Planning and implementing communication and public participation processes in flood risk management

Procedural guidelines and toolbox of methods
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# Table of contents

## Chapter One

1. Introduction  
   1.1 Background  
   1.2 Scope and character of the handbook  
   1.3 Structure of the handbook  
   1.4 How to use this handbook  
   1.5 Addressees  
   1.6 Transferability  
   1.6.1 Role of specific contexts  
   1.6.2 Role of legal and administrative background of planning systems

## Chapter Two

2. Step-by-step guide of communication and participation process  
   2.1 Identify your own position  
   2.1.1 Step 1: Carry out initial self assessment of risk governance performance  
   2.1.2 Step 2: Define goals and scope of process  
   2.1.3 Step 3: Identify resources (money, time, personnel)  
   2.2 Identify your strategic partners  
   2.2.1 Step 4: Identify relevant stakeholders  
   2.2.2 Step 5: Design and define scope of participation process  
   2.2.3 Step 6: Create a network of stakeholders  
   2.2.4 Step 7: Identify the public’s view  
   2.3 Decide on measures  
   2.3.1 Step 8: Agree on objectives  
   2.3.2 Step 9: Agree on targeted communication and participation measures  
   2.3.3 Step 10: Design an implementation plan for communication and participation measures  
   2.4 Implementation  
   2.4.1 Step 11: Implement communication and participation measures  
   2.5 Evaluation  
   2.5.1 Step 12: Evaluate the process

## Chapter Three

3. Innovative and well-proven communication and participation methods  
   3.1 How to find the right method  
   3.1.1 Which method fits to which step of a communication and participation process  
   3.1.2 Scale oriented applicability of methods and measures  
   3.1.3 Planning systems related suitability of methods  
   3.2 Planning phase of governance process  
   3.2.1 Stakeholder analysis tool  
   3.2.2 Social milieu approach  
   3.2.3 Risk governance assessment tool  
   3.3 Information  
   3.3.1 Online communication  
   3.3.2 Public stand with small exhibition  
   3.3.3 Public exhibition  
   3.3.4 Media coverage
3.3.5 Educational information
3.3.6 School competition
3.4 Consultation
3.4.1 Online chat
3.4.2 Virtual social network
3.4.3 Survey: interviews or questionnaires
3.4.4 School project
3.4.5 World Café
3.5 Common decision-making
3.5.1 Stakeholder workshop
3.5.2 Public workshop

Chapter Four
4 Practical recommendations when planning and implementing a communication and participation process

Contacts
Contact details of authors and IMRA partners

References

Tables
Table 1: Which method fits to which step of a communication and participation process
Table 2: Scale oriented applicability of methods and measures
Table 3: Planning systems related suitability of methods
Table 4: Feedback on self assessment of the local water authority
Table 5: Comparison of qualitative and quantitative methods

Figures
Figure 1: IMRA concept for participatory flood risk management
Figure 2: The legal and administrative “families” of Europe
Figure 3: Intensity degrees of participation processes
Figure 4: Stakeholder analysis tool for flood risk projects
Figure 5: Sinus Milieus Austria
Figure 6: Sinus Milieus Germany
Figure 7: Sinus Milieus Italy
Figure 8: Public information stand and visualisation of 100 year flood level
Figure 9: Examples of exhibition panels
Figure 10: Flood Witnesses talk about their experiences
Figure 11: Examples of press reports and radio interview
Figure 12: World Café in local school
Figure 13: Examples from the works produced during the students competition
Figure 14: Exposition of the students’ works during the final event in Assisi
Figure 15: Website announcement of online chat and answering of questions
Figure 16: Examples of IMRA facebook group
Figure 17: MONOPAI game
Figure 18: World Café in Leichlingen, Wupper case study area
Figure 19: During the stakeholder workshop: identification of responsibilities
Chapter One

Introduction

Procedural guidelines and toolbox of methods
1 Introduction

Communication to and participation of the public is an important aspect of many planning processes. This includes the management of flood risk. In addition it is a legal requirement as defined in Articles 9 and 10 of the Floods Directive 2007/60/EC\(^1\) of the European Union which states: “the active involvement of all interested parties under Article 10 of this Directive shall be coordinated, as appropriate, with the active involvement of interested parties under Article 14 of Directive 2000/60/EC.” (Article 9, par. 3) “In accordance with applicable Community legislation, Member States shall make available to the public the preliminary flood risk assessment, the flood hazard maps, the flood risk maps and the flood risk management plans.” (Article 10, par. 1) “Member States shall encourage active involvement of interested parties in the production, review and updating of the flood risk management plans referred to in Chapter IV.” (Article 10, par. 1)

Info box FLOOD RELATED TERMS

- **Flood means** the temporary covering by water of land not normally covered by water. This shall include floods from rivers, mountain torrents, Mediterranean ephemeral water courses, and floods from the sea in coastal areas, and may exclude floods from sewerage systems (cf. Floods Directive 2007/60/EC, Article 2).
- **Flood risk means** the combination of the probability of a flood event and of the potential adverse consequences for human health, the environment, cultural heritage and economic activity associated with a flood event (cf. Floods Directive 2007/60/EC, Article 2).
- **Hazard is a potentially damaging event**, phenomenon or human activity that may have a negative impact on cultural, economic, environmental, institutional, physical or social assets. Hazards may include latent conditions that represent future threats and can have different natural or human-induced origins. Hazards can be single, sequential or multiple in their origins and effects, which can be biological, geological, hydrological, atmospheric, social, psychological or technological. A hazard is characterised by its location, magnitude, frequency and probability (MOVE Project, 2011, p. 12).

The here presented IMRA handbook has been especially designed with the help of and for regional and local administrations, water authorities and river basin authorities to support them in the planning and implementation of communication and public participation processes. The handbook is structured in a way that it can be used as a process- and tool guide in which users can choose the precise information they need. The contents of the handbook are the results of the project IMRA - Integrative flood risk governance approach for improvement of risk awareness and increased public participation, a European research project financed by the 2nd ERA-NET CRUE Research Funding Initiative. We invite all readers to use the IMRA handbook to plan their communication and participation process and hope that it is of support and help in its implementation. Enjoy the reading!

1.1 Background

Floods are among the most frequent natural hazard events, sometimes with disastrous consequences for people, territories and properties. According to a 2004 United Nations University study, the number of people worldwide vulnerable to a devastating flood is expected to grow to 2 billion by 2050 due to climate change, land-use change and population growth in flood-prone areas\(^3\). Flood risk management is then a critical component of public safety and quality of life. As a supplementary directive to the Water Framework Directive 2000/60/EC, which aims to establish a common framework in the field of the water policy, the EU adopted the Floods Directive 2007/60/EC, requiring as a final target the establishment in 2015 of flood risk management plans at the river basin district level. The Floods Directive implementation requires a broad basis of knowledge of territory (with respect to the effects of flood events) and the development of tools and improved governance strategies, also for flood mitigation. Even if 80% of the European river basins are international, crossing administrative and territorial borders, flood risk management is in the responsibility of the single EU Member State governments and sometimes of the single local administrations. In order to assure, support and develop an extensive co-ordination and integration of regional, national, and EU research programmes and policies in the Flood Risk Management field and provide scientific evidence for the Floods Directive implementation, the FP6 ERA-Net CRUE initiative was launched in 2004.

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\(^3\) Institute for Environment and Human Security, United Nations University, press release on June 13, 2004 available online at http://www.ehs.unu.edu
Five Strategic Research Areas have been identified by the initiative and promoted through the “CRUE Research Agenda”:

- Developing resilience and adapting to increasing flood risks: climate change and new development;
- Risk assessment and mapping;
- Implementing trans-national based strategies on flood event management and recovery;
- Meeting the multifunctional demands on flood prevention and protection and their sustainable management;
- Addressing public knowledge of flood risk and enhancing awareness, perception and communications.

**Info box RESILIENCE**

Resilience can be very broadly defined as “the capacity of a system to experience shocks while retaining essentially the same function, structure, feedbacks, and therefore identity” (Walker et al. 2006:2; other definitions: Holling 1973, Disaster Recovery Journal 2005, Van der Perk et al. 2000). In the context of the IMRA project resilience can be understood as the capacity of a society or region to absorb stresses and shocks such as natural hazard impacts.

In particular, the Strategic Research Area on “Addressing public knowledge of flood risk and enhancing awareness, perception and communications” plays a critical role for the sustainable development of flood protection strategies. Although several actions have addressed these issues in the last few years, people still need a better understanding (especially considering the expected rising risk of flooding) of what the flood impacts could be and how they may be affected. To contribute to this Strategic Research Area, the CRUE Consortium promoted at the end of 2008 a pilot common call for transnational research projects, having the topic of improvement of risk awareness and increasing public participation (as requested by Articles 9 and 10 of Floods Directive). One of the selected projects was IMRA - Integrative flood risk governance approach for improvement of risk awareness and increased public participation. The overarching goal of the IMRA project was to influence and change risk perception and real decision-making by actively involving stakeholders and the public in three case study areas of three different river basin districts in Europe. The process of assessing and managing flood risks followed the risk governance concept for participatory flood risk management, developed during the IMRA project.

**Info box STAKEHOLDER**

In scientific projects the term stakeholders is often used for representatives of the institutionalised public and of (non-institutionalised) organised interest groups. In contrast, other institutions have a broader understanding of the term stakeholder: it is everybody who is affected or interested by a project or an activity.

Within the ERA-Net CRUE-funded IMRA project we distinguish between (institutional) stakeholders and the public.

**Info box PUBLIC**

The public means “everybody”: an open and more or less unlimited group of persons that are affected by or interested in a topic or a project/a process. A good example of such an unlimited circle is the term “water users” – no one can be excluded from that description.

The methodologies proposed in the IMRA handbook was tested in three case study areas (Firus et al., 2011):

- River Wupper in Germany, a mid-European hilly land river basin district, densely built-up, mainly prone to winter floods and flash floods;
- River Möll in Austria, an alpine river basin, prone to flash floods and debris flows;
- River Chiascio in Italy, a Mediterranean river basin, prone to torrential floods.

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2. Further information on: http://www.imra.cnr.it/
1.2 Scope and character of the handbook

This IMRA handbook aims to provide an up-to-date and innovative tool to support the technical staff involved in regional administrations, water authorities and river basin authorities and districts in planning, implementing and evaluating a communication and public participation process as part of Flood Risk Management. The IMRA project (briefly described in the previous chapter) provided good practices and methods with particular reference to non-structural flood mitigation measures, risk governance and public risk awareness. These are the core basis of this handbook.

The IMRA handbook intends to prove practical support for day-to-day decisions and actions to be taken in regard to public participation in flood risk management. There are a lot of different ways of approaching the task. This handbook gives some advice on a possible process and possible methods that proved to be successful from our experience. However, it is not exhaustive. Many other ways of implementing a public participation or communication action are possible.

IMRA concept for participatory flood risk management aiming at the improvement of risk awareness and increased public participation

The handbook provides a practical tool to apply the “IMRA concept for participatory flood risk management”, aiming at the improvement of risk awareness and increased public participation. The IMRA concept offers a practical, goal-oriented application of public participation processes in flood risk management. Applying the IMRA concept will lead to more efficient governance and flexibility in local flood risk prevention and management, considering the impact of actions on general policy and society.

The IMRA concept is composed of 12 Steps, following a logical and chronological order:

**Figure 1:** IMRA concept for participatory flood risk management, Source: own elaboration

| Step 1: Carry out initial self assessment of risk governance performance |
| Step 2: Define goals and scope of process |
| Step 3: Identify resources (money, time, personnel) |
| Step 4: Identify relevant stakeholders |
| Step 5: Design and define scope of participation process |
| Step 6: Create a network of stakeholders |
| Step 7: Identify the public’s view |
| Step 8: Agree on objectives |
| Step 9: Agree on targeted communication and participation measures |
| Step 10: Design an implementation plan for communication and participation measures |
| Step 11: Implement communication and participation measures |
| Step 12: Evaluate the process |
1.3 Structure of the handbook

The handbook is structured in various parts, intending to provide an easy-to-be-used tool for technical staff in order to support them in the challenging task of organising information, consultation and participation processes.

Chapter One
Introduction: providing the background and general introduction on the handbook and the way to use it

Chapter Two
Step-by-step guide of a communication and participation process: description of logical and procedural steps, linking it to communication and participation methods of Chapter 3

Chapter Three
Innovative and well-proven communication and participation methods, providing a collection of (innovative) methods for the purposes of the implementation of the floods directive. They are divided in four sections, covering various aspects of communication and participation processes: Planning phase of governance process (Chapter 3.2), Information (Chapter 3.3), Consultation (Chapter 3.4), Common decision-making (Chapter 3.5). The description of each method follows a common structure, providing brief information on:

- Purpose
- Area of application
- Aim of method and context
- Addressees/target group
- Scale of application
- Costs and human resources necessary for the implementation
- Necessary skills
- Main features of method
- Expected results
- Assessment of results
- Degree of implementation

In addition it gives an example of a practical application of the method and lists sources of further information and key references. It also indicates references to the steps of the communication and participation process of Chapter 2 to which the method is suitable.

Chapter Four
Practical tips when planning and implementing a communication and participation process

1.4 How to use this handbook

Users have two main ways to use this handbook:

- Basis for planning and implementing a complete communication and participation process;
- Information tool on specific steps or methods of communication and participation processes with links for further readings.
1.5 Addressees

This IMRA handbook was developed for all institutions
- which are involved in the implementation of flood risk management plans and measures;
- who have already completed the steps of flood risk assessment; and
- who want to start with their risk communication and participation process as a part of the risk management process.

In particular it is targeted to the technical staff of:
- regional administrations, water authorities and river basin authorities and districts responsible for planning and carrying out flood risk management communication and participation processes;
- local authorities in charge of implementing flood risk management communication and participation processes.

1.6 Transferability

Any kind of guidance or handbook has to deal with the following questions: Which of the recommendations compiled from literature or case study experiences can be transferred to other cases? Are the applied and tested methods and approaches flexible enough? Which elements are generally transferable and which are context related and have to be adapted to other circumstances? The following section points at some circumstances that determine the transferability of the suggested methods and approaches.

1.6.1 Role of specific contexts

The 12-steps concept presented in this handbook is a general frame for involving and informing stakeholders and the public in flood risk management. It can be generally applied to other cases. The specifications within each step and the design of approaches and methods, however, need to take a look at specific situations because every case has its own context and specificities which depend on the characteristics of the risk setting itself (e.g. existing level of acceptance with respect to risk governance), political (e.g. legal system), economic, social (e.g. risk culture), institutional and other aspects. These characteristics have a large influence on the implementation of any concept for participatory flood risk management.

Therefore aspects/questions, which should be stressed in this context, are:
- What kind of risk type does exist?
- What kind of administrative/institutional type characterises the case study?
- Which parts of the concept have to be modified?
- How are the structure and type of the affected stakeholders?
- How to deal with stakeholders that do not speak English?
- What does the access to local stakeholders/decision makers look like?

Context of scale

One major issue is the question of how large the flood risk management area is. Is the catchment area or the area of intervention rather local or is it of regional extent? How large is the population that is potentially affected by flood hazards and which stakeholders have to be informed? What is the share of the potentially affected population?

The extent of the area of intervention determines to a large degree which approach shall be chosen. In very general terms the approaches can be characterised as follows:
- Large areas/regional scale: In this case not everyone may be reached by the information or participation campaign. Further, the level and character of the analysis has to be adapted to the large number of people or extent of the area, respectively. Decision-makers have to make use of tools where they are able to reach a large number of people taking into account their often limited resources. Such methods can be e.g. the use of mass media (newspapers, TV spots, radio), written or online surveys that can be sent to households or companies and more or less automatically analysed, exhibitions at strongly frequented venues, work with multipliers, etc.
- Small areas/local scale: If only a small area and a limited number of people are concerned, information can address people directly by oral interviews (for the analysis), direct involvement in public events like workshops or others. Internet based methods might be less useful than direct contacts between decision-makers and the public.
Context of responsibility

Another aspect is how the responsibilities for flood risk management are distributed among different authorities. Who are the responsible stakeholders? Who is responsible for flood hazard and flood risk assessment? Who is responsible for informing the public? Who is responsible for deciding on flood protection measures? Who is responsible for implementing flood protection measures?

The analysis of the scientific literature concerning different projects handling risk governance has shown that research on risk as well as risk management practice is fragmented by subject and according to the budget-holding organisations involved. This might be evaluated as a problem according to the responsibilities which may lead to failure of the risk governance process in times of e.g. immediate danger.

The complexity of the flood risk management regime has to be taken into consideration before designing a flood risk management concept:

- Large set of stakeholders with complex structure of responsibilities: First it is necessary to identify if relevant stakeholders exist and who these stakeholders are. The more stakeholders are involved, the more there is a need to start a dialogue and information exchange process between the stakeholders such as water authorities, land-use planning, landscape planning, “experts” (e.g. engineers and researchers), local authorities, regional authorities, emergency management, etc. This is a basis for the coordination of activities and for a cooperative flood risk management process which needs a large quantity of trust and openness among stakeholders.

- Limited number of stakeholders with clear responsibilities: Also in this case cooperative approaches in a coordinated flood risk management concept are needed, however, the process can start quicker, as the step of stakeholder identification and the identification of responsibilities can be done with less effort.

