**Needs and pathways for strengthening the contribution of qualitative methods toward more effective impact assessment practice**

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Many jurisdictions are looking to next-generation impact assessment (IA) that includes sustainability considerations that extend beyond biophysical. Subjectivity is inherent in many of these additional impact considerations and they are often not easily nor effectively quantified. Delivering effective IA within this broadening scope requires new, innovative, and rigorous applications of qualitative methods that enable meaningful inclusion of diverse knowledges, values, and information. While many qualitative methods are available for IA, there remains significant opportunity to strengthen their contribution toward more effective IA practice. As such, we establish in this paper needs that must be addressed if qualitative methods are to meaningfully contribute to IA and pathways for acting on these needs. Relating findings from a survey, semi-structured interviews, and a world café, the paper specifically identifies six key needs for enhancing the effective use of qualitative methods in IA, and five pathways for addressing these needs that involve all IA actors. We conclude that there are deeply entrenched assumptions about qualitative methods and that shifting these views will be challenging and take time. Together, the identified needs and pathways provide a framework for action to improve the effectiveness of IA and should be considered in IA training and practice.

Keywords: impact assessment; qualitative methods; effectiveness; sustainability; next generation

**Introduction**

Governments around the world are increasingly looking to move beyond impact assessment (IA) as it has traditionally been conducted by adopting what has been called next-generation IA (Hacking and Guthrie 2008; Gibson et al. 2016; Sinclair et al. 2018). Next-generation IA extends beyond a primary focus on biophysical impacts to consider a broader range of potential social, health and well-being, economic, cultural, cumulative, and equity implications of proposed projects. As an example, the *Impact Assessment Act of Canada* (SC 2019, c 28) requires consideration of health, social, and economic issues; gender-based analysis; sustainability evaluations; bridging of Indigenous and Western scientific knowledge; and meaningful public participation.

For many of the broader range of impacts considered in next-generation IA, cause and effect can only be established—and alternatives and mitigation measures suggested—through qualitative methods that can explain the values and connections people have with the places and land where projects are proposed. The literature establishes that effective and best practice IA is methodologically based while drawing upon rigorous and best available science (Morgan 1998; IAIA and IEA 1999). Quantitative methods are key for examining causes and effects associated with biophysical impacts and in identifying, for example, alternatives and mitigation measures. However, the broader scope of next-generation IA requires new thinking and a wider array of methods that enable meaningful inclusion of diverse knowledges, values, information sources, and data types. Next-generation IA requires the effective integration of qualitative data and interpretive research from the social sciences into assessment processes, along with quantitative data derived from the natural sciences and the descriptive social sciences (Bradbury and Rayner 2002; Ashley and Boyd 2006; Kwiatkowski 2011; Roudgarmi 2011; Vanclay et al. 2013; Partal and Dunphy 2016).

While there are many books and journals about qualitative research methods and much is known about their effective use (e.g., Ritchie and Lewis 2003; Creswell 2007; Flick 2009; Neuman 2014; Leedy and Ormrod 2015; Leavy 2017; Creswell and Creswell 2018; *International Journal of Qualitative Methods*; *Qualitative Research*), IA practice has long prioritized quantitative methods. This is the case despite recognition of the potential for such methods to mask conflict and prevent robust discussions (Bisset 1978) and despite the value that qualitative methods can bring to IA in elucidating and assessing subjective values. Subjectivity is inherent in various impact categories, encompassing not just wellbeing, but also landscape values, visual aesthetics, cultural heritage, etc. (e.g., Esteves et al. 2012; Vanclay et al. 2015; Vanclay 2020). Subjectivity and value-based judgements are also inherent in the evaluation of impact significance, a fundamental component of IA (e.g., Wood 2008; Ehrlich and Ross 2015). Qualitative methods also support effective IA practice by providing rich, in-depth, and contextual information that can supplement and support quantitative findings and help address the inherent complexity involved in predicting and evaluating potential impacts (Walker et al. 2023).

Despite the prevalence of subjectivity and values in IA decision-making, there is a dearth of research that considers fundamental questions about qualitative methods in IA:

* What roles do such methods play in IA?
* Which methods are best suited for IA?
* What are key considerations for selection and implementation of these methods?
* What pathways exist to strengthen the contribution of qualitative methods towards more effective IA practice?

Other reports and publications have addressed the first three questions relating to the roles of qualitative methods for IA (Walker et al. 2025), qualitative methods available for IA (Walker et al. 2023; Walker et al. 2024), and considerations for their selection (Walker et al. 2023). For instance, Walker et al. 2023, establish the clear necessity to expand the range of qualitative methods used in IA and enhance rigor in their use. Further, Walker et al. (2024) present 17 qualitative method categories previous research identified as relevant to IA. A summary of these method categories is presented in Table 1 to provide context for the present paper.

[Insert Table 1]

Reporting findings from an international survey, semi-structured interviews, and a ‘quick’ World Café workshop, this paper discusses the needs that must be addressed if qualitative methods are to meaningfully contribute to IA and pathways to act on these needs. The paper also examines ways for strengthening the contributions of qualitative methods as IA practice continues to evolve. In the next section, we provide details of our data collection and analysis procedures. Section 3 identifies six needs for strengthening the contribution of qualitative methods in IA, while Section 4 by presents concrete pathways for taking action to address these needs. Our discussion and conclusions reflect on these needs and action that is already being taken on moving forward.

Before describing our methods in the next section, some definitions of our key terms and concepts are warranted. Firstly, we adopted a broad definition of Impact Assessment*:* the systematic identification of the future implications of an action (IAIA 2025). Secondly, q*ualitative research* is the systematic procedures used to examine the meaning people ascribe to societal issues (Leavy 2017; Creswell and Creswell 2018;). It focuses more on the qualities of issues and phenomena, rather than their quantity. In IA, applied qualitative research explores people’s perceptions, experiences, and knowledges that contribute to an in-depth understanding of the potential effects of proposed land and resource development projects, plans, and/or policies. Qualitative research draws upon interaction with potentially affected populations, and/or experts, and/or secondary documentation to systematically identify, evaluate, and avoid or mitigate these potential effects. Finally, *research methods* are the systematic techniques and procedures used to collect and analyze data (Creswell and Creswell, 2018). We distinguish research methods from broader research approaches (e.g., ethnography, participatory action research, grounded theory research), IA processes (e.g., social engagement, participatory development of indicators), and tools that facilitate data collection (e.g., virtual reality, artificial intelligence, digital technology, online conferencing). While such approaches, processes, and tools are highly relevant and worth exploring further, they were beyond the scope of this project.

