

D2.5

National reports with a review and synthesis of the collated information

Switzerland





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

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1. Introduction

1.1 About INSPIRATION

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

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

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

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

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

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

1.2 This report

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

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



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

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

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

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

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

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

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

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

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

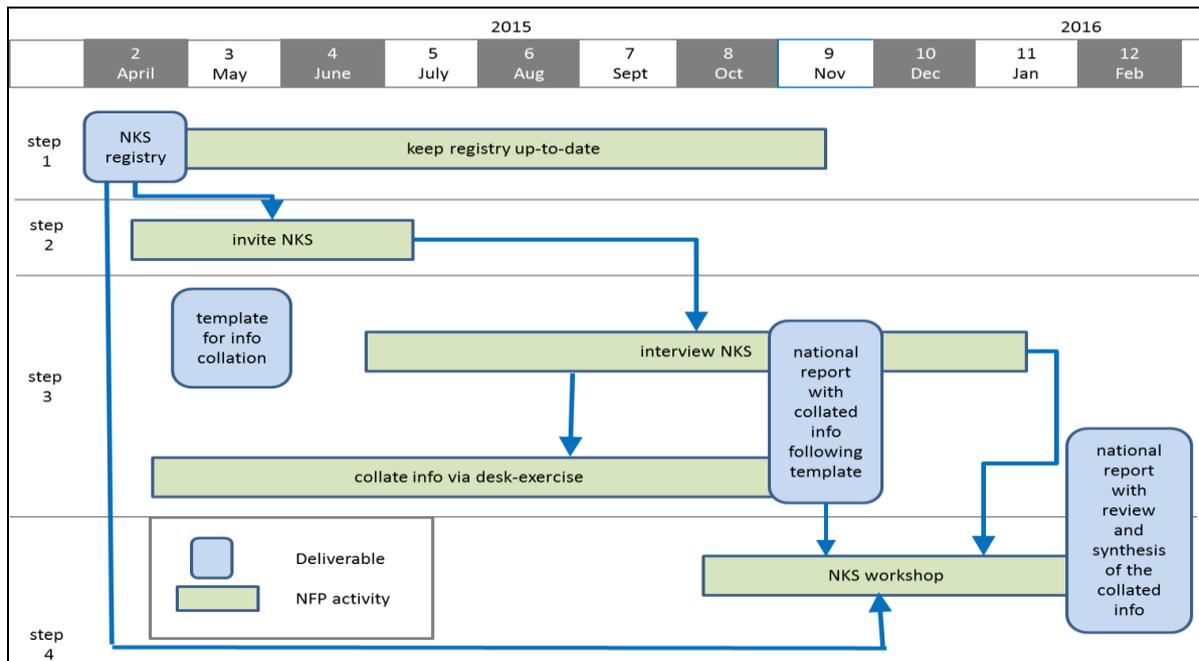


Figure 1: INSPIRATION's WP2 workflow.

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

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

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

1.3 The INSPIRATION conceptual model and its themes

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

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

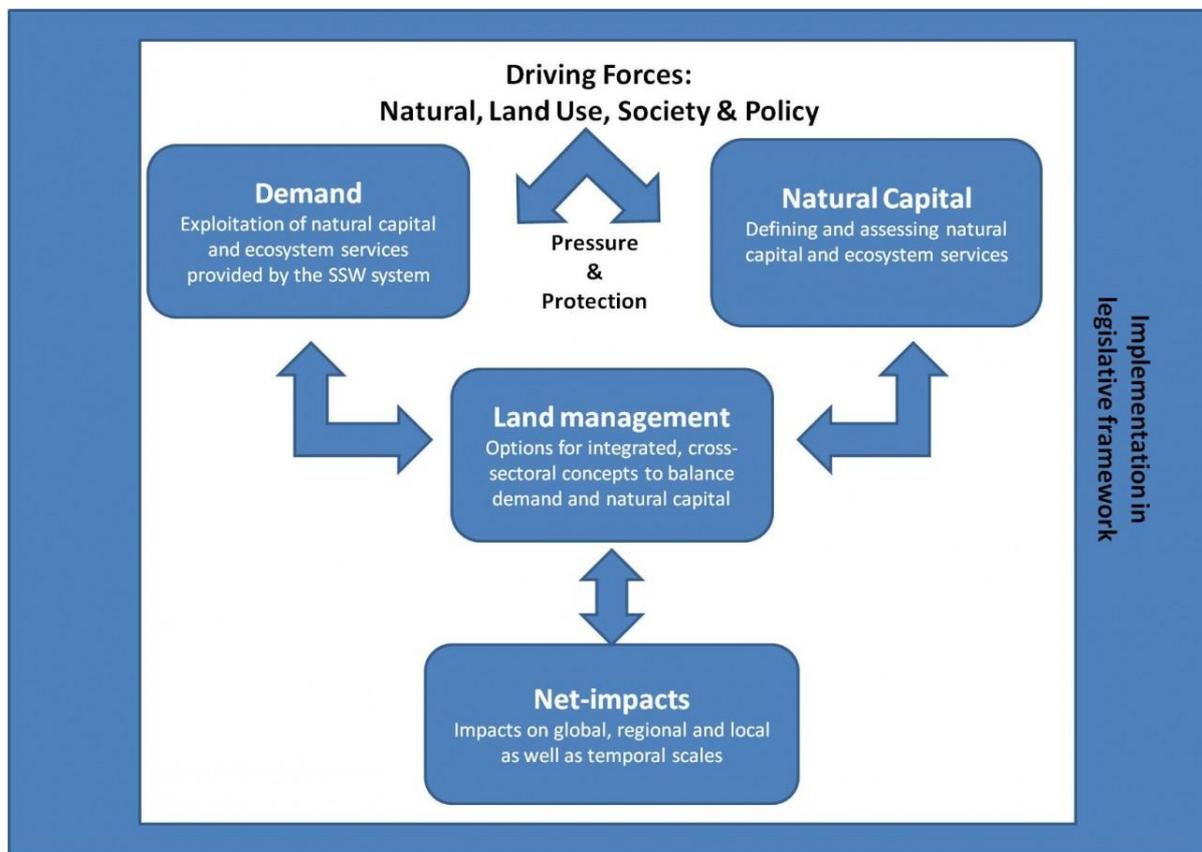


Figure 2: INSPIRATION's conceptual model.

1.4 Guide to the reader: outline of the country chapters

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

Section X.1- Executive summary

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

Section X.2 - Methodology followed

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

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

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

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

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

This section is divided in the sub-sections:

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

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

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

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

This section is divided in the sub-sections:

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



Section X.5 National and transnational funding schemes

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

This section is divided in the sub-sections:

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

Section X.6 - Other remarks made by interviewees

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

1.5 Annexes

Annex I: NKS questionnaire template

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

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

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

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

Questionnaire template

A. Interview information

Country:

Name of INSPIRATION researcher:

Date of Interview:

How does the NKS wish to be referred to: *[Anonymous, personal opinions, company's opinion. Choose when it is a good time to discuss this. In the beginning or later on.*

SHOW the interviewed NKS the ENGAGEMENT CONSENT FORM and ask him/her to fill it out. Please introduce the engagement consent form (available in 'D2.1 MoU' and editable by yourself) and hand a copy to the interviewee to read and fill in – make sure that you take this away with you and keep for your own records]

B. Introductions

[Please introduce your selves, the project and the purpose of the interview. You can use the handout as provided at the end of this template. This can also be sent beforehand to the NKS. Agree on a time span: approximately one and a half hour.]

C. Background information on the interviewee

1. Name of NKS interviewed:

2. Institution:

3. Role:

4. Are you a (multiple answers possible):

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

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

- Soil
- Water
- Sediment
- Urban / spatial planning
- Landscape design
- Land management
- Other, specify:

6. Does your organisation provide external research funding?

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

D. SRA

7. Which societal challenges do you regard as important?

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

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

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

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

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

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

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

- a. Explain – elaborate the topic

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

- b. Priority:

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



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

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

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

9. Linked to topics mentioned by the NKS:

a. What are the important / relevant documents, research agendas, research programmes underpinning these topics? (state-of-the-art)

b. Related to these agendas and programmes: what are timelines of programming and windows-of-opportunities to influence agendas / programmes?

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

E. Science-Policy-Interfacing (SPI)

10. How would you define 'scientific knowledge'?

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

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

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

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

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

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

15. To which extent do our national policies/agendas reflect your specific needs and priorities?

16. To what extent has been made use of the state-of-the art in scientific research for the formulation of existing policies in our country?

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

17. Have you ever been involved in:

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

[When yes: Follow-up questions]

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

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

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

[If they know: Follow-up questions:]

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

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

F. Funding



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

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

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

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

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

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

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

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

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

G. Other (remarks, suggestions, examples):

H. Ending the interview

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

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

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

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

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

b. Preferred level of feedback:

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

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

INSPIRATION acknowledges the received funding from the
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under grant agreement no 642372





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

INSPIRATION interview at a glance

Aim of INSPIRATION:

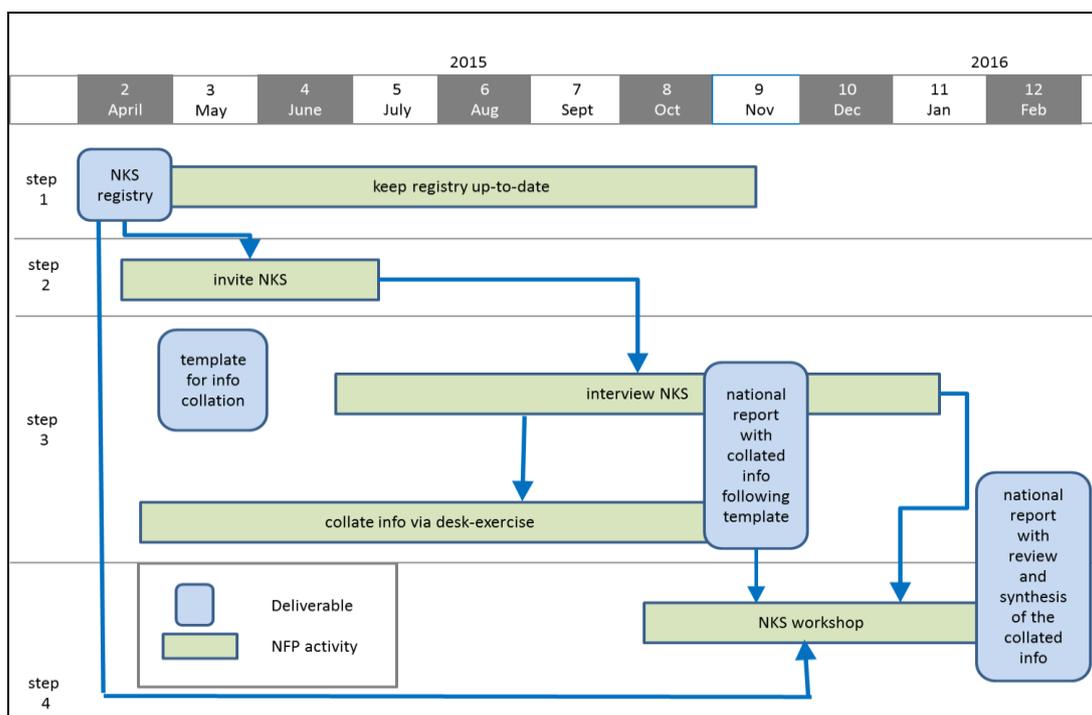
The main purpose of the EC-funded INSPIRATION project is to formulate an end-user driven strategic research agenda (SRA) for land-use, land-use changes and the related, impacted compartments of the Soil-Sediment-Water (SSW) system in order to meet current and future societal challenges and needs. Next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

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



2. Switzerland

Report by Regula Brassel, Marco Pütz

2.1 Executive summary

2.1.1 English version

INSPIRATION is a European research project within the research program Horizon 2020. The project aims at building up a strategic research agenda in the fields of spatial planning, land use and soil management. Furthermore, models to implement the research agenda are to be designed and a network of funding institutions is to be built up.

In 17 European countries, interviews and workshops with selected key stakeholders have been conducted. In the following chapters, an overview of the results of the Swiss interviews and workshop are presented.

Societal challenges

In the Swiss interviews and workshop, nine topics have been discussed that identify societal challenges in the fields of spatial planning, land use and soil management. However, finding joint solutions and compromises has been singled out as a superordinate challenge, because of the great influence it has on the handling of the other societal challenges.

- Finding joint solutions and compromises
- Finding sites for renewable energy
- Handling the impacts of climate change
- Finding solutions to the impacts of demographic change onto space and bridging gaps between population groups
- Finding ways to foster high-density housing and to prevent urban sprawl
- Protecting and enhancing the quantity and the quality of ecosystems, woods, the agricultural land and soils
- Protecting the landscape and enhancing its quality
- Creating a sustainable overall traffic
- Decoupling prosperity, economic growth and demand for land

Strategic research agenda Switzerland

In Switzerland 74 specific research topics have been compiled from the interview and workshop data, revealing research needs and knowledge gaps in the fields of spatial planning, land use and soil management. The research topics were organised along five research fields and cover a broad range of different research questions in jurisprudence, natural sciences and social sciences:

Within the research field “**Legal Framework**”, research needs are identified, concerning the Swiss zone concept (agricultural zone, building zone) and the rural land rights. Furthermore, research is needed, on how environmental qualities may be integrated into the land rights of the residential areas. Potentials to review the right of ownership in order to facilitate compact building are also to be explored.

The research field “**Spatial planning and development**” focuses on planning issues and on the land as a resource. One research need in this field is to develop visions for spatial



planning that show how the situation *should be like* in the future. Furthermore, research is needed on how the multifunctionality of space might be preserved, on how the implementation and acceptance of inner development in residential areas could be enhanced and on the organisation of mobility and transport in Switzerland. Other knowledge gaps have been identified in the fields of soil protection, landscape protection and the protection of cultivated land. The Swiss key stakeholders thereby focused particularly on planning instruments and steering measures that should be developed as well as on landscape-development goals and landscape protection sites that need to be defined. To tackle challenges in the mountain regions (emigration, effects of climate change in mountain regions, tourism, supply and infrastructure) also new knowledge and new approaches are needed. In the geological underground, instruments to weigh up underground land-use claims are missing. Additionally, new sites to mine gravel, sand and other geological raw materials in Switzerland are to be found, because the known deposits are either depleted or blocked by conflicting uses. Moreover, research is needed to find new sites for alternative energies. The effects of demographic change, social trends and lifestyle onto space as well as the spatial effects of economic drivers and political and economic interests have been mentioned as further important research needs.

