

# Criteria for evaluating climate adaptation measures: A meta-analysis

Sabine Weiland, Helmholtz Centre for Environmental Research – UFZ

Silke Beck, Helmholtz Centre for Environmental Research – UFZ

Alessio Capriolo, Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)

Roos Den Uyl, Exeter University

Francesca Giordano, Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)

Mikael Hildén, Finnish Environment Institute (SYKE)

Anne Jensen, Aarhus University

Eleni Karali, Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)

Kirsi Mäkinen, Finnish Environment Institute (SYKE)

Helle Ørsted Nielsen, Aarhus University

Gil Penha-Lopes, University of Lisbon

Duncan Russel, Exeter University

Jenny Tröltzsch, Ecologic Institute

## Climate adaptation evaluation

- Climate change adaptation carried out through different policies and measures
- Criteria and criteria sets to evaluate the implementation of climate adaptation policies and measures
- Assessment of effectiveness, avoided damage, side effects, interlinkages between different policy objectives (e.g. co-benefits) etc.

## Research aims

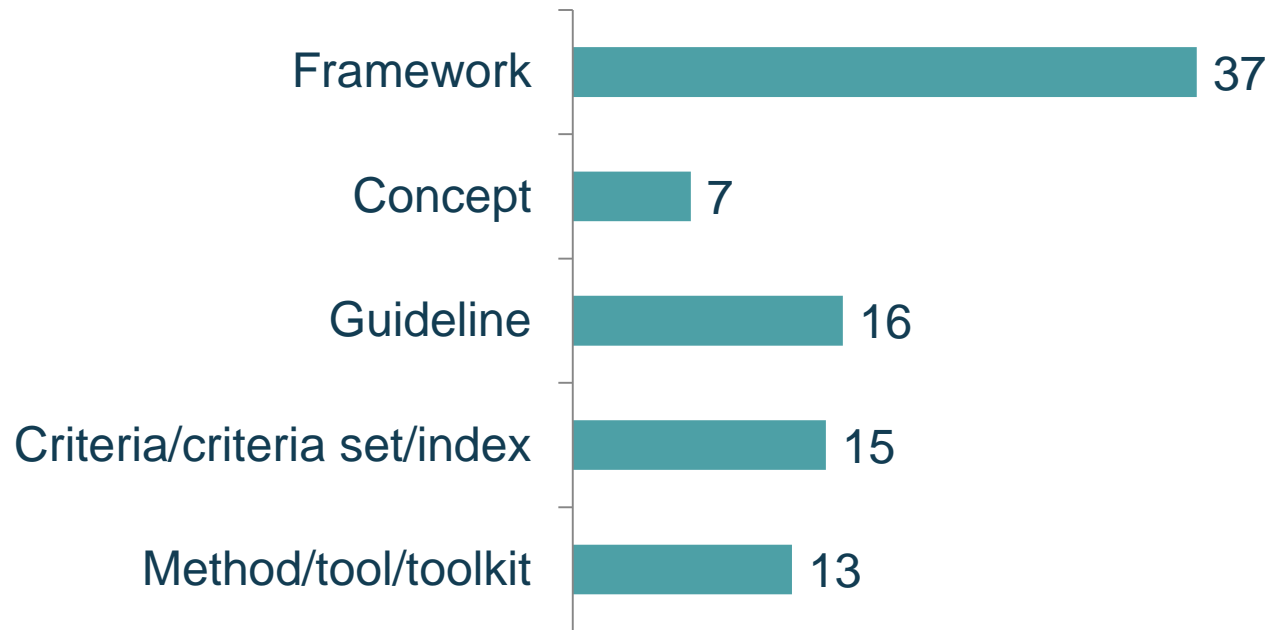
- Identify a set of criteria for evaluating adaptation action
- Based on existing approaches, frameworks and criteria sets for climate adaptation evaluation
- Meta-analysis to systematise these criteria
  - and on that basis, to develop a set of **BASE climate adaptation criteria**

