RISC-KIT

RESILIENCE-INCREASING STRATEGIES FOR COASTS - TOOLKIT

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Identifying DRR Measures through participatory approaches

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Outline

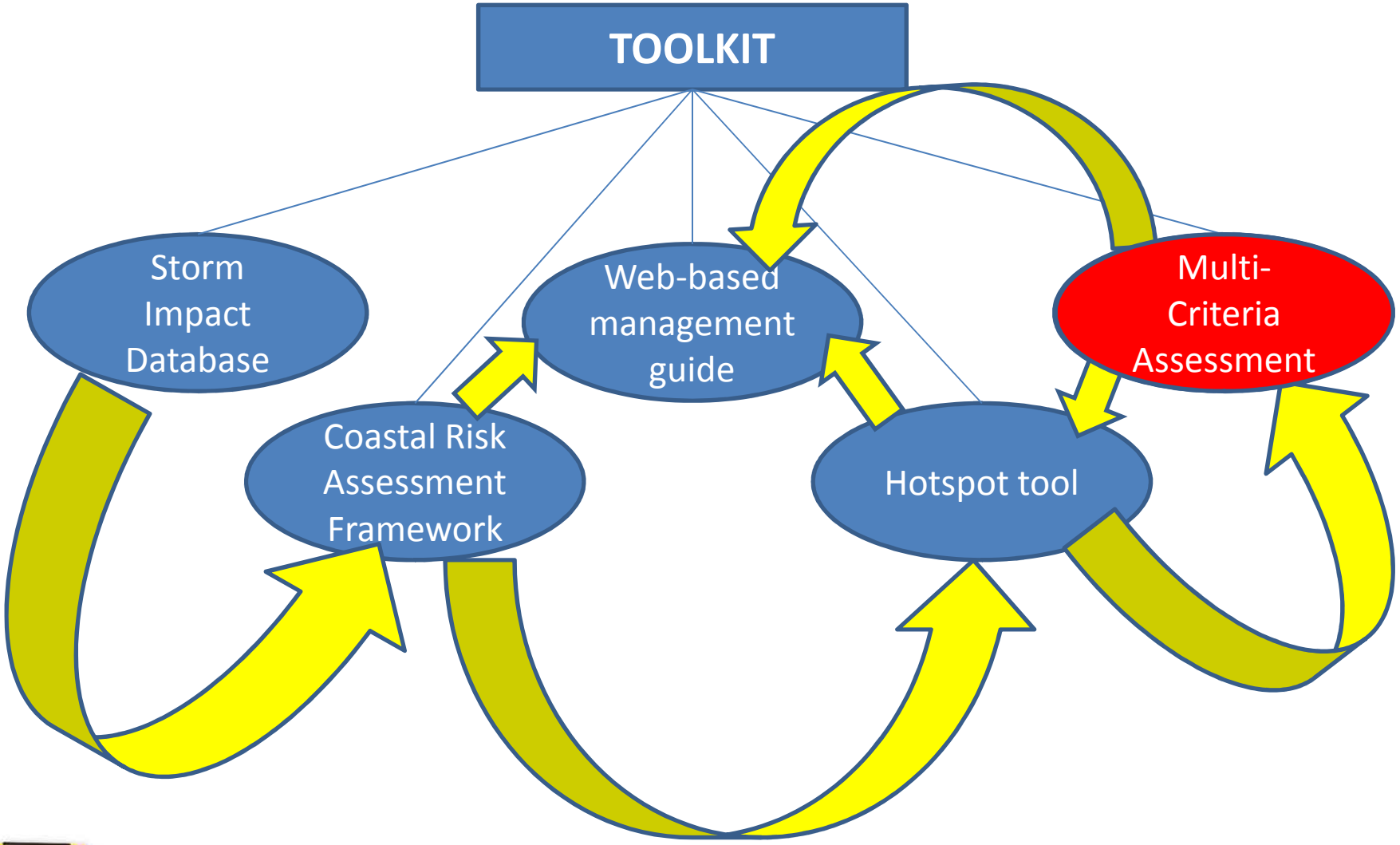
- Project Background
- RISC-KIT toolkit
- Methodology
- Challenges
- The potential of participatory approaches

