AN ADAPTIVE APPROACH

Adaptive delta management means: addressing climate change in a level-headed manner

Measures to climate-proof a country take a great deal of time. That is why we need to look far ahead: how will the climate change until 2050, and up to 2100? There is no univocal answer to this question; climate change is surrounded by uncertainties.

That is why the national Delta Programme must plan far ahead and, concurrently, factor in uncertainties. To this end, we are pursuing adaptive delta management: we are looking ahead to the potential taskings facing us, we are using this insight to take the measures that are presently required, and we are remaining flexible in order to accommodate new insights.

The six-year reviews ensure that we remain alert to changes

Adaptive delta management also entails: regularly checking whether the chosen course still holds good. For example, do new insights into sea level rise dictate an acceleration or rather a reduction of the pace at which measures are being implemented?

Does the flood protection tasking still chime with the major construction taskings in The Netherlands? Are the scheduled measures producing the intended effects? With its six-year reviews, the Delta Programme maps out, every six years, whether its course needs adjusting. Thus, it is keeping a finger on the pulse.

Efficient combination benefits everyone

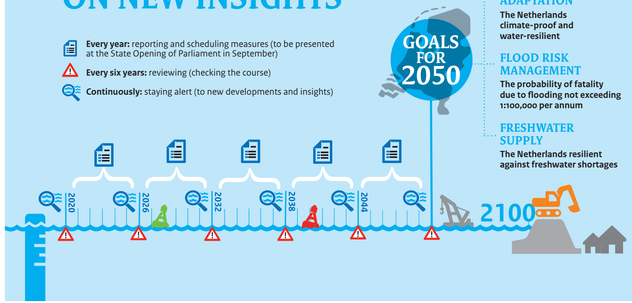
All over The Netherlands, people are working on a healthy, safe, and attractive environment. For example, by building new houses, through sewer system maintenance, urban restructuring, nature development, infrastructure innovations, et cetera. In many cases, a timely dialogue with other stakeholders will generate interesting and efficient options for linkage with the national Delta Programme taskings. Linking nature development and agriculture with water storage. Linking house construction with climate-proof spatial planning. Linking dyke improvement with improved road safety. Such combinations benefit us all.

RHYTHMICITY: CAPITALISING ON NEW INSIGHTS

Every year: reporting and scheduling measures (to be presented at the State Opening of Parliament in September)

Every six years: reviewing (checking the course)

Continuously: staying alert (to new developments and insights)



SPATIAL ADAPTATION
The Netherlands climate-proof and water-resilient

FLOOD RISK MANAGEMENT
The probability of fatality due to flooding not exceeding 1:100,000 per annum

FRESHWATER SUPPLY
The Netherlands resilient against freshwater shortages

The Netherlands is a low-lying country with an abundance of water. The national Delta Programme protects The Netherlands against flooding, ensures a sufficient supply of fresh water, and contributes to rendering the country climate-proof and water-resilient. The national Delta Programme website outlines the progress of the work on the delta.

The national Delta Programme involves concerted efforts by the central government, the provinces, municipalities, and district water boards in The Netherlands. Research institutes, NGOs, residents, and businesses also actively provide input.

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WORKING ON CLIMATE-PROOFING THE NETHERLANDS

NATIONAL DELTA PROGRAMME

GIVING OUR ALL TO MAKE OUR DELTA SAFE AND LIVEABLE

NATIONAL DELTA PROGRAMME

VULNERABLE COUNTRY, A POWERFUL APPROACH

The national Delta Programme aims to climate-proof The Netherlands

Climate change has a major impact on a low-lying country such as The Netherlands. The sea level is rising, and we will be faced with torrential rain, prolonged drought, and heatwaves more often. We need to protect ourselves even better against flooding, freshwater shortages, and extreme weather.

In other words: The Netherlands must be climate-proofed. This is a transition of unprecedented proportions. It involves major and minor adjustments, extending to the very capillaries of our country. All this is effected under the national Delta Programme.