**Methods**

The research was conducted over a three-year period (2021 to 2023). We used multiple methods in a phased research design involving a literature review, a workshop with IA practitioners, a survey, semi-structured interviews, and a World Café. This paper emphasizes the results of the latter three methods; however, each of the methods was key to the overall effectiveness of the methodology, with the literature review and workshop providing foundational data that were refined and supplemented with the other methods. Details of the systematic literature review carried out and workshop with international IA practitioners can be found in earlier research outputs (Walker et al. 2023; Walker et al. 2024). The research was designed and implemented with guidance and feedback from a Best Practice Advisory Committee comprising nine IA and qualitative research experts. Ethical approval for the conduct of the survey, interviews, and World Café was obtained from the University of Manitoba. All research team members undertook ethics training pursuant to Canada’s Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Course on Research Ethics) and, where required, the ethics protocol approved by the University of Manitoba was subjected to a multi-site ethics review process. Survey and interview participants remain anonymous beyond a numerical code (distinguishing the different participants) and a broad category of professional affiliation, including self-reported roles of IA practitioner, academic/researcher, and government/regulatory agency).

***Survey***

An international online survey built on the literature review and workshop that had revealed qualitative method categories applied in IA and related fields such as planning and natural resource management. The survey asked IA professionals about their engagement with the methods revealed by the review and workshop and with qualitative research more broadly. The survey was piloted with the Best Practice Advisory Committee before dissemination.

The survey used both closed- and open-ended questions, and asked respondents about:

* the sector to which they belong, years of experience, gender, and country of practice;
* the extent to which they use, or engage with, each of the identified methods (often, sometimes, rarely, or never);
* two methods they have used or engaged with that contributed most to IA's overall objectives and the application of those methods in IA;
* potential case studies highlighting the use of the methods;
* additional qualitative methods that could be applied within IA; and
* the use of qualitative methods in IA in general.

Of particular relevance to this paper, one survey question asked, “What do you consider most important to improving the contribution of qualitative research to Impact Assessment?”

The total population of IA professionals who work with qualitative methods was unknown, so we relied on a non-random, purposive sampling strategy. The survey was distributed via: 1) 238 emails sent directly to a list of potential participants known to have expertise in qualitative research in IA, as identified by the research team, the advisory committee, and the literature review; 2) nine national and international IA professional associations’ newsletters and/or social media platforms; and 3) information cards distributed at the International Association for Impact Assessment (IAIA) annual meeting in May 2022, where 811 delegates were in attendance. The survey was available between March 24 and May 25, 2022, and a total of 145 responses were received. Reflecting the client of the research (Impact Assessment Agency of Canada) and the advertising strategy (the IAIA annual meeting was held in Vancouver, Canada in 2022), 50 of the 111 respondents who reported their location details were from Canada. Responses were also received from 24 additional countries (though only Australia, the United States, the United Kingdom, Netherlands, Brazil, Sweden, Thailand, and South Africa also had more than one response each).

***Semi-structured interviews***

The survey was followed by semi-structured interviews to enable in-depth discussion of the methods and their use in IA, including details regarding data collection and analysis procedures, implementation considerations and tips, strengths and challenges, and appropriate contexts for use in IA. The interviews also covered factors participants consider when selecting qualitative methods and needs for strengthening the contributions of such methods in IA, including the question “How can we strengthen the use of qualitative research in IA?” As with the surveys, pilot interviews were undertaken, resulting in several questions being refined and simplified.

Eighty survey respondents expressed interest in participating in a follow-up interview. From this list, 46 respondents, selected to cover experience with the widest possible range of qualitative methods, were invited to participate in a follow-up interview. Forty invitations were accepted. Eight interviews were also conducted with IA professionals who had not completed the survey, but who were sought out because they had known expertise in otherwise under-represented methods. Similar to the survey responses, the majority of interview participants were based in Canada. Nonetheless, the study aimed to capture insights from innovative practices and cross-sectoral experiences globally. In total, interviewees represented 17 countries: Canada (n = 18), Australia (n = 6), the United Kingdom (n = 5), South Africa (n = 3), the Netherlands (n = 2), Brazil (n = 2), Sweden (n = 2), and one participant each from Argentina, Denmark, Iceland, India, Italy, New Zealand, Nigeria, Portugal, Uganda, and the United States. The team conducted the interviews via Zoom or Teams and used the transcription or closed caption functions to create initial transcripts. Audio recordings were then used to verify and refine the transcripts.

Through an initial thematic analysis of the survey and interview data following the analysis approach outlined below, six needs for enhancing the contribution of qualitative methods in IA were identified. The six needs are reported in the ‘Needs’ results section below. While participants had much to say about needs for enhancing the contributions of qualitative methods in IA, concrete actions for addressing those needs were less prominent in the survey and interview data. The World Café workshop helped fill this gap.

***World Café***

The research team hosted a ‘quick’ World Café session at the annual conference of the International Association for Impact Assessment in 2023 (Kuching, Malaysia). This was a fast-paced variation of the deliberative World Café method, which aims to cross-pollinate ideas and build solutions among a large group of people (Brown et al. 2005). The session included practitioners, government officials, and researchers from around the world and aimed to identify concrete actions, or pathways, that can help address the six needs for enhancing the contribution of qualitative methods in IA that had emerged through of the analysis of the survey and semi-structured interview data. One of the six needs was summarized and presented at each table. The table groups (approximately eight participants per table) rotated through each of the six tables and were given approximately seven minutes at each table to discuss their responses to the question ‘What strategies will meet this need and/or overcome the barrier?’ A designated host remained at each table to update groups on the previous conversations, listen to the discussions, and record key points on large pieces of blank paper covering the tables. Participants were also invited to jot their ideas directly on the paper.

***Data analysis***

A first round of analysis was conducted following the surveys and semi-structured interviews to identify “needs” for enhancing the contribution of qualitative methods in IA. Following the World Café, the survey data, interview transcripts, and World Café notes were subjected to a second round of coding to identify pathways for taking action to address those needs. Both rounds of analysis applied the same strategy.

The data were coded in NVivo12 using a hybrid deductive-inductive thematic analysis approach. Deductive codes were initially established based on specific project objectives. For example, aligning with the core research questions, first-level codes included “role of qualitative research,” “barriers and needs [for improving contributions of qualitative methods]”, and “actions/strategies to address needs”. After first-level deductive codes were applied to the data, inductive coding enabled the identification of specific themes. During this phase, data coded to each first-level code were thoroughly reviewed. The data were then further coded using inductive data-driven second-level codes. Data in each second-level code were reviewed again, and related codes clustered into broader themes. For example, the second-level codes “reflexivity”, “documenting procedures”, and “user-friendly outputs” were clustered together, as they all relate to transparency and communication, which is reported as a pathway in the results section below.

