Involving stakeholders in the risk governance process

International Risk Governance Center

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Introduction

Stakeholder involvement is a necessary part of risk governance, especially when there is uncertainty or ambiguity concerning a risk. Efforts to assess, evaluate, manage and communicate the risk must account for the perceptions, concerns and opinions of stakeholders. This is just as necessary as the technical assessment of risk, or the risk management methods and tools themselves.

This publication builds on and replaces an earlier version entitled "Resource guide on stakeholder involvement",[1] which was published in 2013 and written by Pia-Johanna Schweizer and Ortwin Renn of the Institute for Advanced Sustainability Studies (IASS) as an introduction to a set of manuals explaining how to involve stakeholders in the risk governance process. The present document focusses primarily on the reasoning behind engaging stakeholders, while providing some general principles on how to involve stakeholders.[2]

The main objective of involving stakeholders and members of the general public in the risk governance process is to improve decision-making by risk managers throughout. It is meant to provide a greater understanding of the rationale behind stakeholders' interests, expectations and motivations that influence their decisions. This document describes the purpose of involving stakeholders (section 1) and illustrates where stakeholders have a role in the risk governance process (section 2). It then describes the specific objectives that may be met and expected outcomes for these different objectives, and concludes by drawing attention to the major benefits and challenges of involving stakeholders in an appropriate manner (section 3).

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[1] Schweizer, P.-J., & Renn, O. (2013). *A resource guide for developing and implementing science-based stakeholder involvement research, policy, strategies, and practices*. Geneva: IRGC.

[2] There is a large and growing literature on stakeholder engagement, which it is beyond the scope of this document to review. However, we would highlight the following publications:

- UNEP. (2020). *Handbook for Stakeholder Engagement*. UNEP Civil Society Unit. Retrieved from www.unenvironment.org/resources/publication/stakeholder-engagement-handbook.
- Huzzard, T. (2018). *Stakeholder Engagement Manual*. European Commission's Horizon 2020 QuInnE project 649497. Retrieved from ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5bda5ad97&appId=PPGMS
- Association for Project Management. (2017, June 28). *Stakeholder engagement*. Retrieved from www.apm.org.uk/resources/find-a-resource/stakeholder-engagement.

Concerning participatory politics and governance, the Participedia crowdsourcing platform provides guidance and case studies: participedia.net.

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Chapter 1

The purpose of stakeholder involvement

Who are stakeholders?

The International Risk Governance Center (IRGC) defines stakeholders in the realm of risk governance as "Socially organised groups that are or will be affected by the outcome of the event or the activity from which the risk originates and/or by the risk management options taken to counter the risk."[3] Groups can socially organise through various means, whether formal (i.e. through the creation of non-governmental organisations or civil society organisations) or informal, as the advent of social media has shown (i.e. Facebook groups, Twitter accounts that have a capacity to communicate and mobilise groups).

In this document, the following distinctions are made based on the organisational structure of stakeholder groups and their proximity and exposure to the risk issue:

- **Directly affected groups** — socially or politically organised groups who are or will be either affected by or have a strong interest in the outcome of the event or activity from which the risk originates and/or by the risk management options taken to counter the risk. These are formal groups, such as official advocacy groups, governments, or industries. Example: workers in asbestos mining.

[3] IRGC. (2005). *Risk Governance: Towards an Integrative Approach*. International Risk Governance Council. Retrieved from irgc.org/wp-content/uploads/2018/09/IRGC_WP_No_1_Risk_Governance__reprinted_version_3.pdf

- **Directly affected public** — individuals and groups who will experience positive or negative impacts from the outcome of the event or the activity from which the risk originates and/or by the risk management options taken to counter the risk. This might include community members or certain marginalised populations. In the case of some risks, the entire general public is directly affected. Example: people working or living in a building in which asbestos was used in construction.

In addition, while the following groups are not always defined as stakeholders, they may have similar influence and will, therefore, sometimes need to be engaged or informed in similar ways:

- **Observing public** — scientists, the media, cultural elites and opinion leaders who may or may not comment on the risk issue or influence public opinion. Example: scientists that work on safety aspects related to asbestos.
- **General public** — all individuals who are not directly affected by the risk or risk management activities and are part of the emerging public opinion on the issue.

