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Analyzing who is relevant to engage in environmental decision-making processes by interests, influence and impact: the 3i framework --Manuscript Draft--

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Abstract:	<p>Outcomes in participatory environmental processes are strongly affected by choices about who is engaged. Inclusive engagement diversifies the range of interests and perspectives represented, including those from vulnerable and marginalized groups, ultimately contributing to more socially and environmentally sustainable and equitable outcomes. However, existing "stakeholder analysis" methods often bias participant identification away from disenfranchised groups with limited pre-existing interest or influence, instead favoring the most easily accessed and influential stakeholders. This paper draws on research impact theory and practice to propose a new, more inclusive approach, adding impact to the existing interest and influence criteria (which each begin with the letter "i", hence the 3i framework) that are typically used to identify, categorize and prioritize those who are relevant to be included or excluded from engagement processes. As part of this proposed 3i analysis approach, we articulate a new typology of relevant parties to engage in environmental decision-making processes, including: uninterested; uninterested and impacted; uninterested influencers; disinterested, influential and impacted; only interested; interested and impacted; interested influencers; and interested, influential and impacted. Except for the first group, all types of relevant parties should be considered for engagement wherever possible, with participation strategies tailored to their specific 3i profile. The approach was developed and refined through a series of workshops before developing it into a survey instrument that was piloted to gather 3i data efficiently across several national contexts. Survey findings are presented for a case study identifying those relevant to wetland and peatland restoration in a Scottish catchment. If widely adopted, the 3i framework would be the most consequential change in stakeholder analysis methods since the introduction of interest-influence matrices in the 1980s.</p>
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Analyzing who is relevant to engage in environmental decision-making processes by interests, influence and impact: the 3i framework

Abstract: Outcomes in participatory environmental processes are strongly affected by choices about who is engaged. Inclusive engagement diversifies the range of interests and perspectives represented, including those from vulnerable and marginalized groups, ultimately contributing to more socially and environmentally sustainable and equitable outcomes. However, existing “stakeholder analysis” methods often bias participant identification away from disenfranchised groups with limited pre-existing interest or influence, instead favoring the most easily accessed and influential stakeholders. This paper draws on research impact theory and practice to propose a new, more inclusive approach, adding *impact* to the existing *interest* and *influence* criteria (which each begin with the letter “i”, hence the 3i framework) that are typically used to identify, categorize and prioritize those who are relevant to be included or excluded from engagement processes. As part of this proposed 3i analysis approach, we articulate a new typology of relevant parties to engage in environmental decision-making processes, including: uninterested; uninterested and impacted; uninterested influencers; disinterested, influential and impacted; only interested; interested and impacted; interested influencers; and interested, influential and impacted. Except for the first group, all types of relevant parties should be considered for engagement wherever possible, with participation strategies tailored to their specific 3i profile. The approach was developed and refined through a series of workshops before developing it into a survey instrument that was piloted to gather 3i data efficiently across several national contexts. Survey findings are presented for a case study identifying those relevant to wetland and peatland restoration in a Scottish catchment. If widely adopted, the 3i framework would be the most consequential change in stakeholder analysis methods since the introduction of interest-influence matrices in the 1980s.

Keywords: Stakeholder engagement, participatory processes, stakeholder analysis, stakeholder management, research impact, public participation,

1 Introduction

Engaging effectively with those affected by change is essential, as they typically represent varied, and often conflicting, positions, priorities and values (Reed, 2008; Reed et al., 2017). It is widely acknowledged that those affected by such challenges “*can and should*” (Prell et al., 2009) participate in decisions relating to those problems. The focus of this paper is how to identify relevant parties for such decision-making. Although our case study focusses on environmental issues, the proposed methods may be applied across a range of decision-making contexts. The process of systematically analyzing who may be affected by an issue, intervention, project, process or decision has for decades been known as *stakeholder analysis*. This type of analysis is recognized as an essential precursor to effective engagement that can enhance the quality of decision-making (Colvin et al., 2020; Prell et al., 2009; Reed et al., 2009, Reed et al., 2008, Rowe and Frewer, 2000). By systematically ensuring the representation of relevant parties, a well-designed and theoretically-informed participatory process has potential to markedly improve outcomes and can mitigate the risks associated with tokenistic participation mechanisms (De Vente et al., 2016; Reed et al. 2009; Reed et al., 2018a, Rowe and Frewer, 2000). Studies in environmental governance show that co-production of knowledge and evidence can have long-lasting effects on relationships between different actors and implementation of policy outcomes (Armitage et al. 2015). On the other hand, failure to systematically identify and engage directly with those who are affected by a given issue at an early stage can inflame conflicts, resulting in alienation and distrust and the failure of well-meaning efforts to deliver social and environmental benefits (Chinseu et al., 2021, Reed et al., 2017, Prell et al., 2009). Without a systematic analysis of who is relevant to engage, there is a heightened risk that powerful groups and organizations dominate decision making, marginalising other groups and voices and potentially biasing outcomes (Reed et al., 2009; Reed and Rudman, 2022).

Despite their broad adoption and application to a variety of policy contexts, stakeholder analysis methods have seen limited conceptual development since their introduction 30 years ago. Traditional approaches have been criticized for oversimplifying the process by prioritizing stakeholders with high interest and influence (“key players”), using low interest and influence as a justification for the exclusion of marginalized groups (Reed et al., 2018). This is widely acknowledged to reinforce existing power disparities (Dougill et al., 2006; Reed and Curzon, 2015; Prell et al., 2009; Colvin et al., 2020). Only 44% of the stakeholder analysis studies reviewed by Bendtsen et al. (2021) considered marginalised groups, a significant shortcoming given the need to incorporate the perspectives of disadvantaged and less powerful groups to avoid further marginalisation and protect the legitimacy of decisions (e.g. Bryson, 2004; [Mushove and Vogel, 2005](#)).

Considering Banerjee (2003) and Reed et al.’s (2024) call to decolonize language in research, we use the term *relevant parties*, drawing on Freeman’s (1984:52) original definition of stakeholders as “groups and individuals who can affect, or are affected by” an action or decision (in his case, he was referring to the mission of an organization). We use the word *parties* to refer to actors, people, groups, partners or rightsholders, to include non-human

1 species and those who are not (yet) formally recognized as partners or rightsholders, but who
2 may still be interested in, have influence over or be affected by an issue, intervention, project
3 or decision. Freeman (1984) identified two essential characteristics: influence (the capacity
4 to affect a decision) and impact (the capacity to be impacted by a decision, whether positively
5 or negatively). However, stakeholder analysis has to date focused primarily on the relative
6 interest and influence of different parties.
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9 Despite these challenges, there have been some efforts to reverse the logic of traditional
10 interest and influence frameworks and promote broader inclusivity. For example, Hart and
11 Sharma's (2004) concept of "radical transactiveness" acknowledges the knowledge,
12 perspectives and potential to influence outcomes that are possessed by marginalized groups
13 and supports the inclusion and empowerment of those on the "fringe". This approach has
14 been used to identify relevant marginalized groups to be empowered through the
15 engagement process (Prell et al., 2009). Reed and Curzon (2015) proposed the use of
16 "extendible matrices" to qualitatively characterize the nature of different interests and
17 suggest reasons for the level of influence ascribed. This qualitative approach facilitated an
18 exploration of relevant parties' varying levels of influence in different contexts or at different
19 times. In addition, the extendible matrix allowed for the consideration (and documentation)
20 of additional factors that might influence existing social roles or relationships between
21 groups, such as coalitions or conflicts between different parties that could affect engagement
22 strategies. Consistent with radical transactiveness (Hart and Sharma, 2004), Reed et al.
23 (2018a) proposed the inclusion of *benefit*, recognizing that interest does not necessarily
24 equate to benefit and not all stakeholders will benefit equally from the outcomes.
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31 Building on this, we introduce *impact* as a third criterion in the "3i" framework that considers
32 the relative '*interest*', '*influence*' and '*impact*' of different parties. *Impact* can be either
33 positive or negative, enabling the identification of both beneficiary groups and those likely to
34 be negatively impacted. This is particularly pertinent for groups that have limited interest and
35 influence, who would otherwise be overlooked by traditional interest-influence matrix
36 approaches, who may already be marginalized, enabling more inclusive engagement.
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40 The paper first details the conceptual development of the 3i approach, drawing on research
41 impact theory and practice. It then describes how the approach was refined via a series of
42 workshops, before developing and piloting a survey method for the efficient application of
43 the approach. Finally, the approach is illustrated using a case study application of the survey
44 method in a project to identify those relevant to wetland and peatland restoration in a
45 Scottish catchment.
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51 **2 The 3i analytical framework**

52 Here we present the 3i analytical framework as a tool for analyzing relevant parties' *interest*
53 in, *influence* over and experience or likely *impact* of issues, interventions, projects, processes
54 and decisions. This approach helps to go beyond interest and influence to evaluate the likely
55 impact of the issue both in terms of the likely benefits and potential risks. Table 1 shows how
56 the analysis seeks to understand *interest*, *influence* and *impact* at two levels: primary and
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secondary. Such multi-level analysis builds more comprehensive understandings of relevant parties than traditional stakeholder analyses, aiming to uncover hidden dynamics that might be driving interactions and outcomes. Primary analysis seeks to provide metric style evaluations of relevant parties, aligned with traditional methods of stakeholder analysis. Secondary analysis questions assumptions and facilitates deeper discussions, fostering a more empathetic and effective engagement approach with relevant parties.

