

APPENDIX 1. AUTHOR TABLES

When used below in connection with a number, the following letters refer to a guidebook: A = d'Aquino (2008), B&C = Beierle and Cayford (2002), C = Creighton (2005), M = Mazri (2007), and S&F = Stern and Fineberg (1996). The numbers used with them refer to a step or substep in that guidebook. The abbreviations in the last column refer to steps that have been reconstructed in the text of this article in the sections on decision analysis (DA), stakeholder analysis (SA), and public participation (PP).

Table A1-1. Author table: d'Aquino (2008).

His steps	Decision analysis			
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Worksheet 1	A1: Determine the minimum and the short-, mid-, and long-term objectives of the intervention.	Ask: What are the minimum and the short-, mid-, and long-term objectives of the intervention?	B&C3, C3, M1	DA 2
Worksheet 2	A2: Find out which groups are to be involved.	Determine the stakeholder groups of your intervention.	B&C4, C2, C3, M2, S&F2	DA 3
	A3: Determine preconditions for each target group prior to starting work.	This step asks what each potential stakeholder group needs in terms of its motivation to participate, responsibilities, knowledge, and know-how to be able to take part in a specific participation process.	B&C6	DA 6
	A4: Determine the objectives of the intervention in terms of the changes to be brought about in the target groups.	This is could be seen as a specification of step A1. This step asks what the objectives of the intervention are in terms of changes in the behavior, responsibilities, knowledge, and/ or know-how of the various target groups. According to d'Aquino, the answer should be determined for four different but not exactly specified points in time during the intervention, e.g., beginning, middle, end.	None	Additional step
	A5: Determine what capacities the target groups still need to acquire after the intervention.	This helps to clarify the limits of the intervention. In conjunction with the previous steps, it helps determine the	None	Additional step

point at which the expectations of the intervention come to an end.

Stakeholder analysis				
His steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Worksheet 2	A1: List the stakeholders and link them with their interests.	D'Aquino advises that a list of stakeholders be made as a basis for reflecting on their "positive" interests, i.e., what they want to achieve, and their "negative" interests, i.e., what they want to avoid.	B&C1, C2, M2, M5, S&F1	SA 2
	A2: Determine possible reactions of other stakeholders.	Process designers should then ask themselves how other stakeholders will react to the communication of these interests, i.e., positively or negatively.	C5, S&F7	SA 8
Worksheet 3	A3: Consider the stages in the decision-making process, e.g., data collection, data analysis, interest definition, etc. D'Aquino provides 12 stages. Define which actors will be involved in which phases and with which objectives	The designers reflect on which of the various stakeholders will participate in which of 12 fixed stages of the participation process and with which objectives.	S&F 5	SA 4

Participation planning				
His steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Worksheet 4	A1: Determine the various institutional and/or geographical levels that will be relevant for your interventions (workshops or other) and for the eventual decisions to be made.	This substep serves to explicitly reflect on the various geo-institutional scales that may be relevant for making the decision. It could, for example, lead to reflection about involving decision makers on a higher institutional level or larger numbers of end-users on the ground. The intervention (workshop or other) will at this point be only roughly described.	B&C3, C3, S&F1	PP 3
	A2: Define the objective, the facilitator, and the decision	Self-explanatory	A3, A4	Additional step

maker for each of the interventions (workshops, etc.) on each of the different scales, as well as the stakeholders to be involved.

A3: Reflect on change objectives for each stakeholder as a result of the interventions.	The designers determine change objectives, e.g., they would like to see stakeholders begin to consider collective solutions to collective problems or become open to an external intervention with regard to the problem under consideration.	A2, A4	Additional step
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A4: Consider those stakeholders who need to be mobilized for the intervention, who are usually to be found on the ground; those who need to be lobbied at higher administrative levels; and those who need to be empowered, such as marginalized populations.	Here the designers think about the readiness of the participants to become involved. Some may need good arguments, others may need individual meetings, and still others may need incentives or some other form of support to be able to participate.	A2, A3	Additional step
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Worksheet 5	A5: Use the worksheet to make the final plan by listing the actors, their level of influence on the decision, the objectives of the issues to be addressed at specific points in time, the methods and support materials to be selected for specific interventions, and the character of the intervention, i.e., presentation, facilitation, or mediation.	This worksheet takes the form of a Gantt chart representing the final participation plan and specifying many elements that have now been decided through the previous steps, including the participation mechanisms to be selected, the points in time when they occur, the participants to be involved, etc.	B&C1, B&C2, C4	PP 4
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Table A1-2. Author table: Beierle and Cayford (2002).

