# Towards climate-smart sustainable management of agricultural soils

## Deliverable 8.1

Methodology for policy stakeholder survey / interviews

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# Table of Contents

List of Tables ..... 3
List of Figures ..... 3
List of acronyms and abbreviations ..... 4
1 Executive summary ..... 5
2 WP8 Background ..... 6
3 Introduction ..... 7
3.1 Task 8.2 Understand and Analyse ..... 8
4 Methodology ..... 9
4.1 Context for method development ..... 9
4.2 Description of the Survey Instrument ..... 10
4.2.1 Section A: Background information ..... 11
4.2.2 Section B: Policy framing and barriers to implimentation of existing policy targets ..... 11
4.2.3 Section C: Horizon scanning for emerging policies ..... 12
4.2.4 Section D: Co-innovation, knowledge needs and requirements for implementation of emerging policies ..... 12
5 Appendix A ..... 13
6 Appendix B ..... 15

# List of Tables

Table 1 Step One of the policy stakeholder mapping exercise ..... 13
Table 2 Step 2 of the policy stakeholder mapping exercise ..... 14
Table 3 Survey Template Section A: Background information ..... 15
Table 4 . Survey Template Section B: Policy framing and barriers to implementation of existing policy targets ..... 16
Table 5 Survey Template Section C: Horizon scanning for emerging policies ..... 17
Table 6 Survey Instrument Template Section D: Co-innovation, knowledge needs and requirements for implementation of emerging policies ..... 18

# List of Figures

Figure 1. Sample of some of the existing policies identified by respondents from Austria in Section B of the survey instrument ..... 10

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# List of acronyms and abbreviations

| | |
|---|---|
| WP | Work Package |
| EU | European Union |
| MS | Member State |
| CCM | Climate change mitigation |
| CCA | Climate change adaptation |
| FS | Food security |
| ES | Ecosystem services |
| ALD | Avoiding land degradation |
| CAP | Common agriculture policy |

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# 1 Executive summary

The overall aim of the EJP SOIL work package (WP) 8 - Science to policy interaction, is to support a strengthened science-policy interface within the four EJP SOIL policy domains of Climate change mitigation, Climate change adaptation, Sustainable Production and Sustainable Environment. To facilitate a more in depth analysis the domain of Sustainable Environment was divided into two sub-domains: Ecosystem services and Avoiding land degradation. Task 8.2 Understand & Analyse requires the identification, understanding and analysis of policy stakeholder needs at both national and EU levels across these domains. This will be achieved via Sub-Task 8.2.1 Needs analysis, which involves the use of a policy stakeholder survey instrument (survey instrument) as well as Sub-Task 8.2.2 Support for dialogue on policy needs, which involves policy forums. This report details the methodology used to develop the survey instrument used in Sub-Task 8.2.1 Needs Analysis and constitutes Deliverable 8.1 Methodology for policy survey/interviews.

The methodology outlined in this report has been developed to help assess policy stakeholder needs for new knowledge as well as for an enhanced access to currently available scientific results to support future policy development & formation, implementation, and monitoring.

Policy stakeholder needs will be assessed at both national and EU levels with this survey instrument. As part of EJP SOIL key policy stakeholders at both national and EU levels have been identified and characterised including their scale of operation and also their level of interest and influence. This provides a standardised dataset of key stakeholders and allows the key policy stakeholders at both levels to be targeted with this survey instrument. The survey instrument itself, comprises of Sections A-D described below.

Section A) Background information – general information about the respondent is collected to help link the stakeholder needs response to the Member State environmental zone and to the stakeholder type, their role within the policy pathway, and their knowledge across the EJP SOIL policy domains.

Section B) Policy framing and barriers to implementation of existing policy targets- respondents will be asked to review existing policies and assess how wide they think the gap is between the policy realisation and the actual target. They will be asked why certain policies are falling short of their targets and to identify barriers to implimentation for these policies. The responses to section B will help the EJP SOIL to identify key policy gaps across different regions/environmental zones, where existing policies are falling short and where support and knowledge is needed to achieve better policy implimentation in future.

In Section C) Horizon scanning for emerging policies- policy stakeholders will be asked where EJP SOIL can address policy needs for better implimentation of these policies (e.g. Green deal, CAP) in future. The responses collected will identify pathways by which the EJP SOIL can strengthen the science to policy interaction to meet policy stakeholder needs.

