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KNOWLEDGE CURATION IN CLIMATE ASSEMBLIES: SELECTION AND PRESENTATION OF EVIDENCE

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1. Key insights

- The evidence provision stage is of paramount importance in the formation of attitudes of participants and their collective recommendation writing in climate assemblies. This importance raises a number of epistemic, normative, and practical questions that must be taken into account in knowledge curation in citizens assemblies.
- From a deliberative-democratic point of view, expert input must be subject to potential counter expertise and public scrutiny. In the context of a climate assembly, this ideally requires recruitment of a broad spectrum of experts within the bounds of reasonable disagreement, and that participants are given the opportunity to influence the selection of evidence and speakers.
- In reality, time and budget constraints often mean that evidence and speakers are chosen by organisers and only subsequently vetted by a scientific board. Citizens are often only given the chance to influence knowledge curation later in the process, if at all.
- Presentation of evidence from different thematic and scientific areas may elicit different reactions and degrees of engagement from citizens. In particular, speakers in climate assemblies often predominantly come from a natural-scientific background, and rarely present in an interactive format that facilitates discussion and engagement with participants. This increases the danger of blind deference to authoritative expert opinion.
- Recent literature emphasises the importance of experts acting as “honest brokers”, who can engage with participants in interactive dialogue and joint deliberation and offer an overview of different actionable policy options. In reality, however, experts often subscribe to an outmoded knowledge-deficit model of science communication, which compromises their ability to serve as honest brokers. This accentuates the responsibility of organisers to brief them and facilitate their input.
- There is an under-utilised potential for climate assemblies to make use of narrative formats, story-telling, and visualisation to increase understanding and facilitate engagement from participants of diverse educational and cultural backgrounds and learning styles.
- Climate assemblies often struggle with the scope of climate change as a “super wicked problem”. When sessions are subject to a sectorial or topical division, this often comes at the cost of cross-cutting issues and the overall picture.

2. Key recommendations

- Set up a knowledge committee at the earliest possible stage of planning for the climate assembly. The work of knowledge curation should be anchored from the beginning in a forum of independent expertise, and members of the knowledge committee should be able to at least co-determine thematic content, information material, selection of speakers, etc.
- Include considerations of diversity and ensuring a multiplicity of voices across several different parameters (i.e., scientific approaches or “schools”, gender, ethnicity, values/political beliefs, etc., when applicable) in recruitment of the knowledge committee, and, in particular, in recruitment of speakers that directly address members of the citizen assembly.
- Don't forget to integrate social-scientific evidence, especially when considering policy alternatives and more systemic or cross-cutting issues. Consider also integrating

presentations from experts on deliberation and deliberative formats to heighten assembly members' understanding of the undertaking and their role and responsibilities.

- Equip assembly members with the requisite resources and effective agency for taking an active part in the work of knowledge curation. Provide opportunities for members to input on selection of experts, especially to support the development of recommendations.
- In order to mitigate the risk of expert domination, it is advisable to adopt interactive formats in evidence presentation that allow members of the citizen assembly a broad space for active engagement, especially when the evidence presented is natural-scientific or more technical in kind.
- Ensure evidence provision is balanced with plenty of time for members to reflect and deliberate on the issues raised and to raise questions. Don't overload members with inputs.
- Integrate communicability in all aspects of evidence presentation. Consider having a trained science communicator or journalist draft information material and presentations in consultation with the knowledge committee and other experts.
- Use a plurality of presentation formats in evidence presentation. Narrative and visual formats and story-telling may facilitate deeper understanding and reactions from assembly members with diverse educational and cultural backgrounds and learning styles.

3. The problem

Citizen assemblies are seen by many as a key part of the solution in democratic societies' attempt to develop qualified and legitimate responses to the challenges and dilemmas precipitated by anthropogenic climate change. Yet while climate assemblies offer a valuable platform for allowing a diverse, randomly selected group of citizens to engage in informed deliberations and formulate evidence-based recommendations for politically addressing climate change, the question of how to curate knowledge – selecting, organizing, and presenting evidence – raises a number of epistemic, normative, and practical problems. Understanding the problems raised by evidence curation in climate assemblies requires attention to questions such as:

- How should the relevant thematic and scientific areas be demarcated – i.e., what counts as relevant evidence, and what does not?
- Who should make decisions concerning the selection and demarcation of relevant evidence, and how should decision-making processes be organized?
- How should experts, witnesses, or speakers be selected, and how should they be briefed?
- How can expert knowledge be communicated to citizens with different educational and cultural backgrounds and learning styles?
- Should assembly members take active part in the work of knowledge curation, and if so, how can they be equipped to do so?

This Briefing offers a survey of the current literature on knowledge curation within deliberative processes such as climate assemblies before drawing lessons from 5 national climate assemblies across Europe.

Definition of expert:

A number of different understandings of the term “expert” are used in the scientific literature, the reports, and the interviews conducted for this briefing. Some studies and climate assemblies clearly distinguish between “experts” (scientists etc.) and “advocates” (lobbyists, NGOs, etc.), while others adopt the term “witnesses” to refer to both technical experts and advocates. In this briefing, the terms expert and expertise are used in a broad sense to cover not only traditional forms of technical or scientific expertise but also policy experts or citizens with lived experience of a particular social context. When more specific forms of expertise or expert functions are discussed, terms such as “technical expert” (of a scientific field), “speakers” (who directly address the members of the assembly), etc., will be used. The terms “scientific board” and “knowledge committee” are used interchangeably.

