



Centro Euro-Mediterraneo
per i Cambiamenti Climatici

***ClimWatAdapt:
From the inventory to the assessment of
CCA measures in the water sector***

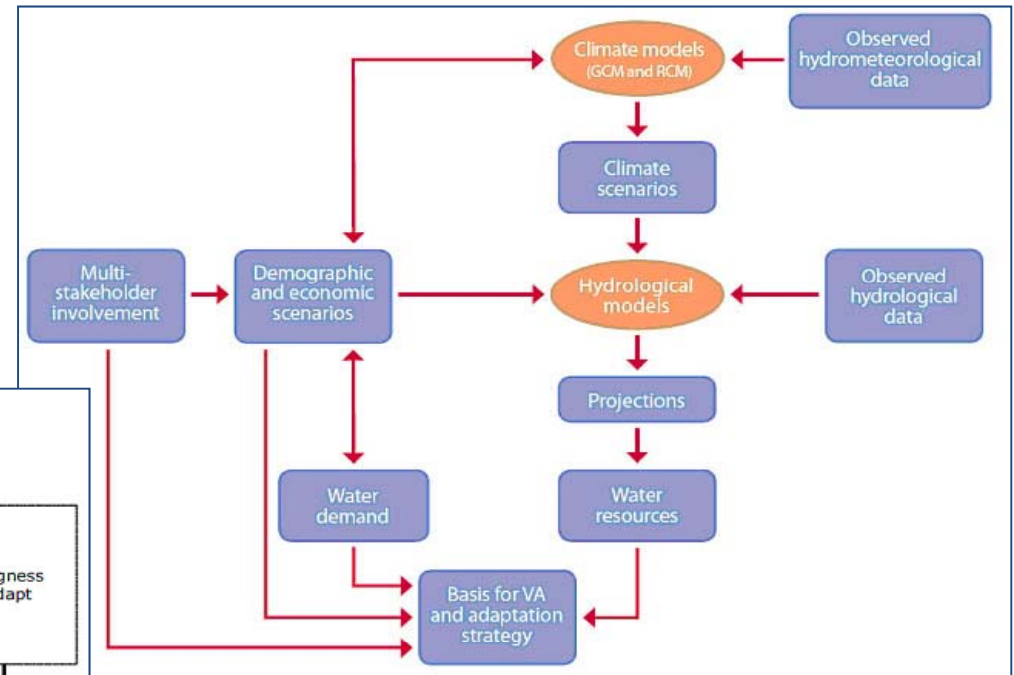
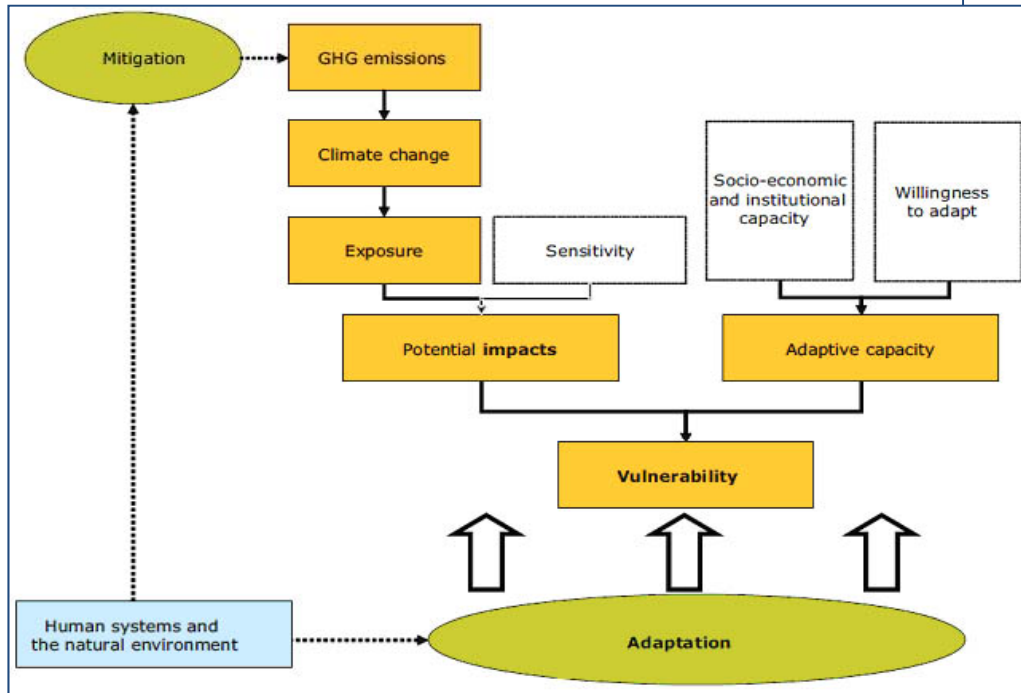
***Carlo Giupponi
Venezia 13/10/2011***

