MIND THE STRATEGY-PRACTICE GAP. OPPORTUNITIES AND BARRIERS TO EFFECTIVE RISK DIALOGUE

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Abstract

PLANAT advocates the adoption of a more future-oriented and comprehensive risk-based approach to manage natural hazard. The measures currently applied are still incomplete in including the following considerations:

- all aspects of sustainability (ecological, economic, social). They are mainly focusing on economic aspects.
- all possible categories of measures (preparedness, response, recovery). They are mainly planned in a sector-based manner.
- the risks of all stakeholders. They are mainly considering easily quantifiable direct losses.
- the bearability and acceptability of residual risks. They are mainly focusing on the risks to be avoided.
- future changes like climate change and socio-economic changes. They are mainly based on the current state.

A successfully applied integrated risk management requires a risk dialogue systematically and holistically conducted among stakeholders. This working paper explores both the opportunities and the barriers to effective risk dialogue.

1. Introduction

PLANAT published the revised strategy "Management of Risks from Natural Hazards" in 2018, based on the 2003 strategy and the publication "Security Level for Natural Hazards" (PLANAT, 2013 & 2015). PLANAT postulates integrated risk management, which involves dealing with risks holistically, similar to the ISO 31000 standard.
Integrated risk management is known among practitioners in the field of gravitational natural hazards in Switzerland. However, while the publications "Security Level for Natural Hazards" (PLANAT, 2013 & 2015) and the revised strategy (PLANAT, 2018) encompass a wider scope, their consistent practical application remains incomplete. The current strategy advocates for a shift from an "equal security" (PLANAT, 2003) to a "comparable security" approach. This shift aims for comprehensive risk management, considering all aspects of sustainability and assessing the bearability and acceptability of risks for all stakeholders. Implementing this transition necessitates a systematic risk dialogue involving the relevant stakeholders. PLANAT identifies risk dialogue as a key process in becoming a risk-competent society.

Legally, under Swiss federal law (Art. 3 Spatial Planning Ordinance), all authorities responsible for tasks with spatial implications are obliged to consider and balance interests. This process of balancing interests occurs throughout the entire planning process, encompassing sectoral planning, structural planning, land use planning, and other spatial development concepts, including the concerns of individual land, building, or facility owners. Consequently, it is imperative that all interests are reconciled before proceeding with the building permit procedure within a designated building zone.

2. Risk Dialogue

PLANAT advocates among all stakeholders and the legislators that the security level shall be developed according to a procedure, which is comparable nationwide, abandoning the idea of equal security.

The aim is to develop the optimum combination of measures with consideration of the overall context so that the decision on its implementation is made and justified in full knowledge of the risks, uncertainties and, ultimately, of the residual risks.

Optimised sectoral planning is often regarded as sufficient for a comprehensive risk management; however, all aspects of sustainability, including ecological and social sustainability, need to be considered. The overall optimal solution is considering all aspects such as the environment, economy, sense of place, beauty etc. (FOC, 2021) from the beginning, even though it might not be the best solution for individual aspects at the end. Risk dialogue helps in considering all these aspects in decision-making.

Risk dialogue is a highly participatory process that engages all stakeholders from the beginning. Namely those responsible for managing the risks, the risk takers (e.g. insurance companies), those affected by natural hazard events or measures (e.g. citizens, building owners, enterprises) and the natural hazard (risk) experts.

This requires a well facilitated and systematic risk dialogue which ensures an approach free of preconceived views and leaves space for an open-ended outcome. The guided discussion increases the understanding by those affected by natural hazard risks and the acceptance for either implementing measures to reduce the risks or intentionally not implementing measures. The following questions need to be answered in a risk dialogue when dealing with risks according to the concept of integrated risk management:

- What can happen? Risk assessment is a science-based process; it looks into both the intensity and frequency of natural hazards and the expected consequences and damages.
- What is allowed to happen? Evaluation identifies acceptable and unacceptable risks.
- What has to be done? Integrated planning of measures, e.g. spatial planning, operational, biological and structural measures, weighs risks and opportunities and defines the degree to which risks are to be avoided, reduced, or borne.

Figure 1: Integrated Risk Management with a focus on Risk Dialogue in all stages according to PLANAT.

Being aware of the strategy-practice gap, PLANAT aims to better understand the barriers to applying risk dialogue.

3. Scope and Approach

The focus of this working paper is on gravitational hazards. Risk dialogue as a process can be applied to other natural hazards, such as earthquakes, hail, heatwaves, droughts, and forest fires.

This working paper is derived from findings of workshops conducted by PLANAT with its members, who have diverse backgrounds and views. PLANAT members convene regularly for strategic workshops to discuss topics related to integrated risk management. Two workshops specifically focused on identifying the main barriers to risk dialogue. In the initial workshop, PLANAT members provided insights based on their experience, forming the foundation for discussions within three groups. The results were further discussed and validated during the second workshop. The narrative analysis summarised the results of both workshops, while the thematic analysis helped underscore key themes. A prioritisation of opportunities and barriers was not applied, as the prioritisation is context-specific. The findings were complemented by interviews with natural hazard experts, primarily involved in the management of gravitational natural hazards, with a specific emphasis on structural areal protection.

