

# WATER MANAGEMENT Driving Force behind the Dutch Economy

**W**ATER has been something of a mixed blessing for the Netherlands, bringing both disasters and affluence. The last millennium has seen a recurrent pattern of floods, repair work and land reclamation. Since the land is steadily subsiding and sea levels are rising, 25% of the country's surface now lies below mean sea level. The lowest area, east of Rotterdam, is a staggering 6.7 meters below sea level. If the dikes and dunes were not there, 65% of the country would be flooded regularly.

## The Dutch Stand Their Ground

The danger posed by floods means that safety has been a prime consideration since time immemorial. The first flood defenses date from the 9th century, when many sluices and canals were dug in the Rhine, Maas and Scheldt estuaries to reclaim the peat bogs. These drainage activities hastened the process of subsidence. Floods threatened, and the first dikes were built.

The Netherlands now has an ingenious water defense system. On the coast, it includes dikes, dunes and storm surge barriers. The inland waterways are regulated by dikes, dams, quays, polders, windmills, pumps, dams, and sluices. The highest priority in water management, though, goes to sea defenses. People get very little warning of coastal floods, and the results can be fatal.

Monique de Vries sees the Delta Project as the crowning achievement of the Dutch in their struggle against the water. "This unique network of high-grade dams and storm surge barriers can cut off the provinces of Zeeland and South Holland from the sea during severe storms. This means that the country's big cities keep their feet dry — which is crucial to the national economy."

The decision to construct the Delta flood defenses (which were built between 1956 and 1986) was taken after the disastrous flood of 1 February 1953. The dikes in the southwestern



Water works, Eastern Scheldt

province of Zeeland burst at a time of extremely high spring tides and storms. Over 1,800 people were killed and 47,000 homes were destroyed.

1997 saw the completion of the final link in the Delta defenses: the Maeslant storm surge barrier in the New Waterway. This computer-operated storm surge barrier was built to allow ocean-going vessels to pass freely. It is only when water levels are exceptionally high that the doors, which are normally docked on the quayside, float towards the middle of the river and sink to close off the 360-metre-wide waterway in a single movement.

**But for the dikes and dunes, 65% of the country would be regularly flooded**

A Delta Project for the Netherlands' main rivers was recently also put into effect. In the winters of 1993/1994 and 1994/1995, the Rhine and the Maas rose to an exceptionally high level, flooding the uterwarden (the land between a river's banks and the dikes) and causing a great deal of damage. The Project's aim is to complete the river defenses by 2000 and to deepen and broaden the Maas in Limburg by 2015, as well as to deepen the uterwarden along the branches of the Rhine and (where feasible) to move dikes.

## Economic Interests

Water management is not just a question of safety, it is also necessary for a healthy economy. "The fact that our

water management is effective enables us to maintain our position as an advanced industrial society. For one thing, water is an essential means of production. And our waterways protect numerous investments with a joint replacement value of over 4,000 billion guilders," says Monique de Vries.

The Netherlands' advantageous position in the delta of the Rhine, Maas and Scheldt has brought the country great prosperity. With a network of no fewer than 3,500 km of rivers and canals, the country has an excellent transport axis. Monique de Vries adds: "Of course, the navigability of these waterways and access to our ports must be guaranteed. Here, too, water management plays a crucial role."

Since the Netherlands is bordered to the west and north by the North Sea, sea trading flourished very early in its history. In the Golden Age (17th century), the ports served as gateways to the rest of the world. The resulting trade with regions such as the East Indies made the Netherlands rich. The ports are still important transport nodes. The North Sea is the busiest sea and Rotterdam the largest port in the world. "Rotterdam was able to develop as a main port thanks to its proximity to the North Sea and its excellent hinterland links via the Maas, Scheldt and Rhine. So it can offer rapid transshipment, and that is what makes or breaks a port," says Monique de Vries. The Dutch agricultural sector also represents major economic interests, and it, too, depends very much on good water management. Almost half of the Netherlands' surface area of 4.15 million hectares is used for agriculture. For the land to be workable and productive, the ground water level must be exactly right, both in summer and winter. This factor is even more critical in peat land than in the higher, sandy regions.

Most farmland is incidentally reclaimed land: the Netherlands has been busy reclaiming land on a large scale since the 16th century. One of the largest reclamation projects took place in the Zuider Zee (now the IJsselmeer), a stretch of tidal water some 350,000 hectares in size that was linked to the North Sea. In a bid to give farmers more room, about 220,000 hectares were drained in this area between 1900 and 1970, forming the Wieringermeer, the Northeast polder and the Flevo polder. "It's not just a question of water quantity. The quality of the water systems also plays an economic role," Monique de Vries emphasizes. "Clean water is essential, not only for farming, nature management and fisheries, but also for certain branches of industry, and of course, for domestic consumers."

Finally, water is also an important factor in tourism and recreation. Large projects like the Delta flood defenses and the Barrier Dam attract large numbers of tourists, as do Amsterdam's canals, the picturesque villages bordering the IJsselmeer, like Volendam and Enkhuizen, and resorts like Bergen aan Zee.

The Netherlands is moreover famed for its water sports facilities — a real paradise for pleasure craft and yachts, and safe water for swimming, to say nothing of the 340,000 or so hectares of fishing waters. In the first half of the nineties, water tourism grew by about 6.2%.

**"The Dutch are the nation that captured land to keep their feet dry"**

**Water Depletion**  
Dutch water defenses have unfortunately not always been good for the country or wildlife. Here and there, water has been too strictly regulated, making it a scarce commodity. By 1990, 6,000 km sq. of natural areas were classified as "depleted".