Climate Adaptation – Modelling water scenarios and sectoral impacts

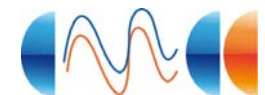
Contract N° DG ENV.D.2/SER/2009/0034

Reference cognitive models

EEA

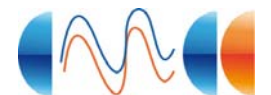


UNECE

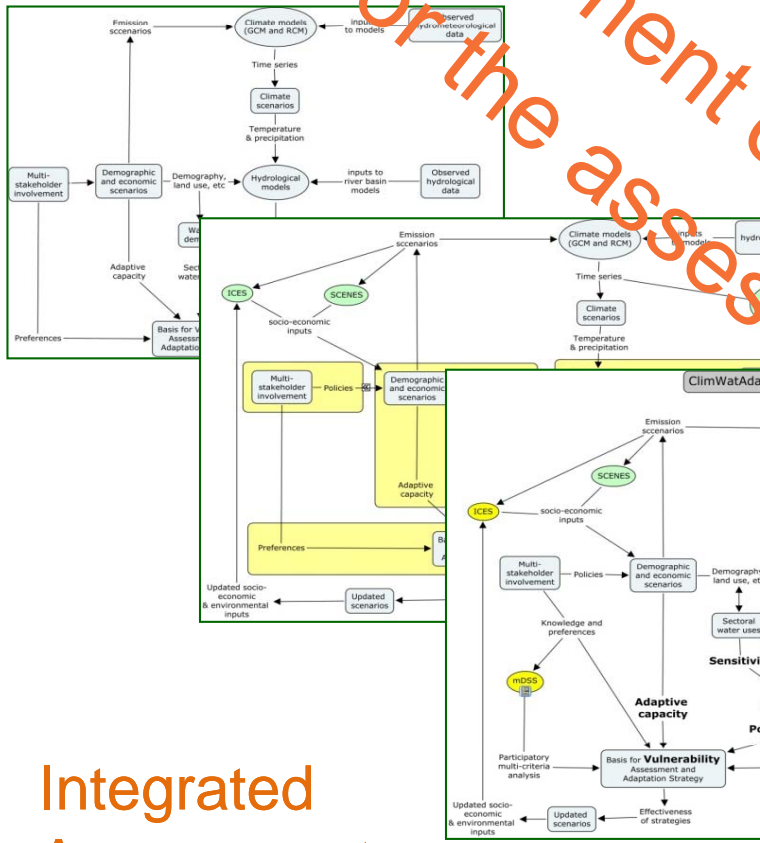


Main CWA-IAF tools

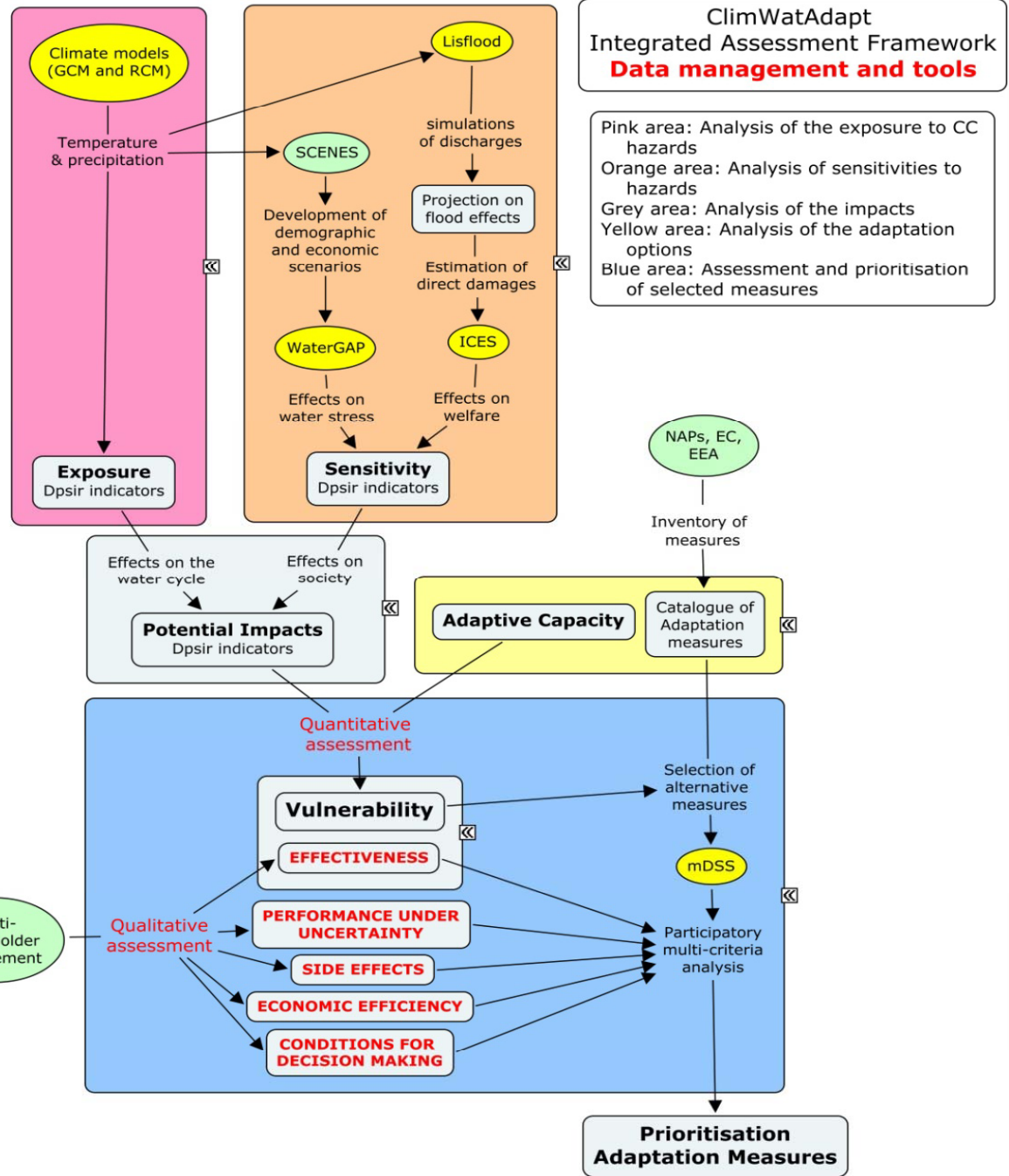
1. LISFLOOD: used to model water availability, floods and droughts under future climate conditions, developed in the ENSEMBLES project.
2. WaterGAP: used to model future water uses driven by socio-economic scenario input from the SCENES project.
3. ICES: used to assess the economic consequences of adaptation measures in an economic equilibrium perspective.
4. mDSS: used to analyze alternative options with multi-criteria decision methods (MCDM).