In the research field “**Soil, sediment and water**”, research needs on biodiversity and soil biology are identified. Other important research needs within this research field are a better understanding of the material flows in the soil and the impact of stress factors on ecosystems. Furthermore numerous research topics on agricultural land management have been formulated.

Within the research field “**Data and harmonisation**”, missing data and unharmonised data in the fields of soil, sediment and ecosystem are discussed.

The research field “**Implementation and awareness-raising activities**” focuses on research needs dealing with weighing up interests, solving conflicting uses and the design of knowledge transfer and cooperation. Besides, in this research field, missing knowledge on the concrete implementation of visions and targets and on the management of long-term spatial planning projects is discussed. Finally, further research is needed that show how the awareness of different population groups on sustainability issues and on concerns of other population groups could be enhanced.

Science-policy-interface

In several sectors, knowledge transfer between science and policy/practice is working well in Switzerland. However, in the fields of surface water, geological underground and spatial planning knowledge transfer is viewed as insufficient.

To improve knowledge transfer, the interviewees stressed that scientific knowledge cannot just be disseminated, but has to be processed and brought down to an applicable level and transformed into an easily understandable language. A person particularly responsible for communication and knowledge transfer within research projects can help to improve this process. Public-private-partnerships as well as transdisciplinary approaches are also viewed as options to improve knowledge transfer.



Funding options

In Switzerland a multitude of different institutions exist that fund scientific projects in the fields of spatial planning, land use and soil management. In the interviews and the workshop the Swiss National Science Foundation, diverse other foundations, networks, societies, NGOs and commercial companies have been named, but also Federal offices and cantonal administrations.

2.1.2 Deutsche Version

INSPIRATION ist ein europäisches Forschungsprojekt innerhalb des Forschungsprogramms Horizon 2020. Das Ziel des Projekts ist es, eine strategische Forschungsagenda zu den Themen Raumplanung, Landnutzung und Bodenmanagement aufzubauen und aufzuzeigen, wie diese Forschungsagenda umgesetzt und finanziert werden kann.

In 17 europäischen Ländern wurden hierzu Interviews und Workshops mit ausgewählten Experten durchgeführt. Die Resultate der Befragung und des Workshops in der Schweiz sind in den folgenden Kapiteln zusammengestellt.

Gesellschaftliche Herausforderungen

In den Interviews und dem Workshop in der Schweiz wurden insgesamt neun Themenbereiche diskutiert, die gesellschaftliche Herausforderungen in der Raumplanung, der Landnutzung und dem Bodenmanagement aufzeigen. Das Finden von gemeinsamen Lösungen und Kompromissen wurde dabei als übergeordnetes Thema bezeichnet, da es den Umgang mit den übrigen Herausforderungen stark beeinflusst.

- Finden von gemeinsamen Lösungen und Kompromissen
- Finden von Standorten für erneuerbare Energien
- Finden von Lösungen, um mit den Auswirkungen des Klimawandels umzugehen
- Finden von Lösungen, um mit der Wirkung des demografischen Wandels auf den Raum umzugehen und Überbrücken von Gräben zwischen Bevölkerungsgruppen
- Finden von Möglichkeiten, um verdichtetes Bauen zu fördern und der Zersiedelung entgegen zu wirken
- Schützen und Erhöhen der Qualität von Ökosystemen, Wäldern, landwirtschaftlichem Land und Böden; Erhalten dieser Flächen (Quantität)
- Schützen der Landschaft und Erhöhen der Landschaftsqualität
- Schaffen eines nachhaltigen Gesamtverkehrs
- Entkoppeln von Wohlstand, ökonomischem Wachstum und Bodenverbrauch

Strategische Forschungsagenda Schweiz

Aus den Resultaten der Interviews und des Workshops in der Schweiz konnten 74 spezifische Forschungsthemen erarbeitet werden, die Wissenslücken und Forschungsbedarf in der Raumplanung, der Landnutzung und dem Bodenmanagement aufzeigen. Die Forschungsthemen sind in fünf Forschungsbereiche gegliedert und decken eine breite Palette verschiedenster rechts-, natur- und sozialwissenschaftlicher Fragestellungen ab:



Im Forschungsbereich **„Rechtliche Grundlagen“** wird Forschungsbedarf zum Zonenkonzept und dem bäuerlichen Bodenrecht in der Schweiz formuliert sowie zur Frage, wie Umweltqualitäten in das Bodenrecht der Siedlungsgebiete eingebunden werden können. Weiterer Forschungsbedarf besteht im Eigentumsrecht. Dabei steht die Frage nach möglichen Anpassungen des Eigentumsrechts im Zentrum, die die Umsetzung verdichteten Bauens erleichtern könnten.

Der Forschungsbereich **„Räumliche Planung und Entwicklung“** befasst sich mit raumplanerischen Fragestellungen und dem Boden als nutzbarer Fläche, beziehungsweise geologischer Ressource. Als wichtiger Forschungsbedarf wurde die Erarbeitung von Visionen der Raumplanung genannt. Es reicht nicht aufzuzeigen, wie sich der Raum zukünftig entwickeln könnte – es werden Visionen benötigt, die festlegen, wie der Raum in Zukunft *gestaltet sein soll*. Des Weiteren wird Forschung zum Erhalt der Multifunktionalität des Raumes, zur Gestaltung von Verkehr und Mobilität in der Schweiz sowie zur Umsetzung und Akzeptanz baulicher Innenentwicklung gefordert. Wissenslücken wurden aber auch im Bodenschutz, im Kulturlandschutz sowie im Landschaftsschutz und in der Landschaftsentwicklung identifiziert. Dabei wurde insbesondere Fokus auf das Fehlen von geeigneten Planungsinstrumenten und Steuerungsmassnahmen gelegt sowie auf die ungenügende Definition von landschaftlichen Schutzgütern und Entwicklungszielen. Um die Herausforderungen in den Berggebieten angehen zu können (Abwanderung, Wirkung des Klimawandels auf die Berggebiete, Tourismus, Versorgung) werden ebenfalls neue Ansätze und neues Wissen benötigt. Im Bereich des geologischen Untergrunds fehlen Instrumente zur Abwägung von Nutzungsansprüchen. Zudem muss nach neuen Vorkommen von Kies, Sand und weiteren geologischen Rohstoffen in der Schweiz gesucht werden, da die vorhandenen Ressourcen erschöpft oder durch Nutzungskonflikte blockiert sind. Für die Suche nach Standorten für erneuerbare Energien wird ebenfalls eine wissenschaftliche Auseinandersetzung mit dem Thema gefordert. Die Wirkung des demografischen Wandels, sozialer Trends und Lifestyle auf den Raum, wie auch die räumliche Wirkung ökonomischer Treiber sowie politischer und ökonomischer Interessen, wurden ebenfalls als wichtiger Forschungsbedarf genannt.

Im Forschungsbereich **„Boden, Sediment und Wasser“** wird einerseits Forschungsbedarf zu Biodiversität und Bodenbiologie formuliert. Andererseits wird das bessere Verständnis der Stoffflüsse im Boden sowie die Wirkung von Stressfaktoren auf Ökosysteme als wichtiger Forschungsbedarf identifiziert. Zahlreiche der genannten Forschungsthemen betreffen zudem das landwirtschaftliche Bodenmanagement.

Fehlende Datensätze in den Bereichen Boden, Ökosystem und Sedimente sowie die Harmonisierung von Daten werden im Forschungsbereich **„Daten und Harmonisierung“** diskutiert.

Im Forschungsbereich **„Umsetzung und Sensibilisierung“** wird Forschungsbedarf zu Interessensabwägungen und der Lösung von Nutzungskonflikten identifiziert, sowie zur Gestaltung von Wissenstransfer und Zusammenarbeit. Zudem fehlt Wissen, wie Zielbilder und Vorgaben konkret umgesetzt werden können und wie langfristige Raumplanungsprojekte optimal geleitet werden. Schliesslich wird weitere Forschung benötigt, die zeigt, wie verschiedene Bevölkerungsgruppen für Nachhaltigkeitsthemen sowie für Anliegen anderer Bevölkerungsgruppen sensibilisiert werden können.



Verknüpfung von Wissenschaft und Praxis

Der Wissenstransfer zwischen Wissenschaft und Praxis in der Schweiz funktioniert in gewissen Sektoren gut – in den Bereichen Oberflächengewässer, geologischer Untergrund und Raumplanung wird er jedoch als ungenügend betrachtet.

Zur Verbesserung von Wissenstransfer wurde in den Interviews die Aufbereitung von Wissen als zentraler Punkt genannt. Wissenschaftliches Wissen muss auf eine anwendbare Ebene transferiert und in einfacher Sprache vermittelt werden, damit es die Praxis erreicht. Personen innerhalb von Forschungsprojekten, die speziell für Kommunikation und Wissenstransfer verantwortlich sind, können diesen Prozess erleichtern. Public-private-partnerships sowie transdisziplinäre Ansätze werden ebenfalls als Möglichkeiten gesehen, den Wissenstransfer zu verbessern.

Finanzierungsmöglichkeiten

In der Schweiz existiert eine Vielzahl verschiedener Institutionen, die wissenschaftliche Projekte in den Bereichen Raumplanung, Landnutzung und Bodenmanagement finanzieren. In den Interviews und dem Workshop wurden der Schweizerische Nationalfonds, verschiedene Stiftungen, Netzwerke, Verbände, NGOs und kommerzielle Firmen genannt, aber auch Bundesämter und kantonale Stellen.



2.2 Methodology followed

This national report (i.e. INSPIRATION deliverable 2.5 - Switzerland) presents the reviewed and synthesised information collated for Switzerland. The information has been collated in accordance with INSPIRATION D2.3 “Template for national information collation”. From August 2015 till mid of January 2016, the NFP Switzerland conducted 20 interviews with 23 NKS and recorded them in writing. Details on these NKS are provided in Annex I. In a next step, the results of the interviews have been analysed by coding them according to the questions of the questionnaire and according to their content. To grasp all of the relevant information, a code system of more than 100 codes and subcodes has been developed. The desk study was mainly based on documents suggested by the NKS. However, it has been extended by further important documents. All documents of the deskwork are listed in Annex II. In the INSPIRATION-Workshop Switzerland, which has been held on Friday, 13th of November at the ETH Zurich, the data from the interviews has been reviewed and complemented interactively with 13 stakeholders. Details on the workshop participants are provided in Annex I. In deliverable 2.5 we give a synthesised overview on the results from the interviews and the workshop in Switzerland.



2.3 Research and Innovation (R&I) needs

2.3.1 Societal challenges and needs

In the Swiss interviews and the workshop a broad variety of different societal challenges were named. We grouped them thematically and ended up with nine topics, which describe the societal challenges Switzerland is facing today in the fields of spatial planning, land use and soil management. However, finding joint solutions is viewed as a superordinate topic, because it has great influence on the handling of the other societal challenges.

- **Joint solutions:** Finding joint solutions and compromises in spatial planning, land use and soil management; solving conflicting use.
- **Renewable energy:** Implementing nuclear phase-out and finding sites for renewable energy.
- **Climate change:** Handling the impacts of climate change onto ecosystems and the agricultural production.
- **Demographic change:** Finding solutions to the impacts of demographic change onto space and bridging gaps between population groups, e.g. the views of people from the country and people from the city.
- **Constructional change:** Finding ways to foster high-density housing and to prevent urban sprawl; finding ways to deal with abandoned buildings.
- **Protecting and enhancing the quantity and the quality of ecosystems, woods, the agricultural land and soils:** Protecting ecosystems, woods, the agricultural land and soils from degradation and constructional sealing; enhancing and developing their quality; preserving food security on a global scale and the multifunctionality of the land.
- **Protecting the landscape and enhancing its quality:** Enhancing the quality, protecting and developing the landscape - especially its visual aspects; preserving its heterogeneity; finding ways to deal with alpine emigration zones and the upcoming of trees.
- **Sustainable overall traffic:** Integrating individual motor car traffic, public transport and non-motorised traffic into the overall traffic.
- **Linkage between prosperity, economic growth and demand for land:** Decoupling prosperity, economic growth and demand for land, e.g. by constructing higher buildings.

2.3.2 Topics / research needs to include in the SRA

In the following we first list existing research programmes and research agendas in Switzerland that formulate research questions in the fields of spatial planning, land use and soil management. After that, we present the Strategic Research Agenda Switzerland, which comprises the research needs and knowledge gaps named in the interviews and during the workshop.



National Research Programmes of the Swiss National Science Foundation

The National Research Programmes (NRPs) of the Swiss National Science Foundation (SNSF) are a funding instrument aiming to solve the most urgent societal problems in Switzerland (for more on the funding schemes of the SNSF, see Chapter 16.5.1 *Funding schemes and possibilities for research funding*). Each NRP is dedicated to a specific problem, addressing pressing societal, political and economic issues. New topics for NRPs can be proposed every two to three years to the State Secretariat for Education, Research and Innovation (SERI) by Swiss Federal Offices, research institutes, research groups, other institutions or individuals. The final decision on NRP topics lies with the Swiss Federal Council ([Swiss National Science Foundation \(SNSF\), 2011](#); [Swiss National Science Foundation \(SNSF\), 2015c](#)).