Table 1: The two levels for clarifying interest, influence and impact

	Interest	Influence	Impact
Primary	Stated interest and preferences	Explicit, hierarchical “power over”	Immediate benefits or negative impacts
Secondary	Underpinning (transcendental) values beliefs and norms	Implicit, personal and transpersonal “power with”	Long-term benefits or negative impacts

For *interest*, the primary level is consistent with traditional interest/influence matrices, and identifies their degree of interest from low to high *via* consideration of their stated interests and preferences. The secondary level of analysis considers a deeper articulation of (often implicit) underlying (transcendental) values, beliefs and norms that may underpin interests or drive disinterest (following the deliberative value formation model of Kenter et al. (2016a) and their (2016b) conceptualization of “shared, plural and cultural values”).

The degree of *influence* that any party exerts, is explored along two dimensions defined from high to low and positive to negative. Influence here is framed by Berger’s (2005) definition of power and the first level is consistent with traditional interest-influence matrices in considering explicit, hierarchical ‘power-over’ forms of influence that are typically characterized by control, instrumentalism and self-interest, and driven by factors such as access to resources, organizational scale, property rights, and levels of authority and expertise. The secondary level of analysis probes deeper to consider the implicit or personal ‘power with’ forms of empowerment, characterized by dialogue, inclusion, networks, negotiation and shared power (Berger 2005). For example, a landlord has ‘power over’ their tenant farmer due to the legally binding restrictions contained within a tenancy agreement, whereas, a farmers’ union, which tries to guide or influence tenant farmers towards, say, adopting certain environmental practices has ‘power with’. In both cases, influence can act to facilitate or block change.

This inclusion of *impact* represents a novel third criterion for analysis that aims to understand who is likely to directly benefit or, equally as importantly, be negatively impacted from engaging with a given issue, intervention, project, process or decision. This broadens the benefit criteria proposed by Reed et al. (2018a), ensuring that disempowered groups are not further marginalized, whilst simultaneously identifying and mitigating the risk of negative unintended consequences for relevant parties. It seems paradoxical that groups or individuals expected to be impacted might be deemed not to be interested. Such a situation might arise from *inter alia* lacking information, social distance from decision-makers, being disconnected

from issues or policy-making contexts, or being alienated by language or other power mechanisms. In common with the first two criteria, the impact criterion operates at two levels. The primary level is designed to consider the short-term impacts from engagement and identify both the benefits that might arise from engagement, for example, the formation of new networks, capacity, knowledge or skills, and the possible risks that may arise, such as inflaming conflict, or misunderstandings that could lead to disengagement. The secondary, deeper level of analysis considers the long-term putative benefits or possible risks that might arise from the engagement. This could include instrumental benefits, such as new policies, or economic, social, environmental, health or cultural benefits arising from the issue, intervention, project, process or decision as it plays out, or negative impacts that might arise as an unintended consequence.

The 3i framework in Tables 2 and 3 facilitates analytical classification of multiple parties and provides insights into the relationships between these parties and an issue, intervention, project, process or decision. The questions in Table 2 are designed to facilitate discussion (where the analysis is conducted via a workshop) or feed into a survey (where this method is preferred to conduct the analysis) at both the primary and secondary levels described in Table 1. Questions are posed in both positive and negative forms to capture those with and without interest and influence and those who may be negatively or positively impacted by the issue, intervention, project, process or decision. Table 3 provides a table that can be used to capture answers to these questions in workshops, and a survey instrument to operationalize the analysis can be found in Supplementary Material.

Table 2: Questions to identify relevant parties for engagement based on the dimensions of interest, influence and impact, including questions to facilitate analysis at both the primary and secondary levels described in Table 1.

Dimension	Primary level questions	Secondary level questions
Interest	<p>Which parties are already interested and what is the nature of their interest?</p> <ul style="list-style-type: none"> • What is the scope of their interest? • What aspects of an issue are they interested in? • Who within the group or which part of the organization is most interested? <p>Who else do you think should be interested?</p> <ul style="list-style-type: none"> • Why should they be interested? 	<ul style="list-style-type: none"> • What values, beliefs, norms or assumptions might be influencing their <i>perception</i> of the issue, intervention, project, process or decision? • What values, beliefs, norms or assumptions might be driving or inhibiting the <i>interest or disinterest</i> in the issue, intervention, project, process or decision?
Influence	<p>Which parties have the power to <i>facilitate</i> development of positive or negative impacts in relation to this</p>	<ul style="list-style-type: none"> • Who has indirect influence to facilitate or block impacts, for example via dialogue,

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	<p>issue, intervention, project, process or decision?</p> <ul style="list-style-type: none"> • Do they have direct influence over impacts, for example via access to resources, organizational scale, property rights, or levels of authority and expertise that give them “power over” others? • Which individuals with a group or groups within an organisation have most influence to facilitate impact and why? <p>Who has the power to <i>block</i> development of these impacts?</p> <ul style="list-style-type: none"> • Do they have direct influence over impacts? • Which individuals or groups have most influence to block impact and why? <p>Who or what can they influence and at what geographical, social or other scale?</p>	<p>inclusion, networks, negotiation and shared power that give them “power with” others?</p> <ul style="list-style-type: none"> • Which individuals or groups within organisations have most influence to facilitate or block impact in these ways? • Who or what can they influence and at what geographical, social or other scale?
Impact	<p>Which parties might benefit most in the short-term from initial engagement with this issue, intervention, project, process or decision?</p> <ul style="list-style-type: none"> • What types of benefits are likely to be gained for each of these parties, for example, the formation of new networks, capacity, knowledge or skills? <p>Which parties may be disadvantaged or harmed most in the short-term, from initial engagement with this issue, intervention, project, process or decision?</p> <ul style="list-style-type: none"> • What risks are these parties likely to be exposed to or disadvantages might they suffer, such as inflaming conflict, or misunderstandings 	<p>Which parties might benefit most in the long-term as a result of the issue, intervention, project, process or decision as it plays out?</p> <ul style="list-style-type: none"> • What types of benefits are likely to be gained for each of these parties, for example, new policies, or economic, social, environmental, health or cultural benefits? • How significant and far-reaching are these impacts anticipated to be? <p>Which parties may be disadvantaged or harmed most in the long-term, as this issue, intervention, project, process or decision plays out?</p> <ul style="list-style-type: none"> • What risks are these parties likely to be exposed to or disadvantages might they

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	that could lead to disengagement?	suffer, for example as a result of negative unintended consequences? <ul style="list-style-type: none">• How significant and far-reaching are these impacts anticipated to be?
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Table 3: The 3i analytical framework

Name of organization, group or individual	Interest				Influence (indirect)				Impact (direct)			Other context
	<p>Scope of interest: Geographical or other relevant scope</p> <p>(Closed answer question: regional, national, multi-national)</p>	<p>Nature of interest (preferences): Which parties are <u>already</u> interested and what is the nature of their interest? Who do you think should be interested?</p> <p>(describe)</p>	<p>Nature of interest (values): What values, beliefs, norms or assumptions might be influencing their perception of or interest/disinterest in the issue, intervention, project, process or decision?</p> <p>(describe)</p>	<p>Level of interest in the work</p> <p>(Closed answer question: High, Medium or Low)</p>	<p>Nature of influence (direct power over):</p> <p>Which parties have direct influence or "power over" others to facilitate or block development of positive or negative impacts? Are there individuals or groups within organisations with more influence?</p> <p>(describe)</p>	<p>Nature of influence (indirect power with):</p> <p>Which parties have indirect influence or "power with" others to facilitate or block development of positive or negative impacts? Are there individuals or groups within organisations with more influence?</p> <p>(describe)</p>	<p>Reach of influence: who or what can they influence and at what geographical, social or other scale?</p> <p>(describe)</p>	<p>Level of influence: in the research</p> <p>(High/Medium/Low)</p>	<p>Nature of impact (short-term): Which parties might benefit or be disadvantaged most in the short-term from initial engagement with this issue, intervention, project, process or decision?</p> <p>(describe)</p>	<p>Nature of impact (long-term): Which parties might benefit or be disadvantaged most in the long-term as a result of the issue, intervention, project, process or decision as it plays out?</p> <p>(describe)</p>	<p>Level of impact: how significant and far-reaching are the identified impacts likely to be?</p> <p>(Closed answer question: high, medium or low)</p>	<p>For example: knowledge base, expertise, funding, political context etc.</p> <p>(describe)</p>

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Relevant Party 1 (named)												
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3 How to implement a 3i analysis: Data collection

Stakeholder analyses can be undertaken with a range of social science methods. Other than the interest-influence matrices used in traditional stakeholder analyses (Reed et al., 2009), the most used data collection tools include qualitative interviews, mixed-method surveys, focus groups and participatory workshops. These tools can be used in concert to boost the reach and quality of an analysis (e.g., see Morgan 2014). Here, we describe the workshop methods used to trial and refine our approach, followed by a new survey design that was created based on the 3i conceptual framework presented above.