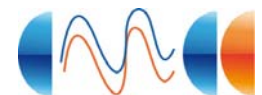
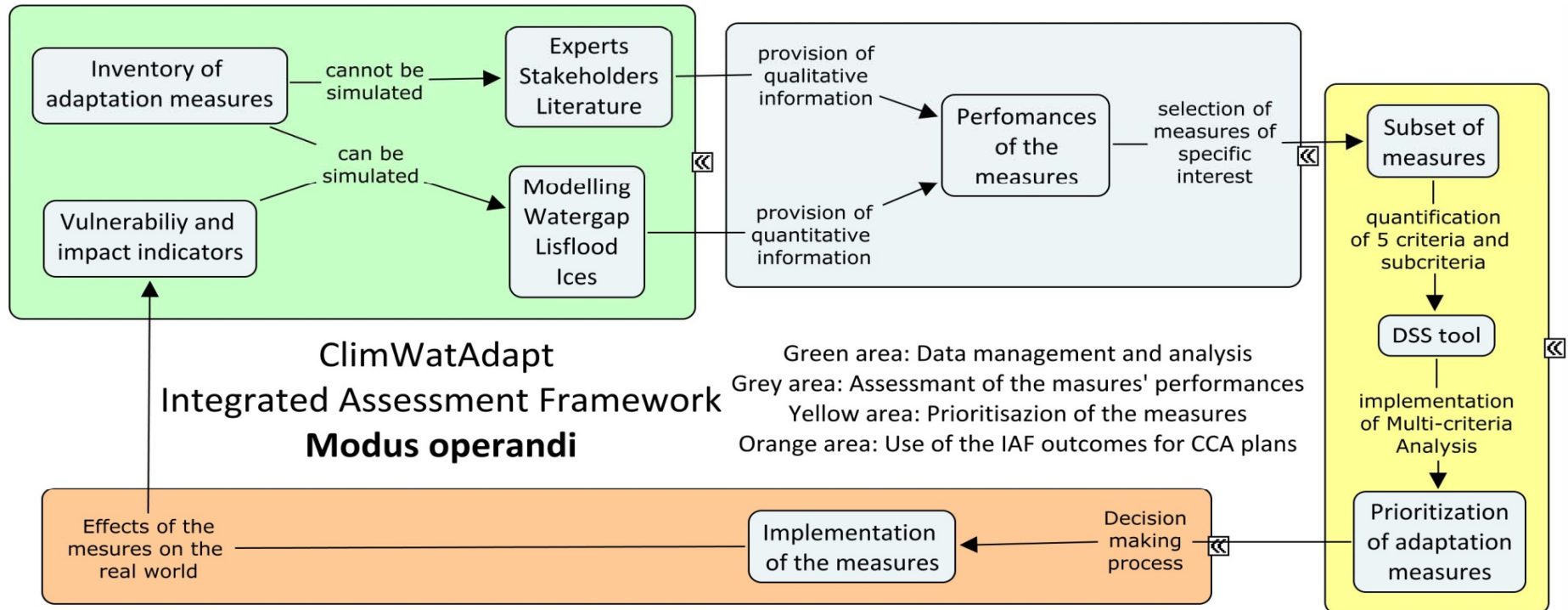
Development for the assessment



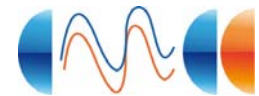
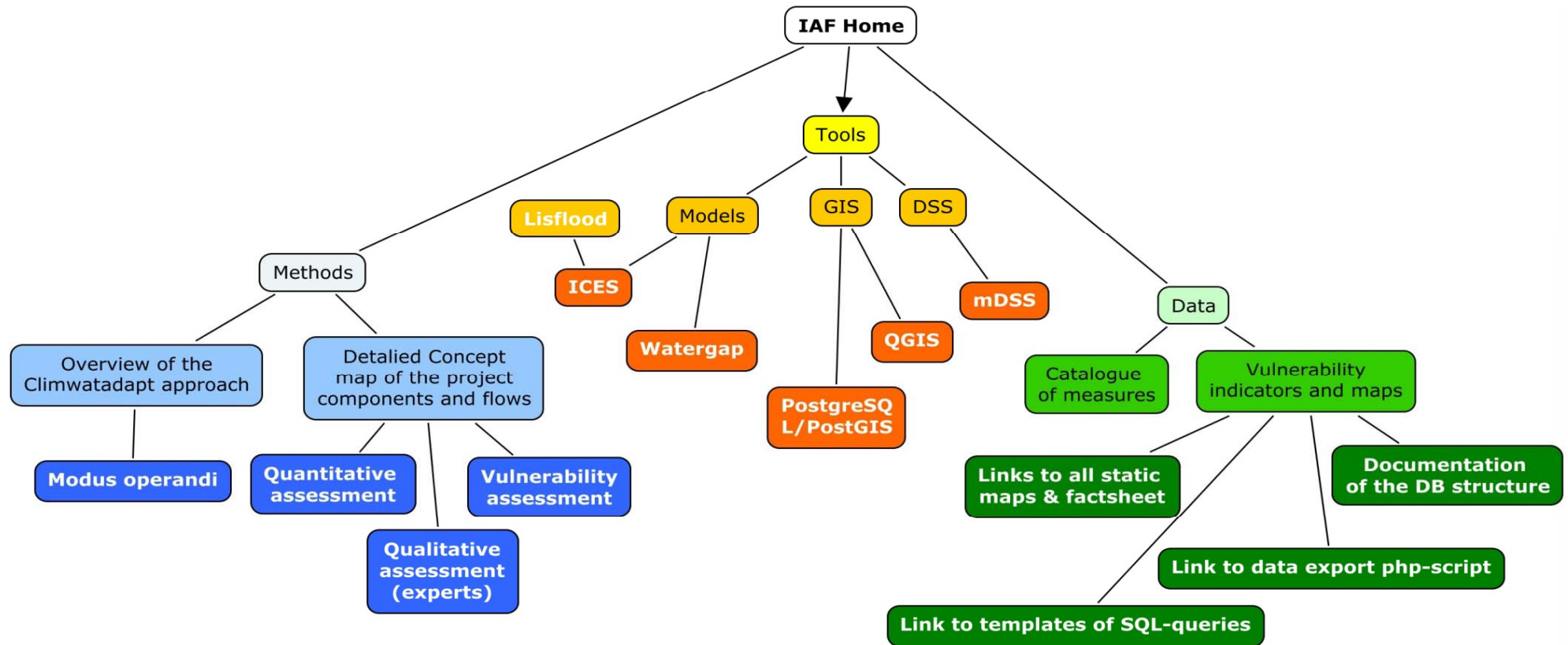
Integrated Assessment Framework