4. State of current knowledge

Questions concerning the selection and presentation of evidence, the selection and value of experts, and the communication of different kinds of expert knowledge to participants in citizen assemblies have only recently become the object of sustained scholarly and practical interest. As a recent paper on citizens’ juries notes (an observation which applies more broadly to climate assemblies):

“...there is currently little guidance on some of the challenges that organisers and advocates of citizens’ juries must consider regarding expert involvement, including the role of the witness, issues around witness identification and selection, the format of evidence provision, the evidence itself, and how these factors affect the experience of the participants and the witnesses” (Roberts et al., 2020).

This Briefing summarises insights from existing studies on these and related questions. Section 4 focuses on **how experts and evidence are selected**, with particular attention to the role and importance of evidence in climate assemblies (4.1), the selection of experts (4.2.), and the organization of evidence-provision (4.3). Section 5 considers **how evidence is presented**, focusing on recent trends in science communication in relation to communication of expert knowledge (5.1), dialogical communication and empowerment (5. 2.), the increasing importance afforded to storytelling, narrative, and visualization (5.3.), and uptake and impact (5.4.).

4.1. How experts and evidence are selected

4.1.1 The role and importance of evidence in climate assemblies

Christina Lafont notes that proponents of mini-publics often highlight their potential for enhancing the epistemic *quality* of decision-making processes (by meeting the demanding enabling conditions of informed deliberation), as well as the representativeness of public decision-making (through stratified random sampling procedures) (Lafont, 2020). However, if mini-publics such as climate assemblies are to meet the conditions not only of deliberation *per se* – such as openness to all perspectives and arguments, respectful recognition of others as equal partners in dialogue, etc. (Habermas, 1998b) – but of *informed* deliberation, participants must have access to state-of-the-art evidence on the matter at hand in a language and format they are able to understand and apply in subsequent discussions.

A number of studies suggest that the provision of information and evidence is highly important to the formation of attitudes and preferences in mini-publics, with several studies pointing to this phase as the single most important (Drury et al., 2021; Goodin & Niemeyer, 2003; Muradova et al., 2020; Thompson et al., 2021). While citizens' attitudes may adapt both to the quality of information and deliberation, the danger exists that fallacious appeals to authority or even outright manipulative interventions by “stealth issue advocates” will unduly influence citizens (Brown, 2014; Drury et al., 2021; Pielke, 2007). This underscores the risk of “expert domination” in mini-publics, where expert input determines outcomes rather than informs deliberation, in cases where participants suspend their capacity for critical judgment and blindly defer to the supposedly authoritative statements of experts (Leino et al., 2022). Only recently have empirical studies broached the question, whether and how appropriately organised selection and presentation of evidence in mini-publics can avoid such pitfalls.

Anthropogenic climate change is often described as a “wicked problem” – or even a “super wicked problem” – meaning that climate change has complex and crosscutting causes, that understanding climate change and its natural and societal consequences requires inquiry across multiple epistemic domains, and, most worryingly from a practical point of view, is “the absence of an existing institutional framework of government with the ability to develop, implement, and maintain the laws necessary to address a problem of climate change's tremendous spatial and temporal scope” (Lazarus, 2009). The “wickedness” of climate change has potentially wide-ranging implications for how knowledge curation in climate assemblies is organized, as well as the range of epistemic domains and disciplines that need to be covered (Elstub, Carrick, et al., 2021).

A recent study on citizens juries on wind farm development in Scotland suggests that presentation of evidence from different scientific areas may elicit different responses from participants. The authors observe that presentation of natural-scientific evidence was more likely to be unquestionably accepted as authoritative and beyond contestation. By contrast, participants were observed to be better able to contextualise and integrate social-scientific evidence with their own experiences, allowing for deeper forms of deliberative engagement (Drury et al., 2021). Such different reactions to different kinds of scientific knowledge may seem to suggest that methods must be developed specifically for presenting natural-scientific evidence in a way that elicits interactive and deliberative engagement, rather than a passively deferential response from participants in citizens assemblies.

4.2. Selection of experts and witnesses in mini-publics

Given that the evidence-provision phase is of such paramount importance for the formation of attitudes in mini-publics, the selection of experts is crucial to the quality of the outcome of the deliberative process. This in turn raises normative questions concerning the legitimacy of the influence of expert opinion on the deliberative process, as well as the proper criteria for expert selection.

As we have seen, advocates of deliberative processes – including mini-publics such as climate assemblies – often argue that such processes not only allow for but require expert judgments and opinion for deliberation to produce meaningful recommendations on complex societal problems. However, given the risk of expert domination, many also argue that such expert interventions must be “shaped by the publicly organized contest of opinions between experts and counterexperts and monitored by public opinion” (Habermas, 1998; see also: Bohman, 1996; Warren, 1996).

In the context of a climate assembly, this is often thought to imply not only that experts and speakers must be recruited from across the spectrum of reasonably disagreement (excluding, however, patently unreasonable voices such as certain climate change deniers), and that the criteria for expert selection are transparent to participants. Also, citizens should be able to exercise some influence on the selection of experts. Some studies even argue that citizens/participants should ideally be able to identify and determine the experts and speakers that they want to hear from (Roberts et al., 2020).

