research results could be a viable input for municipality regulations and sustainable municipality development. A summary of best practice examples could show the public successful research implementations. Many SPI documents would already be available, but are not brought to the attention of relevant stakeholders.

In Austria, adequate tools are needed to assess the environmental impact of land and soil use, successful project implementation, added value or societal impact of research projects. A uniform assessment would be a necessary prerequisite for the development and establishment of indicators, which would make political goals reasonable and could function as communication tool for the public. Demonstration of consequential costs of land use changes have to be one of the main outcomes of research projects.

In particular with regard to soil topics and land management, long-term projects, monitoring programs and socio-political topics, there is a clear need for strengthened action and de-bureaucratisation. The merger of regional administrations could simplify old, complex structures, but the political resistance would be tremendous. Re-zoning of green land could be losing attractiveness with financial benefits for resource-saving measures or restriction of intervention possibilities for municipalities (e.g. the spatial planning laws of the counties).

Funding

The Austrian workshop participants see a distinct need for new structures of the call process and the implementation of new research projects and programs. This would be necessary to secure sustainable success, avoid parallel research and reduce implementation deficits. In order to reinforce the added value of different financial resources (for EU and national demands), researchers, funders and questioners should establish a clear structured and transparent research platform for a wide range of topics about soil and spatial planning. Network building and the elimination of fragmentation would increase the added value of financial resources and improve the knowledge transfer. Funders will experience that their invested, national Euros are indeed multiplied, when (1) inter-/trans-disciplinary approaches, (2) applied research as well as (3) local issues are considered.



According to the Austrian workshop participants, funding programs and schemes should include (1) goal orientation and practicability, (2) a committed budget for communication, awareness raising and participation, (3) focus on implementation, (4) a clear definition of the market stakeholders in their socio-political role in the relevant time frame, (5) assessment and evaluation of the social impact and added value and (6) interconnection of the funding schemes.

The setting of scientific research policies/agendas can only be influenced with the allocation of budget for certain research projects, in raising questions to the administration, within and via expert committees, and through co-operation with research institutions. Co-funding, private sector companies and initiatives should be integrated.

2.1.2 German version

Nachhaltiges Flächen- und Bodenmanagement ist in Zeiten des Klimawandels und endlicher Bodenressourcen auch in Österreich ein dringendes Thema. Theoretisch kann dieselbe Fläche verschiedenste Bedürfnisse erfüllen. Dafür sind jedoch das Setzen von Prioritäten und die Anpassung an sich verändernde soziale Bedingungen und an die Umwelt erforderlich, und die großen gesellschaftlichen Herausforderungen der EU sollten als gleichwertige Basis betrachtet werden.

Österreich ist ein Land mit hohen Umweltstandards. Trotzdem ist weder in der Politik noch in der Bevölkerung ein breites Bewusstsein zu den Themen Bodenschutz und nachhaltige Raumplanung vorhanden. Das ist insofern verwunderlich, da in Gebirgsregionen fruchtbarer Boden besonders rar und wertvoll ist. Eine nationale Agenda zum Thema von INSPIRATION gibt es in Österreich nicht. Unter der momentanen Gesetzeslage ist es in Österreich besonders schwierig, Boden und Land national zu schützen. Auf Grund der Kompetenzteilung sind Gesetze und Richtlinien zu Boden und Raumplanung dezentral und Aufgabe der Länder und nicht des Bundes. Das Problem wird noch weiter verschärft, da Boden in Raumplanung und Bodenwissenschaften unterschiedlich beurteilt wird. Die Bodenqualität spielte in der Raumplanung bislang keine Rolle. Das Fehlen einheitlicher Gesetze verhindert eine einheitliche Beurteilung und Regulierung von Boden- und Flächenverbrauch sowie eine überregionale Zusammenarbeit.

Übergeordnete Forschungsförderungskonzepte für Boden- und Raumplanung gibt es in Österreich grundsätzlich keine. Derzeit sind Forschungsagenden zumeist disziplinär, gesellschaftliche Herausforderungen werden nur kurzfristig behandelt und viele Langzeitforschungsprojekte werden aufgrund mangelnder Finanzierung reduziert oder eingestellt. Das momentane Finanzierungs- und Fördersystem auf diesem Gebiet ist für zukunftsweisende Innovation, politischen Bedarf und nachhaltiger Umsetzung nicht ausreichend.



Forschungs- und Innovationsbedarf

Die Workshop-TeilnehmerInnen sehen eine Diskrepanz zwischen Grundlagenforschung und angewandter Forschung, die zu einer Kluft zwischen Wissenschaft und Zivilgesellschaft führt. Die Teilnehmenden finden, dass Forschung im Bereich Boden und Raumplanung vermehrt Umsetzungsorientierung braucht. Mit einem partizipativen Ansatz in der Forschung können Stakeholder besser integriert und langfristige Partnerschaften aufgebaut werden. Integrative und partizipative Forschung ermöglichen es, gesellschaftliche Probleme an die Wissenschaft heranzubringen. Zuerst sollten die gesellschaftlichen Probleme identifiziert, bestehendes Wissen konsolidiert und gleichzeitig oder danach die konkreten Forschungs- und Innovationsanforderungen definiert werden, damit eine sinnvolle Umsetzung noch zeitnah geschehen könnte. Der nachhaltige Erfolg von implementierten Forschungsprojekten und gesetzten Maßnahmen müsse evaluiert werden. Geeignete Indikatoren und Regelwerke müssen zunächst entwickelt und dann angewandt werden.

Es müsse Aufgabe der Forschung sein zu zeigen, wie die Rahmenbedingungen für eine nachhaltige Landnutzung geändert werden können. Die Wissenschaft ist mehr als bisher gefordert, auch auf neue, situationsbedingte Fragestellungen relativ rasch Antworten zu finden, die für die Praxis relevant und anwendbar sind. Neben der Umsetzungsforschung sollte aber auch so genannte „Blue Skies Research“, dh. riskante Bottom-Up Forschung zu neuartigen Themen mit hohem Innovationsgrad, möglich sein. Zukünftige Forschungsthemen sollten sich mit folgenden Fragestellungen befassen: nachhaltige Landnutzung, ihr Beitrag zur Ernährungssicherheit, Rekultivierung von degradierten Flächen, demographische Veränderungen und deren Auswirkungen auf z.B. Zersiedelung und Infrastruktur, Innovation durch Digitalisierung, Naturgefahren, Schutz der Biodiversität, Strukturen im Alpenen Raum, öffentliche Partizipation, politische Rahmenbedingungen sowie Evaluierung der Auswirkungen von Projektumsetzungen.

Die Politik benötige fundiertes Wissen, um den gesellschaftlichen Druck auf Böden zu reduzieren. Die teilnehmenden ExpertInnen betonen, dass es essentiell sei, wissenschaftliche Ergebnisse der Öffentlichkeit und Politik verständlicher zu kommunizieren. In Österreich erwartet man sich dadurch, z.B. die Problematik der Flächenumwidmungen nachhaltiger lösen zu können. Bewusstseinsbildung sei zu verstärken und das Aufzeigen der Folgekosten bei Landnutzungsänderungen müsse verständlicher kommuniziert werden.

Die politischen EntscheidungsträgerInnen auf lokaler Ebene müssen konkret einbezogen werden, um die Umsetzung von Forschungsergebnissen sicher zu stellen. Idealerweise sollen Fallbeispiele zusammengetragen werden, um Best-Case- und Worst-Case-Szenarien aufzuzeigen. Anhand dieser Sammlung könne (internationaler) Konsens gefunden werden, der PolitikerInnen europaweit bei der Umsetzung behilflich ist.



Science Policy Interface

Die Möglichkeiten für ForscherInnen, den politischen Entscheidungsfindungsprozess zu beeinflussen, seien rar. Unterschiedliche Schwerpunkte bei Forschung und EntscheidungsträgerInnen erschweren zudem den Wissenstransfer. WissenschaftlerInnen seien meist auf analytische und methodische Aspekte ausgerichtet, während EntscheidungsträgerInnen auf die Umsetzung der wissenschaftlichen Erkenntnisse fokussiert wären.

