Kennis voor Klimaat
Knowledge for Climate

Framework for monitoring and evaluation of adaptation

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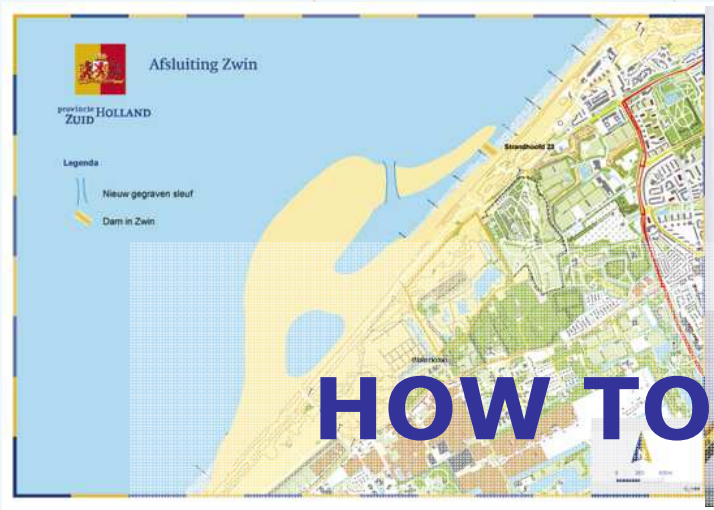
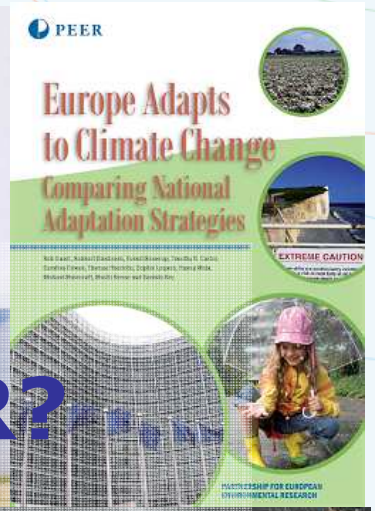
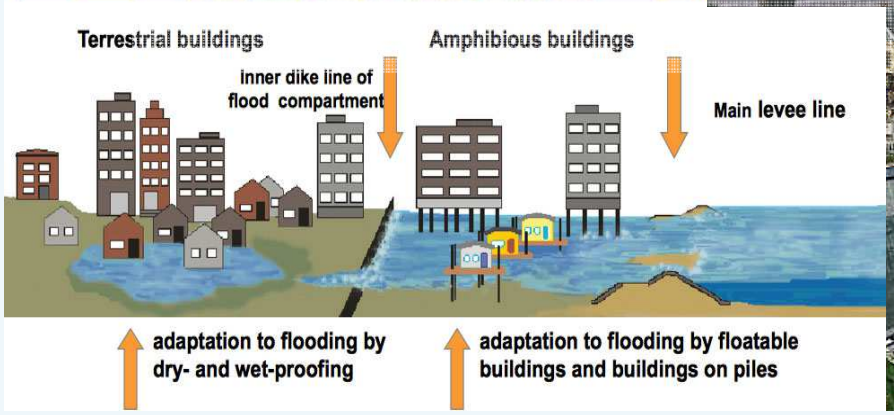
Adaptation initiatives





HOW TO MONITOR?



Monitoring framework

We developed a general framework to analyse monitoring programmes and that should help governments and project leaders to set up a structured monitoring program

The framework consists of:

1. **Requirements for institutional body responsible for monitoring**
2. **Method for defining the system of interest**
3. **Method for selection of indicators**
4. **Monitoring and evaluation procedures**

Application of monitoring framework in three countries

We analysed if existing monitoring strategies or monitoring strategies under development follow this framework and what lessons we can learn