The first point on the horizon is 2050. By then, The Netherlands must be climate-proof: safe from flooding, with sufficient fresh water, and resilient against extreme weather. Meanwhile, the national Delta Programme is also looking farther ahead, to 2100. Because climate change is continuing.

The national Delta Programme involves us all

Flood-proof and liveable spatial planning requires a wide range of interventions. Along the water, in cities, and in rural areas. These affect everyone. That is why parties all over the country are participating in the national Delta Programme. National and regional governments. Businesses and NGOs. Residents and farmers. Scientists. Together we are making the national Delta Programme.

Major transitions converge

The national Delta Programme is not the only major societal change. The Netherlands is also working on the energy transition, the huge housing tasking, transitions in agriculture and infrastructure, nature enhancement, and the circular economy.

Every area is faced with several major taskings. Combining solutions is inevitable and produces unique opportunities. It is important to link up with one another and establish mutual connections.

PETER GLAS, DELTA PROGRAMME COMMISSIONER:

'Water can bring out the best in us: water as a driving force.'

A special Act for a special tasking

In view of their huge scope and extreme urgency, the Delta Programme issues are covered by a special Act: the Delta Act. The Delta Act stipulates that a Delta Programme Commissioner must be appointed to monitor the course of the Delta Programme. Every year, the Delta Programme Commissioner must submit a proposal for the substantiation of the Delta Programme. Furthermore, the Delta Act provides for a Delta Fund as the financial basis. The Delta Fund has an annual budget of more than 1 billion euros.

THE COURSE: NATIONAL DELTA DECISIONS

The main taskings involve flood risk management, freshwater supply, and spatial adaptation

Under the national Delta Programme, The Netherlands is addressing three interconnected taskings:

- Flood risk management: proper protection against flooding
- Freshwater supply: sufficient fresh water where needed
- Spatial adaptation: resilient spatial planning to reduce the impact of flooding, waterlogging, drought, and heat

Delta Decisions set out the collective course

In order to be climate-proof by 2050, all the national Delta Programme parties must follow the same course. That is why the Delta Programme Commissioner has proposed five Delta Decisions. These set out goals and ambitions for 2050, and in part, for the period beyond. In 2020, the Delta Decisions were reviewed on the basis of new insights.

Sea Level Rise Knowledge Programme

The sea level is rising, that is for sure, but how fast and to what extent? This is uncertain. The Sea Level Rise Knowledge Programme has been set up to reduce such uncertainties and develop action perspectives. It involves collaboration between governments, research institutes, businesses, and NGOs. The results will be accommodated in the long-term course of the national Delta Programme.

MATHIEU GREMMEN, RIVIERENLAND DISTRICT WATER BOARD:

'At the Nijmegen lateral moraine, we are combining combating waterlogging during torrential rain with the opportunity to reduce dehydration through groundwater supplementation at the slope. A fine example of a strategy that combines two Delta Programme taskings: freshwater supply and spatial adaptation.'

GERHARD VAN DEN TOP, CHAIRMAN OF THE CORE GROUP, FLOOD RISK MANAGEMENT EXPERTISE NETWORK:

'Climate-proofing The Netherlands involves far-reaching measures. Our proposals must be underpinned by solid knowledge. This is a precondition for investment decisions and for social support.'

ASTRID DE WIT, CLIMATE ADAPTATION PROGRAMME MANAGER, PROVINCE OF ZUID-HOLLAND:

'We are striving for maximum climate adaptation in new construction projects in the province of Zuid-Holland, to ensure that the buildings are capable of withstanding weather extremes resulting from climate change. In line with the Delta Programme, agreements to this end have been set down in the Climate-adaptive Construction Covenant.'

THE DELTA DECISIONS OUTLINED

FLOOD RISK MANAGEMENT

By 2050, the probability of fatality due to flooding must not exceed 1 in 100,000 per annum. All the primary flood defences must meet new statutory standards by 2050. Along the coast, this goal must be achieved through sand replenishment, wherever possible (Decision on Sand).

FRESHWATER SUPPLY

By 2050, an area's spatial planning must be geared to its water availability, and The Netherlands must be resilient against freshwater shortages: economising water use, water retention, efficient water distribution, and accepting potential damage.