IAF overview



IAF structure



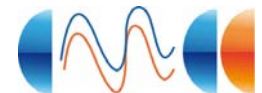
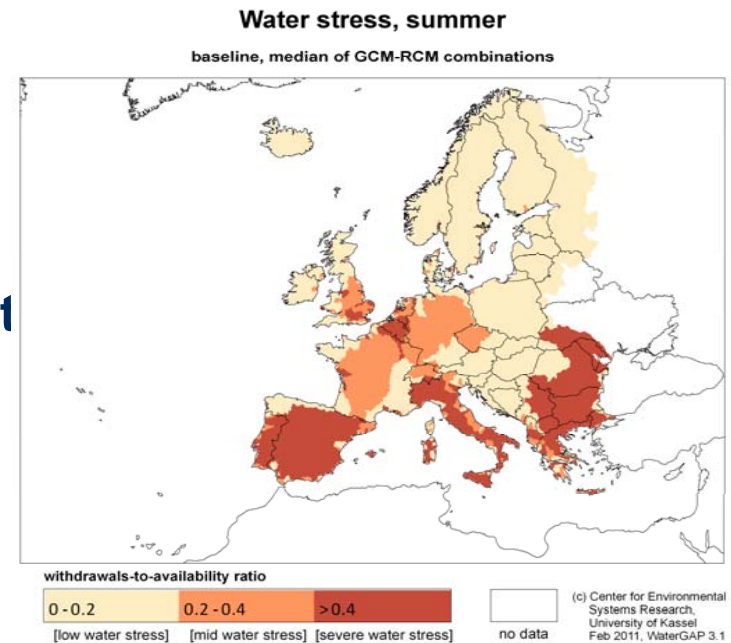
Catalogue of measures

Title of the measure

Description, link to
vulnerability framework

Assessment

EU Policies and
implementation



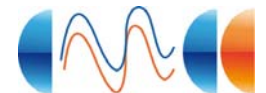
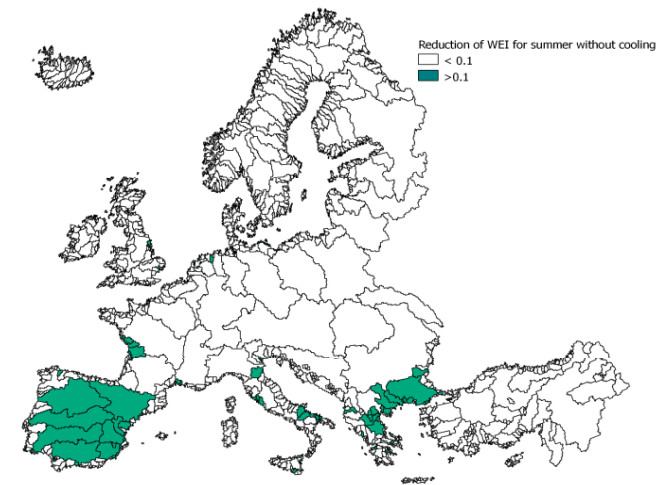
Catalogue of measures

Title of the measure

**Description, link to
vulnerability framework**

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**EU Policies and
implementation**



Catalogue of measures

Title of the measure

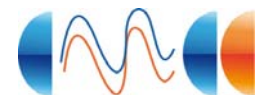
**Description, link to
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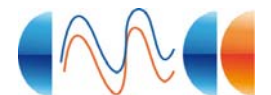
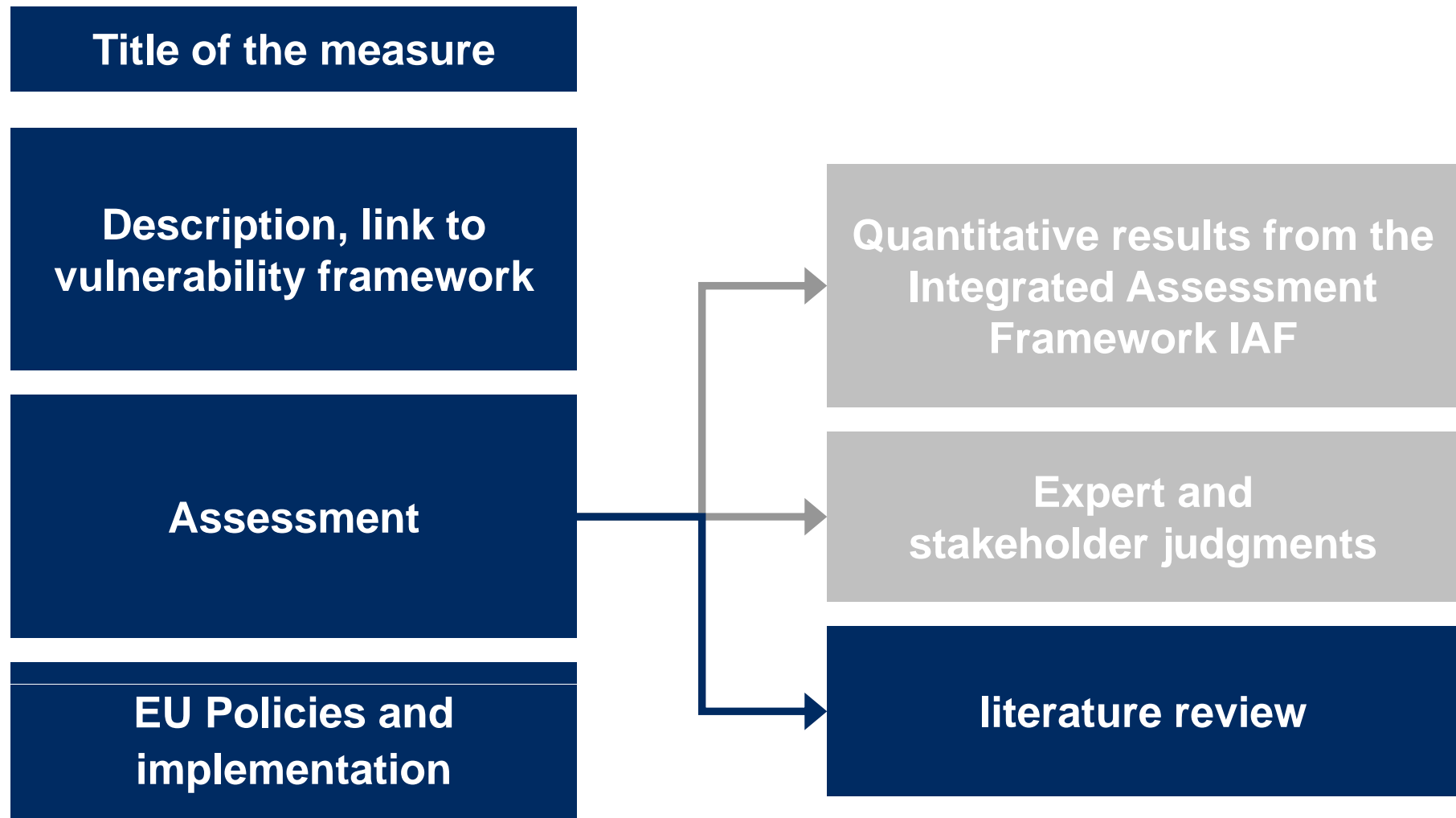
**EU Policies and
implementation**

