



Public perceptions of

Longitudinal dams

Residents, recreational
anglers and boaters,
shipping professionals



Why this study?



Photo: Beeldbank Rijkswaterstaat

In 2015, longitudinal dams replaced the traditional groynes in the inner bends of part of the river Waal between Wamel and Ophemert. Longitudinal dams are situated parallel to the river flow and divide the river in a main channel and shore channel. This drastic change in the river landscape has consequences for people living, recreating or working in the area.

The main research question of this study was:

How do residents, recreationists and shipping professionals perceive and experience these changes in the river landscape?



Henk Eerden (Rijkswaterstaat): "One of the main aims of the longitudinal dams is to give the Waal more space during high water discharges, and to make sure the water flow is not obstructed. The monitoring project WaalTogether is a partnership consisting of five knowledge institutes, two angling associations, and the representative organisation of the shipping sector. Together we are measuring the effects of this intervention on recreation, nature and safety."

Photo: Laura Verbrugge

Study design

Studying public perceptions and preferences is useful for evaluating river management. Important themes in this study are nature and recreation, living and travelling safely, and trust.

Questionnaires were distributed in 2014 and 2016 among residents of Ophemert, Wamel, Dreumel and Tiel, recreational anglers and boaters, and shipping professionals.

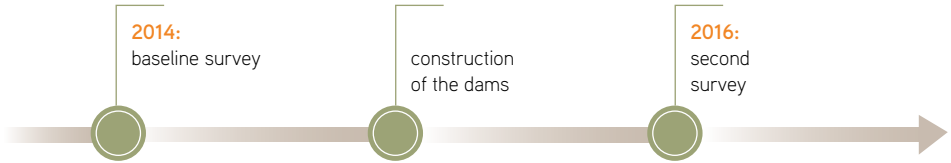





Table 1
Number of respondents for each group

		2014	2016
Residents		1102	880
Recreationists		75	158
Shipping professionals		88	141

Nature and recreation



*"When water levels are low, the dams are clearly visible for hikers. They ruin the view, and you can no longer hear the water hitting the river bank."
(Resident of Tiel)*



*"The dams align well with the river (part of nature)."
(Resident of Wamel)*



"We miss the groynes... they belong to the river landscape. We catch less fish. The natural shelters seem to have disappeared."



"The shore channel has its own character and dynamics but is still 'young'. It is difficult to predict what it will look like in 5 or 10 years."

Residents and recreational anglers experience a strong bond with the area: they feel at home and it is part of their identity. They are also strongly attached to nature in the area. Seventy-five percent of the residents and recreationists find the area attractive for recreation.

The newly constructed dams impact the studied groups in different ways. For example, local residents mentioned bank erosion and the way the view has changed. Recreational anglers perceived the dams more positively after construction compared to 2014, though they still expressed concerns about the availability and accessibility of fishing location, as well as the impact of the dams on nature.

Recreationists and residents remarked that the flow velocity in the shore channel is high. This creates dynamic conditions but also requires adaptation. For instance, recreational anglers use more weights on their rods. The disappearance of sheltered beaches limits some forms of onshore recreation.

A changing landscape



Photos: Alphons van Winden (Bureau Strooming)

Safe living...

Of the four groups, residents and recreational boaters had the most positive views on the longitudinal dams. This was mainly due to the perceived benefits for flood safety.

During high water levels the dams are below the surface (right picture), just as the groynes were.



Photos: Frank Collas



*"To manage the Waal during high waters we need to innovate, not stick with old tricks. The world is changing, so should the Waal."
(Resident of Dreumel)*

...and safe travels?

Shipping professionals expressed their concerns regarding a reduced width of the fairway, longer travel times and increased fuel usage, as well as safety issues due to recreational boating.

Over the past two years the shore channels have often been closed, limiting the experience with recreational boating in the shore channel. Therefore, it is too early to draw any conclusions about potential benefits of the longitudinal dams in terms of creating separate fairways for recreational boating and professional shipping.



"I do not know if and how the dams contribute to flood safety. For professional shipping, however, they lead to many restrictions, and for recreational boaters they create confusion and unsafe situations."



