

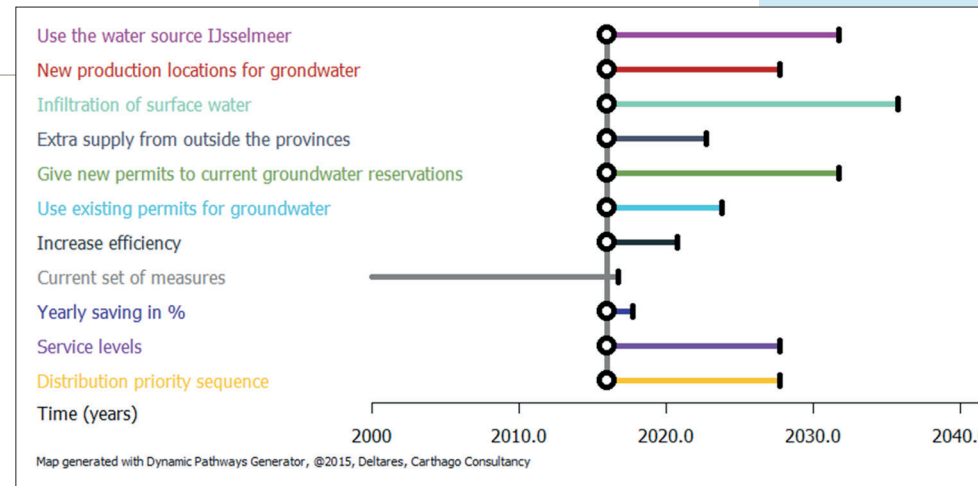
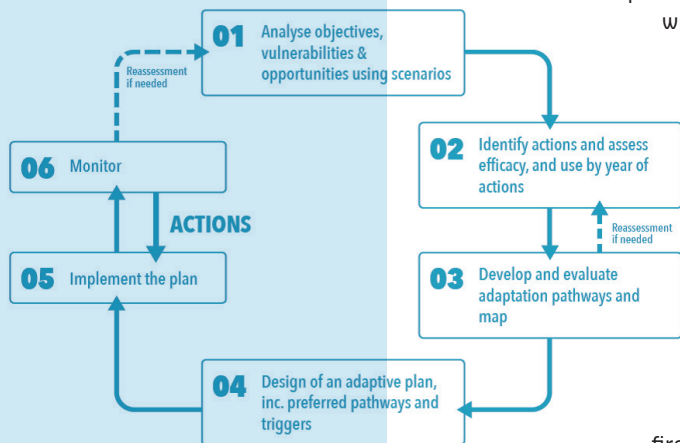
# Adapting to changes in demand for drinking water

A rise in demand for drinking water requires extra investment, while a fall results in invested capital being underused. So uncertainty about trends in demand make investment decisions difficult for Dutch provincial authorities. Deltares helps the authorities during the process of decision-making under uncertainty by training officials in Adaptive Planning.

Most drinking water in the Netherlands comes from groundwater: more than 60% overall and up to 95% in some regions. The provincial authorities are responsible for safeguarding supplies in the long term. Uncertainties about socio-economic developments and climate change make it hard to predict how demand will fluctuate exactly and what resources will be available in a specific region. Adaptive planning is required.

Deltares trained civil servants in the use of Dynamic Adaptive Policy Pathways. This approach was originally developed for freshwater supplies and flood risk management. This project adapted it for use in the drinking water sector.

The three basic components of the approach were discussed extensively in a series of workshops with civil servants from the various provincial authorities. The first component is the identification of tipping points. The tipping point in this case was defined as the point at which supplies dropped below 120% of the demand. The authority will then need to invest in additional capacity. The Province of Overijssel served as an example. The tipping point was determined for three different socio-economic scenarios. The moment at which the tipping point was reached



varied between one year, eleven years and “never” in the three scenarios. This indicates the bandwidth of uncertainty that the authority needs to address.

The second component is the identification of measures and the assessment of the degree to which they result in the postponement of the tipping point. These measures may include increasing efficiency, issuing new permits, extra supplies from outside the province, or shifting extraction to surface water. When measures have little effect, follow-up measures were introduced, building towards pathways extending beyond 2050. Comparing the pros and cons of pathways established a clearer picture of the best and most flexible strategies. The third component is the design of a monitoring system for critical developments. Monitoring provides crucial information about whether the tipping point is approaching and whether the expected pathways are still feasible.

This project showed that the adaptive approach is a valuable tool for the drinking water sector. The provincial authorities are adopting this approach and they will be able to use it to develop long-term drinking water policy.

**Further reading (in Dutch):**  
<https://publicwiki.deltares.nl/display/AP/Adaptieve+aanpak+++Lange+term+ijn+drinkwatervoorziening>