Im österreichischen Workshop hat sich herausgestellt, dass Lösungsansätze für eine Verringerung der Diskrepanz von Wissenschaft und politischen EntscheidungsträgerInnen vor allem auf einer Annäherung der Wissenschaft an die Bedürfnisse der BürgerInnen beruhen würden. Eine anwendungsnahe Forschung stelle sicher, dass die Ergebnisse direkt umgesetzt werden können. Eine Netzwerkbildung zur Stärkung des Wissenstransfers sei dabei essentiell. Noch besser wäre eine konkrete Zusammenarbeit, um die Forschung näher an die Gemeinden zu bringen. Angewandte Forschung könnte ein Input für Gemeindevorschriften und nachhaltige Gemeindeentwicklung sein.

Eine rein auf Umsetzung ausgerichtete Forschung ist jedoch nicht realistisch. ForscherInnen sollen auf Grund ihrer Expertise auch Fragen untersuchen können, die nicht im direkten Zusammenhang mit dem öffentlichen Gemeinwohl stehen. Die Bündelung der Forschungsressourcen solle ermöglichen, dass Zukunftsfragen ohne Umsetzungsdruck erforscht werden können.

Funding

Die Workshop-TeilnehmerInnen schlugen vor, gemeinsame Finanzierungsprogramme für die Inhalte Boden(funktionen), Raumplanung sowie Politik und Gesellschaft zu schaffen. Die Finanzierung solle Co-Funds (national/international), Privatwirtschaft und Initiativen integrieren. Eine Orientierung am ERA-Modell (European Research Area) für Innovation und Umsetzung könnte für Österreich geschaffen werden. Strukturfonds (z.B. Regionalförderung und ländliche Entwicklung) sollen in nationale Modelle eingebunden werden. In Österreich kann ein Zusammenschluss von regionalen Verwaltungen zur Problemlösung beitragen. Der politische Widerstand darf in dieser Hinsicht allerdings nicht unterschätzt werden.

Im Hinblick auf die Ausrichtung zukünftiger Förderprogramme bzw. Förderschienen müssen die MarktteilnehmerInnen genau definiert werden. Durch die Zielgruppenorientierung sollen die relevanten Akteure/Akteurinnen in ihrer gesellschaftlichen Rolle in einem angemessenen Zeithorizont definiert werden. Programme sollen Grundlagenforschung, angewandte Forschung, Umsetzung, Lehre und Bildung gleichwertig adressieren. Die Mehrwertdebatte im Forschungsbereich sei differenziert zu betrachten und darf nicht abschließend angesehen werden. Der Mehrwert müsse sowohl projektbezogen wie auch programmbezogen beurteilt werden. Indikatoren für die Messung von Innovation und Kapitalisierung der Ergebnisse müssen definiert werden, um die Kosten messbar zu machen. Optionen mit klar strukturierten Kosten werden bei Entscheidungen vorgezogen (siehe: Ecosystem Services vs. Einkaufscenter). Es werden Mechanismen zur Förderung/Finanzierung guter, unberücksichtigter Projektanträge und klarere Kommunikation der Qualität des abgelehnten Projekts durch EvaluatorInnen/FördergeberInnen benötigt.



Die Workshop-TeilnehmerInnen forderten neue Strukturen für den Ausschreibungsprozess und die Implementierung von Forschungsprojekten- und programmen, um nachhaltige Erfolge zu erzielen, Parallelforschung zu vermeiden und Umsetzungsdefizite zu verringern. Stakeholder auf politischer und Verwaltungsebene müssen vor der Ausschreibung oder Projekteinreichphase in die Problemdefinition involviert und in Hinblick auf die Abstimmung von Förderprogrammen möglichst früh miteinbezogen werden. Dies könne gegen Sektorpolitiken wirken, durch die Geld in Regionen investiert wird, wo niemand lebt, der es verwenden kann.

Ausschreibungen sollen Zielorientierung, Bewusstseinsbildung und Praktikabilität adressieren. Eine Vernetzung der Förderschienen sowie der Forschung mit Lehre und Praxis müsse stattfinden, damit Parallelitäten vermieden werden. Forschungsinhalte sind einem Prozess gleichzusetzen. Es soll von Grundlagen- in Richtung Anwendungs-orientierung gehen und Rückkoppelungen zugelassen werden. Forschung und Anwendung seien ganzheitlich auszurichten. Neben einer horizontalen inter- und transdisziplinären Ausrichtung auf allen Ebenen, soll auch eine vertikale Ausrichtung (Einbindung aller Akteursebenen) integraler Bestandteil von Forschungsprojekten werden. Politische EntscheidungsträgerInnen (auch Gemeinden) und Stakeholder sind als gleichwertige PartnerInnen mit entsprechenden Verpflichtungen einzubinden. Ebenso muss die Gesellschaft die Möglichkeit erhalten, ihre Bedürfnisse darzulegen und eine verstärkte Mitwirkungsmöglichkeit wahrnehmen zu können. Reine Entscheidungsplattformen sind zu unverbindlich.



2.2 Methodology followed

This national report (i.e. INSPIRATION deliverable 2.5) reports the information collated for Austria. The information was collated in accordance with INSPIRATION D2.4. In Austria, 11 NKS were interviewed. Details on these NKS are provided in Annex I. The desk study was based on documents as suggested by NKS. These are listed in Annex II.

The Austrian workshop lasted for two days (detailed agenda Annex III). At Day 1, over a hundred participants addressed the most pressing societal challenges identified in the conducted interviews. Each participant had the possibility to add valuable insights at two different World Café tables. At the end of the day, the table hosts presented the results in the auditorium. The key points of these workshop sessions were included in the D2.5. At Day 2, selected NKS synthesized the results of Day 1 further. The focus of the second day was to agree on the main messages of the three key areas Research and Innovation Needs, SPI and Funding Options.

A draft version of D2.5 was sent out to the NKS. Two NKS replied and offered further improvements on the specific research questions. The low responds rate was probably due to the fact, that the NKS had the possibility to add remarks throughout the working period and provided further information before the draft version was sent out.



2.3 Research and Innovation (R&I) needs

2.3.1 Societal challenges and needs

In general, the interviews revealed that the EU societal challenges should not be seen as competing, but partly complementary and equally important. Tackling these systematic problems and challenges is necessary to secure life quality and long-term economic development.

According to the NKS, climate change should be regarded differently than the other societal challenges. The main focus should be on the protection of environment and the support of sustainability within the changing conditions and not climate change per se. Nevertheless, climate change is seen to be the number one threat as it is a very complex problem with a fast cascade effect, therefore needing fast solutions. The compartments air, water and soil should be “at grip”, and then research questions concerning climate change could be addressed.

Land consumption, land use and land availability are the most important topics. Food security will become more and more important due to increasing world population and increasing prosperity in newly industrializing and development countries, coupled with the associated changes in consumer habits and progressing climate change. Food security should be regarded from an international viewpoint to secure a responsible exchange and compensation of raw material and products between all states. Food autarky is not an explicit topic!

According to the interviewed NKS, the most important societal challenges are

1. Contribution to food security and food safety
2. Contribution to climate change mitigation and societal adaptation
3. Reduction of raw material and resource consumption; Ensuring efficient use of natural resources

Additionally, the interviewed NKS insisted on (8) *Protection of biodiversity* as one of the most important societal challenges.

The participants of the Austrian workshop concluded that there is a significant discrepancy between basic and applied research, which leads to a gap between science and civil society. However, the science’s sustainability is based on the society’s involvement. Participation and integration of relevant stakeholders (e.g. politicians, society) would lead to long-term partnerships and implemented research results. Integrative and participative research allows for societal problems to be brought to scientists (e.g. BMWF 2015a). Long-lasting results are only possible if societal needs are identified before existing knowledge is consolidated and specific research and innovation demands are defined. After a project ended, success and implementation have to be evaluated to assess the added value for society and environment. Therefore, appropriate indicators and regulations have to be developed or implemented.

Politicians need valid knowledge to reduce the societal pressure on certain types of land use. It is necessary to consolidate existing knowledge, methods and concepts before new research is conducted. It should be the duty of researchers to deliver scientific results to



show how the framework conditions can be changed to support sustainable land use and manage land use conflicts. However, research should not only focus on applicability, but also on innovative questions of bottom-up research that could help our societies in the future.

Implementation research alone will neither be sufficient nor realistic. Researchers have to be able to explore research questions on the basis of their expertise without the pressure of implementation and societal benefit. Science continues to have a consulting role in terms of fundamental research. Many scientific topics are still prospective topics in practice. There is not only an obligation to provide knowledge by the scientists, but also an obligation to claim it by the politicians and policy makers.