Their steps	Decision analysis			
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Step 1: Determine the need for public participation.	B&C1: Find out if you want to undertake participation for qualifying reasons.	Beierle and Cayford suggest that there are three "rationales" for which decision makers should undertake participation.	B&C2, C9, C10, S&F6	DA 10

		These are instrumental, substantive, or normative reasons (according to Fiorino 1990). Designing participation for other rationales, such as only for legal obligations, may result in failure.		
	B&C2: Make a commitment to be flexible in terms of content and process.	The commitments of the decision makers should be to remain open to the potential desire of the participants to alter the framing of the problem and accept that the decision makers consider wrong. Without these commitments, the participation process may lack legitimacy and trust.	B&C1, C9, C10, S&F6	DA 10
Step 2: Identify the goals of the process.	B&C3: Identify the goals of the participation process that is to be designed.	Determine, as a lead agency, what specific problem is being solved with the participation process. Check whether wider social goals (for a definition see Beierle and Cayford) are or should be targeted by the process.	A1, C2, M2, S&F1	DA 2
	B&C4: Identify the "public."	Identify the parties that need to be involved. Although B&C do not state this very clearly as a step, the implication is clear when they urge decision makers to consider "the goals ... of the public."	A2, C2, C4, M2, S&F2	DA 3
	B&C5: Identify the goals of the public/the stakeholders.	Ask: What are the goals of the public/stakeholders? This point is also mentioned rather implicitly.	C5, M3, S&F3	DA 4
	B&C6: Identify barriers to goal achievement.,	Barriers could, for example, be strong conflict or the lack of knowledge of specific stakeholders. Barriers already provide ideas about process elements because they need to be addressed if the process is to succeed.	A3	DA 6

Stakeholder analysis

Their steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Step 3: Answer	B&C 1: Ask how far the	Here, the choice is between	A1, C2, M2, M5,	SA 2

design questions.	reach of participation should extend.	broad and narrow inclusion. Issues that affect a broad section of the public demand broader participation than issues that affect a relatively narrow set of private interests. So, for processes that aim to reach large sections of the public, corresponding mechanisms should be chosen. However, it should also be kept in mind that mechanisms that are based on intensive small-group interactions often perform better when solving difficult issues than do large-scale activities that include wide parts of the public.	S&F1	
	B&C 2: Ask if participation should be based on socioeconomic characteristics or on interest group representation.	Again, the answer is guided by process objectives. For example, if the representativeness of the policy decision is an issue, the choice will be for socioeconomically representative stakeholders, such as in a citizen jury. If specific expertise and communication skills are important for reaching objectives, the choice will be more likely for interest group representation.	S&F2, S&F3, S&F4	SA 3
	B&C 3: Determine what kind of engagement is appropriate.	The trade-off is between information sharing, i.e., a two-way exchange of information between agencies and citizens such as in a public hearing, and deliberation, which involves more intensive discussion and problem solving. The choice again is a function of the objectives, e.g., informing the public vs. building trust.	B&C4, C3, M3	SA 5
	B&C4: Determine how much influence the public should have, i.e., limited, moderate, or high.	The range is from providing information and comments to formulating recommendations to forging agreements. Again, participation objectives are relevant: More influence, e.g., in negotiations, is likely	B&C3, C3, M3	SA 5

<p>B&C 5: Determine the role the decision maker should play in running and organizing the participation process.</p>	<p>to increase stakeholder commitment to the process and also more likely to build trust.</p> <p>The choice is between being responsive to the requests of participants and controlling the process. Beierle and Cayford's advice: "Responsiveness is important ... for creating trust..." Decision makers should therefore be ready to relinquish some or even a lot of control of how things are done in the interests of trust.</p>	<p>None</p>	<p>SA 9</p>
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Participation planning