**Quantitative results from the
Integrated Assessment
Framework IAF**

**Expert and
stakeholder judgments**

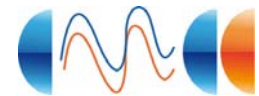
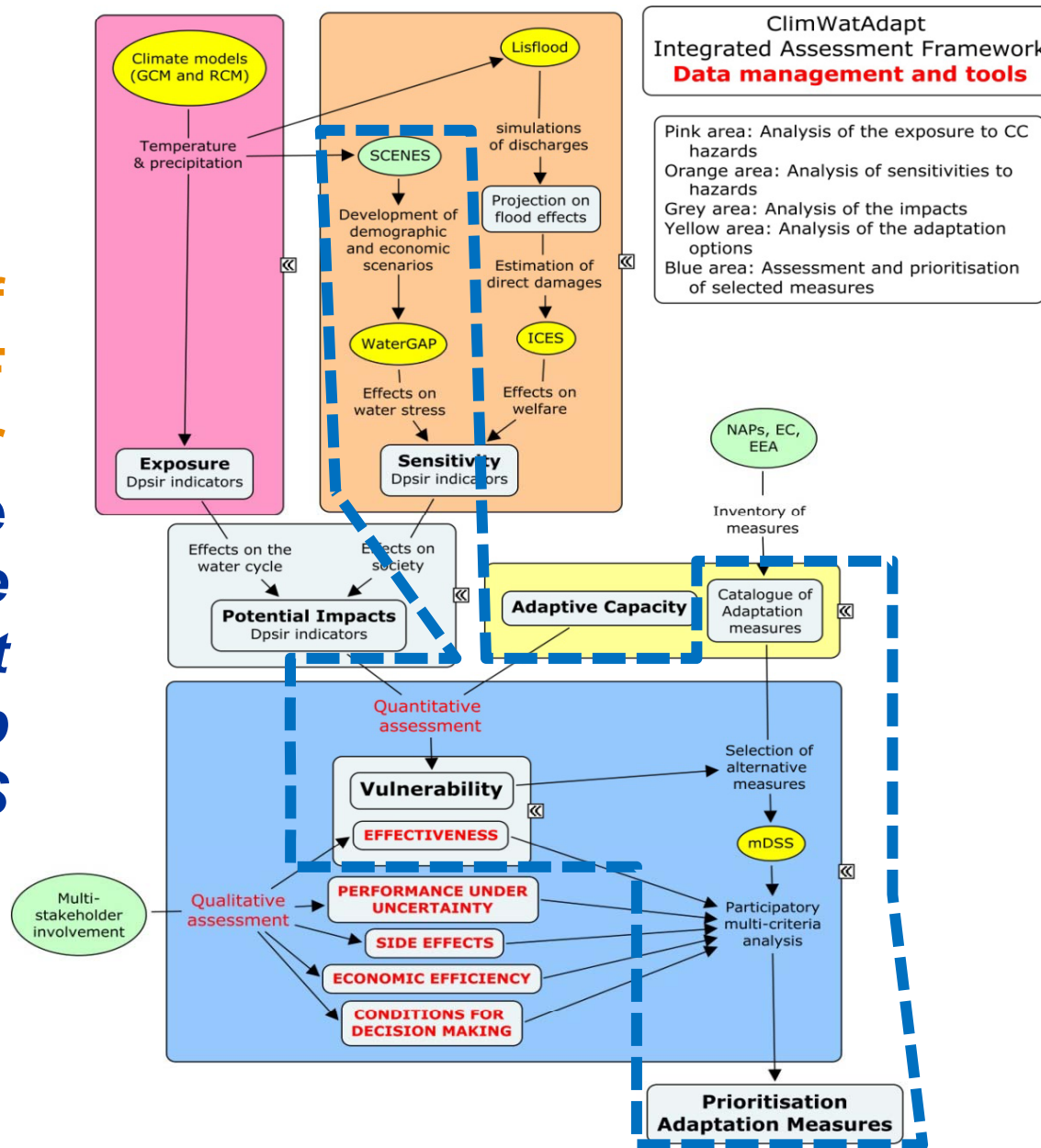


Catalogue of measures



Assessment of the measures:

Elements of the IAF activated for the quantitative assessment with WaterGap and mDSS



Assessment of CCA measures

focus on effectiveness in reducing vulnerability (1/2)