Running NRPs in the fields of spatial planning, land use and soil management

- NRP 70 "Energy Turnaround"
- NRP 69 "Healthy Nutrition and Sustainable Food Production"
- NRP 68 "Sustainable Use of Soil as a Resource"
- NRP 66 "Resource Wood"
- NRP 65 "New Urban Quality"

Concluded NRPs in the fields of spatial planning, land use and soil management

- NRP 61 "Sustainable Water Management"
- NRP 54 "Sustainable Development of the Built Environment"
- NRP 48 "Landscapes and Habitats of the Alps"
- NRP 41 "Transport and Environment: Interactions Switzerland / Europe"

([Swiss National Science Foundation \(SNSF\), 2015c](#))

Research agendas by Federal Offices and other Swiss institutions related to the scope of INSPIRATION

- *Forschungskonzept Land- und Ernährungswirtschaft 2013-2016:* ([Bundesamt für Landwirtschaft \(BLW\), 2012](#)) Research concept on agriculture and nutrition economy of the Federal Office for Agriculture (FOAG)
- *Forschungskonzept Nachhaltige Raumentwicklung und Mobilität 2013-2016:* ([Bundesamt für Raumentwicklung \(ARE\), 2012](#)) Research concept on sustainable spatial development and mobility of the Federal Office for Spatial Development (ARE)
- *Forschungskonzept Nachhaltiger Verkehr 2013-2016:* ([Bundesamt für Strasse \(ASTRA\) & Bundesamt für Verkehr \(BAV\), 2012](#)) Research concept on sustainable transport of the Federal Office of Transport (FOT) and the Federal Roads Office (FEDRO)
- *Forschungskonzept Umwelt für die Jahre 2013-2016. Schwerpunkte, Forschungsbereiche und prioritäre Forschungsthemen:* ([Miranda; Jacquat et al.,](#)



[2012](#)) Master plan on environmental research of the Federal Office for the Environment (FOEN)

- *Wohnforschung 2012-2015. Forschungsprogramm des Bundesamtes für Wohnungswesen:* ([Bundesamt für Wohnungswesen \(BWO\), 2012](#)) Research programme on habitation of the Federal Office of habitation (BWO)
- *Arbeitsprogramm Agroscope 2014-2017:* ([Agroscope, 2014](#)) Work plan of Agroscope (Swiss centre of excellence for agricultural research)
- *Herausforderungen der Landschaftsentwicklung - Aktuelle Forschungstrends und zukünftiger Forschungsbedarf in der Schweiz:* ([Degenhardt & Hunziker, 2011](#)) Research agenda on landscape development
- *Bodenkartierung Schweiz. Entwicklung und Ausblick:* ([Borer & Knecht, 2014](#)) Developments and perspectives in Swiss soil mapping, including the formulation of research fields
- *Schwerpunkte der Eawag-Forschung von 2013 bis 2016:* ([EAWAG, 2011](#)) Focus areas EAWAG, Swiss Federal Institute of Aquatic Science and Technology
- *Themenspeicher:* ([Forum Früherkennung Biodiversität und Landschaft, 2011](#)) Collection of topics in the fields of biodiversity and landscape that will be relevant in the future
- *Strategie Antibiotikaresistenzen Schweiz:* ([Schweizerischer Bundesrat, 2015](#)) Swiss strategy on antibiotic resistance, including the formulation of research topics on antibiotics in ecosystems
- *Kompetenzzentrum Boden: Servicestelle für Kantone und Bund:* ([Keller, Meuli et al., 2014](#)) Collection of tasks a „Soil Competence Centre“ (not yet existing) could be responsible for, including fields where further research is needed



Strategic research agenda Switzerland

Research field 1: Legal framework

CH 1.1: Zone concept and rural land rights

Relevance of the issue and justification of the need for research:

In Switzerland, land in the agricultural zone has long ceased to be used solely for farming purposes. Such land is being built on (e.g. high-voltage lines, conversions of agricultural buildings into dwellings), it includes ecologically protected areas, special-use areas (e.g. landfill sites) and also agricultural superstructure works. Some 25% of all buildings in Switzerland are constructed outside of the building zone, which strongly questions the concept of separating between agricultural land and building areas. Moreover, there is a discrepancy between the Federal Act on Rural Land Rights (Bundesgesetz über das bäuerliche Bodenrecht, BGG), under which only farmers are allowed to acquire farmland, and the actual highly diverse use of such land. In this context it may also be questioned, if it still shall be possible in future to inherit agricultural land by non-farmers, as it is possible today.

Specific research topics and knowledge gaps:

Land management

- **Develop a new zone concept:** Develop new spatial planning concepts which could replace the concept of agricultural zone and building zone and provide a more faithful reflection of the current situation (e.g. by introducing a cultivated land zone).
- **Update the rural land rights and the inheritance law:** Develop new legal solutions that could supplement or replace the rural land rights, and take better account of the diverse use of farmland. Reconsider who shall be allowed to inherit agricultural land in the future.

Documents:

- *Bauen ausserhalb der Bauzonen: Fehlanreize im Nichtbaugebiet - eine Übersicht. Schlussbericht vom 27.07.2015:* ([Institut für Wirtschaftsstudien Basel, 2015](#))
- *Website on the Project Raum+:* ([ETH Zurich, 2015](#))
- *Umweltrecht in der Praxis:* Journal of the Association for Environmental Law
- *INFORAUM and Raum & Umwelt:* Journals of VLP-ASPAN, Swiss Association for Spatial Planning

Stakeholders:

- NGO, network, workshop participants

CH 1.2: Environmental qualities and land rights of the residential areas

Relevance of the issue and justification of the need for research:

To a certain extent, the environmental qualities of land and soil are included in the Swiss rural land rights. This is not the case for the land rights of the residential areas. However, it is essential that the land in residential areas is not accorded a purely economic character. Unfortunately, researchers in environmental law that deal with this land issue are missing in Switzerland.

Specific research topics and knowledge gaps:

Land management

- **Integrate environmental qualities in the land rights of residential areas:** Show how environmental qualities can be integrated into the land rights of residential areas, so that the land there is not accorded a purely economic character.

Stakeholders:

- Network, SME/consultant, others, workshop participants

CH 1.3: Right of ownership

Relevance of the issue and justification of the need for research:

The right of ownership is very deeply entrenched in Swiss law. At the same time, the new Spatial Planning Act (Raumplanungsgesetz, RPG) demands for internal development and compact building. The internal development of residential areas poses a daunting challenge because often solutions have to be sought in consultation with many private landowners, which may block the project.

Specific research topics and knowledge gaps:

Land management

- **Reconsider the right of ownership:** Show how the right of ownership in Switzerland could be reviewed, ensuring the feasibility of the mission set out by the Spatial Planning Act when it comes to compact building and internal development.

Stakeholders:

- Network, SME/consultant, national/regional/local authority, others, workshop participants



Research field 2: Spatial planning and development

CH 2.1: Visions for spatial development

Relevance of the issue and justification of the need for research:

Until now, scenarios have been designed that show how the use of land will develop in future and how Swiss spatial planning could react to these developments. However, this is not enough – visions for what the future situation *should be like* are needed to be able to actively influence future developments. The Swiss Concept of spatial Planning (Raumkonzept Schweiz) already takes this line but must now be developed further.

Specific research topics and knowledge gaps:

Demand

- **Develop visions for spatial planning:** Develop visions of how land in Switzerland is to be used in future, how cities and municipalities are to be planned, how the landscape in Switzerland is to be developed, and how mobility in the country is to be refined.

Land management

- **Develop visions for spatial planning:** Develop visions of how land in Switzerland is to be used in future, how cities and municipalities are to be planned, how the landscape in Switzerland is to be developed, and how mobility in the country is to be refined.

Documents:

- *Raumkonzept Schweiz. Überarbeitete Fassung:* ([Schweizerischer Bundesrat; Konferenz der Kantonsregierungen \(KdK\) et al., 2012](#))
- *Die Schweiz - ein städtebauliches Portrait:* ([Diener; Herzog et al., 2006](#))

Stakeholders:

- National/regional/local authority, network, NGO, workshop participants



CH 2.2: Multifunctionality of space

Relevance of the issue and justification of the need for research:

It is important to preserve the multifunctionality of land and space. Agricultural land shall not only produce products, but also be a habitat for diverse species. However, biodiversity is not only to be found in protection areas and on agricultural land, but also within settlements. To be attractive, settlement areas and agglomerations also have to satisfy a multitude of different needs.

Specific research topics and knowledge gaps:

Land management

- **Multifunctionality of agricultural land:** Find ways to preserve the multifunctionality of agricultural land (production, biodiversity etc.).
- **Multifunctionality of agglomerations and settlement areas:** Find ways to preserve the multifunctionality of agglomerations and settlement areas (habitation, recreation, green space or agricultural areas, biodiversity etc.).

Stakeholders:

- National/regional/local authority, workshop participants



CH 2.3: Inner development of residential areas

Relevance of the issue and justification of the need for research:

Inner development and compact building are laid down as requirements in the new Spatial Planning Act. However, compact building must not damage the quality of life of inhabitants. Dense residential areas must therefore be well designed and should include attractive open spaces and recreation areas. Many inhabitants have a "not in my backyard" mentality. This makes research on the acceptance of compact building very important. Moreover, the question arises which residential areas shall still be allowed to grow outwards and which shall be slated for internal development only. In this field research on burden sharing is needed. The concrete implementation of compact building also poses a challenge.

Specific research topics and knowledge gaps:

Land management

- **Inner development and preservation of the quality of life:** Show how a residential area can be developed internally without reducing the quality of life of the inhabitants.
- **Acceptance of compact building:** Understand why the acceptance of compact building is higher in certain areas and where those areas are. Show how compact building must be planned so as to be accepted by the population.
- **Decision criteria for inner development:** Define decision criteria which help to decide where compact building is and where it is not to take place. Show how to decide fairly which residential areas have to limit themselves to inner development in the future (developing approaches on burden sharing).
- **Implementation of inner development:** Develop instruments and examples that demonstrate how compact building can be carried out. Municipalities and cantons lack information on how particularly rural detached-housing areas can be densified. Better support for municipalities and cantons, rather than research, is needed here.

Documents:

- *Website of New Urban Quality, National Research Programme NRP 65 (running):* ([Swiss National Science Foundation \(SNSF\), 2015b](#))
- *Gesundheit fördern, Landschaft gestalten. Gesundheitsressource Landschaft: Wie sich in Gemeinde-, Stadt- und Quartierentwicklungen dieses Potenzial nutzen lässt:* ([Stiftung Landschaftsschutz Schweiz & naturaqua PBK, 2015](#))
- *Website on Pilot Programmes Sustainable Spatial Development (Modellvorhaben Nachhaltige Raumentwicklung):* ([Bundesamt für Raumentwicklung \(ARE\), 2015](#))
- *Modellvorhaben Nachhaltige Raumentwicklung: Nutzungspotentiale für eine Siedlungsentwicklung nach innen:* ([Bundesamt für Raumentwicklung \(ARE\), 2013](#))
- *Bundesgesetz über die Raumplanung (Raumplanungsgesetz, RPG) vom 22. Juni 1979 (Stand am 1. Mai 2014):* ([Bundesversammlung der Schweizerischen Eidgenossenschaft, 2014](#))
- *Website on the Project Raum+:* ([ETH Zurich, 2015](#))

Stakeholders:

- network, national/regional/local authority, NGO, business/industry, workshop participants



CH 2.4: Transport and mobility

Relevance of the issue and justification of the need for research:

The Swiss Plateau will be one big conurbation by 2050. To function properly, this conurbation will need appropriate infrastructure. In the future, Swiss roads will be characterised by self-driving vehicles, which will transform mobility completely. It is vital to think about such future developments already and to plan accordingly. Required transport developments such as bicycling, however, should also be promoted.

Specific research topics and knowledge gaps:

Land management

- **Design the future development of transport:** Develop concepts showing how transport can be tailored to the developments of compact building and how automated vehicles can be integrated into the overall traffic. Research and also new planning instruments are needed for this purpose.
- **Make bicycle lanes more attractive:** Show how bicycle lanes can be made more attractive.

Documents:

- *Der grosse Plan und seine helvetische Realisierung. Die Gesamtverkehrskonzeption 1972-1977 und ihre Wirkung auf die schweizerische Verkehrspolitik:* ([Haefeli, 2006](#))

Stakeholders:

- Network, national/regional/local authority, business/industry, workshop participants



CH 2.5: Soil protection

Relevance of the issue and justification of the need for research:

Today in Switzerland a soil strategy is missing that defines how soils are to be used. Also missing are spatial planning instruments that integrate soil functions and therefore consider the quality of soils. Both aspects, however, are very important to make sound spatial planning decisions. In order to show better the high value soils have, economic valorisation of soil functions could be a solution where further research is needed. Moreover, there are no quality-assurance standards for soil-protection projects.

Specific research topics and knowledge gaps:

Land management

- **Missing soil strategy:** Develop a strategy on the use of soils, considering soil properties and their location.
- **Spatial planning instruments considering soil functions:** Develop spatial planning instruments that integrate the qualities of soils. Develop models to show the spatial distribution of soil functions in Switzerland. To this end, methods must be devised to reliably translate soil properties into soil functions.
- **Acceptance of spatial planning instruments considering soil qualities:** Show how to enhance the acceptance of spatial planning instruments considering the qualities of the soil by land owners, constructors, spatial planners and communalities.
- **Economic valorisation of soil functions and multifunctionality:** Develop methods to monetarise soil functions and the multifunctionality of the soil.
- **Quality assurance in soil-protection projects:** Develop standards for quality assurance in soil-protection projects that reveal the effectiveness of such projects and thus demonstrate whether the available implementation guidelines are sufficient.

Documents:

- *Website of “Sustainable Use of Soil as a Resource”, National Research Programme NRP 68 (running):* e.g. Felix Walter, Policy Instruments for Sustainable Soil and Land Use Management ([Swiss National Science Foundation \(SNSF\), 2015a](#))

Stakeholders:

- SME/consultant, network, university/research institute, others, workshop participants

CH 2.6: Protection of cultivated land

Relevance of the issue and justification of the need for research:

Cultivated land is under pressure in Switzerland. While the best cultivated land is preserved by the Sectoral Plan for Cropland Protection (Sachplan Fruchtfolgeflächen), other cultivated areas are built over. In addition to construction on cultivated land in the building zone, a great deal of cultivated land is lost in the agricultural zone to agricultural structures (e.g. animal mast facilities, refrigeration buildings). The agricultural zone has turned into the “building zone” of farmers.

Specific research topics and knowledge gaps:

Land management

- **Steering measures to limit building development on cultivated land:** Develop economic concepts that will help preserve cultivated land in the long term. Develop approaches that pass the social costs for the loss of land to construction to the party responsible. Develop support measures and economic incentives for farmers to prevent them building agricultural structures on agricultural land.

Documents:

- *Sachplan Fruchtfolgeflächen (FFF), Festsetzung des Mindestumfangs der Fruchtfolgeflächen und deren Aufteilung auf die Kantone:* ([Eidgenössisches Justiz und Polizeidepartement \(EJPD\)](#); [Bundesamt für Raumplanung \(BRP\) et al., 1992](#))
- *Weissbuch Landwirtschaft Schweiz: Analysen und Vorschläge zur Reform der Agrarpolitik, 2., korrigierte Auflage:* ([Bosshard; Schläpfer et al., 2011](#))
- *Press releases of the Swiss Foundation for Landscape Conservation*

Stakeholders:

- National/regional/local authority, NGO, SME/consultant



CH 2.7: Landscape protection and development

Relevance of the issue and justification of the need for research:

The European Landscape Convention entered into force in Switzerland in 2013. As a result, Switzerland is required to improve its knowledge of its landscapes. However, a lot of basic knowledge is still missing. Today superordinate interests are emerging in different sectoral areas (mining of hard stone, renewable energies, transport infrastructure, high-voltage lines, etc.) that require space. If the quality and development goals for the Swiss landscapes are unknown and the subjects of landscape protection are not identified, valuable landscapes will not be protected sufficiently and sites for the use of superordinate interests cannot be selected reasonably.

Specific research topics and knowledge gaps:

Demand

- **Identification of landscape protection sites and landscape development goals:** Define quality and development goals for landscapes in Switzerland and determine where the subjects of landscape protection are located (task of the cantons).