Section D) Co-innovation, knowledge needs and requirements for implimentation of emerging policies- Policy stakeholders will be engaged to identify policy and other instruments and opportunities for achieving aspirational goals to address soil challenges. Stakeholders will be asked to evaluate their state of readiness, knowledge needs for implementation, and areas of action to move towards these aspirational policy options that are evaluated. In this section, new ideas for co-innovation, knowledge

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needs and requirements for implimentation of emerging policies will be identified which can be considered by the EJP SOIL when developing and updating the EJP SOIL roadmap and strategic research agenda.

# 2 WP8 Background

### *Overall objectives and approach taken in WP8 –Science to policy interaction*

The overall aim of the EJP SOIL WP8 is to support a strengthened science-policy interface in the area of agricultural soil management and climate change mitigation and adaptation. The focus will be on providing support for the implementation of soil C accounting, the delivery of soil ecosystem services and enhanced soil quality and optimised soil management and fertilisation practices. The Key objectives are to:

- Identify and address current and future policy needs (e.g. CAP, Climate Policy, Land Degradation Neutrality) for new knowledge and scientific evidence base at a range of scales as appropriate (e.g. regional, national and European);
- Facilitate access to scientific knowledge at appropriate scales for national and European policy makers and support the effective use of scientific results for policy design at these different scales;
- Provide scientific support to policymakers to enable the design of effective policy measures at different scales, especially in relation to soil carbon accounting;
- Summarise key findings of the EJP SOIL for dissemination to policymakers;
- Promote the work and outputs of the EJP SOIL to EU and international policymakers;
- Establish relationships with related projects and initiatives in order to exploit synergies in the science-policy interface.

The approach taken in WP8 will provide evidence-based recommendations to EU and national/regional policymakers on optimal agricultural soil management through:

a. Establishing open dialogue and information flow between the EJP SOIL consortium and relevant EU and national/regional policymakers with governance over agriculture, environment and climate policy;
b. Seeking information from policymakers in order to facilitate access to, and more fully exploit scientific results that are already available for informing, developing and implementing soil related policy;
c. Synthesising research results with policy impact to policymakers to enable improved policy implementation;
d. Facilitating knowledge sharing and mutual learning among policymakers;
*e.* Establishing relationships with related projects and initiatives in order to exploit synergies in the science-policy interface.

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# 3 Introduction

Agricultural soil management in the EU is impacted by a diversity of binding and non-binding agri-environmental policies implemented at different spatial and temporal scales that generally address aspects of soil protection as a secondary rather than a primary objective (e.g EU Nitrates Directive. Indeed, agricultural soils are even impacted by polices that do not directly address them at all e.g. land tenure policies, urbanisation policies etc. The EJP SOIL WP8 aims to address current and future policy needs related to the EJP SOIL policy domain areas by enhancing policy stakeholder access to scientific information, technical expertise and ongoing initiatives of relevance to the agricultural soil related policy cycle. The policy domains that the EJP SOIL is focusing on are as follows

1. **Climate change mitigation**
- Policies to mitigate or limit climate change related to agricultural land,
2. **Climate change adaptation**
-Policies that respond to changing weather patterns affecting agricultural soils,
3. **Sustainable Production**
- Food and agricultural policies, mainly CAP
4. **Sustainable Environment**

*Ecosystem services (ES)*

- Land based services including water purification and regulation, climate regulation, biodiversity and nutrient cycling

*Avoiding land degradation (ALD)*

– Polices that identify sustainable agricultural management practices

These policy domains underpin the scope of the science to policy activities being carried out in WP8. New understanding of policy ambitions and analysis of policy stakeholder needs is being conducted for each of these domain areas. The domain area “Sustainable Environment” was split into two sub-domains for the purpose of this task to facilitate a more in depth capture and analysis of information as the domain is broad.

Policy stakeholders that are involved in the design, review and implementation of polices affecting agricultural soils were targeted as the main respondents for this survey. They were chosen because they are the most aware of the current needs surrounding emerging and future policies and how those policies relate to agricultural soil management. This group of policy stakeholders also hold awareness of the most relevant policies and needs at a national level in their respective countries and so are in the best position to communicate those needs and the context in which they exist.