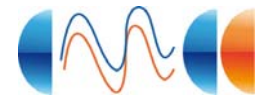
Scenarios & DPSIR

Indicators & measures

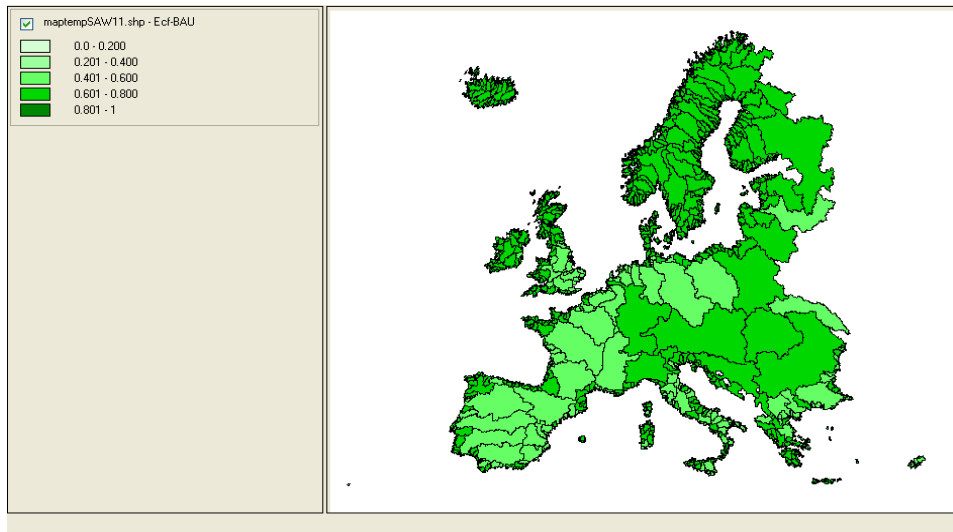
Value functions

Multi Criteria Analysis

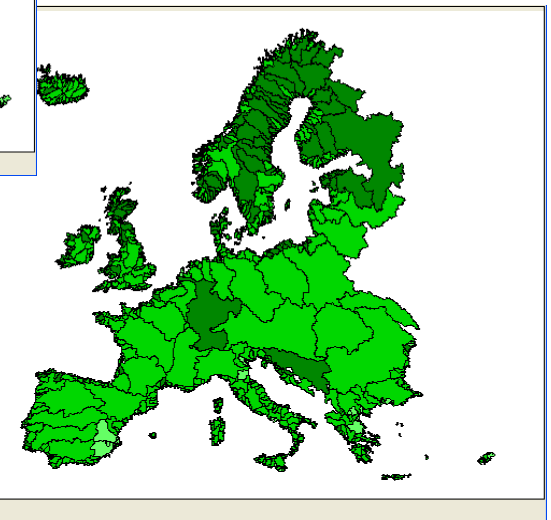
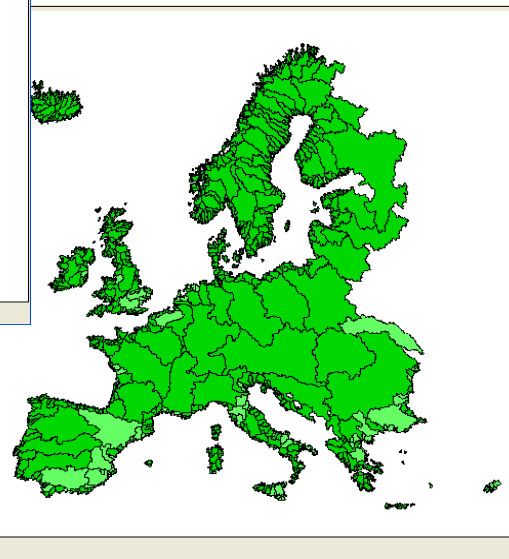
Quantitative assessment of spatially distributed adaptation measures for the water sector: ad hoc WaterGap model simulations analysed with mDSS



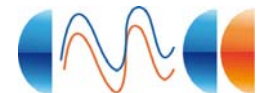
Assessment of CCA measures



focus on effectiveness in reducing vulnerability (1/2)

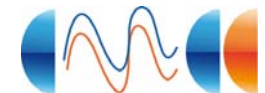
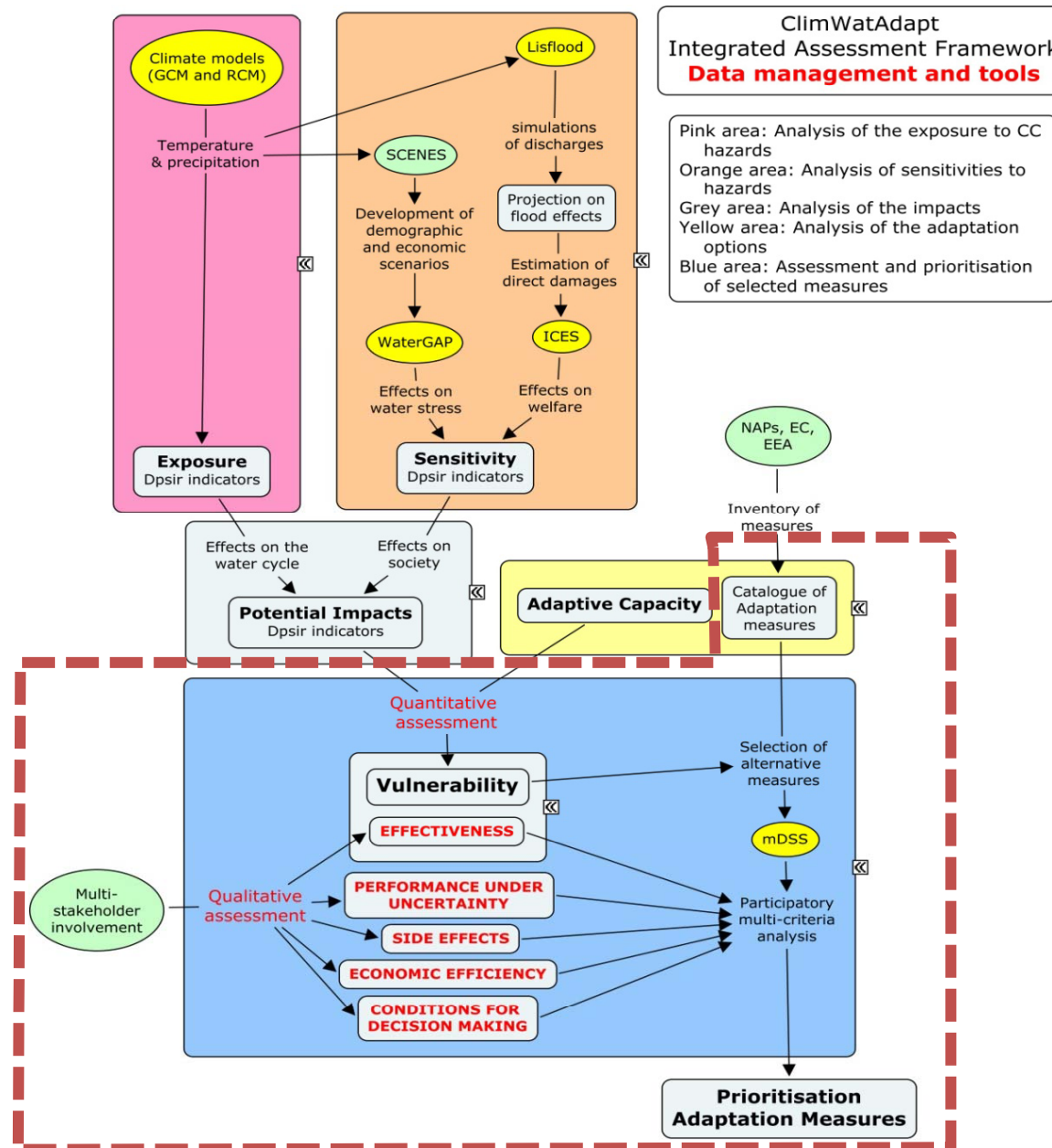