3.1 Workshop methods

A five-stage workshop method was developed to assess the interest, influence and impact of relevant parties in relation to an issue, intervention, project, process or decision, consistent with recognized best practice engagement (see Rowe and Frewer, 2000, Reed, 2008). These methods were trialed and refined via a series of workshops in seven case study projects working across a range of environmental and health issues in Europe. Workshops were facilitated with groups of between 6-14 experts who had a strong, cross-cutting understanding of relevant parties. In successive workshops, different questions were used to elicit the second, deeper level of analysis in ways that could be easily understood by workshop participants, gradually expanding the scope of the analysis. However, as the scope expanded, so did the time required to complete the analysis, resulting in significant gaps in the analysis which were not always filled by participants after the workshop. The resulting analytical framework (in Table 3) attempts to strike a balance between depth and efficiency of analysis by integrating primary and secondary levels of analysis in as few questions as possible. The stages are summarized below and may be adapted by others for use in future work:

- **Stage 1 - Establishing the focus:** It is important to clearly define the issue, intervention, project, process or decision so that there is a clear boundary to the analysis and it is possible to identify what parties might be interested in, have influence over or be affected by the issue, intervention, project, process or decision. Stage 1 requires a facilitated discussion among key informants, which may for example, include the geographical or sectoral scope of the issue, intervention, project or decision. For example, in a local environmental issue or project, a decision would need to be made about the relevance of national organizations and government agencies working on the issue, and whether to extend the scope to international organizations and climate policy. These different geographical scales may then be used as prompts to remind

1 the group not to forget national and international parties, or it may be
2 decided that national and international parties so little interest in, influence
3 over or impacts arising from such a local issue, that they should be scoped out
4 of the analysis.
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7 ● **Stage 2 - Identifying relevant parties:** Identification of as many individuals,
8 groups, or organizations as possible that may be interested, influential or
9 affected by the issue, intervention, project, process or decision. This is done as
10 an individual activity by separate key informants working in parallel with each
11 other. Stage 2 of the analysis begins by identifying those with ‘interest’ in a
12 given issue, intervention, project, process or decision. This analytic step is
13 then extended by exploring each of the three analytical categories - *interest*,
14 *influence* and *impact* - at two levels by following the prompts in Table 2.
15 Where the interest, influence or impact differs within a group or organization,
16 different sub-groups or teams may be analyzed separately, or information
17 about different teams may be captured in a single row for that organization,
18 making multiple points relevant to each team. For example, the climate
19 change team of a water utilities company might be the most interested in a
20 decarbonization project. Still, ultimately, the power to implement the
21 recommendations of the project might be determined by the delivery team or
22 a director of finance. Stage 2 is relatively time-demanding, especially if there
23 are many relevant parties to consider, so the method is flexible to allow key
24 informants to gap-fill after the workshop if it is not possible to complete all
25 stages of the analysis in the time available.
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- 27 ● **Stage 3 - Rate the relative interest, influence, and impact:** Participants use
28 the analytical framework (see Table 3) to guide and capture the discussion,
29 either using paper and sticky notes on walls or using a shared spreadsheet
30 online. To train the key informants and ensure a consistent application of the
31 approach, it is possible to first work as a group and then ask individual key
32 informants to repeat the process for groups and organizations that they are
33 familiar with. Key informants can then be asked to check the work of others,
34 add information where they have additional knowledge or highlight any areas
35 of disagreement, using additional sticky notes or online comments as
36 necessary.
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- 38 ● **Stage 4 - Facilitate discussion:** Key informants should explore each others’
39 contributions, discuss where there is disagreement about the parties
40 identified, recognizing differences in perspectives and/or resolving this where
41 possible. For example, one key informant may judge that an organisation has
42 limited influence, based on their experience working with the organisation on
43 a particular issue or in a specific sector, whereas another key informant may
44 think they have significant influence on other issues or sectors. Both ratings
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1 (for example low versus high influence) and this would be discussed, either
2 leading to a change in the rating and comments if it is agreed that one
3 perspective has a stronger evidence-base, or both ratings and comments
4 would be retained where disagreement cannot be resolved or both
5 perspectives are deemed relevant.
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8 ● **Stage 5 - Identification and categorization of key parties:** Through group
9 discussion, review the parties identified and look at ways in which they might
10 be grouped and categorized. The resulting categorization will identify
11 distinctly different groups which most commonly are differentiated by the
12 nature of their interest in the issue. As a starting point, seek to condense the
13 list by first identifying parties that are likely to have similar views, taking care
14 to identify any parties with low influence that you do not want to marginalize
15 in your work. It is important that these discussions are confidential, given that
16 the opinions expressed by key informants about groups, organizations or
17 individuals may be controversial. However, depending on the sensitivity of
18 the issues, some of the identified parties may themselves be approached and
19 encouraged to review categorizations. Case study teams were also
20 recommended to review the identified parties and the subsequent
21 categorizations after the workshop, giving key informants the time and space
22 to re-consider the groupings and challenge/revise if necessary.
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30 The outputs of this analysis may then be used to design and implement a targeted
31 engagement plan adapted to the interests and needs of different groups of relevant
32 parties. To effectively engage the identified and prioritized relevant parties, the
33 engagement plan should include differentiated strategies for reaching out to
34 different groups and methods for providing information and collecting feedback. The
35 engagement plan should then be delivered, with regular monitoring and evaluation
36 to ensure that it effectively reaches and engages relevant parties. Finally, there
37 should be on-going refinement of 3i analysis and engagement plan. These processes
38 should adapt to evolving needs and circumstances as new organisations become
39 interested, increase or decrease in their level of influence, or start gaining benefits or
40 being disadvantaged as the issue evolves or the intervention, project or decision
41 progresses.
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50 **3.2 Survey methods**

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52 To efficiently generate data using the 3i approach, a survey was piloted and
53 implemented across several countries to identify relevant parties for a multi-national
54 research project focusing on wetlands restoration. The survey focuses on gathering
55 insights about relevant parties from individuals who are identified by the researchers
56 as knowledgeable about a given geographical area. That is, it is expected that the
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respondents will be identifying organizations that are relevant to a given project, as opposed to relevant individuals directly responding to the survey.

The survey instrument follows established good practices (e.g., Jensen & Laurie, 2016), including sticking to questions that the respondent could realistically answer about parties relevant to the topic being addressed (e.g., Tourangeau et al., 2000), using validated Likert-type scale anchors such as ‘not at all’ to ‘extremely’ (Vagias, 2006; Wagoner & Valsiner, 2005) and ensuring that survey response options are comprehensive and distinct (e.g., Jensen, 2014; Kennedy et al., 2021).



Here, we provide a step-by-step walkthrough of the survey design to show how the 3i framework can be operationalized in practice. We show the 3i-focused survey questions only, with a commentary explaining what each item is measuring and how it connects to the conceptual framework (Table 4). An additional ‘impact planning’ version of this survey, aimed at the relevant parties identified through the 3i analysis, is provided in the Supplementary Material.

Table 4: Survey questions operationalizing the 3i framework and commentary



Question	Commentary
<p><i>[Respondents are provided with a description of the project.]</i></p> <p>Are you aware of any organisations or groups in [project area] that may be relevant to these topics in any way? [Radio box]</p> <p>Yes</p> <p>No</p> <p>Unsure</p>	<p>Following a description of the research project, the survey starts by asking respondents to assess their own awareness of organisations or groups that may be relevant to the planned work or aims of the project. This initiates the process of respondents reviewing their network in relation to the project, and defining specific relevant parties to answer subsequent 3i questions about.</p> <p>The inclusion of ‘unsure’ in addition to ‘Yes’ and ‘No’ ensures that all possible responses have been covered, in line with good practice (e.g., Jensen & Laurie, 2016).</p>
<p>At what level is this organization/group related to this project area? [Checkbox]</p> <p><i>(Tick all that apply)</i></p> <p>[Most familiar catchment areas]</p> <p>National</p> <p>International</p>	<p>Once a specific party has been named, the next question measures the level at which they are related to the research in terms of geographical scale, from the respondent’s perspective. The analytical purpose of this question is to understand the scope of the relevant party’s interest, and to indicate from which geographical angle their perspective is likely to be informed by.</p> <p>The inclusion of ‘none of the above’ as a response option ensures comprehensiveness in</p>

<p>None of the above</p>	<p>line with good practice (e.g., Jensen & Laurie, 2016).</p>
<p>How is this organization/group related to this project's work? [Checkbox]</p> <p><i>(Tick all that apply)</i></p> <p>Interest - They are likely to be interested in the project's work</p> <p>Influence - They are likely to have some power to block or facilitate the project's work</p> <p>Benefit - They might benefit from the project's work</p> <p>Negative impact - They might be negatively affected by the project's work</p>	<p>This question directly measures which of the 3i concepts are perceived as relevant for the named party.</p> <p>The 'interest' checkbox constitutes a binary categorical variable measuring the respondent's perception of whether or not the relevant party is likely to want to pay attention to the project's work for any reason. It also serves as a screening question for follow up questions which dig deeper into the nature of their interest.</p> <p>The 'influence' checkbox also constitutes a binary categorical variable measuring the respondent's perception of whether the relevant party possesses any level of power that may enable them to have influence on the project or its intended impacts or not. Selection of this checkbox triggers follow-up questions which dig deeper into the nature of their influence.</p> <p>The 'impact' assessment is split into two binary categorical variables - 'benefit' or 'negative impact', to immediately assess the respondent's perception of whether or not the relevant party could be positively or negatively affected by the project.</p> <p>The terminology used in this survey item is aimed at ensuring clarity and avoiding jargon, in line with good practice (e.g., Jensen & Laurie, 2016).</p>
<p><i>Shown if 'Interest - They are likely to be interested in the project's work' selected:</i></p> <p>How interested in the project's work do you think they are likely to be?</p> <p>Not at all Extremely</p> <p>0 10 20 30 40 50 60 70 80 90 100</p> 	<p>This follow-up question measures the respondent's perception of the relevant party's level of interest in the project work. The 0-100 range response format provides ordinal data, and indicates the extent to which the relevant party is likely to want to pay attention to the project, learn about it and potentially engage with it. The survey item uses the scale anchors 'not at all' to 'extremely', which is drawn from a previously validated scale (Vagias, 2006).</p> <p>After this, the respondent is given an open text-</p>