This survey will identify country specific policies of relevance, analyse barriers that are responsible for limiting the implementation of these polices as well as assess the robustness of indicators for EU level emerging policies and seek recommendations on the creation and implementation of suggested possible policy instruments within the identified EJP SOIL domains.

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## 3.1 Task 8.2 Understand and Analyse

The focus of EJP SOIL Task 8.2 - Understand & Analyse, is to gain an understanding of policymaker needs for research and soil quality indicator monitoring information, especially in the area of soil C accounting and soil ecosystem services. The goal will be to identify if this knowledge is currently not available from scientific research or just not appropriately communicated or accessed by policy makers. This process will also inform needs and gaps for new research, data or resources for integration into future EJP SOIL activities such as; WP2 - Developing a Roadmap for EU Agricultural Soil Management Research, WP6 - Supporting harmonised soil information and reporting, & WP7 - Synthesis and knowledge integration**.** This work will also inform the methods and forms of accessibility to results by policy makers in WP9 - Dissemination and outreach for European scale impacts**.**

Task 8.2 - Understand & Analyse, seeks to identify and to address current and future policy needs (e.g. Common Agricultural Policy, Land Degradation Neutrality) for new knowledge and scientific evidence base at a range of scales as appropriate (e.g. national, regional, European). These needs will be identified through a process of (a) intelligence gathering from EU policy documents and peer-reviewed research papers on climate policy and environmental law, (b) analysis with policy stakeholders of research, knowledge and resource gaps through future oriented methodologies (e.g. horizon scanning). There are two main Sub-Tasks that will facilitate this process, Sub-Task 8.2.1 Needs Analysis and Sub-Task 8.2.2 Support for dialogue on policy needs.

Sub-Task 8.2.1 Needs Analysis, will be completed using a policy stakeholder needs survey instrument (referred to as the survey instrument). This report presents the methodology used to develop the survey instrument that EJP SOIL partners will use to collect national and EU level inputs for this Sub-Task. The outputs will be utilised to feed directly into subsequent WP8 tasks that will support science to policy dialogue and aim to strengthen the science policy interaction, and to ensure that EJP SOIL activities can serve a central role in meeting policy stakeholder needs in alignment with the overarching goals of the EJP SOIL.

To facilitate Sub-Task 8.2.2 key policy stakeholders identified through the combined efforts of Task 9.1 – Mapping of Key Stakeholders, and Task 8.1 - Connect and Synergise, will be engaged to identify priority needs through Policy Forums. A European level policy forum will be conducted to identify EU policy levels needs (data, indicators etc.) where national level needs will also be considered by Member State representatives (stakeholders drawn from the national stakeholder hubs identified in tasks 9.1 and 8.1). In addition, 3-4 national level policy forums (case study countries selected) will be conducted to further elucidate the priority needs at national level. Analysis of policy documents and peer-reviewed publications will provide additional supplementary data. Barriers to implementation and to the integration of different policies with soil targets will be identified and pathways to enhance adoption of measures elaborated. The information generated will be summarised and feed into the development of the EJP SOIL Roadmap (WP2).

The combined results from Sub-Task 8.2.1 and Sub-Task 8.2.2 will be analysed, consolidated and presented in Deliverable 8.3 First Summary Report on Policy Needs Identified.

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# 4 Methodology

This report presents the methodology used in the survey instrument designed to collect inputs for Sub-Task 8.2.1 Stakeholder Needs Analysis. The aim of this survey instrument is to obtain feedback on the needs of key policy stakeholders. These policy stakeholders have been previously identified at national and EU levels based on activities conducted in Sub-Task 8.1.1 Identification and mapping of policy stakeholders in which each EJP SOIL partner country was asked to complete a mapping exercise (Appendix A) and list 25 policy stakeholders within their country. They were then asked to refine this list and select 5 key policy stakeholders, the methodology and results of these activities are reported in D8.4 Report mapping policy stakeholders. This group of key policy stakeholders described in D8.4 were the target respondents for this survey instrument.

The survey instrument contains four sections which are described in detail in Section 4.2 and are visible in Appendix B. Completion of this survey instrument will provide information for a comprehensive and regionally explicit analysis of stakeholder policy needs by identifying those policies for which a large gap in target realisation currently exists, policies that are not considered future-proofed and opportunities that are not already deployed to address soil challenges within Task 8.2.

