



# Room for the River

Giving rivers more space in order to prevent flooding

Climate change leads to increasing amounts of rainwater and meltwater draining into rivers. As a result, high water levels are increasingly common. Major rivers like the Rhine and the Meuse flow through the Netherlands towards the sea. A lot of these rivers are contained by dykes, but in many places the space between the dykes is insufficient to accommodate very high water volumes. This increases the risk of flooding. To address the situation, the Netherlands has established the Room for the River programme. As well as enhancing flood protection, the programme also makes the surroundings more attractive by reinforcing the ecological, economic and landscape functions.



JOHAN ROERINK/AEROPICTURE

Enhanced flood protection *and* a more attractive environment – with those twin aims, the Dutch Room for the River programme has already created more space for the Netherlands’ major rivers at more than thirty locations. As a result, four million people living near to rivers in the Netherlands now enjoy better protection against flooding. And the quality of the river environment has been improved in the process.

### What’s the issue?

High river levels are increasingly common as a result of greater rainwater and meltwater inflows, due to climate change. Rivers contained by dykes often have insufficient space to accommodate very high water volumes, and leading to an increased risk of flooding. At some point strengthening dykes by making them even higher is not a satisfactory answer to the problem, because both the

stability of the dikes and the spatial quality for the hinterland decrease. The problem can only be properly resolved by reducing the rivers’ water levels. The Netherlands is therefore giving its rivers more room. This can be done by relocating dykes or by creating side channels in the flood plains. Such measures are helping to prevent flooding and all attendant problems for people, animals, infrastructure, and the economy.

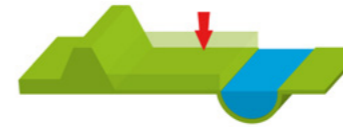
The opportunity is also being taken to improve spatial quality by utilising the potential of the river environment. Urban and rural riverside areas are made more visually attractive, and scope is created for recreational activities. The programme also provides opportunities for local economies, and stimulates the national economy by awarding project realisation contracts to the hydraulic engineering sector.



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### A variety of measures

Every river is different and requires an individual solution. A variety of measures and techniques are available for making room for the river:



- **High-water channel:** a branch of a river is used to drain high water via a different route. The channel is not excavated below the water table, but constructed by building tow dykes in the landscape.

- **Lowering the flood plain:** sedimentation has gradually raised the level of the flood plain over the past few centuries. Excavating the top layers of the flood plain makes them lower, providing more space for the river during periods of high water.



- **De-poldering:** the containing dyke is moved further away from the river, so that the river can flow into the area during periods of high water. The people living in these areas are compensated to move elsewhere, or have to build new houses on dwelling mounds.

- **Deepening the summer bed:** dredging the riverbed to make it deeper creates more room for the river.



- **Removing obstacles:** removing or modifying obstacles in the river helps to increase its flow rate. Examples include lowering or eliminating ferry pier banks, widening bridge openings, and removing or lowering quays and flood-free areas.

- **Water retention:** some places along rivers, such as certain lakes, can serve as temporary water storage areas for the retention of excess river water under exceptional circumstances. Such as when the storm surge barrier is closed and the amount of water flowing towards the sea is very great.



- **Strengthening dykes:** in some areas, river widening is not an option due to lack of space. At such locations, the dykes may be reinforced instead.

- **Dyke relocation:** moving a dyke further away from the river increases the width of the flood plain and provides more room for the river by extending its winter bed.



**Special team works to enhance spatial quality**  
The Room for the River programme has a special Q Team, which is dedicated to enhancing spatial quality. The team does not produce plans itself, but gives solicited and unsolicited advice, is always available to the programme bureau as a discussion partner, and makes so-called Spatial Quality Implementation Visits during the realisation and delivery phase. On completion of each project, the Q Team produces a Final Spatial Quality Assessment Report.

- **Lowering perpendicular groynes and building attracting groynes:** groynes are hydraulic engineering structures that interrupt the water flow and limit the movement of sediment. Rivers will be able to drain excess water more easily when existing groynes are lowered and parallel barriers are built.

**Never-ending task**  
Protecting against high water is a never-ending task. The climate is constantly changing, and many delta countries like the Netherlands are vulnerable to flooding. As a result, flood prevention work is always necessary. Responsive action is no substitute for pre-emptive intervention to make deltas safe places to live and work – now and in the future.



### **More information and contact**

For more information about the Room for the River programme, visit [www.ruimtevoorderivier.nl/english](http://www.ruimtevoorderivier.nl/english)