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WG F and STAR-FLOOD Objectives, Measures and Prioritisation Workshop: 16.10.2013

Title : Report of the WG F and STAR-FLOOD Workshop on Objectives, Measures and Prioritisation Workshop

Report to WG F and STAR-FLOOD project report (Deliverable D2.1)

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Final Report (Version 4). This is the final version of the Report of the WG F/STAR-FLOOD Workshop on Objectives, Measures and Prioritisation.

The Version 1 draft was submitted to the organising committee, presenters and facilitators for comments, and Version 2 was circulated to WG F for written comment. Version 3 was circulated to delegates and WG F for discussion at Working Group F Meeting No. 15, 1st - 2nd April, where the report was adopted as final, subject to the inclusion of the findings of knowledge needs questionnaire.

WG F and STAR-FLOOD WORKSHOP REPORT:

OBJECTIVES, MEASURES AND PRIORITISATION

WEDNESDAY 16 OCTOBER 2013

10:00 – 18:00

VENUE: MARTIN'S CENTRAL PARK HOTEL, BRUSSELS
BOULEVARD CHARLEMAGNE 80, 1000 BRUSSELS

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PREFACE

This report presents the results and conclusions of a workshop on the topics of Objectives, Measures and Prioritisation that was held in Brussels on 16 October 2013. The workshop was organised by the Working Group on Floods of the Common Implementation Strategy of the Water Framework Directive (WG-F) and the STAR-FLOOD project consortium. The report serves two aims.

First, it is a WG-F document and thereby part of the documentation related to a broader series of workshops intended to promote exchange of knowledge and experiences of relevance for the implementation of the EU Floods Directive (Directive 2007/60/EC) amongst EU Member States.

Second, the report is a deliverable of the EU 7th Framework Project STAR-FLOOD (www.starflood.eu). STAR-FLOOD focuses on Flood Risk Governance. The project investigates strategies for dealing with flood risks in 18 vulnerable urban regions in six European countries: England and Scotland in the UK, Belgium, France, The Netherlands, Poland and Sweden. The project assesses the institutional embedding of these strategies from a combined public administration and legal perspective, with the aim to make European regions more resilient to flood risks.

WG-F and STAR-FLOOD decided to organise a joint workshop after having noticed that both parties seemed to have largely congruent needs:

- WG-F observed that EU Member States were in need of an exchange of knowledge and experiences to facilitate the definition of Objectives, the identification of Measures and their Prioritisation, three obligatory steps in the drafting of Flood Risk Management Plans which should be finalised and publicised by 22 December 2015 (Directive 2007/60/EC, art. 7);
- The STAR-FLOOD project was at the start of the core of the project's empirical research and wanted to receive feedback from policymakers and stakeholders involved in Flood Risk Governance in Europe on two issues in particular: i) STAR-FLOOD's analysis of the flood problem in Europe as it was laid down in the deliverable reports related to Work Package 1 of the project (http://www.starflood.eu/products/deliverables/); ii) STAR-FLOOD's intended approach for researching Flood Risk Governance in Europe as laid down in the deliverable reports of WP2 (http://www.starflood.eu/products/deliverables/).

Therefore, in this report, the reader may find, first, reflections on how EU Member States are implementing the EU Floods Directive, in particular how they are defining Objectives to be included in Flood Risk Management Plans, identifying Measures and prioritising them. The report also provides guidance on how Member States could improve their practices in this regard. Second, the reader may find reflections on how the STAR-FLOOD project intends to improve its research practices in order to maximally contribute to the knowledge needs of policymakers and practitioners, WG-F members in particular.

TABLE OF CONTENTS

1. INTRODUCTION AND BACKGROUND

1.1. The STAR-FLOOD project and WG-F

1.1.1. The STAR-FLOOD project

This report is a deliverable of the EU 7th Framework Project STAR-FLOOD (see www.starflood.eu for an outline of the project). STAR-FLOOD focuses on Flood Risk Governance. The project investigates strategies for dealing with flood risks in 18 vulnerable urban regions in six European countries: England and Scotland in the UK, Belgium, France, The Netherlands, Poland and Sweden. The project is assessing the Flood Risk Governance Arrangements from a combined public administration and legal perspective, with the aim to make European regions more resilient to flood risks.

1.1.2. Working Group F

In December 2006 EU Water Directors established a Working Group on Floods (WG-F), which reports to the Strategic Coordination Group and the Water Directors. Given the strong need for coordination between the WFD and the Floods Directive and the important role of floods in relation to other WFD related activities (such as the strategic steering group on Climate change, drafting groups on exemptions and hydro-morphology as well as WG D on reporting), WG F will coordinate with other activities in the Common Implementation Strategy (CIS). In addition the Floods Directive will use the same regulatory Committee.

One core objective of the group is to provide a platform for dialogue and support of the implementation of the Directive, in particular focussing on the formal requirements of the Floods Directive on developing reporting formats, and the related requirements of the Water Framework Directive (i.e on heavily modified water bodies, exemptions, water service cost recovery, accidental pollution prevention). Moreover, such cooperation will foster more integrated river basin management.

The other core objective is information exchange. As recognised through the fruitful and successful information exchange between Member States in the Exchange circles on Flood forecasting and on Flood mapping, there is a strong need to further promote information exchange to enable Member States to learn from each other's good practices and experiences of Flood Risk Management. Continued information exchange will be vital part of preparing the implementation of the Floods Directive.

1.2. Position of this report

1.2.1. Introduction

This report presents the results and conclusions of a workshop on the topics of Objectives, Measures and Prioritisation that was held in Brussels on 16 October 2013 and organised by the Working Group on Floods of the Common Implementation Strategy of the Water Framework Directive (WG-F) and the STAR-FLOOD project consortium. The report intends to contribute both to the STAR-FLOOD project and to the implementation of the Floods Directive.

1.2.2. Contribution to the STAR-FLOOD project

This report is a deliverable of the EU 7th Framework Project STAR-FLOOD (www.starflood.eu). When the workshop on Objectives, Measures and Prioritisation was held, STAR-FLOOD was at the start of the core of the project's empirical research and wanted to receive feedback from policymakers and stakeholders involved in Flood Risk Governance in Europe on two issues in particular: i) STAR-FLOOD's analysis of the flood problem in Europe as it was laid down in the deliverable reports related to Work Package 1 of the project (http://www.starflood.eu/products/deliverables/); ii) STAR-FLOOD's intended

approach for researching Flood Risk Governance in Europe as laid down in the deliverable reports of WP2 (http://www.starflood.eu/products/deliverables/).

Within STAR-FLOOD, various knowledge co-creation activities have been planned, in which the STAR-FLOOD consortium engages with other flood experts, policymakers, stakeholders and practitioners in various stages of the project and through various means. These include:

1. Two **expert panels** with high level policymakers and representatives of societal organisations (one in 2013 being this workshop, one in 2015);
2. At least one **case study workshop** with actors related to vulnerable urban regions in each of the six STAR-FLOOD consortium countries (2014/2015);
3. **International workshops** with experts, policymakers and stakeholders in which country specific findings from the STAR-FLOOD consortium countries are exchanged with neighbouring countries (2015);
4. **Design-oriented workshops** in which the STAR-FLOOD results are discussed with societal actors to arrive at good practices for Flood Risk Governance as well as guidelines for their applicability in different contexts (2015-2016);
5. At least three meetings with STAR-FLOOD's **Transdisciplinary Advisory Board**, chaired by Prof. Jurian Edelenbos (Erasmus University, Rotterdam), consisting of one scientist and one societal actor from each STAR-FLOOD consortium country (2013/2014/2015);
6. A final conference (2015-2016).

The workshop reported on in the current report is the first of the two expert panels listed under #1. Whereas the current workshop serves the goal of providing feedback on STAR-FLOOD's problem analysis and intended research approach, the second expert panel is expected to inform societal actors about the project's results as well as to translate these results into concrete recommendations for especially policymakers at the national and the EU level.

1.2.3. Contribution to the implementation of the Floods Directive

This report is also a WG-F document and thereby part of the documentation related to a broader series of workshops intended to promote exchange of knowledge and experiences of relevance for the implementation of the EU Floods Directive (Directive 2007/60/EC) amongst EU Member States.

WG-F observed that EU Member States were in need of an exchange of knowledge and experiences to facilitate the definition of Objectives, the identification of Measures and their Prioritisation, three obligatory steps in the drafting of Flood Risk Management Plans which should be finalised and publicised by 22 December 2015 (Directive 2007/60/EC, art. 7). The current report provides an overview of the results of this exchange.

1.2.4. Process towards the workshop

The STAR-FLOOD team and WG-F were brought in touch with one another by Philippe Quevauviller, back then EC project officer of STAR-FLOOD, in December 2013. Following some initial exchanges between the project coordinator and Mark Adamson, chair of WG-F, STAR-FLOOD presented its project at the WG-F meeting in Dublin on 18 April 2013 and proposed to organise its first expert panel in the form of a workshop adjacent to the WG-F meeting in Brussels on 17 October 2013. WG-F reacted positively to this proposal.

At the same time, WG-F itself initiated a workshop on Objectives, Measures and Prioritisation for the reasons stated earlier. Discussions between WG-F and the STAR-FLOOD project brought to light that there was some overlap between the focus of the intended STAR-FLOOD workshop and the WG F workshop and this has led to the decision to jointly organise the workshop.

1.2.5. Organisers of the workshop

The main organisers of the workshop were:

- Ioannis Kavvadas (EC);
- Jorge Rodriguez-Romero (EC);
- Mark Adamson (WG-F, IE);
- Barbro Näslund-Landenmark (WG-F, SE);
- Clemens Neuhold (WG-F, AT);
- Meike Gierk (WG-F, DE);
- Ville Keskisarja (WG-F, FI);
- Roy Richardson (WG-F, UK);
- Dries Hegger (STAR-FLOOD);
- Marlous van Herten (STAR-FLOOD);
- Carel Dieperink (STAR-FLOOD);
- Tom Raadgever (STAR-FLOOD).

1.3. Overview of the workshop

The workshop consisted of the following parts:

- **Questionnaire** – Prior to the workshop, a questionnaire was distributed to all members of WG-F. This questionnaire covered the topics of funding arrangements; objectives; measures; prioritisation; linkages through the process; and implementation of Flood Risk Management Strategies and Measures. Eighteen answers of WG-F members were received, thirteen of which before the start of the workshop. At the start of the workshop, Barbro Näslund-Landenmark provided an overview of the questionnaire responses received at that point;
- **Plenary presentations and discussion** – presentations on the setting of objectives, identification of measures and their prioritisation were given by Clemens Neuhold (Austria), Mark Adamson (Ireland), Roy Richardson (UK), Adrian Schmidt-Breton (ICPR) and Sven Verbeke (Belgium). These were followed by a presentation on the STAR-FLOOD project by Dries Hegger and a plenary discussion;
- **Discussions in parallel sessions** – in three parallel sessions, discussions were held on the setting of objectives, identification of measures and their prioritisation;
- **Plenary feedback** – at the end of the day, the parallel sessions were reported in a closing plenary session, followed by a round up, conclusions and an overview of next steps.

1.4. Outline of the report

Chapter 2 provides a summary of the presentations and discussions during the plenary sessions in the morning part of the workshop. Chapter 3 summarises the discussions in the three parallel sessions. Chapter 4 provides the conclusions of the workshop as well as their implications both for the implementation of the Floods Directive and for the execution of the STAR-FLOOD project. Chapter 5 include the workshop's agenda, the list of participants, the consolidated questionnaire responses and a graphical representation of the questionnaire responses, and also all the slides of the presentations that were held during the workshops as well as the slides of Dries Hegger's presentation on the workshop at the WG-F meeting of October 17 in Brussels.

2. OVERVIEW OF PLENARY SESSIONS

2.1. Introduction and welcome (Mark Adamson)

The workshop on Objectives, Measures and Prioritisation began with an introduction by Mark Adamson, who welcomed the large number of WG F members that joined the workshop and the workshop's co-organisers of the EU-funded STAR-FLOOD project.

MA outlined that STAR-FLOOD had proposed to organise an expert panel with the WG F members in the form of a workshop. The WG F already intended to organise a workshop on Objectives, Measures and Prioritisation, because MSs expressed the need to exchange information and experiences on the definition of Objectives, the identification of Measures and their Prioritisation. These issues came up in previous workshops, e.g., the workshop on Climate Change Adaptation (Maastricht, January 2010). It became apparent that there was overlap between the focus of the intended STAR-FLOOD workshop and the WG F workshop leading to the decision to jointly organise the workshop. Because the WG F meeting could be held in one day this time, the workshop could be planned adjacent to the WG F meeting in Brussels on 17 October 2013.

The objectives of this workshop on Objectives, Measures and Prioritisation are to exchange information and different experiences on:

- different understandings between MSs of how to define objectives, measures and priorities;
- how these different understandings affect the implementation of the Floods Directive;
- which barriers and problems different MSs encountered and what solutions they have applied to overcome them;
- which knowledge gaps exist and what kind of research would help to tackle the issues that Member States face.

Mark Adamson continued by giving an outline of the programme. The first plenary session starts with a presentation by Barbro Näslund-Landenmark on the responses the MSs have sent on the questionnaire that WG F and STAR-FLOOD made. This questionnaire was intended to get a first insight into how the different Member States deal with the definition and measurement of objectives, the selection of measures and their prioritisation. Furthermore, attention will be paid to the knowledge gaps Member States would like to address. Subsequently, some presentations will follow on the practices in different countries. After the lunch break, issues will be further discussed in separate break-out sessions. The break-out groups present a recap of their discussion in the final plenary session, followed by a round-up discussion and next steps.

2.2. Overview of questionnaire responses (Barbro Näslund-Landenmark)

Below are the main observations based on the questionnaire responses. The text has been compiled by Dries Hegger before the workshop and updated after the workshop with additional questionnaire responses. The slides of the presentation given by Barbro Näslund-Landenmark on the questionnaire responses can be found in the appendix.

Responses

Before the workshop, the majority of the questionnaires were received and thirteen responses were included in the presentation. After the workshop, additional responses were received from some countries. Eighteen answers from the following countries / organisations are included in the compilation. Two countries answered with two different questionnaires (Spain, national and regional level) and UK (England and Scotland):

Austria, BE-Flanders, Estonia, Finland, Germany, Greece, ICPR, Ireland, Italy, Netherlands, Sweden, UK-England, UK-Scotland, Spain-Ministry, Spain-regional, Latvia, Slovakia and Poland.

Objectives

The organisations responsible for the setting of objectives include: water management agencies; the Environment Agency; the Office of Public Works and the Civil Contingencies Agency. These are different types of organisations focusing on different parts of the risk chain. This may suggest that Member States have different ideas on which aspects of risk management should be emphasised most.

There are many differences in how objectives are set. A recurring pattern is that the setting of objectives starts at the national level and is then translated to the regional/APSFR/local level through formal and informal consultation processes. Countries differ in the extent to which consultation takes place formally or informally and whether they are or are not linked to the approval of FRMPs.

Almost all countries define objectives in terms of risk reduction/reducing risks to people (16). Other terms are less frequently used:

- Implementation of Flood Risk Management measures (e.g., Implement a flood warning scheme) 8x;
- Achievement of a target level of protection (e.g., Protect community against a 100-year flood) 10x;
- Aiming at risk reduction (e.g., Reduce risk to people) 16x;
- Implementation of a process (e.g., Assess appropriate measure for the community) 8x;
- None of the above / Other 1x.

Most countries seem to define objectives qualitatively. Scotland and The Netherlands explicitly refer to the fact that objectives should be measurable. It is not clear if this means that quantitative indicators will be defined.

Measures

According to the questionnaire responses, there seem to be differences in the relative power of national, regional, APSFR and local authorities for selecting measures. In some cases the formal decision making power lies at the national level (e.g. Scotland), in other cases the national level seems to have a more coordinating role (e.g. Netherlands). Sometimes the selection of measures is an entirely local responsibility (e.g. Sweden) but all measures that have to be built in water need to have a court permit according to the Environmental Act.

Measures are described in different ways in different countries. Terms used include:

- Specific Flood Risk Management measures (e.g. a flood defence wall, a flood storage area, a flood warning scheme, etc., i.e., a defined sub-type of measure with some design detail) 14x;
- Types of Flood Risk Management measure (e.g. flood prevention, flood protection, etc., i.e., without defining what sub-type of measure and without any design detail) 12x;
- Flood Risk Management policies (e.g. ‘Reduce flooding’, or ‘Permit Flooding and Reduce Vulnerability’) 10x;
- Analysis, Research and / or Information Gathering (e.g. Increased hydrometric monitoring to improve information base, further more detailed analysis, etc.) 13X.

Measures are selected also in different ways:

- Economic Analysis (e.g., benefit – cost ratio) 15x;
- Multi-Criteria Analysis 15x;
- Public / Stakeholder Opinion 11x;
- Regional / Social Equity 7x;
- Addressing Specific / Exceptional Risks 10x;
- None of the Above / Other 4x;
- Not filled out ICPR.

All respondents state that a wide range of FRM strategies is implemented in their country:

- Prevention 18x;
- Protection 17x;
- Preparedness 16x;
- Emergency Response 16x;
- Recovery 13x.

There may be differences, though, in how respondents define each of these five strategies as well as in the degree to which the strategies have been institutionalised in a certain Member State. Most countries expect all types of FRM strategies to be included in the Flood Risk Management Plans, with the exception of Poland, Latvia and the Slovak Republic, who do not expect “recovery” to be included. Some countries indicate that new types of strategies have been introduced by them or received much more priority in their country in the last decade, including “non-structural” measures’, preparedness, emergency response, recovery and disaster risk reduction. Sweden also includes lessons learned in the strategy steps.

Prioritisation

Also with regard to how prioritisation is done, there are many differences between the Member States. A recurring pattern, though, is that the priorities are set at the national and regional level and are then translated to the regional/APSFR/local level through formal and informal consultation processes. There are differences in the extent to which consultation takes place formally or informally and whether they are or are not linked to the approval of FRMPs. Also when it comes to prioritisation we see multi-level dynamics, with differences in how the levels interplay in different countries.

All respondents, except one, indicate that the processes of setting objectives, defining measures and defining priorities are linked. With some risk of over simplification, overall approaches between MSs can be said to vary significantly, but that within a MS the approaches to setting objectives, and then defining, selecting and then prioritising measures have similarities and consistencies (e.g., in terms of interpretation, level of decision-making, etc.)

Implementation

Based on the questionnaire responses, the following barriers to the implementation of FRM strategies have been identified:

- Funding 14;
- Fragmented responsibilities 9;
- Public / political expectations views 9;

- Procedures 2;
- Knowledge 4;
- Conflicts of interests/opposition 5;
- Uncertainties 2;
- Skills 1;
- Timescales 1;
- Environmental constraints 1;
- Staff resources 1;
- Administrative procedures 1;
- Legislation 1;

With regard to funding, which seems to be the main barrier, Mark Adamson posed the question whether there is a particular barrier to EU funding. This question has been further explored in the break-out groups.

Knowledge Needs
In the questionnaires, the following knowledge needs were mentioned:

- Consequences of climate change **3**
- Demographic developments **1**
- Good practices **1**
- Risk assessment and awareness **1**
- Valuation of water resources **1**
- Social sciences **2**
- Effectiveness of measures and how to monetize these **2**
- Better communication **1**
- Land use planning **2**
- Legislation **1**
- Experience **2**
- Natural phenomena **2**

2.3. Plenary session on setting of Objectives, defining Measures and prioritising them

2.3.1. Austria (Clemens Neuhold – Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management)

Decision Process and Timeline

Austria is a Federal State consisting of 9 federal provinces. In part the legal frameworks related to the implementation of the FD are defined on the federal level (e.g. Water Law) and in other part on the level of federal provinces (spatial planning, emergency planning) Therefore, Austria has agreed upon a three-step procedure for the implementation of the FD and also the WFD. First, the setting of objectives, determining a catalogue of measures and a method for prioritisation take place at the Federal level under permanent consultation and collaboration with the federal provinces, resulting in a so-called "Federal Blueprint" (March 2014). Secondly, provincial editing on APSFR level (until Sept. 2014) takes place. Public information and consultation starts in Dec. 2014 and ends in Jul. 2015. Following the information and consultation process the FRMP will be finalised and published (Dec. 2015) on federal level and reported to the EC in March 2016.

Austria intensively links the different processes, with the ICPDR (Danube River), ICPR (Rhine River) and the ICPER (Elbe River) to obtain harmonised results with no contradictions amongst the FRMP on Level A, federal level, federal provinces level and APSFR level, respectively. Decisions in the entire process are agreed upon in the frame of a working committee (approx. 70 representatives at federal level and at federal provinces level) based on discussion workshops and on the results of five pilot projects. The pilot projects have been conducted to analyse potential problems occurring in the frame of the implementation of the FD on APSFR level. Different areas are selected for this to cover different APSFR characteristics as well as measures to be potentially applied: rural areas, urban areas, areas with intense industrial land use and energy supply.

Working Progress – Objectives, Measures and Prioritisation

Currently, the 4 objectives have been set and 22 types of measures have been defined to contribute to flood risk reduction. With regard to prioritisation, there is still a draft under discussion which is expected to be finalised in December 2013. The objectives are defined as (1) avoiding new risks, (2) reducing existing risks, (3) strengthening resilience and (4) raising awareness. Austria linked the 22 measures to the 4 objectives and to 5 fields of action referring to the risk cycle (i.e. prevention, protection, awareness, preparedness and recovery).

Instead of prioritising distinct measures, Austria will prioritise types of measures to also cover potentially applicable measures for the respective APSFR, not only measures which are on their way of implementation. The measures will be prioritised on three different levels, i.e. the federal, provincial and APSFR level. Referring to the Guidance Document for Reporting under the FD (Guidance Document No. 29) there are three possible ways to prioritise measures (1) drafting a timetable for implementation, (2) deriving a category of priority, or providing a (3) summary text. Austria chose to derive categories of priority based on the status of implementation and the preview of what status will be achieved in the current implementation cycle as well as in future implementation cycles The other two options of prioritisation are less suitable, since a timetable of implementation may create public pressure under financial constraints and a summary text is hardly comparable for all 391 APSFRs defined and inherent variety of characteristics.

Next Steps
The way to obtain priorities needs to be discussed and agreed upon until Dec. 2013. There are still questions about how to sum up gathered information. Nevertheless, the current approach looks very promising. On October 23rd 2013, there will be a next working committee meeting to discuss the method and agree upon further steps. On December 20nd 2013 first information on the Federal blueprint of the FRMP will be provided for the federal provinces to enable the start of provincial editing on APSFR level. The federal blueprint will then be finalised in March 2014.

Questions
One of the WG F members asked whether Austria also takes into account the cost-benefit ratio in selecting measures. Clemens Neuhold responded that Austria chose a general approach by accounting for types of measures, and, therefore, not distinct measures. Nevertheless, based on the information gathered in the frame of prioritisation of measures a general cost effectiveness estimation can be obtained.

Another question was whether Austria includes river retention measures to reduce risk. Clemens Neuhold stated that Austria does have a national strategy for new retention areas.

2.3.2. Ireland (Mark Adamson – Office of Public Works)

Historic Approach
Ireland's approach to setting objectives, selecting measures and prioritising was historically focused on economic impacts, with a limited evaluation of social impacts. With regard to the environment, the focus was on avoiding damage and minimising negative impacts through EIS instead of on win-win situations or potential environmental benefits of flood risk measures.

Drivers For a New Approach
It was increasingly recognised that there is a need for a more inclusive approach that addresses risks to people, environment, cultural heritage and the economy. The National Policy Review of 2004 advocated this approach. The CFRAM pilot studies followed to test how to redefine how we measure risks and benefits. The outcomes of the pilot studies were positive, and subsequently the CFRAM programme was rolled out nationally. Another driver for a different approach has been the FD. The FD is driving us to have a broad-based flood risk management, which links all the different processes. However, some issues remain, such as difficulties in monetising certain risks and benefits (e.g. environmental).

New Approach – Objectives, Measures and Prioritisation
Ireland defined a series of objectives and sub-objectives including economic (4), social (5) and environmental and cultural (6) objectives. These objectives represent potential benefits instead of focusing on avoiding damage solely. The objectives are used for the selection of measures and also for prioritisation. Because the objectives are not all of equal importance, Ireland assigned weightings to the objectives. These weightings reflect the importance of the objective in terms of its societal value. Stakeholder and public consultation at the national level are intended to validate the weightings. Ireland identified nationally consistent indicators for each objective to make them measurable, where possible (e.g. the indicator used to measure the Risk of people, is 'the number of residential properties at risk'). For each objective or sub-objective there are minimum requirements (i.e. do not make matters worse) and aspirational targets defined.

The measures constitute the specific actions to be taken to reach the objectives. A Multi Criteria Assessment / Appraisal is used to select the measures for the APSFR / UoM and to score the performance of the measures or schemes against the minimum requirements and

aspirational targets. The performance is measured with a score between 0 and 5, with possible negative scores when the minimum requirements have not been reached. A detailed guidance on scoring is being prepared to help ensure national consistency. For each sub-objective, a MCA score is calculated as a function of the Performance score, Global weighting and Local weighting. The highest score reflects the highest benefit or the highest risk reduction. Costs are relevant as well (the benefit / cost ratio has to be greater than 1). In addition, other factors such as professional judgement and stakeholder views are taken into account.

With regard to prioritisation, FRM in Ireland is set and funded nationally, but applied and assessed locally. However, this is done in a nationally consistent way.

Remaining Issues
Ireland currently deals with questions like: How to manage information and reactions in communities where measures are designated as 'low' priority? After all, the budgets cannot fund all measures at the moment so choices have to be made. Another issue is the how to improve the measurement of benefits or the reduction in risk for certain sectors, e.g., the flood impacts of pollution and damage to cultural heritage. These aspects can be hard to quantify.

Questions
A question coming from one of the WG F participants was how many people there are involved. Mark Adamson explained that there is a small central team managing the process and working in partnership with about 30 local authorities across the country, with around 300 ASPFRs involved. Someone else asked whether Ireland also relates the prioritisation procedure to the weighting of objectives. Mark Adamson responded that this is correct, the scores given which determine the relevance or benefit are indeed used to determine priority. The last question was what is included in the benefits when determining the cost/benefit ratio. Mark Adamson clarified that mainly the direct economic benefits are included in the economic analysis as other benefits (related to environment, culture, etc.) are difficult to monetise, however, all benefits are considered relative to cost using the outcomes of the MCA through a quantitative, but non-monetised, net benefit-cost ratio.

2.3.3. UK, Scotland (Roy Richardson – Scottish Environment Protection Agency)

Flood Risk Management In Scotland
Roy Richardson stated that Scotland has learnt a lot from the pilot studies in Ireland, and therefore, FRM in Scotland bears much resemblance to FRM in Ireland. Until recently, FRM in Scotland was very reactive, with a heavy focus on economic benefits and a limited set of measures and means. With the Flood Risk Management Act, a plan-led and catchment based approach was introduced. In 2011, a National Flood Risk Assessment was carried out, which identified the main sources and impacts of flooding in Scotland. Between 2012 and 2016 Flood Risk Management Strategies and Flood Risk Management Plans will be further elaborated within 14 FRM districts, making use of national and local advisory groups and of local partnerships between SEPA, local authorities and Scottish Water.

Objectives, Measures And Prioritisation
Scotland has a 5-step procedure for setting objectives, selecting measures and prioritisation. First, the problem is defined through mapping and assessments. Secondly, objectives are set in the order of i) avoiding risks; ii) protection and iii) preparation. Third, measures are identified, taking into account measures that are practical and feasible. Fourth, an appraisal of the measures is carried out based on costs and benefits. Fifth, the measures are prioritised and agreements with funding bodies are made. In this procedure, a clear

distinction between objectives and measures is made. There is a separate responsibility between politics and APFRSs.

The overall goal is to achieve Sustainable FRM. Guiding in this, is the avoidance of risk, protection to reduce the likelihood of flooding, and if this is not possible preparation to reduce the impacts of flooding and accepting (a part of) the flood risk. The objectives should be defined according to SMART standards (specific, measurable, attainable, relevant, time-bound).

In the selection of measures, for each FRM area economic, social and environmental criteria are defined. Scotland does not calculate an aggregate score, they present the information instead and let the decision-makers decide.

For prioritisation, a benefit / cost ratio is calculated based on economic information. In addition, the investment profile is plotted across a time- line against the three cycles of the FRMPs. The associated risk reduction profile and the investment profile are compared and discussed with stakeholders. A balance is sought in which both the level of risk and the funding are deemed acceptable.

Remaining Issues
Scotland wonders how other MSs deal with issues such as the degree to which objectives are measurable, to what extent you can and should take account of non-monetary impacts, and which links there are between funding and delivering plans.

