

COLLABORATIVE RISK INFORMED DECISION ANALYSIS

Water resources planning under uncertainty

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UNECE 6th workshop on Adaptation to Climate Change
in transboundary basins, Geneva, 14 September 2016

What do decision makers need?

- Defendable, straightforward process
- Identification of problematic risks
- Hierarchy of effort
 - Screening level vs detailed assessment
- Recommendations for action
- Going from planning to implementation

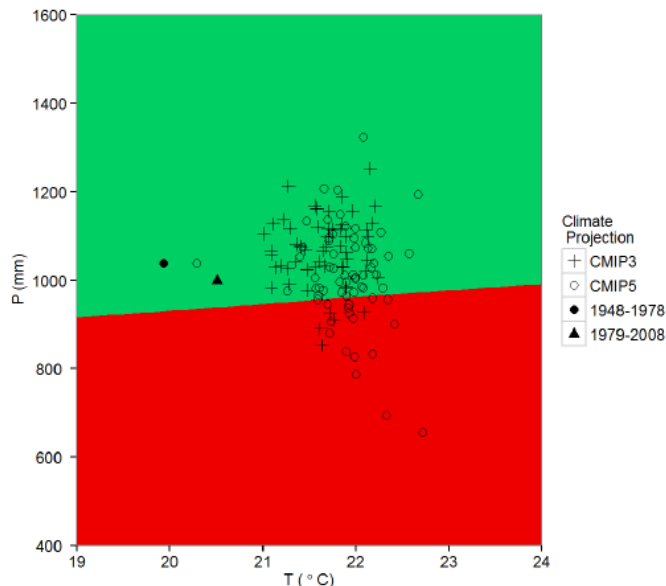
Aim of CRIDA

- Giving planning guidance, training and strengthening a community of practice
- Allowing for scalable application
 - High/low budgets, resources, data, models
 - Low/high plausibility, impact, analytical uncertainty
- Reaching a practical level audience of decision support: the analyst

Two Key Elements of CRIDA

Decision Scaling Stress Test

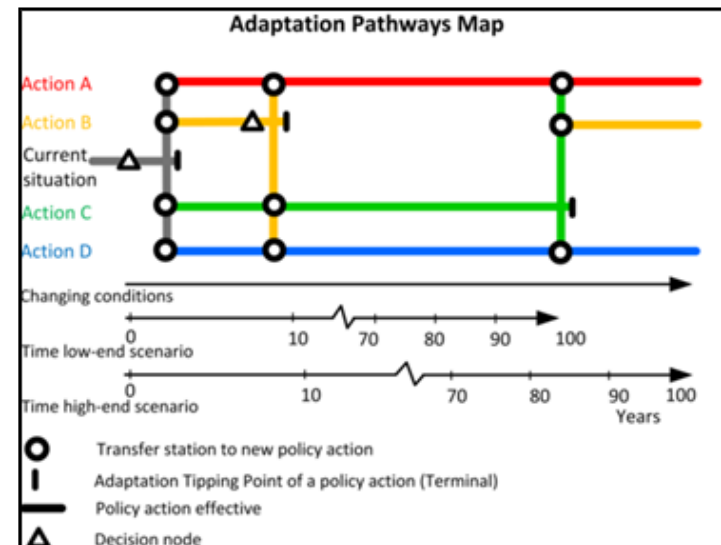
- Available climate data doesn't always meet the problem at hand: time-scale differs, models perform poorly in geographic region, observed data not available for downscaling
- Limiting analysis to GCM derived scenarios confines your decision space
- Allow stakeholders to define system failure



Climate Response Map for a Proposed Run-of-the-River Hydropower Project (Ray and Brown, 2015).

Adaptation Pathways

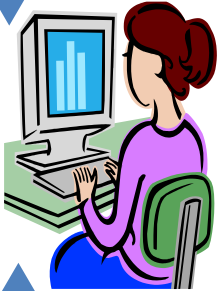
- With limited information, decision makers risk over- or under-designing solutions
- Adaptation pathways illustrate flexible strategies to the decision maker
- Choosing an action that has many transfer points in the future provides a low regret option as the science progresses



CRIDA in a nutshell



STAKEHOLDERS



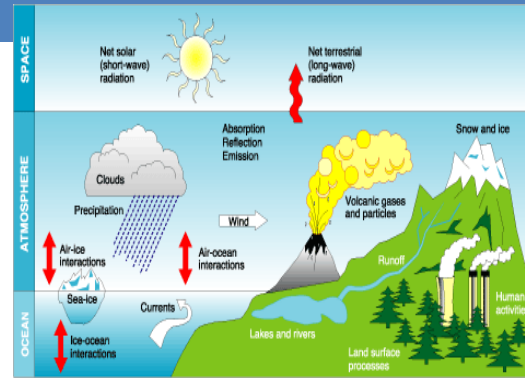
'ANALYST'