Their steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
<p>Step 4: Select and modify a process.</p>	<p>B&C1: Match the answers to the design questions (see B&C3 in <i>Stakeholder analysis</i>) to specific participation mechanisms.</p>	<p>Beierle and Cayford's design questions require decision makers to choose among the following trade-offs: narrow vs. broad scope of inclusion, socioeconomic vs. interest group representation, information sharing vs. deliberation, limited vs. moderate or high influence of the public, passive vs. active role of the lead agency in organizing the process. The choice of trade-offs determines the choice of participation mechanism. Possible correlations are provided by Beierle and Cayford in a separate table (see Appendix 5: Table A5-3). The designer should be aware that the mechanism chosen in this manner may be appropriate for only one topic, event, or phase, e.g., the diagnosis of the functioning of the ecological system, in a longer decision-making process.</p>	<p>A5, B&C2, C4</p>	<p>PP 4</p>
	<p>B&C2: Repeat the previous substeps as needed for other stages of the participation process.</p>	<p>The designer should now repeat B&C1 for other phases, topics, and events in the planned participation</p>	<p>A5, B&C1, C4</p>	<p>PP 4</p>

		process as needed.		
	B&C3: Consider also the cost of making your choice.	If resources, especially in terms of funds and time, are quite limited, you should obviously plan for a less intensive process. In this case, it is also important to start by tempering any overdrawn expectations from agencies and participants.	A1, C3, S&F1	PP 3
Step 5: Evaluate the process.	B&C4: Build evaluation mechanisms into the process, especially for checking if the process objectives were reached and if design choices were useful.	Any participation process should be evaluated. To do this, the goals of the process identified earlier can be turned into evaluation criteria. Also, the evaluation can "test the assumptions that drove design choices ... (e.g., whether the right people were selected to participate and whether the public had the right level of influence)."	None	PP 8

A1-3. Author table: Creighton (2005).

His steps	Decision analysis			
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Step 1: Decide who needs to be involved in decision analysis.	C1: Decide who needs to be involved in decision analysis.	The project manager should find out which other people within her organization or outside may be needed for decision analysis, e.g., higher-up decision makers, decision implementers, support staff such as graphic designers, and possibly members of citizen advisory groups. These people, to the extent possible, should form a team that undertakes the following steps of decision analysis.	None in decision analysis	DA 1
Step 2: Clarify who the decision maker will be.	C2: Clarify who the decision maker will be.	The final decision maker, for example on a water management plan, may not be the project manager who designs and implements the participation plan but one or several higher-up	A2, B&C4, C4, M2, S&F2	DA 3

<p>Step 3: Clarify the decision being made or the problem being solved.</p>	<p>C3 Determine the decision being made or the problem being solved from the point of view of those responsible for the participation process.</p>	<p>government authorities in the ministry, province, etc. Other agencies may also have formal decision-making power. To avoid alienating them from the decision to be taken and to secure their buy-in into the process, it is necessary to identify and involve them early on.</p>	<p>A1, B&C3, M1, S&F1</p>	<p>DA 2</p>
	<p>C4: Consider who the potential stakeholders are.</p>	<p>With the entire decision analysis team, determine what the question is that needs to be answered with the help of the participation process. The idea here is, until C5, to reach agency-internal agreement on the framing of the problem before going out to the public.</p>	<p>A2, B&C4, C2, M2, S&F2</p>	<p>DA 3</p>
	<p>C5: Preliminarily find out what stakeholder views on the problem/question that needs to be addressed are or could be.</p>	<p>In his step, Creighton does not explicitly advise identifying the stakeholders at this point. However, he implies it by recommending that expected stakeholder views be included in the project and in the way the problem is framed.</p>	<p>B&C5, M3, S&F3</p>	<p>DA 4</p>
	<p>C6: Build the stakeholders view into problem formulation.</p>	<p>This step should be taken here in to avoid discovering belatedly that the stakeholders are opposed to the focus of the topic.</p>	<p>M4, M5, S&F7, S&F8</p>	<p>DA 5</p>
	<p>C7: Specify the stages in the decision-making process.</p>	<p>If possible (when, for example, the political situation allows it), try to formulate the problem at least as broadly as the stakeholders do, which means reframing the problem or the decision as it was formulated in C3.</p>	<p>C8</p>	<p>DA 9</p>
<p>Step 4: Specify the stages in the decision-making process and the scheduling of those stages.</p>		<p>A decision-making process usually has various stages such as problem definition, determining evaluation criteria, the identification of alternatives, the evaluation of alternatives, and the selection of one alternative. There may be many more. The important point here is to be clear about</p>		