Questions
Roy Richardson was asked what Scotland does with aspects which are not measurable. Are they listed? Roy Richardson replied that in Scotland, the decision is left up to the decision-makers so all the information is presented to them. Scotland introduced space in the decision-making to describe non-measurable impacts and benefits in a qualitative way, but it is still difficult. Another question posed was whether there is scope for linking with climate change adaptation plans. Mark Adamson responded to this question by stating that Ireland adopted a Climate Change Adaptation Plan and sectoral adaptation plans that will point to the CFRAM programme. So there are separate documents, but the climate change adaptation plans refer to the CFRAM programme.

One of the WG F members wondered whether the lack of an aggregated score in Scotland led to any problems (e.g. subjective decisions) or inconsistencies between different districts (lack of comparability). Roy Richardson emphasised that it is about recognising local needs and priorities. Therefore, they decided not to use an aggregate score, because then economic criteria will guide the decision and the wider criteria will be a les strong driver. Providing all the information is more complete in that sense. Scotland made a guidance document on how to interpret the information.

2.3.4. ICPR (Adrian Schmidt-Breton – ICPR)

Flood Risk Management Rhine
The ICPR takes several aspects into account when drafting the FRMP for the Rhine, including the ICPR Action Plan on Floods, the FD requirements and products, transnational measures, national and regional FRMP objectives and measures, and a tool to assess the effectiveness of measures. In a later stage, the ICPR also wants to include climate change adaptation.

Action Plan On Floods
In 1998, after the (nearly) floods of 1993 and 1995, the ICPR established the Action Plan on Floods. It aims to reduce flood level and flood damage risks, and to increase flood awareness and improve flood forecasting systems. Since the implementation of the action plan, 22 out of the 76 selected measures are realised. The Action Plan on Floods was intended to last until 2020, but the FD is now also an important guideline. The ICPR is currently investigating how these two documents can be coordinated. Possibly, the measures of the action plan could be part of the FRMPs. In addition, the objectives stated in the Action Plan on Floods could serve as long term objectives, lasting through multiple FRMP cycles.

FRMP Rhine
The preparation for the first FRMP of the Rhine is a living process which began in 2010. The Working group H (Flood) is developing the plan. At first, only objectives were discussed, followed by discussions on measures and how they fit to objectives. Some measures are of high transnational importance, others less. In addition, the APF has to be assessed, to see what we can take from it for in the FRMP. A draft of the FRMP is expected by the end of 2014, followed by a consultation procedure and the finalisation of the FRMP by the end of 2015.

The objectives are defined at 3 different levels: the strategic (e.g. the principles of subsidiarity and solidarity) and operational (e.g. avoiding new risks) level, and the level where the objectives and measures are related to each other. There are 4 protection objectives, i.e. human life, economic activity, environment and cultural heritage. The ICPR has a list of different types of measures. Measures are selected based on their trans-boundary effects (where there is a need for coordination). The ICPR aims to stimulate the exchange of information on national and regional plans, looking at synergies and avoiding negative effects. Currently, new measures are considered, such as a crisis exercise.

GIS-Instrument
The ICPR is developing a GIS-instrument for assessing flood risks and the effect of measures. It is expected to be ready by the end of 2014. More specifically, the ICPR aims to use the GIS-instrument for an assessment of the risk reduction and evolution from 1995 up to now, and for a priority setting of different measures and assessment of the FRMP. This assessment will be repeated every 6 years for each new FRMP. The 4 protection objectives link to the IPCC, Birds and Habitat Directives, UNESCO (Cultural heritage), etc. These different fields will be integrated in the GIS instrument as well as linked to the measures. The GIS tool is usable for other transboundary river basins as well, because it is adaptable.

Climate Change Adaptation
The WG-H is currently discussing the development of an ICPR Climate Change Adaptation Strategy. Such a strategy could be implemented in the FRMPs, but probably not yet in the first FRMP but in the second one.

Remaining Issues
Adrian Schmidt-Breton asked the WG F members if there are similar approaches in other international river basins as the ones that he presented. A special concern of the ICPR is how to fit together different measures and objectives from different decision levels (especially the river basin versus the States / Regions / Municipalities). The ICPR finds it difficult to coordinate and integrate FRMPs from different countries. Adrian Schmidt-Breton wondered which difficulties other WG F members encountered and how they solved these.

Questions
A question posed by the audience was whether the ICPR was sure that they can fulfil the quantitative objective of a reduction of 60 cm in flood levels by 2020. Adrian Schmidt-Breton answered that they were thinking about integrating the Action Plan on Floods on longer term

objectives, with cycles of 6 years. The 60 cm objective is a long term objective and is aimed at extreme floods. For certain shapes of floods we can achieve this, but not for all floods. A possibility is to think about other retention areas that could contribute to achieving the goal.

2.3.5. Belgium (Sven Verbeke – Vlaamse Milieumaatschappij)

Sven Verbeke started his presentation with some figures of the flood hazard area in Flanders (Belgium), the number of people that live there, and the paid out damage. These are significant amounts for such a small region as Flanders. Flanders carried out two studies to support its FRM, i.e. the FRM project and the study on Environmental water quantity objectives for surface water bodies.

FRM Project

The FRM project included a model based risk analysis (in terms of probability times consequences), the assessment of policy options, and the definition of criteria for objectives.
Evaluation and prioritisation of the policy options are based on two criteria: the net present value (benefits and costs) and social benefits (B(P@R)). One of the results shown by Sven Verbeke is a graph against which these two criteria are plotted. Each dot in the graph represents a (combination of) measure(s), including protection, prevention and preparedness measures that reduce the consequences of the flood. The green line is the break even line. Three policy options are explored: the basic policy, which looks at the highest net present value and a positive benefit for people at risk , the intermediate policy, which maximises the favour for people at risk with a positive net present value, and the maximal policy, which also maximises the favour for people at risk but regardless the net present value (who can turn negative). .

For the definition of criteria for objectives, consultation and participation are used. Almost 100% of the consultation groups support the idea that a transition to a multi-layer water safety (3 P's and appropriate responsibilities) is necessary, with a majority leaning towards the intermediate policy. Three criteria are deemed applicable for defining objectives, i.e. the net present value, P@R, and the risk numbers in relation to GNP. This information was used for the second study, which derived environmental water quantity objectives for surface water bodies.

Study Environmental Water Quantity Objectives For Surface Water Bodies

This study was aimed at elaborating objectives specifically aimed at managing floods and water shortages. After an inventory was made (incl. water managers, environment agencies, drinking water services, spatial planning, agriculture, and cultural heritage), a risk matrix was formatted on the regional scale and worked out in 3 test cases on a local scale. The risk matrix considers 4 aspects, namely water management and safety, shipping, ecology, and water supply. For each of these aspects, a risk matrix was constructed specifying which risks were acceptable (and thus required no measures), which risks needed a cost-benefit analysis on which measures could be applied, and inacceptable risks for which measures must be taken regardless of the costs and benefits. As an example for the aspect of water management and safety, the risk matrix for people at risk and the damage in relation to the GNP is shown.

Implementation Process

The two studies are used as support for the policy, the definition of objectives, selection of measures and prioritisation. In addition, a participation process is used for support. This includes workshops and taskforces that translate objectives and criteria that come from the supporting studies. Two tracks will be followed after December 2013, i.e. Legislation (but the timing is uncertain due to the upcoming elections) and Plans, notably the RBMP and FRMP which should be submitted to the EU by the end of 2015 and the reporting to the EU which will take place in 2016.

There are some differences in the implementation process between the level of the River basin / Flanders and the sub-catchments. The degree of detail will be general at the level of Flanders but can be elaborated specifically for different sub-catchments. On the regional scale the 4 aspects of the objectives are equally valued, but a differentiation can be made in the sub-catchment. The regional principles that these objectives should adhere to are that they should be measurable, realistic, ambitious and vigorous, and acceptable.

Remaining Issues

After quoting the provisional flood risk management objective, Sven Verbeke concluded that the studies provided useful criteria and an applicable risk matrix for deriving environmental flood risk objectives. However, objectives can and must be translated to a more policy based approach and can be embedded in WFD legislation. Sven Verbeke wondered how other MSs quantify objectives or whether they use a qualitative approach. In the case a qualitative approach is used, a question is how the evolution of the flood risk will be judged (i.e. is it possible to compare qualitative data during the years?).

Questions

One of the WG F members asked whether the risk matrix is already fully established. Sven Verbeke stated that the results of the risk analysis are delivered and that they tried to define criteria, but that the risk matrix is still provisional and no hard figures are available yet. The risk matrix will be presented and discussed, final results are expected by the end of 2013. Another question was how the risk analysis of the risk matrix is related to the preliminary flood risk assessment required by the FD. Sven Verbeke clarified that the whole of Flanders is seen as a risk prone area A selection of rivers is made (watercourses with a potential significant flood risk), because it is not meaningful to make hydraulic models for each and every watercourse.

2.3.6. STAR-FLOOD (Dries Hegger – Utrecht University, the Netherlands)

Dries Hegger presented the headlines of the STAR-FLOOD research project. The STAR-FLOOD film that is part of Work Package 7 (knowledge dissemination) was shown[1], which gives in a nutshell a first impression of the research project. Dries Hegger explained that the STAR-FLOOD project focuses on flood risk policies in Europe. The project engages with current policy debates on a diversification of Flood Risk Management Strategies (FRMSs) that are embedded in different Flood Risk Governance Arrangements (FRGAs). STAR-FLOOD thus focuses on governance instead of technologies. It is assumed that Flood Risk Management will make regions at risk of flooding more resilient if several forms of FRMSs are combined.

Research Approach

The research approach of the STAR-FLOOD project is to integrate public administration and legal expertise into one common analytical framework: the Policy Arrangement Approach. The framework includes factors pertaining to the content of policies (the discourses) and their institutional organisation (the actors, rules of the game and resources). The consortium working on this project consists of universities and knowledge dissemination organisations (i.e. Grontmij and Cépri1) in the six different countries. In each country, an extensive empirical analysis will be conducted both at the national level (the so-called National Flood Policies and Regulations domain) and at the level of three different case studies. these case studies are urban agglomerations that are prone to flooding.

1 The film can be viewed here: http://www.youtube.com/watch?v=XuRVQmxxvVQ

Research Objective
The aim of the STAR-FLOOD project is good practices regarding flood risk policies, including guidelines about the applicability of these good practices in different contexts. With this knowledge it is aimed to help stakeholders to improve the implementation of FRMSs. In addition, the knowledge generated by the STAR-FLOOD project should be useful to more countries than the six STAR-FLOOD countries alone.

Points For Discussion
Dries Hegger asked the WG F members what relevant similarities and differences are between MSs in terms of the structure and culture of the flood policy domain and what the significance is of this for the implementation of FRM strategies and the implementation of the Floods Directive. Furthermore, Dries Hegger wonders how universal the identified barriers for the implementation of FRM strategies are and how you can deal with these barriers. Additionally, he asked how the science-policy face should be improved, e.g. in relation to how to proceed in the face of uncertainty. Lastly, Dries Hegger asked what could be the contribution of social and legal science to the issues that the MSs struggle with, and what the WG F members would like to get from STAR-FLOOD.

2.3.7. Reaction by the EC (Jorge Rodriguez-Romero)
Jorge Rodriquez-Romero commented by reflecting on the reasons for having a Directive on Floods. Three crucial elements which should be taken into account in order for FRM to be successful were emphasised:

- The first crucial element is taking into account trans-boundary issues in FRM. The Floods Directive does include trans-boundary issues. Taking a trans-boundary component into account is a crucial step in the successful implementation of the Floods Directive;
- Second, planning at a proper scale is crucial. This scale should be the river basin, which means that different organisations at different levels have to cooperate. This is also of importance for dealing with trans-boundary issues. The right scale is also important in prioritisation. A too local view has the danger that the wrong decisions are taken;
- Third, SMART objectives are important. Objectives should be measurable, i.e. by measuring the success in terms of protection, whether it meets certain targets, reduces risks, etc. In addition, the objectives should be understandable. Public participation is of importance in this. It should be tried to explain to citizens why so much money is invested in FRM measures and it should be made clear which level of protection is aimed at.
- Fourth, it is imperative to go beyond the traditional approach of technical structural measures, which often can increase the flood risk downstream. Jorge Rodriquez-Romero would like to put emphasis on measures that go beyond infrastructure. For example, bringing in elements of emergency response and recovery. This also avoids transferring the problem downstream.
- Fifth, it was emphasised that strong legislation is in place. One of the obligations is to consider the best environmental option. It is important to consider alternatives in FRM.
- Sixth, prioritisation is necessary. This always has a political component. However, judgement has to be made based on sound information on the costs and benefits of different options, primarily on benefits. Also benefits that go beyond economic benefits (such as environmental, social, and cultural benefits). These kinds of benefits are hard to monetise, but ways should be found to present information in such a way that a decision can be made and the choices are transparent for the public.

Jorge Rodriquez-Romero concluded that he is happy to see the large number of WG F members present at this workshop (around 50). He closed his speech by asking to send the questionnaire results before October 25th 2013.

2.4. Recap of the break-out group sessions

After the lunch break, the WG F members engaged in more detailed discussions in three parallel break-out groups during two sessions. After that, a plenary session followed in which the reporters of each break-out group summarised the results of the discussions. For a more detailed account of the results of the break-out group sessions, see chapter 3.

2.4.1. Results break-out group 1 - (Facilitators: Mark Adamson, Clemens Neuhold – Reporters: Dries Hegger, Marlous van Herten)

Objectives

The discussion of break-out group 1 was summarised by Dries Hegger. With regard to the setting of objectives, it appeared that there exist many differences in the way this is done. First of all, there are differences in the level of abstraction at which they are defined (e.g. at a high level in Austria, Scotland, Italy, while in Ireland they are very specific). Second, there are different foci in determining objectives, e.g. in the Netherlands the process for setting protection levels should be followed while in Ireland aspirational targets for risk reduction are set. Third, there are differences in how the WFD and FD objectives are linked. Lastly, some have made a distinction between objectives at the strategic and operational level.

Measures

Also with regard to the selection of measures, differences between the MSs can be found. First, there are differences in the level of detail with which measures are defined and "prescribed", e.g. in Ireland there are very specific guidelines, while in Germany and Austria a catalogue of potential measures exists. Second, the extent to which (hydrological) modelling is used in the selection of measures differs. E.g. Austria used modelling for the preliminary flood risk assessment and, of course, the development of flood hazard maps and flood risk maps, but will not obligatory use it for the assessment of risk reduction of distinct measures in the current cycle, by means of scenario analyses to derive priorities. For evaluation purposes, in the frame of the next cycle, models will, again, be applied to analyse the effects of measures set by comparing flood hazard maps and flood risk maps of cycle 1 and 2. Third, most MSs stated that the decision of what to implement is often made at the local level or with a high degree of local level consultation, but England has a "Green book" at the national level to which local authorities have to stick.

The contribution of the FD has been discussed as well. For example, it was concluded that current debates on new strategies are partly caused by the FD. But also other policy developments have an influence, e.g. the harmonisation of water management (federal law) and spatial planning (9 laws on the level of federal provinces) in Austria. The MSs in break-out Group 1 expressed some concern that Directives such as the FD can also have an adverse effect sometimes. Especially when it comes to trans-boundary FRM, the ambitions seemed lower because of a fear for repercussions by the EC when the targets are not met.

Prioritisation

In the prioritisation procedures of different MSs, several tools are used, e.g. MCA, a risk matrix and a GIS instrument which the ICPR is currently developing to see the effects of measures for damage reduction. England brought forward that prioritisation is sometimes a political process, in which some interests should be served to some extent. Several MSs use costs and benefits to come to a prioritisation. In addition, in several MSs trans-boundary issues are taken into account (e.g.in the Maaswerken in the Netherlands; in the border river in Ireland; and the ICPR is there because it benefits all).

Knowledge Needs

The MSs in break-out group 1 expressed a need to get more knowledge on the following issues:

- Show the benefits of FRM measures e.g. in monetary terms, or in co-benefits for other domains because of multi-actor challenges. Especially land use policy could be better connected with FRM.
- Development trends are hard to control/regulate in a democratic society. So, how should we deal with this?
- Necessary changes in legal systems;
- Show who bears the costs and who reaps the benefits of developments e.g. hydropower developments.

2.4.2. Results break-out group 2 - (Facilitators: Carel Dieperink, Ville Keskisarja – Reporter: Darren Lumbroso)

Objectives
Darren Lumbroso summarised the discussion held in break-out group 2. When discussing the objectives, it appeared that in most MSs the objectives are set at the national level. Exceptions are Belgium, where the objectives are set at the federal level, and Germany, where the legislation is nationally defined but carried out on the federal/regional level. Some MSs set objectives that are measurable, but not time-bound (e.g. Belgium). The EC stated that it is advisable to have a timeframe for objectives and measures included in the FRMPs.

The MSs confirmed that there will be different objectives at different scales (e.g. on the national versus the APSFR level). When discussing what will be the significance of the FRMP objectives in the future, e.g. how much they will influence the selection of measures, Germany responded that the FRMPs are not legally binding, and third parties cannot go to a law court to have measures implemented. Local Authorities need to take them into account when they take decisions.

Measures
When discussing the measures, the MSs reflected upon the question whether a shift in FRM strategies can be noted. Flanders (Belgium) stated that there has not really been a shift after the FD, but it was shown that a wider range of measures are taken into account indeed. However, England argued that most of the financial resources are still spent on structural prevention.

2.4.3. Results break-out group 3 - (Facilitators: Meike Gierk, Roy Richardson – Reporter: Tom Raadgever)

Objectives
Tom Raadgever presented the results of the third break-out group. The third break-out group had a discussion on what is an objective and what is a measure. Who defines the objectives differs per country, e.g. England sets the objectives on a local level, because there is more knowledge on the feasibility. Croatia did the process backwards, first selecting the measures and then setting the objectives.

All MSs agreed that the objectives of the WFD and the FD should be coordinated, but there are different ways to do this. For example, coordination can take place on the level of setting objectives or on the level of the appraisal of measures. The MSs agree that it is helpful when the implementation of the WFD and the FD is done by the same competent authority. Currently, a document about the linkages between the WFD and the FD is in preparation (it is planned for the end of 2013), which can be used as a background paper.

Between MSs, there are different approaches for making objectives measurable. For example, Greece shows the effects of measures on risk maps and hazard maps, while Ireland uses indicators and GIS.

There was consensus on the need for main trans-boundary objectives (e.g. reduce flood risk), which the MSs make more specific. It should be ensured that the risks downstream are not increased by actions of upstream MSs.

Measures
It appeared that several MSs attempt to broaden the types of measures they use. There is a subtle shift towards more preparedness, emergency response and recovery. MSs differ in how far they are with this shift. Related to this, the use of redundancy was discussed. It was argued that combining measures is a good thing, but that redundancy is not always affordable. Furthermore, it is necessary to take into account multiple benefits in the selection of measures (e.g. WFD objectives), but how to do this is still under development.

In selecting the measures, the MSs recognised that tools such as MCA can aid the decision-making process, but that it cannot fully determine the selection because there is also always a political process in the end.

Prioritisation
Prioritisation is mainly done at the national level and subsequently translated to the regional, APSFR or local level. Considerations that play a role in the prioritisation of measures include whether the measure achieves the objectives, whether there is budget available, and the planning cycle (some measures might be implemented in a later stage). A concern expressed was how to deal with actors and organisations that have different responsibilities. The MSs agreed that it is crucial to meet each other in an early stage and discuss matters.

Implementation
Similarly, one can deal with different public perspectives by involving stakeholders in an early stage, in the setting of objectives and maybe the selection of measures. They are not involved in prioritisation because they cannot influence these decisions. Information is important in this stage though. Another question was how to bring in other types of funding (e.g. private funding). England tries to stimulate partnership funding.

Knowledge Needs
The following knowledge needs have been expressed by the third break-out group:

- How to apply monetary value to wider societal impacts of measures?
- Measuring progress in objectives requires good data infrastructure.
- A good decision support tool.

Questions
The WG-F members asked whether there would be an opportunity to look at the slides of the presentations to see if everything is correct, and react on them. The WG-F members were told that the slides will be circulated to the delegates for comments. The final responses on the questionnaire are awaited and then the report on this workshop will be finalised. Carel Dieperink (STAR-FLOOD) also asked the WG F members if they could react on the knowledge needs as well. STAR-FLOOD will send a list with knowledge needs that were mentioned in the questionnaire and during the workshop. The knowledge needs will be organised into categories. The WG F members are asked to rank these categories according to their level of importance.

2.5. Results of the questionnaire on knowledge needs, distributed at the 15th WG F meeting (Budapest)

After the workshop in Brussels, the authors categorised all knowledge needs that had been raised. This has resulted in a brief questionnaire, containing 22 categories, which has been included in annex VI to this report. Together with the STAR-FLOOD consortium partners, the authors assessed to what extent each category is being addressed within the project. A distinction was made between:

- **Knowledge needs that are currently being addressed within STAR-FLOOD** (e.g. determining the possibilities of land use planning and opportunities for linking FRM with land use planning policy and other policy domains; determining which changes in legal systems are necessary / desirable; the level of risk awareness and how to increase risk awareness at the societal and individual level);
- **Knowledge needs that fall outside the scope of STAR-FLOOD** because STAR-FLOOD is a combined social scientific-legal research project while the knowledge need asks for predominantly natural science research (e.g. consequences of climate change; hydrological changes);
- **Knowledge needs that could be addressed within STAR-FLOOD or could be emphasised more than is currently the case** (e.g. future urban development/demographic developments; how to valuate non-economic risks and benefits; how to make objectives measurable and time-bound).

As a next step, all Member States were asked to indicate which knowledge needs they deemed to be the most pressing ones. They did so by providing the authors with a “top 5” of the knowledge needs. The authors subsequently counted how often a knowledge need was ranked first, second etc. leading to the following prioritisation:

1. Determining the possibilities of land use planning and opportunities for linking FRM with land use planning policy and other policy domains (seven countries ranked this first);
2. How to deal with different or conflicting needs and cost-benefit distributions of FRM measures of the involved actors (six countries ranked this second);
3. Communication of policy-makers to the public: how to deal with different perspectives on objectives and misconceptions about the effectiveness of measures (six countries ranked this third)
4. How to valuate non-economic risks and benefits (four countries ranked this fourth)
5. Communication of policy-makers to the public: how to deal with different perspectives on objectives and misconceptions about the effectiveness of measures (three countries ranked this fifth)

The knowledge need that received the highest priority by the Member States is already being addressed within the STAR-FLOOD project so no changes in the execution of the project are needed. The other four knowledge needs all fall under the category of knowledge needs that could be addressed. The fact that the WG F members find these knowledge needs important is a valid reason for the STAR-FLOOD consortium to discuss how these issues could be emphasised more in the remainder of the project.

2.6. Close (Mark Adamson)

Mark Adamson stated that there seem to be many similarities but also lots of differences between the approaches of MSs. Many MSs have formed ideas about how to set objectives, select measures and prioritise these. This day can be useful for this process. The comments made by Jorge Rodriquez-Romero could be useful as well.

Mark Adamson continued by explaining the next steps. Tomorrow (Thursday October 17th 2013) STAR-FLOOD will give a recap of today in a presentation during the WG F meeting. This provides an additional chance to ask questions. If there is anything we did not tackle and we should address, there might be a possibility to organise another (mini) workshop later on. In the next couple of weeks STAR-FLOOD circulates the presentations and sends around an editorial document of the minutes of this workshop to which people can add or correct with track changes.

Mark Adamson requested all WG F members once again to complete the questionnaire. The questionnaire and a summary of the results will be included in the report on today's workshop. Mark Adamson asked the WG F members to indicate if they would not like their response published, or would like to edit their questionnaire responses. After this, the report will be circulated, and the comments of different MSs will be collected. In addition, STAR-FLOOD will distribute a knowledge needs list with the request to rank these knowledge needs according to their level of importance.

3. OVERVIEW OF BREAK-OUT WORKSHOPS/DISCUSSIONS ON OBJECTIVES, MEASURES, PRIORITISATION

3.1. Break-out group 1 (facilitators: Clemens Neuhold and Mark Adamson; reporters: Dries Hegger and Marlous van Herten)

In Break-out group 1, representatives from Austria, Belgium, Estonia, Spain, Finland, Croatia, the ICPR, Ireland, Italy, The Netherlands, Poland, Sweden, the Slovak Republic and the UK participated. The issues of the setting of Objectives, the identification of Measures and their Prioritisation were discussed consecutively.

Objectives

The Member States represented in this break-out group differ in the level of abstraction with which objectives are defined. In Austria, Scotland and Italy, for instance, these are defined at a very high level of abstraction, whereas the objectives are defined in very specific terms in Ireland. For some countries, e.g. The Netherlands, it was noted that the process of defining objectives has to fit within existing policy processes. In the case of The Netherlands, these include existing planning cycles for determining safety levels as well as the country's predominant focus on flood defence. In Croatia it is different. There is an agency responsible for everything related to water. This agency sets the objectives and does the work. The Ministry only has a supervision role. Objectives are set through consultation of experts in the field. Germany has working groups at the level of the Länder.

Between countries, the focus in determining objectives varies. In some cases, the objectives focus on a process that should be followed (e.g. in The Netherlands) whereas in other cases the objectives pertain to substantive targets (e.g. in Ireland). In the latter country, also a distinction is made between minimum requirements and aspirational targets.

Countries also differ in the extent to which WFD and FD objectives are linked. In many cases, the competent authority for the implementation of both directives is the same, but in Ireland and Sweden this is not the case. It should be noted, though, that all Member States have established checks and balances to see to it that objectives and measures fit in WFD requirements. For instance, in Ireland each measure of the Floods Directive is checked for how they contribute to the objectives of the WFD. Ireland seems to differ a bit from the other countries because it has, first a very specific dedicated process in place to check for conformity between both implementation processes and, second, it seems to also look at benefits of the setting of objectives rather than at risk reduction only.

Looking at all Member States present in the sub-group, two types of objectives can be identified: strategic and operational ones. The former pertain to guiding principles such as the subsidiarity principle, the solidarity principle, achieving synergy between WFD and FD and the sharing of knowledge, amongst others. The latter pertain, amongst others, to the reduction of new or existing risks, and the minimisation of adverse consequences. Some countries identify operational objectives at a very high level, for example "reducing risks related to all fields of the FRM cycle" (Austria). In Ireland the primary focus of objectives is on risk reduction. The Netherlands focus predominantly on desired safety standards of the infrastructure. Croatia's main goal is risk reduction. Germany focuses on the prevention of new risks (building in risk areas is prohibited). At the level of the ICPR, three levels of objectives are distinguished: 1) strategic objectives, i.e. achieving an acceptable security level, sharing of responsibility, the subsidiarity principle (e.g. in some places they have other measures than in others, which is respected); 2) operational objectives, i.e. reducing new risks, reducing existing risks to an acceptable level; 3) sub-objectives linked to measures (e.g. create a flood risk map, etc.). The distinction between objectives and measures can often not be made straightforwardly. In the UK, the FRMPS are to be seen as strategic, but they will be more detailed in the future.

It has turned out that in practice, the distinction between (strategic/operational) objectives and measures is sometimes hard to draw (e.g. should “informing the public” can be seen both as an objective and as a measure?). Generally, measures are understood as the ways to implement the set objectives.

As an additional point, the Netherlands briefly referred to the measurability of targets.

Measures

The countries participating in the break-out group differ in the level of detail with which measures are defined and the extent to which these measures are meant to provide detailed prescriptions versus general guidance on what to do. In Ireland the process for selecting measures should follow specific guidelines. In Germany and Austria, on the other hand, a so-called Maßnahmenkatalog (catalogue of measures) is used, providing an overview of objectives and measures as well as guidance on their applicability. In Austria this catalogue is developed at the national level and applied by the Federal Provinces on APSFR level. In Germany, the catalogue is also made at the national level, but the Länder are not legally bound by it. Luxembourg is much focused on the local level. All countries have general measures on the national level and more specific ones on the local level. In general, the decision of what to implement at the local level is also made at this level, and, in those cases in which it is not, a high degree of local level consultation takes place. Local level authorities of course have to operate within the boundaries of their formal competences and in accordance with relevant rules and regulations. In this regard, the example of the Green Book[2] in England was explicitly mentioned. In some countries, hydrological and hydrodynamic modelling of the effect of measures is done, for instance in Ireland and Poland. In Austria, no obligatory modelling (additional to the derivation of hazard and risk maps) is conducted in the frame of Objectives, Measures and Prioritisation.