Three strategies were used to establish validity in the analysis, interpretation, and reporting of the study results. Triangulating among the literature review results and the coded survey and interview data provided additional confidence in key characteristics identified for each method category. Member-checking was accomplished by providing interview participants the option of reviewing their transcripts for accuracy. When requested by participants, we also shared the draft report to allow them an opportunity to verify that our use of direct quotes accurately reflected their intent. External auditing was done by the Best Practices Advisory Committee, whose members were not directly involved in data collection or analysis.

Several strategies contributed to reliability in coding and analysis. Interview transcripts were reviewed against the audio-recordings to verify their accuracy. Regular communication among the research team on the development of the analysis and coding strategy added confidence to the analysis approach. One member of the team led the coding process, while another conducted spot audits of the completed coding to ensure consistency across the data.

Our systematic qualitative coding and analysis process enabled the identification of key themes around needs for enhancing the contribution of qualitative methods in IA, and pathways for addressing those needs, while avoiding “cherry-picking” of data (i.e., basing findings on the most interesting or noteworthy excerpts). The liberal use of direct quotes in reporting results provides supporting evidence for, and confidence in, the key themes identified through the qualitative thematic analysis. Effort was made to select quotes that were representative of the coded data. Further details regarding analytical procedures and strategies in respect of validity and reliability can be found in earlier research outputs (Walker et al. 2023; Walker et al. 2024).

**Enhancing the contribution of qualitative methods to effective IA practice: Needs**

While the practitioners, researchers, and decision makers involved in this study consistently spoke about the importance of applying qualitative methods in IA, they also identified a number of needs that must be addressed if qualitative methods are to consistently and meaningfully contribute to effective IA processes. Our thematic qualitative analysis identified six specific needs that are presented below in order of the relative frequency with which they were raised. Pathways for actioning these inter-related needs are then discussed in the next section.

***Need 1: Elevating the perceived value of qualitative methods in IA***

Elevating the perceived value of qualitative methods in a sector still largely dominated by biophysical, quantitative approaches was the most frequently raised need by survey and interview respondents.

Frequently, participants in our research spoke of the persistence of this quantitative culture in contemporary IA practice: “And I really found the system is so…it’s a cultural thing. It’s so biophysical. The people who commissioned the work, who do the work, read the work—it’s a biophysical culture” (Interview, P36, IA practitioner). According to participants, this enduring biophysical ‘culture’ has resulted in the perception that quantitative methods are more valid or ‘scientific’, leading to a persistent undervaluing of qualitative social science approaches. For example, one participant noted that “the contribution of qualitative research to impact assessment can be hindered by the dominance of quantitative measures, which can look more ‘scientific’” (Survey, P98, researcher/academic), while another indicated that “the biggest challenge is mindset—bias against qualitative methods. Practitioners feel the need to quantify the outcomes to make IAs valid” (Survey, P8, IA practitioner). Others noted the need for “greater recognition of the value of qualitative information” and “to take qualitative research and its inputs seriously. Attaching quantitative values to analysis does not necessarily mean the analysis is more valid” (Survey, P72, IA practitioner).

While the need for both quantitative and qualitative methods in IA is now well established, broadly elevating the perceived value of qualitative methods requires specific attention if they are to effectively and consistently add value to next generation IA practice.

***Need 2:*** ***Enhancing qualitative methods skills and expertise***

The second most frequently cited need is ensuring that the IA sector is equipped with appropriate skills and expertise to be able to conduct high-quality qualitative data collection and analysis in IA. Participants noted that the expansion of legislation, such as the Canadian *Impact Assessment Act [IAA]* and the European Union EIA Directive (2014/52/EU), to include the consideration of health and social impacts, for example, has created a noticeable skill gap in the sector:

There are currently not enough qualified practitioners to meet the demand created by the new *IAA*. Practitioners with a foundation in qualitative data collection and analysis techniques are not necessarily a given, and it reduces the rigour that should be applied to analysis and outcomes. (Survey, P117, IA practitioner)

But given that health is now formally required in the EIA Directive, I think there will be a lot of health work going on that never comes across the desk of anybody who has any formal training in health. I think that would be a concern for quality, so I think skill sets are fantastically important. (Interview, P66, IA practitioner)

In a similar vein, participants also noted that in a field that most often attracts people with natural science and engineering backgrounds, there is often a mismatch between the skills available and the skills required to do high-calibre qualitative research:

Better training for qualitative researchers is needed. Getting a consultant with training in conservation biology or engineering to conduct the qualitative studies (interviews, surveys) isn't good enough. We would never allow the opposite arrangement to take places (e.g., a trained sociologist doing engineering work). (Survey, P38, researcher/academic)

Impact assessors often come from a natural science background and are not familiar with social science methodology. [...] There must be a focus on including qualitative methodology - in mastering, applying and analysing it. It results in really rich data. (Survey, P56, IA practitioner)

As the scope of IA continues to widen beyond primarily biophysical considerations, there is a need for expanded skillsets—and the inclusion of professionals with the appropriate training and skills—to ensure that the qualitative aspects of assessment are conducted in a rigorous and ethical manner.

***Need 3: Ensuring qualitative methods influence IA processes and outcomes***

A third need noted by participants is to ensure that IA structures and practice enables qualitative methods to meaningfully influence process and outcomes. Participants explained how the cost-competitive and time-constrained environment of IA practice can hinder experimentation with innovative and participatory qualitative methods:

The bottom line is that in a cost-competitive situation, you wind up trying to do it as cost effectively as possible and that leaves absolutely no room for experimentation […] And you’ve got this huge, huge inertia that’s keeping the system going the way it is and doing a research project on new qualitative methods isn’t really going to have any effect on that until such time as things like terms of reference change, budgets change. And that there’s recognition within the whole EIA process that there is a role for socioeconomics. (Interview, P7, IA practitioner)

Similarly, participants spoke about how qualitative methods—even conventional methods like interviews and focus groups—are often perceived as too time- and cost-intensive to fit within IA timelines. For example, one participant acknowledged the “need for this [qualitative] type of analysis as part of decision making” but also noted it is “perceived as expensive and irrelevant to preparation of impact assessments by regulators and proponents” (Survey, P32, IA practitioner). Others specifically spoke about the time required for qualitative data analysis, raising concerns about the degree to which qualitative methods can meaningfully influence IA processes and outcomes if insufficient attention and resources are available for analysis:

If you had done transcripts of all the interviews and all the focus group discussion and thematic analysis, I would have not been able to do this part within the time frame of the health impact assessment I have received. So, I think that there is an issue between quality of the method and the results versus timeline of the impact assessment framework process. (Interview, P121, IA practitioner)

Though legislation and academic literature is “inviting a much deeper methodology to be used in terms of qualitative research or the social impact side,” the “deeper methodologies” are often not implemented because of real or perceived constraints in practice (Interview, P38, researcher/academic).