An important recent study, which combines case-studies and meta-analysis, finds that in most cases, the reality of expert selection does not live up to these deliberative ideals. Practical challenges and time-constraints mean that as a rule, experts and speakers are identified and recruited by organisers and sometimes vetted by a scientific committee or oversight board. Occasionally, citizens are allowed to ask for specific inputs later in the process (Roberts et al., 2020). The study also finds that it is often more difficult to recruit “neutral”¹ experts and speakers, who do not have a stake or interest in the topic under discussion, especially when the remit of the mini-public concerns politically controversial topics or is subject to scientific uncertainty. The authors note that in such circumstances, “the imperative to have [expert] witnesses with a diversity of political views is enhanced” (Roberts et al., 2020, 16).

The issue of diversity in expert recruitment is also relevant beyond a diversity of political views. The same report found that of 23 mini-publics reviewed, none gave public information on or explicit priority to considerations of equity, diversity, and representation of different demographic groups in the recruitment of expert witnesses – in marked contrast to the importance of such concerns in the recruitment of participants (Roberts et al., 2022). Such lack of diversity amongst experts and speakers not only risks compromising the legitimacy of a mini-public, but may also alienate members of marginalised or minority groups from participation and engagement, as frequent public criticism of so-called “manels” (all-male-panels) attests.

4.3. Organizing evidence-provision in mini-publics

Building on Roger Pielke’s concept of “the honest broker”, Mark Brown has drawn systematic implications for how to organise the relationship between experts and citizens to avoid expert domination in mini-publics. Brown argues that the role of honest brokers, “who combine technical and political considerations to clarify existing policy options and identify new options”, effectively requires abandoning “a ‘deficit model’ of science communication which emphasises the lay public’s knowledge deficit and gives scientists the task of rectifying it”. Instead, a more equal relationship where experts and citizens engage in “joint deliberation” should be favoured (Brown, 2014).² This view is supported by a recent study of a mini-public in Finland during the COVID pandemic, which finds that “interactive modes of expert hearings in mini-publics [such as Q&As] are not particularly prone to expert domination, and in this respect, they may have merits in comparison with other types of expert hearing processes” (Leino et al., 2022).

However, Roberts and colleagues find that in many of the cases they have surveyed, experts “tend to see mini-public participants as having knowledge deficits that need to be corrected rather than being active scrutinisers of their own knowledge and evidence” (Roberts et al., 2020). If invited experts subscribe to such a deficit model of knowledge provision, they may be unable to act as honest brokers, and, when this is indeed the case, it may fall to facilitators or science

¹ This is the term used in the study. Whether “neutral” expertise is possible is in itself a reasonable question.

² This briefing will unpack and discuss the different potential meanings of “joint deliberation” in Section 7.

communicators to assume this role of mediating between technical and political considerations and highlighting policy options.

The study makes a number of further observations and recommendations on the organisation of evidence-provision in mini-publics, underlining amongst other things the importance of:

- The appropriate composition of the knowledge committee, who are responsible for selecting or vetting evidence and speakers.
- A proper and thorough briefing of speakers, including such measures as coaching them in effective science communication.
- Support for participants to critique and contest evidence, e.g., in facilitated Q&A sessions or group work (Roberts et al., 2020).

5. How evidence is presented

5.1. Communicating expertise

In a comprehensive review article on recent trends in climate change communication, Susanne Moser maps a number of developments of relevance to the presentation of evidence in climate assemblies. Moser notes that research in climate change communication is far from a consolidated field but rather distributed across several sectors and disciplines and highly interdisciplinary in nature: “Because climate change affects everything and everyone everywhere, effective communication about it should involve and reach across disciplinary, sectoral, and geographic boundaries” (Moser, 2016). This insight, which echoes the description of climate change as a wicked problem, is equally relevant to the task of effectively communicating research on climate change in climate assemblies, which must succeed in bringing together and conveying knowledge cutting across several fields of inquiry.

According to Moser, an important general advance in climate change communication is a much greater appreciation of the extent to which “the values we hold affect not only our perceptions and interpretations of the climate and our acceptability of climate science, but—crucially, and often more prominently—the acceptability of anticipated or proposed behavioral changes, technological solutions, or climate policies” (Moser, 2016). This appreciation of values has in turn shifted attention to questions of “framing, messaging, and language”, which are equally important in the context of climate assemblies. Moreover, as I shall describe in greater detail below, this shift in focus has also contributed to expanding the methods of climate change communication beyond written material and oral presentations to include visualization, imagery, story-telling, and other narrative formats.

5.2. Dialogical communication and empowerment

In line with Mark Brown’s criticism of the deficit model, Moser observes that a “growing number of studies is available illustrating how dialogic, deliberative processes can open minds, deepen understanding, foster empathy, change attitudes, and increase receptivity to policy alternatives whereas not nearly as much impact could be achieved by simply transmitting information” (Moser, 2016). This observation speaks directly to the more general promise of climate assemblies in communicating climate change to a wider public audience (Devaney et al., 2020), but also to how evidence is communicated *within* assemblies – underlining the importance of experts and speakers

as “honest brokers” and of curating more interactive formats. Moreover, in the last decade, climate change communication has also evolved more fundamentally from a knowledge-deficit model, which risks inspiring passivity in the face of both the complexity and severity of problems, to a much greater emphasis on empowerment of audiences through a focus on different actionable options, including backcasting approaches that envision alternative futures and map out the practical steps necessary for achieving those outcomes (Cooke, 2015; Dryzek & Niemeyer, 2019; Lorenz et al., 2015; Morton et al., 2011; Robinson et al., 2011; Trott, 2020).³