The survey instrument will be sent to each EJP SOIL partner and a separate file for each survey respondent (key policy stakeholder) will be completed and saved. It is envisaged that a minimum of 5 policy stakeholders in each EJP SOIL partner country will be sought to complete the survey instrument. For Member State reporting each EJP SOIL partner will synthesise and return the survey results /report to the WP8 team using a secure centralised document storage system. The WP8 team will coordinate the completion of EU level surveys.

## 4.1 Context for method development

To enhance synergies between the EJP SOIL work package activities WP8 designed this needs survey instrument to enable policy stakeholder respondents to build on the responses provided by national hub stakeholders in Task 2.1 “Agricultural soil service aspirations at regional and national levels”. In T2.1, respondents were asked to prioritise soil challenges and identify the related existing policies of relevance within their country. Respondents screened these existing national policies of relevance to climate smart and sustainable soil management and ranked the performance of these policies in realising targets, along with the scope of these policies to satisfy policy targets in 2050. Many of these national level policies, some unique to each responding country, were identified as not realising targets within T2.1 and so are most relevant for further analysis to identify and understanding the needs of policy stakeholders. WP8 has designed this survey instrument to identify these needs of these previously identified policies and the potential barriers to realising the policy targets set out. In this way, the responses obtained from the EJP SOIL partner countries could indicate the most relevant soil challenges related to their geo-climatic context and to express their needs to the existing national polices related to these soil challenges. This approach exists throughout the survey instrument and presents the opportunity to respondents to identify any key policies or topics, e.g. land use change that could be especially relevant to them (Fig. 1).

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| Soil Challenges | Common/ general name for policy in your Country | Gap between current policy realisation and target (likert scale)- please provide the | | | | | For each barriers -please provide the sum total value based upon the five respondents (e.g. scores for respondents 1+2+3+4+5) for each policy | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | Lack of standardization methodologies | Inappropriate incentives | Insufficient knowledge transfer | Bureacratic burden | Socio-cultural, gender | Trade-offs - conflicting policies | Data/ scientific knowledge gaps | Other *(please specify)* | Total |
| Maintain/increase SOC | **Soil Protection Act + ÖPUL + FUNC** | | | x | | | 45 | 80 | 45 | 30 | 10 | 45 | 65 | 80 | **400** |
| Enhance water storage capacity | **FUNC** | | | x | | | 40 | 75 | 40 | 85 | 5 | 55 | 70 | 30 | **400** |
| Enhance soil biodiversity | **FUNC** | | x | x | | | 90 | 40 | 60 | 20 | 0 | 30 | 130 | 30 | **400** |
| Enhanced soil nutrient retention/use efficiency | **Soil Protection Act + ÖPUL + NAP + FUNC** | | | x | | | 70 | 90 | 70 | 50 | 15 | 40 | 65 | 0 | **400** |

*Figure 1. Sample of some of the existing policies identified by respondents from Austria in Section B of the survey instrument. Soil Protection Act: Bodenschutzgesetze der Bundesländer, OPUL: Rural Development Programme, Directive "Agri-Environmental Programme 2015", (Sonderrichtlinie OPUL 2015), NAP: Nitrate Action Programme –Ordninance, FUNC: Austrian Standard OENORM L 1076 (2012) - Principles of soil function evaluation,(Grundlagen zur Bodenfunktionsbewertung).*

## 4.2 Description of the Survey Instrument

The survey instrument comprises four sections (A-D). The general methodology and guidance for the completion of the survey instrument is described for each section below. In some cases interviews were conducted with stakeholders and the survey instrument was completed based on the responses of the stakeholders. A description of the survey instrument with sample templates is provided in Appendix A of this document.

Sections A and B were designed to complement and build on the information obtained from surveys that were completed as part of Task 2.1. The previously completed surveys (Task 2.1) investigated the presence or absence of gaps with respect to achieving policy targets for existing policies within each partner country. Section B of this survey instrument sought to identify which barriers contribute to the existing gaps in these previously identified policies as well as the degree to which they do so. Section C aimed to identify policy needs surrounding emerging policies at the time of the development of this survey instrument. Section D was designed to allow for respondents to propose policy instruments to address issues that were relevant to them within the EJP SOIL policy domains. In this way leading respondents to specific answers or topics will be avoided and the data that is collected will be based on those issues most relevant to the respondent.