Why stakeholder involvement is necessary

Effective stakeholder involvement can make a strong contribution to the success of a comprehensive and responsible risk governance programme (see section 2 of this document for greater detail on the role of stakeholder involvement in the various phases of the IRGC risk governance process). Effective stakeholder involvement helps risk managers in several ways:

(1) providing fair, accurate and appropriate information to ensure that stakeholders are aware of the risks and benefits associated with technologies, products, activities or situations
(2) assessing stakeholders' opinions and preferences regarding risks, risk technical assessment and risk management decisions, so that this information can be incorporated into the decision-making process
(3) creating the conditions for informed consent, behaviour change and building public confidence in appropriate risk management decisions
(4) contributing to mutual understanding that may help to resolve ambiguities, trade-offs and conflicts about preferences among and between stakeholders, regulators and society.

Well-structured and purposefully designed stakeholder involvement procedures have proven to be effective, efficient and to produce a fair outcome. Among the many examples in the environmental domain, the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, published on 25 June 1998,[4] establishes that sustainable development can be achieved only through the involvement of all stakeholders and focuses on interactions between the public and public authorities in a democratic context. Similarly, the 2008 report of the US National Academy of Science on public participation for environmental policymaking states:

> *When done well, public participation provides multiple benefits. It improves the quality and legitimacy of a decision and builds the capacity of all involved to engage in the policy process. It can lead to better outcomes in terms of environmental quality and other social objectives. It also can enhance trust and understanding among parties.*[5]

In risk-related matters, stakeholder involvement should not be seen as an attempt to convince or persuade stakeholders to adopt the judgement of the risk manager about the tolerability or acceptability of risks. Rather, it is an attempt to help the public make better informed judgments and enable them to control the risks that they face. When stakeholders are involved in public participation programmes, it is an opportunity for all members of organised groups and affected citizens to take an active part in societal discourse about collective risk-bearing matters such as modern technologies, economic activities or other projects for designing and shaping our natural and social environment.

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[4] UNECE. (1998). Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. *International Legal Materials, 38*(3), 517–533. treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-13&chapter=27

[5] National Research Council. (2008). *Public Participation in Environmental Assessment and Decision Making*. Washington, DC: The National Academies Press. doi.org/10.17226/12434

Chapter 2

Stakeholders in the IRGC risk governance framework

The importance of stakeholder involvement in the risk governance process can be illustrated with reference to the IRGC's risk governance framework,[6] which offers a conceptual approach for describing and studying risk governance as well as normative guidelines for improving decision-making and handling risk. The IRGC risk governance framework is composed of a series of phases (see Figure 1). Stakeholder involvement will take different forms and have different purposes in the different phases, and may be necessary on multiple occasions throughout the risk governance process.

Where stakeholder involvement fits in the risk governance process

The IRGC's risk governance framework starts with pre-assessment, framing the problem that needs to be addressed. This stage establishes a broad picture of the risk in order to assess and manage it. In this stage, risk managers frame the risk, which allows for early warning and preparation. It is at this

[6] IRGC. (2017). *Introduction to the IRGC Risk Governance Framework, revised version*. Lausanne: EPFL International Risk Governance Center. infoscience.epfl.ch/record/233739