5.3. Storytelling, narrative, and visualization

Recent research has acknowledged the importance of narrative and story-telling, as well as visual formats in effective climate change communication (Gulliver et al., 2020; León & Erviti, 2015; Miller et al., 2015; Sheppard, 2011; Wozniak et al., 2015). For example, Julie Downs has argued that narrative formats are particularly well-suited to communicate complex phenomena and causal processes while “promoting identification with the story and eliciting deeper emotional reactions”, including through audiovisual formats such as videos and games (Downs, 2014). A recent study finds substantial benefits from relying on narrative strategies for accentuating the “human element” in imagined future scenarios of complex energy systems change in a mini-public setting, and argues that story-telling formats can “open energy deliberation scenario creation to diverse publics” (Miller et al., 2015). Moreover, increasing attention is paid to the value of visualizations in illustrating both the impacts of climate change as well as possible future scenarios dependent on the choice of different policy options and pathways (Corner et al., 2015; Shaw et al., 2009; Sheppard, 2011).

5.4. Uptake and impact

Finally, recent research has also addressed the importance of effective communication for the uptake and impact of presented evidence – finding that it “is not climate change information per se, but how it is communicated that matters for participants’ uptake of ambitious climate measures” (Muradova et al., 2020). The same study finds that effective communicative strategies for uptake differ between technical experts and advocates, where the former increase the likelihood of participants’ uptake by presenting a broad range of proposed measures, while the “latter were successful when they presented a simple, unique message”.

6. Curating evidence in practice: lessons from five climate assemblies

The following observations derive from desk research on and interviews with key members of five recent climate assemblies: the Austrian “Klimarat” in 2022 (AK), the German “Bürgerrat Klima” in 2021 (GBK), the Danish “Borgertinget på Klimaområdet” in 2020-2022 (DBK), the French “Convention Citoyenne pour le Climat” in 2019-2020 (FCCC), and the British “Climate Assembly UK” in 2020 (CAUK). Some of these assemblies, such as the AK and the DBK, were commissioned by national parliaments, the CAUK was commissioned by parliamentary select committees, the FCCC was commissioned directly on the initiative of the French President, while the GBK was a bottom-up civil society initiative completely independent from German political institutions.

As a rule, semi-structured interviews were conducted with two central figures from each assembly, most often a member of the organizational staff and a member of the scientific committee/oversight

³ See [KNOCA Workshop on Integrating Backcasting in Climate Assemblies](#).

board, but also in one case with staff responsible for facilitation and science communication. In what follows, the assemblies are analysed thematically with a view to their overall organization of selecting speakers and evidence (6.1.), the role of experts within the assemblies (6.2.), the knowledge domains included in evidence provision (6.3.) and their curation of science communication (6.4.).

6.1. Organization of selection of speakers and evidence

The five climate assemblies surveyed in this Briefing differ in terms of how the work of knowledge curation was organized, which is reflective of different political circumstances and national or administrative cultures, and the extent to which these innovative processes had to produce novel solutions often within very short time frames. The remits of the assemblies all included the task of producing recommendations for how governments could meet emission targets within a specified time frame. The FCCC stands out as the only assembly with a mandate to make recommendations for laws, regulations, or referendums which could – in President Macron’s words – potentially pass to the relevant decision making body in “unfiltered” form, although for many this political promise was later reneged on (Stack & Griessler, 2022). I will return to the issue of the relationship between the French political situation and the FCCC in the discussion.

In the CAUK, the major thematic divisions of the assembly were undertaken under the supervision of the clerks of the Parliamentary Committee commissioning the assembly, while the overall selection of evidence and speakers was delegated to four expert leads each responsible for a topic bloc (how we travel; in the home; and what we buy, land use, food, and farming), who were in turn advised by a 12 member academic panel and a 19 member advisory panel of private, public, and civil society stakeholders (Elstub, Carrick, et al., 2021). The CAUK took place over four weekends and was split into three different topic groups to be able to cover the scope of the remit. According to an evaluation report, although this time frame and split into topic groups was directly motivated by time and budgetary constraints, it was “an insufficient amount of time for a climate assembly and the split into topic groups to address this was not ideal” – both because some participants ended up not being able to identify with recommendations from other topic groups, and because it likely diminished the political impact of the assembly (Elstub, Farrell, et al., 2021). Participants were able to request additional information throughout the process, although some reported feeling overwhelmed by the amount of evidence presented during the four weekends.

In both the GBK and the AK, selection of themes, evidence and speakers was largely entrusted to a scientific board, alongside advisory stakeholder boards. In the GBK, the scientific board (25 members) selected themes, while consulting the stakeholder board and opinion polling of the most important themes in the view of the general population. Speakers were selected by the organizers – partly with a view to their science communication skills – and subsequently vetted by the scientific board. Citizens were allowed to ask for speakers, which happened (according to the memory of an interviewee) once or twice. In the AK, the scientific board (15 member) also acted as speakers. Citizens were not given the opportunity to ask for further speakers or expert inputs, nor to ask for additional information on topics (Buzogány et al., 2022).