Natural capital

- **Monitoring landscape change:** Building up a monitoring system to observe landscape change.

Land management

- **Landscape-development goals and identification of landscape protection sites:** Define quality and development goals for landscapes in Switzerland and determine where the subjects of landscape protection are located (task of the cantons).
- **Landscape-protection and -development instruments:** Develop instruments for the protection and development of landscapes, e.g. a landscape strategy (some instruments, such as structure plans and a landscape typology, already exist, but are insufficient).
- **Concepts for the protection and development of open spaces and everyday landscapes:** Develop concepts that show how everyday landscapes, open spaces and quiet areas can be protected better and how they can be developed. Make sure that these concepts are integrated into spatial planning.

Documents:

- [Landschaftstypologie Schweiz. Teil 1, Ziele, Methode und Anwendung: \(Bundesamt für Raumentwicklung \(ARE\); Bundesamt für Umwelt \(BAFU\) et al., 2011a\)](#)
- [Landschaftstypologie Schweiz. Teil 2, Beschreibung der Landschaftstypen: \(Bundesamt für Raumentwicklung \(ARE\); Bundesamt für Umwelt \(BAFU\) et al., 2011b\)](#)
- [Publications by Silvia Tobias \(WSL\) on ecosystems in urban areas, e.g. Preserving ecosystem services in urban regions: Challenges for planning and best practice examples from Switzerland: \(Tobias, 2013\)](#)
- [Freiraumentwicklung in Agglomerationen: \(Bundesamt für Raumentwicklung \(ARE\) & Bundesamt für Wohnungswesen \(BWO\), 2014\)](#)



- *Gesundheit fördern, Landschaft gestalten. Gesundheitsressource Landschaft: Wie sich in Gemeinde-, Stadt- und Quartierentwicklungen dieses Potenzial nutzen lässt: (Stiftung Landschaftsschutz Schweiz & naturaqua PBK, 2015)*
- *Press releases of the Swiss Foundation for Landscape Conservation*

Stakeholders:

- NGO, network, national/regional/local authority, workshop participants



CH 2.8: Mountain regions

Relevance of the issue and justification of the need for research:

Switzerland's mountain regions are under pressure from a host of minor changes, which however add up when put together. The question arises whether the quality of the mountain regions (retreat area, identification area, economic zone, social space, natural space, landscape area etc.) can be maintained in the long-term under the prevailing conditions. The recultivation of construction sites in mountain regions for agricultural production purposes has been cited as a challenge. In this field, adequate implementation guidelines are missing.

Specific research topics and knowledge gaps:

Land management

- **Challenges in mountain regions:** Develop integral planning approaches to define and steer the desired aims of development, and to preserve the qualities of the mountain regions. This requires new knowledge in the following fields:
 - Develop approaches to deal with emigration from mountain regions; show how an organised, planned retreat from emigration areas can be implemented and how scrub encroachment (advance of scrubs and trees onto agricultural land) can be countered.
 - Develop strategies to tackle the effects of climate change in mountain regions.
 - Show how tourism which has taken root in mountain regions can be dealt with.
 - Find solutions on how to organise supply and infrastructure in mountain regions.
- **Guidelines for the recultivation of construction sites in mountain regions:** Develop guidelines on how to recultivate construction sites in mountain regions (rules, manuals).

Impacts

- **Challenges in mountain regions:** Develop integral planning approaches to define and steer the desired aims of development, and to preserve the qualities of the mountain regions. This requires new knowledge in the following fields:
 - Develop approaches to deal with emigration from mountain regions; show how an organised, planned retreat from emigration areas can be implemented and how scrub encroachment (advance of scrubs and trees onto agricultural land) can be countered.
 - Develop strategies to tackle the effects of climate change in mountain regions.
 - Show how tourism which has taken root in mountain regions can be dealt with.
 - Find solutions on how to organise supply and infrastructure in mountain regions.

Documents:

- *Existing cantonal guidelines on the recultivation of construction sites in the alps*
- *Boden und Bauen. Stand der Technik und Praktiken:* ([Bellini, 2015](#))

Stakeholders:

- National/regional/local authority, university/research institute, network, workshop participants



CH 2.9: Geological underground sites

Relevance of the issue and justification of the need for research:

Geological underground sites are not used optimally in Switzerland because the country has no underground planning. Currently, the principle "first come, first served" is applied. In Switzerland the geological underground belongs to the landowners down to the depth which they use. As a result, it is increasingly used by private landowners (e.g. by geothermal probes) and there is no room left for superordinate interests. In addition, it has become difficult to mine gravel, sand and other geological raw materials in Switzerland, because the easily accessible deposits are depleted. Overlapping uses such as residential areas, forests or protection areas prevent the further mining of existing deposits.

Specific research topics and knowledge gaps:

Demand

- **Consideration of underground land-use claims:** Develop criteria, tools and instruments to weigh up different underground land-use claims. Revise the legal framework for assessing underground land-use claims so that society can gain the maximum possible benefit from the use of the geological underground.
- **Scarce geological raw materials:** Find new deposits and resolve conflicting uses of the land and the geological underground so that known deposits can be mined.

Land management

- **Consideration of underground land-use claims:** Develop criteria, tools and instruments to weigh up different underground land-use claims. Revise the legal framework for assessing underground land-use claims so that society can gain the maximum possible benefit from the use of the geological underground.
- **Scarce geological raw materials:** Find new deposits and resolve conflicting uses of the land and the geological underground so that known deposits can be mined.

Documents:

- [Rohstoffsicherungskonzept, RoSiK \(under progress\)](#)
- [Le régime du sous-sol en droit suisse : planification - exploitation - construction: \(Carrel, 2014\)](#)
- [Die Nutzung des geologischen Untergrunds in der Schweiz: Empfehlungen des Schweizer Geologenverbands CHGEOL zur Harmonisierung von Verfügungshoheit, Sachherrschaft und Nutzungsvorschriften: \(Schweizer Geologenverband \(CHGEOL\), 2012\)](#)
- [Poster on the KiesRohstoffStudie Schweiz KiRoSt: \(Netzwerk Mineralische Rohstoffe Schweiz \(NEROS\), 2014\)](#)
- [Evaluation von Potenzialgebieten für Hartsteinbrüche ausserhalb der Landschaften von nationaler Bedeutung \(BLN\). Schlussbericht: \(Verband Schweizerischer Hartsteinbrüche \(VSH\); Bundesamt für Landestopografie \(swisstopo\) et al., 2012\)](#)

Stakeholders:

- National/regional/local authority, workshop participants



CH 2.10: Alternative energies

Relevance of the issue and justification of the need for research:

In 2011, Switzerland decided to gradually phase out nuclear energy. As a result, the demand for sites for alternative sources of energy is growing. Decision-making tools to select such sites are needed as well as a “Renewable Energy Sectoral Plan (Sachplan erneuerbare Energien)” which compares the various technologies and takes possible future developments into account.

Specific research topics and knowledge gaps:

Demand

- **Draw up a “Renewable Energy Sectoral Plan”:** Develop a “Renewable Energy Sectoral Plan” that conducts a comparative assessment of the various technologies (wind, solar, hydroelectric) and also provides answers to possible future developments.

Land management

- **Decision-making support for alternative energy site selection:** Develop the scientific basis and decision-making tools for selecting sites for solar panels, wind farms and hydroelectric power plants.
- **Acceptance of alternative energies:** Develop approaches to enhancing the acceptance of solar panels, wind turbines and hydroelectric power plants by the population.
- **Draw up a “Renewable Energy Sectoral Plan”:** Develop a “Renewable Energy Sectoral Plan” that conducts a comparative assessment of the various technologies (wind, solar, hydroelectric) and also provides answers to possible future developments.

Documents:

- *Lösungsansätze für die Schweiz im Konfliktfeld erneuerbare Energien und Raumnutzung:* ([Akademien der Wissenschaften Schweiz, 2012](#))

Stakeholders:

- Network, SME/consultant, university/research institute, others, workshop participants



CH 2.11: Demographic change and lifestyle

Relevance of the issue and justification of the need for research:

The demographic structure in Switzerland is undergoing changes: the number of older people is increasing, and the population is growing primarily due to migration. This has effects on spatial aspects, like housing and residential district development. Furthermore, social trends and lifestyle have spatial implications.

Specific research topics and knowledge gaps:

Impacts

- **Effect of demography on space:** Gain a better understanding of the effect of demographic change on spatial aspects, like housing and residential district development.
- **Effect of social trends and lifestyle on space:** Analyse the effects of social trends and lifestyle on space, e.g. the demand for larger living space.

Stakeholders:

- Business/industry, SME/consultant, university/research institute, workshop participants

CH 2.12: (Economic) drivers and political and economic interests

Relevance of the issue and justification of the need for research:

Spatial planning in Switzerland does not deal with the impact of the capital markets on the construction and real-estate sector nor with locational policy and tax policy. These aspects nevertheless have an effect on spatial aspects, making it important to gain a better understanding of the connections and interactions between these fields. Furthermore, political and economic interests and interrelationships that lie behind spatial planning and land management decisions are often understood insufficiently. Because land speculation still is a lucrative business, instruments are needed to limit this process.

Specific research topics and knowledge gaps:

Land management

- **Steering measures to limit land speculation:** Develop instruments to limit land speculation.

Impacts

- **Impact of economic drivers on spatial aspects:** Gain a better understanding of the impact of locational policy, site competition and tax policy on spatial development. Gain insights on the impact of capital markets on the construction and real-estate sector and on the investment business.
- **Monitoring the drivers of land consumption and urban sprawl:** Building up a monitoring system to observe the drivers of land consumption and urban sprawl.
- **Political and economic interests:** Understand better the political and economic interests and interrelationships that lie behind spatial planning and land management decisions.

Stakeholders:

- Business/industry, SME/consultant, university/research institute, national/regional/local authority, workshop participants



Research field 3: Soil, sediment and water

CH 3.1: Interaction between soil biology and the soil

Relevance of the issue and justification of the need for research:

Soil organisms play an important role in the soil: They interact with each other and with plants and inanimate components, thereby ensuring the functioning of various different soil processes. The impact of this interaction on soil processes, and therefore also on soil functions, is not yet fully understood. However, such an understanding is vital to make optimal use of the soil. Soil biology is also undergoing major changes as a result of genetically-modified organisms and invasive species. The biodiversity in the soil needs to be registered as soon as possible to grasp it at least in a near-natural state.

Specific research topics and knowledge gaps:

Natural capital

- **Role of biodiversity in the fulfilment of soil functions:** Study the role which biodiversity – in particular small organisms (fungi, bacteria, and archaea) – plays in fulfilling soil functions and maintaining material cycles in the soil.
- **Functioning of food webs:** Understand how food webs function (animal-plant-microorganism networks). Study how the different soil organisms interact with each other and how the interaction with plants and inanimate components of the soil works.
- **Register the spatial and temporal heterogeneity of biodiversity:** Register the spatial and temporal heterogeneity of soil-organism communities.

Documents:

- *Website "Sustainable Use of Soil as a Resource", National Research Programme NRP 68 (running):* e.g. Dr. Monika Maurhofer Bringolf, Healthy soils thanks to soil bacteria; Prof. Marcel Van der Heijden, Restoration of soil functions with the help of arbuscular mycorrhiza ([Swiss National Science Foundation \(SNSF\), 2015a](#))
- *Bulletins of the working group on soil biology (Arbeitsgruppe Vollzug Bodenbiologie, VBB) of the cantonal soil protection agencies and FOEN*
- *Verordnung über Belastungen des Bodens (VBBo) vom 1. Juli 1998 (Stand am 1. Juni 2012):* ([Schweizerischer Bundesrat, 2012](#))

Stakeholders:

- University/research institute, national/regional/local authority, others, workshop participants



CH 3.2: Material flows in the soil

Relevance of the issue and justification of the need for research:

The bio-geochemical processes in the soil are already known for the most part. More knowledge is needed, however, on which role soil organic matter plays. Unknown is also how the material flows in the soil behave under modified conditions and what impact these conditions have on the quantity of the material flows. In fact, modelling studies are already carried out at present, but they are not precise enough to be used as a basis for policy recommendations. Similarly, there is still too little knowledge of how the bio-geochemical processes in the soil can be influenced.

Specific research topics and knowledge gaps:

Natural capital

- **Role of soil organic matter:** Gain a better understanding of the role soil organic matter plays in the soil and its impacts on the agricultural production.
- **Quantitative change of material flows:** Study how the quantity of material flows changes under modified conditions.
- **Impact on biochemical processes:** Understand how the bio-geochemical processes in the soil can be impacted and controlled.

Land management

- **Impact on bio-geochemical processes:** Understand how the bio-geochemical processes in the soil can be impacted and controlled.

Stakeholders:

- University/research institute, others, workshop participants



CH 3.3: Impact of stress factors on ecosystems

Relevance of the issue and justification of the need for research:

A better understanding of the connections and dynamics between soil, sediment and water is needed to manage ecosystems in a sustainable manner. Further, more biological tests must be developed to measure the impact of contaminants on ecosystems. But not only chemical stress factors are a problem to ecosystems. Also physical factors like the effects of climate change (e.g. temperature, insolation, rainfall rates, sedimentation rates) affect the Soil-Sediment-Water-System.

Specific research topics and knowledge gaps:

Natural capital

- **Dynamics and connections in the Soil-Sediment-Water-System:** Gain a better understanding of the dynamics and connections in the Soil-Sediment-Water-System.
- **Material flow of pesticides and antibiotics:** Gain a better understanding of the material flow of pesticides and antibiotics in ecosystems across all environmental compartments.
- **Methods for measuring contaminants in ecosystems:** Improve and supplement the methods for measuring contaminants in ecosystems through biological indicators (biological tests). Study the effect of pesticide components (e.g. neonicotinoids) on ecosystems.
- **Effect of climate change on the Soil-Sediment-Water-System:** Study the effect of climate change on Swiss agriculture and its impact on the Soil-Sediment-Water-System.

Impacts

- **Material flow of pesticides and antibiotics:** Gain a better understanding of the material flow of pesticides and antibiotics in ecosystems across all environmental compartments.
- **Methods for measuring contaminants in ecosystems:** Improve and supplement the methods for measuring contaminants in ecosystems through biological indicators (biological tests). Study the effect of pesticide components (e.g. neonicotinoids) on ecosystems.
- **Effect of climate change on the Soil-Sediment-Water-System:** Study the effect of climate change on Swiss agriculture and its impact on the Soil-Sediment-Water-System.