"On a busy river like the Waal, with many ships, it is a lot safer to have a separate lane for recreational boats. The benefits for nature are a positive development."

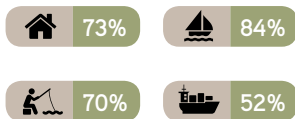
Trust in Rijkswaterstaat

Trust in Rijkswaterstaat was measured using four statements. Levels of trust in the agency in relation to its *main tasks* (flood protection and waterway maintenance) is higher compared to levels of trust in the *data and models* the agency uses and when asking whether the target group *feels taken seriously*. Shipping professionals reported lower levels of trust than the other three stakeholder groups.

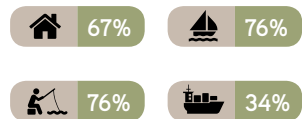
The percentages below represent the groups of respondents who 'agree' or 'fully agree' with the statements (measured on a 5-point scale).



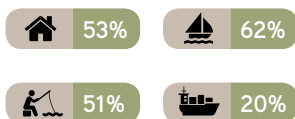
Trust in flood protection



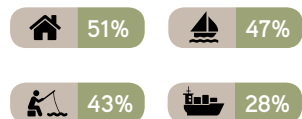
Trust in fairway maintenance



Trust in data and modelling

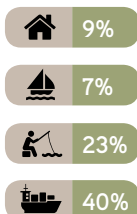


Feels taking seriously

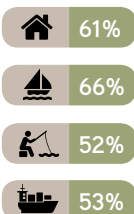


My trust in Rijkswaterstaat is now ... than before the start of the project

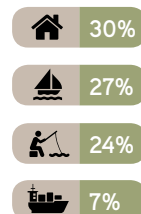
Lower



Equal



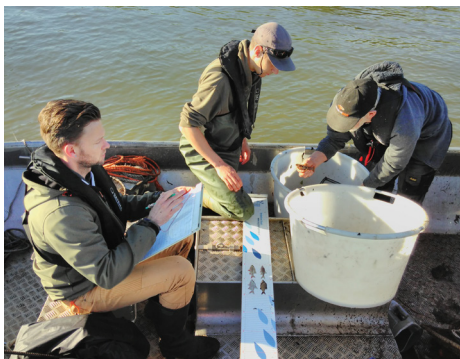
Higher



How are the results used?

- The results of this study are shared with Rijkswaterstaat and other project partners during the monitoring period (2016- 2019), and they inform adaptive management.
- Based on the results of the baseline study in 2014 we initiated a participatory monitoring project, in which recreational anglers report their catches and fishing experiences. This is an important contribution to the monitoring program in terms of the ecological and recreational impacts.
- The study outcomes will be considered in the evaluation of the Pilot Longitudinal Dams by Rijkswaterstaat (East Netherlands department) in 2020.

Photos: Volunteers and Roland van Aalderen



Volunteers participating in the project (2016 and 2017)

Finally, we would like to thank all who participated in this study: everyone who completed our questionnaires, Royal BLN-Schuttevaer, the Royal Dutch Angling Association and Rijkswaterstaat (East Netherlands department).

Further reading

Verbrugge, L.N.H. & R.J.G. Van den Born, 2018.

The role of place attachment in public perceptions of a re-landscaping intervention in the river Waal (The Netherlands). *Landscape and Urban Planning* 177:241-250

Ganzevoort, W. & R.J.G. Van den Born, 2018.

Exploring place attachment and visions of nature of water-based recreationists: The case of the longitudinal dams. *Landscape Research*

Verbrugge, L.N.H., W. Ganzevoort, J.M. Fliervoet, K. Panten, R.J.G. van den Born, 2017. Implementing participatory monitoring in river management: The role of stakeholders' perspectives and incentives. *Journal of Environmental Management* 195:62-69

Facebook - www.facebook.com/vissenlangsdedam

RiverCare - www.rivercare.nl



Colophon

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Cover photos

Beeldbank Rijkswaterstaat (aerial photo and bottom left), John Genessen (second left) en Laura Verbrugge (right)

Layout

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RiverCare

Towards self-sustaining multifunctional rivers

Nijmegen, Institute for Science in Society,
Radboud University, October 2018.

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