SPATIAL ADAPTATION

By 2050, The Netherlands must be climate-proof and water-resilient. Governments are analysing vulnerabilities and taking measures. National vital and vulnerable functions, such as the drinking water systems and power grids, must also be climate-proof and water-resilient by 2050.

RHINE-MEUSE DELTA

IJSSELMEER REGION

These Delta Decisions encompass directive choices relating to, e.g., the distribution of Rhine water and level management in the IJsselmeer Region. Around 2040, a comprehensive analysis will be conducted regarding the replacement of the Maeslant storm surge barrier.

ACTUAL PRACTICE: DELTA PLANS AND REGIONAL PREFERENTIAL STRATEGIES

The Delta Plans set out specific measures

The annual Delta Programme comprises three Delta Plans with measures:

- Delta Plan on Flood Risk Management: measures pertaining to, e.g., dyke improvement (Flood Protection Programme) and river widening;
- Delta Plan on Freshwater Supply: agreements on, e.g., water availability, water storage, efficient water control, and resilient water inlets;
- Delta Plan on Spatial Adaptation: seven ambitions regarding climate-proof spatial planning, featuring stress tests, risk dialogues, and implementation agendas.

Regional Preferential Strategies tailored to each area

Although The Netherlands is a small country, it features major differences in landscape and taskings. Ergo, in terms of measures, each area requires a different approach. That is why the Delta Programme comprises regional Preferential Strategies.

Area division follows tasking

In many of the regional Preferential Strategies, the focus is on flood risk management. Freshwater supply and spatial adaptation strategies and measures are usually developed via a different area division, tailored to these taskings.

WADDEN REGION

Here, flood protection is ensured through sand replenishment and innovative dykes. Each Wadden Island will have its own flood risk management strategy, factoring in climate-adaptive planning and disaster control. An unknown quantity is the impact of the rising sea level on the Wadden system.

IJSSELMEER REGION

The main solutions to protect the IJsselmeer Region against flooding involve dyke improvements around Lake IJsselmeer and pumping at the IJsselmeer Closure Dam. With respect to water drainage near the Closure Dam, the rule is 'drainage by gravity if possible, pumping if need be'. Through flexible water level management, the IJsselmeer Region can provide a substantial supply of fresh water.

THE COAST

The goal is a safe, attractive, and economically viable coast. Wherever possible, flood protection taskings are combined with other spatial taskings. With respect to flood risk management, the rule is 'flexible where possible, solid where needed'.

RHINE AND MEUSE

The rivers strategy will be updated in the Integrated River Management programme. Under this programme, the central and regional governments are collectively addressing all the taskings relating to flood protection, discharge capacity, navigability, freshwater availability, water quality, nature development, and economic development, including opportunities for leisure activities and an attractive environment.

SOUTHWEST DELTA

Flood risk management and freshwater supply measures can also boost the restoration of estuarine nature. This is essential for a vital economy and a sustainable environment. On the former Zeeland islands, innovative measures are required for the retention and storage of fresh water.

RHINE ESTUARY-DRECHTSTEDEN

Flood risk management is founded on dykes and closable storm surge barriers. Flood-conscious planning is pursued for areas inside and outside the dykes, particularly residential areas and areas accommodating vital and vulnerable functions. A key freshwater supply measure is 'efficient water control'.

ELEVATED SANDY SOILS

Here, the freshwater supply and spatial adaptation measures are combined wherever possible. Water retention is the key method to boost the region's resilience against water shortages. Adapting land use or accepting damage caused by water shortages may also be necessary.

Drought is also affecting The Netherlands

The Netherlands has an abundance of water. And yet a sufficient supply of fresh water cannot be taken for granted, as was demonstrated by the prolonged droughts of 2018, 2019, and 2020. There was not always sufficient fresh water for everyone. In addition to the inconvenience, this also causes economic damage and risks to public health. Climate change may add to the probability of freshwater shortages. That is why it is important to boost The Netherlands' resilience against freshwater shortages.