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<p>1 Please explain [Text area]</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p>	<p>box to explain the nature of the interest the relevant party has to the project. This provides the space for respondents to indicate which aspects of the work they are likely to be interested in, as well as what values, beliefs or assumptions that might drive this interest.</p>
<p>8</p> <p>9 <i>Shown if 'Influence - They are likely to have some power to block or facilitate the project's work' selected:</i></p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14 How much power do you think they have to support the project to deliver its goals in [project area]?</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19 Not at all Extremely</p> <p>20 0 10 20 30 40 50 60 70 80 90 100</p> <p>21 </p> <p>22</p> <p>23</p> <p>24</p> <p>25 Please explain [Textarea]</p> <p>26</p> <p>27</p> <p>28</p> <p>29</p> <p>30</p> <p>31</p> <p>32</p> <p>33</p> <p>34</p> <p>35</p>	<p>This follow-up question measures the respondent's perception of the relevant party's level of power to support the project's work and its potential impacts. The 0-100 range response format provides ordinal data, and ultimately indicates how influential or useful the relevant party could be in supporting the project to achieve its aims.</p> <p>The subsequent text-box provides space for the respondent to explain their understanding of the nature of the relevant party's influence in terms of supporting the project to achieve its aims. Here, they can elaborate on the type of power that the relevant party has (e.g. whether it is explicit, hierarchical "power over", or implicit, personal or transpersonal "power with"), and how it might be leveraged to facilitate the project's work and its potential impacts. Respondents can also use this space to describe the reach of the party's influence, in terms of who they can influence and at what geographical or social scale.</p>
<p>36</p> <p>37</p> <p>38 <i>Shown if 'Influence - They are likely to have some power to block or facilitate the project's work' selected:</i></p> <p>39</p> <p>40</p> <p>41</p> <p>42</p> <p>43 How much power do you think they have to block the project from achieving its goals in [project area]?</p> <p>44</p> <p>45</p> <p>46</p> <p>47</p> <p>48 Not at all Extremely</p> <p>49 0 10 20 30 40 50 60 70 80 90 100</p> <p>50 </p> <p>51</p> <p>52</p> <p>53 Please explain [Text area]</p> <p>54</p> <p>55</p> <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p>	<p>This follow-up question measures the respondent's perception of the relevant party's level of power to inhibit the project's work and its potential impacts. The 0-100 range response format provides ordinal data, and ultimately indicates how important it might be for the project to engage the party to invite them to help shape the project. This maximises the likelihood that they will be supportive of the project and its goals, so they do not utilise their power to block it.</p> <p>Following this, the 'please explain' text-box provides space for the respondent to explain their understanding of the nature of the relevant party's influence in terms of their ability to block the project from achieving its goals. Here, they can elaborate on the type of power that the relevant party has (e.g. whether it is explicit, hierarchical "power over", or</p>

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	<p>implicit, personal or transpersonal “power with”), and how it might be leveraged to inhibit the project’s work and its potential impacts. Respondents can also use this space to describe the reach of the party’s influence, in terms of who they can influence and at what geographical or social scale.</p>
<p><i>Shown if ‘Benefit - They might benefit from the project’s work’ selected:</i></p> <p>To what extent would this organization benefit from the project’s work in [project area]?</p> <p>Not at all Extremely 0 10 20 30 40 50 60 70 80 90 100</p>  <p>Please explain [Text area]</p>	<p>This question measures the respondent’s perception of the extent to which the relevant party might be able to benefit from the project’s work. The 0-100 range response format provides ordinal data, and provides an indication of the significance of the benefits that the project’s work or impacts might deliver for the party.</p> <p>The linked text-box invites respondents to explain the nature of this benefit, and gives them space to clarify other details, such as whether the benefits might be long-term or short term.</p>
<p><i>Shown if ‘Negative impact - They might be negatively affected by the project’s work’ selected:</i></p> <p>To what extent would this organization be negatively affected by the project’s work in [project area]?</p> <p>Not at all Extremely 0 10 20 30 40 50 60 70 80 90 100</p>  <p>Please explain [Text area]</p>	<p>This question measures the respondent’s perception of the extent to which the relevant party might be negatively affected by the project’s work. The 0-100 range response format provides ordinal data, and provides an indication of the significance of the negative impacts that the project’s work or impacts might deliver for the party.</p> <p>The linked text-box invites respondents to explain the nature of the negative impact they might face, and gives them space to clarify other details, such as whether the impacts might be long-term or short term.</p>
<p>Is there anything else we should know about engaging with this relevant party?</p> <p>Yes</p> <p>No</p>	<p>This penultimate block of questions starts with a question assessing the respondent’s awareness of any other useful information it would be useful for the project to know with regards to engaging the relevant party. This might include important context, such as their knowledge base, expertise, funding, or the</p>

<p>1 Unsure</p> <p>2</p> <p>3 <i>Shown if 'Yes' selected:</i></p> <p>4</p> <p>5 What should we know about when engaging</p> <p>6 with this relevant party? [Text area]</p> <p>7</p> <p>8</p> <p>9</p>	<p>political context they are embedded in.</p>
<p>10 Would you be able to contact someone from</p> <p>11 this relevant party?</p> <p>12</p> <p>13 Yes</p> <p>14</p> <p>15 No</p> <p>16</p> <p>17 Unsure</p> <p>18</p> <p>19</p> <p>20</p> <p>21 Would you be willing to invite your contacts to</p> <p>22 help shape the [project]?</p> <p>23</p> <p>24 Yes</p> <p>25</p> <p>26 No</p> <p>27</p> <p>28 Unsure</p> <p>29</p> <p>30</p> <p>31 <i>Shown if 'Yes' selected:</i></p> <p>32</p> <p>33 Note: We can provide you with an email</p> <p>34 template and information about the project for</p> <p>35 you to personalise and share.</p> <p>36</p> <p>37</p> <p>38</p>	<p>Finally, respondents are asked if they have the ability and willingness to invite someone from this relevant party to engage with the project. This is asked in order to lay the foundations for actual stakeholder engagement and impact planning work, and gain consent for asking the respondent to support this engagement.</p>

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40 The full survey design that was used in nine catchments for the EU-funded Wet

41 Horizons project is available in Supplemental Material. This includes demographic

42 and other questions. The survey design is available in English, Finnish, Danish, and

43 Polish. The survey was also adapted as a semi-structured interview schedule for the

44 same project. Informed consent was gained from all participants via a consent block

45 in the online survey, and the survey design was approved by the SRUC Ethics Board.

46 To identify participants for the survey, a call-out for participation was circulated

47 within Wet Horizons researchers' networks, forming the basis for a snowball sample.

48 Participation was requested of those with knowledge of the groups or organisations

49 with a stake or relation to wetlands restoration in each catchment. Where survey

50 responses were low, additional requests for participation were made via social media

51 (Twitter and LinkedIn). This first survey received n=94 responses across the nine

52 study catchments. Once data for each catchment had been collected, survey results

53 were analysed to identify the nature and level of each relevant party's interest,

54 influence and impact in relation to the Wet Horizons project. Each organisation was

1 given an overall '3i score', with higher scores indicating the more important
 2 organisations to engage in the project. The next section provides findings from one
 3 of the study catchments, located in Scotland, as a case study to illustrate the utility of
 4 the method.
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6 **4 Case study findings**

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 10 The 3i analysis survey tool (see Supplementary Material) was used to identify parties
 11 relevant to wetland and peatland restoration within the River Dee catchment in
 12 Scotland, UK. A total of 11 organisations were identified with interests in, influence
 13 over and/or likely to be impacted positively or negatively by restoration effort. This
 14 information was provided by 9 survey respondents. Table 5 summarises the
 15 organisations identified in four categories and Table 6 shows the scores assigned for
 16 each organisation's interest, influence and impact. The full analysis of all
 17 organisations is provided in Supplementary Material. Results for two contrasting
 18 organisations are provided below, to allow comparison of the organisations with the
 19 highest versus lowest scores across the three criteria, interest, influence and impact.
 20 In some cases, respondents indicated there would be some level of interest,
 21 influence or impact for the organisation, but did not provide a score indicating the
 22 extent. In these cases, desk research and interpretation of open-ended responses
 23 were used to infer an appropriate level (low, medium or high).
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33 **Table 5:** Relevant party categories identified
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Relevant party category	Category description	Organisations	No. of organisations identified
National and regional level public bodies	National and regional public bodies with statutory powers responsible for nature conservation or public land management	<ul style="list-style-type: none"> ● Cairngorms National Park Authority ● Forestry & Land Scotland ● Peatland Action (NatureScot) 	3

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Local authorities and community councils	Local level public bodies and voluntary organisations set up by statute by local authorities.	<ul style="list-style-type: none"> ● Ballater and Crathie Community Council 	1
Environmental charities, initiatives and partnerships	Non-governmental organisations, partnerships, networks and initiatives with conservation and restoration goals.	<ul style="list-style-type: none"> ● East Cairngorms Moorland Partnership ● Dee Catchment Partnership ● Dee District Salmon Fishery Board and River Dee Trust* 	3
Landowners	Private estates, charitable estate owners, owner occupier farmers, and other institutional landowners.	<ul style="list-style-type: none"> ● Balmoral Estate ● Glenmuick Estate ● Invercauld Estate ● Mar Lodge Estate 	4

* Dee District Salmon Fishery Board and River Dee Trust are legally separate entities that in many ways function as a separate organisation, with a shared website, office

and staff team. The fisheries board is a statutory body, so could have been categorised differently here.