1. Requirements for institutional body responsible for monitoring

- Dependency
- Resources
- Stakeholder involvement

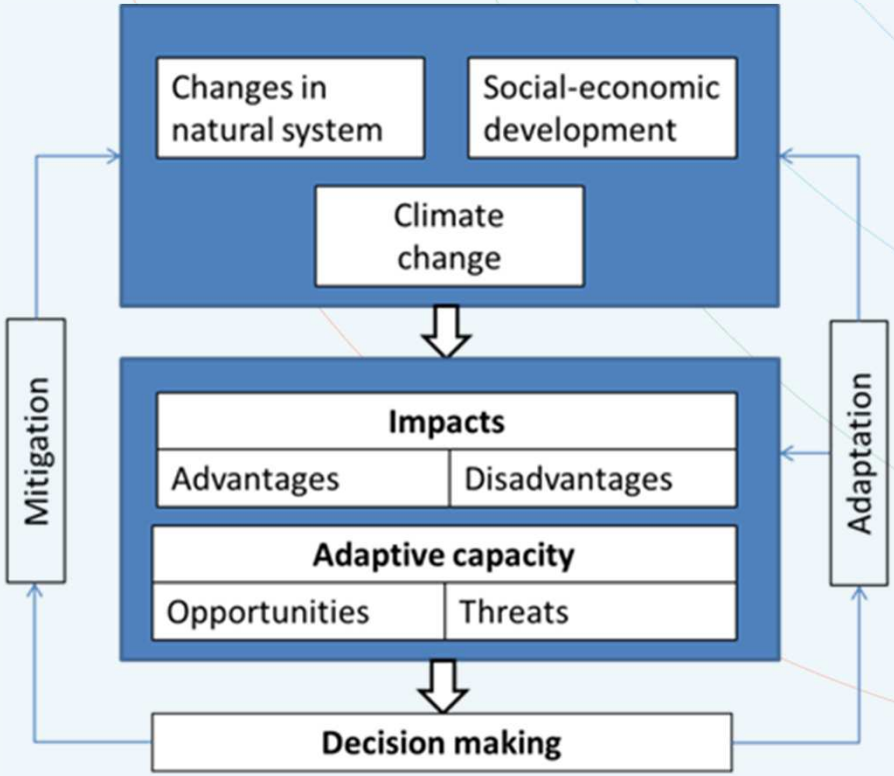
Example of analysis result - monitoring Finland's Adaptation Strategy

Institutional body	Aspect	Description
	Institutional body	Coordination group for Adaptation to Climate Change
	Dependency	Not independent - steered by the ministry of Agriculture and Forestry and involved in implementation
	Resources	Supported with resources
	Stakeholder involvement	Different stakeholders are member of the Coordination group and therefore committed to the results

Method for defining the system of interest

- Climate system; downscaled scenarios
- Climate impact; the climate impact includes exposure and sensitivity
- Social, environmental and economic vulnerabilities; vulnerabilities include climate impacts and the adaptive capacity
- Temporal and spatial scales
- Mainstreaming context
- Inter-linkages with other policy domains and opportunities and challenges for mainstreaming
- Adaptation objectives and action (measures, policies)
- Monitoring objectives

Example system of interest Finland's Adaptation Strategy



Example of analysis result - monitoring Finland's Adaptation

System of Interest	Aspects	Description
	Climate system	In depth analysis based on downscaled scenarios for Finland in different research programs with different scenario assumptions
	Climate impact	In depth sectoral analyses. Sectors cover natural and social economic systems
	Vulnerabilities	No, impacts are described in terms of advantages and disadvantages
	Temporal scales	Clearly delineated scales: "immediate " (2005-2010), short term (2010-2030) and long term (2030-2080)
	Spatial scales	Unclearly delineated scales: mostly at national level but in some sectors more detailed (regional scale)
	Mainstreaming	Is seen as an important way to implement climate adaptation policies and measures. Mainstreaming means that climate change impacts should be incorporated into the regular planning, implementation and monitoring processes of the different sectors
	Adaptation action	Yes, identified for each sector and categorised along responsibility, anticipatory or reactive and timing
	Information needs	Defined, what progress has been made in adaptation for different sectors since the adoption of the NAS? The progress is measured on the following elements: • Recognition of the need for adaptation • Adaptation measures launched • Adaptation research • Cooperation between sectors