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### 4.2.1 Section A: Background information

This section is designed to collect background information to help categorise the Member State, environmental zone and, stakeholder type, role and knowledge across the EJP SOIL policy domains.

- Unique ID –Consists of the member state selected from the drop down menu plus and survey number comprising of two digits, for example, the first respondent will be '01'. To be completed by survey administrator.
- Member State – To be selected from the drop down menu provided.
- Role – Response to the question 'what is your role in policy?'
- Scale of work - The scale that the respondent mostly works at. To be selected from a list of drop down options available.
- Environmental zone – – Selection of the environmental zone(s) to which the MS belongs using the classification map provided which is the result of a study by Metzger et al. (2005)[1]. The study employed a principal component analysis (PCA) of 20 most relevant and available environmental variables (grouped under climate, geomorphology, oceanicity and northing), combined using an ISODATA principal component analysis (PCA) clustering, which resulted in thirteen environmental zones. The selection is to be made from a provided drop down list.
- Stakeholder group – The group of stakeholders that the respondent belongs to. To be selected from the drop down menu provided. Opportunity to write in an answer if the options available do not apply.
- Which type of organisation do you represent – To be selected from drop down options provided. Opportunity to fill in a response if the options available do not apply.
- Organisation Role – Response to the question 'What is your role in the organisation?'

### 4.2.2 Section B: Policy framing and barriers to implimentation of existing policy targets

National level stakeholder groups i.e. National Nubs, have been previously engaged in EJP SOIL WP2, Task 2.1 which involved screening existing policies and assessing to what extent a gap exists between current policy realisation and target. These results present the national representation of how different policies are performing. Task 2.1 has resulted in a synthesised list of policies unique to each responding country that are currently falling short i.e. those policies, which at best, are only considered half way to achieving their target for each EJP SOIL Partner (Fig. 1). Respondents are asked to list these policies in Section B and to rate the size of the gap in the realisation of these policies. Additionally, they are asked to identify the key barriers to the implementation of these policies within their MS and to validate these responses by weighting the degree to which each barrier affects each policy.

These barriers include:

- Lack of standardization of methodologies
- Inappropriate incentives
- Insufficient knowledge transfer
- Bureaucratic burden

[1] Metzger, M.J., Bunce, R.G.H., Jongman, R.H.G., Mücher, C.A. and Watkins, J.W. (2005). A climatic stratification of the environment of Europe. *Global Ecology and Biogeography*, 14, pp. 549–563.

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- Socio-cultural/ Gender
- Trade-offs with conflicting policies
- Data/Scientific knowledge gaps
- Other (to be specified by the respondent if relevant)

### 4.2.3 Section C: Horizon scanning for emerging policies

Based on a review of literature and texts of emerging policies, performed by the WP8 Team, a selection of emerging EU Policies that bear relevance to EJP SOIL overarching policy domains were selected for consultation in this section, however, responses were not limited to these policies only. The emerging EU policies put forward by WP8 fall within the determined scope of the EJP SOIL which focuses on climate smart and sustainable management of agricultural soils. Within this section an option is also included to allow respondents to introduce any other emerging policies that are relevant, including policies not directly targeting agricultural soil management but which are still impacting it within their respective countries e.g. policies targeting land use change, land tenure etc.

A series of questions are asked to identify needs which can be supported by EJP SOIL activities for these emerging policies. These questions relate to the requirements for implementation of the policies and responses will offer insights into the pathways by which EJP SOIL can strengthen the science to policy interaction to meet policy stakeholder needs.

Emerging policies that are addressed within section C include:

- The European Green Deal
- Common Agricultural Policy (CAP)
- Farm to Fork Strategy
- Biodiversity Strategy
- Other policy areas of relevance decided by the respondent

### 4.2.4 Section D: Co-innovation, knowledge needs and requirements for implementation of emerging policies

Respondents are asked to suggest possible instruments that can be implemented to support the EJP SOIL policy domains with a focus on future policy targets. For each suggested instrument respondents are asked about the knowledge needs related to that instrument. Additionally, they are asked to rate the importance of various tools in achieving the implementation of the suggested instrument. The list of tools provided was created based on the analysis of the feedback from stakeholders in Task 2.1 and includes the following:

- Appropriate incentives/ market opportunities
- Reduced administrative burden
- Technical skills
- Socio-cultural/Gender
- Data/Scientific knowledge gaps
- AKIS requirement- including knowledge transfer

