



DELTA IN TIMES OF CLIMATE CHANGE II INTERNATIONAL CONFERENCE

OPPORTUNITIES FOR PEOPLE, SCIENCE, CITIES AND BUSINESS
ROTTERDAM THE NETHERLANDS, 24-26 SEPTEMBER 2014

Deltas in Depth scientific sessions	
Deltas in Depth 11. Decision support tools and risk assessment	
DD 11.2 Pathways for adaptation to an uncertain future	
Chair	Dr. Ad Jeuken, Deltares, the Netherlands
Presentations	<ul style="list-style-type: none">• Dr. Marjolijn Haasnoot, Deltares, the Netherlands• MSc Katharina Hölscher, Dutch Research Institute for Transitions (DRIFT), the Netherlands• Prof. Agustín Sánchez-Arcilla, Lab. d'Enginyeria Marítima (LIM/UPC), Universitat Politècnica de Catalunya (UPC), Spain

Exploring adaptation pathways is an emerging concept for supporting climate adaptation and mitigation decisions. Adaptation pathways describe a sequence of policy actions or investments in institutions and infrastructure over time to achieve a set of pre-specified objectives under uncertain changing conditions, and are part of a policy and planning framework (e.g. Dynamic Adaptive Policy Pathways) that ensures evaluation of costs and benefits and monitoring to track both implementation and changing conditions.

This session aimed to bring together and exchange knowledge between four EU FP7 research programs (BASE, RISES, IMPRESSIONS and URBES) that all elaborate on the adaptation pathways concept to support climate adaptation and mitigation decisions but from different angles. While BASE and URBES have been ongoing for some time, RISES and IMPRESSIONS just started. The BASE project (Bottom-up Adaptation Strategies Europe) focuses on upscaling and identification of generic pathways, and also on the economic evaluation of adaptation pathways. IMPRESSION (Impacts and Risks from High-End Scenarios: Strategies for Innovative Solutions) relates the pathways to resilience and transition thinking and to address the governance of adaptation pathways. The RISES-AM project (Responses to coastal climate change: Innovative Strategies for high End Scenarios -Adaptation and Mitigation-) follows a model-based approach of impacts strategies and scenarios to identify flexible eco-engineering strategies for coastal zones. The URBES addressed how cities could include green actions and how historical context influences future adaptation pathways.

Marjolijn Haasnoot (Deltares) presented an approach and example to upscale pathways and develop generic pathways at European scale. She used different modelling results to identify a range of use-by dates – the moment of an adaptation tipping point of actions – that represents uncertainties in scenarios and models. As pathways are only relevant if they are related to goals and not necessarily different sectors or scales, Rob Swart (Alterra) suggested to relate the European scale pathways to goals at European level such as the European Directives. Prof. Agustín Sánchez-Arcilla presented the RISES model-based approach to rank policy actions and develop adaptation pathways. He highlighted the importance of sediment and the use of natural dynamic to identify flexible actions. He gave an example of adaptation tipping points for the Ebro delta. Katharina Hölscher introduced a conceptual foundation to inform decision-making on pathways. She integrates resilience and transitions thinking, that both starts from the notion of complex adaptive systems and explore change in such systems, acknowledge possible tipping points and backlash effects. She argued that 'sustainability' as normative end-goal gives the strategic direction for governance of system change and that 'resilience' and 'vulnerability' provide as non-normative system properties the context and orientation for striving towards sustainability. While governance needs to fit the appropriate scale,





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cross-scale and cross-time dynamics create shocks, trade-offs and windows of opportunity. Thus, intervention points have to be sought between scales.

In addition to the presentations there were poster pitches illustrating cases on adaptation pathways. André Vizinho (FFCUL) presented adaptation pathways that were developed in a participatory setting using multicriteria for a coastal region in Portugal. They managed to converge different perspectives of stakeholders into adaptation actions. Eliska Lorencova (CzechGlobe) showed a first analysis of adaptation pathways for heat island in Prague. The pathways mapped showed that additional actions need to be explored to get acceptable conditions.

Both scientists and practitioners that were involved pathways applications contributed to the lively discussion. Participants saw the concept as an approach that can be used at different scales without too much cost to identify problems and adaptation options, not only for moderate futures but also high-end futures.

Two pictures from this session: <https://flic.kr/p/paPedm>; <https://flic.kr/p/paNSpr>