Quantitative assessment of spatially distributed adaptation measures for the water sector:
ad hoc WaterGap model simulations analysed with mDSS

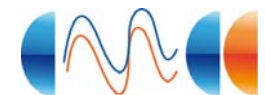
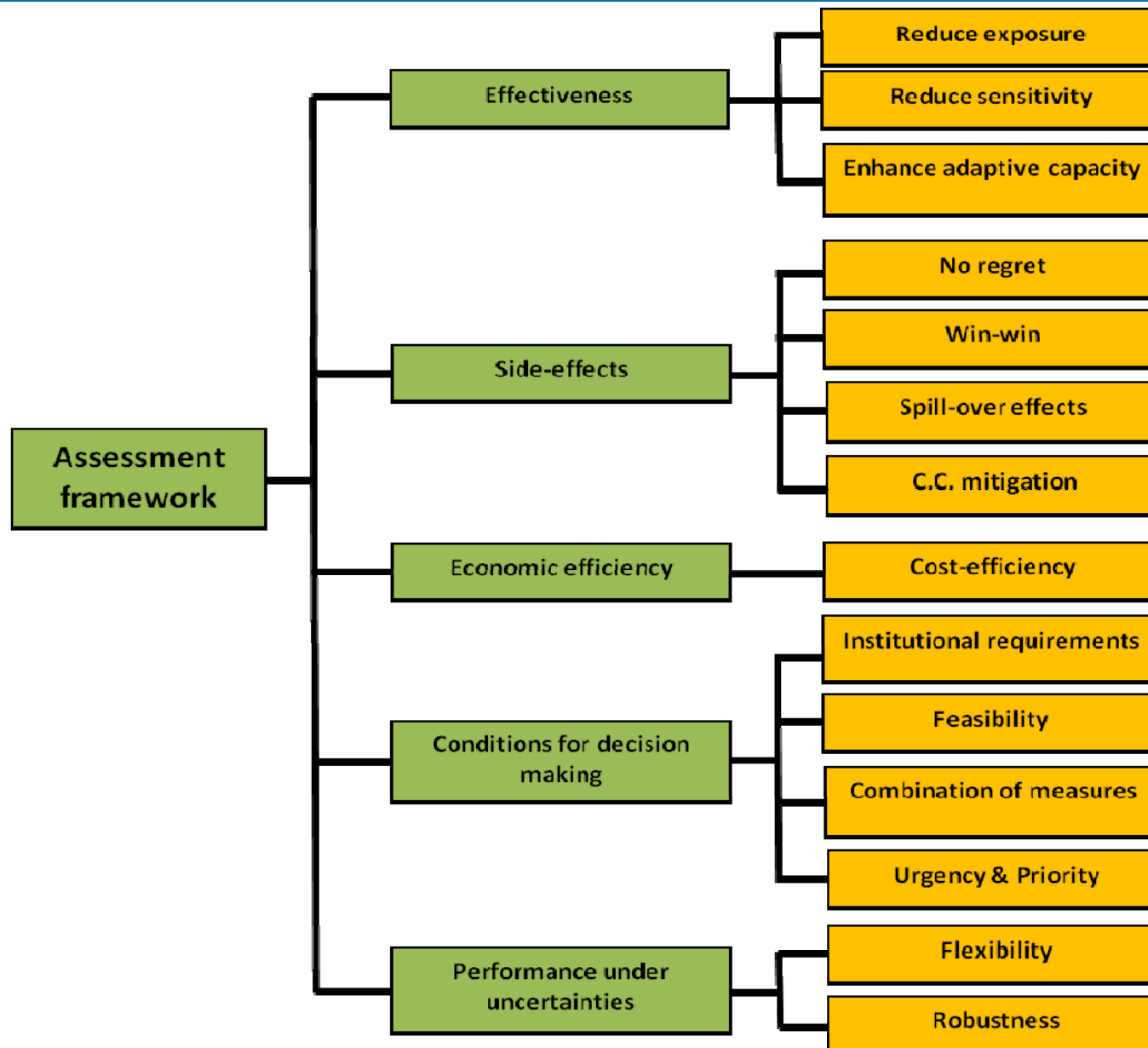


Assessment of the measures:

Elements of the IAF activated for the expert knowledge elicitation exercise and the web prototype



Assessment framework: selected criteria



The web prototype => Wise / Clearinghouse

Driving Force

SOCIO-ECOSYSTEM FRAMEWORK

Select the MEASURES

Select	Code	Full Name
<input checked="" type="checkbox"/>	001	Adapt management rules in silviculture to improve tree water balance
<input type="checkbox"/>	002	Adapt waste water treatment and sediment management to more frequent
<input type="checkbox"/>	003	

INDICATORS

Indicator	001	008	013
Decision Making: Combinability	2.51894	3.67677	
Decision Making: Feasibility	2.80303	3.96465	
Decision Making: Institutional requirements	2.71477	3.84844	
Effectiveness	3.02841	3.92222	
Efficiency: Cost/Benefit	2.96111	4.01511	
Side-Effect: Negative	3.03056	4.11666	
Side-Effect: Spill-over	2.80694	3.74444	
Side-Effect: win-win	2.89607	3.48911	
Side-Effects: No-regrets	2.99375	3.92177	
Uncertainty: Flexibility	2.91667	4.11611	
Uncertainty: Robustness	3.3125	3.69944	

Ranking Histogram

0.8
0.6
0.4
0.2
0

001 008 013

- Decision Making: Combinability
- Decision Making: Feasibility
- Decision Making: Institutional requirements
- Effectiveness
- Efficiency: Cost/Benefit
- Side-Effect: Negative
- Side-Effect: Spill-over
- Side-Effect: Win-win
- Side-Effects: No-regrets
- Uncertainty: Flexibility
- Uncertainty: Robustness