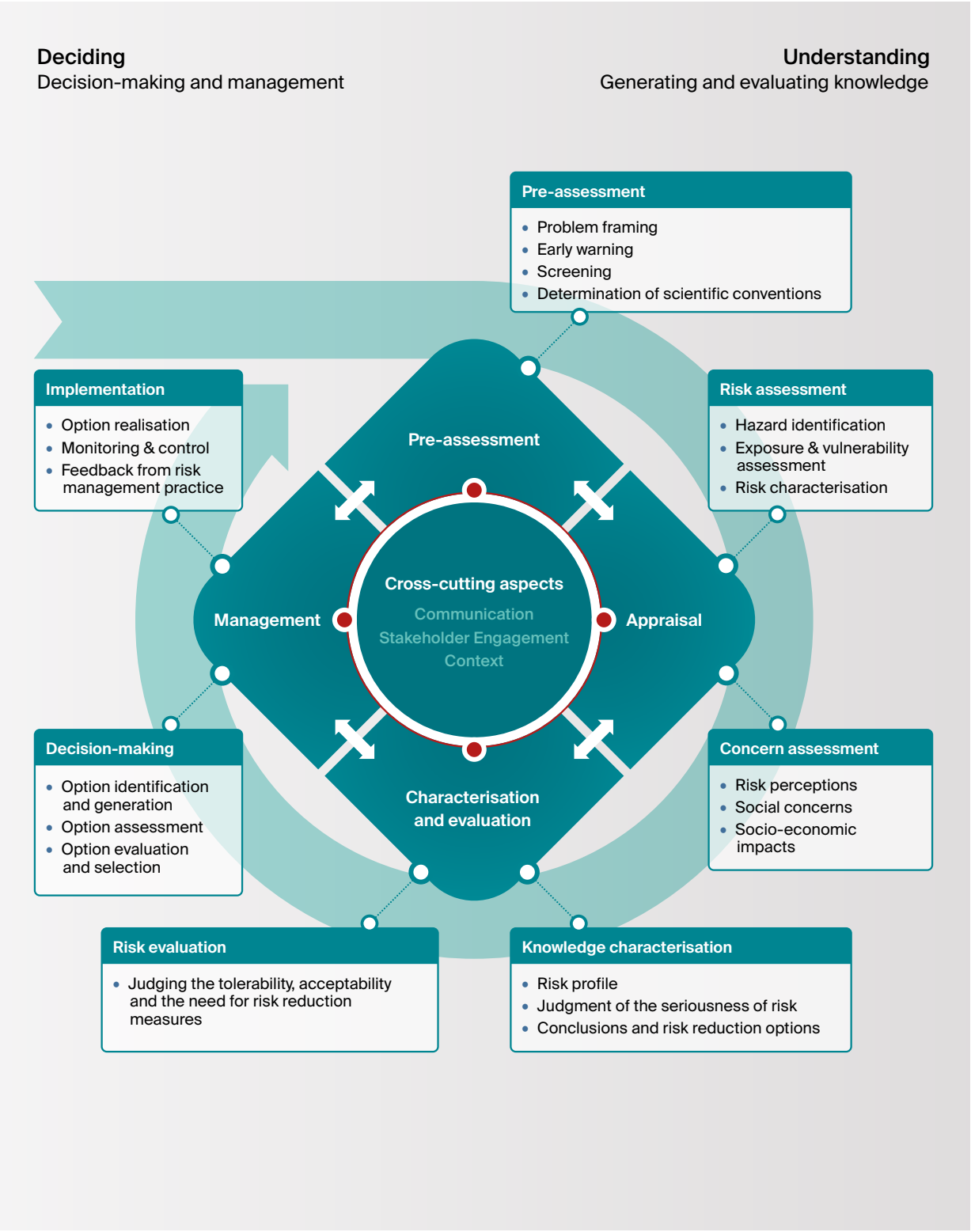

Figure 1: The IRGC risk governance framework.

stage that risk managers can ask themselves who the stakeholders are in this particular situation. The stakeholders in this phase can then contribute information about their experience with the issue at hand and may point towards desired time frames, potential urgencies, non-obvious applications and other context-related issues.

The next phase is risk appraisal, which includes two major components: risk assessment and concern assessment. Risk assessment seeks to establish the technical link(s) between risk agent(s), cause(s) and consequence(s), specifying the probabilities of occurrence. Concern assessment complements this information with insight from risk perception studies and interdisciplinary analyses of a risk's social and economic implications to better understand the values and emotional issues that could be associated with a risk. Stakeholders can be involved by contributing information or understanding about the limits of knowledge and about the risk(s) being evaluated.

The third phase involves making a decision about whether a risk is acceptable, tolerable or intolerable. Acceptable activities offer benefits with negligible risks, making risk reduction unnecessary. Tolerable activities, on the other hand, are pursued for their benefits but require additional risk reduction efforts. Intolerable activities are prohibited or substituted. This decision is made on the basis of the characterisation and evaluation of the risk. Involving stakeholders during this phase ensures that important values and priorities (such as political preferences or economic interests) are taken into account. Where there are controversial or conflicting evaluations, a stakeholder mediation process can allow these conflicts to be openly addressed, with a view to developing widely acceptable solutions.

In the risk management phase, all the information gathered in previous phases is combined to design and implement the actions and remedies required to avoid, reduce, transfer or retain the risk. Stakeholders may be involved at this stage, both in identifying and selecting the most appropriate risk management options and in their implementation. In the evaluation of possible risk management options, it is necessary to understand how stakeholders will experience their impacts.