RISC-KIT Background

- Focus: low-frequency high-impact events
- Aim: Methods and tools to decrease risk and increase resilience
- Objectives:
  - Enhance forecasting, prediction and early warning capabilities
  - Improve the assessment of long-term coastal risk
  - Optimise the mix of prevention, mitigation and preparedness measures.

RISC-KIT Cases

RISC-KIT Toolkit



MCA Methodology

Purpose of MCA:

1) facilitate the communication and presentation of project results in a coherent and contextualized manner to relevant local stakeholders and decision-makers;

2) capture other types of knowledge, such as local every-day experiences, socio-economic and political factors that might affect how the proposed measures are perceived;

3) Facilitate interaction between local stakeholders and raise awareness of risks and potential measures.

Stakeholders

Stakeholder Group	Stakeholder in each case study	Role						
		Decision-maker	Lobbyist	Informed Receptor	Overseer	Implementer	Expert	Private Sector
SH1: Coastal manager	N/A	☐	☐	☐	☐	☐	☐	☐
SH2: Land use planners	**NAME,** landscape architect, Sustainable Development Management, Kristianstad Municipality	☐	☐	☐	☐	☒	☐	☐
SH3: Civil protection/ disaster management agency	**NAME,** Fire Protection, Safety and Security, Emergency Services, Kristianstad Municipality	☐	☐	☐	☐	☒	☐	☐
SH4: academic working in coastal zone	**NAME**, Geo-planning and Climate Adaptation Unit, Swedish Geotechnical Institute	☐	☐	☐	☐	☐	☒	☐
SH5: Consultant previously engaged in managing the coastal environment	**NAME**, Research assistant, World Maritime University	☐	☐	☐	☒	☐	☐	☐
SH6: Local resident previously affected by the hazard	**NAME**, representative from community association in Äspet	☐	☐	☒	☐	☐	☐	☐
SH7: Chairperson of local active citizen groups	N/A	☐	☐	☐	☐	☐	☐	☐
SH8: Local authority (e.g. port, tourism board, fishing, housing)	**NAME**, Coordinator Environment and Security, Åhus Port	☐	☐	☐	☐	☒	☐	☐
	NAME, Environmental Communicator, Sustainable Development Management	☐	☐	☐	☐	☒	☐	☐
SH9: Representative from private sector	**NAME**, Claims Manager, Claims Department, Länsförsäkringar Insurance	☐	☐	☐	☐	☐	☐	☒

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Assessment of measures

1. Dune Nourishment

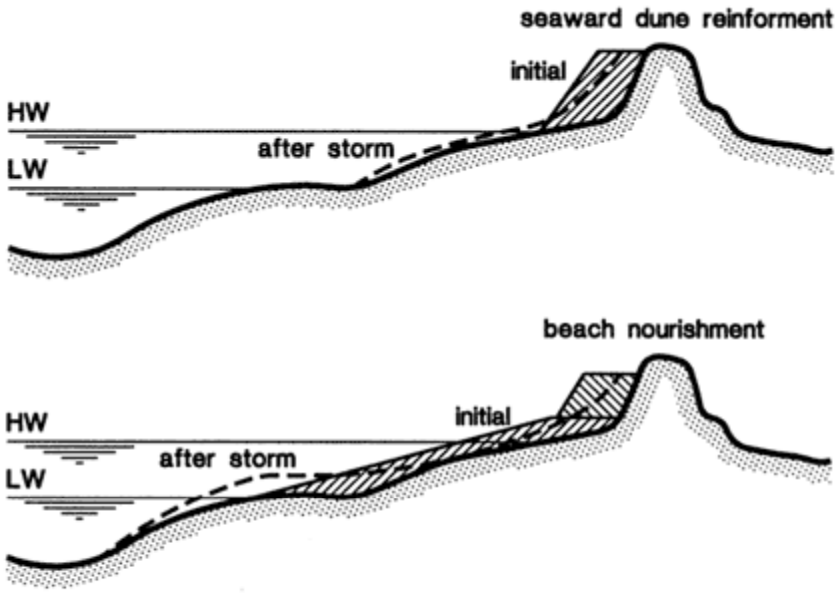
-Effective storm surges/waves
-Narrows beach width
-Construction Bulldozers

