

ECRAN / TAIEX Workshop
National Climate Adaption Policies and Legislation

Assessing adaptation options

Dr Dragana Bojovic
Euro-Mediterranean Centre on Climate Change

Ankara, 18 February 2016



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European Adaptation
Support Tool

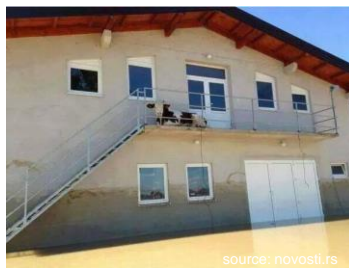
Self-check for assessing adaptation options

The following key issues are suggested as essential when assessing adaptation options:

- ✓ A prioritisation system of adaptation options developed in cooperation with stakeholders
- ✓ Possible synergies and conflicts identified and taken into account
- ✓ Cost-benefits of options assessed
- ✓ Preferred adaptation options selected for implementation
- ✓ Adaptation strategy developed and politically adopted



Why assessing adaptation options?



- No one optimum solution, but an array of adaptation options combined
- Assess trade-offs and synergies of climate change adaptation (CCA) options
- Adaptation measures tailored to spatial and temporal circumstances
- Need to consider limited confidence of climate change (CC) projections



What should assessment of adaptation options perform (from Climate-ADAPT)?

- Identify the risks the adaptation option addresses
- Consider the time frame to implement the option and when it shall become effective
- Address direct and indirect effects of the option in economic, environmental and social terms
- Assess costs and benefits
- Consider the barriers to implementation of adaptation actions



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Assessing adaptation options

Self-check for assessing adaptation options

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Why involving stakeholders?

- Legitimacy of the process: the extent to which actors are recognised, invited and included in decision-making process
- To understand socio-economic and cultural setting
- To increase acceptability of the proposed measures
- Policy requirement or recommendation:
 - * The EU strategy on adaptation to climate change suggests flexible and participatory approaches
 - * Adaptation preparedness scoreboard suggests robust methods, such as stakeholders consultation, for selection of priority adaptation options



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Selecting stakeholders

- * Vertical comprehensiveness: considers all the actors directly or indirectly involved in the decision-making process at all levels of governance
- * Horizontal comprehensiveness: considers all the actors from different sectors which are directly or indirectly affected by the decision
- * Cross-sectoral comprehensives: includes representatives of all major social groups



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Decision-support

- Decision process requires contributions from multiple actors
- Decision support is a process of **mutual learning** and it requires consideration of many elements, like norms, informal institutions and power relations
- Adaptation decisions should be supported with various activities such as **scenario development** and **modelling**



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Analysis of Alternative Adaptation Options

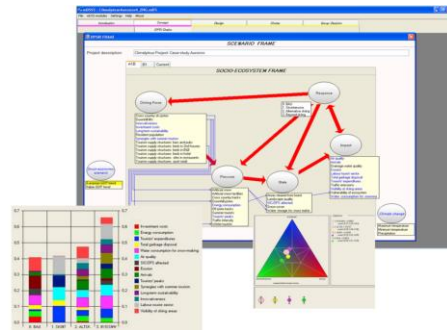
- * Intelligence phase - defines the structure and information basis
- * Design phase - conducts data processing and scenario simulations to obtain quantitative/qualitative information about the performances of options
- * Choice phase - final steps of decision analysis, includes sensitivity and uncertainty analyses
- **Robust Decision Making approach** - explores how options perform in a multitude of possible future scenarios



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Decision support system

- Decision Support Systems (**DSS**) refer to computer tools - couple the individuals' intellectual resources with computer capabilities to improve the quality of decisions
- DSS combine data processing tools (simulation models, GIS), evaluation routines - **techniques for decision analysis**, within a customised user interface to manage the decision making process with consideration of uncertainties (Xu and Tung 2008)



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Techniques for decision analysis

- Cost-Benefit Analysis (**CBA**) - when the various dimensions of the problem can be converted into monetary units
- CCA decision problems are multidimensional and expected performances of options are measured according to multiple indicators - **Multi-criteria analysis (MCA)**
- MCA methods provide a wide set of techniques for elicitation and aggregation of decision preferences



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Multi-criteria analysis

- Involving stakeholders for discussing and deciding on **criteria** and their weightings for the prioritisation and selection of adaptation options
- Criteria examples: effectiveness, efficiency, robustness, flexibility, acceptability, enhancement of adaptive capacity, conflict resolution...
- MCA aggregates partial preferences describing individual criteria into a global preference and rank the alternatives
- **Group decision-making** is a final phase that facilitates the identification of a compromise solution, combining all individual rankings



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Multi-criteria analysis for assessment of CCA measures for Dojran Lake

- The Southeastern part of Macedonia is identified as the region most vulnerable to climate change
- Dojran Lake is highly sensitive to CC and anthropogenic impacts
- Measures to achieve IWRM and adapt the system to CC
- Measures were determined with national experts
- Assessment was performed with local stakeholders