***Need 4: Consistent implementation of standards for methodological rigour***

The fourth need for strengthening the contribution of qualitative methods to effective IA practice is recognizing and consistently applying standards of qualitative methodological rigour to data collection and analysis. In line with the observation that the IA field continues to be dominated by a biophysical, quantitative culture, one participant noted that “I think there [are] some built in prejudices around the rigours of social science” (Interview, P150, researcher/academic). Similarly, others suggested that the standards for qualitative rigour may not be well-understood or regarded among those for whom quantitative approaches are the norm. For example:

I think there is a deficit of esteem in qualitative work among the ‘numbers’ people who make the decisions. In part, this is from a lack of recognition of the methodological underpinnings and norms/markers of quality in such work. Incomparability and lack of ‘units’ is also a challenge, from that more quantitative perspective. Qualitative researchers may need to be more transparent, methodologically, in turn. (Survey, P123, researcher/academic)

There are well-established standards for rigour in qualitative data collection and analysis that are different from those in quantitative research, but are just as important in IA:

Qualitative data is as rigorous and as reliable as quantitative data as long as you follow the rules, as long as you do what is expected of you as a qualitative researcher. There are different rules, there are different methods, but there should be an equal amount of rigour in the research. (Interview, P49, IA practitioner)

Another participant highlighted the importance of taking a thoughtful approach to planning data collection and analysis procedures prior to conducting the work.

[Be]cause there’s a lot of work you have to do to action that [qualitative] approach. It’s not just going out doing interviews and putting them in an excel spreadsheet. (Interview, P8, IA practitioner)

***Need 5: Greater community and Indigenous inclusion, leadership, and control***

The fifth need we identified is for greater community and Indigenous inclusion, leadership, and control over IA processes. As one participant pointed out, there is a need for “more acknowledgement that qualitative research methods should be culturally appropriate and led by Indigenous peoples” (Survey, P41, IA practitioner). Participants also noted that certain players have greater power in IA, which can limit the extent to which community and Indigenous values, knowledges, and perspectives are meaningfully included through qualitative methods and IA more broadly. For example:

For years, what I’ve been saying is that we have to change the power structure of how impact assessment is done. Right now, you have three big circles and a couple of smaller circles off to the side. The three big circles are the government agencies responsible, the proponents, and big consulting firms. Each of them has a formula for how they do what they do, and it tends to focus on the things that the people running the show are comfortable with, which is about physical environment and quantitative data. On the outside looking in are Indigenous people and any other interested Canadians and they’re in the small circles. And those circles…that focus of power really needs to shift. So, you’re seeing it with things like Indigenous-led impact assessment. (Interview, P149, IA practitioner)

Some noted, however, that centering Indigenous frameworks can be challenging within the current IA landscape as it can be difficult to depart from traditional IA reporting formats expected by decision-makers. For example:

What we’re missing in terms of methods I think is really strong Māori frameworks and ways of promoting or portraying information […] But we are limited from doing that because the way we write [cultural impact statements] and the methods we use are very geared towards getting information in a certain format. (Interview, P57, IA practitioner and researcher)

***Need 6: Adequate attention to ethical considerations***

Finally, participants noted a need for strong ethical protocols in qualitative research in IA, such as around informed consent and data ownership, to ensure no harm is done to the individuals and communities in IA processes. Many participants spoke about ways they integrate ethical protocols in their own IA work. They also expressed concern that there are no consistent requirements or guidance in many jurisdictions where IA is practiced:

Ethics!! It is so important to ensure that those conducting qualitative research participate in some sort of ethics approval or have an ethical requirement to ensure that the data is collected and used in an ethical matter (and aligned with OCAP principles[[1]](#endnote-1) for Indigenous communities). In [British Columbia, Canada], this is not a requirement, and I foresee many issues as the need and interest in conducting more social/health qualitative research arises. (Survey, P9, government/regulatory agency staff)

One participant also noted that there is also often a need for education about the importance of ethics procedures, particularly in proponent-led IA processes, where there may be a lack of familiarity with ethical standards in qualitative research:

Also, just explaining to clients what the process is and why aspects of the process are important. Sometimes going through ethics and consent and data ownership can feel like a drag for clients who really want to get the work done. But it’s a pretty critical part of the process. (Interview, P106, IA practitioner and researcher)

**Pathways for taking action to address identified needs and enhance the contribution of qualitative methods to effective IA practice**

Survey, interview, and World Café participants suggested a wide range of concrete pathways for responding to the six needs for enhancing the effectiveness of qualitative research. Upon analysis, it became clear that many of these pathways crosscut more than one of the needs identified in Section 3. For example, training and mentorship was noted as a pathway for enhancing qualitative research skills and expertise, ensuring consistent implementation of standards of qualitative methodological rigour, and developing strong ethical research protocols. This section identifies five pathways for actioning needs and enhancing the effectiveness of qualitative methods in IA and elaborates on which needs they meet, suggested actions, and IA actors to whom the actions are relevant. Figure 1 provides a summary of the five pathways and the needs that each address.

[Insert Figure 1 here]

The following five subsections provide a summary of the data that establishes the identified action pathways that respond to the needs for enhancing qualitative research in IA.

***Pathway 1: Training and mentorship***

As the data outlined above show, enhancing skills and experience in the application of qualitative methods in IA is a central need for enhancing the use of such methods. Not surprisingly, training and mentorship were identified by participants as key pathways to success in this regard. It is also important to note, however, that action on this pathway will also help to address other needs as revealed in Figure 1. For example, ensuring highly trained qualitative researchers are hired and involved in training new and experienced IA practitioners will result in the more effective and efficient use of qualitative methods in IA, ensuring methodological choices and implementation are rigorous, defensible, ethically sound, and meaningfully contribute to IA outcomes. Training on qualitative methods for staff involved in IA review would also enhance decision-makers understanding of qualitative findings in reporting, which in turn could also help elevate the perceived value of those methods and their findings in decision-making phases of assessment. Table 2 summarizes the actions and representative quotes related to pathway 1.