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# 5 Appendix A

*Table 1 Step One of the policy stakeholder mapping exercise*

| |
|---|
| **Brainstorm stakeholder categories/stakeholers relevant for or interested in the EJP Soil related policy areas: The main policy domains related to EJP Soil include: 1) Climate Change Mitigation; 2) Climate Change Adaptation; 3) Food Security; 4) Ecosystem Services Delivery Enhancement and 5) Avoiding Land Degradation** |
| ***Note: Interest indicates that they have a stake: so they can be affected by related policies; they have a role in implementation or have a stated interest.*** |
| ***Note: Consider if specific experience, expertise or technical knowledge stakeholders are important, for example, C-accounting which stakeholder can help identify implementation requirements*** |
| ***Note: Do not limit to 'obvious' stakeholders, identify target groups at risk of being exclued*** |
| **Step 1. On a separate piece of paper please complete the following brainstorming activity. Please compile a list of all potential stakeholders by asking the following test questions (1 - 6). Please ask these test questions for each of the policy areas to capture a wide starting list (Climate change mitigation, climate change adaptation, food security, ecosystem services delivery and enhancement and avoiding land degradation). Consider those who will be affected by policy areas (e.g. beneficiaries) or those who might have a role in the execution / implementation (e.g. policy makers, authorities etc.).** |
| **Test 1 Who is directly impacted by policies related to the [e.g. climate change mitigation..] five areas?** (whose daily/weekly lives will change? who cannot easily take steps to avoid being affected by this policy? Who will have to change behaviour?) |
| **Test 2 Who is indirectly impacted?** (Whose daily lives will change because others have been directly impacted by the policy? Who will gain or lose because of changes related to these policies?) |
| **Test 3 Who is potentially impacted?** (are there others who may have to adjust behaviour if conditions apply?) |
| **Test 4 Whose help is needed to make it work?** (Are there vital groups/individuals in policy delivery? Who is necessary for implementation? Who understands the impact on other stakeholders?) |
| **Test 5 Who thinks they know about the subject?** (Who has studies/published views? Who has knowledge that those implementing policy require? Are there individuals/groups that are considered knowledgeable on the subject?) |
| **Test 6 Who will show an interest in the subject?** ( are ther other who think they have an interest? Has anyone campaigned/lobbied about this topic? Is anyone publishing/broadcasting views on the topic?) |
| |

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*Table 2 Step 2 of the policy stakeholder mapping exercise*

| | |
|---|---|
| Step 2 Shortlist: The second step of stakeholder mapping is the sorting of the identified stakeholder categories and relevant stakeholders for analysis in Section C. Guided by the following sorting criteria, circle the top five for each category. Altogether, shortlist the top ten key stakeholders from the list and populate these actors below. Prioritise stakeholders based upon the following: | |
| **1. Identify those that have a high relative influence over policy making, its implementation and evaluation.** | |
| **2. Distinguish between how the different stakeholders are affected and consider a relative order of interest.** | |
| **Shortlisting activity**<br>**Step 2. Prioritise stakeholders and shortlist those who have direct interest and could affect the policy process / implementation. (Actors who do not have ability to affect specific policy should not be included). Circle up to a maximum of 10 key stakeholders to further analyse in the next sheet "C) Analyse_Stakeholders"** | |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

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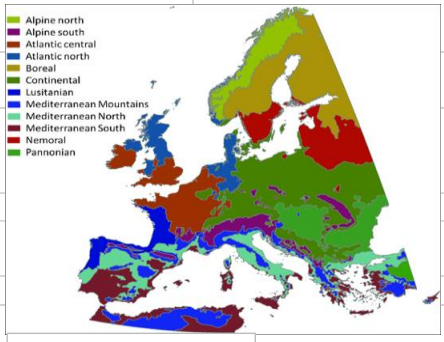
# 6 Appendix B