## Evaluation criteria

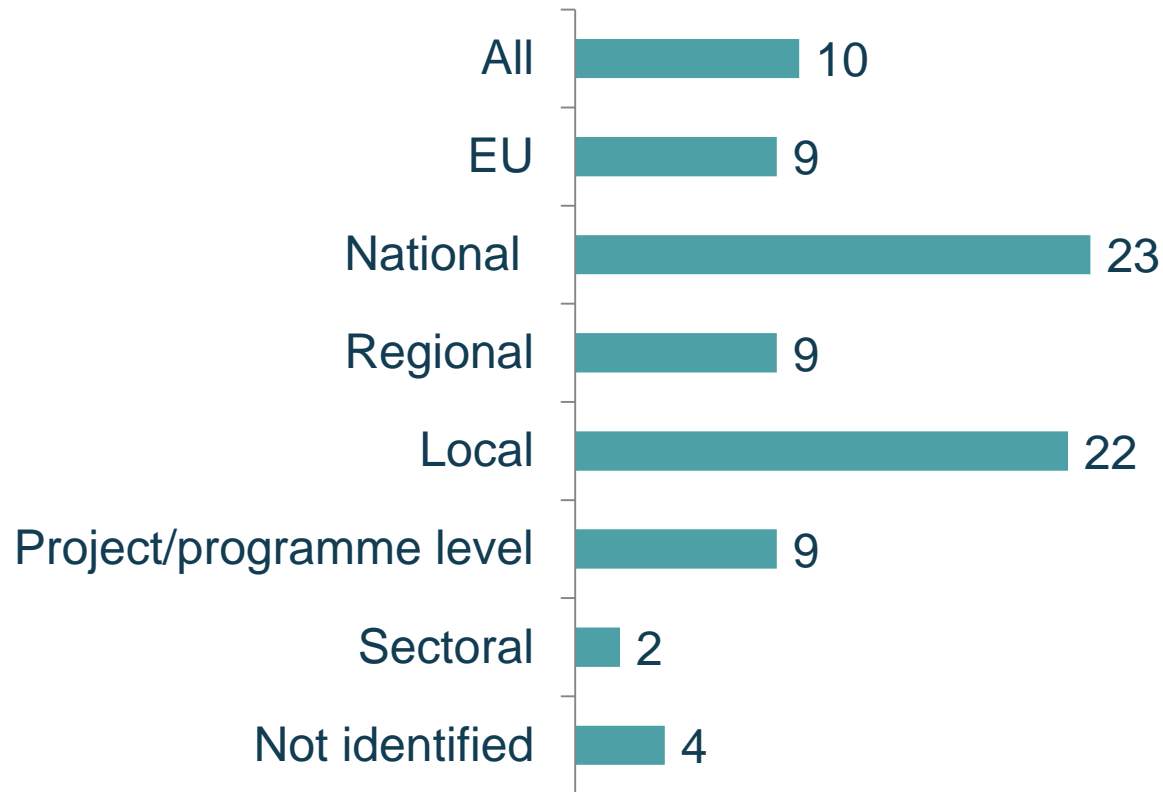
- (1) General characterisation
- (2) Purpose of evaluation
- (3) Outcome criteria
- (4) Process criteria
- (5) Level of adaptation
- (6) Stage in the adaptation cycle
- (7) Adaptation context
- (8) Adaptive capacity
- (9) Participation
- (10) Policy coherence and vertical integration