2.3.2 Topics / research needs to include in the SRA

AT-1: Soil and land management contribution to food security

In light of climate change and adaptation to new climatic conditions, land consumption is an urgent topic as it directly impacts food production. Soil and production conditions have to be considered, when area is assigned to different purposes. Land for food production has to compete with a whole range of other uses such as fodder production, raw material production, energy production, mobility and transport. Although the workshop participants urge to give food production the priority, the reality depicts a different picture.

Demand

- Does food security have to have the priority over other land use options?
- How much agricultural area is “lost” to reforestation?

Net impacts

- What are effective incentives to avoid building on prime agricultural land?
- How can the many part-time farmers in Austria be supported to maintain their small scale farms?



AT-2: Improvement of management measures for the cultivation of agricultural land

This is a very urgent topic because it addresses people worldwide. Possible indirect impacts of land cultivation should be taken into account (e.g. Sahel zone: interconnection husbandry and erosion). Implementable solutions with regard to regional adaptation are necessary. An international implementation of improved management measures will have a tremendous impact for small- and large-scale farmers. Funding could come from international organisations (e.g. FAO, UNO, OECD, IWF).

Land management

- How can the improvement of management measures be achieved with progressing digitalisation?
- How can phosphor recycling contribute to sustainable food production?
- How can sustainable intensification be managed and how can cultivation methods be improved to contribute to this goal?

Net impacts

- How does an optimal knowledge transfer look like? An essential key to improve the situation is a consequent education of land users. Here, adequate models should be developed and implemented. A combination of theory and practice is necessary!
- What are the effects of climate change on agricultural greenhouse gas emissions?

AT-3: Digitalisation and usage of existing/new technology

Pressure on costs and time exists. Manpower becomes less and less important on agricultural farms. Farmers have to react to the changed and changing climatic conditions. Agricultural engineering has many developments, which should be considered.

Funding could come from the funding ministerial department of BMVIT.

Land management

- How can new technologies and advanced digitalisation help farmers to adapt to climate change?
- What practicable, digitalised solutions could help the remaining farmers?
- How can co-operation offer and secure technical pre-conditions (e.g. Maschinenring or similar structures, purchase of special machinery)?
- Research in precision agriculture (under consideration of spatial and temporal restrictions)

Net impacts

- How can smart grids (electricity, water use, communication with end-user, ...) contribute to sustainable land management?



AT-4: Dealing with natural hazards

Various natural hazards affect the Austrian counties differently. Nuanced approaches are necessary for legal guidelines, but are often difficult to reach because of the assessment of the remaining risk. Centralised strategic planning is not the solution. However, all counties will need more precaution for extreme weather events. The West will need further flood protection and the East a more pronounced water saving cultivation to combat droughts. The priority should be knowledge gathering and access to information for all involved levels (from home-builders to mayors).

Demand

- What is the area demand for flood protection areas, levees, residential areas, (water) transportation ways, retention areas, nature conservation areas and danger zones?

Land management

- What is the contribution of soil to water retention?
- How can open space be useful as a barrier and for higher resilience in context of climate change (e.g. alignment of spatial structures, keep infrastructure embankments clear in the alpine regions?)
- How can open space be used to tackle potential conflict of interests for nature conservation, silviculture and areas for hazard prevention?
- How can flood protection areas be used in times of no floods? (yield, contaminants, functions, soil structure, leakage capability, ...)

Net impacts

- How can information and access to information for all involved levels (from home-builders to mayors) be improved?



AT-5: Monitoring and evaluating land and soil use for settlements and infrastructure

In Austria, an adequate tool for the assessment of land and soil use is not yet implemented. The development of an objective assessment and registration tool would be sensible. This could be the foundation for a comparable survey of the data basis. The assessment is the prerequisite for the development and establishment of indicators, which would make political goals reasonable. The use of indicators for the evaluation of measurements would also increase the public awareness. Furthermore, a uniform approach for the assessment of land use and soil loss (especially for land use other than agriculture and silviculture) would simplify the comparison nationwide.

Demand

- How much land is actually “consumed”? How are re-cultivated areas accounted for?

Natural Capital

- How much of the sealed area does not fulfil any soil function anymore?

Land management

- Which regional indicators and target values (e.g. sealing, flood protection, building density, type of agricultural cultivation) could support sustainable land use? How can they be implemented?
- Development of adequate classification with evaluation of lost soil functions (can be combined with GIS illustrations).
- Monitor, measure and evaluate sustainable land management techniques.

Net impacts

- Develop an implementable set of indicators to monitor and evaluate the impact of e.g. annual maximum land consumption, climate change effects or sustainable land use.

AT-6: Land use for infrastructure

Infrastructure decisions are often not reversible (e.g. power plants, urban sprawl) and not easy to handle. In Austria, the quality of soil is not a deciding factor in spatial planning (Zech, Blanda and Klingler 2010). A distinct gap exists between the assessment of soil in spatial planning and in soil sciences (Environment Agency Austria 2013a). Adequate tools for the assessment of land and soil use have not been implemented yet.

Natural Capital

- How should an adequate tool for the assessment of soil quality look like for soil sciences and spatial planning?

Land management

- How can vacated traffic infrastructure be assessed?
- What kind of indicators will help to secure bare land sustainably?

Net impacts

- How can the consideration of soil quality for infrastructure projects be improved?
- Are inter-municipality financial compensation or compensation funds for waiver of re-zoning to building zones a promising incentive to save green space?

AT-7: Restoration and re-cultivation of land

As soil and land are finite resources, the restoration or re-cultivation of unused or polluted areas is essential. Open questions regard benefits of re-cultivation, soil quality, liability of pollution and assessment of the pollution source and extent. Abandoned land should be re-purposed to be able to fulfil other necessary functions.

Demand

- How can sealed areas be re-cultivated to fulfil soil functions and improve land sparing elsewhere?

Natural Capital

- How can re-cultivation of soil be achieved in a way to save the most resources? (challenge: to achieve this for large construction sites as well as for small gardens; assess the added value for spatial planning)
- Develop a guideline to assess the soil quality on large construction sites in view of resilience.
- Assessment of pollutants (e.g. long-term impact of heavy metals or pesticides in soil; pollution load of high current masts, wood impregnation)

Land management

- What are the possibilities for re-cultivation of abandoned land and what are the benefits for sustainable land management?

Net impacts

- How can funds or incentives for re-cultivation support sustainable land use?
- Is it beneficial and implementable to let revitalisation costs be paid by the polluter or the user?



AT-8: Soil and landscape diversity

Austria's very diverse landscapes are due to various climate zones and morphologies. The protection of this diversity is essential for Austria's ecosystems, biodiversity and tourism. This heterogeneity should be secured and also assessed how it can be used sustainably. Research programs should consider the diversity of soils and landscapes (e.g. Alpine regions). Values such as aesthetics cannot be monetised easily. Additionally, the assessment is difficult because biodiversity can be identified on different scales (molecular, type,...). Furthermore, soil encloses a high and unexplored gene pool. The soil microorganisms have a high potential to be used in human medicine or as pest control against soil pathogens. Assessment of consequences of loss of soil species should be attempted.

Natural Capital

- How can the very diverse and small structured landscape be kept and cultivated to secure biodiversity of the landscape and the soils in Austria?
- Define a clear structured set of indicators and scales to unify the assessment of biodiversity.
- What kind of soil organisms can help human medicine?

Land management

- Are innovative forms of cultivation (e.g. minimal soil treatment, new crops, crop rotations, slurry management) appropriate for different types of soils?

Net impacts

- How can various funding and protection systems be used efficiently to save biodiversity?

AT-9: Decoupling of the economic impact

The topic of "natural capital" should be addressed more critically. The protection of close-to-nature areas is mostly not a pressing issue, although there is no restoration after loss. Loss of biodiversity means a transgression of the planetary boundaries. The spatial dimensions of societal actions should be considered. A depiction and consideration of the whole complexity of a society can avoid (collateral) damages (e.g. resource wasting life style).

Natural Capital

- Is a monetisation of ecosystem services necessary to achieve cost transparency and global equality?