The term "depletion" is used when the vegetation formerly at the original water level has disappeared. This has happened — and it still is happening — in the Veluwe, the largest nature conservation area in the central Netherlands. In former times, laundries and paper mills, which use running water from streams as a power source, caused the groundwater level to sink dramatically, with the result that certain kinds of plants and animals disappeared. The

peat bogs, too, with their typical flora and fauna, almost vanished.

The term depletion is also used when water has to be let in from other areas to prevent groundwater levels from sinking too low. It is a paradoxical state of affairs. In the old days, farmland was drained because it was too wet, whereas now water has to be let in because farmland is too dry.

Besides depletion, the Netherlands has also been faced with the problem of polluted surface water, caused by the increase in industrialisation in the fifties and sixties. Since the pollution affected not just the water itself, but silt as well, the beds of streams, rivers and canals also became polluted. In 1970, the Pollution of Surface Waters Act came into effect, applying the principle of "the pol-

luter pays". It has proved a very successful piece of environmental legislation. In the space of 25 years, pollution levels fell by 85%.

## Integrated Approach

In the mid-1980s, Rijkswaterstaat (the Directorate General for Public Works and Water Management) published the policy document Living with Water. It was based on a new

idea: that sound water management can only be achieved using an integrated approach. In other words, it is necessary not only to link policies on water, spatial planning and environment, but also to harmonize the quantity and quality of ground water and surface water. Water management, after all, involves a great many interests, such as the safety of the popula-

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## Development Cooperation: Bangladesh-The Netherlands

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which projects are prepared and implemented play a role in this respect. In order to improve the effectiveness of development cooperation activities both recipient countries and development partners have been looking for alternatives. A shift from supporting projects to sector development, with the recipient government in the driver seat, is according to the Government of the Netherlands a promising way forward.

The sectoral approach implies linking up with sector policies of the (recipient) government. Ideally it means that development partners provide general budget support to a ministry or non-governmental organisations that implement a sector programme. As that ideal situation requires minimum standards with respect to coherence, transparency, accountability and civil ownership this will take time. Taking the lead in a sector instead of formulating and managing many donor funded projects requires different skills and capacities. Strengthening of institutional development capacities is required. Sectorwide development is a key to success, the developments within the sector have to be managed, in order to ensure that an overall picture of the sector exists. Sectors usually have many players, such as government, NGOs and (commercial) private companies. If real commitment exists to look for alternatives for the project approach, the Netherlands is prepared to provide long term programmatic support to such sectoral policies, including support for capacity building activities. The government of the Netherlands wishes to support comprehensive sectoral programmes, not projects that fit within a sector strategy, which are often defined by donors themselves.



## Consequences for Development Cooperation Relationship with Bangladesh

In 1999 again many important counterparts in Bangladesh, both within and outside government (civil society), were consulted in order to learn their views about the sectors which should be selected as priority sectors in the development cooperation relation between the two countries. The selection that was made after the visit of Minister Pronk in 1997 was re-

confirmed, basic health, basic education and integrated water resource management are the priority sectors.

As the government of the Netherlands, in line with international developments, wishes to work in the framework of the sectoral approach, intensive discussions are ongoing with the respective partners in the three sectors, including other development partners.

The first (sub) sectoral programme in Bangladesh started on 1 July 1998 in the basic health sector. After two years of

preparing the Health and Population Sector Programme (HPSP) both the Government of Bangladesh and many development partners decided to support this five year programme. Within HPSP priority is being given to, amongst others, the provision of essential services, especially to women and children, and important reforms (decentralisation, unification of health and population wings in MOHFW). Donor coordination has been further strengthened, in order to ensure that the Minister of Health and Family Welfare can work with a consortium of donors instead of having to work with many individual donors, all having their own requirements, procedures and visiting missions.

In the integrated water resource management sector opportunities to develop a sectorwide approach exist, as a clear policy framework is in place (National Water Policy) the operationalisation of this policy is under way (National Water Management Plan) and the reform process of major institutions in the sector has started (Bangladesh Water Development Board). A number of important issues however still remain, like the need to build, within the reformed water sector institutions, the appropriate capacity for integrated water resources management and the effective decentralisation of planning, decision making and financing for water management infrastructure. From the side of the donors an enhanced level of coordination will be required for a successful implementation of the future National Water Management Plan.

Currently discussions between the Governments of Bangladesh and the Netherlands are ongoing with respect to future support to the basic education sector.

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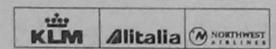
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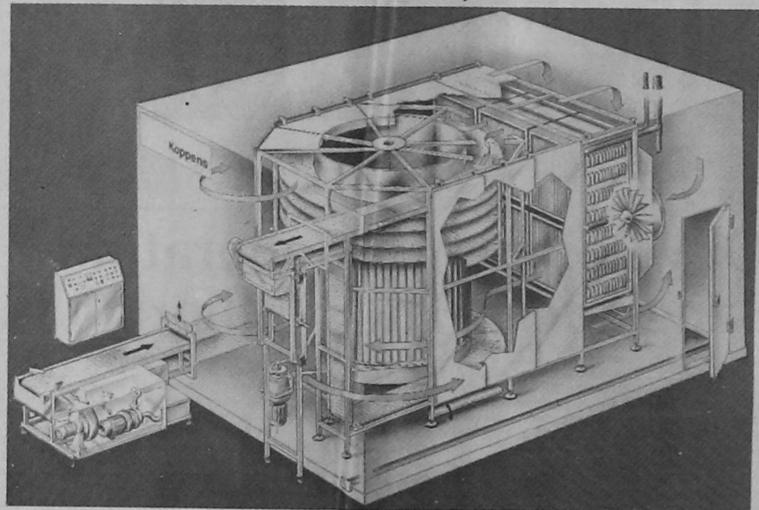
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