[Insert Table 2 here]

***Pathway 2: Transparency and communication***

Transparency and communication are essential to ensuring the that the outcomes of qualitative research have an influence on the IA decisions. As several participants in our study noted, decision makers need to be able to understand the qualitative data collected, which will require clear and concise descriptions of the methods applied, demonstrating that conclusions are evidence-based, and the role of practitioners in the gathering of knowledge. Transparent documentation of methods also obliges practitioners to carefully think through their procedures to ensure they meet accepted standards of rigour expected in qualitative research. Participants also noted the importance of presenting the results and findings of qualitative methods in user-friendly ways, which can help ensure that they meaningfully contribute to IA decisions and outcomes. These actions and representative quotes are summarized in Table 3.

[Insert Table 3 here]

***Pathway 3: Decolonizing approaches***

Adopting decolonizing approaches in the selection, design, and implementation of qualitative methods are fundamental toIndigenous inclusion, leadership, and control, according to participants in this study (Table 4). Centering relationship-oriented practices is a key approach noted as necessary by World Café participants in effective, ethical use of qualitative methods. Likewise, greater control of IA design by Indigenous Nations and communities can ensure culturally appropriate processes and the maintenance of Indigenous sovereignty of knowledge and data. Such processes may also elevate the perceived value of related qualitative data because of its potential to more effectively make space for Indigenous voices in IA. Strategic, beyond project level, capacity building in communities was also noted as an important pathway that can contribute to enhanced qualitative skills and expertise.

[Insert Table 4 here]

***Pathway 4: Strategic integration and validation of qualitative methods***

For qualitive methods to be recognized as having significant value to IA processes, they must have an influence on the decision outcomes about what is being proposed. Pathway 4 is a window into achieving these needs through early and intentional integration of qualitative methods (Table 5). Participants also noted the importance of having decision-making agencies validate qualitative findings and vital components in the decision-making process, which can also contribute to the elevation of the perceived value of qualitative methods in IA more broadly.

[Insert Table 5 here]

***Pathway 5: Guidance and good practice examples***

The last pathway, guidance and good practice examples, will contribute to addressing the needs for enhanced skills and expertise, and for adequate attention to ethical considerations. Action on this pathway is central to building the skills and experiences of practitioners, participants, and decision makers (Table 6). It can also help ensure that guidance on the use of qualitative methods begins to emerge from successful case examples and that the qualitative outcomes have an influence on IA decisions. Participants also emphasized the need for guidance on the development of ethical protocols for guiding qualitative methods in IA and suggested a mix of community-led and professional association guidance.

[insert Table 6 here]

**Discussion**

This research identified six needs for enhancing the contribution of qualitative methods to effective IA practice and five pathways for taking action to address these needs. The most frequently mentioned need is to elevate the perceived value of qualitative methods in IA. The perception that qualitative research is overly subjective and value-laden continues to endure in some quantitative-dominated environmental fields (Caggiano and Weber 2023). Participants agreed that this remains the case in IA, often speaking about the persisting perception that quantitative data is more scientific or valid and, therefore, more likely to be seriously considered and integrated in IA decision making.

 Qualitative approaches in environmental research, however, have been found particularly helpful to enhancing the understanding of risk and impact situated within place-specific cultural and social contexts (Caggiano and Weber 2023; Walker et al. 2025). They allow a rich, in-depth examination of how a proposed project might interact with complex, place-specific social-environmental systems and values. This research identified several actions that might enhance the perceived value of qualitative methods in IA, including: more extensive training opportunities for IA practitioners and decision-makers; clear and transparent documentation of qualitative methodologies applied in IA studies to ensure decision makers and the public can evaluate the study quality and whether conclusions are supported by evidence; and, validation of the value of qualitative methods from decision-makers, such as by including indicators that are best supported by qualitative approaches in IA terms of reference.

The second most frequently cited need for enhancing the effectiveness of qualitative methods in IA is expanding the skillsets and expertise available to ensure it is implemented in a rigorous and ethical manner. Participants noted that this means hiring qualitative social science experts into IA-related positions in decision-making agencies, consulting firms, and industry, and using these experts to provide in-house training and mentorship. They also noted that many environmental science programs could be expanded to include training in qualitative social science methods and promoting IA professions and courses to social science students as relevant to their skillsets. Building strategic long-term community capacity (rather than on a project-by-project basis) is an important pathway for moving towards decolonized practice in which IA processes and outcomes align with local values and worldviews (Willow Springs 2014; Gibson et al. 2020; Middel 2024). Finally, participants identified the development of additional guidance, such as resources detailing the range of qualitative methods available and case studies demonstrating where qualitative methods have added value to decision making, as an action that can help address the need for enhanced qualitative skills and training in IA.

Time and resource constraints in IA practice can result in a limited ability for qualitative methods to meaningfully influence IA processes and outcomes. To meet this need of ensuring qualitative methods meaningfully contribute to IA, participants suggested establishing clear research objectives with a strong understanding of what the qualitative methods are trying to achieve and designing their implementation in ways that most efficiently and effectively meet these objectives. They also note the need for communicating findings in user-friendly ways, such as skillfully weaving quotes and using visualizations to summarize qualitative findings. Re-thinking IA terms of reference to include indicators that are best supported by qualitative analysis is likely to also provide strong foundation for ensuring qualitative findings are meaningfully considered in decision making. Examples of this are slowly becoming more common. For instance, the Heartland Complex Expansion Project’s terms of reference created under Canada’s *Impact Assessment Act* requires the applicant to analyze project interactions with sustainability and well-being as defined by potentially affected Indigenous rights-holders (IAAC 2021). The terms of reference for the Pine Point Mine Project in the Northwest Territories require valued component assessments that lend themselves to quantitative analysis (e.g., surface water quality and quantity, sound levels, employment opportunities), while many others (e.g., changes to perception and connection to the land, sense of place on the landscape, social cohesion, psychosocial impacts) are not easily quantified and are better evaluated qualitatively (Mackenzie Valley Review Board 2021).