Other contexts

Another problem is the understanding of “risk” (see also before). Risk can be understood in a broad sense as a combination of the probability of occurrence and the extent of the consequences of the impacts understood as adverse effects. However, there are significant differences between “real” and “perceived” risk (different interpretation according to individual and social contexts). Subsequently there should also be a distinction between the factual and the “socio-cultural” dimension of risk. It should be underlined, that a public decision-making which is only based on the factual dimension of risk, leads to distrust and makes vulnerable both institutional settings and affected individuals. As a consequence, more public participation in risk assessments and decision-making is needed in order to make the process more democratic, improve the relevance/quality of technical analysis and increase the legitimacy and acceptance of public decision-making.

Further, there is a distinction of the problems related on the one hand to the context and on the other hand to organisational aspects. It is obvious that some of the mentioned hindrances or problems could fit in both categories:

- Context related problems/hindrances: problem of politicians (oppositions) that do not want to be involved because they need the opponents’ failures to strengthen their own politics; Different cultural habits/ways of dealing with risks but also distrust in authorities; No/low access to real decision-making; Problems of understanding (missing common languages, different knowledge base); Non-transparency of the process/problem.

- Problems/hindrances related to organisational aspects: no proper representation of all stakeholder groups in the participation process; Problems of understanding (missing common languages, different knowledge base); Lack of time and financial resources for intensive participation; Lack of engagement/interest of potentially affected stakeholders; Lack of acceptance (valid for all involved actors), e.g. caused by poor integration.

A key element to deal with the mentioned problems is to involve people and stakeholders from the very beginning. Some of the problems such as distrust in authorities, access to decision-making, difficulties in understanding, non-transparency, missing stakeholders and acceptance can be minimised with governance related approaches. An important partner in this respect is the media which helps to inform the public about planned activities.

More generally, all those approaches that relate very much on specific instruments or tools such as zoning ordinances, formalised participation processes, etc. will often fail to be transferred because of the specific local situation. Much more promising is the optimisation of outcomes by a rationalisation of the process itself. The 12-step IMRA concept aims at such a process optimisation. This is clearly in line with EU legislation where some Directives already prescribe process steps that have to be implemented in the member states according to their frameworks. This also supports the subsidiarity principle.
1.6.2 Role of legal and administrative background of planning systems

Importantly, it is the definition of risk that affects the risk policy. Moreover, defining a risk is an exercise of power in view of existing ambiguity. In many cases policy discourse is not about who is correct about assessment of danger, but whose assumptions about political, social and economic conditions, as well as natural or technological forces win in the risk assessment debate. Thus, the hazard as a potentially damaging physical event is real, but risk is socially constructed. Scientific literature and public education are important but are not the only aspects which are necessary to avoid conflicts about risk. Emotional response by stakeholders to issues of risk is truly influenced by distrust in public risk assessment as well as in risk management. Due to this fact, those who manage and communicate risks to the public need to understand the emotional responses towards risk and the way risk is perceived by the at-risk population. It is a matter of the definition of risk and how risk policy is carried out. Moreover, defining risk is an expression of power. Whoever controls the definition of risk controls risk policy. In European Member States, governed according to law, the existing legal framework serves as normative basis for any risk assessment and risk management, to be taken by public as well as private bodies. This frame differs considerably among European countries and can be grouped into different administrative families, as shown in Figure 2. Apart from legal factors, individual risk perception is also shaped by how the community or a certain socio-cultural milieu generally deals with a special type of risk or risky situations. What applies to individuals can also be observed between different societies which each share a common legislative and cultural basis. An important and interesting aspect of risk perception is thus the variation in different cultural (regional, national) contexts, a perspective studied within the cultural risk paradigm. Risk perception enters the risk management equation through differing estimations on, for example, how probable an event may be, and how much money is to be spent on preparedness.

Info box COMMUNITY

Community can be defined in a narrower or wider way. A narrow definition would restrict members of a community to those people who live inside certain administrative borders (e.g. a town or district). A wider definition in the context of flood risk would encompass all those that are directly or indirectly potentially affected by flood risk. Within this document we will use the broader definition of this term.

The given differentiation in legal and administrative families influences particularly the way in which decisions are taken and prevention actions are planned, though the EU Floods Directive sets a common ground. In some of the EU Member States (particularly in the Germanic family), a new development is legally allowed when it is conforming to the land use as laid down in legally binding plans. This so called regulatory function of planning is known under the term “conforming planning” in the international discourse on planning theory (Rivolin 2009, Larsson 2006). In other EU Member States (i.e. the Napoleonic family), the so called development function dominates which is discussed under the term “performing planning”. This planning type is characterised by legally non-binding programmatic and/or strategic statements. Potential projects are then evaluated against the question whether they support the implementation of the programme or strategy. Furthermore, there are – if at all – only partially binding effects for the subordinated local level. In Eastern Europe, however, management policies are characterised by a deep distrust in any long-term strategic planning approach – due to the experiences these cultures made with planning during the communistic epoch. However, the legal framework determines how strategies and measures for risk management are designed and by which institutions they are implemented. As an example, the setting of legally binding and spatially specific objectives (e.g. to keep an area free of further settlement development) presumes that there are laws enabling the enactment and enforcement of such spatial objectives. Thus, the differences in the planning systems shall be taken into consideration for deriving management options.

Figure 2: The legal and administrative ‘families’ of Europe, Source: Newman & Thornley 1996, p.29
Chapter Two

Step-by-step guide of communication and participation process
2  Step-by-step guide of communication and participation process

A successful communication and participation process needs a planning, preparation, implementation and evaluation phase, in particular:
- Identify your own position
- Identify your strategic partners
- Decide on measures
- Implement
- Evaluate

Each phase is composed of one or more steps, following a chronological order. In total, 12 steps were identified and are described in the following, with reference to methods which can be applied for each step. This should give you support to implement your specific communication and participation activity.

In Chapter 3.1 you find a series of matrices, helping you to identify the relevant steps and methods for your specific purpose/situation. These cross-references are also shown in the initial boxes of each step.

2.1  Identify your own position

To start a communication and participation process you should start with yourself, analysing your own position. This part is composed of three steps:

| Step 1: Carry out initial self assessment of risk governance performance |
| Step 2: Define goals and scope of process |
| Step 3: Identify resources (money, time, personnel) |

2.1.1  Step 1: Carry out initial self assessment of risk governance performance

**Related methods of Chapter 3:**
- Risk governance assessment tool
- Stakeholder workshop

In this step the existing management system shall be assessed. Addressees of this assessment are the relevant stakeholders involved in flood risk management. An ex-ante evaluation of the performance of the risk governance process helps to identify shortcomings and to set priorities for the next steps, especially for the definition of objectives, target groups and selection of communication and participation measures.

This openness of stakeholders concerning the quality of their own work is in line with principles of good governance and risk governance.

**Info box GOVERNANCE**

**Governance concerns** all the rules, procedures and practices affecting how powers are exercised. The aim is to adopt new forms of governance that bring decision makers closer to citizens, make it more effective, reinforce democracy and consolidate the legitimacy of the institutions (Glossary of EU Legislation).

**Good governance** within the EU should lie in the framing and implementation of better and more consistent policies associating civil society organisations and the European institutions. It also entails improving the quality of European legislation, making it clearer and more effective. Moreover, the European Union must contribute to the debate on world governance and play an important role in improving the operation of international institutions (Glossary of EU Legislation).
Risk governance can be defined as a process by which risk information is collected, analysed and communicated and management decisions are taken. It aims at enhancing the disaster resilience of a society (or a region) and includes “the totality of actors, rules, conventions, processes, and mechanisms concerned with how relevant risk information is collected, analysed and communicated and management decisions are taken” (IRGC, 2005, p. 22). This definition focuses on three elements of risk governance: risk assessment and risk management that have to be embedded in a risk communication process among scientists, politicians and the public.

In the EU Floods Directive it is said that flood risk management plans shall be coordinated at the level of the river basin district. Thus, responsible management units have been defined for taking care of the management process. In most cases these are the responsible water boards.

There are different approaches of how to assess the quality and performance of management systems. One example is described in the Chapter 3.2.3 “Risk governance assessment tool”. However, there are also other methods known from business management or even flood risk management (such as the “Audit Hochwasser - wie gut sind wir vorbereitet” [= “Flood audit – How well are we prepared”], guidance paper M551 by the German Association for Water, Wastewater and Waste [DWA]).

2.1.2 Step 2: Define goals and scope of process

Before starting with a communication and participation process the goals of this process have to be defined. So decision makers have to ask themselves what the aim of this process is. This is not about the objectives of certain flood risk management measures but rather the objectives of the communication process.

In the Floods Directive it is stated in Article 10 that “Member States shall encourage active involvement of interested parties in the production, review and updating of the flood risk management plans”. Thus, stakeholders and the public have to be enabled to make informed decisions. Negative behaviour shall be prevented through this process. The appropriate way of a potentially successful active involvement of the interested parties has to be defined as a goal of the process and also determines its scope. This of course depends on the existing resources (see step 3).

Derived from this goal, several sub-goals shall be defined that make the process of active involvement more transparent and operationable. These sub-goals should cover:

- Definition of target group: Who shall be informed? Potentially affected people or all people within a community? Is there a need to present information differently according to different social milieus? Tailoring of communication.
- Type of communication/participation process: Will this be more qualitative or more quantitative? One way or two ways communication?
- Which information shall be distributed? Hazard maps, risk maps, management plans?
- When shall the information be distributed? Shall the information be distributed completely at once or consecutively?
- When shall the objectives be reached? What is the timely perspective?

2.1.3 Step 3: Identify resources (money, time, personnel)

A lot of recommendations for flood risk management come as a result from research projects where extra resources in terms of personnel, money and even knowledge are available. In many cases these resources are not available in daily work, e.g. after a funded project has ended. So the scarcity of resources has to be taken into account.
Thus, it is important to identify your own resources:
- **Personnel/time:** How many staff people, person days, etc. are at hand to design and accompany the communication and participation process?
- **Money:** Which financial resources are available? Is there an opportunity of any extra funding?
- **Knowledge:** Is the staff equipped with necessary skills such as communication skills, application of methods, etc.?

The identification of resources is to a certain extent an iterative process with the definition of goals. The potential resources that are at hand might extend or limit the implementation of the predefined goals.

### 2.2 Identify your strategic partners

After having identified your own position, you can move on to identify your strategic partners. This part is composed of four steps:

1. **Step 4: Identify relevant stakeholders**
2. **Step 5: Design and define scope of participation process**
3. **Step 6: Create a network of stakeholders**
4. **Step 7: Identify the public’s view**

**Identify your strategic partners**

Stakeholder is a much used term and can be used in a narrow sense of the word or with a broader understanding (Carina & Keskizalo, 2004). In this handbook stakeholder means institutional **stakeholders** like organised groups that represent specific interests (“stakes”). These can be (a) formal decision makers that are involved in national or regional flood risk management and that have official tasks and (b) those that influence decisions more indirectly (like interest groups).

Usually the main stakeholders (key persons) in a project concerning flood risk are:
- administration (federal, regional, local level),
- politicians (federal, regional, local level),
- interest groups (chamber of commerce, forestry and agriculture, tourism, hunting, fishery, etc.),
- land owners/leaseholders,
- NGOs (mostly nature protection groups at local, regional, federal or international level).

In flood risk management, additionally to these institutional stakeholders, also the public can be involved. The public means “everybody”: an open and more or less unlimited group of persons that are affected by or interested in a topic or a project/process. Stakeholders and the broad public can both be involved in public participation projects; but not necessarily at all stages of the project and in the same intensity.

### 2.2.1 Step 4: Identify relevant stakeholders

**Related methods of Chapter 3:**
- Stakeholder analysis tool [Chapter 3.2.1, page 29]  
- Risk governance assessment tool [Chapter 3.2.3, page 35]  
- Stakeholder workshop [Chapter 3.5.1, page 70]  

For all kinds of stakeholder involvement there are some key questions that have to be answered in the planning phase:
- What is the goal of the involvement of the public or of stakeholders?
- What are the resources for the involvement process?
Who are the relevant stakeholders needed for a successful process?
How are the relationships between stakeholders? Who can influence whom?
What are their assumed interests and expectations?
In which role and at which time should they be involved?
How can they be motivated?
What kind of intensity of the dialogue process and what methods are suitable / applicable for the stakeholders?
How will the results of the process be used?

The main criterion for the selection of participants is:
- Do you want to get a feeling about opinions and moods, needs and trends?
- Do you want to activate the participants?
- Do you need them for additional information or data?
- Do you want to speak about conflicts?
- Do you want them to participate in a problem solution?
- Do you need them for the implementation of activities?

Other criteria for the selection of participants are:
- The level of the project/process: local, regional, national, international.
- Participation of the public can be done at international, national, regional or local level. In contrast to a usually rather low interest of the public in activities on the national and international level, the motivation to engage on the regional and local level is relatively high. Activities on the local level are closer to the social reality of people; impacts of decisions can be more easily understood and seen.

To get an overview of which interests are represented by whom and which contribution stakeholders can bring for a project, it is recommended to systemise the information. Such a diagram can also be used to document the process of your stakeholder selection to guarantee the transparency and traceability of your decisions on whom to involve in the project and why. The question of the representation of all possible interests is a crucial one in all participatory processes. The acceptance and the result of a process can be undermined by criticism concerning the valid representation of concerns.

2.2.2 Step 5: Design and define scope of participation process

Related methods of Chapter 3:
- Stakeholder analysis tool  
  Chapter 3.2.1, page 29
- Social milieu approach  
  Chapter 3.2.2, page 32
- World Café  
  Chapter 3.4.5, page 66
- Stakeholder workshop  
  Chapter 3.5.1, page 70
- Public workshop  
  Chapter 3.5.2, page 73

Stakeholder participation can be defined by law (e.g. Environmental impact assessment) and is mandatory in this case; legal regulations define who takes part, how far rights of participation extend, how the process is structured and what is done with the findings.

All additional voluntary participatory activities that are not required by law are informal. Informal processes should not be seen as a substitute or competing with formal processes, but can supplement these. These kinds of participatory activities of course have to take place within the framework of existing legal requirements. Informal and formal procedures should be adjusted in a way that no parallel or in the worst case impeding processes can happen. Informal processes like stakeholder participation are entirely voluntary and can take many forms. Who takes part, which methods are used and which rules are used are either determined in advance by a project team or agreed by the participants of such an activity themselves. (Arbter et al., 2005). How binding the solutions or results of a voluntary participatory process are, depends on what has been agreed about how to treat the results.
Results can potentially become legally binding e.g. via a mediation contract, a city council decision, etc.

Participation can take many forms, can be done with varied participants and can have different degrees of intensity (see Figure 3): ranging from noncommittal activities with a focus on information activities to consultation activities up to a real inclusion of the public in the decision-making process or at least the pre-decision-making.

Methods like the World Café or public workshop shall not be seen as direct tools for the design and definition of the scope of the participation process. However, the results of these methods can be used to fine tune the participation process.

The kinds of intensity for public participation can vary within a process. Basis for all participation processes is free access to information. But simple information activities such as a website or a dissemination flyer are not considered as “real” participation activities. They do consist of one-way communication only and the main characteristic of participation activities, the element of dialogue, is missing.

The roles of stakeholders within a project lifetime can vary. Think about whom you will need when, in which role and in which intensity.

Roles for stakeholders can be (Carney et al., 2009):
- Initiators: stakeholders involved in developing or financing a project
- Shapers: have a role in consolidating a project plan, supporting it or directing it at an early stage
- Informants: secondary data providers, interviewees, focus groups, etc.
- Central: play a central role during the project, can have a multitude of roles (shaper, informant etc.), can act as an advisory group
- Reviewers: contribute to the final output (workshops, questionnaires etc.)
- Recipients: not directly involved in the project but assumed to have an interest in the outcome
- Reflectors: give feedback to project results, ideas to further activities
- In-directs: not directly involved, but may be influenced by outcome of the project

During the last decade it became quite trendy to involve stakeholders in research projects. Some stakeholders have mixed experiences with this kind of participation and might be rather willing to participate if they get a clear picture of what is expected from them, how much effort it will be for them to participate and how the results of the stakeholder involvement will be used. Such a short explanation can be e.g. added as an annex to an invitation letter.

Figure 3: Intensity degrees of participation processes, Source: after Arbter et al., 2005, p.9
2.2.3 Step 6: Create a network of stakeholders

Related methods of Chapter 3:
- Stakeholder analysis tool
- Risk governance assessment tool
- World Café
- Stakeholder workshop

Participating in a risk dialogue can be a form of social learning. The output of the participation includes not only policies (decisions) but also the development of the social and political capacities of each individual (Paternain after: Teorell, 2006). In participation processes with deliberative elements some form of empowerment can happen. Deliberation combines different forms of argumentation and communication, such as exchanging observations and viewpoints, weighing and balancing arguments, offering reflections and associations and putting facts into a contextual perspective. Deliberation can produce common understanding of the issues or the problems based on the joint learning experience of the participants with regard to systematic or anecdotal knowledge and it may produce a common understanding of each part's position and argumentation and thus assist in a mental reconstruction of each actor's argumentation. People may not be convinced that the arguments of the other side are true or morally strong enough to change their own position, but they understand the reasons why the opponents came to their conclusion. (Renn & Schweizer, 2009). Additionally participants may get some insight into political processes and decision-making structures. Creating a stakeholder network needs some tacit knowledge in dealing with participants outside science or administration. However, scientists, technicians and persons from administration often still tend to see stakeholder participation as a learning tool to educate the stakeholders so that these eventually understand the value and necessity of the actions proposed by the scientists/the administration. But most people feel intuitively if they are included in a dialogue as a full partner or are educated/instrumentalised. An educational approach is a barrier to create the basis for all participation processes based on deliberation: trust. Scientists, technicians and administration representatives need to understand that a qualitative high stakeholder process is an important learning process for all. Technical, administrative, legal, economical, social as well as common knowledge have the same importance and the same usefulness in a dialogue. Getting insight in the knowledge, perceptions and needs of others is not of less worth than technical expertise. A common understanding of this social learning can be supported e.g. by a simple exercise in which the project team (scientists and/or technicians and/or representatives of administration) collect and write down what they think they will learn from the stakeholders – this could be a good approach to counteract the educational intentions. During the process an external facilitator who treats all kind of knowledge with the same importance and supports the deliberation and process of common understanding could be useful.