These findings should be regarded as preliminary.

4. Opportunities of Risk Dialogue

Identification of relevant interests:

Risk dialogue presents an optimal approach to supplement the legal requirements (Art. 3 Spatial Planning Ordinance). This involves the initial assessment of various interests and subsequently prioritising them, recognizing that individual interests are diverse among the affected population.

Particularly in the case of spatial planning measures, the minimum participation of the population legally required (Art. 4 Spatial Planning Act) should be extended in the sense of a participatory dialogue.

4.1 Risk dialogue as an inclusive process for a common understanding:

- The adequate level of security and the implementation or intentional non-implementation of measures must be evaluated with consideration of the overall context.
- Risk dialogue allows active and mutual exchange of knowledge and experience among stakeholders (those responsible, risk takers, those affected, natural hazard experts). During risk dialogue, professionals and laypersons engage in mutual learning: For example, natural hazard professionals gather valuable insights from laypersons regarding local aspects, reasons for acceptable limits for measures, and other relevant aspects. Laypersons gain knowledge from natural hazard professionals understanding the hazard and the reasons why specific security levels might remain unachievable. This mutual learning lays the foundation for a collective understanding and acceptance of specific measures, while acknowledging the limitations in risk reduction and the remaining residual risks.
- A well facilitated risk dialogue reveals the interests of all stakeholders (e.g. civil society, landowners, municipal representatives, natural conservation organisations, insurance companies, etc.). Identifying potential conflicts of interest is crucial to gain social acceptance to develop and implement risk reducing measures. Most often implicit assumptions will become explicit through the discussion, allowing a better understanding of different opinions and needs.

4.2 Risk dialogue allows dealing with uncertainties and residual risks:

- The risks from natural hazards are on the rise due to global warming (IPCC, 2023; NCCS 2018) and due to intensified land use. Hence, it is crucial to incorporate future conditions into integrated risk management. Risk dialogue can facilitate informed decision-making based on uncertain present and future scenarios. Furthermore, risk dialogue allows making stakeholders aware of uncertainties and residual risks and to acknowledge them.

4.3 Risk dialogue can reduce the extent of structural areal protection measures:

- Structural areal protection measures are currently the common choice for reducing hazards. Using risk dialogue to define a security level can result in a reduced level of accepted security. The optimal combination of measures can include measures beyond structural ones, such as other preparedness measures, response, and recovery (FOCP, 2019). Developing the optimum combination of measures using risk dialogue can lead to a reduction of structural areal protection measures.

4.4 Risk dialogue can increase resilience:

- Exclusively reinforcing resistance is not recommended, since absolute security remains unattainable. Finding a balance between efforts to increase resistance and the capacity to recover after an event is essential. Achieving an optimal combination of resistance and the ability to recover stands as a fundamental requirement for a society to consistently navigate the impacts of natural hazards. The development of resilient measures is most effectively undertaken within a risk dialogue setting involving the stakeholders.

4.5 Protective impacts of risk dialogue with regard to legal objections:

- Legal objections regarding structural areal protection projects are quite common. While the reasons for legal objections are diverse, they often revolve around the interests of landowners or nature conservation aspects affected by protective measures. In Switzerland, projects might face rejection by voters due to perceived high costs, excessive space utilisation, or their competition to other municipal needs.
- Hence, there is an evident interest in understanding the concerns of affected parties (including landowners, nature conservation organisations, etc.). This is where the risk dialogue can leverage its strengths: Practical experiences have demonstrated that involving potential objectors in the planning process significantly enhances acceptance among them. This involvement tends to decrease the likelihood of legal objections.

4.6 Risk dialogue creates opportunities:

- Risk dialogue should not be limited to questions of risk and damage. It should also highlight the opportunities emerging from the intended measures, like co-benefits for biodiversity, community, recreation, land use, etc. Consequently, risk dialogue can be understood as both a risk *and opportunity* dialogue.

5. Barriers to apply Risk Dialogue

Despite the increasing momentum of risk dialogue through successful application, significant barriers persist. The following list, derived from participants of PLANAT workshops and interview partners, outline these barriers, which can have various causes. Hence, the following is a loose, incomplete collection, presented without any specific ranking. It's important to note that not all barriers are easily overcome. However, knowing these barriers can help to be prepared and deal with them.

5.1 A narrowly set framework:

- Working towards an open-ended outcome requires a framework that is free of preconceived views and expected results. This is still rare in most settings of current risk assessments
- Natural hazard experts are frequently expected to provide a solution early in the process. Furthermore, there is a concern that risk dialogue leads to high expectations regarding security level and measures, which cannot be fulfilled due to other constraints. These issues prevent an open discussion.
- Projects typically start within a specified local context, such as a municipality. Often, interests beyond this scope are overlooked, despite their potential significance. The same applies to potential solutions outside the set framework. There is a lack of awareness that not all challenges can be solved within a narrow framework. Cooperation with other stakeholders or passing on leadership to other stakeholders is not considered.

