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Towards risk-based drought management in the Netherlands: making water supply levels transparent to water users

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To prepare the Dutch Delta for future droughts and water scarcity, a nation-wide 4-year project, called Delta Programme, assessed the impact of climate change and socio-economic development, and explored strategies to deal with these impacts. The Programme initiated a joint approach to water supply management with stakeholders and developed a national adaptation plan that is able to adapt to future uncertain conditions. The adaptation plan consists of a set of preferred policy pathways - sequences of possible actions and measures through time - to achieve targets while responding in a flexible manner to uncertain developments over time, allowing room to respond to new opportunities and insights.

With regard to fresh water allocation, the Delta Programme stated that supplying water of sufficient quality is a shared responsibility that requires cohesive efforts among users in the main and regional water system. The national and local authorities and water users involved agreed that the water availability and, where relevant, the water quality should be as transparent and predictable as possible under normal, dry and extremely dry conditions. They therefore introduced the concept of ”water supply service levels”, which should describe water availability and quality that can be delivered with a certain return period, for all regions and all relevant water users in the Netherlands. The service levels form an addition to the present policy and should be decided on by 2021. At present water allocation during periods of (expected) water shortage occurs according to a prearranged ranking system (a water hierarchy scheme based on a list of priorities), if water availability drops below a critical low level. The aim is to have supply levels available that are based on the probability of occurrence and economic impact of water shortage, and that are transparent for all water users in the regional water systems and the main water system.

As part of the European project Improving Predictions and Management of Hydrological Extremes (IMPREX), running from 2016-2019, a consortium of the Dutch research institute Deltares and the Dutch water management consultant HKV will design and build a tool to support quantitative risk-informed decision-making for fresh water management for the Netherlands, in particular the decision on water supply service levels. The research will be conducted in collaboration with the Dutch Ministry for Infrastructure and Environment, the Freshwater Supply Programme Office, the Dutch governmental organisation responsible for water management (Rijkswaterstaat), the Foundation for Applied Water Research, (STOWA, knowledge centre of the water boards) and a number of water boards. In the session we will present the conceptual framework for a risk-based approach for water shortage management and share thoughts on how the proposed tool can be applied in the Dutch water management context.