2.2.4 Step 7: Identify the public’s view

Related methods of Chapter 3:
- Social milieu approach
- Online chat
- Virtual social network
- Survey: interviews or questionnaires
- World Café
- Public workshop

Risk communication means a dialogue with stakeholders as well as with the public. The means and methods to involve the public can be found discussing with stakeholders.

To plan a risk communication strategy it is necessary:
1. to find out what the status of the knowledge and risk perception of the local population is by interviews with stakeholders or surveys targeting the broad public;
2. to find out what values and attitudes that can affect risk perception the target groups have. This can be done by an analysis of social milieus.
The aim of a survey can be not only to gain an impression of the status quo of risk perception but also - if done repeatedly - to record changes in the risk perception of the affected people during the project. For this purpose it is advised to use the same group of interviewees. In order to perform a survey, two different methods can be chosen: qualitative in-depth interviews or quantitative questionnaires:

Qualitative in-depth interview
Core of a qualitative interview is an interview guideline that guides through the most important topics. It is up to the interviewer how to formulate the questions in detail and in which sequence the questions are asked. In contrast to a quantitative interview, the qualitative one can be done more like a dialogue, additional themes can be discussed. During an individual interview a high quality of information can be reached to generate a spectrum of options and information.

Quantitative questionnaire
Quantitative methods try to gain results from a sample as big and representative as possible and they can be applied through questionnaires or quantitative interviews. Often a questionnaire is the only feasible way to reach a number of persons large enough to enable a statistically analysis of the answers. The questions of a quantitative questionnaire have to be formulated carefully because in contrast to a qualitative interview clarifying questions are not possible.

The questions in the survey can – among others – cover the following topics:
1. Basic knowledge of (residual) flood hazard/flood risk
2. Individual perception of (residual) flood risk
3. Individually felt level of protection/reliability of protection measures
4. Own feeling of responsibility for implementing (small) measures
5. Own capacity to implement measures
6. Usage and preference of different types of media/information sources
7. Basic information of interviewee (age, gender, children, house/land owner, etc.) in order to be able to characterise individuals according to the social milieu groups

2.3 Decide on measures

Once you concluded the identification of your own position and your strategic partners, you can move on to decide on the adequate measures for the communication and participation strategy. This includes:

Step 8: Agree on objectives

Step 9: Agree on targeted communication and participation measures

Step 10: Design an implementation plan for communication and participation measures

2.3.1 Step 8: Agree on objectives

The definition of precise objectives is an important step in a communication and participation process as it tailors the measures to be chosen, the timescales and the resources. Objectives should derive from the communication needs’ analysis which was performed in Step 7 as well as from the outcomes of Step 1 to 6. They should be shared and agreed with relevant stakeholders. Objectives will differ in regard to the degree of communication you plan to implement (Information, Communication, Common Decision-making).
Usually it makes sense to define an overall objective and then sub-objectives in regard to different target groups. An important question you should answer with your objective is the following: what are the results that each target group should achieve by the end of the initiative? Each of these results should be defined as one sub-objective.

Define your objective/-s considering the following components:
- Specific: the objective should describe in detail what you intend to achieve;
- Measurable: you should be able to evaluate the achievement of the objective in quantitative or qualitative terms;
- Realistic: you should be able to realise the objective in the given timeframe and with the given resources;
- Relevant: the objective should be relevant for you and your target group, as identified in the steps before;
- With a defined time horizon: you should set a time frame.

Example of an objective for information and communication purposes:
Train at least 150 school students (between 10 and 18 years old) on flood risk management in relation to territorial planning within the next academic year, stimulating a participatory behaviour and producing capacity building respect to the flood risk in the area where the students live.

This objective is:
- Specific: it describes in details what is planned to do;
- Measurable: “at least 150 school students”. At the end of the communication process it can be checked if the planned number was achieved;
- Realistic: the objective was realistic in this case as the project team had 1 year of time and enough financial resources to implement the process;
- Relevant: the objective was defined after a precise analysis of the territory and the stakeholders;
- With a defined time horizon: in the example the time horizon was defined as “within the next academic year”.

2.3.2 Step 9: Agree on targeted communication and participation measures

Related methods of Chapter 3:
- Social milieu approach
- World Café
- Stakeholder workshop
- Public workshop

Additionally to institutional stakeholder participation, activities for the broad public can be included. The broad public as a whole is not easy to reach and to motivate.

Many scientific projects suffer from believing that it is possible to reach all possible target groups within a population with one kind of information material. Reality and social marketing show that it is not possible to reach everybody with only one singular mean and that all information and participation activities must be designed for the target group or the target groups you want to reach with your message.

Decide if you want to invite everybody possibly concerned or interested in your activities or if you want to work with a randomly or statistically selected representatives.

Possible target groups of the broad public within risk management projects could be:
1. Persons that experienced a flood in the past or were affected with material losses due to a flood in the region within a timeframe;
2. Persons that do see themselves/their family/their region endangered by floods;
3. Persons that never experienced a flood and do not see themselves at risk;
4. Other selection criteria could be:
   - Gender;
   - Education, social status and lifestyle;
   - Age;
   - Lifestyle;
   - Geographical spread;
   - Persons that are known to be interested in a theme (e.g. members of an association, writers of letters to editors/medias; internet blogger, persons in contacts with politicians, administration).

A statistical representative group is not easy to get. Opinion research centres do have the necessary statistical data available but this is relatively expensive.

Social milieus
Risk perception is affected and filtered by attitudes and values. Attitudes, values and other socio-cultural features can be assigned to social groups, or “milieus”. Research about social milieus is traditionally performed by market research and psychology. After Kleinhügelkotten (2006), the main question is not: “What is wrong with these people, why won’t they understand?” but “What is wrong with us? What don’t we understand about our target audience?”. These social milieus are not just a theoretic exercise but can be used to design tailor-made communication strategies. Understanding how values filter information and colour perceptions is of critical importance to the design and implementation of public information campaigns (Roser-Renouf & Nisbet, 2008). It should not be neglected that there are also sceptical voices (Sjöberg, 2000) which object that the social context per se is by no means the sole determinant of risk perception. Unfortunately, up to now, no better explanation than the social milieu approach exists for building up communication strategies.

This approach will therefore be used as a working hypothesis. Social milieus for the local or the regional level can be explored and described by market research companies or similar institutions/organisations. Within risk management projects, it is normally not possible to perform a detailed socio-cultural analysis of the target groups in the regions of the subprojects. However, an overview at the national level on what kind of target groups exist, what their attitude and values are and what kind of information material might reach them can give valuable input to a risk communication strategy. More information on what such national milieus can look like and which data can help to perform an analysis of the social milieus on the local/regional level by non-experts can be found in Chapter 3.2.2.

2.3.3 Step 10: Design an implementation plan for communication and participation measures

Once all previous steps are implemented, an implementation plan has to be developed which identifies and links:
   - Objectives (identified in Step 8)
   - Target groups (identified in Step 4)
   - Specific planned measures (identified in Step 9)
   - Responsibilities and related tasks
   - Timeline, planning moments of evaluation
   - Resources needed for each measure, considering results of Step 3
   - Other issues (if applicable), as e.g. training needs for staff to be able to implement measures, need for external support of experts, etc.
Example implementation plan:

<table>
<thead>
<tr>
<th>Implementation element</th>
<th>Objective / Sub-objectives</th>
<th>Target groups</th>
<th>Social milieu groups</th>
<th>Measures</th>
<th>Material needed</th>
<th>Human resources needed</th>
<th>Financial resources needed</th>
<th>Implementation period</th>
<th>Person responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public communication strategy on flood risk management in Chiascio river basin</td>
<td>Sub-objective: Train at least 150 school students (between 10 and 18 years old) on flood risk management in relation to territorial planning within the next academic year, stimulating a participatory behavior and producing capacity building respect to the flood risk in the area where the students live.</td>
<td>School students between 10 and 18 years</td>
<td>Ambitious middle class and post workers class</td>
<td>School lectures</td>
<td>Interactive game</td>
<td>Video</td>
<td>15 days per school (Experts of risk communication and/or of flood risk)</td>
<td>1000 € for producing materials, such as video, games; 10 € per school for copies, etc. + possible expenses for transfers</td>
<td>Academic year</td>
</tr>
</tbody>
</table>

This can be complemented with a time line.

Example timeline:

<table>
<thead>
<tr>
<th>Implementation period</th>
<th>Location</th>
<th>Person Responsible</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>School lectures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 March 2011</td>
<td>Istituto Compenso Assisi 2, Municipality of Assisi Convitto Nazionale, Municipality of Assisi</td>
<td>Luca Falcon Katja Firus</td>
<td>Morning: 2 high school classes (17/18 years old) Afternoon: 2 elementary school classes (10/11 years old)</td>
</tr>
<tr>
<td>7 March 2011</td>
<td>Istituto Compenso S. Benedetto, Municipality of Valfabbrica</td>
<td>Paola Malvati Patrizia Griffon</td>
<td>2 elementary school classes (10/11 years old)</td>
</tr>
<tr>
<td>16 March 2011</td>
<td>Istituto Compenso La Marsicana, Municipality of Bettona</td>
<td>Gianni Fangucci Katja Firus</td>
<td>2 elementary school classes (10/11 year old) – no technical equipment in school available</td>
</tr>
<tr>
<td>30 March 2011</td>
<td>Istituto Compenso Assisi 2, Municipality of Assisi</td>
<td>Valentina Vitale Silvio Bagnini</td>
<td>2 secondary school classes (13/14 years old)</td>
</tr>
</tbody>
</table>

2.4 Implementation

After all planning activities, it is now time for the implementation of communication and participation measures. It is the most relevant and time-consuming activity of the whole process. Therefore it is a phase composed by only one step:

Step 11: Implement communication and participation measures
2.4.1 Step 11: Implement communication and participation measures

The chosen communication and participation measures shall now be implemented according to the implementation plan, respecting it in all its aspects. Continuous monitoring of activities in regard to the plan is necessary. The plan should be updated regularly, integrating the changes. An important aspect of this step is to organise a continuous feedback with the target audiences: opinions on the efficacy of the materials/activities should be collected. Additionally, it is important that participants receive information about results of activities (e.g., analysis of a survey, final results of a meeting) as well as information on how and for which purpose these will be used.

2.5 Evaluation

Risk communication and participation processes need to be monitored and evaluated in order to improve them as a part of an iterative process. Therefore it is necessary to carry out an ex-post evaluation of the participation and communication process.

2.5.1 Step 12: Evaluate the process

The aim of monitoring the communication and participation process is to observe the effects of the implementation of measures. Evaluation goes beyond this point as it also evaluates the results and the process as such against certain evaluation criteria. Indicators are (IRGC 2005, p. 44):

- intended impacts: How and to which degree were the intended impacts of the process reached?
- non-intended impacts: Did any non-intended impacts occur? Who was affected and to which degree by these impacts?
- policy impacts: Did the process have any direct or indirect impacts on the design of policies?

Methods for carrying out the evaluation process can be e.g., repeating the institutions’ self-assessment of risk governance performance, the survey on public risk perception or a 2nd stakeholder workshop.
Chapter Three

Innovative and well-proven communication and participation methods
3 Innovative and well-proven communication and participation methods

This part of the handbook provides a collection of (innovative) methods and their assessment for the purposes of the implementation of the Floods Directive, related to the steps presented in Chapter 2. They proved to be highly suitable for a communication and participation process in flood risk management. However, they are just example and can not be considered exhaustive.

The chapter is designed to support decision makers and others that are responsible for the implementation of the Floods Directive especially concerning the active involvement of interested parties by presenting a set of participation and communication methods.

The methods presented in this chapter are structured along the planning phase of a governance process, information, consultation and common decision-making, related to different intensity levels of participation. However, there are overlapping areas among these sections and some methods fit in either of them. The presented structure provides a first orientation.

3.1 How to find the right method

This section provides overviews of the methods presented in the following chapters with relevance to the 12 procedural steps (Table 1) as well as to spatial scale (Table 2) and the cultural/planning related background (Table 3). The tables will help you to identify the right measure for your specific purpose and setting.

3.1.1 Which method fits to which step of a communication and participation process

Table 1 gives an overview which method can be applied for which step. Some steps are self explanatory or easy to perform. No specific methods for these steps are described.

<table>
<thead>
<tr>
<th>Planning phase of governance process</th>
<th>Information</th>
<th>Consultation</th>
<th>Common decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify your own position</td>
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<tr>
<td>Step 1:</td>
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<td></td>
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<tr>
<td>Identify your own position</td>
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<td></td>
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<tr>
<td>Step 2:</td>
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<td></td>
<td></td>
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<tr>
<td>Identify strategic partners</td>
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<tr>
<td>Step 3:</td>
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<td></td>
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<tr>
<td>Decide on measures</td>
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<tr>
<td>Step 4:</td>
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<tr>
<td>Implementations</td>
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<tr>
<td>Step 5:</td>
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<tr>
<td>Evaluation</td>
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</table>

<table>
<thead>
<tr>
<th>Planning phase of governance process</th>
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<th>Consultation</th>
<th>Common decision-making</th>
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</thead>
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<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Common decision-making</td>
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</tr>
</tbody>
</table>

Table 1: Which method fits to which step of a communication and participation process

<table>
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<th>Information</th>
<th>Consultation</th>
<th>Common decision-making</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Consultation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Common decision-making</td>
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<td></td>
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</tbody>
</table>
3.1.2 Scale oriented applicability of methods and measures

This section contains messages about the dedication of measures in relevance to the spatial scale. The level of implementation of measures and application of methods chosen in this handbook is the local scale, taking into account that the term “local” stretches from a quarter or a small alpine village, e.g., up to large district-free cities. The stakeholders responsible for carrying out the information and communication process, however, could also be regional as well as interregional or national authorities.

As this handbook is focused on the work in local surroundings and is based on local case study experiences it is restricted to local approaches.

Table 2: Scale oriented applicability of methods and measures

<table>
<thead>
<tr>
<th>Method</th>
<th>Local level (cities, towns)</th>
<th>Sub-local level (villages, quarters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>Highly recommended as stakeholders often have overlapping responsibilities and on the other side responsibilities might not be covered by authorities; potential for conflicts</td>
<td>Recommended in order to identify responsibilities, however, at the sub-local level responsibilities might be clearer due to contacts of stakeholders can personal, more informal levels</td>
</tr>
<tr>
<td>Stakeholder analysis tool</td>
<td>Recommended, although no homogeneous social milieus for the entire area can be expected; however, knowing about the share of each milieus helps to tailor the communication strategy</td>
<td>Recommended, at the sub-local level certain quarters or villages may even be represented dominated by just one or two social milieus</td>
</tr>
<tr>
<td>Social milieu approach</td>
<td>Recommended; internal and external evaluation of risk governance performance of the responsible regional or local authorities</td>
<td>Recommended, even small authorities at the local/sub-local level can assess the quality of their governance approach with the tool</td>
</tr>
<tr>
<td>Risk governance assessment tool</td>
<td>Recommended, internal and external evaluation of risk governance performance of the responsible regional or local authorities</td>
<td>Recommended, even small authorities at the local/sub-local level can assess the quality of their governance approach with the tool</td>
</tr>
<tr>
<td>Information</td>
<td>Recommended in case a certain minimum number of participants has to be reached</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Online communication</td>
<td>Partly recommended as the public might appreciate more a personal involvement</td>
<td></td>
</tr>
<tr>
<td>Public stand with small exhibition</td>
<td>Recommended, especially whenever areas with high pedestrian frequency can be used</td>
<td>Partly recommended as pedestrian frequency might be too low at the sub-local level</td>
</tr>
<tr>
<td>Public exhibition</td>
<td>Partly recommended; exhibition must be able to reach a broad range of different people, difficult to attract a large number of people to a topic where only a part of the citizens might be affected</td>
<td>Highly recommended, especially if citizens played an active role in the preparation of the exhibition, eye witnesses and/or locally well-known people shall be involved</td>
</tr>
<tr>
<td>Media coverage</td>
<td>Highly recommended because a potentially large number of people can be reached with moderate effort; reporting in media shall be coupled with recent activities</td>
<td>Recommended, in small villages, however, citizens already know about certain activities (by personal contacts) before they are reported in the media; media reports help to inform people from neighbouring towns about local activities</td>
</tr>
<tr>
<td>Educational information</td>
<td>Partly recommended; either large effort to go into several schools and classes (in order to create an effect at the city scale) or rather low effort if only a few classes are involved</td>
<td>Highly recommended as it might be often possible to reach almost all pupils by carrying out activities in a few classes</td>
</tr>
<tr>
<td>School competition</td>
<td>Highly recommended as competitions with pupils from several schools, especially in combination with an exhibition, attracts students, teachers and parents as well as people passing by</td>
<td>Highly recommended as competitions with pupils from several schools, especially in combination with an exhibition, attracts students, teachers</td>
</tr>
<tr>
<td>Consultation</td>
<td>Recommended if carried out with a recent event (e.g. flood event) and if potential users can be reached online by e-mail</td>
<td>Not recommended as people might not approve anonymous way of information exchange/consultation</td>
</tr>
<tr>
<td>Online chat</td>
<td>Recommended if moderation/maintenance of social network group can be guaranteed; opportunity to involve people in larger communities</td>
<td>Not recommended as people at the sub-local level might not approve anonymous way of information exchange/consultation, further it might be in conflict with data privacy</td>
</tr>
<tr>
<td>Virtual social network</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.1.3 Planning systems related suitability of methods

The legal framework determines how risk management is designed depending on the underlying planning culture (Napoleonic, British, Scandinavian, Eastern European and Germanic, see Section 1.6.2). The following table gives an overview which methods might appear most suitable against the background of the different European planning systems.