In the DBK, the ministry initially tasked the Danish Rectors’ Conference (the rectors of Danish universities) with convening a scientific board for selecting themes and speakers, but in the course of the assembly’s work, the task of knowledge curation increasingly fell to a planning committee comprised of organizational leads, civil servants, and selected citizens, mainly due to time and

budgetary constraints (Mariager & Nissen, 2021). This meant that some citizens assumed a very active role in selecting speakers and evidence.⁴

Finally, in the FCCC, the overall tasks of knowledge curation were initially taken on by the governance committee that was established to organise the Convention, comprising of public officials, stakeholders, and climate scientists – plus a couple of Convention members. Only later was a scientific committee established comprised of 19 experts alongside an independent group of legal scholars, who advised citizens on how to formulate recommendations in a juridical language that could be presented to parliament as a package of candidate laws (Giraudet et al., 2020). This inclusion of a separate legal advisory board (in addition to an advisory committee of climate-scientific expertise) is unique to the FCCC, mainly to fulfil President Macron’s promise that its recommendations should be considered in “unfiltered” form. Like the other assemblies, the FCCC was divided into (5) topic groups – this was not so much due to time and budgetary constraints (the FCCC met for 7 weekend sessions and had a substantially larger budget than the other climate assemblies), but rather a methodological choice.

In most assemblies surveyed, the intention was to follow the principle of tasking a diverse body of independent experts from different scientific backgrounds with the overall work of evidence and speaker selection – however, this principle often ended up in conflict with time and budgeting constraints (Elstub, Carrick, et al., 2021; Mariager & Nissen, 2021). The FCCC is notable in its deviation from this principle (at least initially). In most cases, citizens were allowed to ask for speakers and evidence, and, in a couple of cases, given a formal organizational role in knowledge curation (Buzogány et al., 2022).

6.2. The role of experts

In most assemblies, experts were generally given very similar roles. These include serving on the scientific board and making decisions on thematic focus; selecting speakers and evidence; serving as speakers; participating in Q&As; clustering content and offering assessments on the emissions reductions impact of recommendations; answering participants questions during group work (a “fact checking” service); and sometimes serving as co-spokespersons after the conclusion of the assembly. However, there were also significant differences in who was considered “experts”, and in the division between experts, advocates, and in one case, even organisers.

In the CAUK, no distinction was made between different kinds of expertise, and experts were included both from a university and stakeholder background. Instead, a clear functional differentiation between “informants” and “advocates” was drawn, where the former group were asked to give as close to an objective account of the state of scientific knowledge or some policy area, whereas advocates argued for more value-based approaches – such as whether to pursue a community, regulatory or a market-based solution to a particular policy challenge. In the AK, members of the stakeholder board were allowed to join the assembly in one of the later sessions to make their case for certain problems or policy solutions, but were clearly designated as such, rather than as experts. In the GBK, it was initially discussed whether to have a joint scientific-stakeholder board, but it was eventually decided to maintain a strict separation between a scientific board and a stakeholder board, with the former based on “evidence” and the latter on “interests” (as formulated by an interviewee formulated). In the DBK, expert witnesses were mainly recruited from the

⁴ Amongst other things, the DBK builds on the Danish experience with technology assessment and “consensus conferences” – a method developed and refined by the Danish Board of Technology, the commissioned organiser of the DBK. (Joss & Durant, 1995; Klüver et al., 2016)

universities, with a considerable majority from a STEM-background,⁵ and an organiser expressed in an interview that more stakeholder witnesses would perhaps have been preferable.

The FCCC stands out, as experts were formally given a more prominent role than in other climate assemblies. In the FCCC, experts from both the scientific and the legal advisory boards were asked to contribute actively in citizens' deliberation in a format called "co-construction". For example, as recommendations were intended to have a form that allowed them to be readily implementable into law, the legal advisory board was consistently engaged in the legal elements of the specification and formulation of the recommendations. As the observers of the FCCC note, this extent of expert involvement comes with certain risks: "a sort of primacy of the citizens prevails in citizens' assemblies. External input (from experts in particular), while allowed, is limited to that which is strictly necessary. In contrast, under co-construction, the outcome might be of greater consequence, but responsibility for it is somewhat shared—or diluted, as some warn." (Giraudet et al., 2022, 3)

Moreover, in the FCCC, the distinction between expert and organisers was sometimes blurred, as an evaluation report notes: "in contrast with most other citizens' assemblies, the organisers were not required to observe strict neutrality. One of the Convention's co-chairs for instance intervened as an expert. We also witnessed a co-chair, a guarantor, and members of the Governance committee give their own opinions to the citizens on some measures" (Giraudet et al., 2020).

Notwithstanding this extent of expert and organiser involvement in deliberation, the observers conclude that:

"the citizens embraced these external inputs inasmuch as it did not impair their agency, their creativity, and their freedom of choice. When they felt these values were at risk, they challenged authority... These adjustments were made possible by flexible, sometimes even loose, planning. As a result, the [FCCC] output can be said to have been co-produced in the sense that input from external bodies was essential, but this does not imply shared responsibility. In effect, the citizens retain full responsibility for the output" (Giraudet et al., 2022, 11).