Some discussion was held on the question whether and to what extent the implementation of the Floods Directive in general, and the identification of Objectives and Measures and their Prioritisation in particular, has led to the application of FRM strategies that had not been applied before. It seems that the implementation of the Floods Directive has influenced debates on FRM strategies to some extent. For example in Austria the debate on increased harmonisation of water management and spatial planning has been put even more strongly on the agenda. It should be noted, though, that the implementation of the FD co-occurs with other policy developments, so it is not possible to attribute certain developments entirely to the implementation of the FD. Italy already had FRMPs in 1989, but originally with more structural measures. The FD is a chance to broaden and revise measures, e.g. buildings have to comply with the requirements of the FD. For Ireland it was said that he FD supports what was decided in 2004. The FD started the process. In Croatia it is different. The law prohibits activity and living in areas reserved for flood risk management. You cannot build there regardless of the FD. You have to send your plan to the Croatian Water Agency, which decides whether you can built or not. This comment seems to suggest that the influence of the FD in Croatia is not yet that outspoken.

Some members of the sub-group were concerned about the nature of the compliance checks by the Commission on the Objectives and measures set and defined. In other words, would Member States be held accountable for the defined Objectives and Measures, and if so,

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[2] The Green Book is guidance for central government produced by the Treasury on how publicly funded bodies should prepare and analyse proposed policies, programmes and projects to obtain the best public value and manage risks. It also covers the evaluation of policies programmes and projects after they have been implemented to find out how well they have achieved their original objectives and how well they have delivered within their original budgets and planned timescales. The Green Book guidance on assessing public value and risks applies to proposals and decisions about both spending public money and to changes in regulation https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent).

how? This concern may lead to a more conservative wording of Objectives or Measures. Some Member States also seem to be a bit hesitant to focus on river basin areas, because they would like to get their “national objectives” handled first. Some countries are concerned they might not achieve the targets set, and what the consequences might be if this were so, and as a result might be more hesitant to set ambitious targets.

On request of STAR-FLOOD, the participants indicated what kind of knowledge they expect from social scientists/legal scholars in general, and from the STAR-FLOOD project in particular. The following issues were mentioned:

- Knowledge on the co-benefits of FRM measures for other policy domains, especially land-use policy;
- If development cannot be controlled or regulated in a strict meaning of the term, what other ways would there be for governmental actors to influence it?;
- What changes in legal systems would be necessary to improve FRM practices?;
- Who bears the costs and who reaps the benefits of developments, e.g. hydropower developments? This point also relates to how the implementation of the Floods Directive is framed. Germany remarked that in the climate discussion, the argument was changed to what could be gained from it.

Prioritisation

In accordance with what was found through the questionnaire, the break out group discussion showed that several methods are used for the prioritisation of measures, including Multi-Criteria Analysis; Cost Benefit Analysis; an investigation of public or stakeholder opinions amongst others. ICPR noted that they are currently developing a GIS-based instrument to assess the potential of measures for damage reduction.

A short discussion was held on the way in which prioritisation was done: by a timescale or through ranking. Austria combines timescale and ranking. It is argued that you have to be precise with timescales and that an indication should be given of in which half of the cycle something should be started and ended. The Netherlands, Italy and Sweden will use ranking at the local level. The ICPR uses neither. It will describe priority.

Some participants stressed that prioritisation is not a technocratic exercise. It is always to some extent political in the sense that there are interests that should be served.

Member states differ in the types of aspects for which priorities are set. Sometimes, for instance, priorities are set for flood forecasting, sometimes they are not. In Croatia, the level of flood forecasting is not so high. In the Netherlands, protection is a huge priority, but this is more a prioritisation of objectives.

Trans-boundary issues are taken into account in prioritisation to some extent (e.g. Maaswerken in The Netherlands; border river in Ireland). Also, the ICPR is there because it benefits all).

3.2. Break-out group 2 (facilitators: Ville Keskisarja and Carel Dieperink; reporter: Darren Lumbroso)

In Break-out group 2, representatives from the Member States (MSs) Belgium, Germany, Greece, Spain, Finland, Latvia, Sweden, Slovakia and the UK participated, as well as a representative of the European Commission, CEPRI, the STAR-FLOOD consortium and EWA. The topics of the setting of Objectives, the identification of Measures and their Prioritisation, Implementation and Knowledge needs were discussed consecutively.

Objectives

Regarding the setting of objectives, the discussion has revealed much diversity between Member States both in terms of the level at which objectives are defined and the level at which they are implemented. Administrative arrangements are different in different Member States and different administrations have responsibility for flood risk management:

- In Croatia, objectives are generally defined at the national level. According to the water management strategy defined in 2008, national level objectives should be defined to achieve a target level of protection for some areas. Croatia also produces FRM plans to comply with the requirements stipulated in the Floods Directive. These will be harmonised with the RBMPs.
- In Belgium, the federal level is involved instead of the national level. Implementing the FD is a regional matter. This is also the level at which changes in legislation happen.
- In Germany, legislation for implementing the Floods Directive (FD) is made at the national level but the Länder are responsible for implementing the legislation. All Länder (Federal States) participate to agree on general objectives. They basically have to agree on documents that are discussed by the CIS Working Group on Floods.
- In Spain, legislation is national, and the Competent Authorities are to be found at the river basin district level.
- In Greece, objectives are set by regional water authorities which are decentralised. This is, however, done only after the national Ministry of the Environment has implemented the FD and the Water Framework Directive (WFD). This centralisation is attributable to the FD. Before, it was the responsibility of the Office of Public Works.
- In Finland, objectives are set at the national level; however, the final decision regarding the level of protection is made at a regional level. This is also happening in other countries.

The Member States also differ in the extent to which the defined objectives are measurable and/or time bound:

- In Flanders (Belgium), objectives are measurable in terms of risk reduction but not time bound, as there was a need for a “certain level of ambition” (flexibility)
- In Greece, before the FD, the application of flood measures was not rationalised. The level of protection was dependent on the budget available. With the introduction of the FD, the measures will be harmonised. For the first FRMP, Greece will only carry out the affordable measures. It seems to be difficult to set time bounds to the objectives owing to political, administrative and budgetary issues.
- In England, there is a national flood risk management strategy. Behind this, there are outcome measures on a funding cycle that measure numbers of houses protected and areas of deprivation, and these will be defined at the level of the FRMP.
- In Flanders, objectives are not really time bound, but there is 40 years to implement measures

The representative of the European Commission comments that it is advisable, if there are objectives and measures, to achieve them. It is therefore logical to have a timeframe. Ideally, this timeframe should be in the FRMPs. The measures that should be taken should also be prioritised.

Greece is interested in how STAR-FLOOD will “measure” objectives and measures. Carel Dieperink comments that STAR-FLOOD will try to evaluate if governance arrangements are effective, legitimate and efficient.

The discussion then moves on to the issue of whether different objectives will be set at different scales (e.g. national, unit of management, APSFR) and how much they will influence the selection of measures.

- In Germany, FRMPs are not legally binding in the sense that third parties cannot go to a law court to have measures implemented. However, local authorities do need to take FRMPs into account when they take decisions.
- In Finland, the influence of the FMRPs is not yet known. Discussions regarding the WFD and RBMP are still ongoing.

Measures

Regarding measures, the question is raised whether participants see a shift in flood risk management strategies and whether the FD has played a role in that shift. The responses of the Member States differ:

- In Flanders (Belgium), there was not really a shift after the FD, but it was shown that a wider range of measures are taken into account for the first cycle of the FRMPs. In Flanders (Belgium), the measures of building no new buildings in flood risk areas and improving the resilience of new and existing buildings have been studied and show to have great potential.
- In England flood forecasting and warning have been put on the agenda through the FD, which has worked well. The money is still mainly spent in prevention and there has not been a big switch in financial resources. In the UK there is partnership funding so that communities can contribute to measures in specific places since 2011. There are also planning policies in place but these do not necessarily reduce flood risk.
- Sweden noted that some areas of the EU are really flood prone, and some others do not face as many. This should be borne in mind.
- In Spain the nature of floods can be different.

The representative of the Commission mentions that water retention methods are one of the priorities of the Commission. The question is raised if there are similar plans in other countries:

- In the Croatian Sava River, there are the largest retention areas in Europe that are not significant for just Croatia but also Bosnia and Serbia. There is also potential to have retention areas on smaller tributaries. Because of the specific shape of Croatia all the large rivers are international rivers.
- In Greece it depends on the characteristics of specific cases whether retention can be used. In the 1950s, flood protection increased forests in an integrated river basin.
- Regarding river retention, the experience in Germany is that you have to distinguish between plains and mountains. On plains, flood risk management is often difficult owing to conflicting land use (e.g. farms, urban areas). In mountains, afforestation does not make much difference, except for small floods.
- In Sweden there are River Coordination Groups to look at the whole basin, together with the County Administrative Boards, but some measures are very site specific. With regards to time bounds, when the plans are written targeted goals need to be written.
- In England, there is an increasing emphasis on personal responsibility.

Prioritisation

Regarding prioritisation, the first question raised is the question of who is responsible:

- In Flanders (Belgium), at the moment the authority responsible for carrying out measures sets the priorities. Priority setting is a matter of deciding what will be done first. Each authority is responsible for their reach of the watercourse.
- In Croatia, the State Agency for Water Management is responsible for the FRMPs. These have to be adopted by the Croatian Government.
- In Germany setting objectives, defining measures and prioritising them is one process with three steps
- In England, with regard to rivers and coastal floods, responsibilities for prioritising are to be found at the national level. However, there is a local approach for local surface water flooding. Prioritisation is done by multiple criteria. The existence of partnership funding means that priorities may change. This could make planning more difficult.
- In Greece, before the FD there was no established method for prioritisation. Consultants will prioritise measures and then the views of local stakeholders and finances will determine priority setting and the time scales used. Everybody will be involved in consultation for setting the priorities.

After discussing responsibilities, the issue of how prioritisation is carried out and how the public is involved is discussed:

- In Sweden, different types of priorities (e.g. health, economic, cultural) are used, resulting from different priorities in the FD. Ultimately, the local level will decide on the prioritisation. It is argued that decision-making should be made from sound facts and data informing the political process.
- In Spain, work on a national and regional scale prioritisation based on prevention and civil protection is in progress. It is important to include non-structural measures, but it is not easy to make an economic analysis of these measures.
- Germany and Flanders experience that engagement with stakeholders can slow down the process. An example from Germany is a case where authorities wanted to re-connect a floodplain by taking down a flood defence. However, conservationist will not agree owing to the habitat behind the dike.
- In Spain, authorities see themselves confronted with a dominant idea that technical approaches can solve every problem. It is complicated to explain that it is not possible to authorise new buildings in the floodplain. In some areas, farmers are also vocal, although damage is relatively small in comparison with urban areas.
- In England a guidance document produced on all sources of funding if there are multiple benefits. In cases in which community based funding is available, it is still needed to get legal permission. This approach is beginning to happen in practice. If a community gets involved, they have more “political power” in getting the scheme funded. However, could affect prioritisation of measures. An example is given of how defining the areas of benefit could be important (e.g. one side of a street protected and one is not). Flood risk management is trans-boundary at all levels (i.e. community to international). Also, there is lots of funding in London that can change the prioritisation.
- In Germany, companies have in some cases contributed to the state to improve the level of protection of flood defences (e.g. increasing the level of protection from 1 in 100 year to 1 in 200 years).
- In Croatia, like in The Netherlands, regional water authorities use a property tax on all properties to fund flood risk management (e.g. maintenance of flood defences).
- In Sweden, measures are prioritised by putting the highest rank on human life because applications of the government subsidies exceed the need by many times. National Government can pay 60% of the costs of FRM and local government/estate owners have to pay 40%. Effectively, therefore, prioritisation is mainly done at the national level when it comes to the government subsidies. But prioritisation of measures is done at

the local level. Measures might require a building permit according to the Environmental Act, though, if the measure needs to be built in water.

3.3. Break-out group 3 (facilitators: Meike Gierk and Roy Richardson; reporter: Tom Raadgever)

In Break-out group 3, representatives from the Member States (MSs) Bulgaria, Czech Republic, England (UK) Croatia, Germany, Greece, Ireland, Scotland (UK) and Sweden participated, as well as a representative of the European Commission. The topics of the setting of Objectives, the identification of Measures and their Prioritisation, Implementation and Knowledge Needs were discussed consecutively.

Objectives

The discussion started with a reflection on the used terminology. The group agreed that objectives relate to what you want to achieve and measures to how to do it. In CIRCA there is a document with guidance on terminology, prepared by the WG F.

In most MSs objectives are defined first, and subsequently the measures are determined and prioritized. However, this is often an iterative process, which takes into account the objectives and measures that were in place before the Floods Directive. In Bulgaria both objectives and measures were catalogued and then prioritized together, and in Croatia, a new MS, the measures were defined first and then objectives were derived.

The actor that defines the objectives differs per country. In most MSs objectives are set at the national level, either with or without involving the sub-national (regional and local) level. In Sweden objectives are set at the regional level, with involvement of the local level and guidance on the process by the national level. In England objectives are set at the local level, as at this level there is more knowledge on the feasibility of achieving the objectives.

In all represented MSs the implementation of the Floods Directive (FD) and Water Framework Directive (WFD) are coordinated, but in different ways. In some MSs objectives are coordinated, in others measures (based on selection criteria). Conflicts are avoided and sometimes synergies are sought. For example in Ireland the FD objectives include an objective to support the WFD. In Germany, FD measures are divided in three categories: no influence on WFD, synergies with WFD, or conflicts with WFD. These categories are used in the selection and prioritisation of measures. A suggestion was made to coordinate FD and WFD on the project level, were mutual effects become more visible. In general, coordination is deemed easier when the same authority is responsible for both FD and WFD. There is a document about WFD-FD linkages in preparation, which can serve as background paper.

At the river basin level, only global objectives are deemed necessary (e.g. reduce flood risk). MSs have to make this concrete and make sure not to increase risks downstream.

MSs should be able to measure and demonstrate the level of achievement of objectives. Suggestions for this are to use quantitative indicators, use GIS and show effects of measures on risk maps and hazard maps.

Measures

MSs are attempting to broaden the types of measures (or Flood Risk Management Strategies) they apply: a subtle shift to more preparedness, emergency response and recovery can be noticed. For instance, in England there is more focus on self-help (voluntary wardens, etc.) and giving land back to water. The advantage is that these types of measures are less expensive and more flexible than structural measures. Furthermore, in all represented MSs the flood sector can influence spatial planning. There was some discussion

about the need to create redundancy by applying multiple strategies, e.g. flood defence, flood-proof building and awareness raising, at the same time. This is not always affordable.

Selection of measures consist of ‘substantive’ analysis and ‘political’ decision-making. The appraisal aids the decision-making, but does not fully determine the selection. The MSs all use Multi Criteria Analysis and/or Cost Benefit Analysis for the analysis, and all include some non-monetary criteria. There is a good guidance document on how to do economic analysis.

The participants agree that multiple benefits (synergies with other policies) should be taken into account in the selection of measures, but methods to do this are still under development. Conflicts with other policies should be avoided, and synergies sought. Economic analysis is often less suitable for analyzing other benefits (such as ecological and social values). A related knowledge need is: how to apply monetary value to wider societal impacts of measures?

Prioritisation

After the selection of measures, they are prioritized. Outcomes of prioritisation may be a report on the time-frame: in which planning cycle a measure is implemented. In most MSs priorities are formally set at the national level and subsequently translated to regional/APSFR/local level. In practice, this is often a process with interplay between the levels. In Germany the local level may have to decide, dependent on the federal act. In England regional/local authorities prioritise in principal, but the state co-decides as main funding body. In Croatia priorities may be adapted to availability of EU funding.

The main prioritisation criteria are the contribution of a measure to the objectives (e.g. risk reduction) in relation to costs and budget availability. The methods are in most MSs under development.

In case of measures that are synergetic with other sector’s policies, a joint prioritisation is desirable. Yet, this is often difficult to organise. For instance in most MSs water and spatial planning do not collaborate enough. This may be caused by fragmented responsibilities and financing. Early deliberation is recommended.

Knowledge Needs

One issue in the implementation process is “How to deal with different public perspectives?”. One good practice in this matter is to involve stakeholders early in the process, at a moment on which they can have an influence on the process. In all stages of the process it is important to be transparent and inform stakeholders. In Ireland, for example, the public is involved in setting objectives and weighing measures, and not so much involved in prioritization, as they cannot influence it.

Another issue is “How to bring in other funding, e.g., private?”. A good practice from England is that the private sector (and other financing parties) are strongly involved in the prioritization of measures. Efforts are undertaken to stimulate partnership funding.

Finally, the participants were asked on what they would spend 5 Million Euro of research budget. Answers were on good decision support tools and good data infrastructure to measure progress in objectives.

4. CONCLUSIONS

4.1. Main findings of the workshop

The observation that formed the main reason for initiating the workshop on Objectives, Measures and Prioritisation was that EU Member States seem to differ in the ways in which they determine Objectives and Measures and Prioritise them in order to comply with article 7 of the Floods Directive. After the workshop being held, we can say that this observation was correct. The two main findings of the workshop are:

- The process of setting objectives and defining and prioritising measures are linked within EU Member States, but there are large differences between the countries. Some of them have progressed more than others;
- There is some evidence that the Floods Directive fulfils an agenda setting function, fuelling debates on new Flood Risk Management measures.

The workshop was also aimed at discovering the knowledge needs of the WG F members. This resulted in a wide range of questions that need to be addressed, including:

- What are the effects of climate change and socio-economic developments?
- How to set SMART objectives? Including different user needs and integrating objectives of the Floods Directive and Water Framework Directives;
- How can land use planning be effectively incorporated to flood risk management conducted by water management agencies?
- How to increase flood risk awareness efficiently?
- How to determine the effectiveness of especially non-structural measures?
- How to monetise costs and benefits, in particular related to damage to environment, social and cultural heritage?
- How to prioritise measures?
- How to bridge fragmented responsibilities (between levels, sectors, public-private, etc.)?
- How to bridge fragmented sources of financing?
- How to improve decision-making and communication?

These questions will be further addressed by exchange of experiences in the WG F, and by natural and social scientific research. Some of the questions raised are related to public administration and legal expertise. STAR-FLOOD will address these questions.

4.2. Implications for the execution of the STAR-FLOOOD project

As stated in the previous sub-section, the dominant message that arises from the OMP workshop is that there are large differences between EU Member States in the way in which they address flood risks, more specifically, how they implement the Floods Directive and, in particular, how they determine Objectives and Measures and how they prioritise them. This message is in accordance with the main results of the first Work Package of STAR-FLOOD, which provided an extended problem analysis of Flood Risk Governance in Europe.

Some differences will mainly be attributable to the fact that some countries were the first to develop a certain “good practice”. In such cases, a practice would deserve to be translated to other countries. In other cases, however, differences may be reflecting underlying more fundamental differences between countries, e.g. in terms of their administrative structure and culture, historical pathways in dealing with flood risks, physical and geographical

characteristics etc. Therefore, one needs to be cautious not to universalise a particular solution too quickly. An important contribution of STAR-FLOOD would be to deliver social scientific and legal knowledge that provides Member States and the EC with guidance on the applicability of certain good practices in specific contexts. STAR-FLOOD's detailed empirical analyses at country and regional level will contribute to this knowledge. STAR-FLOOD will address, for instance, how to deal with fragmented responsibilities and financing between sectors, levels and types of actors (public-private-citizens), in specific circumstances, or what level of resilience / abundance of strategies is affordable.

To be able to make this contribution, the country-specific questionnaire responses will be important input for the STAR-FLOOD researchers. As was mentioned earlier, within STAR-FLOOD also, in a later stage, discussions will be held on the broader applicability of country-specific findings. Finally, it will be important for the STAR-FLOOD researchers to liaise with the WG-F members in their country. It can be expected that both the execution of the STAR-FLOOD project and the implementation of the Floods Directive will benefit from this.

4.3. Implications for the implementation of the Floods Directive

Because of the nature of flooding, much flexibility in determining Objectives and Measures as well as their prioritisation is left to Member States in view of subsidiarity (http://www.wise-rtd.info/sites/default/files/Floods%20Directive.pdf). The workshop on Objectives, Measures and Prioritisation has confirmed that existing practices are so diverse that, in general, it does not seem to be feasible or desirable to be very prescriptive at the supra national level.

What does seem to be important is, first, that the EC is very clear towards Member States regarding whether and how Objectives, Measures and their prioritisation will be evaluated. For instance, will compliance checks take place directed at the question whether objectives were met? And if so, what will they look like? One can logically expect the answer to these questions to have influence on the ambition level that Member States will display.

Second, a potential role for the EC could be to evaluate, to what extent Objectives, Measures and their prioritisation address the supra-national level and what their actual effects at this level could be. In particular, the question can be raised whether, to what extent and how Objectives, Measures and their prioritisation in one Member State could lead to positive or negative externalities in other (e.g. downstream) countries.

Third, the process of defining Objectives, identifying Measures and prioritising them is only the start of a long-term process. Flood Risk Management Plans should be available by 22 December 2015. Similarities and differences between Member States should, however, not only be assessed now, in the process of defining Objectives, identifying Measures and prioritising them, but also in the years to come. The consequences of, for instance, certain formulations of Objectives and Measures need to be assessed and lessons should be drawn from this, to take these into account in the first review and update of the FRMPs due in 2021. STAR-FLOOD can contribute to this process by providing a first overview of the mechanisms according to which Objectives, Measures and their prioritisation do or do not contribute to appropriate and resilient Flood Risk Governance.

During the workshop it became clear that tools need to be developed to predict (in advance) and demonstrate (afterwards) the (multiple) effects of measures / goal achievement per MS, and exchange of this knowledge among MS is needed, in order to learn from each other and improve the future selection of measures.

4.4. Next steps for the STAR-FLOOD project

The implications of the workshop's outcomes will be discussed in a plenary consortium meeting of STAR-FLOOD in Antwerp, 1 and 2 April 2014. At this meeting the precise implications of the findings for the execution of the empirical research will be determined. Besides that, at the time of writing, the following opportunities for sustained fruitful collaboration between STAR-FLOOD and WG-F are foreseen:

- STAR-FLOOD researchers will participate in the workshop on trans-boundary flood risk management in Budapest adjacent to WG-F 15 (31 March 2014).
- STAR-FLOOD researchers may get access to upcoming WG-F meetings for the duration of the project (1 April 2016);
- STAR-FLOOD's second expert panel in 2015 may again be organised in cooperation with WG-F, with the aim to share and validate the empirical findings of the project;
- STAR-FLOOD will organise a final conference in 2015/2016 and may schedule some activities that are co-organised by (members of) WG-F;
- The STAR-FLOOD researchers in the six STAR-FLOOD consortium countries (Belgium, France, The Netherlands, The UK, Poland, Sweden) may approach these countries' representatives in WG-F to exchange information.

5 PROVIDED INFORMATION / SUGGESTED READINGS / ANNEXES

Suggested readings

- DEFRA/Environment Agency: Principles for implementing flood and coastal resilience partnerships
- DEFRA/Lywodraeth Welsh Government/Environment Agency/Cymru Natural Resources Wales: Flood Risk Management Plans, Guidance for Risk Assessment Authorities in England and Wales
- Information of ICPR on Floods Directive
- ICPR Action Plan on Floods, here and here
- Information for the public in Greece on Flood Risk Management Plans (in Greece)
- Hydrological plan in Basque country & Report on flood hazard maps and flood risk area
- Latvian National Programme for the Assessment and Management of Flood Risks 2008 – 2015
- Information on Flood Risk Management Plans in England
- Information on Flood Risk Management Plans in Scotland & general information on FRM in Scotland
- Italian Ministry's of the Environment guidelines to assess the hydrological risk and the mitigation by means of measures and activities in agriculture and forestry.

Annex I Agenda

WG F and STAR-FLOOD OBJECTIVES, MEASURES AND PRIORITISATION WORKSHOP

Topaz Room, Martin's Central Park Hotel, Brussels
10:00 – 18:00, Wednesday 16th October 2013

AGENDA

(9:30-10:00 h Registration and welcome coffee)

10:00 Welcome and Introduction (MA)

10:15 Overview of Questionnaire Responses (BNL / Star-Flood)

10:30 Plenary session (MA): Presentations (15-minutes, followed by brief specific questions):

- AT (Clemens Neuhold)
- IE (Mark Adamson)
- UK, Scotland (Roy Richardson)
- ICPR (Adrian Schmidt-Breton)
- BE (Sven Verbeke)
- STAR-FLOOD (Dries Hegger)

12:00 Discussion (Chair – MA: Comment by COM on expectations, followed by open discussion, with 5 minutes for outline of break-out workshops)

12:30 Lunch

13:30 Break-Out Workshop / Discussions

1. Objectives
2. Measures
3. Prioritisation
4. Governance (STAR-FLOOD project)

15:00 Coffee / Tea

15:30 Break-Out Workshop / Discussions (continued)

16:30 Short Break (Preparation of Plenary Presentations by Facilitators / Note-Takers)

16:40 Plenary session

– Reports from the break-out sessions, and discussion

17:40 Round-Up, Conclusions and Next Steps

18:00 Close

Annex II List of Participants (organised according to break-out groups)
Overview based on registration file v2. Update with information on who was actually present.

Break-out group 1

Surname	***First Name***	***Country/Organisation***	***Special role***
Neuhold	**Clemens**	**AT**	**Facilitator**
Haesevoets	Annelies	BE	
Schwarz	Katharina	DE	
Elken	Rain	EE	
Sanz De Galdeano	Jose Maria	ES	
Parjanne	Antti	FI	
Sokolic	Sandra	HR	
Schmid-Breton	Adrian	ICPR	
Adamson	**Mark**	**IE**	**Facilitator**
Bussettini	Martina	IT	
Linsen	Max	NL	
Brzozowska	Marta	PL	
Åhr Evertson	Anna	SE	
Supekova	Monika	SK	
Hegger	Dries	STAR-FLOOD	Reporter
van Herten	Marlous	STAR-FLOOD	Reporter
Aucott	Linda	UK	

Break-out group 2

Surname	**First Name**	**Country/Organisation**	**Special role**
Devroede	Neel	BE	
Verbeke	Sven	BE	
Rodriguez-Romero	Jorge	COM	
Jendrike	Harald	DE	
Triantafyllou	Katerina	EL	
Stocker	Christian	ES	
Falconer	Ronnie	EWA	
Keskisarja	**Ville**	**FI**	**Facilitator**
Biondic	Danko	HR	
Rudlapa	Ilze	LV	
Naslund-Landenmark	Barbro	SE	
Cadek	Peter	SK	
Dieperink	**Carel**	**Star-Flood**	**Facilitator**
Jadot	Julien	Star-Flood / CEPRI (FR)	
Lumbroso	Darrren	UK	Reporter
Orpin	Roger	UK	

Break-out group 3

Surname	**First Name**	**Country/Organisation**	**Special role**
El Kahloun	Mohssine	BE	
Kavvadas	Ioannis	COM	
Brezina	Petr	CZ	
Gierk	**Meike**	**DE**	**Facilitator**
Munk-Nielsen	Carl-Christian	DK	
Bailey	Emma	ELO	
Ureta Maeso	Jorge	ES	
Theodosiou	Nicolaos	HE	
Babic	Marijan	HR	
Liska	Igor	ICPDR	
Martin	John	IE	
Racot	Paul	IMC	
Sadowska	Ursula	PL	
Ashkan Far	Mino	SE	
Raadgever	Tom	Star-Flood	Reporter
Reed	Sue	UK	
Richardson	**Roy**	**UK**	**Facilitator**

Annex III Consolidated Questionnaire Responses

Organisations

- Finnish Environment Institute, Ministry of Agriculture and Forestry
- Vlaamse Milieumaatschappij – department of Mobility and public works
- Rijkswaterstaat
- Environment Agency UK
- International commission for the protection of the Rhine
- Office of public works Ireland
- Scottish Environmental Protection Agency
- Estonia Environment Agency
- Swedish Civil Contingencies Agency
- SPECIAL SECRETARIAT FOR WATER/MINISTRY OF ENVIRONMENT ENERGY AND CLIMATE CHANGE Greece
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety / Saxon State Ministry of the Environment and Agriculture (on behalf also of all regional governments) Germany
- Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
- URA Basque Water Agency, Basque country
- Latvian Environment, Geology and Meteorology Centre; Latvian Ministry of Environmental Protection and Regional Development, Latvia
- Ministry of the Environment of the Slovak Republic
- KZGW (National Water Management Authority), Poland
- ICPR (version as received before the workshop, with minor revisions made)
- ISPRA Italy

2. FUNDING ARRANGEMENTS

2.1: Please identify (highlight / underline) how flood risk management measures are, or will be, funded in your country, e.g., central, national funding, regional funding, local funding, etc.