Participants noted that a common misperception that qualitative research lacks scientific rigour (Sarma 2015) is often felt in IA. To address this, there is a need for IA professionals to consistently implement and model established standards of qualitative rigour—in both qualitative data collection and analysis. As with quantitative methods, the rigour of qualitative data collection and analysis can be established through attention to validity and reliability (the terms ‘trustworthiness’ and ‘credibility’ may also be used in qualitative research) (Lincoln and Guba 1985; Leavy 2017; Creswell and Creswell 2018). Importantly, however, the indicators of qualitative validity and reliability differ from those used in quantitative methods. Qualitative validity refers to whether the findings of a study are deemed accurate or trustworthy from the perspective of the researchers, participants, and readers (Creswell and Creswell 2018). Qualitative reliability refers to the consistency of procedures across researchers and projects (Creswell and Creswell 2018). As cited in the Need #4 section of the results above, methodological rigour requires a well thought out plan prior to data collection and analysis. This planning helps establish methodological coherence—a research design that clearly articulates, and ensures logical flow among, the questions being addressed, the theoretical/analytical framework guiding the research, the chosen methods and their implementation, and the analysis procedures (Savin-Baden & Major, 2013).Further discussion of findings related to qualitative reliability and validity in IA, including in qualitative data analysis, can be found in our project report (Walker et al. 2023).

Our data also establish that the contribution of qualitative methods to IA can be strengthened when the qualitative methods are culturally appropriate and reflect the values and worldviews of those who have deep roots in the places where projects are proposed. Greater community and Indigenous inclusion, leadership, and control over IA processes and their design requires the continued adoption of decolonizing approaches (e.g., Mainville and Pelletier 2021; Jolly 2022; Bruce et al. 2024). Some of decolonizing actions that participants suggested are already becoming more visible in IA. For example, there are an increasing number of examples of IA processes being designed in ways that center Indigenous worldviews and values, which help to displace Western ontological values and support Indigenous sovereignty (e.g., Bruce and Hume 2015; Lawrence and Larson 2017; Niiwin Wendaanimok Partnership 2021; Qikiqtani Inuit Association 2019; Menchaca 2024; Nishima-Miller et al., 2024). These examples rely heavily on qualitative techniques.

Culturally safe and trauma-informed approaches, recently promoted for application in IA, recognize that IA holds potential to re-traumatize people and communities who have experienced historical trauma through colonial dispossession (Hoogeveen and We’es Tes Sandra Martin Harris 2024; Sadiq 2024). Such approaches establish ways to recognize when this could occur and identifies practical tools that help to ensure no further harm is done. Recognizing the importance of this new area, training on trauma informed IA is to be delivered for the first time at the IAIA annual conference in 2025. Likewise, new protocols for engagement with Indigenous people in IA processes, including data collection, are emerging. Sanchez et al. (2024) outline some initiatives in this regard in Latin America. There is also new guidance being developed, such as the work of the Native Women’s Association of Canada that establishes the rights of Indigenous women in IA and approaches to ensuring their knowledge informs IA (Native Women’s Association of Canada 2020).

Finally, this research identified a need for adequate attention to ethical considerations—such as informed consent, confidentiality, and data ownership/control—when qualitative methods are applied in IA. Vanclay et al. (2013) and Baines et al. (2013) have also established the need for competency in ethics when undertaking qualitative, social science research in IA. Participants in this research emphasized the need for training, guidance, and relationship-oriented practices when developing and implementing ethical protocols. One suggestion that emerged was for guidance to come through professional associations. In this regard, Vanclay et al. (2013) point to the ethical guidelines available from many professional associations, such as IAIA (2009) and the Social Policy Association (2009) among others. More recently, Mantelero (2022) establishes ethical and societal considerations with the use of AI in social impact assessment. While such association-led guidance can be helpful, many participants noted that in contexts with histories of colonization, such as Canada and Australia, it is imperative that ethical protocols in IA processes must be Indigenous-led or co-developed in relationship with communities, recognizing that formal, institutionalized ethical processes can actually work in opposition to decolonizing approaches (John and Castleden 2024). There are Indigenous-developed ethical protocols developed outside of IA that can be a starting point. For example, the First Nations Principles of OCAP (Ownership, Control, Access, Possession) establishes guidance for interacting with Indigenous knowledge in a way that maintains Indigenous data sovereignty and is respectful of Indigenous worldviews (First Nations Information Governance Centre, 2014). Many individual Indigenous Nations and communities have also established their own ethical protocols, including ones that are tailored to IA (e.g., Bruce and Hume 2015).

We acknowledge that some of the evidence and examples—such as those related to decolonial approaches and Indigenous data sovereignty—are more focused on the Canadian IA context. This is likely because a large proportion of our respondents were from Canada (see the Methods section), and because Canada has been a leader in these areas. As a result, particular pathways may be most applicable to Canada and other countries with similar colonial histories. In contrast, other identified needs and related pathways—such as increasing the perceived value of qualitative methods, building qualitative expertise, and ensuring methodological rigour—are broadly relevant across most IA contexts.

**Conclusions**

Our work establishes some of the key actions that are needed to promote the effective and rigorous use of qualitative methods in IA. The need to attend to issues of effectiveness emerged from our empirical research into the use of qualitative methods in IA. Participants to this broader research often mentioned issues related to enhancing the effective use of qualitative methods, so much so it became a major theme of our work. Figure 1 canvases the outcomes of the input we received from participants regarding synergistic pathways for strengthening the contribution of qualitative methods to deliver more effective IA practice. This output provides a framework for action that we recommend should be considered as part of IA training and practice.

Perhaps not surprisingly, of the needs identified, elevating the perceived value of qualitative methods dominated. Participants recognized that shifting deeply entrenched assumptions about qualitative, social science methods is going to be challenging and take time. We see promise, however, in the broadening of IA law, regulation and policy that encourages consideration of the broader suite of IA issues, extending well beyond biophysical, and in so doing promoting the use of a more diverse set of methods to understand impacts beyond biophysical. This movement into sustainability-oriented next-generation IA will also help to ensure that terms of reference for IA’s include issues and questions that clearly require the engagement of qualitative methods with the result of practice evolving through application.

Those who participated in this study suggested that building capacity through education and specific guidance is necessary to move forward on many of the needs identified. Our work on qualitative methods that includes a toolkit of method categories and how these could be used in IA is a contribution to this (Walker et al. 2023). In implementing these and other qualitative tools in IA, the codesign of methods with communities will be key to successful implementation. Paying attention to ethical considerations will also be a critical aspect of the co-design of data collection approaches. We were in fact struck by the fact that much of the literature and guidance on ensuring ethical approaches/standards in IA is now almost two decades old and yet participants raised ethical approaches to data collection as a serious concern, one where there has been talk and little action. Needed action includes movement towards relationship-oriented forms of ethical practice. In fact, there is the opportunity to build on a considerable amount of experience in relation to not just ethics, but some of the other pathways forward that participants have identified as we have established, in part, in the discussion above. While the needs and pathways may seem yet another daunting task for the implementation of IA process and for improving the effectiveness of practice, we feel there is a strong foundation for moving forward, but doing so will require the involvement of all IA actors – governments, practitioners, proponents, researchers, professional associations, non-government organizations and communities.