The same judgment is echoed by an interviewee for this Briefing, who notes that he experienced quite strong push-back from a working group of citizens, when he advised them against adopting a proposal, because he deemed it unlikely to have any practical impact. Convention members told him: "We know it's not certain it's going to happen, but we believe this is something we want to put on the agenda ... it's not your role to tell us if we want to select that measure, it's because it matters to us." Although this is suggestive of citizens' retaining their agency in formulating recommendations and not blindly deferring to the advice of experts, such pushback is indicative of the challenge of ensuring citizens are able to resist undue influence or at worse a domination by experts.

6.3. Domains of Knowledge

All of the climate assemblies surveyed included expertise across different scientific domains. However, in most cases, the clear emphasis was on natural-scientific evidence, while social-scientific expertise was deprioritised. For example, in the AK, the evaluation report notes that the scientific board "missed expertise, particularly in the social sciences. Experts from political science,

⁵ STEM is science, technology, engineering and mathematics.

democratic theory and participation might have helped to enhance the understanding of different levels of policy making and instruments among participants” (Buzogány et al., 2022). Likewise, observers have noted that the DBK tended to focus on “technical knowledge” from STEM subjects, at the expense of social-scientific knowledge (Mariager & Nissen, 2021).

Several of the climate assemblies surveyed in this Briefing evidently struggled with coping with the immense scope and “wicked” nature of climate change and faced dilemmas on whether to focus on sectoral issues or transversal issues that allowed for a more systemic perspective. In the CAUK, the division of the assembly into topic groups was directly motivated by an attempt to cover the broad scope of the remit within the narrow time and budget constraints. However, according to observers, this division came with the cost of a tendency towards working in silos and participants’ understanding of not only other topics, but also the overall picture (Elstub, Carrick, et al., 2021).

The FCCC was divided into topic blocs, but also included a session on cross-cutting issues as well as a number of sessions where members could share their emerging recommendations for feedback across groups. Initially, the organisers had planned to establish a transversal working group of randomly selected participants from the thematically divided working groups to work on cross-cutting issues and report back to their “own” working groups. However, this model was met with strong pushback from participants, who feared that it would weaken discussion in the thematically divided working groups. The organisers gave up this model in favor of a more inclusive model, where a whole weekend (session 4) was devoted to cross-cutting issues (Giraudet et al., 2022).

In the DBK, from the beginning the ministry undertook a thematic division of sessions according to sectors, which tended to exclude or systematically downplay issues cutting across sectors. Some cross-cutting issues were brought up later in the process directly at the behest of assembly members (Mariager & Nissen, 2021). The AK likewise operated on a sectorial logic, of which the evaluation report notes:

“In addition, the so-called cross-cutting issues were not dealt with in separate working groups, which resulted in an insufficient consideration of these topics of utmost importance. Hence, coherent system thinking was not promoted on the part of the participants. It is, therefore, unsurprising that the final report proposes many incremental changes but neglects the manifold possibilities of (more disruptive) social innovations and transformation.”

In both the DBK and the AK, the choice of a sectorial logic/thematic division were motivated by concerns to produce actionable recommendations of relevance to policy makers, in order to increase the likelihood of the recommendations having an impact. But the sectorial logic evidently risks coming with a price – namely, a lack of attention to more systematic, cross-cutting, and potentially more transformative considerations.

6.4. Science communication practices

Recall the point made in section 5.2. on recent trends in science communication that emphasize the importance of dialogical communication and empowerment of participants, especially given the “wicked” nature of climate change and the abovementioned predominance of natural-scientific evidence in climate assemblies. As suggested, this requires strongly interactive formats of joint deliberation, rather than the traditional knowledge-deficit model of one-way communication of expertise.

In general, however, the climate assemblies surveyed seem to not have kept track of these advances in science communication – mainly opting for traditional lectures, written material, video recordings (mostly of video-taped presentations), and the like. For example, in the AK, science communication relied heavily on traditional lecture formats (Buzogány et al., 2022). However, the evaluation report describes how the approach was changed because many assembly members were unable to follow the content and style:

”At the beginning of the CCA, the scientific lectures were demanding for non-expert audiences and structured more like university lectures. Far too many graphs were presented, and there was too little time to provide sufficient explanations. This was partly because the process design did not provide enough time to prepare the expert statements and inputs. However, following the first weekend, the facilitators and scientists successfully invested much time and effort in making the scientific input more accessible and understandable for the target audience.”

A similar learning process took place with the fact sheets, which were eventually written by a science journalist and vetted by the scientific board. This was a shift from the original approach of drafting by scientific experts with feedback from the science journalist, which generated documents too dense and specialized for a broad audience. At the same time, all presentations in the AK were complemented by a graphic facilitator, which an interviewee highlights as a substantial success that received very positive evaluations from the participants.

In the DBK, the majority of presentations during the first weekend were pre-recorded, which offered no opportunities for interaction between experts and participants – which was potentially problematic, given the emphasis on the DBK on technical evidence from STEM disciplines. Similarly, in the CAUK, some participants reported feeling overwhelmed by the amount of information, and many “members noted the value of engaging with the presenters at their tables and that this allowed members to ask more detailed questions; both expert witnesses and members indicated that they would have preferred these sessions to be longer” (Elstub, Carrick, et al., 2021). An interviewee from the GBK also reports that the lectures were initially too dry, jargony and specialized for the participants to follow, but after an initial round of evaluation, the formats improved.