		what those stages will be because later the public will want to know about this. It also provides clarity for planning.		
	C8: Schedule these stages.	Attach a timeline to the various stages to see at what point in time you will need stakeholder involvement and for which parts of the decision, and when, for example, you need to provide additional expertise. This will help avoid delays in the process. Also, you may be able to see whether the timeframe is sufficient to achieve the goals of the participation program.	C7	DA 9
Step 5: Identify institutional constraints and special circumstances that could influence the public participation process.	C9: Identify institutional constraints.	Determine if there are any barriers to the planned participation program, such as the fact that: the responsible agency has already made a decision, so that participation is a sham; there is strong opposition against the program within the responsible agency; there are schedule or resource constraints; or there are constraints on the release of information that make it difficult to instruct the public on issues they need to know about if they are to participate in a meaningful way. Find out if it is possible to work around these barriers.	B&C1, B&C2, C10	DA 10
Step 6: Decide whether public participation is needed and, if so, what level of participation is required.	C10: Decide whether public participation is needed.	After having gained initial clarity about the decision from the previous steps, it is now time to decide whether this decision requires stakeholder involvement at all. Creighton provides additional questions that can guide reflections, such as: Are there legal requirements for stakeholder involvement? Will there be controversy, in which case participation is recommended? Will the decision require weighing	B&C1, B&C2, C9	DA 10

one value against another, e.g., environmental protection against farmer incomes, in which case participation is recommended? Also, the issues of C8 should be reconsidered, and at this point it may be decided that a participation program is not advisable.

C11: Decide what level of participation is required.

If a participation program is chosen, clarify the level on which stakeholder involvement should take place. Creighton distinguishes these levels: "informing the public," "procedural public participation such as public hearings," "collaborative problem solving," and "developing agreements." The right level depends of the specific objectives of the participation program. For example, if the goal is merely to inform the public about something, the first level maybe sufficient. If the goal is to resolve a hot controversy, the fourth level maybe required. When there is uncertainty about what level of involvement is appropriate, Creighton recommends discussing this with some key stakeholders.

None in decision analysis

Additional step

Stakeholder analysis

His steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Decide who needs to be on the planning team.	C1: Adjust the planning team as needed.	This is a repeat of step C1 from decision analysis. Essentially, the team built before is likely to continue. However, some senior members who were involved in decision analysis may drop out, and some new members, such as facilitators needed for implementation, may join.	None	SA 1

Identify stakeholders and potential issues or concerns.	C2: Simultaneously identify stakeholders and potential issues and concerns.	Creighton suggests that identifying stakeholders and reflecting on potential issues and concerns are actually two steps, but he recommends carrying them out simultaneously because reflecting about stakeholders will fertilize ideas about potential issues and vice versa. There is much more thorough work at this point than in the preliminary stakeholder analysis in decision analysis. It potentially involves document study and talking to informed persons to find out who the stakeholders could be and what their issues, interests, or concerns are. Creighton provides several sets of questions, i.e., tools, to facilitate this work.	A1, B&C1, M2,M5, S&F1	SA 2
	C3: Determine the level of participation stakeholders will want using the orbits of participation tool.	Creighton proposes an "orbits of influence and interest" model. In the core is the decision-making center, and participants are grouped around this in diminishing circles of influence. The price for being closer to the center is to invest more time and energy; the benefit is more influence. Creighton favors the idea "that people can move from an outer orbit to a more active orbit." The orbits can later be linked to various participation mechanisms.	B&C3, B&C4,M3	SA 5
	C4: Prepare for potential issues and concerns.	The idea is to check how much work, e.g., studies, policy decisions, information material, on the various issues that are likely to be raised needs to be done before the issue can be meaningfully discussed with the stakeholders. Preparing for this helps the lead agency avoid looking unformed, unresponsive, or unprepared.	M1	SA 6
Assess the probable level of	C5: Analyze the existing levels of conflict around the	The rationale for assessing conflict is that a higher level	A2, S&F7	SA 8

controversy. issues to be discussed. of conflict usually requires more intensive participation mechanisms. Creighton recommends that, for each issue that was identified previously, the lead agency check whether there was prior controversy, whether this issue is connected to another major issue or power struggle, and how important this issue is to the major stakeholders.