Documents:

- [Bedarfsabklärung eines Aktionsplans zur Risikoreduktion und nachhaltigen Anwendung von Pflanzenschutzmitteln. Bericht des Bundesrates in Erfüllung des Postulates Moser vom 16. März 2012 \(12.3299\): \(Eidgenössisches Departement für Wirtschaft Bildung und Forschung WBF, 2014\)](#)

Stakeholders:

- University/research institute, workshop participants



CH 3.4: Agricultural land management

Relevance of the issue and justification of the need for research:

Agricultural land management has a major influence on soil quality. Research is needed on this subject to preserve the quality of agricultural soils in the long term. However, new land management methods only develop their positive effect when they are actually applied. Thus, research on the farmers' acceptance of land management methods is also needed.

Specific research topics and knowledge gaps:

Land management

- **Land management methods to promote soil biodiversity:** Find land management methods that promote soil biodiversity.
- **Biological plant protection:** Find herbal active ingredients that can be used in organic agriculture for plant protection.
- **Bio control methods:** Find bio control methods (living organisms - e.g. bacteria - or combinations of living organisms) for land management, yield increase and plant protection.
- **Acceptance of bio control methods:** Show how bio control methods have to be designed, that farmers actually use them. Show how these methods can be produced and applied cost-efficiently.
- **Land management methods to enhance the soil structure and stability:** Determine land management methods that enhance the stability of the soil, while maintaining productivity and the soil functions with minimal use of chemicals (research on non-tillage farming, fertilisation and application of organic matter). Identify measures that optimally stabilise the soil under specific local conditions.
- **Prevent soil compaction through vehicle selection:** Improve tractor tyres and wheels so that they do not compact the soil. Refine tools such as Terranimo (see documents).
- **Land management methods to ensure protection from the effects of climate change:** Identify and develop land management methods to protect the soils and lakes in Switzerland from the effects of climate change (e.g. increased erosion).
- **Land management methods to counteract climate change by carbon-sequestration:** Identify and develop land management methods that sequester carbon into the soil.

Documents:

- *Website "Sustainable Use of Soil as a Resource", National Research Programme NRP 68 (running):* e.g. Prof. Théodor Turlings, Fighting harmful soil organisms with nematodes and soil bacteria ([Swiss National Science Foundation \(SNSF\), 2015a](#))
- *Website Online-Tool Terranimo:* ([Hochschule für Agrar- Forst- und Lebensmittelwissenschaften \(HAFL\); Forschungsanstalt Agroscope Reckenholz-Tänikon \(ART\) et al.](#))
- *IPPC-Reports*

Stakeholders:

- University/research institute, national/regional/local authority, others, workshop participants

Research field 4: Data and harmonisation

CH 4.1: Soil data

Relevance of the issue and justification of the need for research:

There is no nation-wide soil map of Switzerland, although such a map would be an important basis for spatial planning. As conventional soil mapping is very time-consuming and expensive, research on interpolation methods along with the use of drones and satellites for digital soil mapping are needed.

Specific research topics and knowledge gaps:

Natural capital

- **Data acquisition and interpolation methods for soil maps:** Develop new, feasible data acquisition methods using drones and satellites for digital soil mapping. Develop new and improved interpolation and modelling methods to obtain area information from point data. Integrate these new methods into the conventional soil mapping methods.
- **Improve the soil information data base:** Use conventional mapping of new soil points to improve the data density.

Documents:

- *Remote Sensing of Soils:* ([Wulf; Mulder et al., 2015](#))
- *Publications of the SSSS (Swiss Soil Science Society) on traditional soil mapping (see website):* ([Soil Science Society of Switzerland \(SSSS\), 2014](#))
- *Publications of Andreas Papritz, ETH Zürich on modelling of soil data, e.g. Estimating soil organic carbon stocks of Swiss forest soils by robust external-drift kriging:* ([Nussbaum; Papritz et al., 2014](#))

Stakeholders:

- National/regional/local authority, network, SME/consultant, university/research institute, others, workshop participants



CH 4.2: Ecosystem data

Relevance of the issue and justification of the need for research:

Some of the statistical data on the state of ecosystems in Switzerland are out of date (because of rapid degradation) or are simply unavailable. Such data is urgently needed to be able to manage ecosystems in a sustainable way. Furthermore a monitoring system to observe the flows of pesticides and antibiotics through all compartments of the ecosystem is urgently needed.

Specific research topics and knowledge gaps:

Impacts

- **Data on the quality of ecosystems:** Assess how the quality of ecosystems has changed over time in Switzerland. Assess the pollution of ecosystems by contaminants. Identify the contaminants and the pollution hotspots.
- **Data on the movement of erosion material:** Assess the movement of washed-away soil and the accumulation sites.
- **Monitoring pesticides and antibiotics:** Develop a monitoring system to monitor pesticide and antibiotic flows through all compartments of the ecosystem.

Stakeholders:

- University/research institute, workshop participants

CH 4.3: Sediment data

Relevance of the issue and justification of the need for research:

The Swiss Soil Monitoring Network (Nationale Bodenbeobachtung, NABO) is a system that allows Switzerland to monitor the soil quality across the country. With the National Groundwater Monitoring (Nationale Grundwasserbeobachtung, NAQUA) Switzerland observes the groundwater resources. However, the sediment quality is not monitored.

Specific research topics and knowledge gaps:

Natural capital

- **Monitoring sediment quality:** Develop a monitoring system to monitor the sediment quality in Switzerland.

Stakeholders:

- University/research institute, workshop participants



CH 4.4: Harmonisation

Relevance of the issue and justification of the need for research:

Understanding how ecosystems function requires close cooperation between researchers from different disciplines. However, there is currently a lack of basis documents that make the connection between soil, sediment and water. As well missing in the field of ecosystems are uniform data acquisition and sampling methods, binding standards for biological tests and a standardised terminology. In the field of soils, better links between existing soil data records as well as uniform soil description standards would improve the information base a lot. NABODAT is a soil information system with the aim to link the already existing soil data in Switzerland.

Specific research topics and knowledge gaps:

Natural capital

- **Missing basis documents on the Soil-Sediment-Water-System:** There is a lack of basis documents interlinking soil, sediment and water.
- **Missing harmonisation in the field of ecosystems:** Standardise the vocabulary used by different scientific disciplines and also by the administrative authorities. Standardise the sampling methods between cantons and between states for collecting ecosystem data. Standardise the methods for assessing and analysing ecosystem data. Develop binding standards for biological tests to identify stress factors in ecosystems.
- **Missing harmonisation in the field of soils:** Develop binding soil description standards. Bring existing soil data records together. Coordinate the soil strategies between different states.

Land management

- **Missing harmonisation in the field of soils:** Develop binding soil description standards. Bring existing soil data records together. Coordinate the soil strategies between different states.

Stakeholders:

- University/research institute, workshop participants

Research field 5: Implementation and awareness-raising activities

CH 5.1: Conflicts and dialogue regarding land and soil use

Relevance of the issue and justification of the need for research:

There are no adequate instruments in place for resolving conflicts regarding land and soil use. Furthermore, in practice, there is often a lack of concrete knowledge on how to weigh up interests against each other and on how to hold stakeholder dialogues. As the land and soil in Switzerland are under a lot of pressure, support is needed in this field.

Specific research topics and knowledge gaps:

Land management

- **Methods for weighing up interests:** Show how interests can be weighed up in practice. Show how an effective stakeholder dialogue is conducted.
- **Approaches to resolving conflicts regarding land and soil use:** Find approaches to resolving conflicts that involve the stakeholders concerned. Create conflict-resolution 'laboratories' in which general conditions and goals are defined and potential solutions are worked out.

Documents:

- *Testplanung – Methode mit Zukunft: Grundzüge und Hinweise zur praktischen Umsetzung am Beispiel der Testplanung Riedholz/Luterbach:* ([Scholl; Vinzens et al., 2013](#)) (the mentioned „laboratories“ could be built up analogically)

Stakeholders:

- National/regional/local authority, SME/consultant, workshop participants



CH 5.2: Concrete implementation and project management

Relevance of the issue and justification of the need for research:

For several spatial planning issues in Switzerland, visions and targets have been formulated that point to the direction future development should take. However, these visions and targets are partly not applied, because it is not clear how to implement them in practice. It is crucial to develop support measures and guidelines that serve this purpose. Furthermore, major spatial planning projects represent a challenge because they cover periods of up to 50 years. Therefore, project planning must allow some scope for uncertainties, to be able to respond to new developments also after the start of the project.

Specific research topics and knowledge gaps:

Land management

- **Concrete implementation of visions and targets:** Show how visions and targets can be brought down to a feasible level and integrated in the planning process. Develop appropriate implementation instruments.
- **Project management of long-term projects:** Indicate how long-term spatial planning should be refined so as to be able to react to new developments after the start of the project. Improve the process design for long-term projects. Document examples of best practice in interdisciplinary long-term projects.

Stakeholders:

- National/regional/local authority, SME/consultant, network, others, workshop participants



CH 5.3: Cooperation and knowledge transfer

Relevance of the issue and justification of the need for research:

A lot of existing knowledge is never applied in practice due to insufficient cooperation and exchange. In addition, there is a flood of information today which makes it difficult to find relevant knowledge from other disciplines. Searches by keywords are insufficient because different disciplines use different terminology.

Specific research topics and knowledge gaps:

Impossible to assign to the overarching themes

- **Organise interdisciplinary cooperation:** Document examples of how smooth interdisciplinary cooperation can be organised between practitioners, between researchers as well as between practitioners and researchers.
- **Organise and explore transdisciplinary processes:** Show how exchange can be enhanced by transdisciplinary processes. Explore the concrete implementation and the effects of transdisciplinary processes further.
- **Transfer of knowledge:** Identify how knowledge transfer works. Show how knowledge transfer has to be designed, so that knowledge actually is going to be implemented.
- **Interlink knowledge:** Develop data mining tools to establish interrelations between knowledge from different disciplines and to make it available efficiently.

Stakeholders:

- National/regional/local authority, university/research institute, workshop participants



CH 5.4: Awareness-raising

Relevance of the issue and justification of the need for research:

Soil protection, protection of cultivated land, sustainable production and consumption are issues that do not rate high on the radar of the population at large. Little notice is taken of the work that farmers do for the general public. This means that there is a need to establish knowledge, on how to raise public awareness of these issues. Moreover, many farmers fear that ecological management means production losses. Strategies must therefore be developed to show how farmers could get convinced to strive for a more sustainable production. In the past, the OLMA and BEA agricultural trade fairs were events where genuine exchanges between farmers and non-farmers took place. Today, these agricultural trade fairs are more dedicated to entertainment. Such real interaction between farmers and non-farmers should be restored so that the two sides have the chance to understand each other better.

Specific research topics and knowledge gaps:

Impossible to assign to the overarching themes

- **Awareness-raising initiatives on sustainability issues among the general public:** Develop approaches which show how to raise awareness about soil protection, protection of cultivated land, sustainable production and consumption within the general public.
- **Awareness-raising initiatives on sustainability issues among farmers:** Develop strategies on how to convince farmers to produce more ecologically sound and cause less damage to the soil (e.g. smaller tractors). Develop approaches that motivate farmers to apply and implement new knowledge.
- **Strategies to bring farmers and non-farmers closer together:** Develop strategies on how farmers and non-farmers could be brought closer together and therefore get a better understanding of one another's view.

Documents:

- *Soil biodiversity and bioindication: From complex thinking to simple acting:* ([Havlicek, 2012](#))
- *Motivations for implementation of ecological compensation areas on Swiss lowland farms:* ([Home; Balmer et al., 2014](#))

Stakeholders:

- University/research institute, national/regional/local authority, workshop participants

2.4 Experiences regarding connecting science to policy/practice

2.4.1 Use of knowledge

Sources of knowledge

As shown in the table below, for most of the interviewed stakeholders, the personal network is very important to gain new knowledge for doing their job. Scientific papers and other publications are also important sources of knowledge. Besides, many stakeholders inform themselves at conferences, congresses and workshops.

Sources of knowledge	Number of mentions
Colleagues, personal network	16
Scientific publications	15
Conferences, congresses, workshops	11
Other publications and reports	10
Internet	8
Professional associations, networks, platforms, advisory groups	5
Databases and basic information of the administration	5
Experiences and Examples from Switzerland	3
Experiences and Examples from abroad	3
Research- or consultant projects ordered by your institution	3
Media (print, radio, TV...)	1
Twitter, Facebook	1
Library, archive	1
Interviews	1
Public-private-partnerships	1

n=19



Use of scientific knowledge by persons from the non-science sector

All stakeholders from the non-science sector use scientific knowledge at work. This may be through scientific papers, other scientific publications or through conferences and congresses they attend to. Some use scientific knowledge every day; others use it particularly when they start a new project to get new input and to know the state-of-the-art.

Knowledge transfer from science to policy and practice

Because it is difficult to measure how much state-of-the-art scientific knowledge has been used for the formulation of existing policies in Switzerland, we asked our stakeholders, which institutions in Switzerland help integrating scientific knowledge into policy and practice, and how this transfer could be improved. In the following table we give an overview on the institutions in Switzerland, where knowledge flows from the science to the non-science sector or the opposite direction. The table has been complemented at the Swiss NKS-workshop; it is not conclusive, however. After that, we show in which fields knowledge transfer is insufficient today. How knowledge transfer could be improved, we discuss in section 16.4.3 *Science- policy- practice: Experiences in doing research and synthesizing of scientific knowledge by stakeholders from the non-science sector*. Many of the stakeholders' experiences in doing research or synthesizing scientific knowledge, referred to knowledge transfer and its improvement. To prevent repetitions, we decided to discuss this topic only in section 16.4.3.