These observations also suggest an unutilized potential for employing narrative and story-telling formats – and perhaps also a greater degree of visualization – in order to improve the chances of facilitating a deliberative rather than a deferential reaction from participants, but also to decrease the risk of participants with no experience of higher education disengaging.⁶

7. Discussion

This discussion picks up on a number of issues from the preceding sections, which raise interesting questions or dilemmas and different approaches to addressing them.

⁶ Issues of identification and education can be distinguished. Where the former refers to issues of identity and representation and connect with the criticism of all-male panels discussed earlier, the latter – which is what is at stake at the present point – have to do with training in and familiarity with certain formats of presentation, such as the adapted ability to sit through long lectures on technical minutiae.

A first issue warranting consideration is the influence of the overall political context on climate assemblies. All climate assemblies are inevitably influenced by the external political environment, and as one interviewee notes, this is not necessarily a bad thing: if the recommendations are to be taken seriously by policy makers, they must see their own concerns and priorities reflected in them, at least to some extent.

To be sure, this is not equivalent to abandoning an arms-length principle, which implies that policy makers or public officials should refrain from attempts to intervene in and overtly influence the outcome of deliberations. However, even when this arms-length principle is observed, climate assemblies may be influenced by factors in the political context to an extent that bears directly on matters of knowledge and evidence curation.

In the case of the FCCC, in particular, the climate assembly was commissioned after President Macron's "Grand Débat" and thus constituted part of the President's response to the Gilets Jaunes movement, which shook French political life with massive protests across the country from the fall of 2018 onwards. The Gilets Jaunes – or "yellow vests" – were in part motivated by public anger at Macron's proposed hike to a carbon tax in conjunction with his scrapping of a wealth tax (Grossman, 2019).

The protests created a background of intense mistrust of elected representatives and public officials and played a major indirect role in the methodological and principled discussions in the planning stage for the FCCC. An interviewee thus describes an interesting conflict over knowledge curation in the planning stage of the FCCC, where some leading organizers were adamant "that it was important not to pre-frame the questions", while others argued that they "needed to pre-identify some key questions that were of a political nature and focus all the deliberative energy on those questions". The former point of view carried the day, which may also be part of the explanation why a scientific committee was only commissioned later in the process. The interviewee describes this methodological disagreement as turning on the extent to which citizens in assemblies should be regarded as "sovereign" – including in matters of the evidence and speakers they want to be presented with – or if organizers and science committees need to take a more hands-on approach to knowledge curation.

Discussions of this question, concerning whether to approach citizens as "sovereign" and leave the choice of evidence and speakers in their hands, or whether to pursue a more hands-on approach to knowledge curation with emphasis on central political questions, were infused with particular salience by the general atmosphere of political mistrust of elected officials and expert opinion in the wake of the Gilets Jaunes. (Giraudet et al., 2022). The case of the FCCC thus illustrates the extent to which contextual political factors can directly impact on knowledge curation work within climate assemblies, and that organizers and scientific committees must be highly cognizant of how to manage outside pressures in the selection and presentation of evidence, even when they are not overt and do not directly violate the arms-length principle.

The outside political context can of course also impact knowledge curation within climate assemblies in less dramatic ways. Several interviewees explicitly referenced considerations of "legitimacy" when reflecting on basic organizational or design decisions relating to evidence and speaker selection. Their concern being that if they do not get this part of the assembly design right, they will be open to criticism from external actors, which may devalue the process and reception of

recommendations. The higher levels of political distrust and polarization, the more this is likely to be an issue.⁷

The discussions on the “sovereignty” of citizens in the FCCC also raise a further question, which is of a more philosophical nature – namely, whether citizens can meaningfully be given the “sovereign” responsibility of selecting evidence and experts on technical issues relating to climate change, if they have not been equipped with a minimum basis of knowledge in advance for competently doing so? We have a paradox here. Principled concerns about respecting the agency of citizens come into conflict with the level of knowledge and understanding of the issue that is necessary for knowledge curation. One practical solution is to continuously ensure that assembly members have space to question the choices of organisers and scientific committees and submit their own suggestions regarding selection and presentation of evidence and even choice of topics on which to focus.

A further issue highlighted by several climate assemblies is that there may be a dilemma – or at least a tension – between a concern to maintain the policy relevance and likelihood of impact of recommendations on the one hand, and the risk of expert domination on the other. In other words, the thought here is that the greater the push for the policy relevance of recommendations, the greater the required role of experts, and the greater the risk of expert domination. This issue perhaps found its clearest expression in the FCCC, where legal experts participated in joint deliberations with citizens to give recommendations the requisite legal expression. Such an extraordinary level of expert involvement need not result in expert domination, but it means we need to carefully consider how to mitigate the risk of experts exerting an outsized influence on the deliberative process and the resultant recommendations.

Maintaining policy relevance can also increase the risk of creating silos within the assembly if it leads to the use of thematic working groups at the expense of cross-cutting issues and more “holistic” themes that are of less immediate policy relevance but crucial to the nature of a “wicked” problem such as climate change. All the assemblies reviewed in this Briefing adopted a policy-oriented thematic division of climate assemblies. This does not predetermine a lack of focus on more systemic concerns but does require design thinking to ensure space is given to more structural considerations.

