

# Workshop

## “The economics of climate change adaptation measures under WFD, MSFD and ICZM ”

11-13 April 2016

ECRAN 61931

Approaches and experiences on  
monitoring and evaluation of climate  
change adaptation measures



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## Structure of the presentation

- MRE definitions
- European adaptation tool
- National responsibilities
- Legal basis
- RBM steps
- Monitoring and status assessment
- Swiss model



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# Monitoring, reporting and evaluation of adaptation measures

**Monitoring** refers to a continuous process of examining progress made in planning and implementing climate adaptation. (EEA, 2014).

**Reporting** is the process by which monitoring and/or evaluation information is formally communicated.

**Evaluation** refers to a systematic and objective assessment of the effectiveness of climate adaptation plans, policies and actions.

Evaluations are undertaken at a defined point in the project or policy cycle

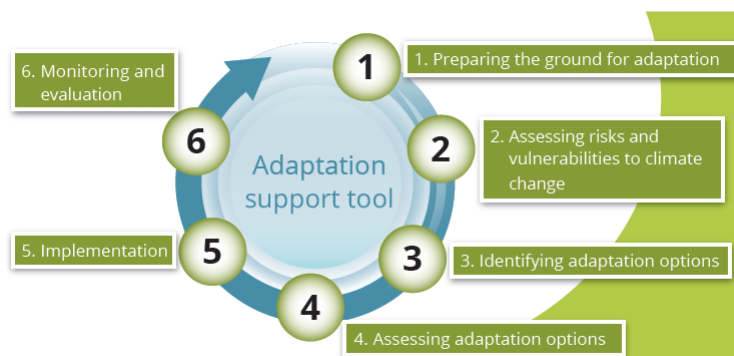


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## EC Adaptation support tool



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## Key messages at the EU level about national responsibilities

Overall responsibility for MRE of adaptation often lies with ministries or government agencies coordinating adaptation policy.

Horizontal and vertical coordination of MRE activities is often organized through committees involving multiple administrative levels and sectors.

In some countries, the requirement for monitoring, reporting and/or evaluation is formalized in legislation, while in other cases it is voluntary.

Understanding progress of adaptation policies and actions benefits from the engagement of a broad range of stakeholders.

In many countries, it is a challenge to involve the municipal level in MRE of national adaptation policies.



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## Legal basis

The WFD RBM steps include:

- Risk assessment - the summary of significant pressures and impacts of human activity on the status of surface water and groundwater (Article 5)
- Monitoring and assessment of the status of surface water (ecological and chemical) and groundwater (chemical and quantitative) (Article 8 and Annex V)



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## Which steps in river basin management are most important in adaptation to climate change?

- Some of the river basin management (RBM) steps are considered more critical than others in our ability to prepare for climate change, especially in the short term.

Essential components for planning for climate change include:

- an ability to identify change as it happens through **monitoring**;
- It is expected that as a minimum, in the 2nd and 3rd cycle of RBM, Member States should clearly demonstrate how climate change projections have informed assessments of WFD pressures and impacts



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## RBM steps and guiding principles for WFD implementation in a changing climate

### Assessing pressures and impacts on water bodies

Assess, over a range of timescales, direct influences of climate change and indirect influences where pressures are created due to human activities in adapting to climate change

A more integrated approach to risk assessment is needed to overcome changes in pressures that may arise from the direct impacts of climate change, as well as from autonomous and/or anticipatory measures taken by different groups to mitigate and adapt to climate change.



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## Monitoring and status assessment (1)

Maintain both surface and groundwater surveillance monitoring sites for long time series.

Set up an investigative monitoring programme for climate change and for monitoring climate change “hot spots”, and try to combine them as much as possible with the results from the operational monitoring programme.

Include reference sites in long term monitoring programmes to understand variability and impact of climate change

Good monitoring networks will be essential to identifying and reacting to climate change and so it is important that sites with long time series of data collection are not dropped from surveillance monitoring.



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## Monitoring and status assessment (2)

### Important for surface water and groundwater

Knowledge of when and where climate change might be first detected could be used to target monitoring and reporting of effects in the most vulnerable water bodies, then to bring forward adaptation interventions as required.

In order to detect climate change impacts early, the monitoring frequency needs to be higher than the WFD minimum for surveillance monitoring.

Simultaneous hydrometeorological data and data on quality elements are needed to better interpret mid and long-term changes in status.



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## Categories of indicators

**Indicators from an adaptation perspective** to measure different aspects of climate change.

- climate impacts (e.g. changing flood frequency)
- adaptation policy responses and actions (e.g. a change in water management policy)
- vulnerability (e.g. rate of residential development on the floodplain)
- realized climate losses (e.g. annual damage costs from flooding).

**Indicators from a policy cycle perspective** to measure a process/output/outcome

- a process-based approach: creation of a coastal adaptation planning committee
- an output-based approach: 'X' km of upgraded sea defenses
- an outcome-based approach: reduction in vulnerability or better adaptive capacity of a coastal community

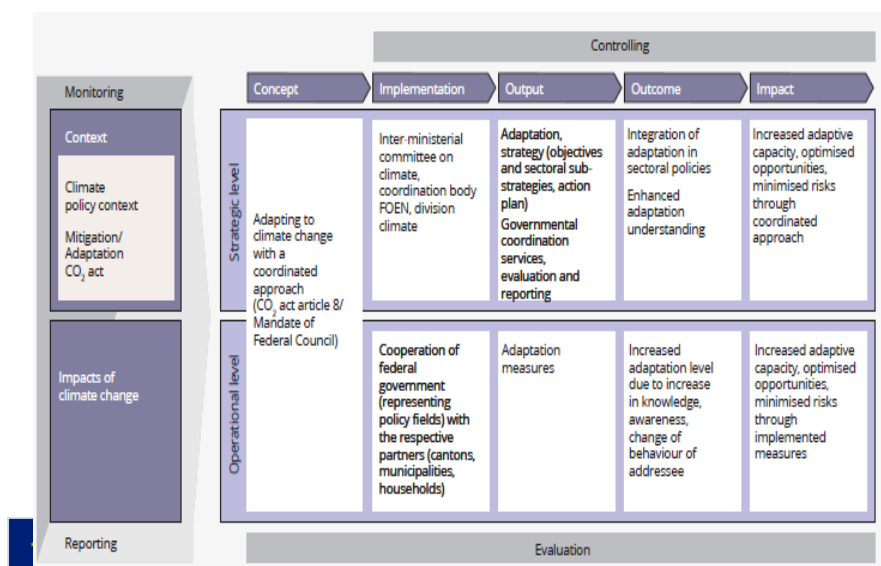


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## Swiss impact model



## Experiences from Switzerland

An impact model is a simple and efficient tool to demonstrate, communicate and facilitate discussion on the complex relationships associated with climate change adaptation.

Indicators can provide relevant information on risks and vulnerabilities, but cannot provide relevant information on the effectiveness of adaptation measures.

The key challenges for the Swiss MRE system are:

- (1) to set objectives and thresholds for evaluating adaptation,
- (2) to capture the causality between the expected and the actual outcome of an adaptation measure and
- (3) the short timeframe between the adoption and the evaluation of the action plan.



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Thank you!



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