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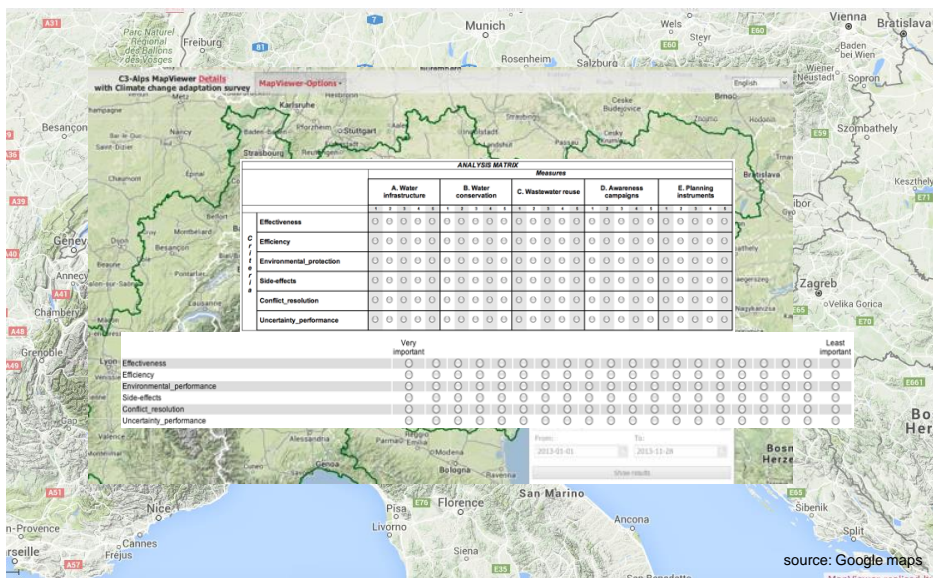
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Multi-criteria analysis for assessment of CCA measures in the Alps

- The Alps - 1,200 kilometres across eight countries
- Spatial element of climate change and adaptation needs
- mDSSweb tool combined with the C3-Alps Web Map Viewer
- Use of ICT to reach the participants
- Involvement of experts in assessment of measures
- Exercise available in different Alpine languages

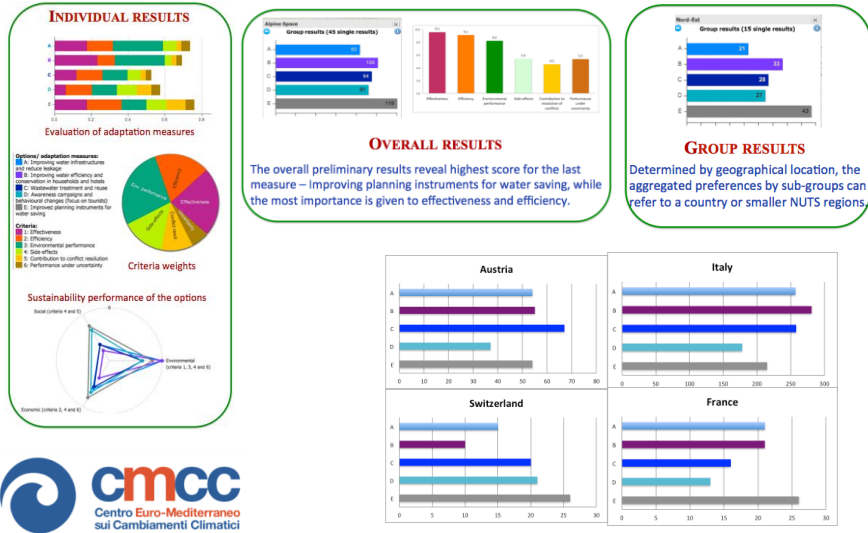


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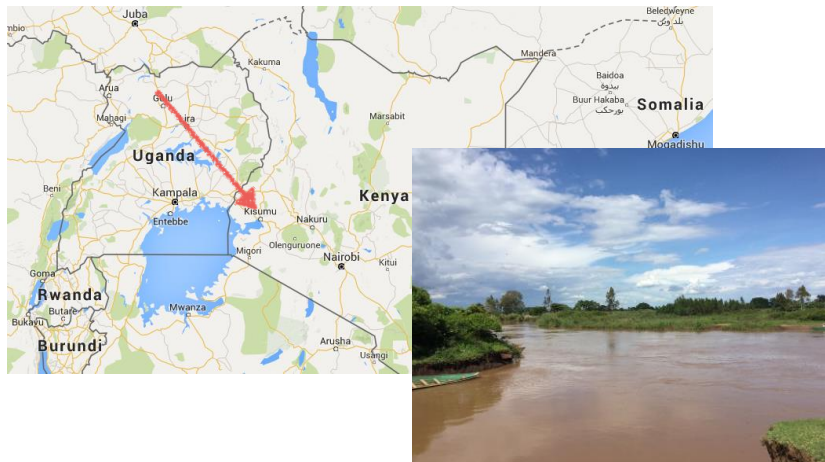
Results of the assessment of CCA measures in the Alps



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Missing assessment of adaptation options

- Absence of assessment can result in reduced incentive to adapt and lack of acceptability of proposed measures



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Missing assessment of adaptation options

- Nzoia river basin in Western Kenya - intensive floods and frequent droughts
- Local knowledge, entrenched habits, informal institutions - Indigenous early warning committee
- Proposed measures:
 - * Early warning system - radio broadcasting for flood warning communication, but there is lack of trust in conventional weather forecast
 - * Sorghum seed - resilient to droughts and floods, but inadequate for the local staple food and paying school fees

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Communication of the results of participatory assessment

- The outcomes of decision support should be adequately documented, and assumptions, subjective choices and uncertainties of various kinds transparently communicated
- The dossier produced during the assessment process represents the knowledge base for decision makers to support the choice to be made in front of the general public and other authorities

Concluding remarks

- Assessment should help prioritising options that: approach most urgent risks, have adequate time frame, will be accepted, expect minimal impediments in implementation
- Decision support can help structuring the adaptation problem and decision-making processes and selecting cost-effective, multiple-benefits and no-regret adaptation options



Thank you for your attention