*Table 3 Survey Template Section A: Background information*

| | | | | |
|---|---|---|---|---|
| | **In this section, please complete the general information about your country and you.** | | | |
| | *please select from dropdown lists were appropriate* | | ID (Country from dropdown) | ID (respondent number from 01) |
| | Unique ID (Assigned by survey administrator) | | | |
| 1 | Please indicate the scale that you mostly work at? | | | |
| 2 | If a national expert please indicate your Member State (select from dropdown list) | | | |
| 3 | environmental zone of your country considered in this file (select the relevant zone for the country from dropdown menu) | | | |
| | | | | |
| 4 | Stakeholder name (for internal purposes only) | | | |
| 5 | Gender | | | |
| 6 | Age (select from ranges in drop down menu) | | | |
| 7 | Stakeholder group | | | |
| 8 | Which type of organisation do you represent? | | | |
| 9 | Position - what is your role in your organisation? | | | |




Metzer et al. 2005

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*Table 4 . Survey Template Section B: Policy framing and barriers to implementation of existing policy targets*

**In this section please rank policies and rank barriers to achieving policy target.**

**Column A - please indicate the main soil challenges and in Column B please indicate the related existing policies for which a wide gap between policy realisation and target exists. These policies should be the same as those derived from the analysis of outcomes of WP2 Task 2.1.**

| Main soil challenges | Common/ general name for policy | In your opinion, how wide is the gap between current policy realisation and target (likert scale) | | | | | Barriers - please score the following barriers to a total of 100% - please include additional barriers not specified in the "other" | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | Lack of standardization methodologies | Inappropriate incentives | Insufficient knowledge transfer | Bureacratic burden | Socio-cultural, gender | Trade-offs - conflicting policies | Data/ scientific knowledge gaps | Other *(please specify)* | **Total** |
| | **Policy Name** (Please input policies based on Task 2.1. outcomes) | *Very large* | *Large* | *Halfway* | *Small* | *No gap* | | | | | | | | | |
| ***e.g. Water quality*** | ***e.g. Nitrates Directive..*** | | | *x* | | | *10* | *20* | *15* | *30* | *5* | *10* | *10* | | ***100*** |
| Maintain/increase SOC | | | | | | | | | | | | | | | **0** |
| Enhance water storage capacity | | | | | | | | | | | | | | | **0** |
| Enhance soil biodiversity | | | | | | | | | | | | | | | **0** |
| Enhanced soil nutrient retention/use efficiency | | | | | | | | | | | | | | | **0** |
| Avoid soil erosion | | | | | | | | | | | | | | | **0** |
| Optimal soil structure | | | | | | | | | | | | | | | **0** |
| Avoid N2O, CH4 emissions | | | | | | | | | | | | | | | **0** |
| Avoid soil sealing | | | | | | | | | | | | | | | **0** |
| Avoid contamination | | | | | | | | | | | | | | | **0** |
| Avoid peat degradation | | | | | | | | | | | | | | | **0** |
| Avoid acidification | | | | | | | | | | | | | | | **0** |
| Avoid salinisation | | | | | | | | | | | | | | | **0** |

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*Table 5 Survey Template Section C: Horizon scanning for emerging policies*

**In this section emerging policies are presented. Respondents are asked about this policies to elucidate knowledge needs and requirements for implementation.**