<table>
<thead>
<tr>
<th>Method</th>
<th>Local level (cities, towns)</th>
<th>Sub-local level (villages, quarters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey: interviews or questionnaires</td>
<td>Highly recommended</td>
<td>Interviews highly recommended as it helps to detect local knowledge and provides deep insight into how people think about flood risk management activities, able to reach people at sub-local scale quite well</td>
</tr>
<tr>
<td>School project</td>
<td>Partly recommended (to be decided case by case)</td>
<td>Questionnaires not recommended as sample group can be too small at sub-regional level, not easy to gain representativeness</td>
</tr>
<tr>
<td>World Café</td>
<td>Highly recommended whenever a large number of people shall be brought together and new ideas shall be generated and exchanged</td>
<td>Recommended whenever a large number of people shall be brought together and new ideas shall be generated and exchanged, depends on total number of participants to be expected as minimum number is required</td>
</tr>
<tr>
<td>Common decision-making</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stakeholder workshop</td>
<td>Highly recommended as this is a necessary prerequisite to discuss on co-operation and co-ordination of activities, establishment of personal contacts as additional aspect</td>
<td>Highly recommended as this is a necessary prerequisite to discuss on co-operation and co-ordination of activities as well as to gain additional knowledge, establishment of personal contacts as additional aspect, also between stakeholders and the public</td>
</tr>
<tr>
<td>Public workshop</td>
<td>Highly recommended as this is a necessary prerequisite to build trust between authorities, the media and the public, establishment of personal contacts as additional aspect; media to report on workshop</td>
<td>Highly recommended as this is a necessary prerequisite to build trust between authorities, the media and the public, establishment of personal contacts as additional aspect; media to report on workshop</td>
</tr>
</tbody>
</table>

#### Table 3: Planning systems related suitability of methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Napoleonic</th>
<th>British</th>
<th>Scandinavian</th>
<th>Germanic</th>
<th>East European</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>⇒</td>
<td>⇒</td>
<td>⇒</td>
<td>⇒</td>
<td>⇒</td>
</tr>
<tr>
<td>Stakeholder analysis tool</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Social milieu approach</td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Risk governance assessment tool</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Information</td>
<td>Information important but has to be supported by elements of consultation in order to design and agree on strategic approaches</td>
<td>Information important but has to be supported by elements of consultation in order to design and agree on strategic approaches</td>
<td>Provision of information necessary in order to keep people informed about different implementation steps within the planning process</td>
<td>Provision of information necessary in order to keep people informed about different implementation steps within the planning process</td>
<td>Provision of information necessary in order to keep people informed about different implementation steps within the planning process, educational information as important basis</td>
</tr>
</tbody>
</table>

Planning and implementing communication and public participation processes in flood risk management
3.2 Planning phase of governance process

This section describes methods that help involved authorities and decision makers to organise the background process of a good governance of flood risk management. The stakeholder analysis tool helps to identify and structure relevant stakeholders whereas the social milieu approach provides assistance to detect the appropriate target group for the selected participation and communication strategy. Finally, the governance tool supports responsible authorities to keep track of and evaluate the process of involving stakeholders and the public.

3.2.1 Stakeholder analysis tool

To be used for:
- Step 4: Identify relevant stakeholders
- Step 5: Design and define scope of participation process
- Step 6: Create a network of stakeholders

Purpose

Planning phase of governance process (basis for stakeholder selection and support for planning the participation process)

Area of application

Risk communication, Participation, Risk governance

<table>
<thead>
<tr>
<th>Method</th>
<th>Napoleonic</th>
<th>British</th>
<th>Scandinavian</th>
<th>Germanic</th>
<th>East European</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online communication</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public stand with small exhibition; Public exhibition</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Media coverage</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Educational information; School competition</td>
<td>+</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultation</td>
<td>Important in order to design and agree on strategic approaches well in advance</td>
<td>Important in order to design and agree on strategic approaches well in advance</td>
<td>Consultation at local level needed and possible due to strong role of local level</td>
<td>Consultation at local level needed and possible due to strong role of local level</td>
<td>Important for increasing quality and acceptance; participation however often not approved, methods to motivate people needed</td>
</tr>
<tr>
<td>Online chat</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Virtual social network (assumption that access to internet and social networks is possible)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Survey: interviews or questionnaires</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>School project</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>World Café</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Common decision-making</td>
<td>Workshops as important method to involve stakeholders and the public</td>
<td>Workshops as important method to involve stakeholders and the public</td>
<td>Workshops as important method to involve stakeholders and the public</td>
<td>Workshops as important method to involve stakeholders and the public</td>
<td></td>
</tr>
<tr>
<td>Stakeholder workshop</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Public workshop</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: + = highly recommended, 0 = recommended, - = partly recommended (to be decided case by case)

Characteristics:
Development function dominates, legally non-binding programmatic and/or strategic statements
- Online communication
- Survey: interviews or questionnaires
- Online chat
- Virtual social network (assumption that access to internet and social networks is possible)
- World Café
- Workshops as important method to involve stakeholders and the public

Area of application:
- Risk communication
- Participation
- Risk governance

Procedural guidelines and toolbox of methods
Aim of the method and context
Support for the selection of all relevant stakeholders at the beginning of a participation process, basis for a context and/or conflict analysis. Additionally a tool like this makes the selection process of the stakeholders transparent.

Addressees / target group
Process planners, project team, key stakeholders

Scale of application
Applicable for all participation planning processes

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td>No costs</td>
<td>No costs</td>
</tr>
<tr>
<td>Working days:</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Necessary skills
No necessary skills needed

Main features of method
Preparation:
- Adapt the tool to the goal of your participation process, fill in stakeholders that are already known

Implementation:
- Discuss the goal of the stakeholder inclusion and the most appropriate stakeholders within your project team; elaborate a preliminary list
- Discuss this selection of the stakeholders with already known key stakeholders and put their suggestions into the list (can be done via telephone calls or within a meeting)

Expected results
- Overview whom to invite for participation and why
- Transparent selection process

Assessment of results
- Could all stakeholders that are relevant for the process be motivated to participate in the process?
- Have some people concerned been forgotten and needed to be included into the project at a later stage?

Prerequisites for success:
- Concrete goal and scope for stakeholder participation already defined
- Support of key stakeholder(s) for selection process
Advantages:
Planning tool for stakeholder participation and a basis for a discussion of selection process with key stakeholders or project founders. Population groups that are not used to participation and often not included can be made more visible and maybe also motivated to take part. It is possible to extend this basic stakeholder analysis with questions like:
- What is the relationship/history with each other (trust, conflicts etc)?
- What is the relationship with the project team? Are there cooperation experiences from former projects?
- How do you assume that they see the problem?
- What do you assume are their interests concerning the project?
- Are all possible interests represented by stakeholders?
- Can they contribute with data or additional information?
- Can they contribute to the quality of the project results?

Disadvantages:
Not needed for stakeholder selection for participation processes on the local scale where everybody is known

Degree of implementation
Project team in the early beginning of the project lifetime. Key stakeholders with know-how concerning the political and social structure of the project region can give valuable input

Examples of stakeholder analysis chart
A stakeholder analysis chart can be helpful to get an overview on the interests of various stakeholders and their potential contribution to a project (see Figure 4). Each stakeholder (e.g. Harbours, Tourism, NGOs, Transport/logistics, Hydropower plants, Insurances, Warehouses, Administration, Civil defence) is characterised along criteria that help to show the role a stakeholder has and potentially can take within a flood risk management process.

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Goal</th>
<th>Interest</th>
<th>Influence</th>
<th>Affected by project</th>
<th>Legal status</th>
<th>Organisation degree</th>
<th>Level</th>
<th>Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harbours</td>
<td></td>
<td></td>
<td>high, medium</td>
<td>high, medium, low</td>
<td>party</td>
<td>high, medium, low</td>
<td>local, regional, national, international</td>
<td>different policy goals, political barriers, competences, responsibilities</td>
</tr>
<tr>
<td>Tourism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGOs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport/logistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydropower plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warehouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil defence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4: Stakeholder analysis tool for flood risk projects, Source: Bundesministerium f. Verkehr, Innovation u. Technologie (2008) after Hostmann et al., 2005, Junker & Buchegger, 2005

Key references
3.2.2 Social milieu approach

**To be used for:**
- Step 5: Design and define scope of participation process  
  Chapter 2.2.2, page 17
- Step 7: Identify the public’s view  
  Chapter 2.2.4, page 19
- Step 9: Agree on targeted communication and participation measures  
  Chapter 2.3.2, page 21

**Purpose**
Planning phase of governance process

**Area of application**
Risk communication, Participation, Risk governance

**Aim of the method and context**
Attitudes, values and other socio-cultural features that influence risk perception can be assigned to social groups, to “milieus”. To have a basis for a discussion available social milieu analyses like the Sinus Milieus®, developed by the market research companies INTEGRAL (Austria) and SINUS-Institut, Heidelberg (Germany), can be used. These Sinus Milieus® give an overview of social groups on the national level for all case studies. Integral (2009) points out that the Sinus Milieus® combine demographic characteristics such as education, profession and income with the real living environments of the people, which means with fundamental value orientations and attitudes towards working and leisure time, family and relationship, consumption and politics. The social milieus are used to plan the risk communication strategy: to find out the target groups, what to communicate, how to communicate and which channels to use.

**Addressees / target group**
Process planners, project team, in discussion with key stakeholders

**Scale of application**
On all scales, the application is only restricted by the availability and/or costs of data about social milieus

**Costs and human resources necessary for the implementation**

<table>
<thead>
<tr>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td></td>
</tr>
<tr>
<td>From 0 € (for an analysis on social milieus based on available data) up to 50,000 € for an detailed analysis done by a market research institute</td>
<td>From 0 € for communication methods created by the project team up to 30,000 € for a professional external communication expert</td>
</tr>
<tr>
<td>Working days:</td>
<td></td>
</tr>
<tr>
<td>Minimum 1 for internet research</td>
<td>Normally done only in the beginning of a project</td>
</tr>
<tr>
<td>5-10 for a more detailed analysis</td>
<td></td>
</tr>
</tbody>
</table>

**Necessary skills**
Some social scientist experience or at least willingness to deal with approaches coming from social science. Some creativity to find communication methods for target groups

**Main features of method**

**Preparation:**
- Research on already existing and easy to get information about social milieus in project region
**Implementation:**
- Definition of target groups (according project goals)
- Detailed research concerning social milieus
- Description of target groups, their socio-cultural features for the project
- Definition of appropriate communication methods and channels

**Expected results**
- Clear picture of target groups and their socio-cultural background and how it possibly influences risk perception
- Risk communication strategy tailored for target groups

**Assessment of results**
- Measurement of successful application
- What is important for the interpretation of the results?
- Participation level in events and other actions initialised by the project team

Assessment of results can be done via a questionnaire (knowledge of risk before – after) if same sample group.

**Prerequisites for success:**
- Adaptation of social milieu approach to regional or local context
- Enough data for social milieu analysis available
- Communication methods should be based on the results of the social milieu analysis

**Advantages:**
During planning risk communication the project team has to bear in mind that values, life style, and socio-cultural features can act like a filter which kind of information is accepted and which not. The analysis of social milieus can help to get through this filters.

**Disadvantages:**
If no data available cost intensive

**Degree of implementation**
Project team

**Example of application of method**
In Figures 5-7 the Sinus Milieus® for Austria, Germany and Italy are presented.

![Figure 5: Sinus Milieus Austria](Image)
Source: Integral, Wien

![Figure 6: Sinus Milieus Germany](Image)
SINUS-Institut, Heidelberg

![Figure 7: Sinus Milieus Italy](Image)
SINUS-Institut, Heidelberg

According to the social milieu approach different social groups need differently designed information material and various communication channels.
As an example four social milieus, the communication campaigns as well as potential cooperation partners for a communication strategy are listed (after: Kleinhückelkotten, 2007):

**Post materialists:** Post-materialists are the post-68 generation with post-materialist values, intellectual interests and a liberal disposition.
- Communication campaign: Stories in regional newspapers, informative, intellectual and innovative designed posters, wall papers, workshops, round tables.
- Cooperation partners for such a media campaign could be: cultural institutions and associations, schools, universities, ecological NGOs.

**Established:** The social milieu of the self-confident establishment is characterised by a success-ethics, a can-do mindset and pronounced demand for exclusiveness.
- Communication campaign: articles in respected (quality) newspapers, detailed, intelligent, sophisticated information material, not flashy or obtrusively.
- Cooperation with institutions and persons with a high social status, local and regional managers of administration, local chamber of commerce.

**Modern Performers:** Modern performers are young, success-oriented, have an intensive private and professional lifestyle, are flexible and interested in multimedia.
- Communication campaign: professional and creative folder and posters, authentic and unconventional.
- Cooperating partners for such a media campaign could be: schools, universities (e.g. department for media design), newly founded companies.

**Traditionalists/Middle class:** Traditionalists belong to the petit bourgeoisie or the working-class; the middle class includes the status-oriented modern mainstream that looks for social and professional establishment, security and harmony.
- Communication strategy: simple, informative and clear designed information sheets in churches, sport clubs, banks and post offices, at village fairs bulk mailing, local newspapers, official gazette.
- Cooperating partners could be: kindergartens, schools, leisure clubs, local politicians, public libraries.

**Practical example:** In the Austrian case study the project team hypothesised that most of the local population of the village Großkirchheim do belong to the rural and traditional milieus and the middle class. Additionally the results from the last elections were taken into account as well as statistical data about income, education and economic sectors, age and gender. These assumptions were discussed with the major and local stakeholders, which have additional knowledge about the professions and education of the local population.

According to that know-how low-threshold approaches with a strong focus on historic local events and oral history involving the local population were discussed.

**Key references**


3.2.3 Risk governance assessment tool

To be used for:
- Step 1: Initial self assessment of risk governance performance  
  Chapter 2.1.1, page 14
- Step 2: Define goals and scope of process  
  Chapter 2.1.2, page 15
- Step 3: Identify resources  
  Chapter 2.1.3, page 15
- Step 4: Identify relevant stakeholders  
  Chapter 2.2.1, page 16
- Step 6: Create a network of stakeholders  
  Chapter 2.2.3, page 19
- Step 8: Agree on objectives  
  Chapter 2.3.1, page 20
- Step 10: Design an implementation plan for communication and participation  
  Chapter 2.3.3, page 22
- Step 12: Evaluate the process (in case of a repetition of a first assessment)  
  Chapter 2.5.1, page 24

Purpose
Planning phase of governance process, Information, Common Decision-making

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
The risk governance assessment tool presented here supports decision makers to optimise the quality and performance of the planned and/or implemented risk governance process by evaluating it against a set of ideal risk governance indicators. Thus, it is mainly a self-assessment tool. However, it can be also used for external communication to other stakeholders and to the public by showing already achieved goals within the process and by pointing at still existing deficits.

Addressees / target group
Institutions/authorities that are responsible for and that carry out the risk communication process (applicants of the tool); other stakeholders, the media, the public in general (as addressees of the tool’s results)

Scale of application
The tool is very flexible and can be applied at national, regional and local level, even at the level of small decision units such as departments. However, it is mostly applied at the regional and local level where a multitude of stakeholders has to be involved, responsibilities have to be fixed and a broad set of addressees has to be informed.

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs:</strong></td>
<td></td>
</tr>
<tr>
<td>&lt; 100 € (without external support); 1,000-2,000 € (with support from external communication expert)</td>
<td>&lt; 100 €</td>
</tr>
<tr>
<td><strong>Working days:</strong></td>
<td></td>
</tr>
<tr>
<td>4 (reading and understanding self assessment tool; adaptation of indicators and agreement on indicator set; application of indicator set and discussion of results; dissemination of results; each 1 working day)</td>
<td>2 (application of indicator set and discussion of results; dissemination of results; each 1 working day)</td>
</tr>
</tbody>
</table>

Necessary skills
Some experience needed with evaluation and/or assessment tools; ability to assess own work; select participants of the own organisation that have an overview of all relevant indicators; moderate the process of indicator adaptation and agreement; provide appropriate way to disseminate results internally (intranet, presentation, etc.) and externally (website, annual report, etc.)
Main features of method

The method enables decision makers in the area of risk governance/communication to optimise the performance of their activities by assessing it along selected “ideal” risk governance indicators. It helps to identify priorities for the next steps of the governance process. After a first round the assessment will be repeated after a certain period of time (e.g. 1 or 2 years) in order to evaluate the progress towards an ideal governance process. The self assessment can be extended by a parallel external assessment by other relevant stakeholders. This gives the institution in charge the opportunity to compare the own view with the external perspective.