– EU funding **10** (noted: generally not available)
– National / central funding **16**
– Regional funding **12**
– Local funding **13**
– Other funding **5**

If 'Other', please explain:

- Private funding (individual members of the public, and private investment (e.g. corporate) **UK**
- The measures that will be part of the new FRMP Rhine will be funded by the countries themselves. **ICPR**
- Infrastructure operators are responsible for managing flood risk associated with the infrastructure they own, operate and maintain **IR**
- Slovak Republic applied for example Swis funds and Norway financial mechanism, **SK.**
- Project financing, EU Life Projects, **IT.**

2.2: Please provide any examples of new or innovative funding models being utilised, such as combined funding from different sources, foundations, public – private partnerships, etc. - National, regional and local public funding are the most likely sources but also other sources are searched such as EU Structural Funds, Interreg and Life+ **FI** - na **BE** - Example of current innovative approach: Room for the river (funding on all levels) Future measures: Deltaprogramme **NL** - See Defra Partnership Funding Policy: http://publications.environment-agency.gov.uk/PDF/GEHO0312BWDK-E-E.pdf **UK** -Joint funding (National / local) for minor works (<€500k) **IR** - Natural Flood Management Measures may be partly funded through initiatives primarily designed to deliver improvements to the water environment under the WFD. The Scottish Gov. has set up a Water Environment Fund, administered by SEPA, for this purpose. The Scot Gov are also looking at agricultural payments through the Scottish Rural Development Programme. **Scotland** - We do not have any innovative funding. **Estonia** - Small amount of governmental subsidies for permanent preventive measures. The government finance 60% and the local municipalities finance 40%. Governmental equipment (non-permanent barriers and pumps for municipalities to use during a flood event when the resources at local and regional level are not enough. Some private partnership initiatives are taken. No solutions decided yet. **SE** - Funding of flood risk management is mainly organised in 3 levels. Federal State, Federal Province and interested party (municipality, private person, energy supplier, …). **AT** -Only public **Basque Country** - Private funds of inhabitants or companies as stakeholders with property finance execution of flood protection measures on the objects localised on flood plains established by state administration on the basis of flood hazard maps where cost benefit analyses do not confirm revenue of investments. **SK.** - Project financing (public-private partnerships)

3. OBJECTIVES

3.1a: At what level will the process for setting or selecting objectives be: A) Defined? B) Applied?	Nationally **15** / Regionally **8** / APSFR **5** / Locally **3** / Other **3** Nationally **11** / Regionally **14** / APSFR **9** / Locally **8**/ Other **2** **(Risk to life can be a bit more regional, eg we have had an "East Coast" review of extreme flooding. UK** **Internationally (Rhine countries) ICPR**

3.1b: Please provide a brief description of the process for setting objectives:

- Every flood management group set preliminary objectives for significant flood risk areas and the whole watershed by the end of 2012. Objectives are based on the preliminary flood risk assessment, regional and local considerations and national general guidelines by the Ministry of Agriculture and Forestry. Based on these preliminary objectives potential measures and also measures that could be left out of the consideration are identified. Objectives will be defined more precisely when the flood hazard and risk maps are ready and after hearing of stakeholders during the FRMP preparation process. Setting the objectives is iterative process. **FI**
- The study 'environmental water quantity objectives for surface water bodies', started in December 2012, aims to formulate environmental water quantity objectives (including flood risk objectives and water scarcity objectives) for surface waterbodies. The study will develop a risk matrix where the appropriate objectives can be delineated. These objectives are focused on diminishing the negative consequences of low and high water. The objectives derived from the study, which will end in November 2013, will then be translated and applied to a more policy based implementation, so that they can be used in the RBMP's and can be incorporated in regional legislation. The CIW (Coordination commission Integrated Water management), with representatives of water managers and public authorities such as urban planning, drinking water and water supply, environment agencies,… will approve the definitive flood risk objectives in December 2013. **BE**
- Based on current practice, policy and law, the objectives are defined on a high level and coordinated on regional/provincial level. At a local scale, Water Authorities/Water Boards (Waterschappen) formulate and Provinces endorse the objectives. **NL**
- "Other" is likely to include river catchments. We have some general guidance (that highlights the areas of interest, eg people, risk to life, ecology, geomorphology etc... We have recommended that Risk Management Authorities (RMAs) preparing FRMPs consider a few technical things – see Annex C at the end of this survey. The **National Flood Risk Management Strategy for England** sets out principles and government aims which will inform objective setting. We have not set out any other processes **UK**
- The setting of the objectives is made through many discussion in meetings from the working group H (Flood) of the ICPR and is based on 1) our past experience with the Action Plan on Floods (since 1998), 2) the requirements of the directive for international river districts (transnational objectives/measures), 3) the two top-down and bottom-up principles **ICPR**
- The objectives have been developed nationally, and through testing and stakeholder consultation under pilot studies at a UoM level. They will be put out for public consultation nationally before adoption. **IR**
- National guidance has been developed and will be agreed locally for each APSFR in partnership bodies that have been established between the relevant national and local delivery bodies (e.g. SEPA, Scottish Water and Local Authorities). **Scotland**
- In Estonia management of floods is not addressed holistically so far. Floods Directive implementation takes the first steps in this direction. Flood risk maps and flood hazard maps are currently under construction. Objectives setting is based on the objectives of the Directive, as well as floods occurring in risk zones (also occurring in the future) and their negative impact. In flood-related risks flood risk management plans are compiled with the water management plans. Water management plans and flood risk management plans production schedule and work plan with objectives was presented to public three years prior to approval of plans. Government shall prepare a flood risk management plan draft on the basis of an expert opinion where detailed objectives and measures are fixed and co-ordinate with relevant counties, municipalities, institutions and individuals for at least one year prior to the approval of plans. **Estonia**
- Guidance from national level for how to set the definitions of the objectives for the regional level. Discussions still ongoing. **SE**
- Hellenic Special Secretariat for Water has procured/assigned six (6) projects for the "Implementation of Flood Risk Management Directive covering all the River Basin Districts of Greece. The Technical Specifications of these projects are in accordance with the principles and recommendations set by the Directive 2007/60/EC. The above projects will finalize the objectives of flood risk management on a RBD level, according to the requirements of Floods Directive after public consultation and in cooperation with the Hellenic Special Secretariat for Water and the Hellenic General Secretariat for Civil Protection. **GR**

- General criteria for defining objectives are agreed at national level. Thus, in Germany four basic objectives are agreed for flood risk management in general: Prevention of new risks (before a flood) in the flood risk area, Reduction of existing risks (before a flood) in the flood risk area, Reduction of adverse consequences during a flood and Reduction of adverse consequences following a flood. Specific objectives will be set within the river basin districts and more detailed objectives at regional and/or local level. Objectives set at local level will be integrated into the FRM Plans for the respective river basin districts. **DE**
- 4 nationally defined – very general – objectives. **AT**
- Preliminary flood risk assessment; Flood hazard maps and flood risk maps + cost/benefits analysis + environmental impacts => Flood risk management plans **Basque Country**
- Legislation acts are/will be provided in the issues of flood risk management (protection, emergency response, damage preventing and preparedness), **Latvia**.
- Objectives settings follow up already defined goals of flood protection strategic documents approved on national level since 2000. Objectives aiming to achieve flood protection level set for plan period and the FRMPs define next one range of protected community that should be reached during the FRMP validity. **SK.**
- General objectives and specific sub objectives are being set out at the national and regional level by the governmental authorities. Both of the types of objectives got universal character. All objectives are going to be verified once again by the expert groups at the beginning of 2014. We defined 5 general objectives and 14 sub objectives. E.g. General objective: To restrain increasing flood risks (prevention phase); Sub objectives: - To maintain and enhance existing catchment retention capacity in the water region; - To prevent/avoid the development growth on areas at particular risk of flooding;- To define the conditions of possible land use of the areas directly protected by dykes. **PL.**
- Objectives are defined at the river basin level (Units of Mgmt) and decided and applied at the regional scale by regional authorities. **IT.**

3.2: Please describe briefly any consultation processes that are, were or will be used in setting the objectives:

- All the relevant authorities are involved in the flood management groups of each APSFR. These groups also consult other stakeholders during the preparation process. In addition, there are three official hearings in the process where stakeholders and citizens are consulted. Firstly, at the time of preliminary flood risk assessment. Secondly, when the flood management groups have set the preliminary objectives (together with description of the FRMP preparation process). Thirdly and lastly, when a proposal for the flood risk management plan is ready. **FI**
- Several workshops (on high and low water) with the participation of regional stakeholders, drinking water services, water managers and public authorities are held during the study 'environmental water quantity objectives for surface water bodies' in order to fit the objectives on a regional scale. Three testcases (with workshops) were chosen to finetune the objectives on a more local scale. The translation to the policy based implementation are and will be fitted by different taskforces, with the participation of different policy stakeholders. **BE**
- Administrative consultation during the definition stage, compliant public consultation after drafting the FRMP. **NL**
- Not specified in guidance – so locally determined, probably focus groups, local engagement, other interest groups and flood action groups etc: workshops to test values, priorities, visions and aspirations etc **UK**
- See above **ICPR**
- A national, web-based consultation process will be undertaken **IR**
- Objectives will be subject to full public consultation when draft FRM plans are published in December 2014. They will also be subject to consultation with other stakeholders through Local Advisory Groups (10 across Scotland). **Scotland**
- Objectives are put together by government on the basis of expert opinion but co-ordinates before approval of plans with public (this includes counties, municipalities, institutions and individuals). **Estonia**
- None for the time being, nothing decided. SE
- The Special Secretariat for Water (SSW) of the Ministry of the Environment, Energy and Climate Change (MinEnv) is responsible for the implementation of Floods Directive 2007/60/EC in Greece, on a national level. At the stage of Preliminary Flood Risk Assessment SSW : has taken into account all data reported on past floods by local and regional stakeholders; has published on the official site of the Hellenic Ministry of Environment, Energy and Climate Change all data related to PFRA; has taken into account all reactions from interested stakeholders (Public Services, NGOs, citizens) in order to define Areas with Potential Significant Flood Risk. In the same way, all data, methodologies and results of the above mentioned projects (point 3.1b) will be constantly available to the public via the website of the Hellenic Ministry of Environment, Energy and Climate Change through a special application that has been constructed. Additionally a special consultation programme with workshops, seminars and presentations will be applied in local and regional level with the participation of all relevant stakeholders. **GR**
- With regard to the general objectives, the consultation process at national level takes mainly place within the German Working Group on water issues of the Federal States and the Federal Government ("LAWA"). Within the river basin districts institutionalized organisations, called River Basin Communities, in which all Federal States completely or partially located in the respective river basin districts take part, promote the process. The consultation process within the Federal States is organized in different ways; in general, the global coordination within a Federal State is effected by its Ministry of Environment. At all levels, interested parties are actively involved in the consultation process, e.g. in the framework of regional or local Flood Partnerships. (“). **DE**
- The objectives were derived in various studies (incorporating stakeholders and administration, and selected private persons) and decided upon in the national working committee on the FD **AT**
- Public consultation & Coordination with municipalities **Basque country**
- Information gathering, Public consultations, including annual inquiry of municipalities on the flood events and consequences, discussions with experts, **Latvia**

- The process of elaboration of the Flood risk management plans includes consultations at the national expert group Flood. At the group have been appointed representatives of water management institutions, universities, state authorities. Approval process of the Flood risk management plans includes the Strategic Environmental Assessment. The Flood risk management plans will be finally approved by Government and therefore there will be inter-sectorial review required in advance. In Slovakia there have been used the consultation processes on PFRA with stakeholders touched on regional level (self-government districts/municipalities) and on local level (municipalities) and NGO´s too. The informative seminars were held too. The platform for exchange of the information was built on the www.minzp.sk. Planned are the same processes on the same levels in all of the following steps of implementation of the FD as FHM and FRM compilation, FRMP´s compilation. **SK.**
- General objectives and sub objectives were set out by the governmental authorities at the national level then they were reviewed and verified by regional water management authorities. At the beginning of 2014 the objectives are going to be once again verified by the planning expert groups at the sub-basin level. The groups of experts will include the representatives of waters administrators, municipalities and NGO's. **PL.**
- The objectives are set by an institutional board where RBAs, Regions, Ministries and other stakeholders participate. The information is then shared through specific forums to the population and the stakeholders. **IT.**

3.3a: From previous information exchange, it appears that different MS intend to set objectives in different ways. Please identify (highlight / underline) the way you foresee the objectives being defined?

A) Implementation of flood risk management measures (e.g., Implement a flood warning scheme) **8**
B) Achievement of a target level of protection (e.g., Protect community against a 100-year flood) **10**
C) Aiming at risk reduction (e.g., Reduce risk to people) **16**
D) Implementation of a process (e.g., Assess appropriate measure for the community) **8**
E) None of the Above / Other (if selected, please provide detail in Q3.3b) **1**

Other aspects of flood risk management seem to be overlooked in this questionnaire (prevention, preparedness). **NL**
every above mentioned points are relevant and part of the discussion on objectives setting. See also answer above under 3.1b. **ICPR**

3.3b: Please provide a brief description as to how the objectives will be defined, with examples, if possible, and whether they will be qualitative / quantitative (measurable), if indicators will be defined and if they will be time-bound:

- Objectives will be defined as described at q 3.1. Objectives are typically qualitative and formulated by achievement of a target level of protection (e.g. no people living at a 100-year flood risk area, or no objects with environment risk at a 250-year flood risk area) **FI**
- The objectives will be generic and qualitative defined. **BE**
- The objectives are "directional", they have a direction towards which flood risk management should move. Example: Protection objectives desire working towards a safety level that is measurable by legal standards. – **NL**
- Likely to be a mixture: so high level, eg "raise awareness of flooding and risk to a broad area", or 'reduce the reliance on asset management in the upstream of the catchment'; medium/getting smarter: eg "reduce the impact of extreme floods to vulnerable communities living along the coastline of xxx"; even smarter, e.g. " reduce the damages to community xxx to provide a cost beneficial level of service"; Probably also some that relate to the measure: eg implement scheme to attenuate flood water upstream of xxx"; Expect quite a lot of variation in developing objectives to suite local circumstances. **UK**
- Currently we are planning to have three sorts of objectives (subject to change): strategic objectives (ensure acceptable safety level, subsidiarity and solidarity principles, shared responsibility and efforts), operational objectives (reduce existing risks, avoid new risks, reduce negative consequences during and after flooding) and objectives related to measures (e.g. Accomplished all retention measures). Ongoing discussions about how the objectives of the Action Plan on Floods could be integrated in the FRMP (idea: take them as long-term objectives on more FRMP cycles). Until end of 2014 the ICPR is developing a GIS-based tool which will be used to gain information on the effects and effectiveness of flood risk management measures (as one help to draft the new FRMP; it is also possible to use the tool theoretically with potential measures) and to assess each 6 years the realization of the FRMP measures (this tool contains indicators linked to measures). **ICPR**
- Defined as reducing risk and / or achieving other benefits (e.g., contribute to achieving objectives of WFD) – See attached draft set of objectives to be put out to public consultation. They are set qualitatively, but are associated with Indicators and Aspirational Targets and Basic Requirements that will facilitate a quantitative assessment at the stage of appraising options. They objectives are not time-bound. **IR**
- Objectives will be based around the principles of avoiding risk, and reducing risk through protection and preparation. Objectives will use indicators and be time-bound to ensure they are measurable. **Scotland**
- - **Estonia**
- The overall arching objective is C) but discussions are ongoing. The outcome is not known now. **SE**
- In general, the objectives will be defined according to the respective risks. So the objectives for densely populated settlements and industrial zones may be to provide a level of protection from 100-year floods or even from 200-year floods. In addition, specific objectives can be defined, depending on regional or local characteristics Depending on the character of the respective objectives, they may be measurable or not. For example, objectives defined by annual probability or by other hydrological parameters, such as water flow, will in general include measurable indicators. The same applies for the number of flood zones to be determined within APSFR. **DE**
- Austria defined the objectives as follows: Avoidance of new risks; Reduction of existing risks; Strengthening resilience; Raising awareness **AT**
- The National Programme for the Assessment and Management of Flood Risks 2008 - 2015 sets the following objectives: 1. Detailed research of flood risk areas according to the flood risk criteria; 2. A preliminary assessment of areas subject to flood risk and planning for further action; 3. Clarification of priority areas at risk of flooding and determination of the specific measures for the prevention or reduction of flood risks; 4. Implementation of measures to be performed for the prevention of flood risks and the reduction of flood risks in priority areas. Besides, the planned results of the program implementation are defined (in a qualitative way, but naming priority sites for the implementation of the measures) and result-based indicators (descriptive and quantitative). Latvia also has used Other funding - EEA Financial Mechanism, Norwegian Financial Mechanism (for flood mapping) **Latvia**

- Aiming at risk reduction other than risk to people (economic activity, environment, cultural heritage,…); The objectives set by the Flood risk management plans will be completed with quantitative indicators of acreage of the areas and portion of affected inhabitants with appropriate flood protection level. Reduction of the risk other than to people will be quantified as costs of flood damages to costs of the proposed measures. **SK.**
- In Poland, it is planned to distinction on two levels of objectives: general and specific (sub objectives). General objectives are broadly understood as the objectives identified in the Flood Directive and therefore difficult to measure. Some specific objectives could be assessed qualitatively or quantitatively. However, we do not intend to identify the precise indicators or time frame for achieving the objectives. Examples of the objectives set in Poland are in point 3.1b. **PL.**
- Objectives are defined in a quantitative way through the measures by which they are implemented. This implementation is time-bound and its efficiency controlled throughout the different stages. **IT.**

3.4: Please describe briefly how setting the objectives will take account of:

A) WFD Objectives

- Generally, WFD objectives are taken in to account with objective "flood risk management measures should <u>not be in conflict with WFD objectives</u>". In many cases, there are also more precise objectives and the impact of FD measures on WFD objectives is evaluated / cross-checked, and vice versa. WFD objectives and synergies should influence the selection of the measures. **FI**
- In the definition of the goals, it is said to find an optimal set of measures. And to define this optimum the measures are assessed. One of the criteria of this assessment is the ecology. **BE**
- Involvement of WFD experts in the processes leading towards the FRMP **NL**
- By considering the objectives set out in RBMP (via the identification of reasons for failure and significant water management issues). We would expect the Strategic Environmental Assessment Policy, Programmes and Plan review to identify these generally then through relevant engagement and discussion we would seek to weave them into the development (or more like adoption) of objectives for the FRMP. Or we may just highlight/signpost where the WFD objectives can also be met through the measures (or perhaps where FRMP objectives may also contribute to WFD objectives – all this may depend on more local issues/evidence/certainty and practicality etc). **UK**
- link to the Water management plan Rhine and ongoing activities in the fields of water ecology and water quality **ICPR**
- Included as objective **IR**
- They won't. WFD objectives will be considered in the appraisal and selection of measures. **Scotland**
- -**Estonia**
- Flood Risk Management objectives will consider and take into account the status of water bodies as well as the objectives and the measures defined for each water body in the framework of the RBMPs. However FRM objectives may lead to changes and exceptions in WFD objectives. **GR**
- WFD and FRM objectives will be harmonized as much as possible. A linking paper and a catalogue of measures including both WFD and FD measures will support this process (see n° 3.5). **DE**
- Integration of Hydrologic plans and Flood risk management plans **Basque Country**
- Flood risks management plans will be integrated into the river basin management plans, so their harmonisation will be ensured, **Latvia**
- Some of WFD objectives seem to be contra productive, but good management, which means setting the objective in the way that it could bring multiplied effect can be assured in some cases. Application of the objectives for flood protection must satisfy criteria of ecological status of water bodies and measures must not deteriorate hydro-morphological criteria. **SK.**
- The objectives are at such a level of generality that are not directly relevant to the above mentioned issues. In Poland, the elements of coordination with the Water Framework Directive or cross-border cooperation will be indicated in the phase of selecting the measures. **PL.**
- Cross compliance checking is ensured by the RBD technical board. **IT.**

B) Objectives of other MS within trans-boundary river basins (if relevant)

- Transboundary river commission will address the FD objectives and has a representative in the flood management group of the area. **FI**
- NA **(BE)**
- This is part of the international river basin committees work packages. In Rhine, Meuse, Scheldt and also Ems, a coordinated international flood risk management plan will be produced. Coordination of objectives is a pivotal step in the drafting process. **NL**
- NA **UK**
- within the ICPR, the outcome of the FRMP Rhine will be a common plan based amongst other on national plans. **ICPR**
- **-**There is regular, ongoing information exchange and cooperation with the Rivers Agency, with a view to achieving compatible approaches. **IR**
- na **Scotland**
- In preliminary flood risk assessment there wasn't identified any areas of flood risk in within trans-boundary river basins. **Estonia**
- The objectives within trans-boundary river basins will be harmonized within the International Commissions for the protection of the respective rivers. **DE**
- Latvia is located in the downstream stretches of all international trans-boundary river basins present in its territory. Flood risks occur mainly in the river basin, which is common with the non-EU neighbouring countries – Belarus and Russia. For the moment intergovernmental agreements in the field of environmental protection and civil protection are used for the cooperation with these countries. For the EU neighbours consultation will be ensured during the consultation of river basin management plans, **Latvia.**
- National Act No. 7/2010 Coll about flood protection includes requirement of the Flood directive to negotiate the trans-boundary impacts with neighbouring countries. Negotiations with bordering countries are already executed in compliance with mutual international agreements. Will be set after common bilateral agreement in way to be effective for both sides. **SK.**
- The objectives are at such a level of generality that are not directly relevant to the above mentioned issues. In Poland, the elements of coordination with the Water Framework Directive or cross-border cooperation will be indicated in the phase of selecting the measures. **PL.**
- Specific agreement are in place with most of the trans-boundary river basins, the remaining ones are ongoing. **IT.**

C) Objectives that support or fulfil the objectives of the FRMP under other legislation

- Flood maps and FRMPs will influence on land use planning, zoning and building. And vice versa: national land use guidelines and land use and building act require that flood risk is taken into account. **FI** Lake regulation permits are controlled by the Water Act. Climate change and FD triggered a preparation of a new bill which would enable to operate different regulation permits in more flood- or drought -resilient manner and from the river basin perspective. **FI**
- Not clear what you mean with this question. Do you mean in a transboundary context? **BE**
- Unknown **UK**
- here we could mention the Action Plan on Floods which is implemented since 1998 in the
- Rhine basin. **ICPR**
- Objectives set under other legislation will support, but do not replace, those set for the FRMP **IR**
- only considered in appraisal and selection of measures. **Scotland**
- Flood Risk Management objectives will be defined taking into account all existing National or European legislation. **GR**
- Objectives under other legislation can especially be those set by local land use plans and regional development plans. These objectives will be integrated into the FRM Plans. **DE**
- Land use planning **Basque Country**
- Among the other things, flood risks and their prevention are described in the National Civil Protection Plan. Its objectives, measures etc. will be taken into account during the development of flood risk management plans, **Latvia**.
- If exist, will be integrated through the RBMP compiled under WFD (e. g. objectives for NiD – reducing nutrients through buffer zones and if buffer zone can e. g. give more space to rivers). **SK.**
- The objectives are at such a level of generality that are not directly relevant to the above mentioned issues. In Poland, the elements of coordination with the Water Framework Directive or cross-border cooperation will be indicated in the phase of selecting the measures. **PL.**
- They are fixed by the national law (D. Lgs. 152/06). **IT.**

D) Potential benefits to other sectors/policy areas

- Multi-Criteria Decision Analysis (MCDA) is used and it takes into account all different aspects that planned objectives and measurements could cause. MCDA includes these sectors: economy (transport, properties…). social (healt, security, Landscape, cultural heritage, recreation), ecology (fish and other aquatic fauna, nature conservation) **FI**
- The environmental water quantity objectives for surface water bodies are delineated for all relevant sectors, all of them (water management, navigation, water supply, cultural heritage, ecology, …) were questioned in the study as mentioned above. In that way the delineated objectives for the different sectors take into account the potential benefits. **BE**
- By considering the objectives set out in other policy areas (eg in land use plans, transport plans etc). We would expect the Strategic Environmental Assessment Policy, Programmes and Plan review to identify these generally then through relevant engagement we would seek to weave them into the development (or more like adoption) of objectives for the FRMP **UK**
- maybe we will mention the climate change topic **ICPR**
- Objectives include achievement of benefits for other policy areas (environment, employment, cultural heritage, etc.) **IR**
- only consideration in appraisal and selection of measures **Scotland**
- Flood Risk Management objectives will be defined taking into account social, economic parameters and development priorities in each RBD. **GR**
- In return, the objectives defined in FRM Plans can influence local land use plans and regional development plans. **DE**
- There are some potential benefits, e. g. more space to rivers - to PA´s, which is the scope of NGO´s; building reservoirs – benefit for HP sector; better property protection – less investments for insurance companies, municipalities, state, and responsible body which has to maintain the damages. **SK**
- The objectives are at such a level of generality that are not directly relevant to the above mentioned issues. In Poland, the elements of coordination with the Water Framework Directive or cross-border cooperation will be indicated in the phase of selecting the measures. **PL.**
- They are ensured by the fact that in national legislation flood risk management policy is superimposed on every other land development policy. **IT.**

3.5: If you already have developed objectives, or guidance on setting objectives, please attach any relevant documents and / or provide a web-link for access to this information:

- National general guidelines on setting objectives exists, but only in Finnish **FI**
- Under development **BE**
- Annex A at the end of this survey is taken from the initial (draft) guidance we have issued – please take a look: https://brand.environment-agency.gov.uk/mb/B1vhej; Our "FRMP" web page has some mock ups that we've shared to get some feedback: http://www.environment-agency.gov.uk/research/planning/135520.aspx **UK**
- The FRMP draft is confidential. However you can get here information on ongoing activities (and outcomes) linked to the FD: http://www.iksr.org/index.php?id=309&L=3&cHash=455fdab52ce6eafbf6f72632159564bf And here some information on our Action Plan on Floods (which well be "transformed" into a FRMP Rhine): http://www.iksr.org/index.php?id=123&L=3&cHash=455fdab52ce6eafbf6f72632159564bf and the "Balance on the implementation of the Action Plan on Floods between 1995 and 2010": http://www.iksr.org/index.php?id=190&L=3&ignoreMobile=1&tx_ttnews[tt_news]=776&cHash=35778a3c86926e85816f994e8178c3b3 **ICPR**
- Draft for consultation is attached **IR**
- See attached document – 'FRM Strategy Appraisal Method v1.0' **Scotland**
- Discussions ongoing, no process defined yet. **SE**
- Technical Specifications for Flood Risk Management Plans Elaboration Projects are available to the public via the website of the Hellenic Ministry of Environment : http://www.ypeka.gr/?tabid=473 **GR**
- Recommendations for the Establishment of Flood Risk Management Plans), adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 26/27 September 2013 ("Empfehlungen zur Aufstellung von Hochwasserrisikomanagementplänen"); Recommendations for coordinated application of the FD and WFD – Synergies at measures data management and public participation"), adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 26/27 September 2013 („Empfehlungen zur koordinierten Anwendung der EG-HWRM-RL und EG-WRRL - Synergien bei Maßnahmen, Datenmanagement und Öffentlichkeitsbeteiligung"); Catalogue of measures according to the WFD and FD), adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 26/27 September 2013. ("LAWA-Maßnahmenkatalog WRRL, HWRM-RL")These documents are not yet available in English. As a consequence of the flood event in May/June 2013 and in addition to the Flood Risk Management according to the FD, the Federal Ministers of Environment have agreed at a conference on 2 September 2013 to compile a National Flood Protection Programme including a river basin district-related evaluation and, if necessary, the enhancement of relevant design bases and parameters as well as a common approach to the assessment of impacts of potential measures. A catalogue of flood prevention measures with supra-regional impacts will be compiled. **DE**
- Hydrological Plan: http://www.uragentzia.euskadi.net/u81-0003/es/contenidos/informacion/2013_aprobacion_hidrologico/es_def/index.shtml; Report about flood hazards maps and flood risk area: http://www.uragentzia.euskadi.net/u81-0003/es/contenidos/informacion/2013_consulta_mapas/es_def/index.shtml **Basque Country**
- "National Programme for the Assessment and Management of Flood Risks 2008 – 2015" was used as a preliminary flood risk assessment and included objectives that were important at the time of its development. The National Program is available at: http://polsis.mk.gov.lv/view.do?id=2432. However, the objectives will be reviewed during the development of flood risks management plans. **Latvia.**
- Objectives followed the Program of flood protection until 2010 approved by the Government. Up to 2015 in section of water management including flood protection is valid the Conception of Water management in the Slovak Republic. **SK.**
- The information with the indicated objectives will be sent as soon as possible. **PL.**

3.6: Please provide any other relevant information you think would be of value / interest to other MS: - Our "FRMP" web page has some mock ups that we've shared to get some feedback: http://www.environment-agency.gov.uk/research/planning/135520.aspx **UK** - http://www.sepa.org.uk/flooding/flood_risk_management/planning_for_floods.aspx **Scotland** - FRMP, to meet with other set of legislations and regulations according to risks in Sweden. Risk management are lead at local level in Sweden. **SE** - Please note that the correct objective choice is the most important matter for the management of flood risk. However, it is a matter of individual countries, depending on the typology of the hydrographic network or area. **PL.**