**Net impacts**

- How can the value of ecosystem services be assessed? (not only monetary; consider access to agricultural land, soil as a legally protected good)
- How can bio-economy be implemented in Austria (e.g. decentralised units for Austria? preserve regional variety!)?
- How can sustainable soil use be monetised?
- Is the decoupling of economy and environmental effects a sustainable solution for the value assessment of soil?

AT-10: Demographic changes and urban land use

Urbanization and migration are evidently pressing societal challenges worldwide. Land consumption is an urgent topic (Environment Agency Austria 2013b). More attention for soil and land use is necessary due to competition in the usage. Adapted settlement structures for different age classes and generations with short walkable ways are social places that will sustain longer. The problematic nature of land use is that ideally more than one type of use is possible for the same area of land. The aim is to support different types of usage beside each other (living, working, agriculture, transport, energy generation, flood protection,...) (Stöglehner et al. 2011).

Demand

- How will climate change impact densely settled area and good quality soil with extreme rain events and erosion?

Land management

- What are (financial) incentives for the re-purpose of urban land?
- How can the problem for secondary residences be solved sustainably?
- Does Austria have potential to save or produce more energy on the given land?
- What should be the coefficient between green area and population density? How much park area is necessary to regenerate clean air for the city's population?

Net impacts

- How can spatial planning tools be used to support inner development, mix of different uses and to avoid decentralised concentrations?
- Investigate socio economic drivers for re-zoning.
- What is the motivation for land use change?
- How can re-zoning be made less profitable and attractive?



AT-11: Participative research and communication

Austrian citizens are not informed sufficiently on topics concerning soil and land management. Appropriate (public) awareness would help to bring the topic further along on the political agenda. Scientific research should be more accessible to the public (i.e. communicated understandably). The workshop participants urge for a committed budget for communication and awareness raising in research programs and projects, public participation and measures oriented to implement strategies. Awareness raising and demonstration of consequential costs of land use changes have to be one of the main outcomes of research projects.

Net impacts

- If no funding can be found to implement research projects where needed, is crowd funding a sustainable option?
- What requirements are necessary to increase participation on all levels within research projects?
- How can the impact of research projects be assessed regarding the improvement of public awareness?
- How can participation and communication improve the overuse of allocation of building land?
- Develop and implement easy and accessible communication tools for the public to raise their concerns and problems (e.g. interactive panels to connect scientists and people interested in science).
- Create soil function maps to show ideal and actual usages of areas.
- Create better information, data and imagery for the media to support alternative lifestyles beside the one-family homes.

AT-12: Impact of research projects

The societal impact of scientific research is not currently evaluated in Austria. The tools and indicators are missing (e.g. for applied research the number of patents can be used as indicator).

Net impacts

- Development of tools for the evaluation of the impact of research projects.
- How should multidimensional (sustainable) impact assessments and reviews of consequences be conducted?
- How can public reactions to science projects and their implementation be assessed?
- Create better ways to show impacts: holistic models and communication tools
- Combine best- practice examples to support political decision making.



AT-13: Political regulations and involvement

In Austria, the legal regulations for soil and land use are very fragmented. The land agenda is in the hands of municipal, regional and state governments for different topics. The topic of land use is spread across various regulations such as water or waste management laws. The responsibilities of zoning and spatial planning are not the same as for soil management. The mayors are key players, but the community is often an insurmountable barrier (prejudices, e.g. no multi-storied houses in rural areas). It would be essential to develop a “communication package” for regulatory departments to increase the awareness for citizens and mayors.

Demand

- How can uniform laws and regulations for soil management and spatial planning be achieved in Austria? What pre-requisites are necessary?

Land management

- How can politics support demolition, restoration and sustainable zoning?
- How can the fractured responsibilities of the state, the counties and the municipalities be coordinated or unified to improve sustainable land management?

Net impacts

- How can feedback loops support the communication between departments and governments? What communication tools can be implemented?
- What political incentives and sanctions could drive sustainable land use?
- How can a political impact factor for scientific research look like?
- How can the municipal level be better included to connect regional politics and civic society? (e.g. inter-municipality networks and co-operations)



AT-14: Is the ideal spatial utilisation possible?

The central question is a solution for conflicts of interest - which solutions are prioritised, which are put on hold? Decisions sometimes are not reversible (e.g. power plants, urban sprawl) and not easy to handle. A major concern is the deciding factor. Most often there are overlaps in usage (e.g. dense settlements following well connected traffic routes with a certain noise problem vs. wide urban sprawl along the city boarder/ exurbs). The legal aspects have to be re-defined (who is responsible: state/county/municipalities, EU, tourism/nature conservation, law makers, land owners, also scientists, ...). In this context the question of “soil as property” has to be answered. Is soil public property? Furthermore, questions concerning the societal impact on soil should be scientifically researched.

Demand

- How can we resolve conflicts of interest around soil as private property with public value? How do we handle land use rights and public interest legally?

Land management

- What is an ideal way of spatial planning for different regions?

Net impacts

- How should spatial utilisation look like ideally in the future? E.g. is a mobility-protecting development also area and soil sparing? Can different goals be fulfilled at the same time?
- What changes in framework conditions are to be expected?
- How do processes and instruments look like? What are possible deficits?
- What is the societal impact on soil?



2.4 Experiences regarding connecting science to policy/practice

2.4.1 Use of knowledge

Scientific knowledge is understood as secure knowledge established on the basis of theories and complementary methods, which are comprehensible and can withstand a certain methodology and verification (verifiable - comprehensible - methodological - new). Quality assurance and scientific consent is given in terms of peer reviews and discourse.

Scientific knowledge is used (1) for teaching and informing co-workers, (2) for producing scientific knowledge as an informative basis, (3) for (environmental impact) assessments and evaluations, (4) in context of consulting or submissions and (5) for publications. The sources of scientific knowledge are various: scientific sections in daily or weekly newspapers and journals, reports, scientific papers, websites (such as MOOCs), open access, proposals, conferences, consultants and through co-operations with universities. In some cases, the interviewees use more grey literature than published documents because it contains more relevant information.

2.4.2 Possibilities to set the agenda

Currently, a distinct gap between politics and science is perceived by the workshop participants and the interviewees. They recommend developing instruments and communication strategies to decrease this gap. Scientific research policies/agendas cannot be influenced easily without political support. The necessary political support could be secured by raising public awareness and therefore political pressure. Especially in the area of environment, it is important for researchers to communicate scientific findings in an appropriate and accessible way to policy-makers. The findings serve as fundamental basis for decision making towards environmental problems and sustainable solutions. The dialogue between the scientific and policy-making communities needs to be strengthened to improve linkages between policy needs and research programmes as well as to enhance the accessibility of scientific knowledge to policy makers. Political support is especially necessary for stakeholder processes, consultations of research policy (e.g. investments, prioritisation, and instruments) and state-county- co-operations. It would be essential to develop a “communication package” for regulatory departments to increase the awareness for citizens and mayors. Already existing knowledge needs to be better transferred to the communities (e.g. energy pass for settlements, NIKK NÖ InfrastrukturKostenKalkulator) (Stöglehner et al. 2014).

The opportunities for researchers to influence political decision-making are rather scarce. Decision-makers are focussed on the implementation of scientific findings, whereas research experts are mostly oriented on analytical and methodological aspects. Research studies are mostly written for scientific communities and are consequently not easily comprehensible for decision makers. It is important to translate the scientific knowledge in “common” language to enhance public understanding. The knowledge transfer is additionally aggravated by the different emphasis of science and political stakeholders. Network building to enhance the knowledge transfer would be essential. Specific co-operation to bring research closer to the municipalities would be even better. Regional management agencies could function as bridging institutions to suffice both local/regional needs and research results.



The setting of scientific research policies/agendas can only be influenced to a very small extent. This is possible e.g. with the allocation of budget for certain research projects, in raising questions to the administration, within and via expert committees, and through co-operation with research institutions.

The state-of-the art in scientific research indirectly influences the existing policies. Comprehensive soil topics are rare. Research studies are manifold, but the access to results is restricted, as is a good overview. A coherent research portal is missing and a high potential for the alignment of existing knowledge is apparent. Consolidation of knowledge is essential, but should happen in light of cultural differences. To improve business opportunities, gathered knowledge should be immediately used, as information is in most cases available. An essential criterion for the exploitation of scientific knowledge is the possibility for implementation. Research results could be a viable input for municipality regulations and sustainable municipality development. A summary of best practice examples could show successful research implementations to the public. This guide supports politicians to achieve consensus and implementation in their scope.