## The sample

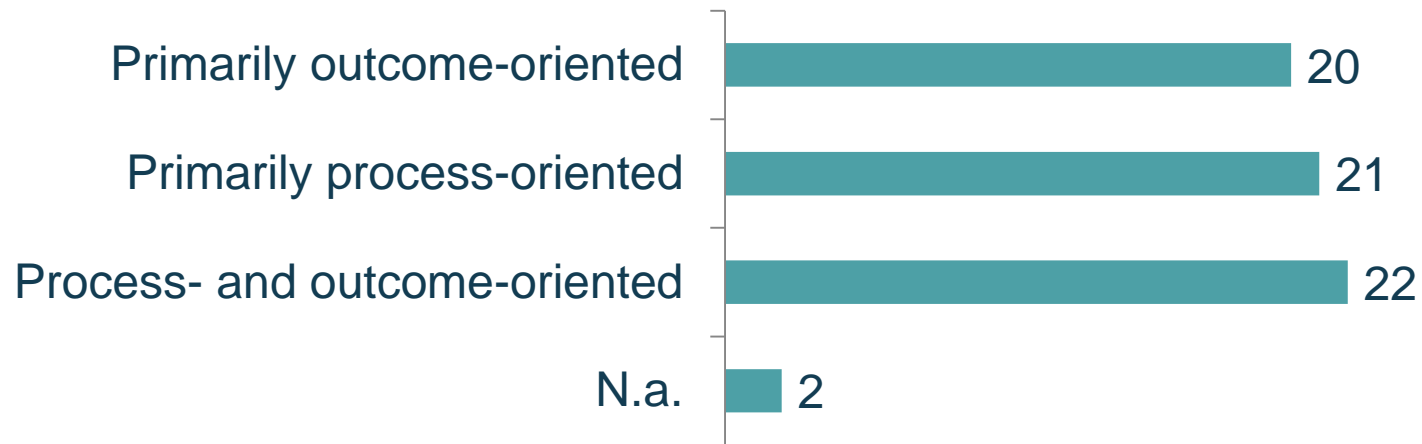
- 65 evaluation frameworks and criteria sets



## The sample: Level of adaptation



## The sample: Outcome- and process-oriented approaches



## The results: Outcome criteria for adaptation evaluation





## Outcome criteria (I): Effectiveness

- Avoided damage
- Level of resilience
- Vulnerability
- Reduction of sensitivity
- Reduction of exposure
- Windfall profits
- Scope of effect
- ...

## Outcome criteria (II): Policy coherence

- Interaction between adaptation measures
- Integration with other policy domains
- Identification of co-benefits and conflicts with other domains
- Identification of co-benefits and conflicts with other adaptation options
- Side-effects
- Possibilities to combine measures
- Redundancy
- ...

## The results: Process criteria for adaptation evaluation

- Broad range of different process criteria for evaluating adaptation action
- Three types of criteria:
  - Procedural approaches presenting a sequence of steps to be followed in the adaptation process;
  - Task-related criteria referring to the different tasks to be carried out in adaptation action;
  - Criteria as factors that influence (successful) adaptation

## Process criteria (I): Procedural approaches

1. Problem identification, impact vulnerability and/or risk assessment
2. Selection of potential climate adaptation measures and actions
3. Assessment of options
4. Choosing an option and implementation
5. Monitoring and ex-post evaluation

## Process criteria (II): Task-related criteria

- Assessment
- Priorisation
- Checking the achievement of objectives
- Coordination
- Management of knowledge diversity
- Climate risk management
- Stakeholder involvement
- Building capacity
- Steer adaptation integration
- ...

## Process criteria (III): Factors for successful adaptation

- Commitment and leadership
- Subsidiarity
- Feasibility
- Acceptance and participation
- A structured decision making process
- Policy to remove barriers
- Policy to encourage adaptation
- Institutions and entitlements
- Forward thinking decision making
- ...

## Envisaged BASE guidance for adaptation evaluation

- Guidance should be informative rather than prescriptive in nature
- It consists of three elements
  - (i) framing the questions and approaches;
  - (ii) approaches, methods and tools in climate adaptation assessment;
  - (iii) the adaptation process
- Intended users are researchers, adaptation practitioners, decision-makers and those involved in policy formulation

## Steps ahead

- Develop a coherent framework and criteria set for process and outcome evaluation of adaptation action
  - Gather feedback from BASE Case Studies
- **BASE guidelines and criteria for climate adaptation evaluation**



# Thank you.

Dr. Sabine Weiland

Helmholtz Centre for Environmental Research - UFZ

[sabine.weiland@ufz.de](mailto:sabine.weiland@ufz.de)

[www.base-adaptation.eu](http://www.base-adaptation.eu)