4. MEASURES

4.1a: At what level will the process for selecting measures be: A) Defined? B) Applied?	Nationally **13**/ Regionally **11** / APSFR 7/ Locally **6**/ Other **4** Nationally **10** / Regionally **14** / APSFR **12** / Locally **11** / Other **2** (Flood warning can be a bit more regional, eg we have had an "East Coast" review of extreme flooding) We could also include sonme national initiatives, eg policy measures or national emergency planning initiatives (eg tests) **UK** Internationally defined, nationally implemented **(ICPR)**

4.1b: Please provide a brief description of the responsibilities for the selection of measures:

- Local flood risk management groups are responsible for the whole flood risk management cycle in their own area (watershed including at least one significant flood risk area). These groups consist of experts from Centres for Economic Development, Transport and the Environment, municipalities, rescue services, and other stakeholders. Selection of the measures are made together with other different stakeholder groups, but it is every flood risk management groups' decision how much they will use their own expertise and how much they need and use expertise outside the group. **FI**
- The water managers and other stakeholders deliver possible measures to reduce the risk of flooding (this process runs together with defining measures in relation to the WFD). We take all these measures into account, the selection will occur after the prioritisation and based on budget - restrictions. **BE**
- Step 1: Bottom up inventory of measures taken by any water management authority Step 2: Inventory from the viewpoint of coordination on a national level Step 3: Coordinated approach for monitoring **NL**
- Risk Management Authorities in England are responsible for selecting measures but we have local partnerships where they work together, with communities and develop these measures. Different authorities have different governance, and these need to be considered. National good practice guidance on project appraisal, options assessment and benefit cost assessment will inform selection of measures. Selection of measures will depend on effectiveness, affordability and the availability of funding, possibly. In England we have the Environment Agency who is responsible for developing measures to manage flood risk from main rivers, the sea and reservoirs. Lead Local Flood Authorities (local government) are responsible for developing measures to manage flood risk from ordinary watercourses, surface water and groundwater. The Environment Agency is responsible for "agreeing" or "approving" its measures, and the Lead Local Flood Authorities are responsible for "approving" their measures. These authorities work in partnership to deliver flood risk management. Note: "main" rivers are generally larger that "ordinary watercourses (and are defined through a legislative process) **UK**
- In the FRMP Plan Rhine it is planned to integrate common transnational measures (e.g. the ones from the Action Plan on Floods (APF)) and gather together national/regional measures (bottom-up). **ICPR**
- The measures will be assessed on the basis of a structured appraisal process, with the decisions on selection undertaken by a steering group comprising national and local government representatives, guided by the structured appraisal outcomes and public and stakeholder consultation. **IR**

- SEPA as a national body has responsibility for selecting measures. However, others including local authorities are responsible for delivery, so SEPA intends to select the measures working in partnership with relevant delivery bodies. This is being achieved through 14 Local FRM Plan District Partnerships that have been established across Scotland. **Scotland**
- In Estonia management of floods is not addressed holistically so far. Floods Directive implementation takes the first steps in this direction. Flood risk maps and flood hazard maps are currently under construction. Objectives setting is based on the objectives of the Directive, as well as floods occurring in risk zones (also occurring in the future) and their negative impact. In flood-related risks flood risk management plans are compiled with the water management plans. Water management plans and flood risk management plans production schedule and work plan with objectives was presented to public three years prior to approval of plans. Government shall prepare a flood risk management plan draft on the basis of an expert opinion where detailed objectives and measures are fixed and co-ordinate with relevant counties, municipalities, institutions and individuals for at least one year prior to the approval of plans. **Estonia**
- Local responsibility **SE**
-
- Prevention and Recovery Measures will be selected by the services of the Hellenic Special Secretariat for Water in collaboration with regional Authorities for water Management, taking into account: the proposals of technical consultants, the consultation process results and the reactions of regional/local stakeholders, funding possibilities and restrictions. Preparation and Response Measures will be selected by the services of the Hellenic Special Secretariat for Civil Protection in collaboration with regional Authorities for Civil Protection. **GR**
- See 3.1b **DE**
- The responsibility for the selection of measures associated to APSFRs is by the 9 Regional Governments. The Federal State provides a Guidance Document. There will be a “strategic” flood risk management plan on Federal and Provincial level. **AT**
- Flood Risk Management Plans: the state; Regionally: Basque Water Agency + Civil Protection + Land use planning authorities; Locally: Land use planning and Civil protection emergency plans. **Basque Country**
- Latvian Environment, Geology and Meteorology centre is responsible for the development of flood risk management plans, hydrometric monitoring and flood risk analysis, early warning. The measures to be included in the flood risk management plans will be proposed during the development of these plans, but they might be changed during public consultation and strategic environmental impact assessment procedure, which shall be applied to flood risks management plans. Besides, flood risk management plans will be consulted with other ministries and relevant public authorities, which also may propose changes of measures. Regional and/or local authorities are responsible for the implementation of the measures, but have their say during the consultation procedure, **Latvia**.
- To each APSFR the water management authorities in cooperation with other institutions ensuring management and operation of land (forestry, agriculture, and municipal authorities) suggest at least two measures to ensure flood protection of the area identified in a frame PFRA. Investment and operation cost are calculated per every measure. Potential damages and risks represented by absolute values of the flood risk entities (inhabitants, etc.) are defined for APSFR. **SK.**
- Selection of measure is going to be conditioned by the formal decision of national and regional authority. However, this is going to be done on the basis of applications from APSFR and local level. Measures will be selected by a multi-criteria analysis performed by the experts group at the sub-basin and water regions level. **PL.**
- Measures are selected at the UoM level if they relate to trans-regional basins, at the regional level otherwise. **IT.**

4.2: Please describe briefly any consultation processes that that are, were or will be used in selecting the measures:

- Multi-criteria decision analysis (MCDA) will be used in the process. Process is described more in detail in the conference paper Involvement of local stakeholders with Multi-Criteria Decision Analysis in flood risk management in Finland (Parjanne et al. 2012) (http://www.danube-floodrisk.eu/download/sessions/Session4.zip) **FI**
- Consultation is the input of measures from all those involved. **BE**
- Administrative consultation during the definition stage, compliant public consultation after drafting the FRMP. **NL**
- These will be designed by the authorities but will probably include workshops, public meetings, broader mail shots, meetings with councils and other committees etc. They will also consider the need for strategic environmental assessment and consultation with the statutory environmental bodies. We also have a list of specific bodies (and the public) that we need to consult and make information available via web pages etc. **UK**
- Same as 3.2 **ICPR**
- Consultation on proposed measures and the alternatives considered will be undertaken informally at an APSFR-level through public consultation days, and then again through a formal consultation process on the draft FRMPs. **IR**
- Measures will be subject to full public consultation when draft FRM plans are published in December 2014. They will also be subject to consultation with other stakeholders through Local Advisory Groups (10 across Scotland). **Scotland**
- In flood-related risks flood risk management plans are compiled with the water management plans. Water management plans and flood risk management plans production schedule and work plan with objectives was presented to public three years prior to approval of plans. Government shall prepare a flood risk management plan draft on the basis of an expert opinion where detailed objectives and measures are fixed and co-ordinate with relevant counties, municipalities, institutions and individuals for at least one year prior to the approval of plans. **Estonia**
- Proposed measures will be made available to the public via the website of the Hellenic Ministry of Environment, Energy and Climate Change through a special application that has been constructed and will be presented and discussed with regional and local stakeholders during the consultation process of FRMPs. **GR**
- see n° 3.2; When measures have to be implemented by other bodies, they have to be consulted and should agree. **DE**
- From the legal side (Water law) there is the consultation process beginning in Dec. 2014 binding. BUT: We consulted numerous stakeholders and private persons in the frame of studies to develop methods for objectives, measures and prioritisation. As well as consultation on municipal level will take place prior to the legally binding consultation process in the frame of selection measures on APSFR level. **AT**
- Public information and consultation & Interinstitutional coordination **Basque country.**
- Flood risk management plans will be integrated in the river basin management plans, for whom at least 6 month long consultation period is envisaged. During the consultation period also flood risk prevention and minimisation measures will be discussed in each of the 4 river basin districts. Besides, the flood risk prevention and control measures will be discussed in the river basin district consultation boards, which involve public institutions, municipalities and NGOs. **Latvia.**
- Water management authorities compile final list of measures on the basis of inputs of all stakeholders that ensure management of the land and so have possibility to execute measures for flood protection. Conceptual approach as mutual consensus of suggested measures in setting of final list of optional measures to all APSFR is a ground for negotiation coordinated by national expert group Flood managed by Ministry of the Environment of the Slovak Republic. Moreover concept of Flood risk management plan will be subject for SEA. **SK**
- During the development of flood risk management plans are scheduled planning experts group meetings at the level of sub-basin, with representatives from the municipalities, NGO's and water administrators. Analogous meeting will be held as well at the national and regional level. **PL.**
- Measures are anyway discussed in the technical board inside the river basin authorities in which all stakeholders and expert participate. After approval they are published to get feedback from population. They are anyway presented in public forums during the process. **IT.**

4.3a: From previous information exchange, it appears that different MS intend to define measures in different ways. Please identify (highlight / underline) the ways you foresee the measures being defined for a given location? (Please highlight more than one if appropriate)

A) Specific flood risk management measures (e.g. a flood defence wall, a flood storage area, a flood warning scheme, etc., i.e., a defined sub-type of measure with some design detail) **14**
B) Types of flood risk management measure (e.g. flood prevention, flood protection, etc., i.e., without defining what sub-type of measure and without any design detail) **12**
C) Flood risk management policies (e.g. 'Reduce flooding', or 'Permit Flooding and Reduce Vulnerability') **10**
D) Analysis, Research and / or Information Gathering (e.g. Increased hydrometric monitoring to improve information base, further more detailed analysis, etc.) **13**
E) None of the Above / Other **1**

- Not filled out **ICPR**

4.3b: If 'Other' is selected, please provide a brief description as to how the measures will be defined, with examples, if possible:

- All types of measures, structural, non-structural, etc., that could be possible in the whole catchment of each ASPFR will be put on the table. The most feasible ones will be selected for more careful analysis e.g. MCDA and prioritised. In some cases, a new research proposal or information gathering could also be considered as a measure. **FI**
- Protection programmes such as the national Flood Protection Programme (HWBP), or national programmes for crisis management (preparedness). **NL**
- In the FRMP Plan Rhine it is planned to integrate common transnational measures (e.g. the ones from the Action Plan on Floods (APF)) and gather together national/regional measures (bottom-up). **ICPR**
- The most appropriate way for defining the objectives will be assessed according to natural conditions, source of flooding, location of municipalities and economic activities, CBA, … in particular risk location. **SK**

4.4a: What processes and criteria do you foresee being used to select measures? (Please highlight more than one if appropriate)

A) Economic Analysis (e.g., benefit – cost ratio) **15**
B) Multi-Criteria Analysis **15**
C) Public / Stakeholder Opinion **11**
D) Regional / Social Equity **7**
E) Addressing Specific / Exceptional Risks **10**
F) None of the Above / Other **4**

- Not filled out **ICPR**

4.4b: If 'Other' is selected, please provide a brief description as to how the measures will be defined, with examples, if possible:

- The water managers and other stakeholders deliver possible measures to reduce the risk of flooding (this process runs together with defining measures in relation to the WFD). We take all these measures into account, the selection will occur after the prioritisation and based on budget - restrictions. **FI**
- Effectiveness at managing flood risks. Sustainability of measures. **UK**
- We plan to have two sorts of objectives: long-term strategic objectives (on more FRMP cylcles) and operational objectives (and measures) that will be for the first cycle. Until end of 2014 the ICPR is developing a GIS-based tool which will be used to gain information on the effects and effectiveness of flood risk management measures (as one help to draft the new FRMP; it is also possible to use the tool theoretically with potential measures) and to assess each 6 years the realization of the FRMP measures (this tool contains indicators linked to measures). **ICPR**
- Probably Poland is going to use in selected areas hydraulic modelling to define the effects of the use of the selected measure. **PL.**

4.5: Please describe briefly how setting the measures will take account of:

A) WFD Measures

- While selecting the measures, the primary objective is flood risk management, however they should conflict with WFD objectives and WFD measures as little as possible. Moreover, , win-win measures are prioritised e.g. by having a higher prioritisation in the MCDA. A couple of research /pilot studies exist to; - identify potential win-win measures; - increase interaction and cooperation between WFD and FD planners and experts; - develop common practices and planning tools, which would support both river basin management and flood risk management and their integration. **FI**
- Some of the measures provide an answer to ecological and flood risk protection goals. So, when defining the measures we try to look at a win-win situations. **BE**
- Compliant to FRMP and WFD **NL**
- -We will be consider the sorts of measures being identified in developing the RBMPs so we can see where there are joint outcomes that can be delivered, for example. **UK**
- -Considered as an objective that forms part of the option appraisal process for measures **IR**
- part of the appraisal of measures in our multi-criteria analysis **Scotland**
- Flood Risk Management measures will consider and take into account the status of water bodies and the measures defined for each water body in the framework of the RBMPs. However FRM measures setting may lead to changes in WFD measures and exceptions for water bodies status. **GR**
- See 3.4a **DE**
- Synergies will be outlined and discussed **AT**
- Integration of Hydrologic plans and Flood risk management plans, **Basque country**
- Flood risks management plans will be integrated into river basin management plans, so their harmonisation will be ensured. **Latvia.**
- Part of the measures preparation to stage of execution will form evaluation of potential impact to overall value of ecological status of water bodies, respectively supported “environmentally friendly” measures that is one of adverse consequences of evaluation of the measures according cost benefit ratio. **SK**
- Every measure will have their own “card of measure” where will be set points, which the task should be performed: e.g. The impact on the environment and the environmental objectives set out in Article 4 of the Water Framework Directive; Extent of the impact (national, regional, local). It is expected to analyse all flood protection measures in Poland which are under realization or planned to realization (e.g. measures implemented under other legislation). It is expected to gain the information about relevant measures from the other MS within trans-boundary river basins. **PL.**
- It is ensured by specific analysis assessing possible impacts on WFD measures. **IT.**

B) Measures and flood risk in other MS within trans-boundary river basins (if relevant)

- Transboundary river commission will have a strong role in selection the measures. **FI**
- Combined studies or bilateral consultation with other MS, can lead to the definition of measures on both sides of the border (examples: EU-project AQUADRA, Grens-Maas) **BE**
- This is part of the international river basin committees work packages. In Rhine, Meuse, Scheldt and also Ems, a coordinated international flood risk management plan will be produced. Coordination of measures is a pivotal step in the drafting process, both on a bilateral and transnational level. **NL**
- NA **UK**
- Will be considered in cooperation with the Competent Authority in other MS (Northern Ireland) **IR**
- NA **Scotland**
- We have only one trans-boundary river basin (Koiva) there isn't any flood risk zone, so therefore defining measures it wouldn't be taken into account. **Estonia**
- Measures within trans-boundary river basins will be discussed and FRMPs will be coordinated with Bulgaria via the Joint Expert Working Group that has been established The Joint Expert Working Group has agreed to examine the organization of bilateral events in order to present the results and proposals of FRMPs to the Bulgarian and Greek stakeholders in early 2015. **GR**
- See 3.4b **DE**
- Flood risks occur mainly in the river basin, which is common with the non-EU neighbouring countries – Belarus and Russia. For the moment intergovernmental agreements in the field of environmental protection and civil protection are used for the cooperation with these countries. For the EU neighbours consultation will be ensured during the consultation of river basin management plans. **Latvia.**
- For measures of APSFR with potential trans-boundary impact of floods, country is duty to negotiate al latest during contraction permission without such agreement structure measure never will be done. Therefore the country concern to trans-boundary assessed suggested measure in a stage of planning. In such way Slovakia already satisfy requirements of the Flood directive. For huge flood protection measures evaluation potential impacts of measures to flood flows regime will be evaluated and should be part of application form of funding. **SK.**
- Every measure will have their own "card of measure" where will be set points, which the task should be performed: e.g. The impact on the environment and the environmental objectives set out in Article 4 of the Water Framework Directive; Extent of the impact (national, regional, local). It is expected to analyse all flood protection measures in Poland which are under realization or planned to realization (e.g. measures implemented under other legislation). It is expected to gain the information about relevant measures from the other MS within trans-boundary river basins. **PL.**
- They are ensured by specific agreements. **IT.**

C) Measures implemented under other legislation

- If the new Water Act bill (see above) will be adopted then it would be possible to prepare river basin level operation rules to be used in the case of flood or drought and that would bound permit holders in order to minimise flood damage at river basin scale. **FI**
- Same as in 4.5A, in defining the measures we try to find win-win solutions. **BE**
- -unknown **UK**
- Will be considered for impact on flood risk, and cumulative / in-combination effects in relation to environmental impact **IR**
- through engagement with relevant bodies **Scotland**
- discussions ongoing **SE**
- Flood Risk Management measures will take account and incorporate all relevant measures implemented on national and regional level under other legislation. **GR**
- Such measures will be integrated into the FRMP. **DE**
- Will be part of the FRMP **AT**
- Land use planning and coastal authorities, **Basque country**
- During consultation in consultative boards and asking for official opinions of other public institutions. **Latvia.**
- Measures of flood risk management focusing to retention of water in a basin and reduction of culminations flood waves support regime of warning system of civil protection downstream of water reservoirs. **SK**
- Every measure will have their own “card of measure” where will be set points, which the task should be performed: e.g. The impact on the environment and the environmental objectives set out in Article 4 of the Water Framework Directive; Extent of the impact (national, regional, local). It is expected to analyse all flood protection measures in Poland which are under realization or planned to realization (e.g. measures implemented under other legislation). It is expected to gain the information about relevant measures from the other MS within trans-boundary river basins. **PL.**
- At the experimental level with agricoltural policies and at the institutional level with civil protection ones. **IT.**

4.6: If you already have developed a process or guidance for identifying measures, please attach any relevant documents and / or provide a web-link for access to this information:

- Identifying measures will be based on WGF8-8-Scoping paper on flood related economics_final version_v2_October 2010. Also grouping of measures is similar as in table 2 (catalogue of measures, p. 42) **FI**
- Nothing too detailed – there is already plenty of guidance available to us https://brand.environment-agency.gov.uk/mb/B1vhej **UK**
- Guidance is currently in draft form, but can be made available once finalised **IR**
- See attached document – 'FRM Strategy Appraisal Method v1.0' **Scotland**
- Recommendations for the Establishment of Flood Risk Management Plans), adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 26/27 September 2013 ("Empfehlungen zur Aufstellung von Hochwasserrisikomanagementplänen"); Guidelines for the execution of cost comparison calculations), issued by DWA Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e. V. (8th edition 2012) („Leitlinien zur Durchführung dynamischer Kostenvergleichsrechnungen (KVR-Leitlinien)"); "Strategic document on the effects of climate change on water management", adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 25/26 March 2010 ("Strategiepapier „Auswirkungen des Klimawandels auf die Wasserwirtschaft"); Catalogue of measures according to the WFD and FD), adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 26/27 September 2013. ("LAWA-Maßnahmenkatalog WRRL, HWRM-RL"); These documents are not yet available in English. **DE**
- We don't have documents yet, I will present it **AT**
- Hydrological Plan: http://www.uragentzia.euskadi.net/u81-0003/es/contenidos/informacion/2013_aprobacion_hidrologico/es_def/index.shtml; Report about flood hazards maps and flood risk area: http://www.uragentzia.euskadi.net/u81-0003/es/contenidos/informacion/2013_consulta_mapas/es_def/index.shtml; **Basque Country.**
- "National Programme for the Assessment and Management of Flood Risks 2008 – 2015" was used as a preliminary flood risk assessment and included objectives that were important at the time of its development. The National Program is available at: http://polsis.mk.gov.lv/view.do?id=2432; However, the objectives will be reviewed during the development of flood risks management plans. **Latvia.**
- Prepared guidance for identifying measures will be sent to the Commission as soon as possible. **PL.**
- http://www.isprambiente.gov.it/en/publications/handbooks-and-guidelines/guidelines-to-assess-the-hydrogeological-risk-and-the-mitigation-by-means-of-measures-and-activities-in-in-agriculture-and-forestry?set_language=en. IT.

4.7a: Which flood risk management strategies[1] / types of measures are already implemented in your country/resp. ICPR?

A) Prevention **18**
B) Protection **17**
C) Preparedness **16**
D) Emergency Response **16**
E) Recovery **13**

We are adding Lessons learned to the process described above. **SE**

Note 1. http://ec.europa.eu/environment/water/flood_risk/flood_risk.htm

4.7b: Which flood risk management strategies / types of measures do you foresee being included as part of the FRMPs in your country?

A) Prevention **18**
B) Protection **18**
C) Preparedness **18**
D) Emergency Response **18**
E) Recovery **14**

Expected shift from AB to ABCDE
FI

Expected shift from all to all
BE, NL, England, Scotland, SE, GR, IR, DE, AT, IT.

Expected shift from ABC to all
ICPR

Expected shift from A and D to all
ES

Expected shift from ABCD to ABCD
Basque country, PL.

Expected shift from ABCDE to ABCD
Latvia, SK

4.8. Which new strategies / measures have been introduced - or received much more priority - in the last decade?

- Before the FD: - Initiative to prepare general plans to mitigate damages caused by extreme floods in 2003. The plans covered 13 risk areas. The plans were rather similar to the flood risk management plans currently under the preparation. However some principal differences exists: the planning area was smaller (targeted to each flood risk area separetely, not to the whole river basin) and flash and coastal floods were not considered with similar weight than after the FD. **FI** A task force of extreme floods made also other recommendations that have been implemented or the process of implementation started already before FD, for example - regular negotiations of municipalities and regional environment centres; - a revision of the Act on the Compensation for Flood Damage; - flood hazard mapping of potential risk areas. **FI** After the FD (in addition to the transposition and implementation of the FD) - Flood and climate -proofing of the national land use guidelines; - National flood information system; - Revision of the national water resources strategy, flood risk management prioritised higher; - Clarification of the responsibilities of different types of floods and addressing more stormwater floods and coastal floods than previously; - Emphasis on flood risk awareness; - Replacement of a government based flood damage compensation system by insurances from 2014 onwards; - A new bill to revise the Water Act to be more flood and drought resilient **FI**
- Preparedness and prevention **BE**
- Emergency response and prevention (in the FD sense) have evolved, but protection will remain the predominant aspect of Flood Risk Management due to the hydrogeographical circumstances. **NL**
- Perhaps more emphasis on emergency response as well as recovery, but I have no specific evidence to hand to base this on. **UK**
- Creation of retention basin and flood plain renaturation, improvement of flood forecasting, flood risk awareness rising We found also that within the countries and in the discussions non-structural measures are getting more importance. **ICPR**
- A greater emphasis has been placed on non-structural measures over the last decade, i.e., prevention, preparedness, emergency response and recovery **IR**
- More emphasis on avoiding risks through land use planning and preparing for flooding through flood warning, emergency response etc. **Scotland**
- We do not have any new strategies or measures **Estonia**
- Preventive measures and disaster risk reduction. Risk and vulnerability analysis and strategy for vital societal functions and continuity planning. According to the Civil Protection Act all municipalities shall have action programs addressing their risks. **SE**
- In general, a more complex approach to FRM in the sense of the FD has been developed in Germany since 2002. In some Federal States comprehensive Flood Protection Concepts, comparable to FRM Plans according to the FD, have been developed since 2004 for all big rivers and many small rivers, and flood zones have systematically been determined to keep areas likely to be flooded clear of building. In coastal areas, climate change is taken into account, when dykes have to be reinforced. **DE**
- Land use planning; Structural measures; Flood early warning systems, **Basque country**
- Development of legal regulations prohibiting construction in the floodplains. **Latvia.**
- Flood protection Act supports as one of most important issues the prevention of potential flood damages with regard to settlements development. On the basis of the Act following do flood hazard maps issue state authorities sets floodplains with specific list of forbidden activities and shift part of responsibility to flood protection to individuals as property owners. **SK.**
- Prevention and Protection. **PL.**
- All the above mentioned measures. **IT.**

4.9: Please provide any other relevant information you think would be of value / interest to other MS. In particular, please include examples of measures / strategies that have been successfully implemented: - Transboundary FRMP: NVE has prepared example of croos-border management plan as a part of SAWA-project: Challenges in flood risk management planning - An example of a flood risk management plan for the Finnish-Norwegian River Tana; http://www.sawa-project.eu/uploads/documents/rapport16-12.pdf **FI** - The FRMP draft is confidential. However you can get here some information on our Action Plan on Floods (which well be "transformed" into a FRMP Rhine): http://www.iksr.org/index.php?id=123&L=3&cHash=455fdab52ce6eafbf6f72632159564bf and the "Balance on the implementation of the Action Plan on Floods between 1995 and 2010": http://www.iksr.org/index.php?id=190&L=3&ignoreMobile=1&tx_ttnews[tt_news]=776&cHash=35778a3c86926e85816f994e8178c3b3 **ICPR** - Further details of FRM Activity can be found here: http://www.sepa.org.uk/flooding.aspx **Scotland** - Strategy for vital societal functions, "A functioning society in a changing world" Guide to Risk and vulnerability analyses A first step towards a national risk assessment (also available as a summery) Public warnings National Platform for disaster risk reduction, according to Hyogo Framework of Action and UNISDR All publications are available as pdf-files from the MSB website, https://www.msb.se/en/Products--services/Publications/Publications-from-the-MSB/ **SE** - The Hellenic General Secretariat for Civil Protection has set a procedure for the public information and training in vulnerable flood zones in cooperation with regional civil protection authorities. In Greece, flood damages to agricultural production and livestock are compensated via the Hellenic Agricultural Insurance Organization (ELGA). In the same way flood damages to buildings and housing equipment are compensated via the Earthquake Victims Rehabilitation Agency (YAS). **GR** - Regulation of land use within floodplains; Flood early warning systems and decision support systems, **Basque Country** - In Poland still the most popular is prevention and protection strategy. As a preventing measure in Poland the most popular are: preventing damage caused by floods by avoiding construction of houses and industries in present and future flood-prone areas and by adapting future developments to the risk of flooding and by promoting appropriate land-use, agricultural and forestry practices and increasing public awareness. Using a strategy of protection we are taking measures, both structural (dykes, polders, reservoirs) and non-structural (natural flood management) to reduce the likelihood of floods and/or the impact of floods in a specific location. **PL.**

5. PRIORITISATION

5.1a: At what level will the process for setting priorities be: A) Defined? B) Applied?	Nationally **14** / Regionally **10** / APSFR **4** / Locally **3** / Other **2** Nationally **12** / Regionally **12**/ APSFR **8** / Locally **8** / Other **2** Internationally defined, nationally implemented **ICPR**

5.1b: Please provide a brief description of the responsibilities for prioritisation:

- General guidelines nationally, but flood risk management groups are responsible for prioritisation in their area. **FI**
- Water managers/ competent authorities make a prioritisation of the measures they are responsible for. At sub-basin level (11 sub-basins in Flanders) the basin management (political consultation between the Flemish Region, the provinces and the municipalities) also prioritises the different measures. **BE**
- Legal responsibility is consistent with authority of competent authorities
- For FRMPs, this is the same as "measures" above **UK**
- The Rhine States have common discussion on prioritisation although the priority is on objectives and measures that have positive transnational effects (retention basins, flood plain restoration, flood forecast, awareness rising). **ICPR**
- Most measures will be funded be central government, and hence will be prioritised nationally. Local funded measures can be prioritised locally. **IR**
- SEPA is responsible for setting priorities for measures within FRM plans. **Scotland**
- Objectives and measures will be prioritized according to importance. Impact to human health, property, economic and environment. **Estonia**
- Prevention and Recovery prioritisation will be done by the services of the Hellenic Special Secretariat for Water in collaboration with regional Authorities for water Management, taking into account of : measures evaluation based on economical and technical criteria, local and regional priorities for development and protection, funding possibilities and restrictions. Preparation and Response prioritisation will be selected by the services of the Hellenic Special Secretariat for Civil Protection in collaboration with regional Authorities for Civil Protection. **GR**
- Basically, the prioritisation will be effected by the same bodies who define the objectives and the measures. **DE**
- Strategic prioritisation made by the federal state – adapted by the Federal Provinces and applied to the APSFRs by the Federal Provinces – sent back to Federal state. **AT**
- State; Basque Government: Basque Water Agency and Civil Protection, **Basque Country**
- Latvian Environment, Geology and Meteorology centre is responsible for the development of flood risk management plans. The priorities will be proposed during the development of the flood risk management plans, but they might be changed during public consultation and strategic environmental impact assessment procedure, which shall be applied to flood risk management plans. Besides, flood risk management plans will be consulted with other ministries and relevant public authorities, which also may propose changes of priorities. Regional and/or local authorities have their say during the consultation procedure. **Latvia.**
- Ministry of the Environment of the Slovak Republic on the basis of available inputs of stakeholders applied described ranking and decision making process of preparation of draft of Flood risk management plan that is consequently assessed under SEA and inter-sectorial approval of ministries before submission to the Government. **SK**.
- Prioritization process is still not finally determined. We are planning to make a prioritization of measures at APSFR and local level by planning experts group in informal consultation. And then verified and accepted at the regional and national levels. **PL.**
- It is up to the technical board instituted in the river basin authorities (UOM). **IT.**

5.1c: Please provide a brief description of the responsibilities for prioritisation according to other legislation.