| Emerging policies | | Knowledge requirements - please rate your level of agreement with these statements from options provided | | Implementation requirements | | | | Policy review | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Policy** | **Ambition/Target** | Policy intent is clearly defined | Scientific evidence base to support policy exists | Does a measurable results data indicator exist? | Please specify indicator and unit if known | Is this indicator harmonised across EU? | Is indicator robust, reliable and statistically validated? | Monitoring Requirements -is a clearly defined monitoring review time period established? | Are reference (baseline) values and / or interpretation of indicators established? (i.e. data for change detection) | Reporting Requirements - Are data available when needed and readily revised if required? |
| **THE EUROPEAN GREEN DEAL - including climate neutrality by 2050** | **Increase the EU's greenhouse gas emission reductions target for 2030 to at least 50% and towards 55% compared with 1990 levels in a responsible way by:** | | | | | | | | | |
| | 1) Emissions Trading System, including a possible extension of European emissions trading to new sectors - policy reforms to ensure effective carbon pricing through out economy | | | | | | | | | |
| | 2) Member State targets to reduce emissions in sectors outside the Emissions Trading System | | | | | | | | | |
| | 3) the regulation on land use, land use change and forestry to include removals from land, land use change and forestry. | | | | | | | | | |
| | Limit/exclude Carbon Leakage where incoherence at global scale is found (i.e. production shifts to areas is less stringent envrionmental standards) | | | | | | | | | |
| | Climate change Adaptation ustilising nature-based solutions - data and instruments to integrate climate change into risk management practices. | | | | | | | | | |
| **Common Agricultural Policy (CAP)** | **Sets out to create an inclusive, competitive, and environmentally friendly future for Europe.** Requires target setting by MS in SPs | | | | | | | | | |
| | Enhanced Conditionality | | | | | | | | | |
| | Eco-schemes | | | | | | | | | |
| | Farm Advisory Service | | | | | | | | | |
| | Agri-environment-climate measures and investments | | | | | | | | | |
| **FARM TO FORK** | **2.1.6. From 'Farm to Fork':** designing a fair, healthy and environmentally-friendly food system: Strengthen efforts to tackle climate change, protect the environment and preserve biodiversity. Enable the transition to a sustainable EU food system that safeguards food security and ensures access to healthy diets sourced from a healthy planet. Reduce the environmental and climate footprint of the EU food system and strengthen its resilience, protecting citizens' health and ensuring the livelihoods of economic operators. | | | | | | | | | |
| | Reduction by 50% of the use and risk of pesticides | | | | | | | | | |
| | Reduction by at least 20% of the use of fertilizers | | | | | | | | | |
| | A reduction by 50% in sales of antimicrobials used for farmed animals and aquaculture | | | | | | | | | |
| | Reaching 25% of agricultural land under organic farming | | | | | | | | | |
| **BIODIVERSITY STRATEGY** | **"Bringing nature back into our lives" - proposes:** | | | | | | | | | |
| | Binding targets to restore damaged ecosystems and rivers. | | | | | | | | | |
| | Improve the health of EU protected habitats and species | | | | | | | | | |
| | Bring back pollinators to agricultural land | | | | | | | | | |
| | Reduce pollution | | | | | | | | | |
| | Green our cities | | | | | | | | | |
| | Enhance organic farming and other bio-diversity friendly farming practices | | | | | | | | | |
| | Improve the health of European forests. | | | | | | | | | |
| | Transform 30% of Europe's lands and seas into protected areas | | | | | | | | | |
| | Bring back at least 10% of agricultural area under high-diversity landscape features. | | | | | | | | | |
| **Other policies - please specify** | | | | | | | | | | |

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*Table 6 Survey Instrument Template Section D: Co-innovation, knowledge needs and requirements for implementation of emerging policies*

**In this section please provide your input on Policy options and Knowledge needs for achieveing policy goals linked with the EJP Soil Policy Domain areas**

| | **Policy option** | | | **Knowledge needs** | | | | | | | | **Please rank the following areas to be targeted in order of priority to move towards the aspirational policy option proposed. Please score 1 for the most important area for action and so on scoring a 6 for the least important area.** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EJP Soil Policy Domain areas** | Possible instruments to support EJP Soil policy domain areas | What type of instrument would best fit the proposed option? | Please indicate the state of readiness for the proposed instrument? | Do you agree with this statement - "Scientific evidence base to support policy exists" | Does a measurable results data indicator exist? (If no, or don't know, skip to ranking exercise) | Please specify indicator and unit if known | Is this indicator harmonised across EU? | Is indicator robust, reliable and statistically validated? | Monitoring Requirements -is a clearly defined monitoring review time period established? | Are reference (baseline) values and / or interpretation of indicators established? (i.e. data for change detection) | Reporting Requirements - Are data available when needed and readily revised if required? | Appropriate incentives / market opportunities | Reduced administrative burden | Technical skills | Socio-cultural, gender | Data/ scientific knowledge gaps | AKIS requirements - incl. knowedge transfer |
| **example** | *A carbon market that includes carbon sequestration in soils* | Market | Somewhat | | | | | | | | | | | | | | |
| **Climate Change Mitigation** (Policies to mitigate / limit climate change related to | | | | | | | | | | | | | | | | | |
| **Climate Change Adaptation** (policies that respond to changing weather patterns affecting | | | | | | | | | | | | | | | | | |
| **Food Security (**Focus for this analysis is on the Common Agricultural | | | | | | | | | | | | | | | | | |
| **Ecosystem services** (Land based services - water purification/ regulation, and | | | | | | | | | | | | | | | | | |
| **Avoiding land degradation** (Sustainable agricultural | | | | | | | | | | | | | | | | | |

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