

Policy brief: Water management in the Netherlands

“Water comes from all four sides”



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Summary

The Netherlands faces critical water management challenges, including sea level rise, river floods, heavy rainfall, and rising groundwater. Historically, the Dutch have developed extensive flood protection systems, especially after a catastrophic flood in 1953. Key strategies in the Dutch Water management today include advanced dike construction and sediment management in rivers. Most importantly in the Maas and Rhine. Modern challenges with the environment beside adapting to rising sea levels is managing water quality affected by pollution and urbanization. In the Future adaptive measures such as elevated or floating structures will be important.

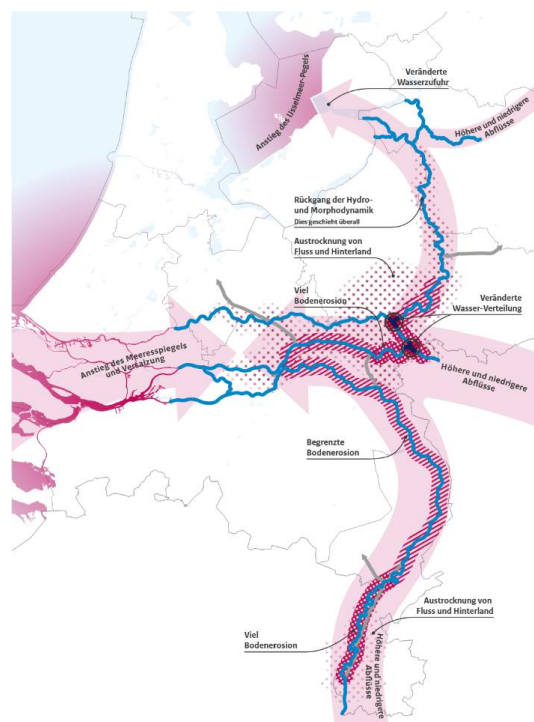
Introduction

The Netherlands has a turbulent history with water. As a country with nearly one-third of its area below sea level and 60 percent of the population living in this zone (Dühr, n.d., p. 3), it is inevitably obliged to deal with the issue of water - and in various ways. The Dutch often quote this one sentence, which is also the title of an article from *The Guardian*: “Water comes from all four sides”(Boztas, 2024), meaning sea level rises, river floods, heavy rainfall and rising groundwater. This highlights the urgency with which this issue is addressed in the Netherlands. The

habitability of cities, the country's drinking water supply, and protection against flooding depend on the Netherlands' water management. This highlights the urgency with which this issue is addressed in the Netherlands. The habitability of cities, the country's drinking water supply, and protection against flooding depend on the Netherlands' water management. As a country that is more dependent on a well-structured water management than many others, it is in fact technologically particularly advanced in these areas. Much can therefore be derived and learned from the effective planning and engineering of the Netherlands. The aim of this policy brief is to provide geography students with a quick overview about the challenges The Netherlands is facing when it comes to water, but also the strategies of Dutch water management.

Key strategies in Dutch water management

Figure 1: Map shows the developments (Waterstaat, n.d.)



From this perspective, it is understandable that the Dutch government focuses heavily on flood protection, especially in urban areas, as part of its water management strategies. (PBL Netherlands Environmental Assessment Agency, 2015) The country is renowned for its dike construction, with approximately 1,500 kilometres of dikes and more than 400 engineering structures being upgraded. These upgrades involve integrative measures that are effective in both high and low discharge scenarios. (Waterstaat, 2020) The most urgent areas requiring sediment management are the Maas and the Rhine branches. (Waterstaat, n.d.) The government can utilize the Delta Fund to cover the costs, with approximately 200 million euros available in until 2028. (Zaken, 2015)

Challenges in water management

The perhaps most striking challenge in water management connected to the Netherlands is their dealing with the rising sea level. The Dutch approach includes adapting society and land use, protecting the environment, and constructing large lakes for temporary water storage and reducing salinization. (Waterstaat, 2023) However, the challenges in water management do not only relate to the immediate management of water.

Extreme weather events exacerbate the challenges, affecting the ICT network and power grid, which are increasingly interconnected and international. Disruptions can have far-reaching consequences. (PBL Netherlands Environmental Assessment Agency, 2015)

Additionally, agricultural pollution, historical soil contamination, and urbanization impact water quality, posing another significant challenge for water management (Zaken, 2015).

Future directions

Extreme weather events like intense rainfall and high temperatures are expected to increase. By 2085, sea levels in the Netherlands may rise by 25-80 cm. (Zaken, 2015) Practical adaptations include elevated houses and floating structures, such as the floating farm project in Rotterdam. (Waterstaat, 2023)

Figure 2: The floating farm in Rotterdam (Corpataux, 2024)



Conclusion

The Netherlands' advanced water management strategies offer valuable insights into addressing climate change and water-related challenges. Flooding now has a significantly greater impact than it did in 1953. With the growing population in the Netherlands, floods now cause more damage. But the country's focus on integrative measures, technological innovation, and international collaboration provides a model for global water management. Crucially, and addressing you as geography students, it is important that further studies are conducted. This is essential for making well-informed long-term decisions and for making wise investments. It is critical that more data becomes available as soon as possible. (Waterstaat, 2023)

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Figure 1 Waterstaat, M. I. en. (n.d.). *Das ist IRM* (Nederland) [Webpage]. Retrieved 21 July 2024, from <https://www.bouwplaatsirm.nl/de>

Figure 2 Corpataux, Aline (2024, June 15)

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