- Question is not clear. Do you mean in a transboundary context? **BE**
- Prioritisation is understood as the extent to which measures are relevant for achieving the goals formulated under the FD. **NL**
- For FRMPs, this is the same as “measures” above.
- We are not drawing on other legislation to prioritise the measures for the purposes of the FRMP, however, we have a prioritisation process in place for allocating investment from general government (see https://www.gov.uk/government/policies/reducing-the-threats-of-flooding-and-coastal-change **UK**
- Not a legislation but the APF has already objectives and measures which we have to consider while drafting the new FRMP. **ICPR**
- Legislation generally sets out duties, powers and responsibilities for funding, authorisation and implementation (and maintenance) of measures / actions, which would be associated with responsibilities for prioritisation, even if responsibilities / requirements for prioritisation are not set out explicitly. The responsibilities will rest with the competent authorities according to which legislation the measures are funded / implemented under. **IR**
- The prioritisation for measures according to other legislation will be integrated into the FRMP. When measures have to be implemented by other bodies they have to be consulted and should agree. **DE**
- Civil Protection; Land use planning (regional) authorities, **Basque country**
- The new Environmental Policy Strategy (Vides politikas pamatnostādnes) 2014-2020 is in the process of development currently. This policy document will also describe the most important tasks related to flood risk prevention and management. **Latvia.**
- It is important to note that the selection of priority measures will be linked to the possibility of implementing the measure. Priority measures will be the non-structural measures and the measures with the highest probability of realization (e.g. measures which has already been defined, are under realization, has secured funding). **PL.**

5.2: Please describe briefly any consultation processes that that are, were or will be used in prioritisation:

- Both prioritisation and selection of measures are done with help of MCDA together with stakeholders. More detailed description will be found here: Multi-Criteria Decision Analysis in flood risk management in Finland (Parjanne et al. 2012) (http://www.danube-floodrisk.eu/download/sessions/Session4.zip) **FI**
- The basin management has regularly meetings during which the prioritisation of measures will be done. Competent authorities will do the same for their measures. All this information will be gathered by the basin secretary (technical office) and brought together on a regional level by the working groups of the Coordination Committee on Integrated Water Policy (CIW – commission responsible for the coordination of the integrated water policy on the level of the Flemish Region). - **BE**
- Probably part of FRMP engagement **UK**
- See answer under 3.2 **ICPR**
- The prioritisation will be set out in the draft FRMPs, that will be subject to public and stakeholder consultation **IR**
- Prioritisation will be subject to consultation with Local Advisory Groups (10 across Scotland) and sign-off by Scottish Ministers. **Scotland**
- It is not clear **Estonia**
- For measures prioritisation SSW will take into account the results of FMPs consultation and the reactions and proposals of local and regional stakeholders. **GR**
- See 3.2 **DE**
- Public information and consultation; Coordination with other institutions, **Basque country**
- Flood risk management plans will be integrated in the river basin management plans, for whom at least 6 month long consultation period is envisaged. During the consultation period also flood risk prevention and minimisation measures will be discussed in each of the 4 river basin districts. Besides, the flood risk prevention and control measures will be discussed in the river basin district consultation boards, which involve public institutions, municipalities and NGOs. **Latvia.**
- Consultancy with stakeholders is the matter of measures suggestions in different variants and responsibility of property owner to ensure flood protection themselves in a case that measure at specific APSFR do not reach threshold of priorities according national approach. **SK.**
- As I wrote before, we are planning to make a prioritization of measures at APSFR and local level by planning experts groups in informal consultation and then verified and accepted at the regional and national levels by the Steering Committees. **PL.**
- Forums, public consultation. **IT.**

5.3a: Please identify (highlight / underline) what will be taken into account in prioritisation (Please highlight more than one if appropriate)

- Economic Analysis (e.g., benefit – cost ratio) **14**
- Multi-Criteria Analysis **14**
- Public / Stakeholder Opinion **11**
- Regional / Social Equity **7**
- Addressing Specific / Exceptional Risks **7**
- None of the Above / Other **4**

Discussions ongoing **SE**

5.3b: If 'Other' is selected, please provide a brief description as to how the prioritisation will be set, with examples, if possible:

- Articles 4.6 and 4.7 of the WFD **NL**
- Affordability and availability of funding **UK**
- Measures that are already implemented along the Rhine (Action Plan on Floods); Measures where there is only a need of exchange of information; Measures where there is a need for coordination such as the ones which have transnational positive effects or could have transnational negative effects; Measures with greatest risk reduction effects (for this a GIS-based tool is currently being developed by the ICPR. It will be used to get an idea about effectiveness of measures and to assess the effects of measures according to the 6-year cycle of the FRMP Rhine); Measures that are part of national FRMP; (Maybe to a later stage: measures which helps to mitigate the adverse consequences of climate change) **ICPR**
- Effectiveness with regard to achieving the objectives, feasibility, economic efficiency (where assessable), synergy effects with other objectives (e. g. other directives) **DE**
- Probability of realization, **PL.**

5.4: Please describe briefly how prioritisation will take account of prioritisation in other MS within trans-boundary river basins (if relevant):

- Transboundary river commission is involved in the process **FI**
- There are bilateral meetings with bordering MS, during these meetings we look at the prioritisation of their measures and if necessary adjust some of our own prioritisations if necessary. **BE**
- This will be part of the FRMP roof-report negotiations. **NL**
- NA **UK**
- See above **ICPR**
- This will be considered through ongoing information exchange and cooperation with the Competent Authority in other MS (Northern Ireland) **IR**
- We have only one trans-boundary river basin (Koiva) there isn't any flood risk zone, so therefore defining measures it wouldn't be taken into account. **Estonia**
- Discussions ongoing: cooperation is essential **SE**
- Measures within trans-boundary river basins will be discussed and prioritisation will be coordinated with Bulgaria via the Joint Expert Working Group that has been established. **GR**
- See 3.4 **DE**
- See 4.5. C **Latvia.**
- Prioritisation of measures on trans-boundary APSFR will be done case by case on the level of Bilateral Commissions. Prioritisation of measures in a frame of trans-boundary river basins should be matter of negotiations in international commissions for instance ICPDR. **SK.**
- This process is still not finally determined. We will try to gain the relevant information on this issue from other countries and take into account in its own prioritization. **PL.**
- By specific agreements. **IT.**

5.5: If you already have developed a process or guidance for prioritisation, please attach any relevant documents and / or provide a web-link for access to this information:

- Multi-Criteria Decision Analysis in flood risk management in Finland (Parjanne et al. 2012) (http://www.danube-floodrisk.eu/download/sessions/Session4.zip) **FI**
- See Defra Partnership Funding Policy:
- http://publications.environment-agency.gov.uk/PDF/GEHO0312BWDK-E-E.pdf **UK**
- Guidance is currently in draft form, but can be made available once finalised **IR**
- See attached document – 'FRM Strategy Appraisal Method v1.0' **Scotland**
- Recommendations for the Establishment of Flood Risk Management Plans), adopted by the German Working Group on water issues of the Federal States and the Federal Government ("LAWA") on 26/27 September 2013 ("Empfehlungen zur Aufstellung von Hochwasserrisikomanagementplänen") The document is not yet available in English. **DE**
- Hydrological Plan: http://www.uragentzia.euskadi.net/u81-0003/es/contenidos/informacion/2013_aprobacion_hidrologico/es_def/index.shtml; Report about flood hazards maps and flood risk area: http://www.uragentzia.euskadi.net/u81-0003/es/contenidos/informacion/2013_consulta_mapas/es_def/index.shtml, **Basque country**
- Methodology mentioned in the questionnaire is description of executed processes and internal agreements. **SK.**
- Prioritization process is still not finally determined. **PL.**

5.6: Please provide any other relevant information you think would be of value / interest to other MS:

- Prioritisation will be based on identifying which FRM planning cycle a measure will be taken forward and delivered. More detailed information on delivery will then be included within Local FRM plans (x14 across Scotland), setting out how measures will be funded and delivered within each 6-year planning cycle. Further details are available here: http://www.sepa.org.uk/flooding/flood_risk_management/idoc.ashx?docid=5f6c3fbe-22dd-41ca-aa72-71120ae41beb&version=-1 **Scotland**

6. LINKAGES THROUGH THE PROCESS

6.1. Are the processes for setting objectives, selecting measures and defining priorities linked?	Yes **17** / No **1**

6.2. If yes, please briefly describe how.

- Preliminary flood risk management objectives are decided based on the preliminary flood risk assessment and potential measures fulfilling these objectives are then selected to more detailed evaluation and comparison. Some of the preliminary objectives could turn out to be too expensive or other ways impossible to fulfil with the selected and feasible measures. Thus, some objectives may have to be revised. Setting the objectives and selecting measures is an iterative and participatory process. **FI**After the selection and prioritisation, the actual implementation is still often subject to availability of funding, political agreement and environmental impact assessment and permit process, depending on the type and magnitude of the measure. **FI**
- Setting the priorities is done according to the extent in which measures fulfill the objectives of risk-reduction. The same team of stakeholders and competent authorities involved in defining the measures is involved in defining the objectives and setting the priorities. The selection is an automatic result of prioritization and budget restrictions. **BE**
- Through organised process: production of plans, measures and objectives for the FD and WFD are exchanged in dedicated coordination teams. **NL**
- Since the drafting of the new FRMP Rhine has begun (since 2010) the three processes are linked and integrated. We try to define strategic objectives and operational objectives and measures. These are all part of the draft FRMP where the links are shown. In some of the meetings of the Working group H (Floods) of the ICPR, the national delegations focussed on fixing objectives ("brainstormings"). **ICPR**
- The processes are inherently linked, whereby: the objectives form the criteria against which the options for measures are appraised, with this appraisal forming the basis for the selection of measures, and, the outcome of the appraisal of the benefits of the selected measures (against the objectives), relative to cost, will form the basis of the prioritisation of the measures (i.e., higher priority given to those measures providing greatest risk reduction / other benefits per euro of investment), subject to the consideration of the broader context and other policy issues.
- Objectives are built around principles of avoiding risk, and reducing risk through protection and preparation. These principles are linked to specific groups of measures, e.g. reducing risk through formal defences. The appraisal method for selecting measures will generate information, such as cost-benefit ratios, that will inform the prioritisation of measures. **Scotland**
- It will all take place during preparation of flood risk management plans. **Estonia**
- They are linked in the legislation and regulations. For application discussions are ongoing **SE**
- Setting objectives, selecting measures and defining priorities are single part of the FRMPs. **GR**
- The processes for setting objectives, selecting measures and defining priorities are widely linked within the bodies and organisations mentioned above. **DE**
- Objectives are set. Measures have to be selected on APSFR level and in the same process prioritised by answering a catalogue of questions related to risk reduction and feasibility. **AT**
- Implementation of 2007/60/CE Directive: Link between hydraulic and land use planning authorities: prevention and structural measures priorization, **Basque country.**
- All of these processes will be an integral part of the development of the flood risk management plans. **Latvia.**
- Process of flood protection implementation grow up of APSFR – measures in different variants for different objectives – prioritisation of measures form range of reachable objectives. **SK.**
- They are successive steps of the same process. **IT.**

7. IMPLEMENTATION OF FLOOD RISK MANAGEMENT STRATEGIES AND MEASURES

7.1. What are the principal barriers for successful implementation of flood risk management strategies and measures (e.g., legislation, fragmented responsibilities, limitation on funding, knowledge, public / political expectations or views, etc.)

- Availability of funding, conflict of interests (nature, flood protection and hydropower), including public / local opposition to the plans or certain measurements, uncertainty of the impacts and future in general, complicated and comprehensive processes may take a very long time until actual implementation, if ever. **FI**
- Fragmented responsibilities; Public/political expectations or views; Administrative procedures (land acquisition, permits, etc.) that slow down the implementation of the works. **BE**
- public political expectations **NL**
- Limitation of funding; fragmented responsibilities, skills and knowledge; timescales **UK**
- limitation on funding; political expectations or views **ICPR**
- Funding, Environmental Constraints, Staff Resources, Planning and Procurement Processes (in relation to delays in implementation) **IR**
- Split responsibilities are a principle barrier and require all public bodies with a FRM function to work in partnership. The legislation in Scotland supports this by clearly defining roles and responsibilities and giving the relevant national and local bodies duties to collaborate and coordinate our work. **Scotland**
- limitation on funding, knowledge, public / political expectations or views **Estonia**
- In Estonia management of floods is not addressed holistically so far. Floods Directive implementation takes the first steps in this direction. Flood risk maps and flood hazard maps are currently under construction. So we cannot firmly allege what kind of problems we are facing. But surely the barriers are as listed above (limitation on funding, knowledge, public / political expectations or views, etc) **Estonia**
- The process with the Floods Directive is in the first implementation cycle so all ingredients above are relevant in the process to get it successful. Aspects of a functioning society in a changing world and vital societal functions together with Climate Change are also important. Limited resources will of course be barriers. **SE**
- Principal barriers for implementation of FRM strategies and measures are fragmented responsibilities between central, regional and local level. Principal barrier for implementation of FRM measures is funding limitation **GR**
- Principal barriers for successful implementation of flood risk management strategies and measures are especially different opinions on appropriate measures (e. g. technical measures vs. natural retention measures) or on remaining risks to be accepted, abuse of other legislation, e.g. on nature protection, especially by local pressure groups, intended to obstruct certain flood protection measures, lack of awareness of flood risks both in the public and in politics (especially at local level), difficulties with land-owners, and limitation of funding. **DE**
- Legislation/fragemented responsibilities **AT**
- Limitation on funding; Public / political expectations or views; Fragmented responsibilities, **Basque country**
- limitation of funding; historical constructions (dwelling houses etc.) built in the flood prone areas, like river banks and floodplains; **Latvia.**
- Limitation of funding, Allotments owners versus public structures. **SK.**
- Most of them: fragmented responsibilities, limitation on funding, knowledge, public / political expectations or views, but in Poland the highest are: fragmented responsibilities and limitation on funding. **PL.**
- Limitation of fundings. **IT.**

Funding **14;** Conflicts of interests/opposition **5;** Uncertainties **2;** Fragmented responsibilities **9;** Procedures **2;** Public/political expectations views **9;** Skills **1;** Knowledge **4;** Timescales **1;** Environmental constraints **1;** Staff resources **1;** administrative procedures **1;** legislation **1**.

7.2. What specific barriers are there for the introduction of new strategies and measures and the alignment between existing and new strategies (see 4.6 and 4.7)?

- Not seen any
- Political dare to introduce these new strategies and measures. - To change the mindset of the public. - Getting an agreement with all the different authorities and stakeholders involved in applying this new strategy.
- Decisions taken at the start of the implementation concerning the added value and ambition of implementation of the Directives – not because they are not correct, but because of the way they "frame" the image of EU legislation. According to many stakeholders in the Netherlands, the intrinsic need of state of the art flood risk management will prevail over legislation that prescribes how to do that. Potential benefits of such exotic legislation might be overlooked. **NL**
- 6 year cycles will make FRMPs relatively inflexible and less relevant. **UK**
- The timing of the FRMP cycles (6 years) is sometimes seen as too short to fulfil objectives and measures that take much more time to be implemented (e.g. creation of retention basins), amongst others the ones coming from the Action Plan on Floods (since 1998). The pressure of possible "sanctions" by the EU when not implementing objectives and measures that are defined in the FRMP can be sometimes seen as a brake to draft new and innovative objectives/measures. It is sometimes tricky to align the existing strategies and their objectives (Action Plan on Floods) with the new FRMP which is currently being drafted. **ICPR**
- Funding and Staff Resources **IR**
- There are no specific barriers to this in Scotland. There is a need in the first cycle of FRM plans to ensure that measures currently under development and due to be implemented within the first cycle are identified and incorporated, without new barriers or hurdles being put in place for their delivery. **Scotland**
- Barriers do not arise, they are compatible. **Estonia**
- See above **SE**
- Public and politics often concentrate on technical measures. They do not see that it would be more efficient to avoid and reduce vulnerable structures in flood areas. **DE**
- e.g. Responsibilities on water law are by the federal state. Responsibilities and legislation on spatial planning solely by the federal provinces. **AT**
- Limitation on funding; Public / political expectations or views; Fragmented responsibilities, **Basque country**
- Not any. **Latvia.**
- Limitation of fundings. **IT.**

Political dare (to change mindset of the public) **1**
Floods Directive seen as "exotic" legislation, added value not immediately clear **1**
Timescale (6 year cycles) **1**
Funding **4**
Staff resources **1**
Tendency to focus on technical/structural measures **1**
Responsibilities and competences divided over several levels of government **4**
Change mindset of the public **1**

7.3. What is necessary to permit or facilitate implementation of flood risk management strategies and measures?

- Regional/local agreement, funding, careful and proper planning in order to get a permit and achieve desired impact. **FI**
- Consultation, consultation, consultation!! To bring minds into line. And a small flood once and a while also helps of course. **BE**
- Involvement of any party with authority related to flood risk management **NL**
- Partnership working, coordinated approach, prioritisation etc…. **UK**
- Discussions/compromises, courage, common understandings about objectives and measures, great trust, knowledge of obligation of report, …**ICPR**
- Additional funding and staff resources, Enhanced approaches to planning and procurement **IR**
- Agreement on the appropriate strategies between relevant public bodies and securing appropriate funding through national funding allocation. **Scotland**
- Resources (time, money and competence). **Estonia**
- Integration in the process with other relevant legislations and regulations. Take new knowledge into the process. **SE**
- Necessary actions are: Training of local/regional/central stakeholders for the application/implementation of measures (through the organisation of seminars, workshops and the publication of guidance reports). Establishment of a detail Action Plan for each measure. Funding assurance for measures implementation. **GR**
- Rising public awareness of flood risks and how to mitigate them would be an important issue to improve the implementation of flood risk management strategies and measures. A broad social consensus on tolerable risks supported by an effective disaster management would also be useful. **DE**
- Harmonised legislation on federal provincial level. **AT**
- Coordination between authorities, Funding, **Basque country**
- Additional funding, the latest topographical data for the digital flood risk maps. **Latvia.**
- Realised measures at specific circumstances of public structures and make wider forms of funding of flood protection measures. **SK.**
- The most important issue is to ensure adequate funding for implementation measures and to cooperate between different authorities in achieving one common purpose: an appropriate flood risk management. **PL.**
- Funding. **IT.**

7.4. What further evidence or knowledge do you think would be useful to improve the implementation of flood risk management strategies and measures?

- In uncertain and continuously changing environment, all the evidence and knowledge are needed. Uncertainty of future climate and hydrological changes but also uncertainty and changes of other issues such as the urban development and valuation of water resources (nature, flood protection, hydropower). **FI** Further evidence is needed continuously to justify resources put on flood risk management instead of other urgent needs of the society, perhaps an EU wide investigation of the benefits of flood risk management measures could be useful. **FI**
- Better understanding of/ knowledge on the uncertainties of Climate Change scenarios and demographic evolutions. **BE**
- Experience and finding the right scope. **NL**
- Knowledge and evidence continues to develop for surface water flooding in England. Need to share good practice and learn from others across Europe. **UK**
- Past experience. The experience with the implementation of the first FRMPs. More work on a free basis. **ICPR**
- Scientific and technological advances are continually contributing to improvement in the understanding, assessment and management of flood risk, and all relevant evidence and knowledge helps to contribute to this. The social science associated with flooding (the impact of flooding on people and people's response to potential flood risk and flood events) is a key area where current developments are contributing, and should continue to contribute to this ongoing improvement. **IR**
- Information on the effectiveness of a wider range of FRM measures, in particular in the area of natural flood management, and mechanisms for valuing in monetary terms the wider social and environmental benefits of all measures. **Scotland**
- Relevant information about climate change impact. **Estonia**
- New knowledge in Climate Change, risk assessments and consequences. Risk awareness at societal and individual level. **SE**
- It would be useful to better communicate the effects and limitations of natural retention measures in the case of large floods and extreme events. **DE**
- Local authorities' formation so that they assume the need of not aggravate the flooding situation, **Basque country**
- The most advanced solutions ensuring flood protection and other benefits, like "green infrastructure" projects – their advantages and disadvantages, relevance for different flood risks, areas and natural conditions. **Latvia.**
- To elaborate corporative Flood risk management plans for trans-boundary river basins forms ground of negotiations about objectives and measures. **SK.**
- An in-depht analysis of existing land planning laws to resolve criticities. **IT.**

Consequences of climate change **3**
Demographic developments **1**
Good practices **1**
Risk assessment and awareness **1**
Valuation of water resources **1**
Social sciences **2**
Effectiveness of measures and how to monetize these **2**
Better communication **1**
Land use planning **2**
Legislation **1**
Experience **2**
Natural phenomena **2**

Annex IV Graphical Representation of Questionnaire Responses

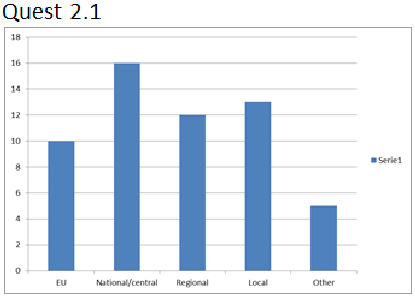
Questionnaire Results

Barbro Näslund-Landenmark, SE

18 answers, 15 countries (2 different answers from 2 countries) + 1 River Com
18 answers in the analysis

Funding arrangements_18

- Quest 2.1

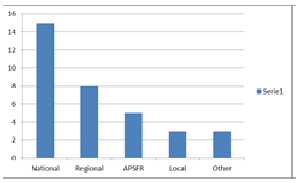


EU-funding not available in some countries

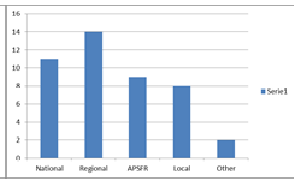
Objectives_18

- Quest 3.1a - process for setting and selecting objectives

Defined

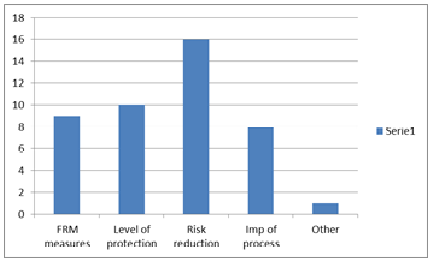


Applied



Setting objectives in different ways_18

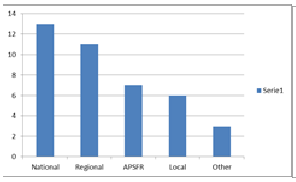
- Quest 3.3a - foresee how the objectives will be defined



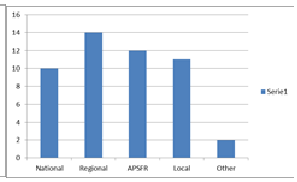
Measures_18

- 4.1a - level of selecting measures

Defined

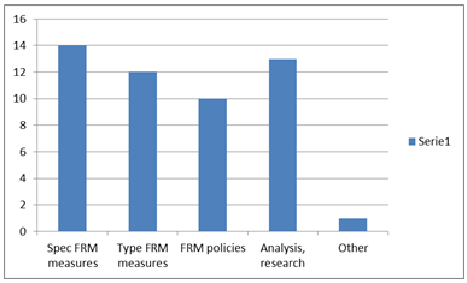


Applied



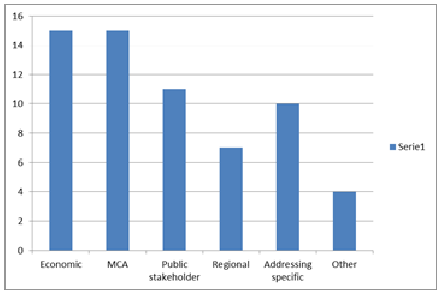
Measures_18

- 4.3a - defined for a given location



Measures_18

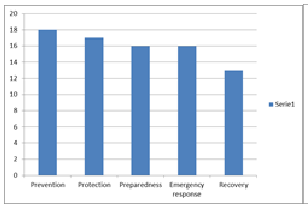
- 4.4a - process and criteria to select measures



Measures_18

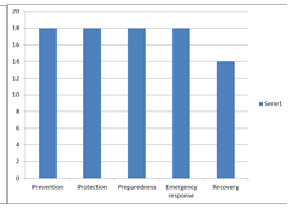
- 4.7a+b - FRM strategies and types of measures

Existing



SE adds lessons learned

Foreseen

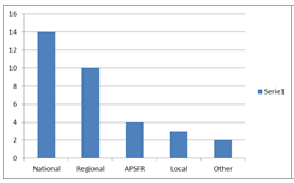


SE adds lessons learned

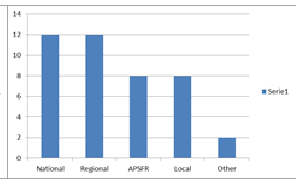
Prioritisation_18

- 5.1a - Level of setting priorities

Defined

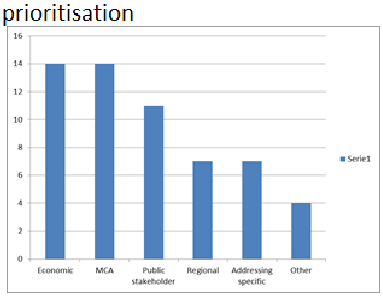


Applied



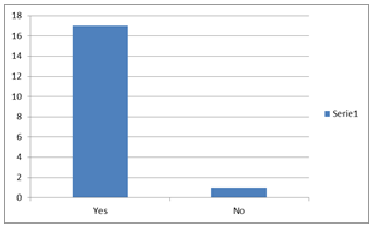
Prioritisation_18

- 5.3a - what will be taken into account in prioritisation



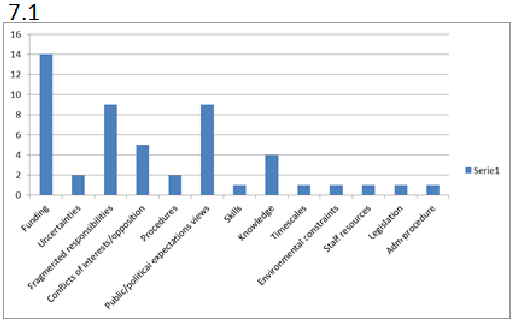
Linkages_18

- Are the processes for setting objectives linked with selecting measures and defining priorities



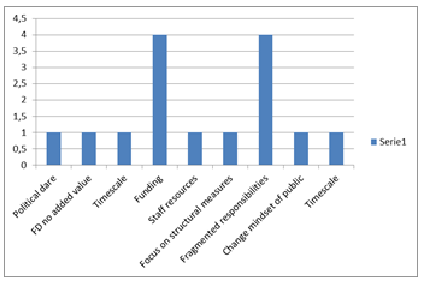
Principal barriers for implementation of FRM strategies and measures_18

- 7.1



Specific barriers, new strategies and measures, existing and new strategies_18

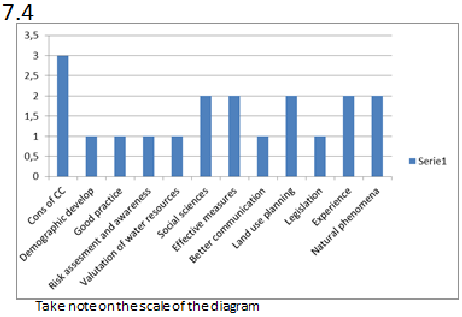
- 7.2



Take note on the scale of the diagram

Improve implementation of FRM strategies and measures_18

- 7.4



Take note on the scale of the diagram

Summary

- 15 countries answered, 2 countries answered with 2 different answers and 1 International River Com
- 18 answers in the analysis
- **Objectives** – mostly defined at national level and applied at all levels. And aiming at disaster risk reduction.
- **Measures** – defined at national and regional levels and applied at all levels. Foreseen to comprise all risk management steps (cycle)
- **Prioritisation** – defined at national and regional levels and applied at same levels (majority) + at APSFR/Local level.
- **The processes for setting objectives, selecting measures and defining priorities are linked**

Annex V Slides of all presentations

Presentation on Austria (Clemens Neuhold)

Prioritisation of measures in FRMPs

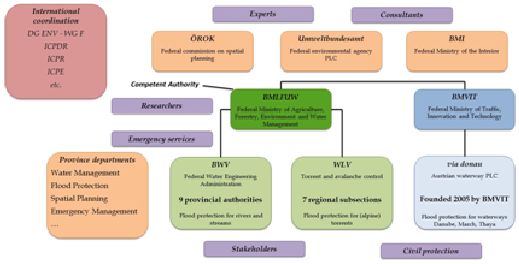
14th WG F meeting, Brussels

Clemens Neuhold

Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management • Flood Control Management Division