Performance



VULNERABILITY

Driver



ROBUST SOLUTIONS



FLEXIBLE IMPLEMENTATION



STRESS TEST

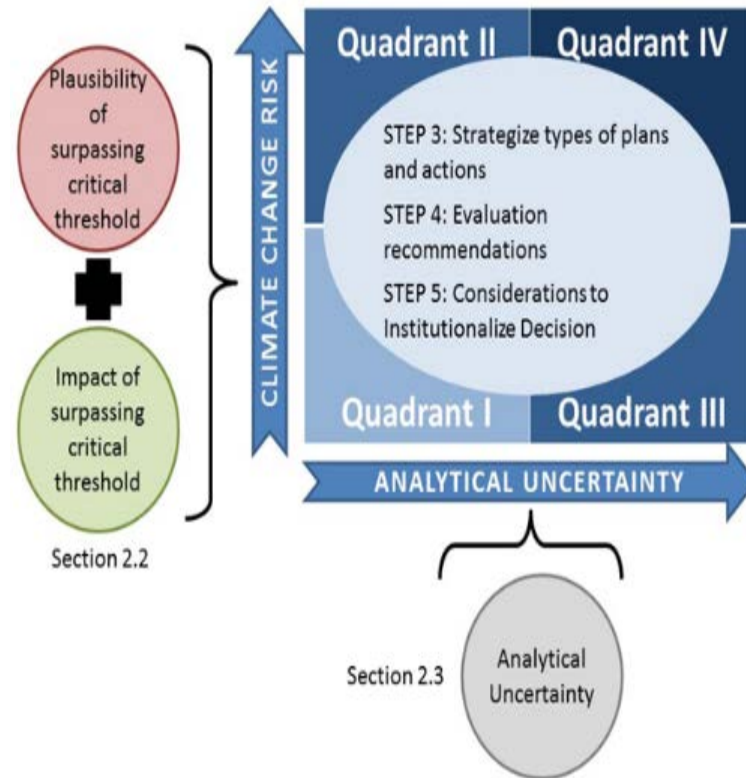


DECISION MAKER

How to interpret stress test results

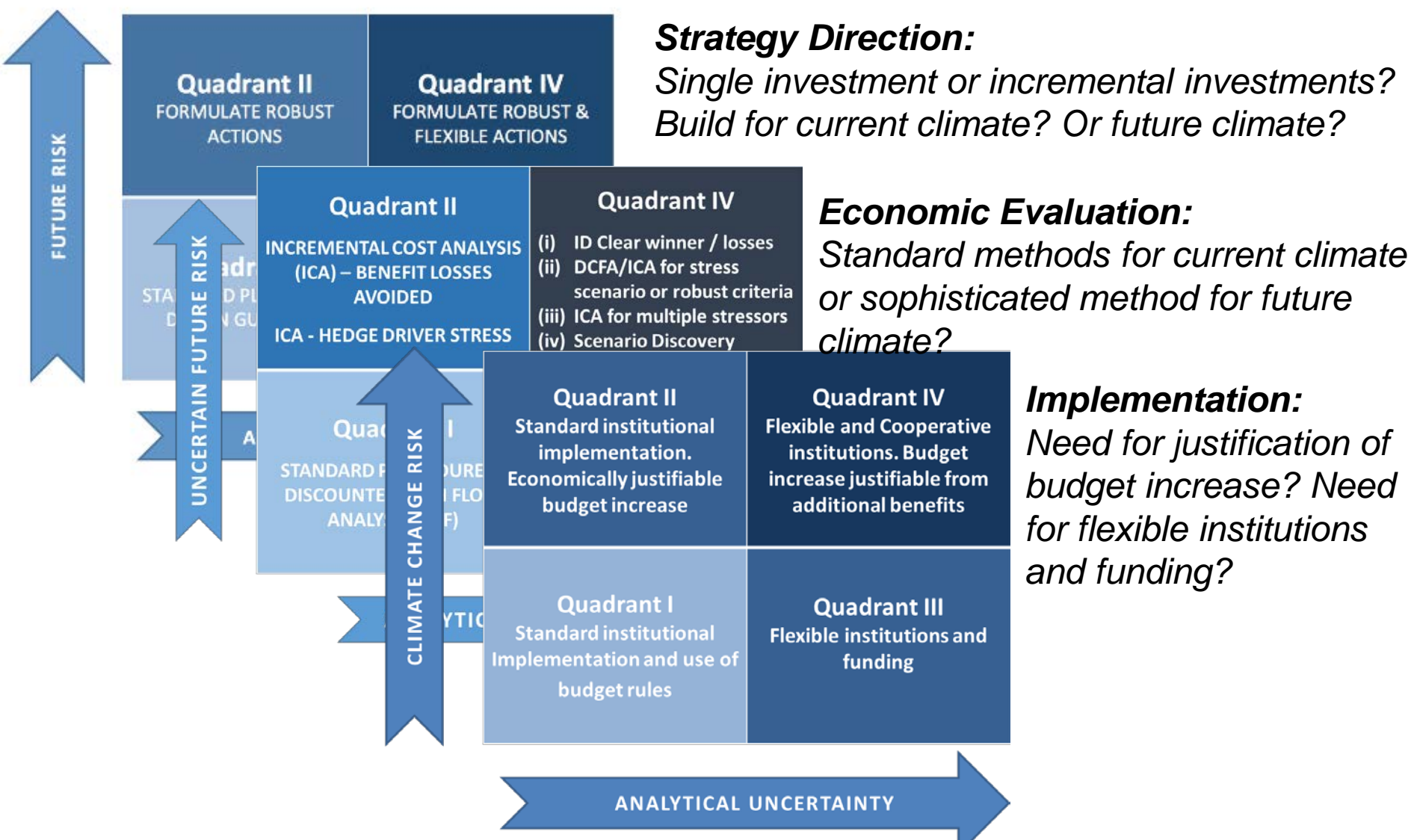
Carefully evaluate your information on future risk
(scientific, observational, projected, evidence – scenarios)