5.2 Incomplete stakeholder groups:

- Involving the appropriate group of stakeholders is a challenge. Risk dialogue aims to bring all stakeholders together. In practice, it is often unclear which institutions and individuals should be involved from the beginning or at later stages and to what extent (e.g. the level of involvement). Furthermore, a large group can be challenging for facilitators, while a small group might not allow for addressing all relevant interests. Risk dialogue demands considerable time from both facilitators and participants. Not everyone is always willing to make this additional effort or invest the required time. Consequently, risk dialogue often involves a limited number of obvious stakeholders and may miss some relevant participants.
- Stakeholders are sometimes not invited to participate in risk dialogue since the impression persists that it is sufficient to raise their voice by means of political or legal objections once the project planning is submitted. Furthermore, some stakeholders might initially give their consent to a project but oppose it in political or legal ways in the end. In both cases, risk dialogue is seen as pointless.

5.3 Incomplete collection of objects to be protected:

- The question of which “objects to be protected” should be included in risk assessments is currently inadequately answered in practice. One possible explanation is the limitation of existing risk assessment tools to monetary values and fatalities. Consequently, only tangible assets and human lives are considered, while other objects to be protected, deemed significant within PLANAT’s holistic approach, are disregarded. Indirect impacts as well as immaterial values are therefore not taken into account in current risk assessments. These risk assessments do therefore not align with the views and needs of the involved stakeholders.
- To some extent this problem is mitigated (but not fully resolved) by the environmental impact assessment required by the Swiss Environmental Protection Act. This assessment must be applied to construction projects with potentially significant environmental impact. Ideally, the risk to the objects to be protected should be determined before the development of a specific measure. However, by the time an environmental impact assessment is conducted, the specific measure will have reached a certain degree of maturity. Some decisions will already have been made at this point in time. Finally, a mere evaluation of legal compliance does not align with PLANAT’s understanding of risks, as it is lacking a comprehensive risk assessment.
- The Federal Office for the Environment FOEN recently started calling for a broader inclusion of objects to be protected, e.g. as a basis for the overarching cantonal planning of measures (FOEN, 2020) or for spatial and land use planning as well as for operational planning at municipal level (FOEN, 2020).

5.4 Uneven playing field:

- The nature of the planning process as a sovereign activity may create an uneven playing field in risk dialogue. For instance, if private landowners and planning authorities are engaged, the power dynamics in the dialogue can be uneven. Not all participants hold the same decision-making rights in the planning process. Stakeholders sometimes have the impression that authorities have already decided on the outcome. Furthermore, participants have various levels of technical and legal expertise. “Non-experts” tend to feel inferior and are therefore reluctant to share their insights and ideas. On the other hand, technical experts tend to disregard the knowledge of “non-experts” such as local conditions or local possibilities for measures. In addition, an erosion of trust in government and institutions can be observed.

5.5 Sequential planning processes:

- Spatial planning occurs at the municipality level and is taking hazard maps into account. Currently, municipalities do not initiate a risk dialogue in this process. Consequently, when a specific protection measure is being planned, it relies on the local spatial planning of the municipality. Because the two processes are sequential and not simultaneous and coordinated, finding an optimum combination of measures within the risk dialogue is hindered by the given spatial planning.

5.6 Focus on changing the hazard map:

- The risk dialogue should include the impact of diverse measures across various domains in a risk-based manner, including preparedness, response, recovery, each with a varying degree of reliability. Presently, discussions about measures often revolve around the hazard map, primarily focusing on potential changes to the areas marked red (with a construction ban) or blue (construction with restrictions) on the hazard map. However, the hazard map serves the purpose of indicating areas where hazards are anticipated, translating into spatial planning aimed at preventing the increase of risks. Consequently, only highly reliable areal protection measures are considered within the hazard map.
- Other measures, like organisational measures such as temporary street closures or property protection like building in line with SIA standard 261/1, should be integrated into a comprehensive planning from the very beginning. They are typically planned independently by different actors. This poses a significant barrier: The effect of other measures, such as those with impact on the hazard, but with lower reliability, or those removing the goods to be protected from the hazardous area in space and time, or those changing the vulnerability, are not noticeable. These measures do not manifest visible changes in the hazard (map). They can have a major influence on the overall risk, thereby affecting its bearability and acceptability. There are currently no tools that can be used to easily visualise the impact of these various measures on risks.

6. Conclusion and Outlook

While the integrated risk management approach is known in the area of gravitational hazards, there is still a considerable gap between the Strategy “Management of Risks from Natural Hazards” and its practical application. The current barriers identified in this working paper may help to advance the process to unpack and address the gap as well as the causes.

Closing the strategy-practice gap is a joint effort of all parties involved in dealing with risks from natural hazards (legislation, administration, academia, professional associations, insurance companies, natural hazard consultancies, etc.). PLANAT’s role is to promote risk dialogue as an integral part of integrated risk management.

These preliminary findings will be further explored and challenged with a wider range of actors concerned with the assessment and management of natural hazard risks. Therefore, this working paper serves as a basis for further discussions. Given that risk dialogue and integrated risk management lead to more risk informed communities, PLANAT aims to address the topic at various conferences including the PLANAT Conference, March 27./28., 2025 in Baden, Switzerland.

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