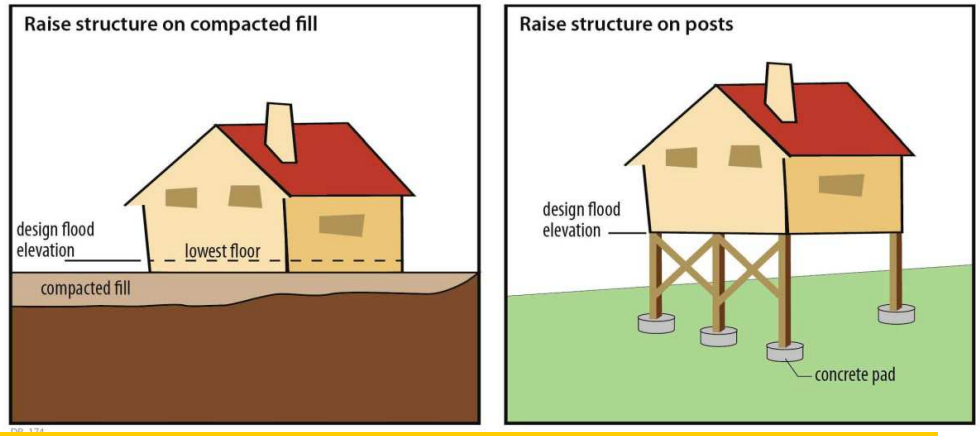
2. Beach Nourishment

-Widens beach width
-Repetitive
-Dissipates waves offshore
-Construction ships and pipes