Stakeholder involvement and different types of risk

IRGC developed a flexible framework (in the form of an 'escalator') for suggesting the appropriate level of stakeholder involvement, depending on the knowledge about the risk (see Figure 2 below). In order to assess when and how to engage different stakeholders and the general public, IRGC recommends using the dominant characteristic of the risk to decide the appropriate level of stakeholder involvement. The stakeholder involvement escalator suggests different approaches depending on whether a risk is characterised as simple, complex, uncertain or ambiguous.

Simple risk phenomena

A risk is considered simple when a clear cause and effect connection is universally known and accepted. These risks generally do not require elaborate

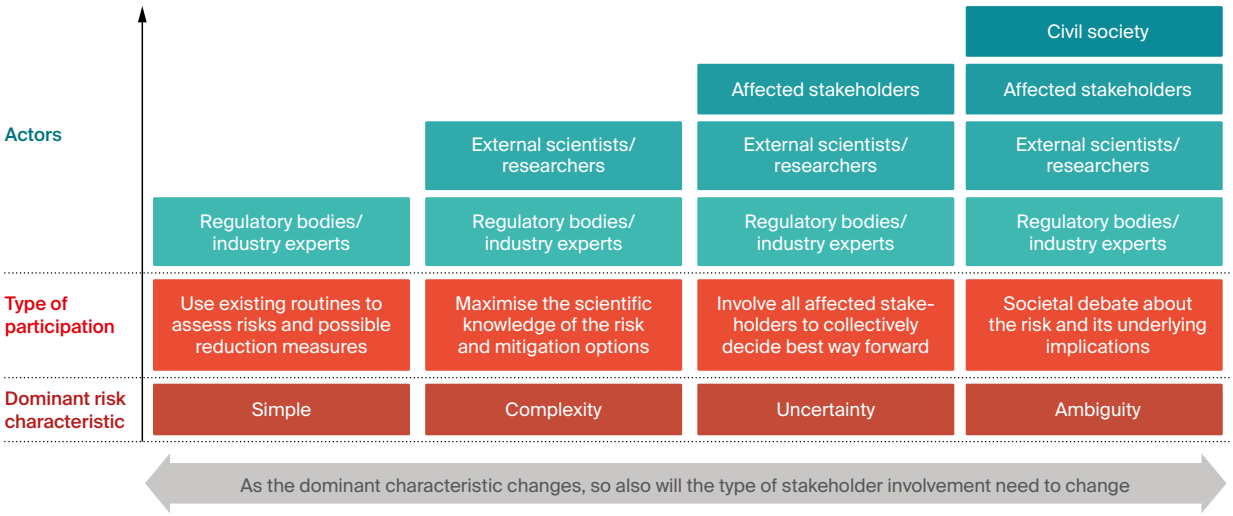

Figure 2: The risk management escalator.

stakeholder involvement, but stakeholders may be included in deliberations because they have information and know-how that could help to make risk-management measures more efficient.[7]

Complex risk phenomena

Complexity refers to difficulties in identifying and quantifying the causes of specific adverse effects, for example, when dealing with sociotechnical systems. Complex risks require dialogue and deliberation among communities with relevant expertise (such as natural and social scientists), with the goal of producing more reliable and valid judgements about the nature of the risks in question.

Uncertain risk phenomena

A risk is uncertain when there is a lack of scientific or technical data, or a lack of clarity on the quality of data, on the cause and effect chain of an action to an outcome. These risks require reflective discourses with agency staff and experts as well as stakeholders in order to find the best compromise between too much and too little precaution when facing uncertain outcomes.

Ambiguous risk phenomena

A risk is ambiguous when there are different interpretations of the information available, which leads to divergent perspectives on the risk, including the likelihood and severity of potential adverse outcomes. Risks that are subject to high levels of ambiguity include issues for which economic or ethical issues matter and where controversies and polemics can emerge. These risks call for participatory discourse with a broad range of stakeholders, including directly and indirectly affected groups, in order to reconcile normative conflicts.[8]

It is worth noting that it is often not obvious whether or how a risk should be characterised in terms of complexity, uncertainty and ambiguity. Stakeholders may disagree on the extent to which these three characteristics exist. In such cases, the IRGC recommends that the risk governance process begins with a "design discourse", defined by the IRGC as "A form of deliberation for defining and specifying the most appropriate route for assessment and management of a given risk".[9] In general, if an agreement cannot be reached, one should select the next highest discourse level.