Preparation:

- Basic decision within institution/authority to carry out self assessment of risk governance performance
- Selection of staff members who prepare the assessment or alternatively selection of external communication expert
- Agree on date and place for an approx. one-day meeting
- Reading and understanding the self assessment tool, explanation by selected staff member or external communication expert
- Adaptation and agreement on indicator set

Implementation:

- Application of indicator set
- Discussion of results
- Discussion of possibly needed adjustment of indicator set
- Agreement on priorities for next steps
- Decision if and how results shall be disseminated (internally: intranet, presentation, etc; externally: website, annual report, etc.)
- Decision if assessment shall be carried out by external stakeholders
- Fixing of a date for repeating the assessment

Expected results

- Agreement on objectives concerning the authority’s planned communication process
- Involvement of relevant staff members and creation of internal risk governance guiding principles
- Clear overview possible about the performance of the complex governance process
- Quick detection of priorities for further actions possible

Assessment of results

The application of the method can be considered successful if the results of the 2nd or any other consecutive assessment rounds show an improvement in the risk governance performance. Further, similar internal and external assessment results can also be interpreted as a part of a successful application. However, also the implementation of the different steps can be seen as a success as objectives, priorities and responsibilities can be defined.

The results always have to be interpreted within the local or regional context. Due to the need to adapt the indicator set and its categories to the local or regional framework conditions the results can not in any case be used for benchmarking the risk governance process with other processes.

Prerequisites for success:

- Adaptation of indicator set to regional or local context
- Agreement on indicators, acceptance of approach
- Embedding the assessment results into the decision-making process
- Communicate the results internally and externally

Advantages:

- Quite low input of financial resources needed
- Limited input of time needed if agreement on indicators is quickly possible
- Clear overview possible of the performance of the complex governance process
Can be used for internal and external communication
Documentary of already achieved objectives in the risk governance process towards the public, the media and others

Disadvantages:
- Academic roots of the approach, needs some “translation” for the practical application
- Support from external communication expert might be useful
- Adaptation and agreement on indicators might be time consuming in case different views have to be balanced
- In case the performance of the governance process is poor this might lead to a negative perception of the authority’s activities

Degree of implementation
Authorities in charge of carrying out a flood risk communication (management) process. It can further be applied by other relevant stakeholders in order to provide an external perspective.

Example of application of method
This tool uses an indicator system that enables decision-makers to monitor the performance of a risk governance process. The quality of the risk governance process can be assessed along 15 categories as shown in the following Table 4.

Once the measurement values are elaborated, it is necessary to choose appropriate levels for their classification. This classification allows the assessment of the performance for a given process. In accordance with the scorecard method, the following five levels were chosen:

**Red** = Initial (with no formal process);
**Orange** = Managed (processes are planned and controlled);
**Yellow** = Defined (processes described in standards, tools and methods);
**Green** = Quantitatively Managed (sub-processes are controlled using data analysis);
**Blue** = Optimising (data are used to continuously improve processes Website Balanced Scorecard).

It should be underlined, that the used measurement values as well as the classification have an exemplary function. It is necessary to define them according to the requirements of the responsible institution/body and situation/circumstances.

For the self assessment of the risk governance process carried out by each of the local water authorities in the IMRA project, the same indicators were used as described in the IMRA concept. However, some of the indicators were slightly adapted to the needs and circumstances of the local water authority.

The results show that the local water authority has already achieved some important steps (blue or green, see Table 4) in the following areas:

- access to information
- financial resources
- staff resources
- role

During a stakeholder workshop the risk governance and assessment approach was presented to the participants. The workshop participants represented stakeholders from communities, emergency management, flood risk management, land-use planning, economic development, environmental planning etc. from the local, regional and state level.
Table 4: Feedback on self assessment of the local water authority

<table>
<thead>
<tr>
<th>Key Performance Indicators</th>
<th>Red</th>
<th>Orange</th>
<th>Yellow</th>
<th>Green</th>
<th>Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic / content</td>
<td></td>
<td></td>
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<tr>
<td>Principles</td>
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<tr>
<td>Objectives</td>
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<td></td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Process</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Accountability principle (internal)</td>
<td></td>
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<tr>
<td>Accountability principle (external)</td>
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<td></td>
<td></td>
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<tr>
<td>Justification</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Stakeholder</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Representation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance process &amp; outcome</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dialogue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Role</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-ordination and co-operation</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Co-ordination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: own elaboration

The self assessment by the local water authority is marked with colours. The estimation results of the three stakeholders are marked with " ■ ".

The participants were asked to anonymously make their own estimation concerning the quality and performance of the risk governance process of the local water authority. Unfortunately only three institutions followed this request. The result that is shown in Table 4 is of course not representative but gives an idea on how the internal and external views of the local authority’s work converge or diverge, respectively, in this respect.

The feedback results show that in general the external and internal views are not that far away from each other. However, concerning some elements there are significant differences:

- access to information: estimated lower than by the local water authority itself;
- financial resources: significantly lower (red/orange external view compared to green);
- staff resources: significantly lower (red/orange/yellow external view compared to blue);
- role: here the external experts judge the work of the local water authority rather low (all orange) compared to the local water authority itself.

Key references


Wanczura, S., Fleischhauer, M., Greiving, S., Fourman, M., Sucker, K., d’Andrea, A. (2007): Analysis of recent EU, international and national research and policy activities in the field of risk governance, Del. 1.1 MIDIR Project.
3.3 Information

This section focuses on methods that merely inform the public and stakeholders about risk assessment and risk management activities. The methods thus belong to the basic set of activities that can in general be characterised as one way communication. However, these methods have an important function but in most cases shall be additionally supported by more communicative and participative elements.

3.3.1 Online communication

To be used for:
- Step 11: Implement communication and participation measures

Purpose
Information, Consultation, Common Decision-making

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
Information delivering, citizens’ information usage and participation, knowledge sharing and stakeholders’ decision-making, are allowed by the Web 2.0 technologies. The use of social network groups is described in the method “Virtual social network” (Chapter 3.4.2) according to their wide diffusion in the society and their proved relevance for managing risk situations (see for example the Tahiti crisis).

Addressees / target group
Stakeholders (public administrations, associations, NGOs, decision makers, civil protection), citizens

Scale of application
Regional, national and European level

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td>5,000 € for the first implementation</td>
<td>500 €</td>
</tr>
<tr>
<td>Working days:</td>
<td>60</td>
<td>7 x month (for maintenance and management)</td>
</tr>
</tbody>
</table>

Necessary skills
Web designer, Web manager, Content designer

Main features of method

Preparation:
Some of the most used web services are: (i) discussion fora, that provide members with the ability to post and reply to messages in a common area; (ii) video/audio conferencing systems which allow users to talk, send video and audio signals, take polls or view online presentations over the Internet; (iii) newsgroups that enable people exchange ideas, discuss, communicate and even make friends; (iv) blogs. All these systems can be used for risk management by decision-makers, stakeholders and citizens for information sharing and active participation.
**Discussion fora**

Discussion fora, also called discussion boards, message boards or online forums, are asynchronous tools that provide an opportunity for each individual (both stakeholders and citizens) to post a statement as well as to respond to the postings of other people; thus, creating a discussion (Markel, 2001). Each one will build up a combined knowledge with multiple perspectives that construct a new knowledge.

**Video/audio conferencing systems**

Video/audio conferencing systems refer to synchronous virtual meetings and sharing of applications over the web. They involve the transmission of image (video) and speech (audio) among physically separated locations (Lensegrav & Pearce, 2002). During a video/audio conferencing participants can see whatever is on the presenter's screen, and simultaneously share applications and discuss matters of common topic. The combination of video data with voice interaction makes it possible to collaboratively perform activities in different parts of the world. This service is particularly useful for the work of stakeholders in the various steps of a decision-making process.

**Newsgroups**

A Newsgroup represents a repository of messages posted by many users from different locations. It can be considered as a virtual space where people exchange ideas, discuss, communicate and even make friends (Roberts, 1998). Newsgroups provide an infinite number of possibilities to participants. They can be used to access information, post questions or commentaries about different topics. They are asynchronous tools.

The use of newsgroups in risks communication practices allows:
- to pose questions and exchange information;
- to collaboratively discuss and write;
- to post procedure and calendars;
- to post web pages.

For this reason newsgroups can be used by stakeholders for discussing among them and for addressing risk management issues to citizens stimulating their participation in the risk management and decision processes. Newsgroups can be opportunely used also for exchanging information between citizens.

**Blogs**

A blog is a service of a Website for communication, collaboration, knowledge building, information gathering and knowledge sharing, knowledge organisation and, thinking and discussion over the content. It is an asynchronous tool.

**Implementation:**
Steps for Website and on-line tools design and management:
- Analysis of the available skills and resources
- Definition of Internet business plan:
  - Definition of the goals of the Website at short and medium term
  - Identification of target users
- Design of the information architecture:
  - Analysis of existing and potential information resources
  - Identification of the concept and definition of the different areas of the Website and their relationships
  - Definition of the on-line services embedded in the Website
  - Definition of the flowchart structuring the different topics and services
- Design of the Website lay-out
- Website updating and management
**Expected results**

Specific outcomes and main results of the methods are:
- Delivering information on risk
- Implementing knowledge sharing (both among stakeholders and citizens)
- Improving citizens’ participatory attitudes and citizens’ trust
- Improving public awareness of risk
- Delivering results of decision-making
- Delivering results of specific projects

**Assessment of results**

Measurements of successful application are:
- Usability of the on-line tools, accessibility
- Number of visits to the Website
- Page Rank, i.e. the relevance of a web page with its topics
- Users’ satisfaction (subjective parameter)

The interpretation of the results produce a useful assessment if a significant set of the identified users is involved for testing subjective parameters, such as users’ satisfaction.

**Prerequisites for success:**

An accurate analysis aiming at identifying target users and their needs is the prerequisite for designing a usable, accessible and satisfactory on-line tool containing all services necessary to the user.

**Advantages:**

- Achievement of expected results

**Disadvantages:**

- Effort of time and money

**Degree of implementation**

On-line tools designer, information designer, e-service planner, citizens and stakeholders are all involved in the implementation.

**Example of application of method**

During the IMRA project some dissemination activities and an on-line presence have been implemented, aiming at supporting the project activities to assure a strong awareness of project objectives and results. The strategy of dissemination and networking has enabled the design and the implementation of a set of on-line resources, including the dynamic Website of the project, the definition of on-line groups of citizens and stakeholders using Facebook (Chiascio IMRA and IMRA Stakeholders) – as described in the method “Virtual social network” (Chapter 3.4.2) – and an on-line resource service devoted to support specific activities, e.g. the administration of on-line questionnaires on flood risk.

The url Website is: http://www.imra.cnr.it. It has been designed and developed both 1) in order to provide and access contents and resources by the different partners of the project, supporting their communication and discussion and 2) for the dissemination and promotion of the project contents and results in the stakeholder’s communities and between citizens in all the case study areas and, more generally, in all the European States. For this reason it has been designed for supporting three different languages: English, German and Italian. This choice makes the website usable and allows the diffusion of best practice arising by the experiences of the three case studies project.

More services could be implemented, but they require more time of persons and economic effort. It could be necessary to define a business plan involving stakeholders in order to allow to the defined on-line tools to be usable and useful beyond the project.
Key references

3.3.2 Public stand with small exhibition

To be used for:
- Step 11: Implement communication and participation measures

Purpose
Information, Consultation

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
Informing the public about flood hazard and flood risk. Such an information stand should be combined with an attractive display of information, e.g. in a small exhibition. Additional information provided by the participating institutions is about research on flood risk management, flood risk management activities and measures, measures for self-protection measures. A public stand provides the opportunity to reach people unintended, just by chance and to open the communication process also to those who normally would not attend public meetings or other information channels.

Addressees / target group
The public in general, group of people that would normally not attend other information channels such as public meetings, internet, etc. Whenever parts of the stand/exhibition is designed for children they can be attracted and by this also their parents.

Scale of application
Local level

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th>Costs:</th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,000-5,000 € for buying first equipment (mobile pavilion, stand-up tables, poster hanging system, etc.)</td>
<td>&lt; 1,000 €; experience shows that the equipment will be permanently improved due to experiences made at every public stand</td>
</tr>
<tr>
<td></td>
<td>100-1,000 € for printing posters, designing games, brochures, giveaways</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Working days:</th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–10, depending on time and effort that shall be dedicated to the public stand</td>
<td>1–2, depending also on the number of involved people</td>
<td></td>
</tr>
</tbody>
</table>

Necessary skills
Technical skills to build, adapt and improve the equipment, transportation of equipment (at least station wagon must be available), layout skills for designing brochures and posters, organising skills, provide stand with staff that is open towards people passing by (also to children) and that must be able to answer questions thoroughly.
**Main features of method**

Public stand with pavilion, stand-up tables, information booths, maybe small games or small competitions for children or adults, posters with information on flood hazard and risk, brochures, self-protection opportunities. If possible the stand should also be in a flood-prone area or close to a river bank. Stand can be combined with activities to visualise e.g. the flood level of an extreme event or a civil protection exercise in order to raise visitor frequency.

**Preparation:**
- Buy equipment
- Pre-test the equipment before first real use
- Decide on date and place for the public stand
- Send request for permission to local authority to put stand in public space
- Invite other stakeholders to participate, e.g. local administration (urban planning, etc.), fire brigade, handicraft enterprises that sell self-protection equipment
- Prepare exhibition contents (maps, posters, brochures, further information) and additional features (games, giveaways)
- Arrange stand attendance with the staff
- Arrange setting up and taking down of the stand and transport of equipment
- Send press release to local newspaper

**Implementation:**
- Set up stand
- Actively talk to people passing by
- Try to get media coverage
- Distribute information

**Expected results**
- Give flood risk management a “face”
- Reach broad variety of different people
- Get people informed about flood hazards and flood risks
- Get people informed about self-protection measures
- Provide information from different stakeholders in one place at the same time
- Visualisation (by stand, posters, staff) helps people to better remember the issues addressed

**Assessment of results**

A direct assessment of the results is hardly possible. However, the degree of media coverage, following information requests addressed to the water authority or local authority, orders at handicraft enterprises can be indicators of a successful public stand.

**Prerequisites for success:**
- Choose a frequented place to set up the stand
- Choose the right day and time (Saturday mornings might be promising as people are not that much in a hurry and often children are with them)
- Make use of eye-catchers (fire engine, flags, balloons, etc.)
- Provide easy-to-understand information
- Have the capacity and skills to explain the provided information
- Prepare information to give away (brochures)
- Try to directly connect the stand with visualising the flood hazard (next to flood markers, next to the river, photos of past flood events, etc.)

**Advantages:**
- Direct communication between stakeholders and the public possible
- Public has the opportunity to give comments and directly receive an answer
Stakeholders get a feeling of the public’s view
Misunderstandings can be immediately resolved
Good opportunity to place a press release and get media coverage
People can be reached that would normally not attend public meetings
Makes the flood risk management process less anonymous (“give flood risk management a face”)

Disadvantages:
Quite a large effort needed for first preparation
Information has to be kept up to date
Stand attendance quite time and personnel consuming
Often work at the weekend necessary
Weather-dependant, works only during the warmer period of the year

Degree of implementation
Authorities in charge of carrying out a flood risk communication (management) process. It can further be applied by other relevant stakeholders that can potentially play a role in flood risk management.

Example of application of method
In the case study area of the river Wupper an information stand was set up for half a day on a Saturday morning and early afternoon to inform the public and to offer a dialogue (Figure 8). The following authorities were planned to participate in the information stand:
- Wupperverband (regional water association, responsible for flood risk assessment, implementation and maintenance of flood protection measures, risk communication)
- City of Leichlingen, planning department and waste water department (responsible for urban planning and local water management)
- Fire Brigade of the City of Leichlingen (responsible for flood emergency management); unfortunately had to withdraw its participation shortly before the event
- Handicraft enterprises in the area of flood protection installations for houses; unfortunately only one enterprise participated due to lack of time for preparation

The stand was combined with the “Crossing Wupper” installation: the level of a 100 year flood was visualised by a rope that spanned the river Wupper from one bank to the other (see Figure 8). Local TV and newspapers reported about the stand the following days. During the four hours about 50 people visited the stand and informed themselves about the IMRA project, flood protection and information activities. It was used by the public to get in contact with representatives from different authorities. Attracting children by a fishing game and involving adults and older children by a small competition was quite successful. It took about 1.5 hrs to set up the stand (with 4 people involved) and 1 hr to take it down again. The stand was equipped with 8 people; however, it would have also worked with less.