His steps	Participation planning			
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Define public participation objectives.	C1: Define public participation objectives for the major stages in the decision-making process.	Review the different decision-making stages that were defined in the decision analysis phase (Creighton's Step 4). These decision analysis stages do not necessarily correspond to single participation events but may require several events (this is to be determined in C4 below). Check if these stages are still appropriate based on the information that has come in so far. Then (re)clarify the objectives for each of these stages. These objectives will later be important for determining the appropriate level of participation to be used in each of these stages; for example, gaining agreement on a solution usually requires much higher involvement levels than sharing information. Like some of the steps of the other authors, this step is a repeat of a former one and thus highlights Creighton's adherence to the iterativeness principle.	None	PP 1
Analyze the information exchange.	C2: Identify for each step the information needs to be prepared for the public and the information needs that	For each stage in the decision-making process, two questions should be considered: What does the	None	Additional step

must be obtained from the public.

public need to know to effectively participate at this step, and what do we need to learn from the public to complete this step? This helps to reflect once again on the purpose of each participation event but can also help planners to be better prepared with any knowledge that the public may request.

Identify special considerations that could affect the selection of techniques	C3: Identify special considerations that could affect the selection of techniques.	There could be "characteristics of the issue, ... of the public, [or] ... of your organization" that could influence the participation mechanisms that are to be used. Creighton lists and describes 15 of these special circumstances or considerations, such as the technical complexity of an issue which requires, according to Creighton, thorough public information, or a hostile public, which often makes it necessary to begin with large public meetings as an opportunity for members of the public to vent their anger.	A1, B&C3, S&F1	PP 3
Select public participation techniques.	C4: Select from a set of mechanisms and schedule them into the different key decision points.	For each stage in the decision-making process, select participation mechanisms. Creighton describes these mechanisms in some detail. Examples are open houses, workshops, advisory committees, and many others.	A5, B&C1, B&C2	PP 4
Prepare a public participation plan.	C5: Write the plan.	The plan should comprise the participation activities that will take place, the sequence of activities and their interrelationships, and their political context to explain why this plan is appropriate in these specific circumstances.	M4, S&F3	PP 5
	C6: Share the plan with the public.	The plan's purpose is to transparently communicate the efforts made so far within the responsible organization,	M5, S&F4	PP 6

e.g., management, to outside stakeholders and decision makers.

A1-4. Author table: Mazri (2007).

His steps	Decision analysis			
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Stage 1: Characterization of the decision maker	M1: The consultant understands the "resources" and interests of the decision maker.	The resources of the decision maker are her legal, economic, and social power but also her knowledge about the issues connected to the decision and her guiding values. Understanding these, as well as her interests regarding the decision, provides a first orientation for the "analyst" or consultant to the participation project. Mazri does not say explicitly that at this point the decision maker should herself express the problems to be addressed, the objectives of the participation process, or the decision to be made. However, this seems to be implied in the question about the interests of the decision maker.	A1, B&C3, C3, S&F1	DA 2
	M2: The consultant understands which stakeholders should be considered.	By asking the decision maker, the consultant determines which actors the decision maker wants to include in the process. This will also shed further light on the problems to be addressed or the decision under consideration.	A2, B&C4, C2, C4, S&F2	DA 3
	M3: The consultant understands the interests and resources of the stakeholders.	Practically at the same time as the previous step, the consultant asks the decision maker to clarify the various interests and resources, e.g., influence, of the stakeholders.	B&C5, C5, S&F3	DA 4
	M4: The decision maker determines the topics to be debated in the participation	The interaction between consultant and decision maker continues, and the	C6, M5, S&F7, S&F8	DA 5

process.	former helps the latter to determine the topics that need to be addressed in the exchanges with the stakeholders.		
M5: The decision maker determines the overall objectives of the participation process.	The consultant asks the decision maker to identify her objectives for the participation process and to analyze to what extent these objectives correspond to the decision maker's interests and resources.	C6, M4, S&F7, S&F8	DA 5
M6: Know the existing relevant legal regulations and, if necessary, advise the decision maker on this.	Often, various texts of law regulate a single decision, and it is necessary to be clear about them from the beginning, because they may regulate certain process steps. In addition, they may prescribe which actors are to be invited into the process and in which capacity.	S&F5	DA 8