Table 6: Scores assigned to each of the organisations identified, in relation to their interest, ability to influence the achievement of restoration goals (positively or negatively), and the likely impacts (either positive or negative) arising from restoration for each organisation. Scores are based on an average of respondents' assessments of the identified relevant organisations in each category using a scale ranging from 0 (Not at all) to 100 (Extremely). Where no survey data was provided, interest/influence/impact levels were identified through desk research and/or interpretation of open-ended responses, are indicated by an asterisk (*), and are explained fully below.

Organisatio n	Interes t	Influence (Positive)	Influence (Negative)	Impact (Positive)	Impact (Negative)	Total 3i score
Balmoral Estate	80	100	100	50	80	410
Invercauld Estate	80	90	80	50	80	380
Forestry and Land Scotland	100	76	70	79	N/A	325
Mar Lodge Estate (National Trust for Scotland)	90	80	30	70	N/A	270
East Cairngorms Moorland Partnership	50	80	80	40	N/A	250
Peatland Action (NatureScot)	70	100	80	N/A	N/A	250
Ballater and Crathie Community Council	90	50	20	80	NA	240
Dee Catchment Partnership	68.5	60	56.5	55	N/A	240

Glenmuick Estate	50	80	51	50	N/A	231
Cairngorms National Park Authority	70	69	30	60	N/A	229
Dee District Salmon Fishery Board and River Dee Trust	60	42.5	22	85	N/A	213

Balmoral Estate

Balmoral Estate, covering an area over 20,000 hectares, is well-known for Balmoral Castle - a residence of the British royal family. The estate was bought by Prince Albert husband of Queen Victoria in 1852¹. The estate falls within the Cairngorms National Park and partly within the Deeside and Lochnagar National Scenic Area, and contains several other designated protected areas. The estate contains extensive tracts of woodland, grouse moor and farmland, as well as large numbers of deer. The estate is also a major tourist destination with visitors coming to see the castle and grounds, access a range of guided walks, talks and 'land rover safaris', and pay to fish from the estate's rivers².

The respondent commented that, 'Balmoral Estate probably owns the largest continuous area of peatland in the Dee catchment (south of Loch Muick), therefore their cooperation in progressing peatland restoration to help mitigate flood risk in this catchment is vital'.

Interest

Balmoral Estate was rated as likely to be highly interested (80%) in Wet Horizons and its outcomes. Though no further explanation was given, this is likely due to the estate containing significant areas of peatlands. Furthermore, Balmoral has been engaged in

¹ <https://balmoralcastle.com/index.html>

1 peatland restoration since 2015 with work to reprofile hags, install dams, and restore
2 areas of bare peat³. The estate was recently awarded further funding from Peatland
3 Action to expand its restoration efforts⁴. A number of monitoring studies are also
4 being carried out on the estate in relation to peatland restoration, including one led
5 by the James Hutton Institute which uses aerial mapping technology⁵.
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7 8 *Influence* 9

10 Balmoral Estate was rated as likely to have a high level of influence (100%) to support
11 Wet Horizons and its outcomes. This power to facilitate restoration relates firstly to
12 control over what happens to peatlands contained on the estate itself. In addition,
13 the respondent noted that 'if they take a lead in restoration, neighbouring estates
14 that are managed in a similar way'. One forum where this type of influence may be
15 exerted is the East Cairngorms Moorland Partnership, of which Balmoral is a partner,
16 described below. Balmoral Estate was rated as likely to have a high level of influence
17 (100%) to block Wet Horizons and its outcomes, with the respondent highlighting the
18 control the estate has over what happens on its own land. Following the above, it is
19 also evident that the estate's power to block restoration is likely to include its ability
20 to shape the decision making of neighbouring estates.
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27 28 *Impact* 29

30 Balmoral Estate was rated as likely to receive a moderate level of benefit (50%) from
31 Wet Horizons and its outcomes. The respondent noted here that there, 'could be
32 significant potential benefits in terms of publicity for the estate, attracting paying
33 visitors, if they can demonstrate green credentials...peatland restoration could also
34 enhance landscape quality, further attracting visitors'. Given that Balmoral Estate is
35 already engaged in peatland restoration, it can also be assumed that the estate
36 would benefit from any improvements in restoration practice as a result of the Wet
37 Horizons project.
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45 Conversely, Balmoral Estate was rated as likely to experience a high level of negative
46 impact (80%) from Wet Horizons and its outcomes. The respondent explained that
47 there is the, 'potential for incompatibilities between some of the estate's traditional
48 commercial activities (e.g. hunting and shooting) that could be a barrier to
49 restoration'. The respondent highlighted the impact of high deer numbers in
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57 ³ <https://www.scottishlandandestates.co.uk/events/walk-talk-peatland-restoration-spittal-glenmuick-balmoral-estate>

58 ⁴ <https://www.theguardian.com/uk-news/2023/apr/20/royal-familys-balmoral-estate-could-be-worth-80m>

59 ⁵ [Aerial maps used to monitor peatland restoration on Balmoral Estate | The James Hutton Institute](https://www.jhi.ac.uk/news/aerial-maps-used-to-monitor-peatland-restoration-on-balmoral-estate)

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reducing the effectiveness of restoration, and it is notable that Balmoral Estate has previously been criticised for failing to reduce deer populations⁶.

Implications and Recommendations

Here, we highlight any practical or strategic implications or inferences that can be drawn out based on the information presented about this organisation, both in terms of self-description and the perspective of the respondent(s). These recommendations focus on further engagement guidance, and outputs likely to be of interest for them.

- **Engaging through existing East Cairngorms Moorland Partnership and Cairngorms National Park Authority:** the estate is located within the Cairngorms National Park and is a member of the East Cairngorms Moorland Partnership. Engaging the estate through these and other existing forums may enhance its view of the credibility of the project.
- **Raising public awareness:** Balmoral Estate has a strong public presence as a residence of the British royal family and is a significant destination for tourists. Increasing the public’s awareness of the value of restoration could there ensure the estate is more likely to engage with the project.
- **Sharing tools, best practice and lessons learned about restoration:** as the estate is already engaged in peatland restoration, it is likely to benefit from any practical outputs from the project.
- **Sharing ecosystem market outputs which support growth in revenue streams:** as the estate is privately owned and operates commercially, it is likely to be interested in any outputs that improve its ability to access natural capital markets.

⁶ <https://www.heraldscotland.com/news/18270928.queen-urged-cull-deer-balmoral/>

Dee District Salmon Fishery Board and River Dee Trust

Dee District Salmon Fisheries Board (DDFSB) and River Dee Trust are separate legal entities working together as a single 'River Dee team', including through sharing a website, office and team⁷. The organisations describe their shared roles as, 'two organisations who look after the UK's highest river and one of the best-known salmon fishing rivers worldwide... working toward our vision of a thriving river supporting abundant biodiversity and binding strong the Deeside communities in Northeast Scotland'. The River Dee Trust is a community based charitable community set up to improve knowledge about the river's ecology and fish stocks and to carry out restoration activities. DDFSB is a statutory body, 'tasked with protecting and enhancing stocks of salmon and sea trout across the district'⁸.

One respondent commented here that, 'they work with local landowners to restore habitat and natural geomorphic function to these watercourse. Restoring river habitats may include improving the channel-floodplain connectivity, which can have benefits for wetland environments on the floodplain. Therefore, there may be opportunities to tie in wetland restoration with some of the projects that they are working on'.

Interest

DDFSB and the River Dee Trust were rated as likely to have a moderate level of interest (60%) in Wet Horizons and its outcomes. One respondent commented here that the organisations, 'are regularly looking for opportunities to improve and restore the natural catchment function. This project may help to identify other potential areas for them to target. Following this, in its 'Management Plan 2020-25', DDFSB states that it is planning to carry out peatland restoration in an effort reduce run-off during flooding and improve water quality. However, it also should be noted that no evidence that this work is on-gong was found during the research⁹.