Risk communication and stakeholder involvement

Risk communication is a vital and ongoing part of effective risk governance. It is a cross-cutting function at the centre of the risk governance framework. It is the continuous process of sharing or exchanging risk-related information, data and knowledge among the diverse groups involved in risk governance, such as scientists, policymakers, regulators, industry, consumers and the general public.

Internally, risk communication develops a common understanding among risk assessors and managers of their tasks and responsibilities. As part of stakeholder involvement, risk communication allows stakeholders to receive important information in a timely manner. It also allows stakeholders to make informed contributions to the risk governance process by creating a deliberate two-way dialogue, which gives stakeholders a voice. Once a risk management decision has been made, the role of communication is to explain the rationale for said policy decision to stakeholders.

Without risk communication, there cannot truly be any successful stakeholder involvement. Effective and early communication is the key to creating long term trust in risk management, in particular when knowledge about a risk is complex, uncertain and/or ambiguous. Stakeholder involvement then goes beyond communication by ensuring that stakeholder knowledge, interests, values and world-views are incorporated and given their due in the governance process. In addition, stakeholders are important agents for disseminating the results of the risk governance process and facilitating outreach throughout.

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[7] Renn, O. (2015). Stakeholder and Public Involvement in Risk Governance. *International Journal of Disaster Risk Science, 1*(6), 8–20. doi.org/10.1007/s13753-015-0037-6

[8] IRGC. (2017). *Introduction to the IRGC Risk Governance Framework, revised version*. Lausanne: EPFL International Risk Governance Center. doi.org/10.5075/epfl-irgc-233739

[9] IRGC. (2005). *Risk Governance: Towards an Integrative Approach*. International Risk Governance Council. Retrieved from irgc.org/wp-content/uploads/2018/09/IRGC_WP_No_1_Risk_Governance__reprinted_version_3.pdf

Chapter 3

Making the most of stakeholder involvement

It is important to be clear about the goal(s) of the stakeholder involvement process. In this chapter, we highlight the three key objectives that can be achieved by involving stakeholders in risk governance and some of the different methods that can be used. It is important to remember that while there are many benefits to stakeholder involvement, there are also challenges that can arise. The second part of this chapter outlines the key benefits and challenges, and also explains how some common pitfalls of stakeholder involvement can be avoided.

Objectives and expected outcomes

There are three main objectives that any stakeholder involvement process might have:

- The first is **communication** — risk managers make stakeholders and the targeted public literate about a risk, and/or induce behavioural changes (such as being prepared for a natural or technological risk and adapting one's behaviour to the type and level of risk).

Box 1: The key questions

Before beginning a process of stakeholder involvement, there are three key questions to ask:

1. What is the purpose or objective of involving stakeholders in the management of a risk issue?
2. What is the problem that needs to be addressed and how can it be framed in such a way that all relevant stakeholders find their concerns addressed?
3. What is expected from the stakeholders and the members of the affected public?

- The second is **consultation** — risk managers collect feedback about preferences and concerns of the stakeholders and the affected public for the purpose of modifying policies in accordance with public preferences, and/or reaching an informed consent.
- The third is **deliberation** — risk managers engage stakeholders and members of the affected public to commit themselves to specific risk management practices, and/or to play an active role in co-determining policies or decisions.

In the sections that follow, we discuss each of these stakeholder objectives in more detail, highlighting the specific goals and expected outcomes that each type of stakeholder engagement can help achieve. We also provide examples of each type of engagement, as well as listing some of the most common methods of stakeholder engagement in each instance. On this last point, it is worth noting the increasing role played by social media as a channel for stakeholder involvement. In general, social media can ease the process of stakeholder involvement and extend its reach, but there are potential concerns related to disinformation and to which individuals and groups are most active and vocal on social media.[10]

Table 1: Objectives and expected outcomes of stakeholder involvement.

Communication	Consultation / feedback	Deliberation / co-determination
• Literacy • Behavioural change	• Representation of public preferences • Informed consent	• Self-commitment • Co-regulation / management

Communication

Communication can be defined in this context as the exchange of information about risks between decision-makers, scientists, stakeholders, the media and the general public. The objective is to improve transparency and openness, but there is no attempt to collect stakeholder or public feedback or involve them in the decision-making process. The goals of

[10] Sutton, J., & Veil, S. R. (2017). Risk communication and social media. In R. E. Kasperson (Ed.), *Risk conundrums: Solving unsolvable problems* (pp. 96–111). doi.org/10.4324/9781315665894

communication, and its expected outcomes, are literacy and behavioural change.