Stakeholder analysis

His steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Stage 2: Study of the topics of debate	M1: For the various issues/topics that were identified in the previous phase (see M4 in <i>Decision analysis</i>), specify the required resources.	Many topics of debate need to be informed by technical as well as contextual knowledge. The decision maker and the consultant should check at this point how much knowledge is already available on the different topics, and how much needs to be acquired before the topics can be addressed with the stakeholders.	C4	SA 6
	M2: For the various issues/topics that were identified in the previous phase, identify the stakeholders and interests of theirs that are linked to the issues.	For each issue, it should be asked who could be affected by decisions related to it and who would like to affect these decisions.	A1, B&C1, C2, M5, S&F1	SA 2
Stage 3: Definition of the level of stakeholder participation	M3: For each issue/topic, determine on what level each stakeholder should participate.	According to his influence model (see Fig.4), Mazri distinguishes four levels of participation: the stakeholders are informed; they are consulted, here in the sense	B&C3, B&C4, C3, M3	SA 5

		of an expert consultation for those with many resources but low stakes; their opinion is taken into consideration, for those with high stakes but few resources such as knowledge or the ability to communicate; or they become involved in deliberations. The decision maker decides on stakeholder involvement according to this model.		
M4: If necessary, foresee participant training.	Some participants may need training to be able to participate in a meaningful manner. This should be envisioned at this point.		S&F6	SA 7
M5: Study each stakeholder once again.	Mazri suggests contacting each stakeholder individually to interview them about the topics they want to address, the objectives of the participation process, and the other stakeholders they would like to see involved.		A1, B&C1, C2, M2, S&F1	SA 2
M6: Adjust your vision about objectives, topics, stakeholders, etc. as new information arises.	Mazri emphasizes the principle of iterativeness. As new information arises through contact with stakeholders, the vision of the consultant and the decision maker concerning the objectives and topics of the participation process should change to reflect this new information. Who should be involved and which interests everybody has are therefore also likely to change. Mazri calls this a "cyclic approach" that requires previous stages to be repeated time and again as new information comes to light.		None as steps (though as principles)	Additional step

Participation planning

His steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Stage 4: Construction of a model that organizes the	M1: Begin to put the various topics to be discussed in the participation process into a logical order.	Organize the topics to be discussed according to their relationship with each other: either chronologically if, for	M2, M3	PP 2

space of
interaction

example, one topic requires the prior study of other topics, synchronically if they are interdependent, or in parallel if they are independent of each other.

M2: Match the various actor groups to the various discussion topics.

On the basis of their competencies and their influence as determined previously, the various actors are assigned to different topics. This means that, at this point, the level of involvement for each actor, e.g., consultation or deliberation, will be determined for each topic.

M1, M3

PP 2

M3: Foresee and plan for the interconnection of the various topics that are going to be addressed.

Because different actors may discuss different topics in various deliberation events but all events are supposed to contribute to a common decision-making project, it is important to ensure an effective exchange between the different activities. For example, this can take place in the form of minutes to be distributed, joint sessions, or a specific committee that is responsible for following and informing about the whole process.

M1, M2

PP 2

Stage 5: The model as a tool for a learning process

M4: The decision maker and the consultant preliminarily finalize the plan.

The various previous stages are integrated into a plan (Mazri's "model"), including the various discussion topics, the stakeholders connected to these, and their level of implication.

C5, S&F3

PP 5

M5: Submit the plan to the stakeholders for approval or modification.

The stakeholders, as considered previously, express themselves mainly on two points: their own place in the process, i.e., level of involvement, topics of debate in which they are involved, and the coherence and completeness of the various discussion topics that have been identified. The idea behind this is to gain a greater legitimacy for the planned process.

