NMDC workshop on model-based decision making under deep uncertainty

"Are current models able to support decision making under deep uncertainty?"

Date : December 3, 2018
Time : 9.30 – 17:00 hrs.
Location : Paviljoen, Deltares Delft

The objective of this workshop is twofold:

- To present and exchange experiences on model-based methods and their models for coping with deep uncertainties in long-term planning and policy development for water management, transport and traffic, and pollution and air quality and
- To discuss the use and potential improvements and linkages of these concepts and methods for planning and policy making in these policy domains.

PROGRAMME:

9.30 – 10.00 Paviljoen: registration and coffee

10.00 – 12.00 plenary session

- *Decision making under deep uncertainty; theoretical background;* Warren Walker (TUD)
- *Policy making under uncertainty;* Jos van Alphen (Office of the Delta Commissioner)
- *Using models in dealing with uncertainties;* Detlef van Vuuren (UU/PBL)
- *Advising policy makers on mobility policies;* Erik Verroen (RWS)
- *Panel discussion on major questions and challenges;* facilitated by Gert-Jan de Maagd (Min IenW)

12.00 – 14.00 Market & Lunch

On a lively market place people are invited to present their concepts and methods, demonstrate their tools and present their case studies; combined with a lunch buffet

- experiences Rijkswaterstaat in embracing uncertainties and adaptive transport policy making; *John Spruijt en Benno van der Griendt (RWS)*
- Dealing with disruptions; *Ming Chen (TNO)*
- KNMI'21; *Rike van Hattem (KNMI)*
- Modelling impact of climate on agro-food; *Saeed Moghayer (WUR)*
- Rapid flood protection screening model for World Bank investments under deep uncertainty: development and application in Beira, Mozambique; *Erik van Berchum en Hidde van de Broek (TU Delft)*
- The Pathway Generator; *Andrew Warren(Deltares)*

14.00 – 15.30 Working sessions

- Using models for climate change adaptation policies
  Marjolijn Haasnoot (Deltares), Bart van de Hurk (KNMI), Neeltje Kielen (RWS)
  Climate adaptation policies need to rely on information about the future state of the climate and socio-economic configuration of the area of interest. In many practices this information is directly or indirectly derived from model projections: IPCC endorsed climate projections, regional downscaling models, hydrological impact models, physical schematisations of infrastructure etc. A relevant topic in this area is the so-called "complexity match": does the use of (chains of) highly complex models and large ensemble sizes match the requested level of information needed for the climate adaptation policy preparation?
  In this workshop first a keynote will be given by Bart van den Hurk on the historical evolution of climate models and their evolving complexity. Also a discussion on the interaction between climate models and climate services will be given, focusing on the "complexity match".
  Subsequently, Neeltje Kielen will reflect on the use and evolvement of water models in the Netherlands that are used to support decision making on long-term strategies for fresh water supply. She will discuss trade-offs between increasing the resolution of the models (in space, process and time), the runtime, and the wish to explore multiple uncertainties.
  Finally a group discussion will be organised highlighting the modelling needs for climate adaptation policy making. The discussion will be led by Marjolijn Haasnoot.

- How to embrace uncertainties in transport policy making?
  Ming Chen (TNO), Daniëlle Snellen (PBL) and Gigi van Rhee (Stratelligence)
  Debating on how to embrace uncertainties to facilitate and improve policy making based on 3 presentations:
    1. *Early warnings (Ming Chen): which uncertainties are arising an should we take into account?*
    2. *Using scenarios (Daniëlle Snellen): how to handle combinations of uncertainties and working with scenarios?*
    3. *Adaptive policy making (Gigi van Rhee): optimizing policy making using scenarios to benefit from uncertainty*

- Energy Investment Decision-Making Under Deep Uncertainty
  Christian Bos (TNO) and Saeed Moghayer (WUR)
  The workshop starts with a key note presentation by Christian Bos on decision making under deep uncertainty based on some experiences from oil/gas E&P and energy transition modelling. This will be followed by a more detailed discussion by Joost van Stralen focusing on the use of models to deal with deep uncertainty in the energy transition. Finally some of the main points with regards to the shortcoming of the current models and the need for new approaches will be discussed in the group. The discussion will be led by Saeed Moghayer.

15.30 – 16.15 Wrap-up session

- Panel discussion lead by facilitator (Gert-Jan de Maagd), focusing on:
  Concepts and methods used, Accuracy and credibility of models, Communication

16.15 – 17.00 Drinks