Knowledge transfer science <=> policy, practice

Research:

- SNF, Swiss National Science Foundation (e.g. knowledge transfer in National Research Programmes, NRPs)
- Universities of applied sciences (e.g. training days, master thesis in collaboration with private enterprises)
- Universities (e.g. master thesis in collaboration with private enterprises)
- Agroscope, Swiss centre of excellence for agricultural research (e.g. Exchange with Federal Office for Agriculture FOAG, exchange with farmers)
- ETH, EPFL, Swiss Federal Institute of Technology (e.g. NSL - Network City and Landscape, conferences)
- WSL, Swiss Federal Institute for Forest, Snow and Landscape Research (e.g. Forum for knowledge, courses for forestry offices, contact with soil protection agencies)
- EAWAG, Swiss Federal Institute of Aquatic Science and Technology
- FiBL, Research Institute of Organic Agriculture

Administration:

- Working groups within and between Federal Offices with people from science, policy and practice (e.g. Federal Office for the Environment FOEN: VBB, Arbeitsgruppe Vollzug Bodenbiologie [working group on soil biology])
- Working groups within and between cantons, meetings of cantonal agencies (e.g. annual meeting of the cantonal soil protection agencies)
- Knowledge transfer within research studies, ordered by the administration

Networks, associations, platforms:

- SSSS, Swiss Soil Science Society (e.g. working groups, conferences, excursions, training days, education for pedological site agents)
- ROSOL, Commission romande pour la protection des sols
- Agridea (e.g. conferences, consulting, training days for farmers)
- Landwirtschaftliche Schulen, Gartenbauschulen
- SUAN, Swiss Urban Agriculture Network
- Forum Landschaft [Forum Landscape] (e.g. conferences, workshops, newsletter)
- Sanu [Trainings and education in the environmental field]
- GWG, Gebirgswaldpflegegruppe [Mountain Forest Cultivation Group]
- NEROS, Netzwerk Mineralische Rohstoffe Schweiz [Network Mineral Raw Materials Switzerland]
- Swiss Academies of Arts and Sciences (e.g. td-net, Network for Transdisciplinary Research): SCNAT, Swiss Academy of Sciences (e.g. SWIFCOB, Swiss Forum on Conservation Biology); SAHS, Swiss Academy of Humanities and Social Sciences; SATW, Swiss Academy of Engineering Sciences
- Regiosuisse, network unit for regional development
- SIA, Swiss Society of Engineers and Architects (e.g. conferences, publications)
- VSS, Schweizerischer Verband der Strassen- und Verkehrsfachleute [Swiss Society of highway and transport experts]
- Netzwerk Raumplanung [Network Spatial Planning]
- VLP-ASPAN, Schweizerische Vereinigung für Landesplanung [Swiss association for spatial planning] (e.g. knowledge transfer and integration, conferences, courses, publications)
- FSU, Fachverband Schweizer Raumplaner [association of Swiss Spatial Planners] (e.g. conferences)
- Modellvorhaben nachhaltige Raumentwicklung [Pilot programme sustainable spatial development]
- Network for Transdisciplinary Research (td-net)
- Internet-Tools (e.g. Terranimo, erosion risk maps)
- Social networks: Groups on spatial planning (e.g. on Xing, LinkedIn, Twitter, Facebook)

Journals:

- Forum Raumentwicklung [Journal of the Federal Office for Spatial Development, ARE]
- disP - The Planning Review [Journal of the ETH Zurich]
- Hotspot [Journal of the Swiss Biodiversity Forum]
- N + L inside [Journal of KBNL and the Federal Office for the Environment FOEN]
- Hochparterre [News in architecture, planning and design]
- Tec21 [Journal of the SIA]
- Inforaum [Journal of VLP-ASPAN]
- Raum & Umwelt [Journal of VLP-ASPAN]
- Swiss Bulletin for Applied Geology
- Wald und Holz [Journal of forestry and timber industry]
- Die Grüne [Magazine on Swiss agriculture]
- Agrarforschung Schweiz [Journal of Agroscope]



The interviewees and also the workshop participants stressed, that knowledge not only flows between science and policy/practice, but also within policy/practice. In many of the institutions mentioned in the table above, such knowledge transfer also takes place. However, some additional institutions have been mentioned where knowledge mainly is transferred within policy and practice, such as the KPK, Kantonsplaner Konferenz [Conference of cantonal planners], the Kantonsgeologen Konferenz [Conference of cantonal geologists], the KBNL, Konferenz der Beauftragten für Natur- und Landschaftsschutz [Conference of conservation and landscape protection agents], Swissmelio, Schweizerische Vereinigung für ländliche Entwicklung [Swiss association for rural development], the Gemeindeverband [association of the municipalities] and Städteverband [association of the cities] and agricultural fairs, such as BEA or OLMA.

Missing knowledge transfer

In several sectors, knowledge transfer between science and policy/practice is viewed as insufficient in Switzerland. In the field of **surface water**, journals are missing that process scientific knowledge for non-scientists. Furthermore, a nationwide network that comprises surface water experts from the science and the non-science sector would be needed to enhance knowledge exchange. In the field of **geological underground** the exchange between scientists and the industry is insufficient – however, more public-private-partnerships would improve this situation. Moreover, professionals from the industry would need continuing high-quality educational trainings to keep themselves up to date. In the field of **spatial planning**, more direct contact between scientists and policymakers is to be established. Finally, a sound education on urban planning is missing in Switzerland.

2.4.2 Possibilities to set the agenda

The interviewed stakeholders have different methods and opportunities to influence research agendas in Switzerland.

Stakeholders from **networks and NGOs** try to influence the setting of research topics by inputs in conferences and workshops and by expert opinions they give. Besides, some of them are part of an advisory group within the Swiss administration and bring in important input on knowledge gaps this way.

Stakeholders from **Federal Offices** give thematic inputs for new National Research Programmes (NRPs) of the Swiss National Science Foundation. They also may influence the research concepts of their own office (*see chapter 16.3.2 Topics / research agendas to include in the SRA: Research agendas by Federal Offices and other Swiss institutions related to the scope of INSPIRATION*). This so called “departmental research” (Ressortforschung) comprises research within the Federal Offices, but also research they fund externally ([Bundesamt für Raumentwicklung \(ARE\), 2012](#)). By funding research, Federal Offices influence, which research topics are actually getting explored.

Stakeholders from **research institutions** influence the setting of research topics through their own work and interests. Besides, researchers give inputs for new NRPs and are asked for expert opinions during the planning phase of NRPs.



2.4.3 Science – policy – practice

Experiences in doing research and synthesizing of scientific knowledge by stakeholders from the non-science sector

Most of the stakeholders from the non-science sector were already involved in research projects and/ or have synthesized scientific knowledge for policy and practice. In the following we give an overview on the experiences the interviewed stakeholders thereby made and on their suggestions for improvement.

Some stakeholders regard knowledge transfer in Switzerland as sufficient and well established. More stakeholders however, consider the **transfer of knowledge from science to policy and practice** as a crucial point which needs improvement. From their point of view, more emphasis should be laid on this aspect:

- **Processing and disseminating results:** Results of a research project cannot just be transferred to policy and practice. They have to be processed, valued and brought down to an applicable level. Very helpful for people from policy and practice are good examples – they are much easier to understand and adopt. Also helpful are “guidelines for successful implementation” with tips and support material for practitioners. One stakeholder suggests sending new results directly to policy makers. Other stakeholders believe it to be more efficient to let communication specialists do this job – such as institutions that process scientific knowledge for policy and practice professionally and make it available on a platform. Networks with members from science, policy and practice are viewed also as very valuable to disseminate knowledge. Yet another approach could be the use of new media to reach particular target groups.
- **Use of language:** Special attention has to be turned to the language of texts addressing people from the non-science sector. Such texts have to be easy to understand and not in academic but in a more journalistic language.
- **Responsibilities for communication:** In every research project one person should be responsible for the communication between science and the non-science sector. From the beginning of a project, this person is to be in close contact with policy, practice and the scientists, to ensure that the research project also addresses the important questions of the non-science sector. The job of this person would also be to ensure that the scientists produce results on an applicable level.
- **Cooperation of science and policy/practice:** To enhance knowledge transfer, the interviewed stakeholders suggest fostering public-private-partnerships, promoting transdisciplinary projects and taking up the problems of practitioners and policy makers to a greater extent.
- **Political interests as an obstacle to knowledge transfer:** Some stakeholders view political interests as an obstacle to knowledge transfer. They experience that scientific results sometimes are being ignored, because they do not correspond with the policy makers’ political beliefs. In other cases policy makers may exploit scientific knowledge for their own purposes.



Transdisciplinary and interdisciplinary research are other topics that have been mentioned by several stakeholders:

- **Transdisciplinarity as a misapprehended concept:** In the interviews it has been criticised that transdisciplinarity is a term that often is misapprehended. A project, where scientists have some contact with persons from the non-science sector is not yet a transdisciplinary project. For transdisciplinarity real involvement from the very beginning of the project until the end is mandatory. However, correctly applied, the method is considered as an option that facilitates the adoption and use of knowledge by persons from policy and practice.
- **Good examples of transdisciplinary processes and institutions:** The National Research Programme “NRP 61, Sustainable Water Management” and the National Centre of Competence in Research “NCCR North-South” have been mentioned as good examples of transdisciplinary research. Moreover, in Switzerland the Swiss Academies of Arts and Science, which is an association of the four scientific academies in Switzerland, operate a Network for Transdisciplinary Research (td-net). The aim of td-net is to promote learning processes between inter- and transdisciplinary scientists and to foster inter- and transdisciplinary processes by providing expertise, methods and tools ([Swiss Academies of Arts and Sciences, 2014](#); [Swiss Academies of Arts and Sciences, 2015](#)). At the ETH Zurich, the Department of Environmental Systems Science (USYS) runs the Transdisciplinarity Lab (TdLab) which trains students, coordinates and conducts transdisciplinary research and supports transdisciplinary processes ([ETH Zurich, 2016](#)). The TdLab has been mentioned in the interviews as a good example for an institution fostering transdisciplinarity.
- **Interdisciplinary research and implementation:** Interdisciplinary research and implementation are viewed as important. Particularly in projects within the federal or cantonal administration, joint approaches should be found.

Assessment of the impact of scientific research

According to the interviewees, the societal, political or economic impact of scientific research in the fields of spatial planning, land use and soil management is not assessed in Switzerland – with two exceptions. Firstly, Agroscope, Swiss centre of excellence for agricultural research, performs an annual efficacy assessment (Wirksamkeitsabschätzung). The indicators for efficacy are the research results that are actually integrated in Swiss legislation. The efficacy assessment is an internal document. Secondly, the effectiveness of National Research Programmes (NRPs) is getting evaluated from time to time. In the evaluation from 2007, the implementation and the use of research results from NRPs is assessed among other parameters ([Staatssekretariat für Bildung und Forschung \(SBF\), 2007](#)).

Science-policy-interface documents

In the following, documents are listed that discuss the science-policy-interface.

Research agendas from the Swiss Federal Offices, discussing the science-policy-interface:



- *Forschungskonzept Land- und Ernährungswirtschaft 2013-2016:* ([Bundesamt für Landwirtschaft \(BLW\), 2012](#)) Research agenda on agriculture and nutrition economy of the Federal Office for Agriculture (FOAG)
- *Forschungskonzept Nachhaltige Raumentwicklung und Mobilität 2013-2016:* ([Bundesamt für Raumentwicklung \(ARE\), 2012](#)) Research agenda on sustainable spatial development and mobility of the Federal Office for Spatial Development (ARE)
- *Forschungskonzept Nachhaltiger Verkehr 2013-2016:* ([Bundesamt für Strasse \(ASTRA\) & Bundesamt für Verkehr \(BAV\), 2012](#)) Research agenda on sustainable transport of the Federal Office of Transport (FOT)
- *Forschungskonzept Umwelt für die Jahre 2013-2016. Schwerpunkte, Forschungsbereiche und prioritäre Forschungsthemen:* ([Miranda; Jacquat et al., 2012](#)) Master plan on environmental research of the Federal Office for the Environment FOEN

Further science-policy-interface documents:

- *Identifying urban transformation dynamics: Functional use of scenario techniques to integrate knowledge from science and practice:* ([von Wirth; Wissen Hayek et al., 2014](#))
- *Soil biodiversity and bioindication: From complex thinking to simple acting:* ([Havlicek, 2012](#))
- *Engagement at the Science–Policy Interface:* ([Hering; Dzombak et al., 2014](#))
- *How to Manage Knowledge Sharing: Experiences from Research Practice:* ([Fry; Zingerli et al., 2011](#))
- *Mit Wissenschaft die Politik erreichen:* ([Akademien der Wissenschaften Schweiz, 2015](#)) Swiss Academies Report on the science-policy interface

2.5 National and transnational funding schemes

2.5.1 Funding schemes and possibilities for research funding

Public and private funding schemes

In the following table, we provide an overview on public and private funding schemes on regional, national, European and international/transnational level that were mentioned during the interviews or the workshop. After that, some of the funding schemes are explained in a more detailed way. As the INPIRATION-Project is interested on experiences how to best set up funding options so that societal demands are getting fulfilled and new knowledge is taken up, we would especially like to point to the National Research Programmes by the Swiss National Science Foundation which are also discussed in the following.

R&I funding options collated for country: Switzerland			
Name*	Research and Innovation funder**	What and/or whom do they fund?***	More info****
Regional			
<i>Foundations</i>			
1	Hamasil Foundation	Hamasil Foundation	Inter alia, support of research projects on sustainability and ecology (active in the region of Zurich) http://www.hamasil.ch
<i>Cantonal Administrations</i>			
2	Cantonal support of research projects	Cantons	Cantons sometimes support research projects they are interested in
National			
<i>Foundations</i>			
1	Sophie und Karl Binding Foundation	Sophie und Karl Binding Foundation	Inter alia, support of concrete projects and applied research projects in Switzerland to protect and enhance the quality of the landscape and to prevent urban sprawl. http://www.binding-stiftung.ch
2	Ernst Göhner Foundation	Ernst Göhner Foundation	Inter alia, support of research projects in all disciplines at Swiss universities (no basic and no commercial research). However, they do not accept applications from medical, natural and technical science because in these fields, they define the topics they fund with the research institutions directly. http://www.ernst-goehner-stiftung.ch
3	Gebert Rüt Foundation	Gebert Rüt Foundation	Support of innovative projects and young academics at Swiss universities. Funding of applied research with the aim to produce something totally new and to foster knowledge transfer. http://www.grstiftung.ch/en.html
4	Maria und Heinrich Th. Uster-Foundation	Maria und Heinrich Th. Uster-Foundation	Inter alia, funding of research and implementation of technologies to enhance life quality in settlement areas such as energy efficiency, fresh air supply and noise prevention. Funding of projects that promote an economical use of the soil (implementation not research). http://www.usterstiftung.ch/index.php
5	Mava-Foundation	Mava-Foundation	Support of projects that aim at conserving biodiversity and ecosystem functions, fostering sustainable management and the use of natural resources and promoting a strong and effective conservation community. The foundation funds projects in the Mediterranean, Coastal West Africa, the Alpine Arc and all of Switzerland. http://en.mava-foundation.org/



