

**4th VALUE Training School:
Validating Regional Climate
Projections**



VALUE: COST Action ES1102 (2012-2015)

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ICTP, Trieste, Italy

GROUP DECISION-MAKING

**An example of climate oriented decision-making process supported by
AHP & Social Choice Theory methods**

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THE PROBLEM:

Rank by importance five criteria for evaluating the suitability of climate scenarios for use in policy-relevant impact assessment.

Goal: **Rank criteria by importance for assessing suitability of climate scenarios**

Criteria */adapted from Smith and Hulme (1998)/*:

- C1 Consistency at regional level with global projections**
- C2 Physical plausibility and realism**
- C3 Appropriateness**
- C4 Representativeness**
- C5 Accessibility.**

DECISION MAKERS

DM1, DM2, DM3,

Description of the criteria set:

C1 - Consistency at regional level with global projections. Scenario changes in regional climate may lie outside the range of global mean changes but should be consistent with theory and model-based results. /CONS/

C2 - Physical plausibility and realism. Changes in climate should be physically plausible, such that changes in different climatic variables are mutually consistent and credible. /PLAU/

C3 - Appropriateness. Appropriateness of information for impact assessments. Scenarios should present climate changes at an appropriate temporal and spatial scale, for a sufficient number of variables, and over an adequate time horizon to allow for impact assessments. /APPR/

C4 - Representativeness. Representativeness of the potential range of future regional climate change. /REPR/

C5 - Accessibility. The information required for developing climate scenarios should be readily available and easily accessible for use in impact assessments. /ACCE/

EVALUATION SHEET #1 (AHP)

Participant name _____ E-mail _____

Institution/Country _____

Educational background _____

Criteria vs. Goal

	Consistency	Plausibility	Appropriate	Represent	Accessibility
Consistency	1				
Plausibility		1			
Appropriate			1		
Represent				1	
Accessibility					1

Saaty's scale for pair wise comparisons in AHP

Judgment term	Numerical term
Absolute preference (element <i>i</i> over element <i>j</i>)	9
Very strong preference (<i>i</i> over <i>j</i>)	7
Strong preference (<i>i</i> over <i>j</i>)	5
Weak preference (<i>i</i> over <i>j</i>)	3
Indifference of <i>i</i> and <i>j</i>	1
Weak preference (<i>j</i> over <i>i</i>)	1/3
Strong preference (<i>j</i> over <i>i</i>)	1/5
Very strong preference (<i>j</i> over <i>i</i>)	1/7
Absolute preference (<i>j</i> over <i>i</i>)	1/9

An intermediate numerical values 2,4,6,8 and 1/2,1/4,1/6,1/8 can be used as well

EVALUATION SHEET #2 (SCT)

Borda Count	Approval Voting
Order criteria by importance (1 – most important, 2 – second most important, ..., 5 – least important)	Approve criteria as you wish regardless their importance. At least one must be approved. (Insert ticks such as \checkmark in the right column)

CRITERION	Importance
Consistency	
Plausibility	
Appropriate	
Represent	
Accessibility	

CRITERION	Approved?
Consistency	
Plausibility	
Appropriate	
Represent	
Accessibility	