Decision Process

1. Working committee on the EU Floods Directive and associated working groups (on scenarios, hazard and risk)



Timeline Austria, administrative organisation

- 2012 objectives
- 30.06.2013 Catalogue of measures, prioritisation
- 23.10.2013 Method to prioritise measures
- 22.12.2013 Federal Blueprint
- 22.09.2014 Provincial editing
- 22.12.2014 Public information and consultation
- 22.12.2015 Federal finishing
- 22.03.2016 Reporting

1. Harmonisation process (federal level) with legal division (water law)
2. 5 pilot projects
   - 4 finished (2 rural, urban, industrial)
   - 1 in progress (energy supply)
3. Workshops on national level

Working progress

1. Appropriate objectives – agreed
   - Avoidance of new risks
   - Reduction of existing risks
   - Strengthening resilience
   - Raising awareness
2. Measures – agreed
   - 22 measures referring to risk circle and appropriate objectives
3. Prioritisation – DRAFT under discussion

Measures

1. 22 measures related to 4 appropriate objectives AND 5 fields of action
   - Prevention
   - Protection
   - Awareness
   - Preparedness
   - Recovery
2. Types of measures will be prioritised – not distinct measures
   - Consideration of hazard zone plans
   - Development of land management concept
   - Restoration of retention areas
   - Structural measures

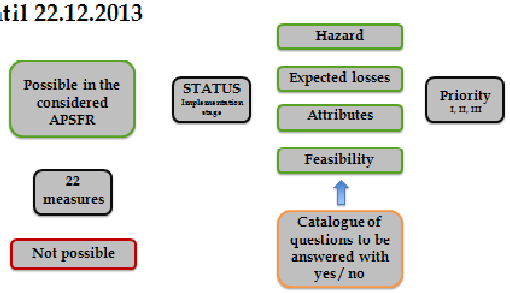
Measures

1. Measures are characterised by
   1. Title
   2. Description
   3. Examples
   4. Legal frame
   5. Relevant divisions, work steps
2. Measures will be prioritised on 3 levels
   1. Federal
   2. Provincial
   3. APSFR

Prioritisation of measures

1. Prioritisation by (reporting sheets by the EC)
   1. "either a timetable for implementation"
      - Creates pressure
      - Under financial constraints
      - Budget on a yearly basis no planning safety
   2. "as a category of priority"
      - Applicability
      - Transparency
      - Objectivity
   3. "Summary text"
      - Not comparable for 391 APSFRs

DRAFT under discussion – to be finalised until 22.12.2013



Catalogue of questions

1. Approach to obtain comparable results – objective approach
2. The estimation if a type of measure leads to "high", "medium" or "low" risk reduction is highly biased by subjetivity
3. Yes / no seems to be more robust
4. General questions
5. Reduction of hazard – questions related to the hydraulic / hydrologic process itself
6. Reduction of expected losses – questions related to development in the flood plain
7. Feasibility to assess potential resistance
8. Legally binding measures obtain Priority I

Catalogue of questions

1. Reduction of Hazard
   - Does the measure reduce the hazard due to retention
   - Does the measure reduce the hazard due to river training
   - Does the measure reduce the probability of alluvial deposition during the flood event
2. Reduction of expected losses
   - Does the measure contribute to flood-adapted land use
   - Does the measure contribute to flood-adapted development
   - Does the measure facilitate emergency response

Catalogue of questions

1. Feasibility
   - Is the measure non-structural
   - Is the measure relevant for another measure
   - Is the measure legally binding
   - Is a consent needed (notification, regulation)
   - Will there be external costs (besides administrational costs)
   - Is there a high degree of administrational harmonisation efforts needed (between administrational levels, decision levels, …)
   - Are there rights of third parties touched
   - Is funding ensured
   - Will the measure be implemented during the current cycle of FD

Prioritisation

1. Priority I
   - A measure is legally binding
   - There are 3 yes out of 5 referring to
     1. Reduction of hazard by retention
     2. Reduction of alluvial deposition during floods
     3. Non-structural
     4. Relevant to implement another measure
     5. Possibility to implement the measure during the current cycle
2. Priority II
   - Feasibilty > 50 % of positive answers
3. Priority III

Next steps

- Way to obtain a Priority I, II, III (IV) needs to be discussed
  - How do we need to sum up the yes / no - answers
  - Do we have to assign weights, additional information?
- Looks very promising
- High degree of objectivity
- 23/10/2013 next work committee meeting to agree upon the method
- 22/12/2013 federal blueprint of the flood risk management plan

Thank you for your attention!

clemens.neuhold@lebensministerium.at

Presentation on Ireland (Mark Adamson)

WG F & Star-Flood Workshop on Objectives, Measures and Prioritsation

SELECTION AND PRIORITISATION OF MEASURES AND SCHEMES IN IRELAND

Mark Adamson
Office of Public Works, IE

16th October, 2013

HISTORIC APPROACH

- FOCUS ON ECONOMIC IMPACTS
  - BUT: Limited evaluation of impacts of flooding on infrastructure & utilities
- LIMITED ASSESSMENT OF SOCIAL IMPACTS
  - Indicative allowance for 'Intangible' Benefits
  - BUT: No allowance for highly vulnerable sites or broader, societal impacts
- DAMAGE AVOIDANCE FOR ENVIRONMENT
  - Focused on minimising negative impacts, through EIS
  - BUT: No assessment of potential benefits nor of impacts of flooding on potential sources of pollution

DRIVERS FOR NEW APPROACH

- EU 'FLOODS' DIRECTIVE, 2007
  - Art. 7(2): *"MS shall establish .. objectives for the management of flood risks .. focusing on the reduction of .. adverse consequences for human health, the environment, cultural heritage and economic activity"*
  - Art. 7(3): *"FRMPs shall include measures for achieving the objectives .."*
  - Annex – FRMPs to Include: *".. summary of .. prioritisation (of measures) aiming to achieve the .. objectives .."*

DRIVERS FOR NEW APPROACH

- NEED FOR APPROACH THAT ADDRESSES:
  - Risk to People, Environment, Cultural Heritage and the Economy
  - Links through and links together:
    - Objectives
    - Development and Selection of Measures
    - Prioritisation
- ISSUES:
  - Difficulties in monetarising some risks / benefits
  - Need to reflect societal values and objectives
  - Need for fair, objective and transparent process

DRIVERS FOR NEW APPROACH

- NATIONAL POLICY REVIEW, 2004
  - Focus on managing risk to *"People, businesses, infrastructure and the environment"*
- 'CFRAM' PILOT STUDIES (www.cfram.ie)
  - 2008: Indicators, Methods & Datasets Study
  - 2008-09: Development & application of new MCA method to test on Pilot CFRAM Studies
  - Outcomes of MCA Process for Pilot CFRAM Studies:
    - Deemed to be appropriate
  - 2013: Being further developed for use for National CFRAM Programme & 'Floods' Directive

NEW APPROACH – OBJECTIVES

- OBJECTIVES & SUB-OBJECTIVES
  - Represent Potential Benefits of Measure / Scheme
    - Economic (4 Objectives):
      - Reduction of economic damages to properties and of risk to transport, utilities and agriculture
    - Social (5 Objectives):
      - Reduction of risk to people, higly vulnerable social properties, social infrastructure, employment and amenity
    - Environmental & Cultural (6 Objectives):
      - WFD, Habitats, Fisheries, Pollution, Landscape & Cultural Heritage
      - Based on avoidance of damage and achievement of benefits
      - Linked closely to SEA / HD AA
    - Technical (3 Objectives):
      - Operational Risk, Climate Change and Health & Safety
      - Used for Option Selection Only

NEW APPROACH – OBJECTIVES

- (DRAFT) GLOBAL WEIGHTINGS PER OBJECTIVE:
  - Risk to Human Health and Life: 40
  - Economic Risk: 30
  - Risk to Community: 15
  - Risk to Utility Infrastrucre: 15
  - Risk (or Benefits) to Water Quality / Pollution Sources: 15
  - Risk (or Benefits) to Habitats / Species: 15
  - Risk to Agriculture: 10
  - Risk to Lanscape (incl Urban Impacts): 10
  - Others (Excl. Technical): 30
- REPRESENT SOCIETAL VALUE OF OBJECTIVE
  - National Stakeholder and Public Consultation to Validate 'Societal Value'

NEW APPROACH – OBJECTIVES

- NATIONALLY CONSISTENT INDICATORS FOR EACH OBJECTIVE
  - Measurable, where possible, e.g:
    - (2.a) Economic Risk – AAD (€)
    - (3.a) Risk to people – No. Properties at risk
    - (3.b.ii) Risk to local employment – No. Businesses at risk
- FOR EACH OBJECTIVE / SUB-OBJECTIVE
  - Minimum Requirements
    - Generally, do not make matters worse
  - Aspirational Targets
    - Reduce risk to zero, or,
    - Environment: Achieve environmental benefits / objectives

NEW APPROACH – MEASURES

- MEASURES TO BE SPECIFIC ACTIONS
- MULTI-CRITERIA ASSESSMENT / APPRAISAL
  - Used for Selection of Measures for APSFR / UoM
  - Performance of Measures / Schemes against Minimum Requirements & Aspirational Targets
    - Score: 0-5 on performance
    - Negative scores for not achieving Min. Requirement
    - Detailed guidance on scoring being prepared to help ensure national consistency (for equal basis for prioritisation)
  - Global Weightings per Objective / Sub-Objective
  - Local weightings
    - Reflect local relevance / importance of the Objectives

NEW APPROACH – MEASURES

- MCA SCORE
  - For each Sub-Objective, MCA Score calculated as function of:
    - Performance score
    - Global weighting
    - Local weighting
  - Sum MCA Score per Sub-Objective for overall MCA Score per Option (measure)
  - Quantitative, but non-monetarised, metric of benefits of the measure
  - Calculated nationally in a consistent manner

NEW APPROACH – MEASURES

- SELECTION OF MEASURES
  - MCA Score represents overall benefits of the measure – No provision for cost
  - MCA Benefit-Cost Ratio
    - Calculate MCA Score per Euro (value per cost)
    - Max. = Greatest overall benefit per Euro spent
  - Economic Benefits
    - Traditional economic 'BCR' also calculated
    - Needed for economic efficiency / financial justification
    - Measure / scheme should have BCR > 1

NEW APPROACH – MEASURES

- SELECTION OF MEASURES
  - MCA Process and BCR is for Decision-Support
  - Other Factors in Decision-Making Process:
    - Professional judgement
    - Stakeholder views / preferences
- OTHER MEASURES
  - National Policy Measures Applicable Everywhere
    - Planning / Land Use
    - Emergency Response Planning
    - Resilience
  - Further Data Collection / Analysis

NEW APPROACH – PRIORITISATION

- PRIORITISATION OF MEASURES
  - Set Nationally / Regionally
    - Major Schemes Funded Nationally
    - Regional Discretion on Priority of Minor Schemes
  - Based on MCA Outcomes:
    - MCA Benefit-Cost Ratio
    - Traditional economic 'BCR' also calculated
  - Take into Account Other Factors
  - To be Defined by Timelines (i.e., as a Programme)
    - Requires Projection / Estimation on Multi-Annual Budgeting

QUESTIONS

- Budgets can not fund all measures now
  - How to manage information and reaction in communities where measures are designated as 'low' priority?
- Flood impacts of pollution and cultural heritage can be difficult to quantify
  - How to determine measureable reduction in risk, or measurable benefits, for reduction in pollution and damage to cultural heritage?

WG F & Star-Flood Workshop on Objectives, Measures and Prioritsation

SELECTION AND PRIORITISATION OF MEASURES AND SCHEMES IN IRELAND

Mark Adamson
Office of Public Works, IE

16th October, 2013

OPW
The Office of Public Works
Oifig na nOibreacha Poiblí

Presentation on Scotland (Roy Richardson)

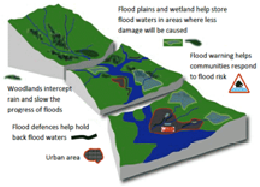
Flood Risk Management Planning in Scotland

Dr Roy Richardson
Principal Policy Officer
Scottish Environment Protection Agency

WG-F and STAR FLOOD Workshop

SEPA Scottish Environment Protection Agency

Flood Risk Management (Scotland) Act



- plan-led approach focussed on areas of greatest risk/benefit
- catchment based
- coordinated approach from SEPA, Local Authorities and Scottish Water
- sustainable actions that stand the test of time

WG-F and STAR FLOOD Workshop

SEPA Scottish Environment Protection Agency

Flood Risk Management in Scotland

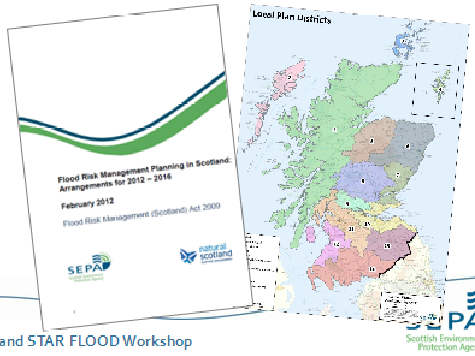
National Flood Risk Assessment (2011)

- 125,000 properties
- 1 in 13 businesses
- 1 in 22 homes
- £720m to £850m AAD

WG-F and STAR FLOOD Workshop

SEPA Scottish Environment Protection Agency

Flood Risk Management in Scotland



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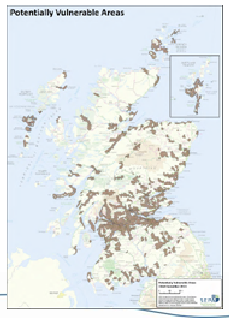
SEPA Scottish Environment Protection Agency

Flood Risk Management in Scotland

WG-F and STAR FLOOD Workshop

SEPA Scottish Environment Protection Agency

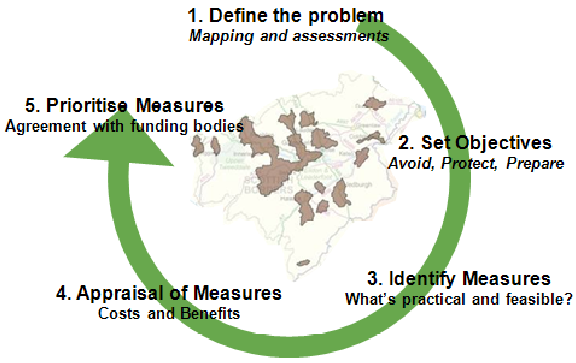
Potentially Vulnerable Areas



- 243 PVAs
- Based on catchment units
- Cover 90% of properties at risk of flooding in Scotland

WG-F and STAR FLOOD Workshop

SEPA Scottish Environment Protection Agency



Setting Objectives

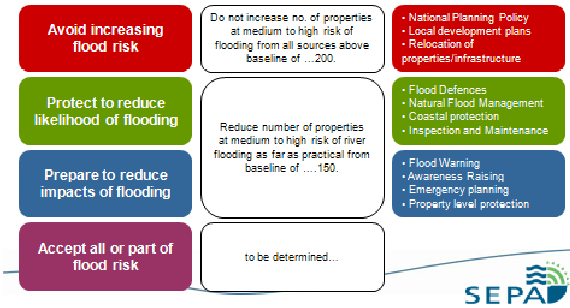
WG-F and STAR FLOOD Workshop

SMART Objectives

Specific	Objectives will relate to the key flood impacts (e.g. businesses, people) and sources of flooding identified
Measureable	Where data and information allow, targets will be used to inform objectives, expressed in terms of the key flood risk indicators
Attainable	Tied to capacity within delivery bodies and level of funding at local and national level
Relevant	Objectives will be relevant to aim of reducing overall flood risk
Time-Bound	Where appropriate, a timetable will be set out for the delivery of objectives

WG-F and STAR FLOOD Workshop

Objectives & Measures



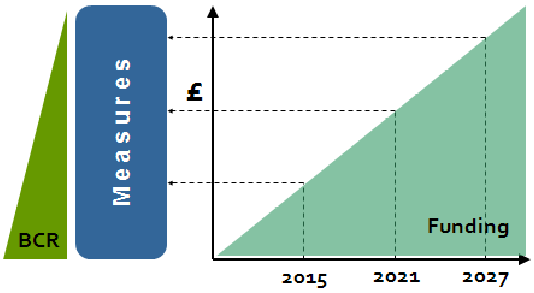
WG-F and STAR FLOOD Workshop

Selection of Measures

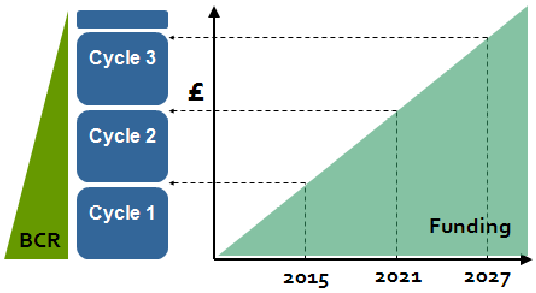
- Economic Criteria (£s)
  - AADs
  - Benefit Cost Ratio
  - Whole life costs
- Social Criteria
  - Risk to Life
  - No. of People
  - Community Facilities
  - Utilities/Infrastructure
- Environmental Criteria

WG-F and STAR FLOOD Workshop

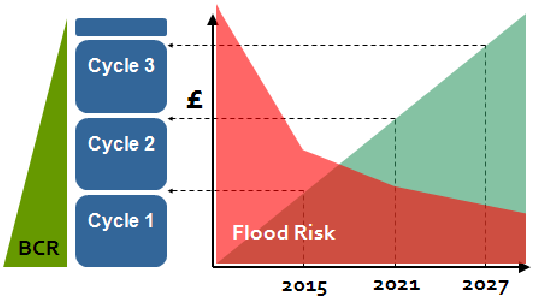
Prioritisation & Funding



Prioritisation & Funding



Prioritisation & Funding



Questions

1. Degree to which objectives are measurable?
2. Taking account of non-monetary impacts?
3. Links to funding & delivery plans?

WG-F and STAR FLOOD Workshop

Presentation on ICPR (Adrian-Schmidt-Breton)

Towards a new flood risk management plan for the Rhine

Adrian Schmid-Breton (ICPR – Coblence)
Scientific assistant

WG F 13 – WS „Objectives, Measures and Prioritisation" - 16.10.2013, Brussels

Internationale Kommission zum Schutz des Rheins
Commission Internationale pour la Protection du Rhin
Internationale Commissie ter Bescherming van de Rijn
International Commission for the Protection of the Rhine

Towards a new flood risk management plan for the Rhine

What do we take into account by drafting the FRMP Rhine:

- **Objectives, measures and state of implementation of the ICPR Action plan on floods**
- **FD requirements and products**
- **Transnational measures (positive effects, avoid negative effects)**
- **National and regional FRMP objectives and measures (level B)**
- **Tool to assess the effectiveness of measures**
- **(to a later stage: climate change effects/adaptation)**

Since 2000 and 2007 the ICPR is the frame for the exchange of information and the coordinated implementation of the WFD and the FD within the "International river basin district of the Rhine"

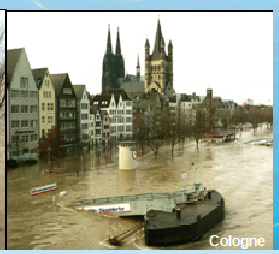
→ Switzerland and Liechtenstein are taking part.

2

ICPR flood management experience: The Action Plan on Floods

December 1993: Cities flooded in D and NL
Damages: 1.4 billion euro; Cologne: 75 million euro

Jan./Feb. 1995: Cities flooded in D and NL
Damages: 2.6 billion euro; Cologne: 35 million Euro
Evacuation of 200 000 people



ACTION TARGETS OF THE ACTION PLAN and Results 2010 (compared to 1995)

(1)Reduce flood damage risks by 25 % by 2020.
→ New and more detailed results are expected for 2014 (risk assessment tool).

(2) Reduction of flood levels - Reduction of extreme flood levels by up to 70 cm by 2020 downstream the impounded section (60 cm due to water retention along the Rhine and approximately 10 cm due to water retention in the Rhine catchment)
→ 2010: approximately 230 million m³ of retention volume were available along the Rhine. Maximum target of 60 cm achieved only in individual cases. More retention is needed.

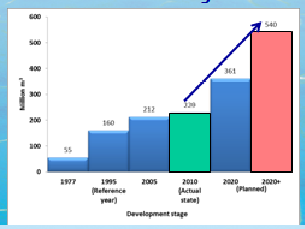
(3) Increasing flood awareness by drafting and spreading flood risk maps for 100 % of flood hazard areas
→ Achieved for the main stream of the Rhine (see ICPR Rhine Atlas 2001; new Atlas 2014).

(4) Improve the flood forecasting system - Prolong forecasting periods by 100 % by 2005.
→ Achieved in 2005.

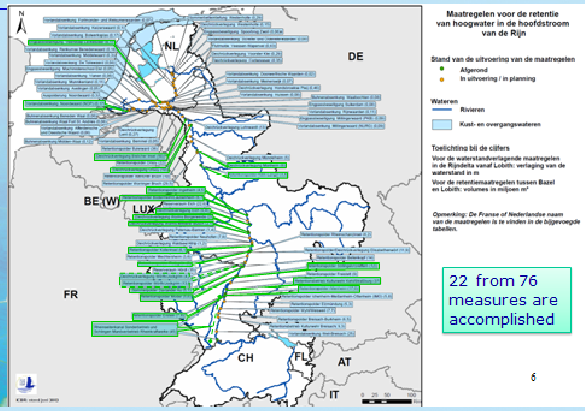
4

Implementation of the APF

Findings:
- Since 1995: **a lot of measures (different types) has been realized**
- **Retention areas:**
  - *Rhine downstream from Basel:* since 2010 until **229 mio. m³ water retention**
  - *Delta: more room for the river; tributaries:* renaturation
- **These measures proved their utility**
  → however: the realization is longer than foreseen



Implementation of the APF



22 from 76 measures are accomplished

6

From the APF to the FRMP Rhine

Idea
- Realize all the retention measures planned for 2020 and after
- The APF-measures could be part of the new FRMP
- APF objectives could serve as long term objectives (lasting on more FRMP cycles)

7

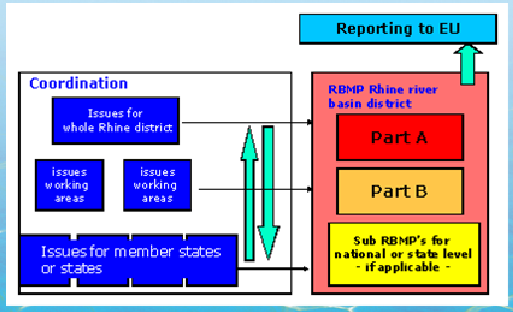
Flood Risk Management Plan Rhine

Requirement:
- **Article 7 and 8 of the FD →*exchange of information and coordination, avoid negative transboundary effects***
- **Annex of the FD**

Components of the first flood risk management plans (cf. Annex):
1. Conclusions of the preliminary flood risk assessment
2. Flood hazard maps and flood risk maps (new Rhine Atlas)
3. Description of the appropriate objectives of flood risk management
4. Summary of the measures and their prioritisation aiming to achieve the appropriate objectives of flood risk management

8

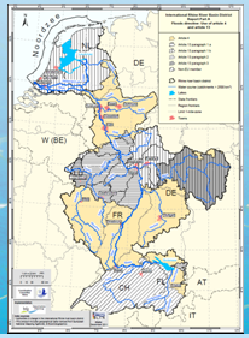
Overall structure for the coordinated implementation of European directives



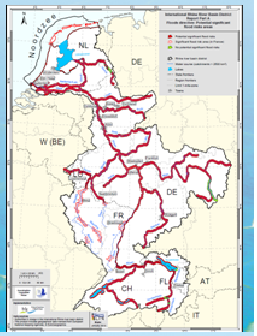
9

Preliminary flood risk assessment: overview maps and short report

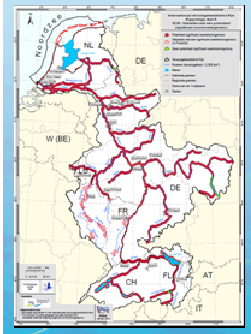
International Rhine River Basin District Report Part A Floods directive: Use of article 4 and article 13



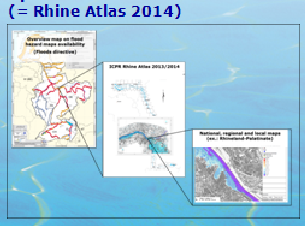
International Rhine River Basin District Report Part A Floods directive: Potential significant flood risks areas



Overview map on flood hazard and risk maps availability and short report (end of 2013)



Updated Flood Risk Atlas (= Rhine Atlas 2014)



11

Preparation of the FRMP

FRMP Rhine → draft to be available **by end of 2014,** then consultation procedure; finalisation **by end of 2015**

Living process: Working group H (Flood) is developping the plan **since 2010**, specific meetings on appropriate objectives and transboundary measures, assessment of APF

How are we defining objectives and priorisiting measures:

- Current state and plannification of the APF
- 4 protection objectives (human life, economic activity, environment, cultural heritage)
- Types of measures (table)
- Overall objectives → top-down and bottom-up
- Exchange of information on national/regional plans to avoid negative effects
- Selection/Focus: Measures with transboundary effects
- Tool to measure effectiveness
- New measures: e.g. crisis exercise

12

Development of an GIS-instrument for assessing flood risks and effect of measures

Project objectives

→Assessment of risk reduction and evolution from 1995 up to now (1st action target of the Flood Action Plan 1998).
→Priority setting of different measures and assessment of the Flood Risk Management Plan (and assessment each 6 years; FD)

Characteristics/Features

- Property of ICPR
- Extendable to **other river basins**
- Strong link to the FD:
  - 3 flood scenarios
  - Types of measures
  - 4 protection objectives (human life, economic activity, environment, cultural heritage)
  - Use national FD data
  - Tool available end of 2014

13

Climate change adaptation

Effects

Winter: increasing runoff (floods): mean discharge until 2050: 0 to +20%; mean flood discharge until 2050: -5 to +25%
Summer: decreasing runoff (low water): mean discharge until 2050: Summer +/-10%

→ **Current discussion in the WG H in relation with the development of an ICPR climate change adaptation strategy**

→ **Could be included in the FRMP (foreseen: later stage/2d cycle)**

14

Questions

Are there similar approaches in other international basin as the ones presented?

How do you fit together different measures/objectives from different decision levels (specially river basin <--> States/Region/Municipalities, ...). Which difficulties appeared? Which solutions did you find?