C6, S&F4

PP 6

M6: The decision maker and the analyst take into account the opinions expressed by the stakeholders and adapt the plan.

Not necessarily all the proposed changes are integrated into the plan, but in any case clear reasoning is developed and communicated by the decision maker and the analyst concerning the various elements of the plan. Consequently, each suggestion of the stakeholders from the previous substep will at least be considered.

S&F5

PP 7

A1-5. Author table: Stern and Fineberg (1996).

Their steps	Decision analysis			
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
Diagnose the kind of risk and the state of knowledge.	S&F1: Understand what is posing the risk.	Understand the main problem that needs to be addressed. In risk characterization, which is Stern and Fineberg's topic, this means to understand what exactly is posing the risk, e.g., engineered processes that may fail or emissions from agriculture; the nature of the harm, e.g., ecological disruption, morbidity, delayed mortality; and where the hazard is experienced, e.g., locally vs. globally, in unique events or repetitively.	A1, B&C3, C3, M1	DA 2
	S&F2: Understand who or what is exposed.	Understand which actors need to be involved. More specifically, ask who is exposed, e.g., human beings, nonhuman organisms, ecological systems, etc., and which groups are exposed, e.g., identifiable sensitive or highly exposed populations.	A2, B&C4, C2, C4, M2	DA 3
	S&F3: Understand which possible harms must be addressed for the risk characterization to be accepted as sufficiently thorough.	Here it should be asked which possible harms will be considered important by the affected populations and must therefore be addressed. This will have implications later, in stakeholder analysis,	B&C4, C5, M3	DA 4

	S&F4: Understand the state of knowledge uncertainty about the risk.	with regard to whom to involve and which issues need to be prepared and studied in greater detail. Analyze what is known, what is inferred, and what is uncertain. Consider what kind of additional analysis the affected and interested parties may demand.	None	DA 7
Describe the legal mandate.	S&F5: Specify any legally fixed elements of the decision-making process.	Determine the level of the lead agency's decision-making authority. In addition, legal fact finding could also pertain to specific process elements, needs for documentation, etc.	M6	DA 8
	S&F6: Consider how much discretion a responsible agency can exercise in involving the affected parties.	In the interests of a "broadly based deliberation," the responsible agency should study "how much statutory discretion it can exercise in order to listen to issues as needed without abdicating responsibility."	B&C1, B&C2, C9, C10	DA 10
Describe the purpose of the risk decision.	S&F7: Describe the purpose of the risk decision.	The type of decision that follows risk characterization should be defined, e.g., the decision could be about regulating an industrial process, setting emission standards, or policy strategies. This will also help identify the affected parties who need to be involved.	C6, M4, M5, S&F8	DA 5
	S&F8: Describe the purpose of the risk characterization.	"Risk characterization" corresponds to "participation process" for the other authors. Consequently, in this substep the decision maker asks about the relationship between risk characterization and the decisions that may be taken as a result. The decision makers should also ask themselves how the risk characterization may affect other goals of the responsible organization.	C6, M4, M5, S&F7	DA 5

Stakeholder analysis

Their steps	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	Reconstructed steps
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<p>4. Describe the affected parties and likely public reactions.</p>	<p>S&F1: Determine "the identity and likely positions and perspectives of the interested and affected parties."</p>	<p>Ask: Who are the affected and interested parties and what are their likely concerns with regard to risk? Risk in this case includes not only mortality and morbidity but also physical, social, economic, ecological, and moral effects. Stern and Fineberg provide more questions to determine the identity of affected parties, such as: Who has expertise that might be helpful? Who has been in a similar risk situation before? Particularly in situations with limited trust, "it is usually wiser to err on the side of too broad rather than too narrow participation."</p>	<p>A1, B&C1, C2, M2, M5</p>	<p>SA 2</p>
	<p>S&F2: Determine whether direct participation is needed.</p>	<p>Direct participation means representation "by the members of their own group." Indirect participation exists when groups are "represented by surrogates such as attorneys or scientific advisors. Direct involvement of affected parties may be essential ... when they have local knowledge that cannot otherwise be brought into the process ..." Direct involvement is also important to increase legitimacy and trust. However, if surrogate representatives such as scientific experts can properly represent the point of view of affected groups and when legitimacy and trust are not issues, indirect representation may be useful. It may, in fact, be the only way to represent certain stakeholders, such as future generations and the environment.</p>	<p>B&C2, S&F3, S&F4</p>	<p>SA 3</p>
	<p>S&F3: Select participants according to four key considerations.</p>	<p>The four considerations are that participation be sufficiently broad, the selection process be fair and perceived as fair, participants</p>	<p>B&C2, S&F2, S&F4</p>	<p>SA 3</p>