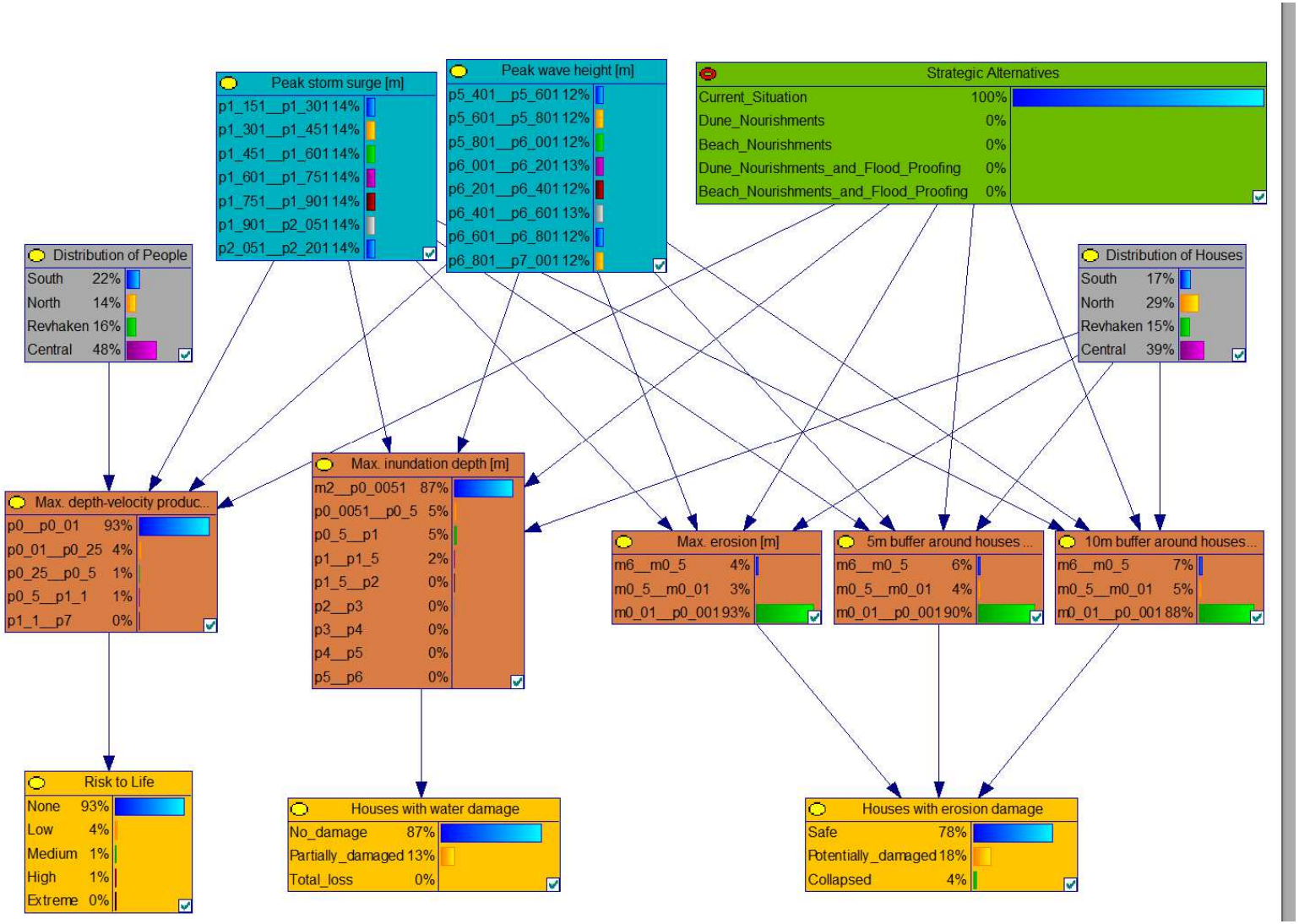
3. Flood proofing

-Maintain natural system





…based on Bayesian results



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MCA Matrix

Step 1: Choose composition of SAs from Bayesian model

Step 2: Score criteria using a -2 (probably no) to +2 (probably yes) scale

CRITERIA	Weights	SA1		SA3		SA3		SA4		SA5	
		Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Feasibility		-2	-8	0	0	2	8	0	0	1	1
Acceptability		-2	-4	0	0	2	4	1	2	1	2
Suitability		-2	-6	2	6	1	3	-1	-3	0	0
Sustainability		-2	-2	0	0	1	1	0	0	0	0
SUM		-20		6		16		-1		3	

Step 3: assign weights using stickers.

Step 4: Calculate weighted score by multiplying the score (-2) times the weight (1).

Step 5: Calculate SUMS by adding the five weighted scores.