Method for selection of indicators

Every adaptation programme needs different indicators

Categorise different indicators in order to help policy makers and stakeholders to select indicators that deliver useful information

- Process-based indicators
- Outcome based indicators

Process-based indicators

Type	Description	Examples
Planned adaptation	Indicates the phase of the adaptation policy or process; formulating objectives, formulating policies, taking measures, etc.. • Formulation of adaptation policies • Delivery of adaptation measures	[-] → is adaptation recognized in spatial planning projects
Adaptive capacity	Indicated the adaptive capacity. Indicators can focus on the following aspects (Gupta et al, 2010): • Variety • Learning capacity • Room for autonomous change • Leadership • Resources • Fair governance	Adaptive capacity wheel is example of method
Mainstreaming	Indicates the level of mainstreaming (Kivimaa & Mickwitz et al, 2009). Indicators can focus on the following aspects; • Inclusion • Consistency • Weighting • Reporting • Resources	[-] what are the climate objectives within the Water Framework Directive? and how are climate impacts covered?

Outcome-based indicators

Type	description	Examples
Climate exposure indicators	Indicates climate change and climate exposure • Changes in exposure by changes in extreme events (probability and magnitude) • Changes in average weather	[1/T] → probability of a 10 mm/h rain event [°C] → average temperature in The Hague in July [m^3/s] → Lowest annual discharge Rhine
Climate sensitivity indicators	Indicates the influence of non-climatic drivers on climate sensitivity	[buildings] → number of buildings built within floodplains
Climate impact indicators	Indicates the effect of climate change on the environment or social-economic system.	[Euro] → expected annual damage by floods [casualties] → number of heat related deaths
Adaptation impact indicators	The climate impact on the social, economic and ecologic system The impact van adaptation action on the social, economic and ecologic system	[Euro] → prevented annual flood damage as a result of higher levees [casualties] → number of avoided heat related deaths as a result of action plans

Example Finland

Indicators	Planned adaptation	A part of the indicator "level of adaptation" indicates progress in adaptation measures taken
	Adaptive capacity	No explicit measurement of adaptive capacity, the indicator "level of adaptation" indicates part of the adaptive capacity by the criteria variety and learning.
	Mainstreaming	A part of the indicator "level of adaptation" indicates the level of mainstreaming by the criterion inclusion
	Outcome	No outcome based indicators used

Monitoring and evaluation procedures

- Data collection and reporting
- Process
- Adaptive character

Procedures	Data collection and reporting	Coordination group collected data by assessing adaptation measures themselves or with assistance from other experts. Representatives of funding agencies assessed the research efforts. It is not clear how conclusions were made about the cooperation between sectors and the recognition of the need of adaptation.
	Process	Not clear
	Adaptive character	Not mentioned

Conclusions of analysis for monitoring Finland's Adaptation Strategy

Strong points:

- early start of monitoring → frontrunners
- broad, systematic approach backed up with science

Weak points:

- no insight in outcomes
- doesn't use the concepts of vulnerability or adaptive capacity and as a result limited insight in the social system
- unclear procedures

Discussion - statements

1. Uncertainty is a reason to start with monitoring, not a reason to postpone monitoring.

2a. The main goal of adaptation monitoring is learning.

2b. The main goal of adaptation monitoring is to account for governmental spending.

2c. Learning and accountability are mutually excluding goals of monitoring.

3a. Monitoring is a Northern European hobby and is not applicable in the rest of Europe.

3b. Context and culture influence a monitoring design; a standardized approach is useless.

Discussion - questions

- Scales: what are the needs? – stop at every scale: local/regional; national; Europe; UN.

- How do scales interact / link up? Is a shared indicator set possible?