A national agenda specific to the scope of INSPIRATION is not known for Austria. Awareness of soil protection and sustainable spatial planning is not achieved on a satisfying level neither in politics, nor in the general public and society. The topics soil and land use do not have any financial support or lobby. The national policies/agendas do not reflect general needs, but specific ones. Many long-term projects were abandoned or have reduced financial support, which is seen by many scientists as the wrong decision. Societal challenges are only tackled short term, whereas they should be considered for the long term. The current financing and funding systems and the response to policy needs are adverse to innovation. It is necessary to put the focus on application-oriented research to secure implementation. Currently, research agendas are mostly disciplinary and not inter- or trans-disciplinary. However, a broad application of applied and inter-/trans-disciplinary research increases the potential for societal added-value.



2.4.3 Science – policy – practice

Most of the interviewed NKS were involved in the formulation of scientific research questions. NKS formulate their own research questions for project proposals, university theses, workshops on research programs and event series. If they were not involved in the formulation of research questions, the thematic programs of their institutions more often focused on the implementation or consultation and less on the development of projects.

Austrians traditional allocation of competences in land use agendas is a significant problem for policies. Land agendas are in the responsibility of the county, which inhibits the possibility to regulate access rights by state law (Environment Agency Austria 2015). It is very difficult to protect soil and land nationwide with the current jurisdiction. This allocation of responsibilities hinders nationwide regulations. Regulations concerning re-cultivation or soil quality exist, but are voluntary (Fachbeirat für Bodenfruchtbarkeit und Bodenschutz 2012, Zech, Blanda and Klinler 2010). No overarching laws or directives exist for fostering nationwide research in the field of soil and spatial planning. As an example, the state does not allocate research (funding) to spatial planning because it is in the responsibility of the county. The principle of the separation of competences is very difficult to apply in practice, as co-operation is necessary over all levels. A further difficulty is that the factual competence of spatial planning lies with the municipalities (ÖREK 2015). Financial support relies on registered residents of the municipality. Therefore, municipalities are interested to change the zoning to increase the immigration and availability of jobs. The goal to save resources is than less important and not a priority (ÖROK 2011).

In Austria, the Austrian Conference of Spatial Planning is organising the agendas of spatial planning (ÖROK 2016). ÖROK addresses recommendations and agendas for spatial planning on national level, which means agendas are often consent-oriented and not firm enough. An improvement in Austria can be achieved with two different approaches; 1) financial benefits for resource-saving measures or 2) restriction of intervention possibilities for municipalities, e.g. the spatial planning laws of the counties. An example for good-practice is the county Salzburg, where future zoning for building land is connected to the availability of public transport (Land Salzburg 2009). The opposition in the municipalities, which resulted from these laws, shows the difficulty for implementation. European countries with centralised intervention possibilities have an advantage.

Applied research should be an obligatory input for municipality regulations. As an example, Agenda 21 projects support the EU Strategic Environmental Assessment as a core project leader. The implementation of scientific research is very diverse and depends on the individual interest and problems of the various municipalities (and even on the specific mayor). Therefore, also the solutions have to be very individual. Scientific research programs should have a stronger implementation focus to be politically viable. A secured sequence of projects for a certain topic could allow for a long-term implementation of the project results.

A key component to solve the discrepancy between science and politics is for the scientific community to approach the public and take into account their problems and needs. This would start by the research questions, which should be provided partly by the stakeholders, and continue throughout the whole process of a research project.



Science-Policy-Interface documents

Surprisingly, a higher number of SPI documents were found for sustainable soil and land use management than assumed after the interviews (e.g. BMLFUW 2011). This clearly contradicts the statements of the interviewed NKS and the workshop participants who said that not a lot of information is available for the public.

The following SPI documents were identified to contain essential information for soil management and land use and are available publicly:

- BMLFUW. (2011). Grund genug? Flächenmanagement in Österreich - Fortschritte und Perspektiven. Wien.
- BMLFUW. (2015). Reduzierung des Verbrauchs landwirtschaftlicher Böden - Maßnahmvorschläge. Wien.
- BMLFUW. (2008). (Bau)Land in Sicht - Leitfaden zur Wiederverwertung von industriellen Brachflächen. Wien. Available from:
<https://www.bmlfuw.gv.at/service/publikationen.html> [2016-01-28]
- BMWFJ and BMLFUW (2010): Eckpunkte der Energiestrategie Österreich. Available from:
<http://cdn1.vol.at/2010/03/Energiestrategie1.pdf> [2015-12-13]
- BMWF. (2015a). Wissenschaft und Gesellschaft im Dialog - Responsible Science. Wien.
- BMWF. (2015b). Action plan for a competitive research area. Wien.
- Bundeskanzleramt, Bundesministerium für Finanzen, Bundesministerium für Unterricht, Kunst und Kultur, Bundesministerium für Verkehr, Innovation und Technologie Bundesministerium für Wirtschaft, Familie und Jugend Bundesministerium für Wissenschaft und Forschung (2011). Strategie der Bundesregierung für Forschung, Technologie und Innovation. Wien.
- Bundesregierung (2015). Österreichischer Forschungs- und Technologiebericht 2015. Wien
- Chemnitz, C. and Weigelt, J. (2015). Bodenatlas. Available from: www.boell.de/bodenatlas [2016-01-28]
- Fachbeirat für Bodenfruchtbarkeit und Bodenschutz - Arbeitsgruppe Bodenrekultivierung (2012). Richtlinien für die sachgerechte Bodenrekultivierung land- und forstwirtschaftlicher genutzter Flächen. 2. Auflage. Wien.
- Fachbeirat für Bodenfruchtbarkeit und Bodenschutz. (2013). Bodenfunktionsbewertung - Methodische Umsetzung der ÖNORM L1076. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.
- Institut für Raumplanung und Ländliche Neuordnung, Institut für Prozess- und Partikeltechnik, Studio Schlierbach. (2011). Energetische Langzeitanalysen für Siedlungsstrukturen - Factsheet für Private AnwenderInnen. Available from:
http://www.elas-calculator.eu/res/de/ELAS_Infopaket.pdf [2016-01-28]
- Land Salzburg. (2012). Bodenschutzbericht 2001-2011. Available from:
<http://www.salzburg.gv.at/themen/lf/landwirtschaft-2/bodenschutz-themenunterseite.htm>



- Land Salzburg (2014). Das Schutzgut Boden im SAGISonline - Lesehilfe zur Bodenfunktionsbewertung. Abteilung Lebensgrundlagen und Energien, Land Salzburg.
- Land Steiermark (2009). 23. Umweltschutzbericht Steiermark - Kapitel Boden.Öö. Umweltschutzbericht. (2009). Positionspapier Flächenverbrauch und Versiegelung. Available from: <http://www.ooe-umweltschutz.at/xbcr/SID-AE9A17CD-7C0FFFBE/Endfassung15Juni09.pdf>
- ÖROK. (2011). Österreichisches Raumentwicklungskonzept ÖREK 2011. Available from: http://www.oerok.gv.at/fileadmin/Bilder/2.Reiter-Raum_u._Region/1.OEREK/OEREK_2011/Dokumente_OEREK_2011/OEREK_2011_DE_Downloadversion.pdf [12-11-1015]
- ÖROK. (2014). Summary - 14th Spatial Planning Report 2012 - 2014. Schriftenreihe 195, p. 19-21. Available from: http://www.oerok.gv.at/fileadmin/Bilder/5.Reiter-Publikationen/Schriftenreihe_Kurzfassung/Schriftenreihe_195_Zusammenfassung_EN.pdf [2016-01-28]
- Stöglehner, G., Erker, S. and Neugebauer, G. (2011). ÖREK-Partnerschaft: Energieraumplanung. Available from: <http://www.bmlfuw.gv.at/umwelt/luft-laerm-verkehr/Energieraumplanung.html> [2016-01-28]
- Stöglehner, G., Erker, S. and Neugebauer, G. 2014. Tools für Energieraumplanung. BMLFUW. Wien.
- Sutor, G. and Knoll, A. (2012). Integration der Bodenfunktionsbewertung in Planungsverfahren. 4. Dresdner Flächensymposium.
- Umweltbundesamt. (2000). Zusammenfassungen aus den Bodenzustandsinventuren der Bundesländer. Wien.
- Umweltbundesamt. (2013). Zehnter Umweltkontrollbericht- Raumentwicklung, p.245-259. Wien
- Umweltbundesamt. (2013). Zehnter Umweltkontrollbericht- Boden. Wien
- Oberösterreichische Umweltschutzbehörde. (2009). Positionspapier Flächenverbrauch und Versiegelung. Available from: <http://www.ooe-umweltschutz.at/xbcr/SID-AE9A17CD-7C0FFFBE/Endfassung15Juni09.pdf> [2016-01-28]
- Zech, S, Blanda, U. and Klingler, S. (2010). Ausgangslage und Trends, Herausforderungen und Anforderungen, Lösungsvorschläge und Empfehlungen zur österreichischen Raumpolitik. Arbeitsgruppe V. Available from: http://www.oerok.gv.at/fileadmin/Bilder/2.Reiter-Raum_u._Region/1.OEREK/OEREK_2011/AGs/5._AG_V_Raumentwicklung/B_Ergebniszusammenfassung_AG_V_Raumentwicklungspolitik.pdf [2016-01-28]