Figure 8: Public information stand and visualisation of 100 year flood level, Source: TU Dortmund
3.3.3 Public exhibition

To be used for:

- Step 11: Implement communication and participation measures  Chapter 2.4.1, page 24

Purpose
Information

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
Increasing and stabilising risk awareness of stakeholders and the broad public on a high level even during a time where no flooding occurs

Addressees / target group
Broad public

Scale of application
On all levels, but mainly local and regional

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td>20,000 – 50,000 €</td>
<td>5,000 €</td>
</tr>
<tr>
<td>Working days:</td>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>

Necessary skills
Graphical design, communication skills

Main features of method
Decide for which social milieu/target group the exhibition should be attractive and interesting

Key references
Preparation:
Define the aim of the exhibition, e.g.:
- to include the knowledge of local flood witnesses that are known in the community
- to have a strong focus on the local area
- to use an exhibition design with a rather small amount of scientific text but emotional statements of flood witnesses to personalise the tragic events.

The target group and the aim of the exhibition are basis for content and design of the exhibition panels as well as the opening ceremony. An exhibition for scientific target groups or persons which a high formal education level will be different in language and graphic design than one designed for the local population in an alpine valley.

Implementation:
- The “communicative memory” of flood events is based on and bonded with the individual persons that are the owners of this kind of memory. This kind of documentation of extreme events and catastrophes is a central element of risk culture. Personal stories make all content more interesting and add a human touch.
- The interviews with flood witnesses can also be done with schools, with the additional benefit that you can include pupils (and their parents).
- Collect, select and design the material for the exhibition including the flood witness statements, media coverage or material from archives of administration and scientific literature if available.
- Think about how to present the material. Do you have exhibition panes already available or is it possible to rent them? If you have no staff with graphical experience, who can support you?
- The less, the better. Don’t try to put too much text on the panels (a well-known problem of scientific presentations). Don’t use technical terms, try to speak as simply as possibly if aiming to tailor the exhibition to the broad public. If possible test the exhibition design with other persons (family, neighbours, etc.).
- Make the opening to a social event: organise a nice and well-known location, contact the persons willing to support the opening, collect cost estimations for a buffet; the buffet is a good investment, because people will stay after the official ceremony and talk to each other (peer communication can foster the content of the exhibition).
- Inform the media before and after the exhibition with press releases, announcements in community newsletter, etc. Think what kind of additional information you can give to journalists attending the opening personally.
- Document the exhibition opening and the reactions of the participants.

Expected results
- Exhibition designed for the social milieus that are the target groups
- Translation of technical/scientific know-how into easy-to-understood content
- Visualisation and emotionalisation of flood risk topics
- Anchoring the communicative memory of flood witnesses
- In combination with event at the opening ceremony or during the exhibition also possibility to enforce peer-to-peer communication
- Makes it easier to gain attention of the media
- Planning with or getting support of stakeholders for the exhibition means working together on a practical task and giving them also the possibility to present themselves in public
- The exhibition can be used as core activity, as interface to additional activities, e.g. public discussions, school competitions, invitations to artists to work on the theme, invitation to public to give a short impression on their experiences, celebration if exhibition is handed over to e.g. municipality

Assessment of results
- Interest of other communities/regions to get similar exhibition
- Interest of school to participate in such an exhibition
- Media coverage
- Number of visitors
- Do people/stakeholder speak about the event (in discussions, interviews, etc.)
Prerequisites for success:
- Enough financial and personal resources

Advantages:
- A good exhibition with a well-planned opening ceremony is something eye-catching and a social event, people do not forget too quickly
- Can possibly be adapted to other communities/regions
- Documentation of flood witness experiences

Disadvantages:
- Expensive and time-consuming
- No success if not targeted to social milieus/target groups

Degree of implementation
Project team in cooperation with e.g. flood witnesses, stakeholders, schools or artists

Example of application of method

The fact that the time span since the last flood was in the Austrian subproject concerning the river Möll more than 40 years, made the communication of the still existing risks a demanding task. Before this exhibition no systematically collection of the flood witness experiences and other information material concerning the flood events in the Großkirchheim was done. The idea of such an exhibition was not foreseen in the project plan but emerged during the discussions on how risk awareness could be established. Additional man power, support of the printing and the loan of exhibition panels were brought additionally into the project by AKL and the international research society Interpraevent made a professional design possible.

The project team decided for an exhibition with a low-threshold design that should be attractive and interesting for the social milieus we defined in our analysis (see inventory).

The exhibition consisted of:
- 1 big panel about the scientific backgrounds (meteorological data, hydrological information) of the floods
- 8 panels of information concerning the floods in Großkirchheim
- 3 panels featuring the media coverage 1965/66

Figure 9: Examples of exhibition panels, Revital
The exhibition space was shared with a more common and digital exhibition of the Austrian Service for Torrent and Avalanche Control (WLV) to have also some additional information about other natural hazards available.

The opening of the exhibition was planned as a mixture of an information activity and a social event. It was moderated by the mayor of Großkirchheim, with contributions of AKL, WLV and flood witnesses (Figure 10). The social framework was given by life musical entertainment of the music school and a buffet. The exhibition was announced in the community newsletter and invitations sent out by AKL and WLV.

The mayor estimated that 70-80 persons would attend the opening, but it was a positive surprise when 140 interested people arrived.

Within the opening the flood witness and former freelance journalist Oswald Zuegg donated his extensive collection of photos from the floods 1965/66 to the community of Großkirchheim. Some of his photos were also used for the exhibition.

Some people arrived very early (approximately 1 hour before the opening started) “to be able to take our time to look at the exhibition”. Half of the people stayed after the official part of the opening to socialise with each other, to look at the exhibition or to watch a slide show consisting of 150 single slides of the floods in Großkirchheim and a video about nature hazards that were shown in an infinite loop. The last persons left at midnight.

There was also some media coverage about the opening event. Some other communities of the Möll valley expressed their interest in the exhibition.

Figure 10: Flood witnesses talk about their experiences, Photos: Therese Stickler, UBA (left) and Gernot Koboltschnig, AKL (right)

3.3.4 Media coverage

To be used for:
- Step 11: Implement communication and participation measures

Purpose
Planning phase of governance process, Information

Area of application
Risk communication, Capacity building

Aim of the method and context
Information to the public but also to other stakeholders. It helps to keep people up to date about risk management activities. Further it is an important tool to make people feel concerned.
**Addressees / target group**
Public in general (households, business enterprises, etc.) but also other stakeholders (local institutions, etc.)

**Scale of application**
National, regional, local, sub-local

**Costs and human resources necessary for the implementation**

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td>&lt; 100 € without professional external support</td>
<td>&lt; 100 €</td>
</tr>
<tr>
<td>Working days</td>
<td>&gt; 10 for building up press contacts; this, however can not be realised on short term; experience shows that it might take years until press/media contacts are established in a way that a press release “automatically” means a successful media coverage.</td>
<td>1 for drafting a press release for a certain event or similar activity</td>
</tr>
</tbody>
</table>

**Necessary skills**
Basic skills in journalism are more than helpful; even more important is to build a network of press and media contacts and to cultivate it by personal contacts and by openly providing information/press releases.

**Main features of method**
Active press/media work in order to inform the public and other stakeholders about news, activities, information sources, etc. Detailed information on flood hazards and risks are normally not an issue for the media but media helps to focus the interest of the people on further information sources. Further it is an important tool to make people concerned – the major driver for people to change behaviour. Finally press releases can be used to give the public a feedback to their participation in the process.

**Preparation:**
- Building up press contacts can not be realised on short term; experience shows that it might take years until press/media contacts are established in a way that a press release “automatically” means a successful media coverage.

**Implementation:**
- Send press releases to local and regional media
- Have general information about own authority, project, involved partners, etc. (whatever applicable) at hand in order to additionally inform the media
- Actively invite media to events, activities

**Expected results**
- Main result is to have a regular information flow from the authority side to the public and to other stakeholders.
- Further the provision of information might activate a public discussion process and increase risk awareness and maybe even concern.

**Assessment of results**
- A successful application can be measured in the number of media appearances as well as in the quality of the media reports.
- Further it can be measured in the number and intensity of the reactions to a media report (follow-up articles in newspapers, letters to the editor, online comments to web based reports).
Planning and implementing communication and public participation processes in flood risk management

Prerequisites for success:
- Already established press contacts/network
- Experience in formulating press releases
- Connect press releases to “real” activities (e.g. presentation of survey results, public information stand, public meeting, opening of exhibition, etc.)
- Use press releases/media to give the public a feedback on participation activities

Advantages:
- Large number of people can be reached by mass media
- Very positive ratio between effort and effects, very effective method
- Media is a good linkage between administrative/scientific perspectives and languages and the public, function of “translation” into understandable and easily to digest portions

Disadvantages:
- Takes long time to establish a network of media contacts
- Media reporting is often not exact and tends to be superficial
- In most cases no opportunity to correct misunderstandings or wrong information
- Only one-way information than rather communication; can not be used for consultation processes

Degree of implementation
Authority in charge of the flood risk management/communication process

Example of application of method
In the Leichlingen case study in the IMRA project the goal of the media activities was to promote and report on activities, inform about the project and to increase flood risk perception. Overall more than 20 media appearances could have been counted within 12 months: 12 reports in newspapers, 9 online reports, 2 local/regional radio appearances and 2 local TV appearances.

Real activities were important to raise interest for the media. People learned to know about project, learned about flood risk management activities. In conclusion it was positive how good the media coverage was. It proved to be an important basis for any work.

Key references

Figure 11: Examples of press reports and radio interview, Source: Rheinische Post, TU Dortmund
3.3.5 Educational information

To be used for:
- Step 11: Implement communication and participation measures  
  Chapter 2.4.1, page 24

Purpose
Information, Consultation

Area of application
Risk communication, Risk governance, Capacity building

Aim of the method and context
Informing pupils/students and start a dialogue with the younger generation that normally does not feel addressed by risk communication activities. Further, pupils and especially teachers are important multipliers.

Addressees / target group
Pupils, students, teachers

Scale of application
Local

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td>100-1,000 € for compiling teaching material; professional support by teachers is recommended</td>
<td>&lt; 100 €</td>
</tr>
<tr>
<td>Working days</td>
<td>10-15 for designing and testing the concept</td>
<td>1-5 per teaching unit, depending on the extent of the concept</td>
</tr>
</tbody>
</table>

Necessary skills
Teaching experience useful but might be also provided from external experts

Main features of method
Different concepts possible, depending also on the age of the pupils

Possible features:
- Interpret and understand existing hazard maps
- Design own flood risk maps and zoning plans
- Identify ideas about protection measures
- Discuss on preferred communication channels for younger generations

Preparation:
- Define the objective of the educational concept
- Define the target group of the activity (age of pupils)
- Design concept (keep balance between theoretical input, own practical work, excursion/field trip and final evaluation)
- Compile necessary teaching material
- Contact teachers and/or school directors well in advance; due to tight curricula work with pupils might not be easy to organise
- Use personal contacts in order to find appropriate classes and motivated teachers
- Present the concept to the teacher; allow fine tuning according to the teacher’s recommendations
Implementation:
- Create an enjoyable atmosphere
- Presentations should be not longer than 10 minutes
- Motivate pupils to develop own ideas
- Dedicate yourself at least 1.5 hrs to the teaching unit
- Leave room for discussion and feedback

Expected results
A more informed group of younger people that also has an important function as multiplier, especially for other students but also for parents.

Assessment of results
Number of pupils that have been directly addressed. Above that it is difficult to measure success as pupils are not house or business owners, meaning that their decisions do not directly lead to improvement of self protection measures or support of flood risk management policies.

The success is rather indirect and has to be seen more as an investment for future policy making in the area of flood risk management.

Prerequisites for success:
- Use a language pupils understand
- Integrate activities for younger people into the school curriculum
- Combine the educational concept with elements from social networks
- Thoroughly prepare the concept and co-operate with teachers
- If possible organise professional educational support
- Test the concept before first application

Advantages:
- Group of younger generation covered
- Direct contact with a group of people that is hardly reached by common communication methods
- Multiplier function, especially if combined with exhibitions or field trips; pupils report at home about activity
- Investment in future acceptance of flood risk management policies

Disadvantages:
- Rather large effort for preparation of concept needed
- External support most likely necessary
- No immediate effect on flood risk management/risk governance performance
- Often difficulties to find motivated directors or teachers
- Depends on willingness of teachers and available time in tight curricula

Degree of implementation
Stakeholders, authorities in charge of flood risk communication.

Example of application of method
In the IMRA project an 11th grade class was selected to participate in a “World Café” about local flood hazards, flood risks, protection measures and preferred information channels (Figure 12). Biggest challenge was to find and to contact a class and a teacher who was motivated and had dedicated some time to this approach. However, the feedback on the World Café with the opportunity to exchange information about local flood risk management was approved by the pupils. Another group of young people was taken on a field trip to the Diepental dam where flood protection measures were presented and the reasons for and character of flood events were explained. The field trip provided a vivid picture of the issue.
Key references

3.3.6 School competition

To be used for:
- Step 11: Implement communication and participation measures  Chapter 2.4.1, page 24

Purpose
Planning phase of governance process, Common Decision-making

Area of application
Risk communication, Participation, Capacity building

Aim of the method and context
Building-up risk awareness in the younger generations and encourage a participatory approach to risk management

Addressees / target group
Students, teachers

Scale of application
Local
**Costs and human resources necessary for the implementation**

<table>
<thead>
<tr>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs:</strong></td>
<td>500 € per school (for preparing the exposition connected with the competition and the award for the schools)</td>
</tr>
<tr>
<td><strong>Working days:</strong></td>
<td>6 for preparation and follow-up, 1 for training per school</td>
</tr>
</tbody>
</table>

**Necessary skills**
Coordination, communication and management skills

**Main features of method**
Building a participatory approach to risk management is a relevant goal of the method. Involving the education system is the first feature of the method. The second feature consists in defining a pro-active role of the identified parts of the education system, in order to improve their engagement level.

**Preparation:**
The school competition requires a preparatory phase, in which the following steps are necessary:
- Defining the expected results and the topics for the competition
- Defining the target sets of students to involve in the competition
- Defining the target set of teachers to involve in the competition management
- Identification of schools to be involved at local level
- Defining the scheduling of the competition activities (in coherence with school curricula and holidays) and the competition rules
- Establishing the competition awards
- Organising meetings with teachers and students to describe the competition purpose, expected results, times, rules and awards
- Organising the final event of the competition with award giving ceremony

**Implementation:**
The implementation of this method consists of:
- Implementation of information meetings involving organisers of the school competition, teachers and students identified for the competition in order to engage them
- Organisation of the schools activities for the competition
- Monitoring the schools activities for the competition
- Implementation of the final event for the competition with award giving ceremony

**Expected results**
The specific outcomes and main results of the method are:
- Specific works produced by students for the competition
- Participation of students and teachers in the discussion on risk

**Assessment of results**
A measurement of successful application is the percentage of teachers and students participating at the activities in respect to the identified one in the preparatory phase. Moreover, a subjective measure is also relevant, their level of engagement and satisfaction, directly connected with the participation level.

**Prerequisites for success:**
An institutional trust is necessary between the actors involved in the project activities, and it is important that the defined activities can be integrated in the school activities, in order to avoid a relevant improvement of workload.
Advantages:
The involvement of teachers and the integration of the activities in the school activities can be important for repeating part of the experience beyond the specific initiative.

Disadvantages:
There were no evident disadvantages in the application of this method.

Degree of implementation
Stakeholders, authorities in charge of flood risk communication

Example of application of method
A school competition was implemented, in the framework of the IMRA project, in the area of the Chiascio river basin in Italy. Both primary schools and secondary schools were invited to participate:

Primary schools:
- Istituto Comprensivo Assisi 2, Municipality of Assisi
- Istituto Comprensivo La Meridiana, Municipality of Bettona
- Istituto Comprensivo S. Benedetto, Municipality of Valfabbrica

Secondary schools:
- Convitto Nazionale, Municipality of Assisi

In total 186 students were involved in the end. Only one of the initially involved classes did not participate in the competition. In addition, the rules of the competition were defined: due to the different features of the involved schools, students were asked to produce a collective work which required their discussion and conceptualisation of flood risk. As a second step, the competition was launched in ten classes. One teacher for each class was identified as a contact point. All participants were informed that they had three months for producing their contribution. Results presented included paintings, brochures, power-point presentations and maps of their area of the Chiascio basin (Figures 13 and 14).

All contributions were presented in an exhibition during a public event on flood risk and each participating school received an award (in this case a financial contribution for educational materials) and a certificate. In addition, all contributions were included in a booklet on the Italian IMRA case study which was distributed at the final event as well as on the IMRA project website.

Figure 13: Examples from the works produced during the students competition
3.4 Consultation

Elements of consultation encompass all methods that help authorities to receive a feedback on planned or implemented activities. In most cases this is a two-way communication.

3.4.1 Online chat

To be used for:
- Step 7: Identify the public's view
- Step 11: Implement communication and participation measures

Purpose
Planning phase of governance process, Information

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
Online chat with experts from science and flood risk management practice in order to offer the opportunity to answer questions around the issue of flood risk and flood protection

Addressees/target group
Public, people with internet access

Scale of application
From regional to local level

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td></td>
</tr>
<tr>
<td>~ 1,000 € for first installation of online chat tool by external provider</td>
<td>~ 200 € once the tool is installed</td>
</tr>
<tr>
<td>Working days:</td>
<td></td>
</tr>
<tr>
<td>3 for preparation of contents and preparation of technical equipment</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Figure 14: Exposition of the students’ works during the final event in Assisi
Necessary skills
Basic computer skills, support by network administrator

Main features of method
For a pre-defined time span online users can log in the chatroom and ask questions to the experts. After the questions have been checked and answered, the answers are put online.