Literacy: information, education and the promotion of understanding

In order to improve literacy, stakeholder involvement aims at informing stakeholders and the affected public about the implications of the respective risks and risk management options. It makes them cognisant of risks and opportunities and assists them in developing a general understanding of the issues at stake.

Examples: provision of information about complex technologies, natural hazards, health and medical matters; education about different types of uncertainty, factual evidence and probabilities; discussion of institutional performance, expertise and experience.

Possible methods: inquiry-based learning methods, science cafes,[11] demonstrations, well-designed print materials and information shared online.

Behavioural change

This form of stakeholder communication aims not just to inform end users about risks, but to change relevant behavioural patterns.

Examples: communication campaigns designed to reduce or adapt energy consumption, nutritional patterns, hygienic practices or safety precautions. Two-way communication may also lead to adjustments of existing risk management practices.

Possible methods: direct exercises, simulations, discussion groups, dialogues, learning platforms, persuasive information materials, social media campaigns.

Box 2: Communicating to drive behaviour change during the Covid-19 pandemic (2020)

Stakeholder communication is especially important during a crisis, such as the Covid-19 global pandemic. Throughout the early months of 2020, communication with stakeholders remained imperative in order both to inform the public and to elicit appropriate and safe behaviours. In Switzerland, the government held frequent press conferences, centred around the spokesperson for the Federal Office of Public Health. Switzerland also produced clear and directive signage about hand-washing and physical distancing that were posted around the country in multiple languages.[12] This consistency in stakeholder communications helped the population adopt the behaviours that were necessary to control the pandemic. In the United States on the other hand, although there were press conferences and other methods of public outreach, inconsistent messaging, downplayed threats, partisanship and the spread of misinformation did not lead to the necessary behavioural changes among the public and the country experienced disproportionately high case numbers.[13]

[11] For further information on science cafes, please see the following article: Mizumachi, E., Matsuda, K., Kano, K., Kawakami, M., & Kato, K. (2011). Scientists' attitudes toward a dialogue with the public: A study using "science cafes." *Journal of Science Communication, 10*(4), A02. doi.org/10.22323/2.10040202

[12] *How the Swiss have navigated crisis (mis)communication during Covid-19*. (n.d.). SWI Swissinfo.Ch. Retrieved August 4, 2020. Retrieved from www.swissinfo.ch/eng/government-response-_how-the-swiss-have-navigated-crisis-- mis-communication-during-covid-19--/45773636

[13] Gollust, S. E., Nagler, R. H., & Fowler, E. F. (n.d.). The Emergence of COVID-19 in the U.S.: A Public Health and Political Communication Crisis. *Journal of Health Politics, Policy and Law*. doi.org/10.1215/03616878-8641506

Consultation / feedback

Feedback refers to the iterative return of information about a risk issue to the risk manager. It aims to gather information from stakeholders and the public about their preferences, interests and values. The objective is to understand the attitudes and opinions of those who might be affected by the risk and to include these concerns in the planning or risk management process. This form of stakeholder involvement is designed for a policy process in which decision-making is highly structured by legal provisions on due process and distribution of formal authority. It is also important for debates that deal with conflicting world views, interests and value systems. The goals of consultation, and expected outcomes, are to gather feedback of public preferences and informed consent.

Representation of public preferences

Stakeholder involvement that is designed to gather feedback collects information about the distribution of public preferences and aims to capture their representation in the affected population.

Examples: Contexts in which consultation is useful include when a policy choice must be made between equally appropriate options or conflicts that cannot be resolved by scientific arguments only and involve social preferences.

Possible methods: representative surveys, public hearings, focus groups, large internet forums with clear access rules, social media Q&As and hashtags.

Informed consent

In this type of stakeholder involvement, the objective is to ensure that stakeholders and populations that are exposed to specific risks are informed about the likely consequences of these risks as well as the risk management options. The goal is to assist individuals and groups to form a position or an attitude towards risks and risk management that is well founded and that corresponds to their basic values and interests, leading to mutual learning.

Examples: Participatory budgeting, a process of democratic engagement designed to increase the community involvement in the budgeting process.[14] National conversations, which are large scale consultation or public engagement exercises usually organised by governments in relation to potential future important policy changes.