2.5 National and transnational funding schemes

2.5.1 Funding schemes and possibilities for research funding

Funding options are best set up and funders will experience that their invested national Euros are indeed multiplied, when (1) inter-/trans-disciplinary approaches, (2) action/applied research as well as (3) local issues (e.g. local implementation AND answering local questions) are considered.

To approach wide acceptance and secure best multiplication, it is critical to involve the civil society and all stakeholders (e.g. land owners, spatial planners, soil scientists, politicians) in funded projects. According to frequent experiences political decision makers should be consulted as early as possible and kept in the project throughout the project period. They can verify the feasibility of the project. Network building and the elimination of fragmentation increase the added value of financial resources.

It is of key importance to formulate socio-political issues in a more understandable way, and to translate them into a user-friendly language. Summaries for the non-science community should be provided in an understandable language. The communication of open questions should address politics, society, land users and land owners. It seems to be necessary to raise awareness of decision makers towards research programmes and connected goals.

The establishment of national platforms additionally to the existing research institutions would be helpful for the coordination of such topics. More generally, there is the problem that projects, which are not put into practice, are not economically assessed.

The focus should not only be put on the realisation of profit but rather on raising of public awareness and the practice-orientation. Program leaders should be sensitised for integrated topics, as the relevance for politics increases with the integration of the programmes. In order to reinforce the added value of different financial resources (for EU and national demands), researchers, funders and questioners should establish a clear structured research platform for a wide range of different articles and reports about the topics soil and spatial planning.



R&I funding options collated for country:			AUSTRIA	
Name	Research and Innovation funder	What and/or whom do they fund?	More info	
Regional				
1	direct funding and commission	Counties and Municipalities		
2	ÖPUL	Federal Ministry of Agriculture, Forestry, Environment and Water Management	Austrian Program to fund agriculture that protects an environmental friendly, extensive and natural living space	https://www.bmlfuw.gv.at/land/laendl_entwicklung/oepul/bodenschutz-und-agrarumweltprogramm.html ; https://www.ama.at/getattachment/9156f06a-7896-44e8-94ca-35e4fda7b158/Merkblatt_OPUL-2015_Internet_25-03-2015.pdf
National				
1	PFEIL 15 PFEIL 20	Federal Ministry of Agriculture, Forestry, Environment and Water Management	basic structure for national focus in commissioned applied agricultural and environmental research and intra-ressort research;	https://www.bmlfuw.gv.at/forst/forst-bbf/Forschung/pfeil15.html
2	LE14-20	Federal Ministry of Agriculture, Forestry, Environment and Water Management	sustainable agriculture	https://www.bmlfuw.gv.at/land/laendl_entwicklung/erstellung_programm_le1420/LE2020.html ; https://www.bmlfuw.gv.at/land/laendl_entwicklung/foerderinfo/veroeffentlichung_stichtag_aufrufe1/veroeffentl_andere.html
3	ACRP 9	KLIEN Klima- and Energiefonds	basic research on climate change	www.klimafonds.gv.at

HORIZON2020 CSA INSPIRATION

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



4	State-County-Cooperation	Federal Ministry of Agriculture, Forestry, Environment and Water Management	energy and environment research; joint research projects of BMLFUW with other federal agencies or counties	
5	Special Specific Research Programmes	Wissenschaftsfond FWF Austrian Science Fund	scients who work in Austrian universities or non-university research establishments; Building up of extremely productive, tightly interconnected research establishments for long-term and interdisciplinary work on complex research topics	http://www.fwf.ac.at/en/research-funding/fwf-programmes/special-research-programmes-sfb/
6	Stand-alone projects	Wissenschaftsfond FWF Austrian Science Fund	individual research in the area of non-profit research; for scientists who work in Austria	http://www.fwf.ac.at/en/research-funding/fwf-programmes/stand-alone-projects/
7	StartClim	StartClim	impulse catalyst for climate change adaptation	http://www.startclim.at/ueber-startclim/
8	BRIDGE	FFG Austrian Research Promotion Agency	research and science transfer; joint projects basic and applied research	https://www.ffg.at/Bridge%20Wissenschaftstransfer
9	COIN Cooperation & Innoation	Federal Ministry of Science, Research and Economy	aims for an improved innovation performance in Austria with better and broader implementation of knowledge	https://www.ffg.at/coin-cooperation-innovation
10	COMET Competenc Centers for Excellent Technologies	Federal Ministry of Science, Research and Economy - Federal Ministry for transport, innovation and technology	set-up of competence centers	https://www.ffg.at/comet-competence-centers-excellent-technologies
11	Basic Program	FFG Austrian Research Promotion Agency	research, development and innovation projects for business; life sciences, mobility, environment, energy, ...	https://www.ffg.at/basisprogramm
12	Wissenstransferzentren und IPR Verwertung	Federal Ministry of Science, Research and Economy - Federal Ministry for	national universities	http://www.bmwf.gv.at/Innovation/Foerderung/Seiten/WissenstransferzentrenundIPR-Verwertung.aspx



		transport, innovation and technology		
European				
1	LIFE 2014-2020			http://www.eu-foerderungen.at/foerderprogramme_detail.php?id=373
2	Interreg Alpine Space Program	European Regional Development Fund	Innovative, CO2-reduced liveable Alpine Region; Transnational co-operation in competitiveness and attractiveness, accessibility and connectivity and environment and risk prevention	http://www.alpine-space.eu/ http://www.alpine-space.org/2007-2013/http://www.oerok.gv.at/eu-kooperationen/etz-transnational-netzwerke/alpine-space-2014-2020.html
3	Interreg Central Europe	European Union and European Regional Development Fund	Regional cooperating on low-carbon strategies, regional cooperating on natural and cultural resources for sustainable growth	http://www.interreg-central.eu/http://www.oerok.gv.at/eu-kooperationen/etz-transnational-netzwerke/central-europe-2014-2020.html
4	Interreg Europe	European Regional Development Fund	regional and local governments to develop and deliver better policy	http://www.interregeurope.eu/http://www.oerok.gv.at/eu-kooperationen/etz-transnational-netzwerke/interreg-europe-2014-2020.html
5	Interreg Danube Transnational	European Regional Development Fund (ERDF), Instrument for Pre-Accession Assistance II and European Neighbourhood Instrument	transnational co-operation promoting economic, social and territorial cohesion Good Governance development and practical implementation of policy frameworks, tools and services and concrete small-scale pilot investments	https://www.ffg.at/beyond-europe
6	Beyond Europe	Federal Ministry of Science, Research and Economy	supports Austrian companies, research and university institutes and other organisations in creating and extending collaborations	
7	Article 185	Federal Ministry of Science, Research and Economy	coordination of national F&E programs; EU member states	https://www.ffg.at/artikel-185

HORIZON2020 CSA INSPIRATION

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



8	PPP Private-Public-Partnership	European Commission	industry and public sector	https://www.ffg.at/private-public-partnerships
9	JPI Joint Programming Initiatives	EU and member states	societal challenges: climate, change, energy and food security, healthy aging	https://www.ffg.at/joint-programming-initiativen
10	ERA-Net	Wissenschaftsfond FWF, European Commission	Coordinates national and regional research programs and supports bilateral research projects with closely integrated content; application deadlines vary from country to country	http://www.fwf.ac.at/en/research-funding/fwf-programmes/international-programmes/joint-projects/
International				
	none mentioned			



2.5.2 Gaps in financial resources for research

The Austrian workshop participants see a distinct need for new structures of the call process and the implementation of new research projects and programs. This would be necessary to secure sustainable successes, avoid parallel research and reduce implementation deficits.