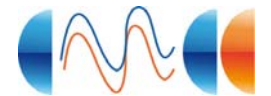
Save the options

Ranking Histogram

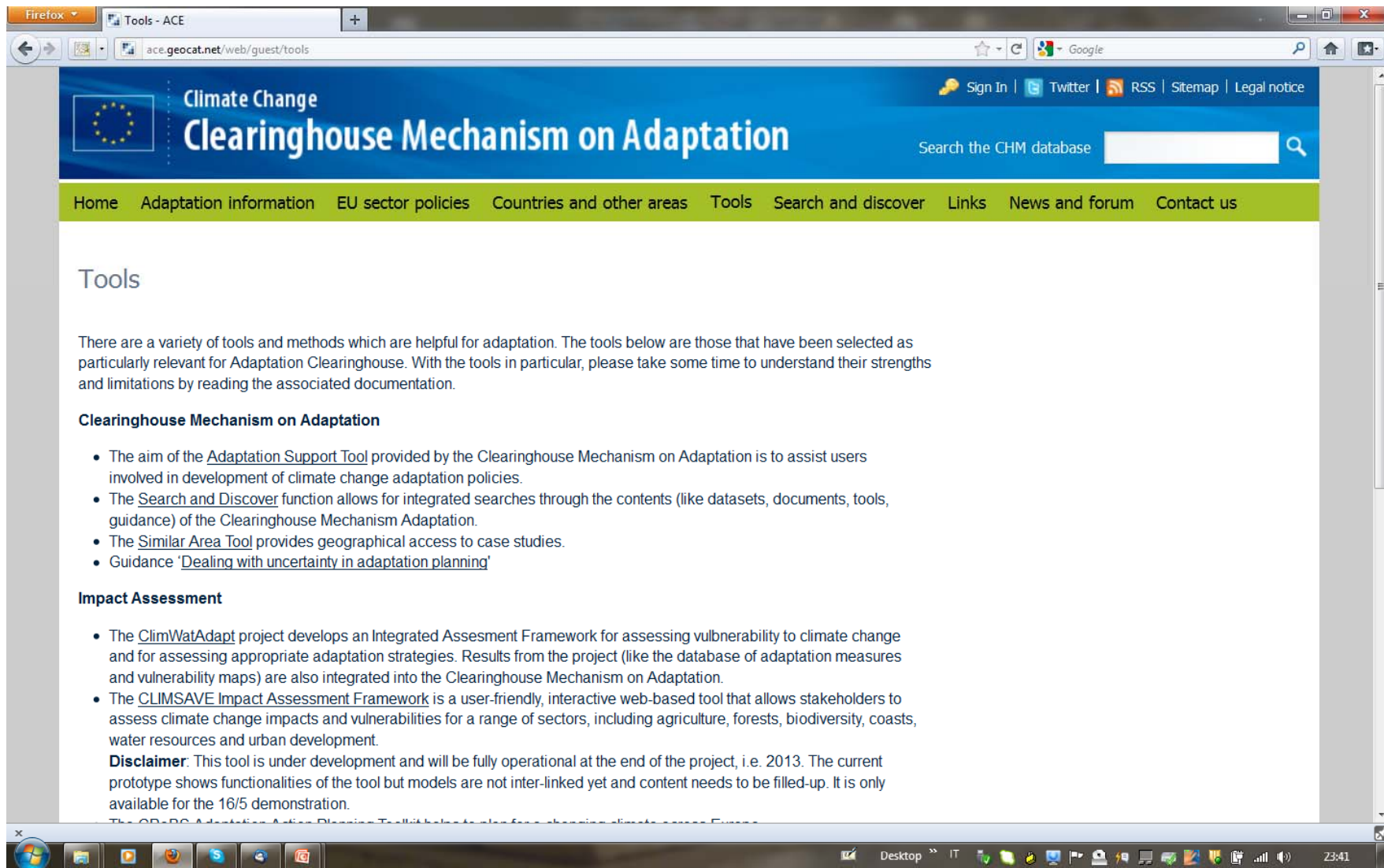
Change Min A=2.79464 B=3.69949 Change Max

Save Value Functions

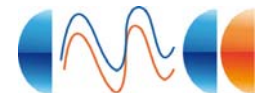
Load Value Functions



CWA in the Clearinghouse Mechanism for Adaptation



The screenshot shows a Firefox browser window displaying the website 'Tools - ACE' at 'ace.geocat.net/web/guest/tools'. The page header features the European Union flag and the title 'Climate Change Clearinghouse Mechanism on Adaptation'. A search bar is present with the text 'Search the CHM database'. The navigation menu includes 'Home', 'Adaptation information', 'EU sector policies', 'Countries and other areas', 'Tools', 'Search and discover', 'Links', 'News and forum', and 'Contact us'. The main content area is titled 'Tools' and contains an introductory paragraph: 'There are a variety of tools and methods which are helpful for adaptation. The tools below are those that have been selected as particularly relevant for Adaptation Clearinghouse. With the tools in particular, please take some time to understand their strengths and limitations by reading the associated documentation.' Below this, there are two sections: 'Clearinghouse Mechanism on Adaptation' and 'Impact Assessment', each with a list of bullet points. The 'Clearinghouse Mechanism on Adaptation' section lists: 'The aim of the [Adaptation Support Tool](#) provided by the Clearinghouse Mechanism on Adaptation is to assist users involved in development of climate change adaptation policies.', 'The [Search and Discover](#) function allows for integrated searches through the contents (like datasets, documents, tools, guidance) of the Clearinghouse Mechanism Adaptation.', 'The [Similar Area Tool](#) provides geographical access to case studies.', and 'Guidance [\'Dealing with uncertainty in adaptation planning\'](#)'. The 'Impact Assessment' section lists: 'The [ClimWatAdapt](#) project develops an Integrated Assessment Framework for assessing vulnerability to climate change and for assessing appropriate adaptation strategies. Results from the project (like the database of adaptation measures and vulnerability maps) are also integrated into the Clearinghouse Mechanism on Adaptation.', and 'The [CLIMSAVE Impact Assessment Framework](#) is a user-friendly, interactive web-based tool that allows stakeholders to assess climate change impacts and vulnerabilities for a range of sectors, including agriculture, forests, biodiversity, coasts, water resources and urban development.' A disclaimer follows: 'Disclaimer: This tool is under development and will be fully operational at the end of the project, i.e. 2013. The current prototype shows functionalities of the tool but models are not inter-linked yet and content needs to be filled-up. It is only available for the 16/5 demonstration.' The browser's taskbar at the bottom shows the system tray with the time 23:41.





Thank you!

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