Finally, this Briefing has consistently touched upon the importance of experts acting as honest brokers and engaging in “joint deliberation” with citizens, rather than in one-way communication according to a deficit model of science communication. This raises the question, what exactly “joint deliberation” amounts to? While there is no hard and fast answer to this question, the possibility of achieving joint deliberation clearly depends on *how the relationship between experts and assembly is curated*. As Brown notes, above all, joint deliberation requires ensuring “that participants are treated with equal respect and have an equal opportunity to make their voices heard” – a task most often undertaken by a trained facilitator (Brown, 2014).

Joint deliberation requires the involvement of both experts and assembly members in order to ensure informed deliberation and outcomes, but it need not require *direct* interaction between experts and assembly members in all circumstances; expert input may for example be mediated by professional science communicators. When direct interaction is preferred (as it often is), it should be curated in interactive formats that ensure the highest possible degree of communicability and

⁷ See [KNOCA Briefing No.6 on Governance Structures and Practices of Climate Assemblies](#) for further reflection on ensuring the integrity of climate assemblies.

understanding, as well as active deliberative engagement from assembly members, rather than hierarchical deference to expert judgment.

Based on the climate assemblies surveyed in this Briefing, we may speak of a continuum of expert involvement: from experts serving a background role (with input mediated by a trained science communicator or journalist as in the AK), over more traditional role of offering presentations and participating in Q&As and facilitated debates, to the active cooperation between experts and citizens characteristic of the FCCC’s co-construction model. Each of these degrees of expert involvement may serve a purpose in a climate assembly, but it is important for organisers to reflect on their associated benefits and risks and to curate them appropriately.

Figure 1: A continuum of expert involvement



8. Towards KNOCA guidance on knowledge curation

This section draws together some of the main findings and lessons of this Briefing with a view to preparing future KNOCA guidance on knowledge curation. What is clear from both the literature and the interviews conducted for this Briefing is that the work of knowledge curation must be given very serious consideration from the beginning to the end of a climate assembly. Although no universal blueprint can be formulated, certain general insights can nonetheless be distilled:

- Set up a knowledge committee at the earliest possible stage of planning for the climate assembly. The work of knowledge curation should be anchored from the beginning in a forum of independent expertise, and members of the knowledge committee (or expert leads, etc.) should be able to at least co-determine matters of thematic content, information material, selection of speakers, etc. While climate assembly organisers have used different methods for setting up knowledge committees, the task of identifying its candidate members has most often been provisionally entrusted to prominent scientific experts (often subsequent chairs of the knowledge committee) in fields of relevance with the requisite knowledge and network for recruiting co-members.
- Include considerations of diversity and ensuring a multiplicity of voices across several different parameters (i.e., scientific approaches or “schools”, gender, ethnicity, values/political beliefs, etc., when applicable) in recruitment of the knowledge committee, and, in particular, in recruitment of speakers that directly address members of the citizen assembly (those speakers may or may not also be members of the knowledge committee).
- Equip assembly members with the requisite resources and effective agency for taking an active part not only in the assembly’s deliberations, but also in the work of knowledge curation. Provide opportunities for members to input on selection of experts, especially to support the development of recommendations.

- Don't let natural-scientific evidence completely overshadow social-scientific evidence, especially when considering policy alternatives and more systemic or cross-cutting issues. Consider also integrating presentations from experts on deliberation and deliberative formats to heighten assembly members' understanding of the undertaking and their role and responsibilities.
- In order to mitigate the risk of expert domination, it is advisable to adopt interactive formats in evidence presentation that allow members of the citizen assembly a broad space for active engagement – at a minimum: for posing questions and contesting presentations – especially when the evidence presented is natural-scientific or more technical in kind.
- Integrate concerns of communicability in all aspects of evidence presentation. Consider having a trained science communicator or journalist draft information material and presentations in consultation with the knowledge committee and other experts to minimise dense and complex texts and oral presentations.
- Consider a plurality of presentation formats in evidence presentation. For example, narrative and visual formats and story-telling may facilitate deeper understanding and deliberative reactions from assembly members with diverse educational and cultural backgrounds.

9. Future network activities

The findings of this Briefing suggest the following avenues for future network activities in relation to knowledge curation:

- Many climate assemblies have struggled with identifying the right mix between thematic divisions and cross-cutting issues, which often remains a point of contention for both organisers, experts, and members of citizen assemblies. More systematic research into these questions – and perhaps design and piloting of different methodological designs – may help find the right balance.
- Although this Briefing has identified a continuum of expert engagement, there is little knowledge of the relative strengths and weaknesses – and, in particular, risk of expert domination – associated with different forms and degrees of expert engagement. More comparative work between climate assemblies can strengthen our knowledge of desirable degrees and forms of expert engagement.
- Although a substantial body of literature in climate science communication suggests that there is room for improvement in communicating evidence through narrative formats, story-telling, and visualisation in climate assemblies, such methods of presentation have rarely been tested in actual climate assemblies. Further research, comparative work and experimentation would be useful for determining their potential contribution.

10. Research methods

This Briefing has been prepared on the basis of extensive desk research and 8 interviews with key figures from 5 climate assemblies, including members of the organising staff, knowledge/scientific committees, and science communication journalists. In the case of two assemblies (the CAUK and the FCCC), for different reasons, it was only possible to conduct interviews with one member from each (both from scientific committees). Moreover, the main points of the Briefing were presented at a [KNOCA workshop on selecting and presenting evidence](#), and the questions, concerns and suggestions of the network's members have been integrated into the Briefing. The author would like to thank the interviewees and the participants in the workshop for their contribution to this project.

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