According to the Austrian workshop participants, future funding programs and schemes should include:

- goal orientation and practicability
- inter- and trans-disciplinary on all horizontal and vertical levels
- awareness raising
- a clear definition of the market stakeholders in their socio-political role in the relevant time frame,
- interconnection of funding schemes
- clear added value of research and innovation investments,
- added value for the project and program, respectively, validated after the end of the project and after continuous implementation,
- fundamental research, applied research, implementation, teaching and education equal to facilitation of feedback between them,
- monetised indicators to assess innovation and capitalisation of the outcome
- budget for short-term topics that arise after the application period of projects (to secure funding for research without the pressure of implementation)

In particular with regard to soil topics and land management, long-term projects, monitoring programs and socio-political topics, there is a clear need for strengthened action and de-bureaucratisation. These topics should be made more publicly accessible and new funding schemes/infrastructures are necessary for:

- scientific communication
- involvement of the civil society and relevant political and scientific stakeholders from the problem definition of a project throughout to the validation at the end
- programs for an interdisciplinary approach and translators between disciplines
- a transparent research platform for soil and spatial planning (an externally coordinated platform, where all important stakeholders can come together)
- merging of responsible competencies on county level

It is still a fact that it is not easy to connect implementing and research institutions. Overarching funding schemes are generally missing (BMWF 2015b). In Austria, merging the regional administrations could simplify outdated, complex structures, but the political resistance would be tremendous. The existing knowledge on regional and national level could be evaluated and connected, overall costs could be reduced and data could be used for other projects. This added value could generate even more data and knowledge if implemented and should be considered more so for the public good.



Political stakeholders on municipality or regional level should be involved before the actual submission period to contribute to the problem definition. This could avoid sector politics and money flow in regions where nobody needs it.

The EU cannot fund future research projects alone and is therefore dependent on national co-funding in form of e.g. public-private partnership or structural funds. For the workshop participants in Austria, a desired outcome would be a combined funding program for soil management, spatial planning, politics and society based on the ERA model. Co-funding, private sector companies and initiatives should be integrated.

Rejected, but good project proposals are perceived as damaging to the national economy. Mechanisms are missing to fund rejected projects, if the project is of high quality, but was proposed to the wrong funding institution. Therefore, evaluators and funders should have to communicate the quality of the rejected project proposals. Large projects should only be approved after hearings and multilevel procedures.

2.6 Other remarks made by interviewees

It was suggested that the European Soil Association could hold a communication role at the regional implementation level for topics on soil and land use (e.g. newsletter, workshops). It could connect to municipalities, regional institutions and university institutes.

HORIZON2020 CSA INSPIRATION

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



2.7 Annexes

Annex Ia: NKS interviews in Austria

Date of interview	Organisation	Interview	funder	end user	knowledge provider	Nat.reg.loc. authority	Univ./research inst	SME /consultant	business &industry	NGO	network	other	soil	sediment	water	land use-management
17-07-15	National Government of Lower Austria	Ilse Wollansky	1			1										1
20-07-15	FFG - Austrian Research Promotion Agency		1									1	1			1
12-08-15	Institute of Spatial Planning and Rural Development, BOKU (personal opinion)	Gernot Stöglehner			1		1									1
20-08-15	Federal Ministry of Agriculture, Forestry, Environment and Water Mgmt.		1			1							1	1	1	1
28-07-15	Austrian Agricultural Chamber	Guenther Rohrer		1		1							1			1
24-08-15	European Soil Association				1						1		1			1
19-07-15	Federal Ministry of Traffic, Innovation and Technology		1			1										1
24-08-15	Government of Salzburg		1			1							1			

HORIZON2020 CSA INSPIRATION

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



14-09-15	Federal Ministry of Science, Research and Economy		1			1							1	1	1	1
28-09-15	Technical University Vienna (personal opinion)	Arthur Kanonier			1		1									1
17-11-15	Former General Secretary of Int. Soil Science Society, Prof em.	Winfried E.H. Blum			1		1						1			



Annex Ib: NKS questionnaire template

See Chapter 1, Annex I

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

See Chapter 1, Annex II

Annex II: Documents used for the AUT desk study

BMLFUW. (2011). Grund genug? Flächenmanagement in Österreich - Fortschritte und Perspektiven. Available from: <https://www.bmlfuw.gv.at/dam/jcr:00072902-0320-4544-b6a4-320325dcfd86/Genug%20grund%20-%20FI%C3%A4chenmanagement.pdf> [2015-12-11].

BMWFW (2015a). Wissenschaft und Gesellschaft im Dialog - Responsible Science. Available from: http://www.youngscience.at/fileadmin/youngscience/pdf/Langfassung_BMWFW_Brosch%C3%BCre_zu_Responsible_Science.pdf [2015-12-11].

BMWFW (2015b). Aktionsplan für einen wettbewerbsfähigen Forschungsraum. Available from: <http://jahrderforschung.at/wp-content/uploads/2015/02/Forschungsaktionsplan-des-BMWFW-2015.pdf> [12-11-2015] [2015-12-11].

Environment Agency Austria (2013a). Zehnter Umweltkontrollbericht - Boden, p.55-62. Available from: http://www.umweltbundesamt.at/fileadmin/site/umweltkontrolle/2013/ukb2013_03_boden.pdf [2015-12-11].

Environment Agency Austria (2013b). Zehnter Umweltkontrollbericht - Raumentwicklung, p.245-259. Available from: http://www.umweltbundesamt.at/fileadmin/site/umweltkontrolle/2013/ukb2013_16_raum.pdf [2015-12-11].

Environment Agency Austria (2015). Soil protection in Austria. Available from: <http://www.umweltbundesamt.at/umweltsituation/boden/zustand/bodenschutz/> [2015-12-11].

Fachbeirat für Bodenfruchtbarkeit und Bodenschutz (2012). Richtlinien für sachgerechte Bodenrekultivierung land- und forstwirtschaftlich genutzter Flächen. Ed.: Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft. Wien.

Land Salzburg (2009). Gesamte Rechtsvorschrift für Salzburger Raumordnungsgesetz 2009, §2 Abschnitt 2.7. Available from: <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrSbg&Gesetzesnummer=20000615> [2015-12-11].



- ÖROK (2011). Österreichisches Raumentwicklungskonzept ÖREK 2011. Available from:
http://www.oerok.gv.at/fileadmin/Bilder/2.Reiter-Raum_u_Region/1.OEREK/OEREK_2011/Dokumente_OEREK_2011/OEREK_2011_DE_Downloadversion.pdf [2015-12-11].
- ÖROK (2015). 14th Spatial Planning Report 2012 to 2014. Available from:
<http://www.oerok.gv.at/raum-region/daten-und-grundlagen/raumordnungsbericht/14-raumordnungsbericht.html> [2015-12-11].
- ÖROK (2016). Die österreichische Raumordnungskonferenz. Available from:
<http://www.oerok.gv.at/die-oerok/>
- Stöglehner, G., Erker, S. and Neugebauer, G. (2011). ÖREK-Partnerschaft: Energieraumplanung. Available from: <http://www.bmlfuw.gv.at/umwelt/luft-laerm-verkehr/Energieraumplanung.html> [2015-12-11].
- Stöglehner, G., Erker, S., Neugebauer, G. (2014). Tools für Energieraumplanung. Available from: <http://www.bmlfuw.gv.at/publikationen/umwelt/energie/toolsenergieraum14.html> [2015-12-11].
- Weber, G., Stöglehner, G. And Grossauer, F. (2008). Klimaschutz durch Bodenschutz – Schlüsselkompetenz Raumplanung. Österreichische Hagelversicherung, 34. Wien.
- Zech, S, Blanda, U. and Klingler, S. (2010). Ausgangslage und Trends, Herausforderungen und Anforderungen, Lösungsvorschläge und Empfehlungen zur österreichischen Raumpolitik. Arbeitsgruppe V. Available from:
http://www.oerok.gv.at/fileadmin/Bilder/2.Reiter-Raum_u_Region/1.OEREK/OEREK_2011/AGs/5.AG_V_Raumentwicklung/B_Ergebniszusammenfassung_AG_V_Raumentwicklungspolitik.pdf [2016-01-28].