Influence

DDFSB and the River Dee Trust were rated as likely to have moderate influence (45.5%) to support Wet Horizons and its outcomes. One respondent noted here that the organisations have, 'good connections with landowners across the Dee catchment, from previous and on-going work'. Such work includes a range of river restoration activities including removing dams, riparian woodland creation and tackling invasive species. A note of caution here is that activities to date appear to have mostly focused on the river and immediately adjacent lands, with less focus on restoration of peatlands or wetlands. Hence, the role of DDFSB and the River Dee

⁷ <https://riverdee.org.uk/>

⁸ <https://riverdee.org.uk/who-we-are/#board>

⁹ <https://riverdee.org.uk/wp-content/uploads/2022/09/Dee-Fisheries-Management-Plan-2020-25.pdf>

1 Trust in facilitating the Wet Horizons could be limited if the project is not seen as
2 directly relevant their work. DDFSB and the River Dee Trust were rated as likely to
3 have a low level of influence (22%) to block Wet Horizons and its outcomes, with one
4 respondent commenting here that ‘it wouldn't be in their interest to do so, unless
5 there was a specific risk to the Dee’.
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7 8 *Impact* 9

10 DDFSB and the River Dee Trust were rated as likely to receive a high level of benefit
11 (85%) from Wet Horizons and its outcomes. One respondent highlighted a potential
12 benefit as, ‘reduced runoff from degraded peatlands into the River Dee’. Following
13 this, benefits could include improvements in restoration practice and tools leading to
14 reductions in flood risk, enhancements in water quality and ultimately to improved
15 fish stocks. Similarly, an increase in peatland restoration across the catchment could
16 be beneficial for DDFSB and the River Dee Trust, for example as a result of any
17 improvements in modelling supporting further expansion of peatland natural capital
18 markets. The respondents did not state whether DDFSB and the River Dee Trust were
19 likely to experience any negative impacts as a result of Wet Horizons and its
20 outcomes, but this would appear to be unlikely.
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30 **5 Discussion** 31

32 The central premise of the 3i approach is that, by the acquisition of a greater depth of
33 knowledge regarding relevant parties and the nature of relationships between them, users
34 are empowered to initiate effective and inclusive engagement. In doing so, the 3i approach
35 acknowledges the importance of social context and the likelihood that, for any given issue,
36 relevant parties may have had previous engagement experiences and therefore come with
37 predispositions towards other participants or decision makers (Colvin et al., 2020). It is also
38 important to emphasize that those who are interested, have influence or who are impacted
39 by an issue, intervention, project, process or decision, are unlikely to be static and there is
40 therefore a need to regularly revisit the analysis to capture new parties as they become
41 relevant to the work, and to ensure that engagement remains targeted to dynamic needs and
42 interests.
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48 Using this framework, it is possible to propose a typology of relevant parties who should be
49 engaged in issues, interventions, projects, processes or decisions, based on eight functional
50 groups grounded in their levels of interest, influence, and relative impact (Table 7). Note that
51 in traditional interest-influence matrices, those with low interest and low influence are
52 termed “the crowd” and are often deprioritized or “crowded out” of subsequent engagement
53 (Reed et al., 2009). However, this may exclude those who are not interested or influential,
54 but who may be significantly impacted. Using the 3i approach, it is legitimate to deprioritize
55 those who have limited interest, influence and impact, our “uninterested” category, only after
56 ascertaining that they are low on all three criteria.
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Table 7: Typology of relevant parties that should be included in engagement processes

Stakeholder type	Interest	Influence	Impact
Uninterested	Low	Low	Low
Uninterested and impacted	Low	Low	High
Uninterested influencers	Low	High	Low
Uninterested, influential and impacted	Low	High	High
Only interested	High	Low	Low
Interested and impacted	High	Low	High
Interested influencers	High	High	Low
Interested, influential and impacted	High	High	High

Critically, the 3i approach enhances levels of insight and inclusivity in “stakeholder analysis” through its integration of impact as a third criterion against which to identify and analyze relevant parties, alongside their relative levels of interest and influence. A number of alternative additional criteria have been discussed in the literature. For example, Hoare et al. (2023) found power, influence, legitimacy and urgency to be the most common criteria used in stakeholder analyses. First proposed by Mitchell et al. (1997), legitimacy is linked to both interest (i.e., those with legitimate interests in an issue, process or decision), and power (given that who is deemed to have a legitimate interest is typically decided by those in power), opening the analysis to bias and power imbalances, depending on how legitimacy is defined and by whom. As such, assessments of legitimacy will often combine the nature of a group’s interest as the basis for their legitimacy with information about the authority with which they lay claim to legitimacy. Nevertheless, legitimacy may be used to qualify the nature of a group’s interests. Indeed, the perceived level of legitimacy of different groups and their interests is often a source of conflict in engagement processes (Birnbaum et al., 2015). Like legitimacy, urgency may also be used to qualify the nature of an interest, and as such can be included in a 3i analysis to qualify the time-sensitivity and importance of any interest (Mitchell et al., 1997). The overlap and nuance of I remain the most used criteria in stakeholder analyses. Limiting the number of criteria in this way also increases the efficiency of the analysis. Given the additional time needed to analyze relevant parties in relation to each additional criterion, there needs to be a strong theoretical and/or normative argument for the inclusion of a third criterion. Given the key problem with

1 existing stakeholder analysis methods being used to legitimize the exclusion of potentially
2 important groups, the inclusion of impact has the potential to identify marginalized groups
3 who have limited interest and influence, but who could nevertheless be significantly
4 impacted (whether positively or negatively) by an issue, intervention, project, process or
5 decision, to ensure that they are prioritised for engagement.
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8 By including impact as a third criterion in the 3i analysis, two types of additional insight were
9 gained from the environmental applications of the approach in the case study. First,
10 additional depth of insight was facilitated by going beyond the exploration of interest as
11 simple expressions of preferences (as is done in traditional stakeholder analyses), without
12 considering the underpinning values and beliefs that drive those preferences. Second, the 3i
13 approach facilitated greater inclusion of more diverse parties, including vulnerable groups
14 with limited interest or influence, who stood to be significantly impacted (whether
15 positively or negatively) by the issue or project (groups who are often “crowded out” in
16 traditional stakeholder analyses). For example, the relatively narrow interests of the Dee
17 District Salmon Fishery Board and River Dee Trust limited their interest in peatland
18 restoration in the headwaters of the river (the main focus of the project), given that the
19 benefits of restoration for water discoloration are more marginal for fish populations than
20 the more significant issues of diffuse pollution in the catchment. Their specialist focus,
21 limited capacity (as a poorly resourced public body and community-based charity) and focus
22 on the lowland parts of the catchment may constrain their engagement with peatland
23 restoration and so explain their relatively limited influence. While their position at the
24 bottom of the score-based ranking in Table 6 could be used to justify engaging preferentially
25 with other organisations, the insights into this organization arising from the analysis could
26 also be used to create a tailored engagement strategy for this organization. For example,
27 interest in potential benefits of peatland restoration for flooding and water quality could be
28 further investigated, alongside the potential for landowners in their network to benefit from
29 peatland carbon markets, as a way of engaging this organisation more actively in decisions
30 about peatland restoration in their catchment. Although the case study focussed heavily on
31 these two organisations, based on their ranking in the analysis, the findings also identified
32 the Ballater and Crathie Community Council as a potentially marginalised group on the basis
33 of the significant benefit they could derive (for example from community benefit funds
34 arising from natural capital markets, which were being proposed by Scottish Government at
35 the time of the research), compared to their very limited influence over restoration
36 decisions (based on their scores for both positive and negative influence, this organisation
37 ranked lowest out of those analysed). Community Councils in Scotland are often perceived
38 to only be interested in issues in the towns and villages, as opposed to the rural areas in
39 their jurisdiction, and so are often excluded from decision-making processes relating to
40 environmental governance. The identification of this group as potentially marginalised could
41 be used as a basis for more targeted engagement, based on the findings of the analysis, to
42 better understand their needs and ensure their future engagement.
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54 By employing the 3i analysis process systematically, organizations can identify a larger
55 number of stakeholders than previously recognized by traditional approaches or by
56 authorities. This can lead to a broader engagement. This in turn results in a shift from
57 developing specific guidelines to establishing minimum requirements for existing entities
58 operating in a particular space. Moreover, using a classification system for stakeholders can
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1 help identify certain hard-to-reach groups that could be influential in generating impact if
2 their interests are adequately addressed. Collaborative efforts with relevant parties can be
3 particularly beneficial, as the insights gained from these partnerships have been used to
4 strengthen existing alliances or forge new connections in various sectors. By employing a
5 comprehensive framework, it is possible to identify essential categories of relevant parties
6 that might otherwise be excluded from engagement in the research process. The analysis
7 should also aim to achieve a high level of granularity to identify hard-to-reach and
8 potentially vulnerable groups. This can include specific community groups, people affected
9 by certain issues, or groups that might face negative consequences due to policy changes.
10 While the large number of relevant parties identified using the 3i approach may be viewed
11 as a challenge, the categorization step in the method enabled long lists of organizations to
12 be organized into as few groups as possible, to help structure subsequent engagement. For
13 example, organizations identified in the case study were categorized into national and
14 regional public bodies, local authorities and community councils, environmental charities
15 and partnerships, and landowners, providing a clear structure for understanding different
16 types of relevant parties and their roles in restoration efforts. This sort of categorisation
17 makes it possible to ensure that at least one representative is engaged from each category
18 in subsequent project work (or more than one individual/organization for large or diverse
19 groups, which were sometimes divided into sub-groups to represent that diversity more
20 systematically). There is now robust evidence that representation of relevant parties is the
21 most significant factor influencing the outcomes of participatory processes in environmental
22 governance (Newig and Fritsch, 2009; Newig et al., 2018). It is therefore essential that a
23 systematic approach is followed, to choose who gets to “sit at the table”. Without this, a
24 participatory process may be challenged and delegitimized by those who believe they were
25 unfairly excluded from the process. Whilst being aware of a problem (e.g. the under-
26 representation of minority groups) doesn’t inherently decrease its proclivity, these
27 processes are designed to make the list of identified parties as comprehensive and
28 representative as possible. In addition to this, developing the engagement process further
29 to meet the needs of different types of relevant parties, could further increase impact of
30 research (Reed and Rudman., 2022).