Preparation:
- Check with local network administrator if technical prerequisites are sufficient
- Contact provider of online chat tool or arrange with internal IT unit
- Announce online chat by local newspapers, radio and TV as well as own website
- Send invitations for online chat to potentially interested persons, ideally by e-mail if e-mail list exists and can be used for this purpose (e.g. recipients of e-mail newsletter)

Implementation:
- Have experts available in time
- Document results on website
- Inform the media about the results

Expected results
- Open questions can be answered, even if people wish to stay anonymous
- Answers can be read also by passive participants of the online chat
- Answers can be documented on the website and can be a starting point for a list of “FAQs”

Assessment of results
The easiest measurement of the results is the number of participants as well as the quality of the questions (to the point, objective) and the answers. The number of hits of the documented answers in the following time can be another indicator.

Prerequisites for success:
- Address the invitation to people that most likely are interested
- Ideally send invitations by e-mail
- Connect online chat with a current incident (if possible) such as a flood event or other connected issues that are presently in the media

Advantages:
- Quite low preparatory work needed
- People can participate from home
- Organising authority can operate the chat from the own office
- People can participate anonymously
- Participants receive direct answers, real communication process
- Dialogue/discussion can be documented and is later still accessible to a large number of interested people

Disadvantages:
- Difficult to attract large number of participants if no specific occasion exists
- Difficult to reach a minimum number of participants if only local people are invited
- Announcement only in newspapers and/or radio or TV does not seem to be sufficient; direct invitation by e-mail seems to be more promising
Degree of implementation
Authority in charge of flood risk communication, scientists; but chat could also be offered in co-operation with other stakeholders so that participants can address their questions to all relevant stakeholders.

Example of application of method
In February 2011, an online chat was offered to the people living in the Wupper case study area of Leichlingen (Figure 15). The objective of this online chat was to answer questions to flooding and flood prevention. The online chat was announced on the website of the Wupperverband and the City of Leichlingen, in 4 newspapers and in the local TV.

However, in the end it was a rather low participation with only 5 really relevant questions from 4 persons in 2 hours. After the online chat the following conclusion was drawn:
- More intense internet announcement needed
- Connect chat with some current event
- 1 hour would be enough time

Figure 15: Website announcement of online chat and answering of questions, Source: TU Dortmund

3.4.2 Virtual social network

To be used for:
- Step 7: Identify the public's view
- Step 11: Implement communication and participation measures

Purpose
Information, Consultation

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
Online information and consultation with citizens and stakeholders via virtual network as e.g. Facebook, LinkedIn, Twitter etc. in order to motivate a discussion on a specific topic or distribute specific information. It is mainly an additional tool to face-to-face meetings. Information on other Web 2.0 tools can be found in the method “Online communication” (Chapter 3.3.1).

Addresses /target group
Citizens and stakeholders, such as voluntary organisations, decision makers from local institutions. The precondition is an Internet connection.
Scale of application
The method can be applied at regional and local level as it is devoted to reinforce the face-to-face existing communities delivering the project actions and events. A virtual social network group could however also be created at national and European level to deliver specific information and stimulate discussion processes.

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs:</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;$100 € (without external support); 1,000-2,000 € (with support from external communication expert); other costs for external technical implementation</td>
<td>&lt;$100 €</td>
</tr>
<tr>
<td><strong>Working days:</strong></td>
<td></td>
</tr>
<tr>
<td>8 (identification of platform; technical implementation; selection of topics and contents; launch; management of community)</td>
<td>2 (selection of new topics and contents; and management of community)</td>
</tr>
</tbody>
</table>

Necessary skills
Communication skills, Information and Communication Technology skills (for set-up of community), complementary skill: sociology.

Main features of method
Considering risk communication we have to take into account that social media and social networking groups are gradually gaining an important role in the discussion, exchanging information and encouraging participation of people in social life. In fact, the interactive Social Media platforms such as Facebook, LinkedIn, Twitter, Youtube and others have radically changed the communication paradigm, stimulating new ideas, good and innovative practices and challenges. For this reason designing an online community is very important. However, in most cases, online tools are not enough. In fact, Social Media provide a process for creating common meanings, sharing information and new social values, and the participants in social relationships always play an important role for this purpose. However, these social relationships and a common understanding is difficult to build only on the base of the online contact (as also the experience of the project underlines). Therefore, a specific set-up and management of virtual social networks is necessary in order to be effective for information and consultation on flood risk management. Usually it is used to reinforce face-to-face activities, existing communities and participation processes, as e.g. the distribution of on-line questionnaires, a continued discussion on a specific topic raised during a meeting, etc. Social virtual networks on a specific topic can be set-up, using existing platforms such as Facebook, LinkedIn, Twitter, Youtube. Social virtual networks are used to create an on-line group of people which have a specific interest on a specific topic. It can be managed by an expert from the organisation which is setting up the network. It can be self-managed or it can be managed on a voluntary base.

Preparation:
- Identification of target group
- Definition of key issues for the community (e.g. flood risk)
- Identification of goals and expected outputs of the identified community (for flood risk: information and knowledge sharing on flood risk and events and discussion on territorial planning in the case study area for promoting a participatory approach)
- Selection of an appropriate platform

Implementation:
- Realisation of community on chosen platform (e.g. a Facebook group on flood risk in a given area)
- Assessment by an analysis of social composition of the potentially involved population
- Identification and description of the benefits of the community, including individual community members and other social network groups
- Identification of the major interests for the community
In case of a managed community: stimulations of discussions by introducing specific topics
Identification of face-to-face meeting opportunities for community members. The aim is to reinforce the feeling of belonging of all community members
Finalisation and publication of the community calendar of events
Design and delivery of virtual synchronous and asynchronous events and activities

**Expected results**
- Definition of virtual social networks at regional and local level for citizens and stakeholders
- Definition of virtual social network for delivering IMRA results by connecting this social network with other existing virtual social networks

**Assessment of results**
- Number of community members
- Number of contributions
- Quality of contributions

**Prerequisites for success:**
The on-line interaction, together with a parallel face-to-face network, is a pre-requisite for success as it is a good stimulus for continuity of action of the virtual social network. In particular, stakeholders and institutions should improve the use of virtual social networks for stimulating a participatory approach, important for the risk governance process.

**Advantages:**
The use of virtual social network has the advantage to establish connections with other existing virtual and face-to-face social networks beyond the single project.

**Disadvantages:**
Sometimes a strong resistance to the on-line interaction can arise, particularly when the on-line participation is only on a voluntary basis and not parallel face-to-face network exists. The time limitation of the activities of the project and the only voluntary set-up and management of a virtual social network represents a limitation for its usefulness.

**Degree of implementation**
Regional administrations, water authorities and river basin authorities and districts in charge of flood risk management planning, scientists, institutional stakeholders, general public

**Example of application of method**
During the Italian case study of the IMRA project, considering that the target communities were the stakeholders and citizens, two groups were created on Facebook: IMRA Stakeholders and IMRA Chiascio (Figure 16). They were connected to some existing social network workgroups such as the Facebook group “Amici del Chiascio”. Both IMRA groups were only used for project activities.

![IMRA Facebook groups](image)

**Figure 16:** Examples of IMRA Facebook groups
3.4.3 Survey: interviews or questionnaires

To be used for:
- Step 7: Identify the public’s view
- Step 11: Implement communication and participation measures
- Step 12: Evaluate the process (in case of a repetition of a first assessment)

Purpose
Information, Consultation

Area of application
Risk communication, Risk governance, Capacity building

Aim of the method and context
A questionnaire can be a qualitative or quantitative tool, as depicted in Table 5.

Table 5: Comparison of qualitative and quantitative methods, Source: Marshall, 1996

<table>
<thead>
<tr>
<th></th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical foundation</td>
<td>Deductive, reductionalist</td>
<td>Inductive, holistic</td>
</tr>
<tr>
<td>Aim</td>
<td>To test pre-set hypothesis</td>
<td>To explore complex human issues</td>
</tr>
<tr>
<td>Study plan</td>
<td>Step-wise predetermined</td>
<td>Iterative, flexible</td>
</tr>
<tr>
<td>Position of researcher</td>
<td>Aims to be detached and objective</td>
<td>Integral part of research process</td>
</tr>
<tr>
<td>Assessing quality of outcomes</td>
<td>Direct tests of validity and reliability using statistics</td>
<td>Indirect quality assurance methods of trustworthiness</td>
</tr>
<tr>
<td>Measures of utility of results</td>
<td>Generalisation</td>
<td>Transferability</td>
</tr>
</tbody>
</table>

Quantitative questionnaire:
Quantitative methods try to gain results from an as big as possible and representative sample and can be done by questionnaires or quantitative interviews. Often a questionnaire is the only feasible way to reach a number of persons large enough to enable a statistically analysis of the answers. Questions of a quantitative questionnaire have to be formulated carefully because in contrast to a qualitative interview clarifying questions are not possible.

Qualitative in-depth questionnaire:
Core of a qualitative interview is an interview guideline that guides through the most important topics. It is up to the interviewer how to formulate the questions in detail and to decide on the sequence in which the questions are asked. In contrast to a quantitative interview the qualitative one can be done more like a dialogue. Additional themes can be discussed. During an individual interview a high quality of information can be reached to generate a spectrum of options and information. Qualitative interviews can be used for exploring topics and gaining insight, description and understanding of proceedings, connections and conflicts. Quantitative surveys can have different aims: mostly they are used to gain a picture about the status quo of knowledge and interests of the interviewees or to prove a hypothesis. By making a second round of questionnaire with the same interviewees changes of information level or opinions can be found out.
Topics of a survey concerning flood risk can – among others – be:

- Basic knowledge of (residual) flood hazard/flood risk
- Individual perception of (residual) flood risk
- Individually felt level of protection/reliability of protection measures
- Own feeling of responsibility for implementing (small) measures
- Own capacity to implement measures
- Usage and preference of different types of media/information sources
- Basic information of interviewee (age, gender, children, house/land owner, etc.) in order to be able to characterise individuals according to the Sinus Milieus®.

An additional aim can be to use the results of a survey for dissemination purposes (discussion groups as well as media information).

Addressees / target group
Broad public or a target group like people living in a flood prone region, or other special target groups

Scale of application
Local, regional and national

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td>2,000 € – 50,000 €</td>
<td>2,000 € – 50,000 €</td>
</tr>
<tr>
<td>Working days</td>
<td>20 - 30 (depends on distribution mode and depth of analysis)</td>
<td>15 - 25</td>
</tr>
</tbody>
</table>

- Time effort: depending on the number of interviewees and the method (written interview, telephone interview or face-to-face interview).
- Costs: depending if data for interviewees is bought from or brought in by a marketing specialist, if external experts do interviews and if support for statistical data analysis is needed.

Necessary skills
Statistic basic knowledge for interpretation of questionnaire results, willingness to make a literature research about similar surveys, support of sociologist for designing the questionnair and to discuss the survey with project team. IT-skills if internet-survey.

Main features of method

Preparation:
- Define aim of survey and target group
- Literature research about similar surveys

Implementation:
- Design most important questions and discuss them maybe with stakeholders
- Prepare survey in local language
- Print out survey for distribution per mail or programme internet-survey for filling it out via internet
- If survey is done by face-to-face interviews engage a person (student) to perform this task and instruct her/him in basics rules for interviews
- Collect surveys and check of completeness
[ ] Interpret and visualise data
[ ] If possible cross-cut with geographical data (like addresses of people living in a flood hazard zone)
[ ] Present data
[ ] Repeated check if survey has to be adapted (due to interviewees feedback or other additional input)

**Expected results**
[ ] Results of the survey
[ ] Material for press release

**Assessment of results**
[ ] The needed number of questionnaires has be filled out (complete)
[ ] Robustness of results of quantitative questionnaires: the validity of the results is depending on the structure and the design of the questions of the standardised questionnaire, the number, the statistical representativeness and honesty of the interviewees and the statistical competence of the researchers
[ ] Robustness of results of qualitative questionnaires: individual inputs, not representative, but more insight into topics possible
[ ] Feedback of interviewees: easy to understand and clear questions, interest in topic due to interview, etc.
[ ] Useable results for discussion with stakeholders

**Prerequisites for success:**
[ ] A well designed questionnaire
[ ] Willingness of interviewees (especially if more than repeated survey rounds)

**Advantages:**
[ ] Easy to perform
[ ] Standardised questions
[ ] By repeated questioning impacts of project activities can become evident
[ ] Qualitative questionnaire: can help to gain insight in connections and/or conflicts

**Disadvantages:**
[ ] If quantitative survey no room for additional information persons want to give, restricted format
[ ] Dependent from willingness of interviewees
[ ] Time effort for data collection and interpretation

**Degree of implementation**
Scientists/ project team

**Example of application of method**
The quantitative questionnaire used in the Austrian IMRA subproject was based on a draft provided by the project partner TUDO. Some questions were adapted due to the regional conditions and the focus of the case study. The survey was presented in German in electronic format. However, the survey was not filled in by the interviewees themselves: the interviewer had a laptop and filled in the answers during the interview. This method was chosen because in this alpine village many people do not have internet access and/or are not used to fill in questionnaires. The additional advantage was that persons could clarify questions and with this the completeness of answers was guaranteed.

The collected data was made available as an excel file to the project team, facilitating the analysis. A student did the survey in Großkirchheim with a laptop within a week in March 2010 and in March 2011. That student went around in the village trying to find participants for the survey. The survey was announced in community newsletter in March 2010. It was planned to perform the survey by going from house-to-house, but people refused to open the doors or had no time. So most of the interviews were done in pubs and restaurants.
The people asked to take part in the survey showed often a quite traditional behaviour (e.g. “Please ask my husband…”) – like to be expected after the analysis of the sinus groups of the village. People are not used to questionnaires and after a while of giving straight answers “got warm” and many of them started with storytelling. Sometimes the student had to filter the information from the storytelling, because the interviewees digressed. Sometimes the student had to transform the formal character of the questions into more informal formulations. Only a few interviewees preferred to read the questions on the laptop by themselves. Some of the questions were hard to understand – the feedback from the interviews will be used to optimise the second survey. The interviewees were reluctant to give their name and feared that some things they said would be made public - strong social control within the village. During the interviews with the survey the first contact with flood witnesses could be established and first short interviews were documented with a voice recorder. We received also recommendations for other additional flood witnesses.

The goal of an identical sample of interviewees of both rounds could not be reached. Only half of the persons were the same. The detailed results of the 69 interviews of the first and the second round of survey were analysed and are documented in detail in two short German reports. The results of the reports were used in the second workshop with stakeholders as well as for a report in the community newspaper.

**Key references**

### 3.4.4 School project

**To be used for:**
- Step 11: Implement communication and participation measures  
  Chapter 2.4.1, page 24

**Purpose**
Planning phase of governance process, Information

**Area of application**
Risk communication, Participation, Capacity building

**Aim of the method and context**
Providing information on flood risk, stimulating a participatory behaviour and producing capacity building respect to the flood risk in the area where they live

**Addresses / target group**
Students, teachers

**Scale of application**
Local

**Costs and human resources necessary for the implementation**

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td>1,000 € for producing materials, such as video, games; 10 € per school for copies etc. + possible expenses for transfers</td>
<td>10 € per school for copies etc. + possible expenses for transfers</td>
</tr>
<tr>
<td>Working days:</td>
<td>50</td>
<td>5 per school (including preparation, implementation and follow-up)</td>
</tr>
</tbody>
</table>
**Necessary skills**
Experts of risk communication and of flood risk for preparing the necessary materials and implementing face-to-face meetings

**Main features of method**

**Preparation:**
- Definition of the target sets of students to involve in the activities
- Definition of the target set of teachers to involve in the activities
- Identification of schools to be involved at local level
- Identification of the activities that will be carried out in the schools
- Planning of the identified activities and approval by teachers
- Preparation of materials necessary for carrying out the activities
- Organisation of meetings with teachers and students to carry out the decided activities
- Organisation of the final event involving students and teachers

**Implementation:**
- Design of games on flood risk to be used by students during meetings in the identified schools
- Organisation of field excursions
- Organisation of expert visits and field experiments
- Realisation of brochures, short prints and video to be used during the meetings
- Implementation of a final event involving students and teachers

**Expected results**
Result should be represented by:
- An increased awareness on flood risk and flood risk management
- A more participatory approach of citizens in decision-making and planning activities related with flood risk

**Assessment of results**
Questionnaires and interviews can be used for measuring the awareness and the participatory attitude of students (and more in general of population) before and after the activities in the schools.

**Prerequisites for success:**
All materials produced need to be adapted to the specific territory where the school is located in. In fact, this makes students and teachers more involved in the activity, as they perceive the problem as a more realistic issue.

**Advantages:**
Mid-term impact: The involvement of teachers, and the integration of the activities in the school activities can be important for repeating part of the experience beyond the specific initiative, providing them the material produced, which could be used in the next years as educational material. School students are good multipliers: students awareness and participation on environmental problems can be improved, and they can be considered more proactive with respect to other parts of the population.

**Disadvantages:**
There are no evident disadvantages in the application of this method.

**Degree of implementation**
Stakeholders, authorities in charge of flood risk communication

**Example of application of method**
A school project was implemented, in the framework of the IMRA project, in the area of the Chiascio river basin in Italy.
Both primary schools and secondary schools were invited to participate:

**Primary schools:**
- Istituto Comprensivo Assisi 2, Municipality of Assisi
- Istituto Comprensivo La Meridiana, Municipality of Bettona
- Istituto Comprensivo S. Benedetto, Municipality of Valfabbrica

**Secondary schools:**
- Convitto Nazionale, Municipality of Assisi

In total 186 students were involved in the end.