Probably No	Possibly No	No effect	Possibly Yes	Probably Yes
-2	-1	0	1	2

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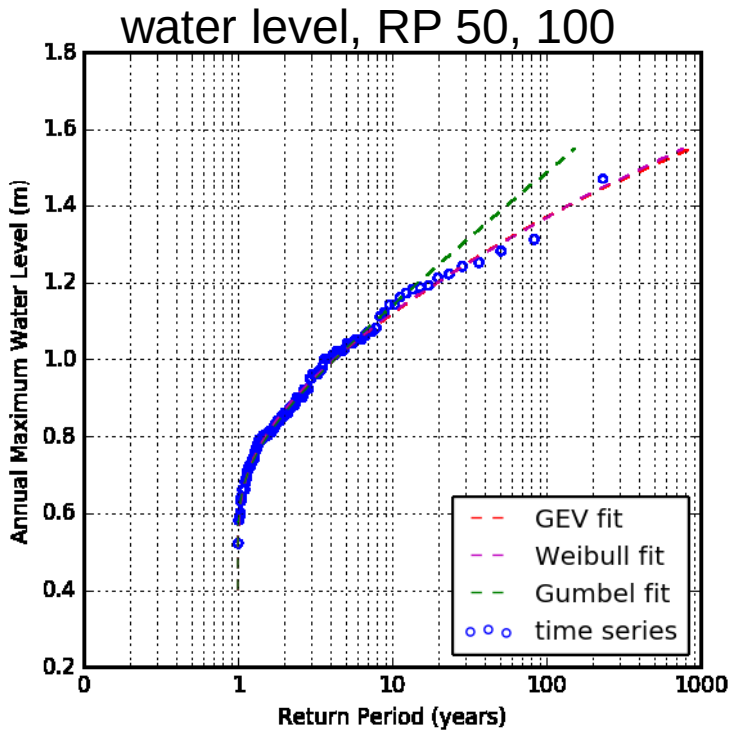
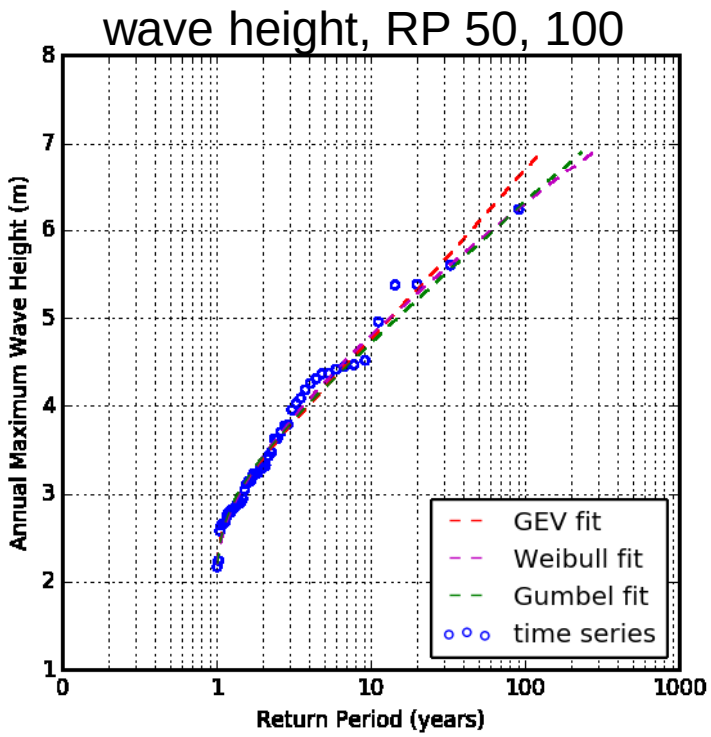
Challenges

- Communicating across disciplines
- Designing methodology for different needs and academic backgrounds
- Stakeholder inclusion
- Communicating results
- Adapting methodology to different contexts

Challenges

For the extreme analysis, the time series of water levels at the tidal gauge in Kungsholmsfort are used, which span over the period from 1886 to 2015. The extrapolated fits for water levels against the return period are shown in the figure below





The potential participatory approaches

For RISC-KIT,

- Strenghten connection between researchers-municipality
- Get unique insight into each case study, and cross-case comparison
- Contextualize results that may matter for coastal planning

For stakeholders, the goal of the session is to reach a result. This result does not have a real meaning. We give meaning to the result by making the process a win-win game:

- Less politicized platform for discussion
- A way to hear and be heard
- Awareness raising
- Contribute to informed decision-making
- Help to develop tools for improved coastal planning
- Networking opportunity

For scientific community

- Contribute to policy-informed science
- Bridge scientific and local knowledge
- Improve 'reciprocity' in qualitative methods (Take and Give)
- Improve facilitation techniques in DRM