40 **4 Conclusion**

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43 In this paper, we have presented a new method for identifying and analyzing those who
44 should be engaged in issues, interventions, projects and decisions, including a detailed
45 survey instrument that can be used to operationalize the method. We have proposed a five-
46 stage process to inform the design of workshops and a short survey design to identify
47 stakeholders and gain perceptions relevant to a 3i analysis from those who know the
48 research context. The survey questions can also be formulated in a way to conduct direct
49 measurement with stakeholders (see Supplemental Materials). Clear sections on interest,
50 influence, negative impact and positive impact are used to collect both quantitative data
51 through closed-ended scale items and qualitative data using open-ended ‘please explain’
52 text areas. Quantitative data enables comparison of levels of interest, influence and impact
53 across stakeholders, while qualitative data allows for an in-depth understanding of
54 stakeholder contexts and the layers of detail (see Table 3) underpinning their perspectives.
55 Although more time-consuming, workshop experience, detailed in Supplementary

1 Materials, demonstrates the flexibility of the proposed process, as it was adapted to a range
2 of project contexts working across a different environmental and health issues.

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4 The 3i framework, although applied in this paper to an environmental decision-making
5 context, is broadly applicable Results from a 3i analysis can be used to guide across a range
6 of disciplinary and policy contexts, allowing practitioners to identify and understand those
7 they should be engaging at a much deeper level than has previously been possible. The
8 depth of knowledge generated by the 3i analysis can then enable more targeted and
9 empathic engagement (Reed and Rudman, 2022).

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12 In addition to evidence that the representation of relevant parties engaging in participatory
13 processes strongly influences outcomes (Newig and Fritsch, 2009; Newig et al., 2018), there
14 is evidence that the breadth of information inputs enables participatory processes to
15 generate impact (socially and environmentally beneficial and durable outcomes; de Vente et
16 al., 2016). It is therefore imperative that engagement is inclusive, representing the fullest
17 possible range of interests and perspectives, including those from vulnerable and
18 marginalized groups, especially when they may be significantly impacted by an issue,
19 intervention, project or decision. The insights gained from the case study underscore the
20 importance of adapting engagement processes to the diverse needs and perspectives of
21 different groups. By prioritizing the inclusion of marginalized and vulnerable groups, the 3i
22 framework not only enhances the legitimacy and equity of environmental governance but
23 also contributes to more sustainable and socially just outcomes.

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26 Existing stakeholder analysis methods are part of the problem; they bias selection away
27 from already disenfranchised groups with limited interest or influence on an issue, even
28 though it is these very characteristics that make them vulnerable and marginalized (they
29 have limited influence). This reifies marginalized groups' positioning, for example, if they
30 have limited interest in the issue or process because of the way it has been framed and
31 communicated (or not communicated) up to that point. It is not possible to include
32 everyone in a participatory process, due to constraints in resources or the process itself
33 (e.g., if the goal is to facilitate deliberation), and it is legitimate to screen out those who
34 have limited interest, influence and impact. However, the remaining seven types of
35 stakeholders identified in our typology (uninterested and impacted; uninterested
36 influencers; uninterested, influential and impacted; only interested; interested and
37 impacted; interested influencers; and interested, influential and impacted; see Table 3)
38 need to be engaged wherever possible, adapting the design of the participatory process to
39 the needs of each group. To ensure inclusive and effective engagement, it is necessary to
40 identify relevant parties from across this typology, and to do this, it is necessary to evaluate
41 the relative interest, influence and impact arising from an issue, intervention, project or
42 decision for each party identified. This is the kind of information that is needed to enable
43 the kind of evidence-based approach to engagement called for by Jensen & Gerber (2020)
44 and Jensen et al. (2021).

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47 As environmental challenges become increasingly complex and interconnected, the need for
48 robust and inclusive engagement frameworks is more critical than ever. The 3i framework
49 offers a valuable tool for researchers, policymakers, and practitioners aiming to foster
50 meaningful participation and collaboration in environmental decision-making. Its adoption
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could lead to more comprehensive and equitable engagement processes, ultimately improving the effectiveness of environmental policies and interventions. The potential for the 3i framework to transform stakeholder analysis methods and participatory practices is significant. By promoting broader inclusivity and deeper understanding of the impacts on all relevant parties, the 3i framework represents a crucial step towards more effective and just environmental governance.

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Supplemental Materials

SURVEY SPECIFICATION FROM WET HORIZONS 3I ANALYSIS SURVEY - STAKEHOLDER IDENTIFICATION

Survey

Welcome!

This page is intended to answer any questions you may have about participating in research for the European Union-funded **Wet Horizons** project. Please read this information before providing your consent to participate.

Why we are asking for your help

You have been identified as having interests relevant to wetland restoration (including peatlands) in one of the study countries involved in the Wet Horizons project. For this reason, **we would like to invite you to share your knowledge of other groups or organisations interested in, involved or affected by restoration.**

How your insights can make a difference

Wet Horizons aims to boost wetlands knowledge and develop tools and approaches for fast-tracking large-scale restoration action. To do this, we need to understand who is interested in, involved or affected by the restoration of wetlands and peatlands, in and around specific catchments in each study country. This will help us engage the right people to shape our research and ensure it benefits EU citizens.

We will use findings from this research to help scale up wetland restoration to help tackle climate change and biodiversity loss, whilst protecting the livelihoods of local communities. This project is being conducted alongside three related projects, looking at other aspects of natural capital markets, and data will be shared between these projects, as described below under “How will my data be stored and used”.

Who is conducting this research

This research is conducted by staff at the [Thriving Natural Capital Challenge Centre](#) at SRUC, including: Prof. Mark Reed (research lead), Prof. Eric Jensen (research fellow), and Sarah Noles (research assistant). The broader EU project team comprises 12 universities and research organisations from around Europe (details of this consortium can be found [here](#)).

How is this research funded

This research is being funded by the European Commission, under the Horizon Europe funding programme, and the Scottish government.

How to participate

This survey will take between 5-20 minutes. This depends on how much detail you provide in your responses. For example, this survey will take very little time if you do not know many others interested in, involved or affected by wetland restoration. We still ask that you answer any relevant questions. If you cannot complete this questionnaire, you are welcome to forward the original invitation and survey link to another suitable individual(s) and encourage them to submit a response.

How data will be stored and used

Data will not be shared outside SRUC and its project partners for Wet Horizons, two related Scottish Government-funded projects being run by SRUC, “Galvanising Change via Natural Capital” (ref. JHI-D5-3) (including the James Hutton Institute) and “Provision of research with supply-side actors in Scotland’s peatland natural capital markets” (ref. CR/2022/08) (including SAC Consulting and Finance

1 Earth). Data will also be shared with the ALFAwetlands project, funded by the European Commission.
2 Data may be used where relevant in publications for these related projects. All personal data will be
3 anonymised before sharing beyond the SRUC and project partner research teams for the Wet
4 Horizons project. Your contributions will remain anonymous by default in project publications, which
5 may include peer-reviewed academic journals and publications aimed at research and policy
6 professionals. Electronic data will be stored on encrypted, password-protected computers, and
7 backed up on secure, encrypted EU-based servers in full compliance with GDPR.

8 **Right to withdraw from participation**

9 No risks associated with this research that would affect you as a participant have been identified.
10 Participation is entirely voluntary, and you may withdraw yourself or your data at any time prior to data
11 anonymisation, without providing any reason.

12 **Research Team Contact**

13 Please contact Sarah Noles (sarah.noles@sruc.ac.uk) if you have questions about participating in this
14 research, would like to request a copy of your data (or request that it is destroyed), or withdraw from
15 participation.

16 **Agreement to participate**

17 After reading the participant information page, please read the following statements and then indicate
18 your understanding and consent:

- 19 **5** I have read the participant information page and the Wet Horizons project objectives of this
20 research study.
- 21 **6** I have had the opportunity to consider the information, ask questions and clarify any doubts
22 regarding the project.
- 23 **7** My participation is voluntary and I am free to withdraw at any time before my responses are
24 anonymised.
- 25 **8** My personal information (name, organisational affiliation, contact details and research
26 contributions) will be processed by SRUC.
- 27 **9** My personal information may be retained for the duration of the Wet Horizons project (end of
28 August 2026) and the three related projects (the longest of which ends March 2027).
- 29 **10** My responses may be shared with partners of the Wet Horizons project and three related
30 projects funded by the Scottish Government.
- 31 **11** After my responses have been anonymised, the information I provide may be used to produce
32 research outputs, including academic journal articles and policy briefings or be published as an
33 open dataset (due to European Commission's open data requirements).