- How plausible are future risks?
- How large is the uncertainty in evidence?



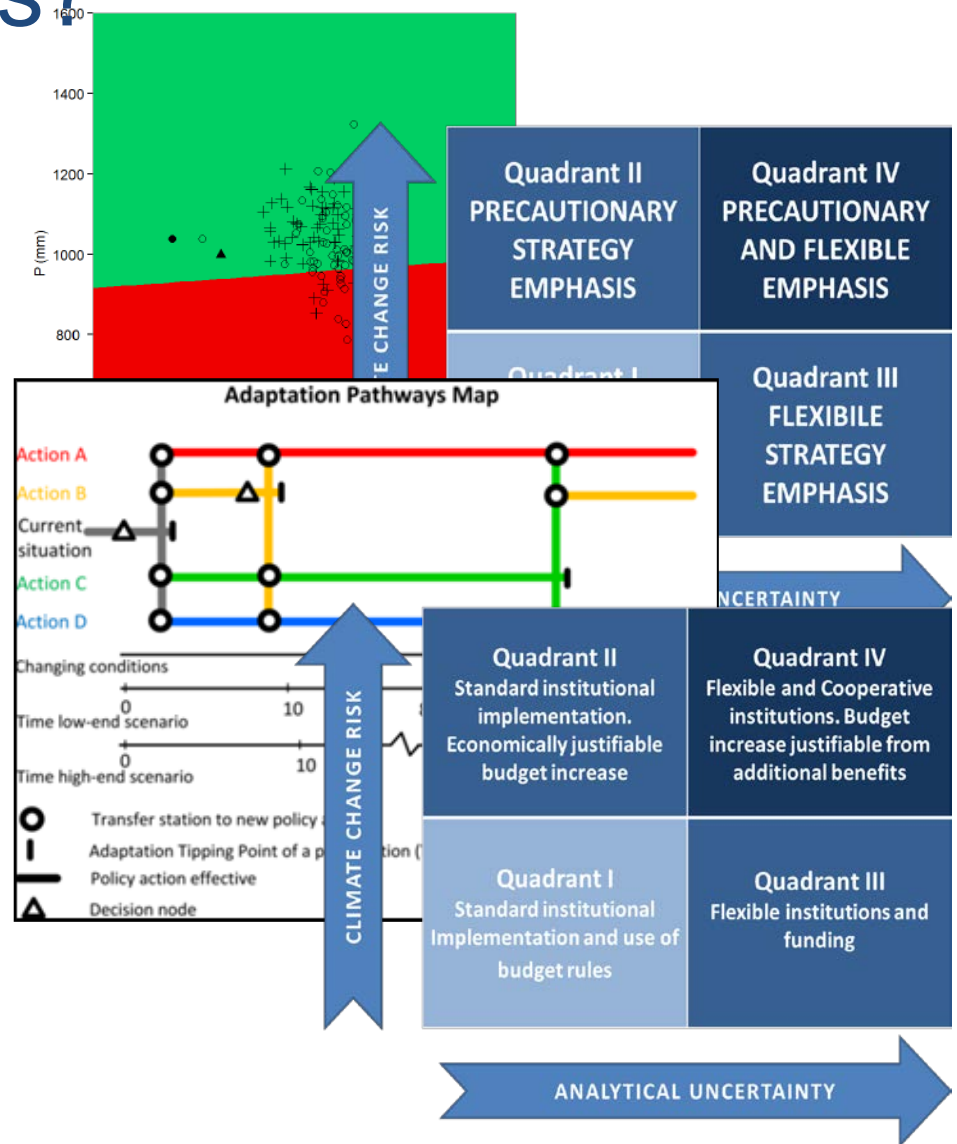
Level of concern decision matrix

Scaling the process through Decision Matrices



What does CRIDA add to traditional planning approaches?

1. A broader vulnerability assessment through stress test
2. Guidance on the necessary level of analysis and strategic direction
3. Adaptation pathways to illustrate flexibility, if recommended
4. Guidance on economic evaluations & role of institutional capacity



Thank you

DEALING WITH UNCERTAINTY IN INVESTMENTS: ROBUST AND FLEXIBLE WATER MANAGEMENT

Interactive session

SIXTH WORKSHOP ON ADAPTATION TO CLIMATE
CHANGE IN TRANSBOUNDARY BASINS

UN-ECE, Geneva, September 14th

Aim of the interactive session

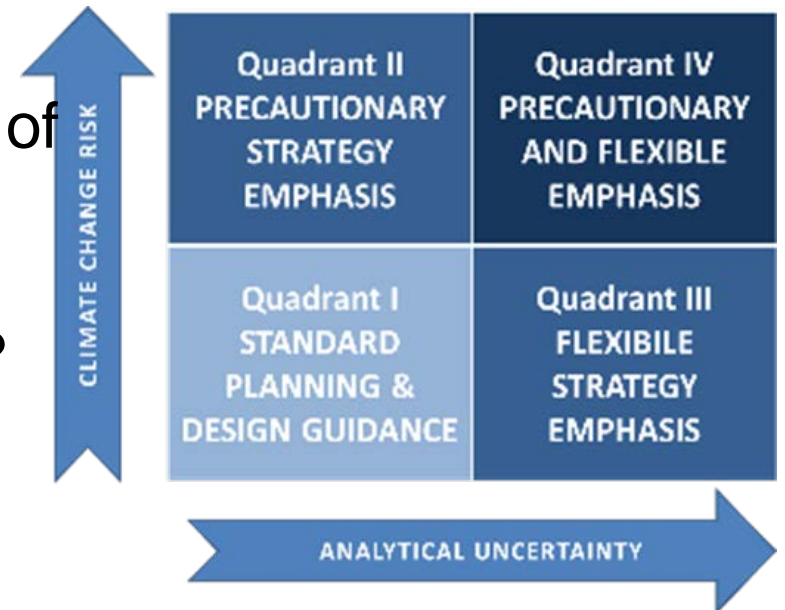
- To familiarize with fundamentals of collaborative risk informed decision analysis
- To explore how it might apply to your trans boundary river basin
- To discuss choosing a strategic direction for plan development
- To discuss what is needed to institutionalize the plan

Problem statement (10 min)

- First pick a real or imaginable river basin planning problem.
- Who are the stakeholders?
- What are the (1 or 2) main objectives?
- What are the main stressors (specific climate, or socio economic variables) that cause the problem or would make investment less effective?

Choosing a strategic direction (30 min)

- How do you value the Climate change Risk?
- How do you value the uncertainty of the evidence (observations, projections, scenarios)?
- In what quadrant is your problem?
- What does this imply for your strategy?
 - Build for current or future climate?
 - Need for flexibility? Large investments now or later? No regret measures available? Wait and monitor?
 - What particular measures would qualify?



Institutionalize plan (30 min)

- How would you justify investments?:
 - Is there a win-win?
 - Is there particular funding available?
- What particular constraints could hamper implementation? F.e.
 - Cooperation between institutions
 - Rigidity of budgets
 - Capacity for adaptive management
 - Etc.