**Acknowledgements**

We are grateful for the many IA professionals who contributed their experience and knowledge to this study. A nine-member Best Practices Advisory Committee provided direction and feedback throughout the process.

**Funding**

Funding for this research was provided by the Impact Assessment Agency of Canada

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**Tables**

**Table 1.** A summary of method categories available to IA (further described in Walker et al. 2023, 2024)

|  |  |
| --- | --- |
| **Method Category** | **Description** |
| Deliberative methods | Use discussion-based approaches to engage the public in collaborative problem-solving and decision-making. Examples of deliberative methods include deliberative polling, world café, community forums, citizens’ juries, and open space technologies. |
| Delphi method | A technique for systematically eliciting advice, and ultimately consensus, from a panel of anonymous experts through iterative rounds of questionnaires. |
| Document analysis | The systematic analysis of various types of documentation, such as news articles, archival documents, official reports, policy documents, and academic literature. |
| Focus Groups | Involve facilitator-moderated group discussion that explores experiences, perspectives, and opinions about a specific topic. Data are generated through interaction among participants (typically 6-8). |
| Fuzzy sets | Fuzzy sets can be considered as “computing with words”. It involves transforming qualitative, descriptive data into a form that can be mathematically described and manipulated in a rigorous way that accounts for the subjective nature of the descriptors. |
| Interviews | A one-on-one exploration of individuals’ experiences, perspectives, and opinions about a specific topic. Interviews can take place face-to-face, online, or via telephone. |
| Matrices | A grid that links systems components with project activities. We are interested in matrix approaches that use qualitative data, analysis, and/or reporting. |
| Multi-criteria analysis | Multi-criteria analysis (MCA), also known as multi-criteria decision analysis (MCDA), is a family of mathematical techniques that support decision-making by assessing and aggregating performance of options (such as alternative development proposals) against multiple, often conflicting, criteria. Participatory or qualitative approaches may be used to collect and integrate qualitative data into the analysis. |
| Narrative methods | Involves engaging with and interpreting people’s experiences through storytelling. Narrative research can collect data through a variety of methods and techniques, such as oral histories, interviews, journal entries, and digital recordings. |
| Q-methodology | Uses statistical analysis to identify dominant perspectives/discourses around a specific issue by having participants sort and rank a set of qualitative statements representing a full range of opinions. |
| Qualitative data analysis | The systematic analysis of non-numerical information gathered through a variety of qualitative data collection methods, often managed using computer-assisted data analysis software (e.g., Nvivo). |
| Participatory spatial methods | Mapping techniques that integrate qualitative data collection and/or analysis (e.g., community mapping, land use and occupancy mapping participatory GIS, public participation GIS). |
| Scenario-based methods | Integrate qualitative future-oriented scenarios (i.e., plausible pathways by which the future could unfold) into IA analysis. Examples of scenario-based methods include participatory scenario analysis and simulation gaming. |
| Surveys | Questionnaires that explore individuals’ experiences, perspectives, and opinions about a specific topic. Surveys can include open-ended qualitative components. |
| Systems/network analysis | Involve the representation and analysis of the relationships between systems components relevant to an Impact Assessment. The analysis may include one or more systems (e.g., ecological, social, economic, institutional). Network analysis is closely related and maps the relationships among stakeholders and/or impact chains relevant to the IA. |
| Visual methods | Collect and analyze visual or audio-visual images as data. Visual methods include, for example, photo-elicitation, photovoice, video narratives, social media image analysis, and seasonal calendars. |
| Workshops | Facilitated participatory sessions in which participants discuss, brainstorm, and identify solutions for a specific problem. Workshops typically run longer and include more participants than a focus group discussion. |

**Table 2.** Summary of actions and representative quotes related to Pathway 1.

|  |  |
| --- | --- |
| **Action** | **Representative Quote(s**) |
| Hire qualitative social science experts into IA-related positions in decision-making agencies, consulting firms, and industry. Use these experts to provide in-house training and mentorship. | You need a rigorous trained social scientist on staff who can train others up, someone who can really be there through the whole process to provide guidance and advice. (Interview, P123, academic/researcher)It involves getting more people from the social sciences actually working higher up in the existing three areas of control, which is government, industry, and consulting. I think that’s absolutely critical. (Interview, P149, IA practitioner) |
| Provide basic training on qualitative methodology to all staff involved in decision-making within regulatory and IA agencies. | It would be a really great opportunity to also be—I don’t want to say training or educating—but raising awareness of those methods with regulators and decision makers so that when they receive reports they understand […] what they’re looking at and what it means. (Interview, P106, IA practitioner and researcher) |
| Provide on-going training and mentorship on all aspects of qualitative research implementation and analysis, including on relational and ethical considerations. This could be facilitated by in-house experts, IA professional associations, and community-based experts.  | Training practitioner[s] on proper use, sampling, analysis, and interpretation of qualitative methods/data. If this is weak or absent, nothing much else matters in terms of the integrity, value, and influence of the results. (Survey, P68, researcher/academic)[Experienced] IA personnel tells story to new staff about the time and experience needed to become familiar and accepted in the community. This could be done through personal advice, workshops, video, social media. (World Cafe, Table 2 notes)Entering a community that is dealing with colonialism, for instance, and asking sensitive questions of members, can result in a lot of trauma and harm—not every consultant should be able to do this without having had specific training, experience, ethics clearance, and the ability to provide support services. (Survey, P9, government/regulatory staff) |
| Broaden IA programs and courses to include qualitative research training. Promote IA as a possible career path for social science students.  | I think that sort of broadening the scope of how we teach environmental impact assessment or impact assessment is really important. So that at least there’s some understanding of [the qualitative aspects of IA], but also bringing in social science students as well to kind of broaden that understanding. (Interview, P150, researcher/academic)We need to find more people that we can train from the social side to get into our processes. They know the methods, but they don’t know impact assessment. (Interview, P119, researcher/academic) |