	<p>representing interested and affected parties be acceptable to those parties, and participants bring to the process the kinds of knowledge, experience, and perspectives that are needed for the deliberation at hand.</p>		
<p>S&F4: Select participants according to any or several of three possible strategies.</p>	<p>The possible strategies are participant self-selection, sampling based on social and possibly other criteria, and representation according to identified interests. However, all these strategies have shortcomings that can be limited by, for example, combining approaches.</p>	<p>B&C2, S&F2, S&F3</p>	<p>SA 3</p>
<p>S&F5: Determine at which point of the process the affected parties should be involved.</p>	<p>The question to Stern and Fineberg is at what points in the process, e.g., problem formulation, knowledge gathering, option consideration, stakeholders should be involved because "...participation across the spectrum of interested and affected parties is warranted at each significant step of the analytic-deliberative process..."</p>	<p>A3</p>	<p>SA 4</p>
<p>S&F6: Determine any barriers that may hinder effective involvement of stakeholders and address them.</p>	<p>These barriers could be lack of expertise, lack of funding, or lack of trust in the organizing agency. It could also be the case that affected parties feel well represented by the organizing agency and therefore do not want to participate, or they refrain from participation because "they believe they are more likely to achieve their desired outcomes by some other strategy, such as a legal challenge." These barriers should be addressed by adequate planning, e.g., make knowledge or funding available as required.</p>	<p>M4</p>	<p>SA 7</p>
<p>S&F7: Consider the potential for controversy.</p>	<p>Stern and Fineberg recommend informal contacts with the interested and affected parties to find out</p>	<p>A2, C5</p>	<p>SA 8</p>

about the existing climate of public opinion, i.e., the levels of trust and conflict, and thus be able to start designing a strategy to deal with the existing conflict levels. For example, additional research may be needed to inform controversies.

Their steps	Participation planning			Reconstructed steps
	Deconstructed steps (substeps)	Explanation of substeps	Correspondence to other substeps	
5. Estimate resource needs and timetable	S&F1: Estimate resource needs and timetable	Process designers should estimate the time and funds needed, in part depending on required expertise and the potential for controversy. They should also judge the potential for receiving additional funding or for budget cuts. In addition, they should take the influence of election and budget cycles for government-related projects into account. Last but not least, they should consider the potential consequences of indecision, especially, but not only, for risk management decisions concerning public health.	A1, B&C3, C3	PP 3
6. Plan for organizational needs	S&F2: Plan for organizational needs	Early on, the unit that is responsible for designing the participation process should consider what kind of support may be required from other units within the agency, e.g., expertise, communication with the public, etc., as well as from outside stakeholders. If relevant, the unit should early in the design process create a "task force or some similar entity that cuts across the usual organizational structure."	None in PP	Additional step
7. Develop a preliminary process design.	S&F3: Develop a preliminary process design.	"The diagnosis, i.e. the design process, should result in a clear proposal for the steps of the analytic-deliberative process, their	C5, M4	PP 5

		sequence, expected iterations, participants, rules for closure and other decisions, and tangible products. ... It should consider the legal and resource constraints on the process, where and how affected and interested parties can participate, time commitments, and overall time frame. ..."		
	S&F4: Be ready to share the plan with the public.	"The plan should be open for discussion by the affected and interested parties once the process begins, and it should be changeable as needed."	C6, M5	PP 6
8. Summarize and discuss the diagnosis within the organization.	S&F5: Summarize and discuss the diagnosis within the organization.	The plan should be discussed within the organization that is responsible for risk assessment. This discussion should "help to surface potential problems within the organization, clarify the degree of commitment the organization should make to the activity, and ensure that the organization enters the process with a consistent position on what it is willing to do in terms of participation, deliberation, and other potentially contentious issues."	M6	PP 7