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Presentation on Belgium (Sven Verbeke)

VLAAMSE MILIEUMAATSCHAPPIJ

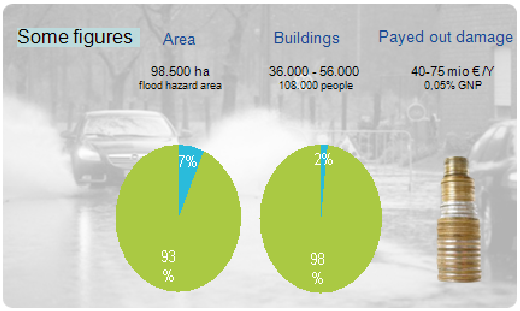
Defining floodrisk objectives in Flanders

Sven Verbeke
Flemish Environment Agency
Division Operational Water Management
WG F meeting 16/10/2013

Content

- Introduction
- Supporting studies
  - Floodrisk Management Project
  - Environmental water quantity objectives for surface water bodies
- Implementation process in Flanders

Introduction



Content

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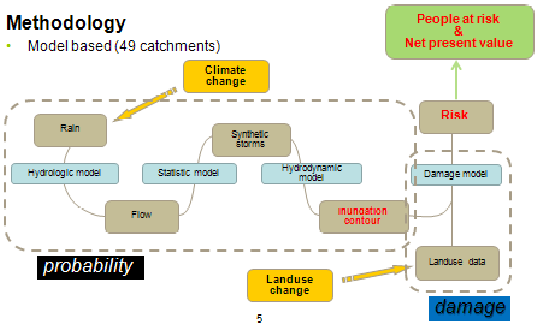
Floodrisk management project

Methodology

- Model based (49 catchments)



5

Floodrisk management project (measures)

Risk = probability x consequences

Protection:
- levees
- retention basins
- increasing discharge capacity

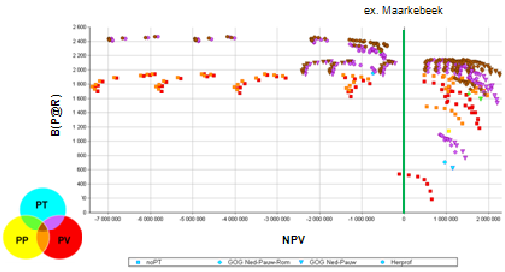
Prevention (vulnerability):
- resilient buildings
- spatial planning

Preparedness (exposure):
- early warning systems
- sandbags



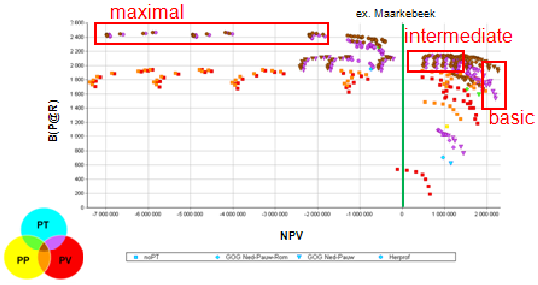
Floodrisk management project (results)

- Risk analysis - policy options – criteria for objectives
  - Evaluation (and prioritisation) based on two criteria: NetPresentValue (NPV) (benefits-costs) and B(P@R) (social benefits)



Floodrisk management project (results)

Risk analysis - policy options – criteria for objectives



Floodrisk management project

Risk analysis – policy options – criteria for objectives

- Consultation – participation
  - Almost 100% support the idea that transition to multi-layer water safety (3 P's) is necessary, with majority leaning towards intermediate policy
- 3 applicable criteria for defining objectives (NPV - P@R – risk numbers in relation GNP)
- Input for study 'environmental water quantity objectives for surface water bodies'

Content

- Introduction
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  - FloodRisk Management Project
  - Environmental water quantity objectives for surface water bodies
- Implementation process in Flanders

Environmental water quantity objectives for surface water bodies

- Elaborating objectives, specifically aimed at managing floods and water shortages
- Link FD and WFD
- Content
  - Inventory (incl. water managers, environment agencies, drinking water services, spatial planning, agriculture, cultural heritage ...)
  - Formatting risk matrix / framework on regional scale
  - Working out 3 testcases on local scale

Environmental water quantity objectives for surface water bodies

- Risk Matrix (flood risk)
  - 4 aspects
    - Water management and safety
    - Shipping
    - Ecology
    - Water supply

Environmental water quantity objectives for surface water bodies (provisional results)

- Risk matrix 'water management and safety' (P@R)

		People at risk (Flanders)				
Frequentie	Smaller than	Trivial < 100	Marginal > 100	Severe > 1000	Critical > 10000	Catastrophic > 50000
Frequent	1/10					
Probably	1/100					
Limited	1/1000					
Unlikely	1/10.000					
Exceptional	> 1/10.000					

Acceptable
Inacceptable
Cost benefit measures, if possible, must be applied

Environmental water quantity objectives for surface water bodies (provisional results)

- Risk matrix 'water management and safety' (based on GNP)

		Material risk (Flanders) (mio €/overstroming)				
Frequency	Smaller then	Trivial < 1	Marginal > 2	Severe > 10	Critical > 100	Catastrophic > 1000
Frequent	1/2					
Probably	1/10					
Limited	1/100					
Unlikely	1/10.00					
Exceptional	> 1/10.00					

Acceptable
Inacceptable
Cost benefit measures, if applicable, must be applied

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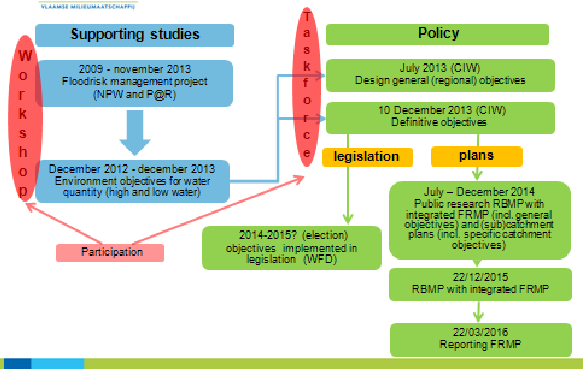
Implementation process



Implementation process (differences)

Objectives	Flanders / River Basement	subcathment
Degree of detail	General	Specific
Equity (4 aspects)	Equal	Differentiation
Plan	RBMP with integrated FRMP	(Sub)catchment plans
Legislation	Modified decree	

Implementation process

- **Regional principles**
  - **Measurable**
  - **Realistic** so measures can be executed
  - **Ambitious en vigorous** so a higher safety level will be realised
  - **Acceptable** for all sectors

Implementation proces

The flood risk management objective for 'water management and safety' (provisional)

Durable reduction of the flood risk with **sufficient** protection for human health, the environment, cultural heritage and economic activity by:

Reducing flood risks, taking into account an optimal mix of **protective, preventive and preparedness** measures, by at least counterbalancing **autonomous development** (climate change and land use change) and executing **cost-efficient measures** with maximal benefits for human health, the environment, cultural heritage and economic activity.

19

Conclusion

- Studies result in useful criteria and applicable risk matrix for deriving environmental flood risk objectives
- Objectives can/must be translated to a more policy based approach and can be embedded in WFD legislation

Questions

- How do MS quantify objectives or do they use a more qualitative approach?
- In the case a qualitative approach is used, how will the evolution of the flood risk be judged?

Presentation on STAR-FLOOD (Dries Hegger)

STAR-FLOOD: headlines of the project

STAR-FLOOD: an EU FP7 project on flood risk governance

-Background: increasing flood risks due to urbanisation and the effects of climate change

-Hypothesis: urban areas will be more resilient if several Flood Risk Management Strategies are combined and integrated

Research approach: integrating public administration and legal expertise

FRM Strategies are embedded in so-called Flood Risk Governance Arrangements:

- Actors
- Discourses
- Rules
- Resources

Related to all policy domains relevant for Flood Risk Management (water management, spatial planning, disaster management)

Universiteit Utrecht · Grontmij · Middlesex University London · PAN · Luleå University of Technology · Université François-Rabelais Tours · Katholieke Universiteit Leuven · Universiteit Antwerpen · Radboud Universiteit Nijmegen

Countries and cases

The Netherlands
Rijnmond Drechtsteden;
Nijmegen;
Westergouwe/Zuidplaspolder)
United Kingdom
London
Hull
Glasgow
Belgium
Antwerp
Geraardsbergen
Ghent)

Sweden
Gothenburg
Haparanda
Karlstad)
Poland
Slubice
Poznan county
Wroclaw
France
Nice
Nevers
Le Havre

We aim to deliver knowledge on flood risk governance that is useful and used

- Comprehensive framework for ex-ante evaluation and design of FRGA in the EU; ideas on:
  - Partnerships, policy programmes, policy implementation, competences, legal instruments, dealing with uncertainties, financing arrangements, distributional effects
- Knowledge & tools on how to set up and use PPP and related financial and legal schemes
- Contribution to implementation of EU policy goals (FD, White paper, Hyogo)

=>Goal: help stakeholders to improve the implementation of FRM Strategies

STAR-FLOOD: first results

We finalised our first Work Package (June 2013)

STAR FLOOD

D1.1.1 Flood Risk Management in Europe: actual flood risks in the STAR-FLOOD consortium countries
D1.1.2 Flood Risk Management in Europe: governance challenges related to flood risk management
D1.1.3 Flood Risk Management in Europe: European flood regulation
D1.1.4 Flood risk management in Europe: similarities and differences between the STAR-FLOOD consortium Countries
http://www.starflood.eu/products/deliverables/

Governance challenges for FRM

STAR FLOOD

- The challenges are related to actors, discourses, rules and resources (e.g. organise joint working between actors; need to make general FRM principles more specific).
- More general finding: Flood Risk Governance Arrangements tend to be highly fragmented
- Need for bridging concepts like Integrated Water Resources Management and Climate Proofing to create synergies between actors involved in Flood Risk Governance

FRM Strategies should be appropriate for the context in which they are applied

STAR FLOOD

This depends on (amongst others):
Flood **experiences**
-Competent **authorities**
-Available **resources**
-Degree and ways in which **integration between water management and spatial planning** is taking place
-If and how **stakeholder involvement** is done
-Existing **norms and goals**
-**Historical discourses** in Flood Risk Management
-Existing FRM Strategies (path dependecy)

The best is yet to come…

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- Assessment framework and case study protocol (October 2013)
- The REAL case study research (until October 2015)
- Design-oriented framework, final conference, practitioners' guidebook (2015-2016)
- Two expert panels (current OMP workshop & other panel in 2015)
- Policy briefs

Questions/points for discussion

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- What are relevant similarities and differences between MSs in terms of the structure and culture of the flood policy domain? What is the significance thereof for the implementation of FRM strategies and the implementation of the Floods Directive?
- How universal are the identified barriers against the implementation of FRM strategies? How can you deal with them and what will it take to do this?
- What improvements in the science-policy interface in Flood Risk Management are needed?
  - E.g. How to proceed in the face of uncertainty?
  - Potential contribution of social/legal scienes (e.g. STAR-FLOOD)

Thank you!

STAR FLOOD

Please visit our website:
www.starflood.eu

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Dries Hegger: d.l.t.hegger@uu.nl




Presentation on break out group 1

OMP workshop

Results of sub-group 1

Facilitators: Clemens Neuhold, Mark Adamson

Reporters: Dries Hegger, Marlous van Herten

Objectives

- Differences in the level of abstraction at which they are defined (e.g. high in Austria/Scotland/Italy, very specific in Ireland)
- In some countries, e.g. Netherlands, process of defining objectives has to fit within existing planning cycles (e.g. determining safety levels) and existing focus on protection
- Different foci in determining objectives, e.g. Netherlands (process for setting protection levels should be followed); in Ireland aspirational targets are set.
- Differences in how WFD and FD objectives are linked
  - Same competent authority or not (e.g. in Ireland/Sweden) potential of conflicts
  - Seems all MS check if measures fit in WFD requirements or not; differences in MS in extent to which a dedicated process is in place (e.g. very specific in Ireland)
  - Ireland also looks at benefits instead of risk reduction only
- The distinction between (strategic/operational) objectives and measures is sometimes hard to draw (e.g. "informing the public")
  - E.g. strategic level: subsidiarity principle, solidarity principle, synergy with WFD, share knowledge;
  - E.g. operational level: reduce new risks, reduce existing risks, avoid adverse consequences
  - measures generally seen as the implementation of the objectives

Measures

- Differences in level of detail with which measures are defined and "prescribed", e.g. in Ireland very specific guidelines, in DE/AT catalogue;
- Decision of what to implement often made at local level or with high degree of local level consultation; in Eng. "Greenbook" at national level to which local authorities have to stick;
- Hydrological modelling of effect of measures is done in IR/PL; in AT no additional (to the derivation of hazard and risk maps) modelling is conducted in the frame of OMP to analyse scenarios, effects of measures etc.

Measures 2

- Debates on new strategies partly due to FD co-occurring with policy developments
  - E.g. water and spatial planning in AT
- Some concern about liability/complicance check by EC=> may lead to conservative wording of objectives/measures;
  - Hesitant to focus on river basin area; "national objectives first"
- Knowledge needed from social scientists/legal scholars
  - Show benefits of FRM measures e.g. in monetary terms, co-benefits for other domains because of multi-actor challenges; especially land use policy;
  - Development hard to control/regulate in a democratic society
  - Necessary changes in legal systems;
  - Show who bears the costs and who reaps the benefits of developments e.g. hydropower developments.

Prioritisation

- Several methods used, e.g. MCA, GIS instrument in development to see effects of measures for damage reduction (ICPR);
- Prioritisation sometimes political process (UK); some interests should be served to some extent;
- Sometimes priorities set for different aspects e.g. flood forecasting;
- Framing in terms of costs/benefits
- Transboundary issues taken into account (e.g. Maaswerken in The Netherlands; border river in Ireland; ICPR is there because it benefits all).

Presentation on break out group 2

Introduction

Group 2

Session 1 Objectives and measures

16 October 2013 Darren Lumbroso

Who defines the objectives?
Croatia - The main objectives are defined at a national level
Flanders - Federal level is responsible
Germany - Legislation for implementing the Floods Directive (FD) is made at a national level but the Federal States are responsible for implementing the legislation
Spain - Legislation is national and the Competent Authority is related to the Basin Districts which mostly depend on the national Government. Only in cases when the whole Basin District is included in one region, the competent authority is regional. This is the case for a part of the Basque country.
In Greece – Objectives are defined at a national level and the Decentralized Administrations are responsible for the implementation of FD.
Finland - Objectives are set at national level; however, the final decision regarding the level of protection is made at a regional level

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Are you using objectives that are measurable and/or time bound?

Flanders - objectives are measurable in terms of risk reduction but not time bound as there was a need for a "certain level of ambition" (flexibility)
Basque country - in the Eastern Cantabrian Basin District Management Plan a general level of protection of about 1 in 100 years is set; however, in each APSFR the cost-benefit analysis and environmental impacts should be analysed
In Greece - FD will contribute to flood measures rationalization and better funds distribution on a national level. For the first circle of implementation Greece will only carry out the affordable measures.
England - There is a national flood risk management strategy. Behind this there are outcome measures on a funding cycle that measure number of houses protected, areas of deprivation
Commission - It is advisable if there are objectives and measures to achieve them. It is logical to have a timeframe. Ideally this should be in the FRMPs. The measures that should be taken should be prioritised

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Objectives

- Will there be different objectives at different scales (e.g. national, unit of management, APSFR)?
  - Yes
- What will be the significance of the FRMP objectives in the future? How much will they influence the selection of measures?
  - Germany - FRMPs are not legally binding in the sense that third parties can go to a law court to have measures implemented. Authorities including local Authorities need to take them into account when they take decisions
  - Finland - This is not known ongoing discussion for the WFD and RBMP

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Measures - Do participants see a shift in flood risk management strategies? Which are the measures identified that were most promising in terms of prevention?

- Flanders "not really a shift after the FD" but it was shown that a wider range of measures are taken into account
- England - Flood forecasting and warning which has worked well. However, most financial resources are still spent in prevention
- England – Since 2011 partnership funding in place so that communities can contribute to measures in places since 2011

Water retention methods is one of the priorities of the Commission are there similar plans in other countries?

- Croatian - Sava River, largest retention basins in Europe
- Greece - Depends on the situation as to whether retention can be used
- Germany [Distinguish between river flood retention in plains and mountains.] Retention in plains is often difficult because of existing landuse, natural retention in mountains cannot prevent high floods

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Prioritisation

Who is responsible for prioritisation?
Flanders – At the moment the authority responsible for carrying out the measures sets the priorities. More a case of which will be done first. Each authority responsible for their reach of the watercourse
Croatia - State Agency for Water Management responsible for flood risk management plan Adopted by Croatian Government
Germany – Same procedure for defining objectives and measures – one process with three steps.
England – National level for rivers and coastal floods However, there is a local approach for local surface water flooding. Where does local sit in prioritisation? Prioritised by multiple criteria, partnership funding means that priorities may change this could make planning more difficult.
Greece - Before FD no method for systematic prioritisation. Special Secretariat for Water of the Hellenic Ministry of Environment Energy and Climate Change will prioritise at a national level measures and then the views of local stakeholders and finances will decide prioritisation and time scale. All stakeholders will be involved in consultation for setting the priorities.

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Prioritisation

How to carry out prioritisation and involve the public?
Sweden - Different priorities (e.g. health, economic, cultural) resulting from different priorities in the FD – local level will decide the prioritisation
Decision making should be made from sound facts and data to make political decisions.
Should there always be higher level of review of local level decision to make sure that they are compliant with national level policy decisions?
In Spain – work on a regional scale prioritisation based on prevention and civil protection. Important to include non-structural measures not easy to make an economic analyses of these measures
Issues with prioritising measures in the past?
Germany/Flanders – Engagement with stakeholders slowing down the process
Germany – Example of wanting to re-connect floodplain by taking down a flood defence but conservationist will not agree owing to the habitat behind the dike
Spain – idea that technical approaches can solve the problem complicated to explain that it is not possible to have buildings in the floodplain. Farmers are vocal although damage is relatively small.
Greece- Measures prioritisation will be finalized after public consultation taking into account financial restructions

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Funding issue

- England – Guidance document produced on all sources of funding if there are multiple benefits
- England – Community based funding but still need to get legal permission. It is beginning to happen in practice. If a community gets involved they have more "poitical power" in getting the scheme funded. However, could affect prioritisation of measures
- Example given of how defining the areas of benefit could be important (e.g. one side of a street protected and one is not). Trans-boundary at all levels (i.e. community to international)
- Germany – Companies have contributed to the state to improve the level of protection of flood defences (e.g. increasing the level of protection from 1 in 100 year to 1 in 200 years)
- Croatia/Netherlands – Property tax on all properties to fund flood risk management (e.g. maintenance of flood defences)
- Sweden – Prioritising the measures by putting the highest rank on human life because applications exceed the need by 25x. National Government pays 60% local government 40%. Effectively prioritisation is at a national level

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Presentation on break out group 3

Objectives 1/3

How do you define them?

•Objective: what do you want to achieve?

•Measure: how to do it?

•Same in IE, DE, ENG

•COM: there is a document with guidance on terminology prepared by WG F (in CIRCA)

•Who defines objectives differs per country.

•IE: national level sets objectives, local level sets weights and decides how to do it (measures)

•CZ (national objective = safety norm (recommended), individual measures compared based on costs/benefits)

•CRO: new MS, catching up in twinning project, process was done backwards, from measures to objectives

•Also in other MSs: check existing FRM with FD implementation

•GR: Bit top-down and then back. Private companies do appraisal measures FD for Ministry,

•DE: national level gives regional level guidance on how to set objectives, local level is involved

•BUL: prepare catalogue of measures & objectives: which first? Both are prioritised. Objectives national level, measures regional / basin. Non-structural measures difficult, maybe more participation required?

•ENG: really local setting of objectives, more knowledge on feasibility

Objectives 2/3

WFD & FD coordination?

•Yes! But there are different approaches to do it.

•Can be on level of objectives or appraisal of measures (Synergies? Or just no conflict?)

•There are advantages when they have the same competent authority

•The document about the WFD-FD linkages (in preparation, planned for the end of 2013) should be used as background paper

•GR: Still issue, obstacles, working group started on this

•SCO: same competent authority, objectives only on flood risk (not including other Dir's), but in criteria for selecting measures

•IE: different competent authorities, but objectives to support each other

•CZ: want to build dam for FD, not good for WFD, so compensation to also meet WFD objective

•DE: three categories of measures (synergies WFD & FD, conflicting measures, no mutual influence) used for selecting measures and preparation of prioritisation.

•ENG: deal with this in objective setting, use funding synthesis

•COM: make the decision on the influence of WFD on measures on the project level

Objectives 3/3

How to make objectives measurables?

•IE: Use of indicators (minimum and maximum), use GIS, specific, not time-bound

•GR: Show effects of measures on risk maps and hazard maps, where possible

Do we need transboundary / river basin objectives?

•You need a main objective (e.g. reduce flood risk)

•MSs make this concrete

•Make sure you do not increase risks downstream

Measures 1/2

MSs are attempting to broaden Types of measures: subtile shift to more preparedness, emergency response and recovery?

•Agree

•ENG: structural is very expensive, difficult to know exactly where to do what

•IE: community needs to be aware and feel responsible , so not too much protection

•ENG: do different things at the same time to create redundancy? depends on risk

•IE: combining measures: yes, redundancy not always affordable

How far are you in this shift?

•SCO/IE: mainly focus on probability

•ALL have the possiblity to influence spatial planning from the flood sector

•IE: people's community / perspective: only protection is seen as real measure

•ENG: more focus on self-help (voluntary wardens, etc) instead of defences, giving land back to water, people are taking more responsiblity

Are multiple benefits taken into account in the selection of measures (e.g. WFD objectives)?

•It is needed. How to do it is still under development.

•SW: method not yet in place

•GR: first look at focus objectives and not conflict with other benefits, later understand multiple benefits

•Economic analysis more easy for flood risk, more difficult for other benefits

Measures 2/2

How do you select measures? Trade of costs and benefits? MCA?

•Only aid decisions, cannot fully determine selection

•Good guidance document on how to do economic analysis

•SCO: not full MCA, but only information on different aspects

•IE: combining MCA and CBA

•No examples of only monetary CBA

Knowledge needs?

•SCO: how to apply monetary value to wider societal impacts of measures?

Prioritisation 1/3

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Differences between selecting and prioritising measures?

- Selection first, prioritisation for example in time

Priorities set at national level and subsequently translated to regional/APSFR/local level

- Agree, mostly top-down.
  - DE: Not always top-down. Federal state cannot decide, but local level. Depends on federal act.
  - ENG: National funding, regional prioritisation. EA and local authorities both involved.
  - SCO: SEPA takes forward, but national and local level decide.
  - CRO: National level responsible for all. EU funding may change priorities. Reduce sewer flooding from external water.
- Differences in who has formal decision making power and how interplay between levels takes place
- Apparently more consistency between OMP within a country than O-O, M-M, P-P between countries

Prioritisation 2/3

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How to prioritise?

- Use objectives (e.g. reduced risk) and budget availability, Report by time / in which planning cycle measure is implemented
- Method often under development
  - SCO/IE: by time / cycles, informed by projected funding, flexible to funding restrictions
  - DE: similar: by time and effect: only measures of which we now that can be implemented within the next cycle, each federal state use other
  - ENG: not clear yet, maybe by risk reduction

If you have different sectors / actors with responsibility, how to deal with it?

- GR: Depends on specific problem
- ENG: local authorities leads on flood risk management, EA, get right people on the table to discuss prioritisation is important first step
- DE: spatial planning and water management do not talk enough, similar in other countries
- SCO: much more integrated catchment management, still difficult to do
- IE: measure with multiple benefits, differente priorities, how to divide funding?
- ENG: start early with deliberation

Implementation

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How to deal with different public perspectives? Experiences / difficulties?

- Early involvement, not so much in prioritisation.
  - DE: when to start participation / exchange with other stakeholders?
  - SW: regional level: want the public to be involved, include local level/public early
  - IE: public involved in objectives and weighing measures, not so much in prioritisation as they cannot influence it, so in this stage maybe more inform / be transparent, works if you have them already in the process

How to bring in other funding, e.g., private?

- ENG: prioritisation is strongly influenced by other funding in addition to national funds, trying to stimulate partnership funding
- IE: some examples, no mechanims of how this influences prioritisation
- → see questionnaire results ENG

Knowledge needs

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Where to spend 5 m Euro research budget?

- IE: Measure progress in objectives requires good data infrastructure.
- SW/SCO: Good decision support tool.

Presentation by Dries Hegger on the main results of the workshop, at WG-F Meeting, Brussels, 17 October 2013

A joint one-day workshop on Objectives, Measures and Prioritisation

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- **Shared interest of STAR-FLOOD and WG-F in identifying similarities and differences regarding OMP**
  - Exchange of best practices & identifying knowledge needs of MSs
- **Input from questionnaires by 16 parties (13 in analysis)**
- **Programme:**
  - Overview of questionnaire responses
  - Presentations on Objectives, Measures and Prioritisation by 4 MSs & ICPR; presentation on STAR-FLOOD project
  - Discussion in breakout groups followed by plenary feedback

Survey results: OMP processes are linked within countries and differ between countries

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- **Objectives** – mostly defined at national level and applied at several different levels. And aiming at disaster risk reduction. Different forms of consultation (formal vs. Informal). Sometimes linked to approval FRMPs;
- **Measures** – defined at national and regional levels and applied at several different levels. Foreseen to comprise all risk management steps (cycle);
- **Prioritisation** – defined at national and regional levels and applied at same levels;
- **Knowledge needs** – mainly consequences of climate change; exchange of good practices; knowledge on demographic/economic developments

Objectives: presentations

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- **Example from Scotland (Roy Richardson)**
  - Coordinated approach from SEPA, local authorities and Scottish water
  - Four types of objectives that should be SMART: avoid increasing flood risk; protect to reduce likelihood of flooding; prepare to reduce impacts of flooding; accept all or part of flood risk
  - Measures are implementation of objectives, prioritised with an eye on funding scheme in Scotland
- **Example from Flanders (Sven Verbeke)**
  - Two supporting studies carried out
  - Useful criteria and applicable risk matrix for deriving objectives; general objectives at river basin level, more specific for subcatchment level
  - Reducing risks, using several strategies that should be cost-effective

Objectives: many differences…

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- …Levels of abstraction (high vs. very specific)
- …Foci (process in NL vs. substantive targets in IR)
- …Ways in which WFD and FD are linked
- …defined at strategic level (principles); operational level (avoid new risks)

Difference with measures sometimes hard to draw (e.g. involve the public)

Measures: presentations

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- **Example from Ireland (Mark Adamson): new approach to flood risks addressing risk to People, Environment, Cultural Heritage and the economy**
  - Drivers: national policy review, pilot studies, implementation of Floods Directive (e.g. article 7 on objectives, measures, prioritisation)
  - 18 objectives are weighed
  - Measures are specific measurable actions for which minimum requirements and aspirational targets should be set
  - Prioritisation done both at national/regional level, using e.g. MCA Benefit-cost ratio

Prioritisation presentations

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- **Example from Austria (Clemens Neuhold): Massnahmenkatalog**
  - 4 objectives and 22 measures denominated
  - Procedure for prioritising (I, II, III) in progress – catalogue of questions on hazard, expected losses, attributes and feasibility to be answered with yes/no.
- **Example from ICPR (Adrian Schmidt-Breton)**
  - FRMP for the Rhine under development (requirement to exchange information, coordinate and avoid negative transboundary effects)
  - GIS instrument for assessing flood risks and effectos of measures in preparation (expected to be available end 2014)

Prioritisation: breakout discussions

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- Several methods used, e.g. MCA, GIS instrument in development to see effects of measures for damage reduction (ICPR);
- Prioritisation is not a technocratic exercise, decisions are made in the political process;
- Sometimes priorities set for different aspects e.g. flood forecasting;
- Framing in terms of costs/benefits;
- Transboundary issues taken into account (e.g. Maaswerken in The Netherlands; border river in Ireland; ICPR is there because it benefits all).

Knowledge needs

- Consequences of climate change;
- Democraphic/economic development;
- Exchange of good practices;
- Ways to show benefits of FRM measures to other domains (development is hard to control in a democratic society);
- Ways to show who bears the costs and who reaps the benefits of FRM measures;
- Knowledge infrastructure;
- Decision support tools.

Main conclusions

- Links between OMP within countries, large differences between countries; some have progressed more than others
- Some evidence that Floods Directive has both a positive and a negative influence on which objectives and measures are selected and how ambitiously they are formulated;
- Reasons to look forward to further exchange of good practices and in-depth insights into specific regions (STAR-FLOOD focus)

Next steps

- Joint report by WG-F and STAR-FLOOD on the workshop & implications for the STAR-FLOOD project (to be circulated for comments);
- Empirical research STAR-FLOOD in 18 case studies; WG-F members in six MS may be consulted for feedback (NL, BE, SV, UK, PL, FR)
- 2-4 International workshops in 2015
- Potential new expert panel with you in 2015?

Annex VI Questionnaire on MS Knowledge Needs

WG F and STAR-FLOOD OBJECTIVES, MEASURES AND PRIORITISATION WORKSHOP

Topaz Room, Martin's Central Park Hotel, Brussels
10:00 – 18:00, Wednesday 16th October 2013

Knowledge needs: preliminary overview

Please give your top 5 priority of the knowledge needs listed below according to their relative importance according to you. To do this, please put a number in the second column: 1 = most important; 2 = second most important etc.

Type of knowledge	Priority (1-5)
Consequences of climate change	
Hydrological changes	
Future urban development/demographic developments	
Determining the possibilities of land use planning and opportunities for linking FRM with land use planning policy and other policy domains	
Determining which changes in legal systems are necessary / desirable	
How to valuate non-economic risks and benefits	
The level of risk awareness and how to increase risk awareness at the societal and individual level	
How to measure the impact of flooding and actor's responses in the different MSs	
How to make objectives measurable and time-bound	
Determining the level of detail of objectives required	
How to determine the effectiveness of measures	
Determining which criteria should be used for prioritisation, and at what level these criteria should be determined	
Determining who sets priorities, at which level	
How to harmonise objectives, measures and prioritisations defined by different competent authorities, at different levels, addressing different geographical scales	
How to deal with different or conflicting needs and cost-benefit distributions of FRM measures of the involved actors	
Determining the possibilities of shifting responsibilities of flood protection to individuals	
How to organise and stimulate (diverse) funding arrangements	

How to integrate the FD and WFD requirements and organisational matters	
Transboundary issues: at what level should objectives, measures and prioritisation be defined and how can these processes be harmonised within the river basin	
The value and use of decision-support tools	
Communication of scientists towards policy-makers: how to deal with different perspectives on objectives and misconceptions about the effectiveness of measures	
Communication of policy-makers to the public: how to deal with different perspectives on objectives and misconceptions about the effectiveness of measures	
Other:	

Thank you for your time!