Annex IIIa: Workshop Agenda

Day 1: 10. November

boden.raum.planung

– Zukunftsperspektiven und Forschungsbedarf

ÖBG Jahrestagung & INSPIRATION Workshop

10. November 2015
(Festsaal, Alte WU)

Welche Probleme sehen Sie in Bezug auf Raumplanung und Bodenschutz derzeit?

Wie soll die Zukunft in diesen Bereichen österreichweit oder in Ihrer Region aussehen?

Programm

10:00 – 10:20	Einleitung	Rektor Martin Gerzabek
10:20 – 12:10	Vorträge	
	Franz Makeschin	Europäische Herausforderungen
	Walter Seher	Fläche und Boden: Anmerkungen zum Bodenschutz in der Raumplanung
	Winfried Blum	Globalisierung - Was hat das mit dem Boden zu tun?
	Reinhard Seiß	Flächensparende Siedlungsentwicklung als Prüfstein für die Raumordnungspolitik
12:10 – 12:30	Einführung in die Workshops	
12:30 – 14:00	Mittagsbuffet	
	Poster-Session zu freien Themen in den Bereichen Boden und Raumplanung	
14:00 – 15:30	Workshops zu <i>boden.raum.planung</i> und Ernährungssicherheit Biodiversität Wasser Energie Wissen und Gesellschaft Klimawandel Demographischer Wandel Politik	
15:30 – 16:00	Kaffeepause	
16:00 – 16:30	Präsentation der Workshop-Ergebnisse	
16:30 – 17:30	Resümee und Podiumsdiskussion	
	„Flächenmanagement für unsere Zukunft“	
ab 19:00	Heuriger Schübel-Auer (Nussdorf)	

www.inspiration-h2020.eu

In Wien ist die Umwelt VIP

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642372.



Day 2: 11. November

		R & I needs	SPI	Funding
9:00 – 9:45	Workshop Round 1			
10:00 – 10:45	Workshop Round 2			
11:00 – 11:45	Workshop Round 2			
12:00 – 12:30	Summary			
Lunch				

Annex IIIb: Workshop Participants

Titel	Name	Vorname
Mag. Dr.	Ausserladscheiter	Johannes
Mag. Dr.	Bauer	Thomas
Dr.	Baumgarten	Andreas
Dr.	Begusch-Pfefferkorn	Karolina
	Bernhardt	Jürgen
	Berthold	Helene
	Biricz	Matthias
	Bonvissuto	Grazia
DI	Bruckman	Viktor
	Dellinger	Valentina
	Deltedesco	Evi
Ass.Prof. DI Dr.	Dillinger	Thomas
Dr. Mag.	Djukic	Ika
	Dober	Melanie
DI	Eder	Johann Otto
	Em	Doris
Dr.	Englisch	Michael
DI	Färber	Barbara
	Fehr	Franz
DI	Fessler	Jakob
	Foldal	Cecilie
	Forstner	Stefan
Dr.	Friesl-Hanl	Wolfgang
	Fuchs	Britta
	Galdberger	Josef Emmanuel
DI	Gärber	Erika
	Gertloff	Sebastian
Univ.-Prof. DI Dr.	Gerzabek	Martin
	Golestani-Fard	Alireza
Mag.	Gritsch	Christine
	Haller	Helmut
DI	Hanke	Roland
	Hanke	Tatyana
	Hertler	Carolin
Dr.	Hickersberger	Michaela
	Höfer	Christoph
Prof. Dr.	Holzer	Gottfried
DI	Hromatka	Angelika

DDI	Huber	Sigbert
Mag.	Jagschich	Stefan
Tzt. Mag. Mag. Dr.	Jakisch	Gerhard
	Jöchlinger	Lisa
MSc	Johannsen	Lisbeth
	Jurasszovich	Sandra
	Kasper	Martina
Dr.	Kienzl	Karl
HR DI Dr.	Kilian	Walter
	Kitzler	Barbara
Univ.-Doz. Mag. Dr.	Kralik	Martin
	Kraus	Sonja
	Kreiml	Christian
	Krobath	Peter
Dr.	Kuderna	Max
DI	Kührer	Matthias
	Kusche	Wolfgang
DI	Lachmann	Bernhard
DI	Lair	Georg
	Langer	Romana
	Legner	Maria
	Lehtinen	Taru
	Maier	Regine
Prof. Dr.	Makeschin	Franz
	Mayer	Renate
	Mayr	Laura
Dr. habil.	Michel	Kerstin
	Minixhofer	Pia
DI	Mitterböck	Nora
DI	Mollay	Ursula
DI	Murer	Erwin
	Nagl	Martina
HR DI	Nelhiebel	Peter
Univ.-Prof.i.R. DI Dr.	Nestroy	Othmar
	Nilsson	Nikola
DI	Nolz	Reinhard
Dr.	Otto	Kaurzim
Ing. Major	Pecina	Emmerich
DI	Peham	Thomas
HR DI	Pehamberger	Alfred

	Peschek	Philipp
BSc	Plank	Claudia
DI	Pock	Maximilian
DI	Rechberger	Maria
	Rechenmacher	Andreas
	Reifer	Johanna
	Riederer	Daniela
LAbg. Mag.	Riedl	Alfred
	Rinklin	Julius
DI	Rohrer	Guenther
DI	Rongitsch	Simone
Dr.	Sager	Manfred
DI	Schaufler	Judith
	Schiefer	Jasmin
Dr.	Schima	Johannes
DI	Schindelegger	Arthur
	Schlossnikel	Bettina
	Schmidt	Corinna
BSc	Schneider	Martin
	Schwab	David
DI Dr.	Schwarz	Sigrid
Ass.Prof. DI Dr.	Seher	Walter
Dr.	Seiß	Reinhard
PD Dr.	Soja	Gerhard
	Sonnleitner	Anna
DI	Spanischberger	Andrea
	Spann	Caroline
DI Dr.	Spiegel	Adelheid
	Stangl	Rosemarie
DI	Stich	Robert
Assoc. Prof. Dr.	Stöglehner	Gernot
DI Dr.	Strauss	Peter
Dr.	Szlezak	Erwin
Univ.-Prof. Dr.	Tappeiner	Ulrike
	Tramberend	Peter
	Weigl	Martin
	Weissenbrugger	Viktoria
Bakk.Techn.	Welter	Sarah
Ao. Univ.-Prof. DI Dr.	Wenzel	Walter
	Woelkart	Birgit

	Wohlmuth	Marie-Luise
Dr.	Zechmeister-Boltenstern	Sophie
	Zeddel	Sebastian
Prof.	Zeyer	Josef
Dr.	Zimmermann	Michael

NKS Day 2

Désirée Ehlers	Bundesanstalt für Bergbauernfragen
Cecilie Foldal	BOKU, Institut für Bodenforschung
Stefan Forstner	BOKU, Institut für Bodenforschung
Wolfgang Friesl-Hanl	AIT, Health & Environment Department, Environmental Resources & Technologies
Franziska Hesse	Wood K plus
Gerhard Jakisch	EU Co-Fin Consult
Max Kuderna	wpa Beratende Ingenieure GmbH
Renate Mayer	HBLFA Raumberg-Gumpenstein, Forschung und Entwicklung
Guenther Rohrer	Landwirtschafts-kammer, Marktpolitik
Anton Schabl	Schabl Consulting
Gernot Stöglehner	BOKU, Institut für Raumplanung, ländliche Neuordnung
Andrea Sutterlüty	Marktanalyse & Innovationsforschung Wood K plus
Erwin Szlezak	Amt der NÖ Landesregierung, Abteilung Landentwicklung
MichalisTzatzanis	FFG
Klaus Wagner	Bundesanstalt für Agrarwirtschaft, Abt. Agrarpolitik, Regionalforschung, Landsoziologie
Ilse Wollansky	NÖ Landesregierung
Josef Zeyer	ETH Zürich, Mikrobiologie



inspiration

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