Box 3: Climate engineering

Climate engineering, broadly defined as the intentional intervention in (or deliberate alteration of) the climate system to address the problems of climate change, includes methods of carbon dioxide removal from the atmosphere (CDR) and solar radiation management to increase the albedo (SRM). The risks involved – particularly large scale and long term – are still not fully understood. There will likely be negative impacts on the environment and biodiversity, meaning that trade-offs between climate and other goals will have to be resolved. Scientists alone cannot determine the right approach to these trade-offs, making dialogue with stakeholders especially important.

One example of stakeholder involvement in this area is the Carnegie Climate Governance Initiative (C2G[15]). It was created to catalyse inclusive and comprehensive governance of climate engineering technologies so that the governance of these emerging technologies is taken on by governments, intergovernmental bodies and society at large. To that end, C2G involves stakeholders, publishes informational material with easy-to-understand concepts and terms, organises various activities and is present in many international and national fora to encourage society-wide discussions that inform national and international policymaking.

[14] We mention participatory budgeting here as an example of consultation, but if community members are given a role in deciding how budgets should be allocated, then it is also an example of the co-determination discussed below. For more information, please see: Shah, A. (2007). *Participatory Budgeting. Public Sector Governance and Accountability.* World Bank. Retrieved from openknowledge.worldbank.org/handle/10986/6640

[15] See www.c2g2.net

Possible methods: a combination of information input and voting procedures, internet forums, town meetings with information, discussion, and preference votes.

Deliberation / co-determination

In co-determination, stakeholders are invited to be an active part of the decision-making or the risk management process. Participants can be asked to get involved in designing measures, to provide service or commit to risk management or risk monitoring purposes, or to become directly engaged in various risk management efforts. The two main objectives (and expected outcomes) for co-determination are self commitment and co-regulation/co-management.

Stakeholder self-commitment

Commitment implies that the stakeholder involvement process is directed at the willingness of stakeholders to take responsibility and commit to changing their behaviours and attitudes to initiate or participate in specific risk management measures.

Example: Stakeholders committing to switch to renewable energy as part of the transition to low-carbon energy; homeowners clearing their yards as part of a forest fire management strategy.

Possible methods: round tables, mediation and alternative conflict resolution methods (in cases where there is conflict among the stakeholders).

Stakeholders co-regulation / co-management

Co-regulation and co-management give the right to participants to be directly included in designing, revising or reviewing regulations and risk management measures, rule-making processes or programmes for monitoring risks.

Examples: waste management plans, emergency plans, building codes, safety rules, action plans for sustainable development.

Possible methods: negotiated rulemaking, citizen consensus conferences, citizen panels, citizen juries, citizen assemblies.[16] In case of conflict: mediation and other forms of alternative conflict resolution.

Box 4: Engaging stakeholders in wildfire management

Oregon, located in the northwest United States, experiences often devastating wildfires. To combat wildfires in the state's Rogue River National Forest, the Ashland Ranger District proposed a fire management plan in 1996 known as HazRed. However, it lacked community involvement or support and was so unpopular that it was eventually withdrawn. Learning from this experience, the Forest Service decided to work with community partners, environmental groups and residents. This led to the development of the Ashland Forest Resiliency Stewardship Project,[17] which uses prescribed burns and clearing of smaller brush in order to prevent megafires. In order to do this, the project incorporated the opinions and knowledge of the Ashland community into the management plan by holding facilitated meetings and engagement through social media. The plan also included stakeholder commitment with volunteers. By involving stakeholders directly in the management plans and securing their participation and/or acceptance, the project has been considered successful. In addition, by actively involving young people, the plan has created educational and job training opportunities.[18]

[16] For more information on involving citizens in decision-making, please see: Harris, C., & Farrell, G. (2013). Rule by the people? Alternative perspectives on citizen participation in democratic policy making. *Administration,* 60, 201–209.
[17] City of Ashland (April 13, 2017). Ashland *Forest Resiliency – Stewardship Project*. www.ashland.or.us/Sectionindex.asp?SectionID=503
[18] Fleeger, W. E., & Becker, M. L. (2008). Creating and sustaining community capacity for ecosystem-based management: Is local government the key? *Journal of Environmental Management, 88*(4), 1396–1405. doi.org/10.1016/j.jenvman.2007.07.018

Benefits and challenges

As shown in the previous sections, stakeholder involvement is needed to better understand and manage risk, and there are many benefits to doing it well. However, involving stakeholders in the risk governance process also has some challenges.