34 **1.1. Please indicate whether you understand and agree with the statements 35 above, and consent to participate in this survey: [Checkbox]**

36 I consent to participate in this survey and for my responses to be used as indicated above.

37 **1.2. In addition, please also indicate whether you opt-in to the following uses 38 of your data: [Checkbox]**

39 *(This will not affect your eligibility to participate in the survey)*

40 Yes, you may indicate my name (or other professional identifier) as a research participant
41 (e.g., in the acknowledgements of the report not linked to any specific responses).

42 Yes, you may keep me up to date on project news using the contact details I have provided
43 (e.g., an invitation to presentations/webinars on findings).

44 Yes, you may re-contact me for the purposes of this study.

45 Yes, you may re-contact me for future studies on related topics.

46 Please click Next to continue

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54 **[PAGE BREAK]**

55 Contact details

56 **First name**

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Last name

2.2. Email [Email]

2.3. Organisation/Institution name [Text line]

2.4. Current job title [Text line]

(If you have more than one, please indicate the one you consider primary)

Note: If you have more than one institution or job title, please indicate the one you consider primary

Please click Next to continue

[PAGE BREAK]

3.1. Which country and catchment areas are you familiar with? [Checkbox (Button)]

- Denmark [various rivers along the Kattegat]
- Finland [Kokemäenjoki, region of Lounais-Häme]
- Finland [Kemi, region of Kittilä, Muonio & Enontekiö]
- France [Garonne]
- Germany [Peene River]
- Netherlands [incl. Lower Rhine, Ljssel]
- Poland [Biebrza]
- Romania [Danube]
- Scotland [Dee]
- None of the above
- Other (please specify)

3.2. Which country and catchment area are you the most familiar with? [Dropdown]

Please select the area in which you are most aware of groups or organisations relevant to improving wetlands or peatlands restoration processes. This is the catchment area we will focus on for this survey.

- Denmark [various rivers along the Kattegat]
- Finland [region of Lounais-Häme]
- Finland [region of Kittilä, Muonio & Enontekiö]
- France [Garonne]
- Germany [Peene River]
- Netherlands [incl. Lower Rhine, Ljssel]
- Poland [Biebrza]
- Romania [Danube]
- Scotland [Dee]
- Other (please specify)

Please click Next to continue

Shown if Denmark [various rivers along the Kattegat], Finland [region of Lounais-Häme], Finland [region of Kittilä, Muonio & Enontekiö], France [Garonne], Germany [Peene River], Netherlands [incl. Lower Rhine, Ljssel], Poland [Biebrza], Romania [Danube] OR Scotland [Dee] selected in 3.2. [Applies to text below, to 4.1.]

[PAGE BREAK]

Please answer the following questions relevant to the country and catchment area you are the most familiar with.

1 **4.1. What role(s) have you held relevant to [Most familiar catchment areas]?**
2 **[Checkbox (Button)]**

3 *(Tick all that apply)*

- 4 Researcher
5 Local community member
6 NGO representative
7 Government or policy representative
8 Land-use business representative (e.g. farmer)
9 Land-planning or environmental management representative
10 Commercial organisation representative (e.g., with a link to the catchment)
11 Other (please specify)
12

13 Please click Next to continue
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15
16 *[PAGE BREAK]*
17

18 **The Wet Horizons project**
19 **Help us engage with the right people**

20 We want to engage with organisations or groups interested in, involved or affected by the restoration
21 of wetlands and peatlands around this country and catchment area: **[Most familiar catchment areas]**
22

23 Sharing your knowledge will help shape our understanding of which stakeholders will be most
24 affected by our research and impact work so that we can more effectively improve the process of
25 restoring wetlands and peatlands.
26

27 The key features of Wet Horizons overall plans include the following:

- 28 ● Use of citizen science for data collection
29 ● Developing digital tools for upscaling wetland restoration, including an app for the
30 visualisation of wetland status and a decision support system for policy makers
31 ● New governance models in land manager organisations
32 ● Use of ecosystem markets to increase private investment in place-based governance of
33 restoration and sustainable wetland management
34 ● Blending public and private finance for wetland restoration in Europe
35 ● Policy recommendations for the protection and restoration of wetlands across Europe
36

37 **5.1. Are you aware of any organisations or groups in [Most familiar catchment**
38 **areas] that may be relevant to these topics in any way? [Radio box]**

- 39 Yes
40 No
41 Unsure
42

43 *Shown if Yes selected in 5.1. [Applies to text below]*
44

45 **Wonderful!**

46 We would greatly appreciate you continuing the survey.
47

48 Please respond to our questions on the following pages for as many
49 relevant parties as possible.
50

51 Please click Next to continue
52

53 *Shown if No OR Unsure selected in 5.1. [Applies to text below]*
54

55 We appreciate you taking the time to respond to our questions.
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1 We may follow up with you should we require any further
2 information.

3
4 Have a wonderful day!

5
6 Please click Submit to send your responses.

7
8 *Shown if Yes selected in 5.1. [Applies to Relevant Party 1, text below, Assessment of project
9 relevance for the organisation or group, to 6.3. and 7.1. to 7.17.]*

10
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12 [PAGE BREAK]

13 14 15 Relevant Party 1

16
17
18 **Please complete the following information about the first
19 relevant party that comes to mind. You may answer these
20 questions about yourself if you are a relevant party for the
21 project. You will have the opportunity to add information about
22 other relevant parties later in the survey.**

23 24 25 Organisation/group Details

26
27
28 **6.1. Name of organisation or group [Textarea]**

29
30
31 **6.2. Organisation/group website link(s) [Textarea]**

32
33
34 **6.3. Organisation or group description [Textarea]**

35
36 *Provide a short description (1-2 sentences) of this organisation or group from your perspective, and
37 how it connects to wetland restoration in and around this catchment.*

38
39 Please click Next to continue

40
41
42 [PAGE BREAK]

43 44 45 Assessment of project relevance for the organisation or group

46
47
48 We want to provide you with a description of the **Wet Horizons
49 project**, so you can more fully understand its aims to improve the
50 process of restoring wetlands and peatlands areas around Europe.
51 The following external link will take you to Wet Horizons' website.

52
53 [View Project Description](#)

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56 After reviewing this information, let us know how you think this
57 organisation or group can connect to our project.
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7.1. At what level is this organisation/group related to this research?

[Checkbox (Button)]

(Tick all that apply)

[Most familiar catchment areas]

National

International

None of the above

7.2. How is this organisation/group related to this research project's work?

[Checkbox (Button)]

(Tick all that apply)

Interest - They are likely to be interested in the project's work

Influence - They are likely to have some power to block or facilitate the project's work

Benefit - They might benefit from the project's work

Negative impact - They might be negatively affected by the project's work

Shown if Interest - They are likely to be interested in the project's work selected in 7.2. [Applies to to 7.4.]

7.3. How interested in the project's work do you think they are likely to be?

Range slider from 0 to 100 with 11 labels.

7.4. Please explain [Textarea]

Shown if Influence - They are likely to have some power to block or facilitate the project's work selected in 7.2. [Applies to to 7.8.]

7.5. How much power do you think they have to support the project to deliver its goals in [Most familiar catchment areas]?

Range slider from 0 to 100 with 11 labels.

7.6. Please explain [Textarea]

7.7. How much power do you think they have to block the project from achieving its goals in [Most familiar catchment areas]?

Range slider from 0 to 100 with 11 labels.

7.8. Please explain [Textarea]

Shown if Benefit - They might benefit from the project's work selected in 7.2. [Applies to to 7.10.]

7.9. To what extent would this organisation benefit from the project's work in [Most familiar catchment areas]?

Range slider from 0 to 100 with 11 labels.

7.10. Please explain [Textarea]

Shown if Negative impact - They might be negatively affected by the project's work selected in 7.2. [Applies to to 7.12.]

7.11. To what extent would this organisation be negatively affected by the project's work in [Most familiar catchment areas]?

Range slider from 0 to 100 with 11 labels.

7.12. Please explain [Textarea]

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	Yes	No	Unsure	Not applicable / No opinion
7.13. Is there anything else we should know about engaging with this relevant party? [Likert Scale (3-point: Yes - No - Unsure)]				

Shown if Yes selected in 7.13. [Applies to 7.14.]

7.14. What should we know about when engaging with this relevant party?
[Textarea]

	Yes	No	Unsure	Not applicable / No opinion
7.15. Would you be able to contact someone from this relevant party? [Likert Scale (3-point: Yes - No - Unsure)]				
7.16. Would you be willing to invite your contacts to help shape the Wet Horizons project? [Likert Scale (3-point: Yes - No - Unsure)]				

Shown if Yes selected in 7.16. [Applies to text below]

Note: We can provide you with an email template and information about the project for you to personalise and share.

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	Yes	No	Unsure	Not applicable / No opinion
7.17. Are you willing to provide information on an additional specific relevant party? [Likert Scale (3-point: Yes - No - Unsure)]				

Shown if No OR Unsure selected in 7.17. [Applies to text below]

On behalf of the Wet Horizons team, thank you for taking the time to complete this questionnaire. If further details are needed, we will follow up with you soon.

Please click Submit to send your responses.

Shown if Yes selected in 7.17. [Applies to text below]

Please click Next to continue

Survey questions 6.1-7.17 repeated for however many 'relevant parties' are known.