**Table 3.** Summary of actions and representative quotes related to Pathway 2.

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| --- | --- |
| **Action** | **Representative Quote(s**) |
| Provide detailed documentation of procedures in IA reporting to ensure decision makers and other users can evaluate the quality of qualitative studies | Part of the problem is translating [methodologies] for decision makers to better understand. And I think that requires for some doing the study or the assessment to be really honest about the shortcomings of their methodologies, the strengths of their methodologies, and so on. And often in impact assessments you don't get that kind of explanation or you don't get it in much detail. So it's pretty hard. It would help if there was more up front as honesty about these methods and the strength of the methods. (Interview, P150, researcher/academic)Document [qualitative research] process to demonstrate rigour. (World Cafe, Table 1 notes) |
| Ensure user-friendly communication of findings | One of the big challenges in qualitative research is that qualitative researchers are not often used to conveying their research in a very brief, very succinct, very easy to understand way. Sometimes we are able to do that with skillful use of quotes and being able to represent that in our work, sometimes people can do it using photovoice or using other kinds of visual tools to do that. Maps if you work hard. [...] You have got to think about what products you are producing for those communities or for that impact assessment that are actually going to matter. (Interview, P77, IA practitioner)Communicating results in a form that participants can access (online, print, debriefing workshop), understand (e.g., language, non-technical) and use. (Survey, P53, IA practitioner and researcher ) |
| Embrace reflexivity; reflect on, and be transparent about, how researchers’ own biases/backgrounds influence research processes and outcomes | Practitioners often don’t take the time to situate themselves (i.e., What am I imposing? What is my worldview and how is it different than others’?) Biases, assumptions, and worldviews: practitioners need to position themselves first and be aware of their own framing. [It can] affect power in the process. (World cafe, Table 5 notes)I think a lot of the hesitation comes from somebody who's trained in the natural sciences, their general discomfort with the idea of subjectivity or bias. Some of that would have to come from developing a comfort level with being a research instrument and recognizing that as that research instrument, you have to document what you're doing and what you're thinking and kind of put yourself in it and deal with that. (Interview, P123, researcher/academic) |

**Table 4.** Summary of actions and representative quotes related to Pathway 3.

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| **Action** | **Representative Quote(s**) |
| Implement ethical, relationship-oriented practices in collaboration with communities | Earn trust from communities about methods; communities need to know how their information will be used [...] Allow flexible timelines and suitable budgets to allow more time for relationship building and proper application of qualitative methods. Open up space for individual methods and community methods. (World Cafe, Table 3 notes)Qualitative methods require trust and relationships. (World Cafe, Table 5 notes) |
| Share control over design and implementation of IA research methodologies with communities | Integrate OCAP principles (Ownership, Control, Access, Possession of data and knowledge). (World Cafe, Table 3 notes) Communities should have the chance to design methodologies for IA. The trend of Indigenous-led IA is good step forward either parallel to or as the main IA process itself. It is best to involve community in design of conceptual model underpinning a risk (IA) assessment. (World Cafe, Table 5 notes) |
| Offer capacity building within communities  | Empower/build capacity within communities through: individual training, which could be improved with policy guidance; case examples; building capacity, but keeping those people employed over time; having a well-trained qualitative person/team in each community, funded over time (not one-offs/project-by-project basis); people from communities teaching others (e.g., community liaisons). (World Cafe, Table 2 notes)Longer strategic skills investment needed for capacity building in communities. This is needed before/outside/above individual IAs. (World Cafe, Table 5 notes) |

**Table 5.** Summary of actions and representative quotes related to Pathway 4.

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| **Action** | **Representative Quote(s**) |
| Integrate qualitative methods in IA practice early and purposefully | Us[e] the research purposively to meet the aims at relevant stages of impact assessment. (Survey, P17, government/regulatory agency staff)Be issues-driven not methods-driven (i.e., ensure that the most suitable and robust method(s) are applied to the issue. (World Cafe, Table 1 notes) |
| Re-imagine the terms of reference to ensure qualitative methods are appropriately reflected | Because [the terms of reference is] the starting point, right? That’s your cookbook. What if they’re wrong? If you haven’t asked the right questions from the beginning and it’s not reflected in your terms of reference, well then nothing is ever going to change […] if all the indicators are quantitative in nature, then there is no room for qualitative analysis. So, the only way of creating a need for qualitative analysis is to go back and look at those terms of reference and see if they can’t be reworked in such a way that those questions of community, sustainability, and everything else are dealt with as a mandatory requirement. (Interview, P7, IA practitioner)If you’re doing terms of reference, making sure that they support achieving a broad analysis of what the actual impacts will be. I think it’s from a bit of both sides, the practitioner but also from a regulator side, making sure that terms of reference actually support that… Enable qualitative assessment. (Interview, P47, IA practitioner) |
| Seek validation of the value of qualitative methods from decision-makers | All research needs credibility if it is to lead to change, so qualitative research needs to be accepted by decision makers (or equivalent) as being credible in terms of their justification of decision. It is not a trivial issue. (Survey, P126, researcher/academic)Recognition by assessment bodies and decision makers that qualitative data is equally valuable to quantitative data. (Survey, P122, IA practitioner) |

**Table 6.** Summary of actions and representative quotes related to Pathway 5.

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| **Action** | **Representative Quote(s**) |
| Develop guidance documents for qualitative methods and how to use them, with concrete good practice and case study examples | Policy and guidance documents, including examples and stories where qualitative methods proved to be value-adding to decision-making (case studies/past experience). (World Cafe, Table 1 notes)Wider knowledge and understanding of the tools available, their risks & benefits and advice on where/when they have been/could be effectively applied. Understanding of how to effectively use evidence gathered in this way alongside/instead of quantified data to deliver a compelling justification to conclusions you seek to make in your IA work. (Survey, P122, IA practitioner) |
| Develop guidance on ethical protocols | Model code of ethics for professional associations to adopt. (World Cafe, Table 6 notes)[Protocols] owned by Indigenous peoples and communities. (World Cafe, Table 6 notes)[Ethics protocols] should not be top down like Research Ethics Boards; have that process outlined by community. (World Cafe, Table 6 notes)Data confidentiality – protocols must be co-developed with Indigenous Peoples and monitored by Indigenous Peoples. (World Cafe, Table 6 notes) |

**Figures**

Figure 1 [see EPS file]

**Figure Captions**

**Figure 1:** Summary of needs for enhancing the effectiveness of qualitative methods in IA and the pathways that address them. Note that various line shades are used to make the links between the needs and related pathways visually clear. The varying shades have no analytical purpose.

1. Referring to the Ownership, Control, Access, and Possession (OCAP) principles by The First Nations Information Governance Centre (2014). [↑](#endnote-ref-1)