Benefits

1. Provides transparency of the entire governance process from the point of view of third parties and participants if it is clear how the stakeholders were selected, how their views were considered, what kind of communication procedures were employed, what kind of methods for reaching agreements were used and how the results of the involvement process will be used.
2. Enhances competence of governance processes by ensuring that state of the art knowledge of the risk issue(s) is considered and that the participants in the governance process are made literate with regard to the risk issue itself.
3. Promotes fairness of the governance process in terms of equal speaking and debating opportunities and the adequate representation of the interests associated with a risk issue.
4. Makes the governance process more efficient by ensuring a balance between participatory activities and outcome.
5. Increases diversity by incorporating different perspectives and disciplines.
6. Adds professionalism in terms of structuring, moderating and facilitating the governance process and summarising and disseminating the results.
7. Focusses the whole governance process on producing applicable results.

Challenges

1. Stakeholders are not necessarily a fully representative sample of the people affected by a risk or a risk management decision. They may represent special value or interest groups and promote extreme positions. As a result, the expressions 'all stakeholders' or 'relevant stakeholders' may result from a value judgement and are often ambiguous and misleading.
2. Many stakeholders are interest-driven and are often unwilling to accept clear evidence from scientific analysis, especially if this evidence contradicts their beliefs.
3. Stakeholder processes may lead to trivial or inconclusive results due to the diversity and plurality of stakeholders in the process. This is particularly a problem if consensus is sought but there is no overlap in interests or values that could be the basis for facilitating a substantial agreement. Often these processes end with ambiguous and abstract statements that have no concrete meaning or lead to paralysis of action.
4. Stakeholders may use the involvement process to stall or prevent regulatory action, delaying a decision to serve a private interest while violating the public interest.

Overcoming common pitfalls

Improper stakeholder involvement may increase risk levels, further entrench existing power structures and lead to inadequate decision-making. However, these drawbacks can be avoided if a clear mandate in terms of objective and expected outcome is assigned to the risk manager in charge of involving stakeholders, if the process is properly designed and if adequate checks and balances are in place.

It is especially important to view stakeholder debates as argumentation pools that provide the basic material for deliberative decision-making processes by having all relevant arguments and positions represented. Deliberation is then aimed at exchanging pros and cons and distilling those arguments that resonate with all groups.

Therefore, it is necessary to include not only the directly affected stakeholders when dealing with risk issues that have major impacts on special populations, but also members of the indirectly affected public.

It is also advisable to get an agreement on the rules of testing the validity of evidence in advance of the process. This facilitates learning and provides some discipline in the interpretation of factual evidence and the acknowledgement of uncertainty and ambiguity.

Conclusion

Stakeholder involvement is a crucial part of the risk governance process. It allows risk managers to communicate important information to the public, hear diverse viewpoints, garner support for management plans, build trust and even include stakeholders in the creation of management plans. Stakeholders can and often should be involved in each stage of the risk governance process, and how they are involved depends on the level of complexity, uncertainty or ambiguity that characterises the risk knowledge.

The most effective stakeholder involvement is done mindfully at each stage of the risk governance process. In this paper, we highlighted three specific objectives: communication, consultation (seeking feedback), and co-determination (deliberation). By evaluating first which of these three objectives are to be pursued at a given time or for a given need in the risk governance process, risk managers can better tailor their methods to fit their needs.

However, there are also challenges when involving stakeholders. It is important that risk managers hear from a diverse cross-section of stakeholders and not just from special interests or people or groups with outsized influence on social media.

Stakeholder involvement requires commitment, professional structuring and sufficient resources. It is not a panacea for resolving risk conflicts, but if done well, it has the potential to improve the quality and legitimacy of risk management decisions.

About IRGC

The International Risk Governance Center at EPFL (Ecole polytechnique fédérale de Lausanne) helps to improve the understanding and governance of systemic risks that have impacts on human health and safety, the environment, the economy and society at large. IRGC's mission includes developing risk governance concepts and providing risk governance policy advice to decision-makers in the private and public sectors on key emerging or neglected issues. It emphasises the role of risk governance for issues marked by complexity, uncertainty and ambiguity, and the need for appropriate policy and regulatory environments for new technologies where risk issues may be important.

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