6	Foundation for the Third Millennium	Foundation for the Third Millennium	Support of projects that foster sustainability. The Foundation favors projects from Switzerland and the surrounding countries and does not support projects that are solely research.	http://www.stiftung-drittes-millennium.com/en/stiftung/stiftungszweck.html
7	Foundation Mercator Schweiz	Foundation Mercator Schweiz	Inter alia, support of research and implementation projects in the fields of environmental responsibility, sufficiency, and ecological agriculture. Promotion of inter- and transdisciplinary approaches and knowledge transfer. The project partner generally has to be located in Switzerland.	http://www.stiftung-mercator.ch/
<i>Networks, Societies, NGOs</i>				
8	Research of the SIA, Swiss Society of Engineers and Architects	SIA, Swiss Society of Engineers and Architects	Funding of research projects they perceive as important knowledge gaps.	http://www.sia.ch/en/the-sia/the-sia/
9	Research of the VSS, Schweizerischer Verband der Strassen- und Verkehrsfachleute [Swiss Society of highway and transport experts]	VSS, Schweizerischer Verband der Strassen- und Verkehrsfachleute (the financial resources stem from the Swiss petroleum tax)	Funding of application-oriented research projects in the fields of highways and transport.	http://www.vss.ch/
10	Financial contribution to research projects by Bio Suisse	Bio Suisse	Sometimes supports research projects linked to biological agriculture	http://www.bio-suisse.ch/en/home.php
11	Financial contribution to research projects by NGO's, e.g. Pro Natura	NGO's, e.g. Pro Natura	Sometimes support research projects linked to their field of activity	http://www.pronatura.ch/aktuell
<i>Commercial Companies</i>				
12	Financial contribution to research projects by commercial companies, e.g. Migros, Coop, Pensimo	Commercial Companies, e.g. Migros, Coop, Pensimo	Sometimes support research projects linked to their field of activity	
<i>Swiss National Science Foundation</i>				
13	Project Funding	SNF Swiss National Science Foundation	Funding opportunity, open to experienced scientists of all disciplines working in Switzerland	http://www.snf.ch/en/funding/projects/Pages/default.aspx
14	Career Funding	SNF Swiss National Science Foundation	Funding of fellowships, respectively wages for researchers and sometimes additionally funding to realise the project	http://www.snf.ch/en/funding/careers/Pages/default.aspx
15	NRP, National Research Programmes	SNF Swiss National Science Foundation	Funding of research projects that approach today's key challenges in Switzerland. The topics for new NRPs are selected by the Swiss Federal Council.	http://www.snf.ch/en/funding/programmes/national-research-programmes-nrp/Pages/default.aspx http://www.snf.ch/SiteCollectionDocuments/nrp_brochure_e.pdf
16	Sinergia	SNF Swiss National Science Foundation	Funding of inter-, multi- and interdisciplinary research projects where 3-4 research groups collaborate. One research group may be from abroad, if there is no equivalent group in Switzerland.	http://www.snf.ch/en/funding/programmes/sinergia/Pages/default.aspx
17	NCCR, National Centres of Competence in Research	SNF Swiss National Science Foundation	Funding of research projects on topics of strategic importance for Swiss science, economy and society.	http://www.snf.ch/en/funding/programmes/national-centres-of-competence-in-research-nccr/Pages/default.aspx http://www.snf.ch/SiteCollectionDocuments/nccr_brochure_e.pdf#search=ncr%20brochure
<i>Federal Offices and Commissions</i>				
18	COST-Actions funded by the SERI, State Secretariat for Education, Research and Innovation	SERI, State Secretariat for Education, Research and Innovation	Support of research projects related to COST-Actions	http://www.sbf.admin.ch/themen/01370/02396/02404/02405/index.html?lang=en
19	CTI Projects	CTI, Commission for Technology and Innovation	Support of applied research projects with high innovation potential, built up in close collaboration between scientists and commercial companies. The costs of the research are shared between the company and the CTI.	https://www.kti.admin.ch/kti/en/home/wen-wir-foerdern/forschende.html
20	Modellvorhaben des Bundes [Pilot Programme Sustainable Spatial Development]	Modellvorhaben des Bundes [Pilot Programme Sustainable Spatial Development]	Support of innovative projects in Swiss sustainable spatial planning.	http://www.are.admin.ch/themen/raumplanung/modellvorhaben/index.html?lang=de
21	ARE, Federal Office for Spatial Development	ARE, Federal Office for Spatial Development	Internal research, cooperations with other institutions and contract research in the field of spatial development.	http://www.are.admin.ch/dokumentation/publikationen/00014/00501/index.html?lang=en



22	Research of FEDRO, Federal Roads Office and FOT, Federal Office of Transport	FEDRO, Federal Roads Office; FOT, Federal Office of Transport	Internal research, cooperations with other institutions and contract research in the fields of transport and roads.	http://www.astra.admin.ch/dienstleistungen/04844/04853/04864/?lang=de
23	Research of FOEN, Federal Office for the Environment (e.g. Forest and timber research fund of FOEN, Umwelttechnologieförderung of FOEN [environmental technology aid])	FOEN, Federal Office for the Environment	Internal research, cooperations with other institutions, contract research in the field of environment.	http://www.bafu.admin.ch/publikationen/publikation/01650/index.html?lang=de http://www.bafu.admin.ch/wald/01234/01238/index.html?lang=de , http://www.bafu.admin.ch/innovation/06629/06633/index.html?lang=de
24	Research of FOPH, Federal Office of Public Health	FOPH, Federal Office of Public Health	Internal research, cooperations with other institutions and contract research in the field of public health.	http://www.bag.admin.ch/themen/gesundheitspolitik/00388/00390/01221/
25	Research of SFOE, Swiss Federal Office of Energy	SFOE, Swiss Federal Office of Energy	Internal research, cooperations with other institutions and contract research in the field of energy.	http://www.ressortforschung.admin.ch/html/dokumentation/Forschungskonzepte_13-16/Forschungskonzept_Nachhaltige_Raumentwicklung-und_Mobilitaet_2013-16_d.pdf
26	Research of FOAG, Federal Office for Agriculture	FOAG, Federal Office for Agriculture	Internal research, cooperations with other institutions and contract research in the field of agriculture.	http://www.blw.admin.ch/themen/00008/
27	Research of Swisstopo, Federal Office of Topography	Swisstopo, Federal Office of Topography	Internal research, cooperations with other institutions and contract research in the field of geo-information and geological underground.	http://www.swisstopo.admin.ch/internet/swisstopo/en/home.html
European				
<i>European Commission</i>				
1	Interreg: Alpine Space-Programme	European Regional Development Fund (ERDF)	European transnational cooperation programme for the alpine region. Finding answers to alpine issues.	http://www.alpine-space.eu/
2	Horizon 2020	European Commission and private investments	EU Research and Innovation programme	https://ec.europa.eu/programmes/horizon2020/
3	JPI Joint Programming Initiatives, e.g. FACCE-JPI (Joint Programming Initiative on Agriculture, Food Security and Climate Change)	The members of each Joint Programming Initiative contribute to it financially.	Pooling of national research activities by common funding.	http://ec.europa.eu/research/era/joint-programming_en.html http://www.facejpi.com/
International/ Transnational				
<i>Commercial Companies</i>				
1	Financial contribution to research projects by commercial companies, e.g. IBM, Michelin, Syngenta	Commercial Companies, e.g. IBM, Michelin, Syngenta	Sometimes support research projects linked to their field of activity	
<i>NGO's, Agencies</i>				
2	Financial contribution to research projects by NGO's, e.g. WWF	NGO's, e.g. WWF	Sometimes support research projects linked to their field of activity	
3	IEA (International Energy Agency) Technology Collaboration Programmes (formerly: Implementing Agreements)	Technology Collaboration Programmes are funded by their participants.	Funding of projects on energy technology research, development and deployment.	http://www.iea.org/tcp

The Swiss National Science Foundation (SNSF)

The Swiss National Science Foundation is a private foundation, which operates on behalf of the Swiss Government. It is the major funding institution for scientific research in Switzerland and funds research in all academic disciplines. The SNSF has different funding instruments at hand: *“Project funding is aimed at experienced researchers working in Switzerland who wish to obtain funding for a project of their own. The research topic can be chosen freely”* ([Swiss National Science Foundation \(SNSF\), 2015d](#)). However, the salary has to be covered by the scientist’s research institution. Within the career funding schemes the researcher’s person stands in the centre. Scientists apply for a fellowship, respectively salary and sometimes additionally for funding to realise their project. With the programme funding schemes, 12 funding instruments are available where the conceptual/organisational framework or the topic already is given. One type of these programmes are the National Research Programmes (NRPs) that address today’s key challenges in Switzerland. Every



two to three years the Swiss Federal Council chooses two to four topics for new NRPs, covering pressing societal, political and economic issues. NRPs give a platform to researchers, policymakers and practitioners to exchange their views and opinions and bring them together. The idea of this exchange is to ensure that knowledge is generated that really helps solving the addressed problem and to facilitate knowledge transfer. Another funding programme is Sinergia which focus on inter-, multi- and unidisciplinary projects where three to four different research groups collaborate. In Sinergia projects, one research group may be from abroad if there is no equivalent group in Switzerland. National Centres of Competence in Research (NCCRs) are a programme to fund long-term high-quality research projects in fields of strategic importance for Swiss science, business and society. It promotes partnerships between science and non-science institutions and aims at enhancing knowledge transfer. Apart from these funding programmes, the SNSF also funds scientific infrastructure and other initiatives to enhance knowledge transfer ([Swiss National Science Foundation \(SNSF\), 2011](#); [Swiss National Science Foundation \(SNSF\), 2014](#); [Swiss National Science Foundation \(SNSF\), 2015c](#)).

COST-Actions funded by the State Secretariat for Education Research and Innovation (SERI)

In Switzerland the SERI is responsible for the management of COST-Actions. It decides in which COST-Actions Switzerland takes part in and has a budget to fund certain parts of research projects linked to COST-Actions ([State Secretariat for Education Research and Innovation \(SERI\), 2015](#)).

Modellvorhaben nachhaltige Raumentwicklung [Pilot Programme Sustainable Spatial Development]

The Pilot Programmes Sustainable Spatial Development are an initiative of the Federal Government to promote new approaches and methods in sustainable spatial planning. Local, regional and cantonal actors may propose innovative projects which get financial support if selected. The Pilot Programmes are getting documented and shall serve as a model and example for further projects ([Bundesamt für Raumentwicklung \(ARE\), 2015](#)).

CTI Projects

CTI Projects are research projects of applied science with a high innovation potential, which are built up in close collaboration between scientists and commercial companies. The Commission for Technology and Innovation (CTI) funds 50% of the research costs while the business partner pays the other half. In this way transfer of knowledge and technology shall be enhanced ([Commission for Technology and Innovation \(CTI\), 2015](#)).



2.5.2 Gaps in financial resources for research

Missing funding mechanisms

In this section we present the results from the interviews and the workshop on funding schemes that today are missing and topics which lack of funding opportunities.

- **New financial sources for the generation of soil data:** The generation of soil data in Switzerland is a task of the cantons. However, at the moment most of the cantons are reducing their expenses. Therefore cantonal soil inventories are often not further extended. As soil data is very important for management and planning issues, new financial sources have to be found. One way to find money for this could be a property appreciation tax (a tax on the increased value of a piece of land, when it is rezoned from agricultural zone to building zone).
- **Commonly funded bottom-up research:** Another interesting funding option for research projects dealing with soil and land issues could be bottom-up induced research. The Federation and the cantons could set up a funding scheme, where local actors could bring in research questions which are important for them to be answered. In addition to the financial contribution by the public authorities, also the local actors would have to invest into the research project.
- **Funding of half-applied research:** Funding mechanisms are missing for projects that are not anymore basic, but not yet applied science. One interviewee indicated that within the NRPs, the Swiss National Science Foundation funds such half-applied research. However, it is one of the few institutions that does so in Switzerland. Besides, the interviewee points out that NRPs are always limited to a certain topic and to a fixed duration. Thus, setting-up constant funding mechanisms for half-applied research projects would be important. Another stakeholder specifies, that funding especially is needed for projects that fall into “the valley of death” – the area between research and commercial application. For further information see the article *“Bridging the Valley of Death: Lessons Learned From 14 Years of Commercialization of Technology Education”* ([Barr; Baker et al., 2009](#)).
- **Crowdfunding:** For research on societal challenges that are often discussed in general public, crowdfunding is viewed as an interesting alternative funding option.

Funding of transdisciplinary research

For transdisciplinary research projects it is often difficult to find money. To change this, one stakeholder suggests setting up good examples of transdisciplinary research that show the benefits of the approach. However, to find funders for transdisciplinary projects is not the only difficulty; for researchers that include practitioners as equivalent partners into the whole research process, it is not easy to get ahead professionally and make a career. This should also be considered when trying to promote transdisciplinarity.



2.6 Annexes

Annex Ia: NKS interviews and workshop participants in Switzerland

NKS Interviews

nr	Name of the entity	Contact person	funder	end user	knowledge provider	national-regional-local authority	university/research institute	SME /consultant	business and industry	NGO	network	other	soil	sediment	water	land use-management
1	Federal Office for the Environment FOEN, Soil Section	Roland von Arx	1	1	1	1							1			
2	Federal Office for Spatial Development ARE, Section for Settlements and Landscape	Reto Camenzind	1	1	1	1										1
3	Soil Science Society Switzerland SSSS Bern University of Applied Sciences: School of Agricultural, Forest and Food Sciences HAFL	Stéphane Burgos		1	1		1				1		1			1
4	Zurich University of Applied Sciences, Research Group Soil Ecology Soil Science Society Switzerland SSSS Netzwerk Raumplanung [Network Spatial Planning]	Beatrice Kulli		1	1		1				1		1			1
5	Landscape Forum (Forum Landschaft) Head of knowledge transfer, National Research Programme "Soil as a Resource" (NRP 68) steiger texte, konzepte, beratung	Urs Steiger		1	1			1			1	1	1	1	1	1
6	Swiss Foundation for Landscape Conservation (SL)	Raimund Rodewald		1	1					1						1
7	Credit Suisse, Real Estate Research	Fabian Waltert		1					1							1
8	Swisstopo, Swiss Geological Survey	Christian Minnig	1	1	1	1							1	1		
9	Research Institute of Organic Agriculture FibL, Department of Socioeconomics	Robert Home			1		1						1			1
10	Swiss Federal Research Institute WSL, Soil Functions and Soil Protection	Jörg Luster			1		1						1	1		
11	Swiss Federal Institute of Aquatic Science and Technology EAWAG, Surface Waters, Sedimentology	Nathalie Dubois			1		1							1	1	
12	Ernst Basler + Partner AG	Daniel Baumgartner		1				1					1			1
13	Pensimo Management AG Privatdozent at the ETH Zurich, Department of Architecture	Joris van Wezemael	1	1			1	1	1							1
14	Schweizerische Vereinigung für Landesplanung VLP-ASPAN [Swiss association for spatial planning]	Lukas Bühlmann		1	1						1					1
15	Stadtbauamt Liestal [Building Authority of the city of Liestal]	Thomas Noack		1		1										1
16	Fachstelle Bodenschutz des Kantons Bern [Soil Protection Agency of the canton of Berne]	Wolfgang Sturny		1		1							1			1
17	Fachstelle Bodenschutz des Kantons Bern [Soil Protection Agency of the canton of Berne]	Andreas Chervet		1		1							1			1
18	Ecotox Centre, Sediment and Soil Ecotoxicology	Benoît Ferrari			1		1						1	1	1	
19	Ecotox Centre, Sediment and Soil Ecotoxicology	Sophie Campiche			1		1						1		1	
20	Ecotox Centre, Sediment and Soil Ecotoxicology	Carmen Casado-Martinez			1		1							1	1	
21	Swiss Society of Engineers and Architects SIA	Hans-Georg Bächtold	1	1	1						1		1	1	1	1
22	Agroscope, Soil Fertility and Soil Protection	Peter Weisskopf			1		1						1			1
23	Programme manager, National Research Programme "Soil as a Resource" (NRP 68)	Pascal Walther	1									1	1	1		1