The Italian partners of the IMRA project defined the schedule for the 2 hours of planned work in each school. It was approved by the involved teachers. The two main used tools were a video, introducing the problem of flood risk and an interactive group game, called MONOPAI (in reference to the abbreviation of the Italian name of the Hydrogeological Setting Plan, PAI).

Italian partners of the IMRA project designed and produced the necessary material, in collaboration with an NGO specialised in geology and education (Geologie senza Frontiere onlus). The main feature of the MONOPAI interactive group game was that a group of students had to allocate a defined number of various types of infrastructure (schools, houses, agricultural areas, train station, hospitals, etc.) on a stylised flood risk map. In addition the group had to write down the reasons for their choices and present them to the whole group. The Italian IMRA partners produced the kit with all necessary material for the game (risk map, small pictures representing the various infrastructure, legends, description of game, paper, glue) as well as the video. The video was focused on the case study, also involving testimonies of people who lived the flood experience in the Chiascio area. During the two-hour meetings in each school (always two classes were participating together in one lecture), a flood risk expert made a brief oral introduction on the topic. Then the video was shown to provide students with background information. After that followed the MONOPAI game, where students worked in groups up to 8 people. Each group presented their results to the whole group, explaining their decisions. A discussion concluded the meeting. As a follow-up each teacher received a CD with the results of the game of their class, photos, the material of the MONOPAI game and the video. They can use them beyond of the project. All students were invited to participate in a school competition (see Chapter 3.3.6) and a concluding final public event of the case study.

**Further information**
Website: http://www.lebensraumwasser.at/index.php?page=page&id=53 (in German)

### 3.4.5 World Café

**To be used for:**
- Step 3: Identify resources
- Step 5: Design and define scope of participation process
- Step 6: Create a network of stakeholders
- Step 7: Identify the public’s view
- Step 9: Agree on targeted communication and participation measures
- Step 11: Implement communication and participation measures

Chapter 2.1.3, page 15  
Chapter 2.2.2, page 17  
Chapter 2.2.3, page 19  
Chapter 2.2.4, page 19  
Chapter 2.3.2, page 21  
Chapter 2.4.1, page 24
Purpose
Information, Consultation, Common Decision-making

Area of application
Risk communication, Participation, Risk governance

Aim of the method and context
The World Café method is quite well established and its main aim is that people get in contact with each other, discuss and develop new ideas by the power of networking with a multitude of people. It can be used for strategic dialogue, multi-stakeholder engagement, multi-generational collaboration and cooperative action (www.theworldcafe.com).

Addressees / target group
Almost everyone (public, stakeholders, etc.) who has to say something concerning a certain issue – and in general almost everybody can say something of relevance

Scale of application
Regional or local

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td>~100 € if café is accessible and own organisation takes care of moderation, etc.</td>
<td>100–2,000 €, depending on the framework conditions (see left)</td>
</tr>
<tr>
<td></td>
<td>&gt;1,000 € if a large number of people is involved, catering, external support and rent for a venue is necessary</td>
<td></td>
</tr>
<tr>
<td>Working days:</td>
<td>6 for understanding the method; preparing the equipment; testing with a sample group; inviting participants; carrying out the World Café; documentation of the World Café</td>
<td>2–3 for inviting participants; carrying out the World Café; documentation of the World Café</td>
</tr>
</tbody>
</table>

Necessary skills
Be able to introduce the method and moderate during the course of the method; be able to structure and summarise intermediate and final results; be open minded because the method is a communication and conversation tool where the participants determine the outcome of the process.

Main features of method
“The World Café is a creative process set in a café setting. The event either takes place in an actual café or else the room is set up to resemble one as much as possible: participants are seated around small tables with tablecloths and tea, coffee and other beverages. The café ambiance allows for a more relaxed and open conversation to take place. Often participants are provided with pens and are encouraged to draw and record their conversations on the paper tablecloths to capture free flowing ideas as they emerge” (People and Participation 2011).

Preparation:
- Select topic, formulate questions
- Arrange place for World Café
- Prepare equipment and materials (see link to checklist in “Key references”)
- Identify and invite participants
Implementation:
Source: The World Café (2008):
- Seat four or five people at small Café-style tables or in conversation clusters;
- Set up progressive (usually three) rounds of conversation of approximately 20-30 minutes each;
- Questions or issues that genuinely matter to your life, work or community are engaged while other small groups explore similar questions at nearby tables;
- Encourage both table hosts and members to write, doodle and draw key ideas on their tablecloths or to note key ideas on large index cards or placemats in the centre of the group;
- Upon completing the initial round of conversation, ask one person to remain at the table as the “host” while the others serve as travellers or “ambassadors of meaning.” The travellers carry key ideas, themes and questions into their new conversations;
- Ask the table host to welcome the new guests and briefly share the main ideas, themes and questions of the initial conversation. Encourage guests to link and connect ideas coming from their previous table conversations - listening carefully and building on each other’s contributions;
- By providing opportunities for people to move in several rounds of conversation, ideas, questions, and themes begin to link and connect. At the end of the second round, all of the tables or conversation clusters in the room will be cross-pollinated with insights from prior conversations;
- In the third round of conversation, people can return to their home (original) tables to synthesise their discoveries, or they may continue travelling to new tables, leaving the same or a new host at the table. Sometimes a new question that helps deepen the exploration is posed for the third round of conversation;
- After several rounds of conversation, initiate a period of sharing discoveries and insights in a whole group conversation. It is in these town meeting-style conversations that patterns can be identified, collective knowledge grows, and possibilities for action emerge.

Expected results
“The World Café has been used in many different settings. It is good at generating ideas, sharing knowledge, stimulate innovative thinking, and exploring action in real life situations. The informal and deep conversations that the World Café encourages can lead to improved relationships between participants and between wider groups” (People and Participation, 2011). For a flood risk communication process the specific results of the World Café method most likely will be:
- Collect ideas for a cooperative flood risk management process
- Strengthen cooperation among stakeholders
- Create an atmosphere of trust between the public and the political-administrative authorities
- Detect local knowledge from the public/laymen on past flood events/flood hazard
- Detect desires from the public or other stakeholders
- A World Café can be the beginning of a vital network among the public and/or relevant stakeholders.

Assessment of results
The more vital the follow-up process of a World Café is, the more successful it can be estimated. Follow-up activities can be a dialogue continuation in another format, building of a network. On the other hand the inclusion of the results into the decision-making process can be considered as the main success of the method.

Prerequisites for success:
- Define questions, accept open answers
- Create an informal atmosphere
- Motivate people to stick to the café etiquette
Advantages:
Source: People and Participation (2011)
- Creative process for developing new ideas
- Informal and inclusive
- Has the potential to be cheap and easy to organise

Disadvantages:
Source: People and Participation (2011)
- Requires a clear and relevant question
- Can not be used to make direct decisions

Degree of implementation
Stakeholders, scientists, authority in charge of risk communication process

Example of application of method
In March 2011 the World Café method was applied in the Wupper case study area of Leichlingen in the IMRA project (Figure 18). The objective was to inform about flood risks and learn from citizens’ personal experience / information needs. An additional objective was to get in contact with people in order to create an atmosphere of trust between the Wupperverband and the public. The World Café was announced in 2 newspapers and some people received direct invitations by e-mail. It took place in a local café. Although the participation was quite low (15 participants) the results were quite promising as intensive discussions among participants and with stakeholders arose immediately and because the participants approved the method very much. Concluding, the application of the method was a success. However, in the future better ways have to be found to attract more people.

Figure 18: World Café in Leichlingen, Wupper case study area, Source: TU Dortmund

Key references
General information: http://www.theworldcafe.com/
People and Participation (2011): World Café. Online: http://www.peopleandparticipation.net/display/Methods/World+Cafe
World Café Tool Kit Resources. Online: http://www.theworldcafe.com/pdfs/Tool_Kit_CheckList.pdf
3.5 Common decision-making

This section summarises methods that potentially help to involve stakeholders and the public into decision-making processes as information is not only exchanged bilaterally but a deep-going communication process between flood risk management authorities and other involved parties is possible, especially before decisions on activities are made. Although both methods are to a large degree similar to each other they are presented individually as they have different target groups and thus are connected to different steps in the IMRA 12-step concept.

3.5.1 Stakeholder workshop

To be used for:

- Step 1: Initial self assessment of risk governance performance  
  Chapter 2.1.1, page 14
- Step 2: Define goals and scope of process  
  Chapter 2.1.2, page 15
- Step 4: Identify relevant stakeholders  
  Chapter 2.2.1, page 16
- Step 5: Design and define scope of participation process  
  Chapter 2.2.2, page 17
- Step 6: Create a network of stakeholders  
  Chapter 2.2.3, page 19
- Step 8: Agree on objectives  
  Chapter 2.3.1, page 20
- Step 9: Agree on targeted communication and participation measures  
  Chapter 2.3.2, page 21
- Step 11: Implement communication and participation measures  
  Chapter 2.4.1, page 24
- Step 12: Evaluate the process (in case of a repetition of a first assessment)  
  Chapter 2.5.1, page 24

Purpose

Common Decision-making

Area of application

Risk communication, Emergency planning, Risk reduction

Aim of the method and context

Bringing together all relevant stakeholders in the area of flood risk management and to identify responsibilities and competences in the different fields of flood risk management (information management, non-structural measures/planning, technical measures, disaster management etc.). Bringing together the different stakeholders as such and have an open discussion often is already a success.

Addressees / target group

Local and regional stakeholders that are involved in the flood risk management process

Scale of application

Any scale, for flood risk management especially regional and local scale

Costs and human resources necessary for the implementation

<table>
<thead>
<tr>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs: 100-1,000 € depending on the number of participants, catering, costs for room rent</td>
<td>100-1,000 € depending on the number of participants, catering, costs for room rent</td>
</tr>
<tr>
<td>Working days: 5 for identifying stakeholders, compiling list of contacts, sending invitations, conceptualising workshop, arranging venue, catering etc., carrying out workshop, documentation of workshop</td>
<td>3 for sending invitations, arranging venue, catering etc., carrying out workshop, documentation of workshop</td>
</tr>
</tbody>
</table>
Necessary skills
Moderating skills, experience with moderation/communication techniques such as brainstorming, metaplan, mental map, etc., some background information of participating authorities/stakeholders considered to be helpful.

Main features of method
Use the opportunity to have all relevant stakeholders at hand in order to get to know each other, exchange information, discuss etc., form a network; certain core questions can be discussed and agreements made; appropriate communication techniques may support this.

Preparation:
- Identify stakeholders
- Compile list of contacts
- Send invitations
- Conceptualise workshop (formulate core questions, objectives of workshop)
- Arrange venue, catering, etc.

Implementation:
- Present clearly the objective of the workshop
- Present programme
- Make introductory round
- Balance between presentation and active work of participants
- Summarise results
- Present next steps
- Have someone who takes pictures and notes

Expected results
- Network of stakeholders
- Basis for trust between stakeholders
- Contacts easier in the future
- Give stakeholders a “face”
- Define common views/perceptions

Assessment of results
Prerequisites for success:
- Identify the relevant stakeholders
- Present striking title for the workshop and suggest interesting and/or controversial questions/theses
- Give stakeholders the feeling that their participation will provide them added value
- Thoroughly conceptualise the workshop

Advantages:
- Face to face contacts
- Multi-stakeholder dialogue
- Quick responses to questions
- Quick agreements or quick identification of disagreements possible

Disadvantages:
- Some effort for preparation
- Success depends to a certain degree on willingness of stakeholders
**Degree of implementation**

**Stakeholders**

**Example of application of method**

In the IMRA project two rounds of stakeholder workshops were organised in each case study area.

**First workshops**

Target group of the first workshops was those stakeholders that have a responsibility for the implementation of the flood risk management process (Figure 19). Preliminary project results were presented and discussed. For the Wupper case study, the workshop was attended by 23 participants from regional and local government, fire brigades, Wupperverband, Chamber of Industry and Commerce etc. The workshop had the following objectives:

- feedback on planned survey
- identification of responsibilities
- presentation of self-assessment tool

Further, general questions on public information and participation were discussed:

- How to involve the public effectively in the process of setting up flood risk management plans from the early beginning?
- To what extent has risk perception of individuals played a role for flood risk management of public authorities and how is it possible to make better use of it for future processes?
- How could proper risk awareness not only be achieved, but then kept for a long time?

**Second workshops**

The second round of workshops was used to present the final results to all relevant stakeholders and it served as a final validation of the project’s work in the stakeholders’ view. Moreover, external experts gave additional input on flood risk management related issues.

![Image](image.png)

**Figure 19:** During the stakeholder workshop: identification of responsibilities, Source: TU Dortmund

**Key references**


3.5.2 Public workshop

**To be used for:**
- Step 2: Define goals and scope of process  
  Chapter 2.1.2, page 15
- Step 5: Design and define scope of participation process  
  Chapter 2.2.2, page 17
- Step 7: Identify the public’s view  
  Chapter 2.2.4, page 19
- Step 8: Agree on objectives  
  Chapter 2.3.1, page 20
- Step 9: Agree on targeted communication and participation measures  
  Chapter 2.3.2, page 21
- Step 11: Implement communication and participation measures  
  Chapter 2.4.1, page 24

**Purpose**
Information, Consultation, Common Decision-making

**Area of application**
Risk communication, Risk Governance, Risk reduction

**Aim of the method and context**
Bringing together stakeholders and the public and to inform and discuss flood risk management related issues

**Addressees / target group**
Local public

**Scale of application**
Any scale, for flood risk management especially regional and local scale

**Costs and human resources necessary for the implementation**

<table>
<thead>
<tr>
<th></th>
<th>First time the method is applied</th>
<th>Further applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs:</strong></td>
<td>100-1,000 € depending on the number of participants, catering, costs for room rent</td>
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</tr>
<tr>
<td><strong>Working days:</strong></td>
<td>5 for identifying stakeholders, compiling list of contacts, sending invitations, conceptualising workshop, arranging venue, catering etc., carrying out workshop, documentation of workshop</td>
<td>3 for sending invitations, arranging venue, catering etc., carrying out workshop, documentation of workshop</td>
</tr>
</tbody>
</table>

**Necessary skills**
Moderating skills, experience with moderation/communication techniques such as brain storming, metaplan, mental map, etc.

**Main features of method**
Use the opportunity to have a group of people from public at hand in order to inform, exchange information, discuss etc.; certain core questions can be discussed; appropriate communication techniques may support this.

**Preparation:**
- Prepare invitations and mailing list
- Send invitations
- Conceptualise workshop (formulate core questions, objectives of workshop)
- Arrange venue, catering, etc.
- Prepare a press-release and diffuse it / contact media
Planning and implementing communication and public participation processes in flood risk management

Implementation:
- Present clearly the objective of the workshop
- Present programme
- Make introductory round
- Balance between presentation and active work of participants
- Summarise results
- Present next steps
- Have someone who takes pictures and notes

Expected results
- Create basis for trust between stakeholders and the public
- Give the public the opportunity to present their own view
- Give stakeholders a “face”
- Define common views/perceptions

Assessment of results

Prerequisites for success:
- Identify the relevant stakeholders
- Present striking title for the workshop and suggest interesting and/or controversial questions/theses
- Give stakeholders the feeling that their participation will provide them added value
- Thoroughly conceptualise the workshop

Advantages:
- Identify the relevant group from the public that shall be invited
- Present striking title for the workshop and suggest interesting and/or controversial questions/theses
- Give the public the feeling that their participation will be taken into consideration by the stakeholders / influence the local policies
- Thoroughly conceptualise the workshop

Disadvantages:
- Some effort for preparation
- Success depends to a certain degree on willingness of the participants

Degree of implementation
Stakeholders, the general public

Example of application of method
In the IMRA project an information workshop was organised to present and to discuss the planned survey. The results and suggestions were finally integrated into the final version of the questionnaire.

Key references
Chapter Four

Practical recommendations when planning and implementing a communication and participation process
4 Practical recommendations when planning and implementing a communication and participation process

Practical recommendations when planning and implementing a communication and participation process:

Make sure to:

1. Make a priority list and tackle the most important issues first.

2. Make people feel concerned: they must understand that flood risk is something that really is relevant for them and not just an administrative exercise.

3. Involve people emotionally (positively!), e.g. by involving witnesses. But: do not make people afraid but raise awareness.

4. Choose the right method for the respective target group as people have different social backgrounds and act in different social networks.

5. Provide the right information (not contradictory, selection of most important information, etc.).

6. Be close to people and to key persons: involve interested people into the process and develop strategy in close cooperation to stakeholders and public, focus on interests, not on positions.

7. Support informed judgement about trust: provide background information e.g. about your mandate and mission, expertise, basic values.

8. Provide some striking/prominent examples/people.

9. Be aware that your manpower and money are limited resources; the effectiveness of measures is important.

10. Take into consideration that people have different perceptions before or after a disastrous event; tailor measures respectively (pictures, graphs, personal messages, etc.).

11. Evaluate your communication material and public participation methods: question which material really improves risk perception.

(based on Wiedemann 2011)
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World Café Tool Kit Resources. Online: http://www.theworldcafe.com/pdfs/Tool_Kit_CheckList.pdf
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