

Water wizards: Dutch flood expertise is big export business

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In this Nov. 6, 2017, photo, a self-raising dike is seen in the Dutch fishing village of Spakenburg. The 300-meter long dike that is raised by the very flood waters it is designed to hold back is an example of Dutch ingenuity in flood prevention that is becoming a major export earner for this low-lying nation. (AP Photo/Mike Corder)

On a calm, clear morning, historic wooden fishing boats float tranquilly on the glassy waters of the Dutch harbor of Spakenburg. Yet just over a

century ago, they were slamming through the houses lining the harbor as a powerful storm unleashed flooding that devastated this picturesque fishing village.

These days, an innovative new self-raising dike protects the village on the edge of Eemmeer Lake, 50 kilometers (30 miles) southeast of Amsterdam. The 300-meter (984-foot) long barrier is concealed in the sidewalk when not in use, and is lifted up to 80 centimeters (31 inches) by the very floodwaters it is designed to keep out.

It's just the latest example of Dutch ingenuity and planning in this low-lying nation's constant battle with water—and increasingly, technology like it is becoming a lucrative Dutch export.

"We live here in a very vulnerable place," said Roeland Hillen, director of the Dutch Flood Protection Program. "We have to adapt to survive."

That message resonates with many other flood-prone countries now attending [climate change](#) talks in Bonn, where delegates from some 195 nations have gathered to discuss rules for implementing the 2015 Paris climate accord. The meeting in the former German capital, which runs until Friday, is being presided over by Fiji, one of the many small island nations threatened by rising sea levels.

"We will feel the impact of climate change all over the world most profoundly through water," said Henk Ovink, the Netherlands' Special Envoy for International Water Affairs, who is at the Bonn conference.



In this Nov. 6, 2017 photo, boats are moored near the self-raising dike in the Dutch fishing village of Spakenburg, Netherlands. The 300-meter long dike that is raised by the very flood waters it is designed to hold back is an example of Dutch ingenuity in flood prevention that is becoming a major export earner for this low-lying nation. (AP Photo/Mike Corder)

The Dutch government teamed up earlier this year with Japan and the U. N. Environment Program to create a Global Center of Excellence on Climate Adaptation in the Netherlands that will be formally launched Tuesday on the sidelines of the Bonn conference.

The center aims to "support those who struggle to put climate adaptation effectively into practice in all parts of the world," the government said.

Housing the water expertise center in the Netherlands was a no-brainer. Some 26 percent of this nation of 17 million people lies below sea level and 29 percent is vulnerable to river flooding. The Dutch struggle to keep the country dry has been a constant fact of life for centuries.

The center will have bases in the northern city of Groningen and in a new floating office in the port city of Rotterdam.

The Dutch government earmarks 1 billion euros (\$1.16 billion) per year to keep up its defenses against high water. The money is spent on maintaining and strengthening dikes and levees and on other water mitigation measures. By 2050, the country aims to reinforce some 1,900 kilometers (1,180 miles) of dikes and levees, Hillen said.

But while the costs are high, expertise and technology developed by the Dutch are becoming increasingly valuable commodities. Annual exports of Dutch water technology and expertise have doubled since 2000 to just under 8 billion euros (\$9.3 billion) a year.



In this Nov. 6, 2017, photo, a man rides a bicycle next to self-raising dike in the Dutch fishing village of Spakenburg, Netherlands. The 300-meter long dike that is raised by the very flood waters it is designed to hold back is an example of Dutch ingenuity in flood prevention that is becoming a major export earner for this low-lying nation. (AP Photo/Mike Corder)

"Water is an asset and a threat," said Ovink.

Recent contracts involving Dutch companies include Netherlands-based Arcadis being selected as part of a consortium involved in a 10-year "seawall resiliency project" to strengthen a century-old San Francisco harbor wall that protects an area including the city's beloved Fisherman's Wharf.

Back in Spakenburg, experts say the self-raising dike is a good example not only of new techniques for holding back rising tides, but also how to integrate such barriers in spatial planning. Sinking the wall into the

sidewalk means that it does not spoil views of the picturesque harbor for tourists or locals. The technology already is being put to use in projects in England, Vietnam and China.

Ovink stresses that it is just one of a multitude of defenses the Dutch have developed to hold water at bay.

"There is no (single) fix," he said. "It's a culture of living with [water](#)."

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