HORIZON2020 CSA INSPIRATION

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



NKS Workshop

nr	Name of the entity	Contact person	funder	end user	knowledge provider	national-regional-local authority	university/research institute	SME /consultant	business and industry	NGO	network	other	soil	sediment	water	land use-management
1	Federal Office for Spatial Development ARE, Section for Settlements and Landscape	Reto Camenzind	1	1	1	1										1
2	Zurich University of Applied Sciences, Research Group Soil Ecology Soil Science Society Switzerland SSSS Netzwerk Raumplanung [Network Spatial Planning]	Beatrice Kulli		1	1		1				1		1			1
3	Swiss Federal Institute of Aquatic Science and Technology EAWAG, Surface Waters, Sedimentology	Nathalie Dubois			1		1							1	1	
4	Fachstelle Bodenschutz des Kantons Bern [Soil Protection Agency of the canton of Berne]	Andreas Chervet		1		1							1			1
5	Fachstelle Bodenschutz des Kantons Bern [Soil Protection Agency of the canton of Berne]	Liv Kellermann		1		1							1			1
6	Ecotox Centre, Sediment and Soil Ecotoxicology	Sophie Campiche			1		1						1		1	
7	Swiss Society of Engineers and Architects SIA	Hans-Georg Bächtold	1	1	1						1		1	1	1	1
8	Agroscope, Soil Fertility and Soil Protection	Peter Weisskopf			1		1						1			1
9	Federal Office for the Environment FOEN, Soil Section	Ruedi Stähli	1	1	1	1							1			
10	ETH Zurich, Environmental Biology	Josef Zeyer			1		1						1		1	
11	HSR Hochschule für Technik Rapperswil, Institute for Spatial Development IRAP	Dirk Engelke			1		1									1
12	Agroscope, Swiss Soil Monitoring Network (NABO)	Reto Meuli			1		1						1			
13	AGRIDEA, Development of rural areas	David Bourdin		1	1						1					1



Annex Ib: NKS questionnaire template adapted for Switzerland

A. Interview information
<p>Country: Switzerland</p> <p>Name of INSPIRATION researcher:</p> <p>Date of interview:</p> <p>Place:</p> <p>Name of person interviewed:</p>
B. Introduction
<p>i. <u>Aims of INSPIRATION</u> Introduction on the project</p> <p>ii. <u>Expert interviews</u> Information on the interviews</p> <p>iii. <u>Anonymization of the statements</u> All your statements will be made anonymous. However, we would like to mention your name as well as the name of your institution as participants of the study.</p> <p>iv. <u>Recording</u> Are we allowed to record the interview?</p>
C. Background information on the interviewee
<p>1. Institution:</p>
<p>2. Position:</p>
<p>3. Are you working at...</p> <ul style="list-style-type: none"> <input type="radio"/> a governmental office <input type="radio"/> an university or a research institute <input type="radio"/> a Small or Medium Sized Enterprise (SME < 500 employees) <input type="radio"/> in a big company <input type="radio"/> a Non-Governmental-Organization (NGO) <input type="radio"/> a network or an union
<p>4. What is your expertize in the fields of spatial planning, land use and soil management?</p>
D. Current land- and soil-relevant objectives
<p>5. Main goals/research topics:</p> <ul style="list-style-type: none"> a. <u>Business/policy:</u> Which are the 3-4 land- and soil-relevant main goals of your organization? b. <u>Science:</u> Which are the 3-4 land- and soil-relevant main research topics at your university or research institute?
<p>6. Which are the most important land- and soil-relevant concepts, strategies, standards and documents your organization refers to and bases itself on?</p>
<p>7. Does your organization provide external research funding? Please give examples.</p>

E. Knowledge needs and research gaps
<p>8. Which societal challenges Switzerland is facing currently in the fields of spatial planning, land use and soil management?</p>
<p>9. Which new knowledge will be needed to tackle these societal challenges? <i>[System knowledge, target knowledge and transformation knowledge]</i></p> <ul style="list-style-type: none"> a. Where do you see knowledge needs in business and policy? b. Where do you see research gaps?
<p>10. Which specific topics (knowledge needs and research gaps) should be included in the Strategic Research Agenda?</p> <ul style="list-style-type: none"> a. Please elaborate the topic. <ul style="list-style-type: none"> <i><u>Optional:</u></i> 1) <i>What exactly is the problem?</i> 2) <i>What is the consequence if we do not act?</i> 3) <i>Who can contribute to the improvement of the situation?</i> 4) <i>How can the newly gained knowledge be effectively used?</i> b. How important is the topic? <i>[in the sense of “what happens if we don’t act”]</i> <ul style="list-style-type: none"> <input type="radio"/> Very high importance <input type="radio"/> high importance <input type="radio"/> medium importance <input type="radio"/> low importance <input type="radio"/> no importance c. How urgent is the topic? <ul style="list-style-type: none"> <input type="radio"/> Very high urgency <input type="radio"/> high urgency <input type="radio"/> medium urgency <input type="radio"/> low urgency <input type="radio"/> no urgency d. Who wants to/should fund this kind of research? e. Which are the important documents underpinning this topic?
<p>11. Which research agendas and research programs do exist that already today cover knowledge needs and research gaps in the fields of spatial planning, land use and soil management?</p> <ul style="list-style-type: none"> a. Please name the relevant documents underpinning these agendas and programs. b. What are windows-of-opportunities to influence the setting of topics for these agendas and programs?
<p>12. To what extent are you able to influence the setting of topics for scientific research agendas, -programs and -strategies in Switzerland?</p>



F. Science-Policy-Interface

13. Which sources of knowledge do you use for doing your job?
- a. Scientific publications
 - b. Other publications and reports
 - c. Colleagues
 - d. Experiences and examples from Switzerland
 - e. Experiences and examples from abroad
 - f. Media (print, radio, TV...)
 - g. Conferences
 - h. Research- or consultant projects ordered by your institution
 - i. Internet
 - j. Other, specify?.....
-
14. Use of scientific knowledge:
- a. **Business/policy:** When (and what for) do you use scientific knowledge in your job?
 - b. **Science:** Which strategies do you adopt to make sure that the results of your research reach business and policy and are used by them?
-
15. To what extent (and where) are results from state-of-the-art scientific research integrated into policies and business in Switzerland? Please give examples.
- a. What goes well?
 - b. What could be improved?
-
16. How could the knowledge transfer from science to policy/business be (further) improved?
- a. Improvement of communication?
 - b. Other funding mechanisms?
 - c. Other research approaches or other research goals?
-
17. [Questions only to persons from the **non-science sector** (business and policy)]
Have you ever been involved in...
- a. the formulation of research questions or in doing scientific research?
 - 1) What went well?
 - 2) What could be improved?
 - b. synthesizing scientific knowledge to feed into policy making/into your company?
 - 1) What went well?
 - 2) What could be improved?
-
18. How is the societal/political/economic impact of scientific research in the field of spatial planning, land use and soil management being assessed in Switzerland?
- a. What indicators are used?
 - b. What goes well?
 - c. What could be improved?
-
19. Which Science-Policy-Interface documents do you know? Please give examples.

G. Funding

20. Funding systems:

- a. How do you finance your activities and projects/your research (public/private)?
 - 1) Subnational
 - 2) National [e.g. „Schweizerischer Nationalfonds“]
 - 3) European [e.g. „H2020“, „Interreg“, multilateral Programs as the „Joint Programming Initiatives“]
 - 4) International [e.g. „Belmont Forum“ etc.]
- b. Do you know other funding schemes (public/private) that fund research in the field of spatial planning, land use and soil management, or could fund such research in the future?
 - 1) Subnational
 - 2) National [e.g. „Schweizerischer Nationalfonds“]
 - 3) European [e.g. „H2020“, „Interreg“, multilateral Programs as the „Joint Programming Initiatives“]
 - 4) International [e.g. „Belmont Forum“ etc.]
- c. Do you know websites or documents on these funding schemes? Which?

21. Are there areas of research and innovation that are not (yet) covered by current funding mechanisms and which would need new/different funding schemes? Which areas of research and innovation?

H. Vision

23. How do you see Swiss spatial planning, land use and soil management in the future? What is your vision?

I. Remarks, suggestions, examples

24. Did we forget something important? Do you wish to add something?

J. Ending the interview

25. Thank you for taking the time to participate in this interview!

- a. Would you like to be updated about the INSPIRATION progress by the online newsletter?
- b. Would you suggest anyone else who we should interview?
- c. We are organizing a workshop in November to consolidate the outcomes of the interviews and to prioritize the found knowledge gaps. Would you be ready to take part in this workshop on Friday, 13th of November 2015 in the afternoon?
- d. We write a report on the results of all the interviews – if you are interested we will send this report to you. For the report, we will make all your statements anonymous. But we would like to give your name and the name of your institution as participants of the study.

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

INSPIRATION (Integrated Spatial Planning, Land-Use and Soil Management Research Action)

Information on the expert interview

If you wish to prepare yourself for the interview, we send you some information on the topics that are covered by the project and the main interview questions.

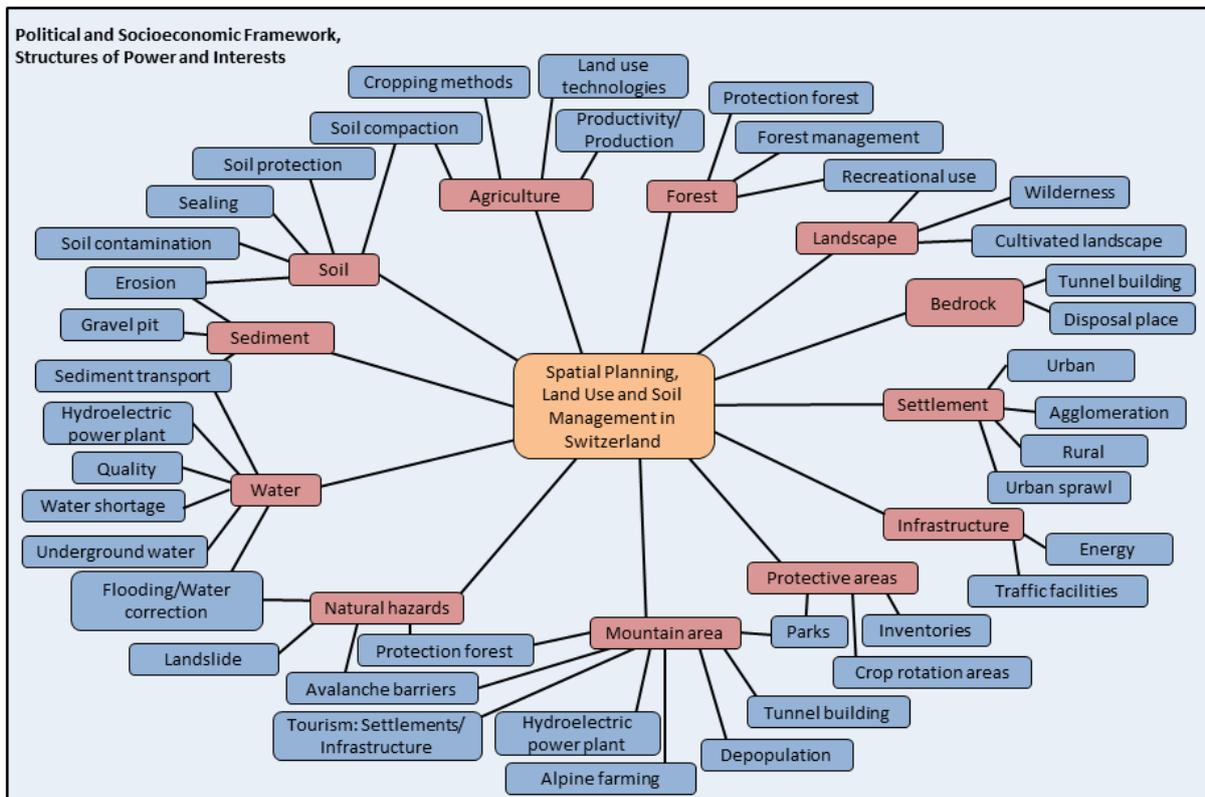
Aim of INSPIRATION

INSPIRATION is a European research project within the research program HORIZON 2020. The aim of the project is to find knowledge needs and research gaps in the fields of spatial planning, land-use and soil management. Within the project a strategic research agenda will be formulated and it will be showed how research in this field could be realised and funded.

Topics covered by INSPIRATION

The topics covered by INSPIRATION are very broadly spread. To visualise this, we developed a “Map of Spatial Planning, Land-Use and Soil Management in Switzerland” that shows, which topics are included in the terms spatial planning, land-use and soil management (red). In the blue fields we list examples, which specify the topics. The examples are not concluding, but will be complemented in the interviews.

Map of Spatial Planning, Land Use and Soil Management in Switzerland





Main interview questions

In the following you find the essential interview questions. When we talk of spatial planning, land-use and soil management, we always refer to all the topics visualized in the map above. The experts decide by themselves on which topics they can give information.

1. Current land- and soil-relevant objectives

- Which are the most important land- and soil-relevant concepts, strategies, standards and documents your organization refers to and bases itself on?

2. Knowledge needs and research gaps

- Which societal challenges Switzerland is facing currently in the fields of spatial planning, land use and soil management?
- Which new knowledge will be needed to tackle these societal challenges?

3. Science-Policy-Interface

- To what extent (and where) are results from state-of-the-art scientific research integrated into policies and business in Switzerland? Please give examples.
- How could the knowledge transfer from science to policy/business be (further) improved?

4. Funding

- Which funding schemes (public/private) do you know that fund research in the field of spatial planning, land use and soil management, or could fund such research in the future?

5. Vision

- How do you see Swiss spatial planning, land use and soil management in the future? What is your vision?

We thank you for your support and are looking forward to the interview!



Annex II: Documents used for the Swiss desk study

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