



Photo: Fallander



Photos: Zinke

Planning goal: Improve the multi-functional river-scape



The *Joint Statement* and the *Manual* are general tools based on a respectful dialogue

Developed by



Comments & contributions

EC – DG MOVE & DG ENV
DE, HU, SK Ministries of Transport & of Environment
Intl. Sava Commission
WWF-DCP, IAD, ÖKM, Virus
Well Consulting, IMDC,
PIANC

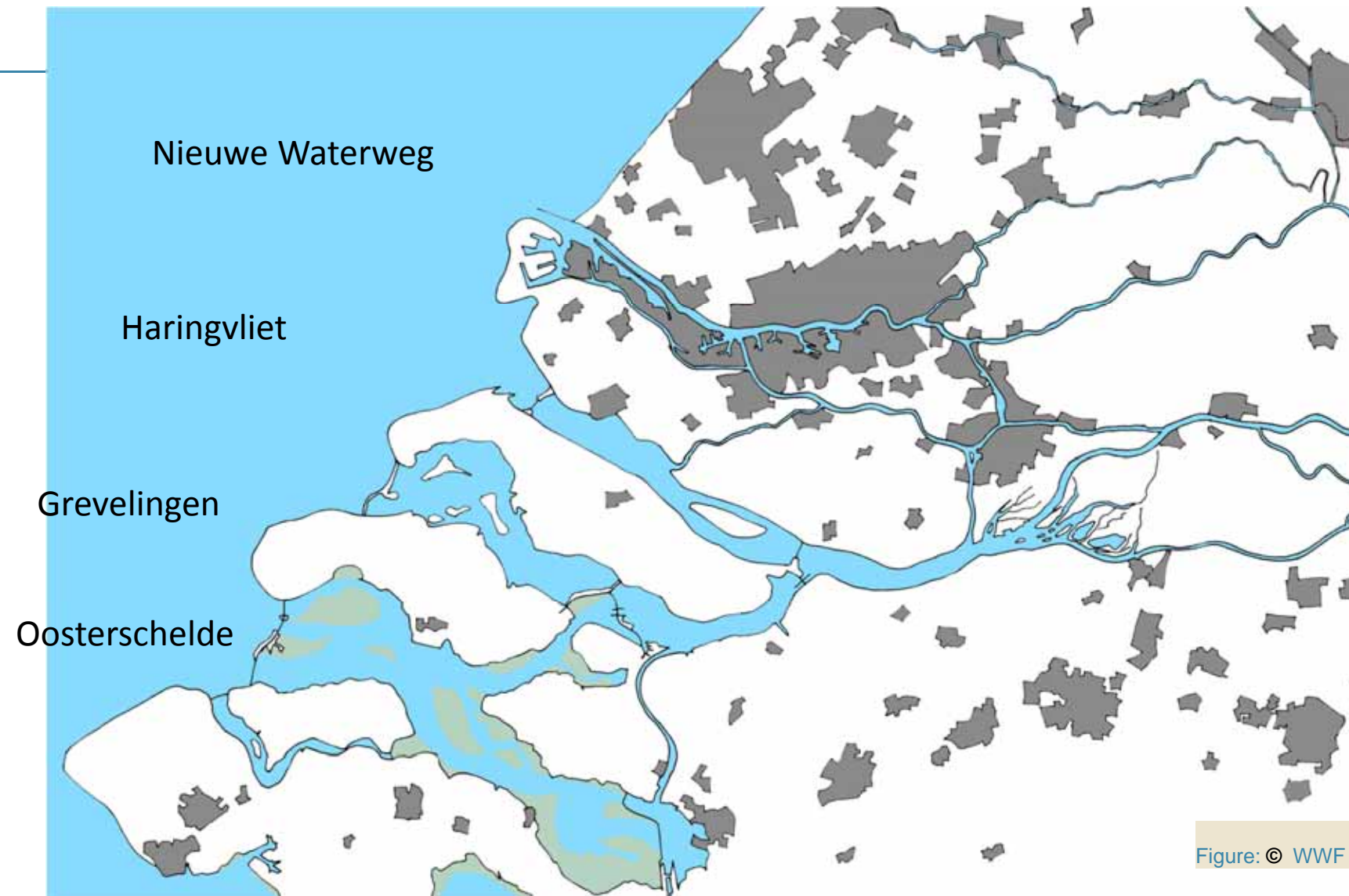
**Download at www.riverpolicynetwork.jimdo.com
or www.naiades.info**

Haringvliet is in the Rhine Schelde Meuse Delta



Figure, photo: © WWF NL

Complex of the Rhine Schelde Meuse Delta



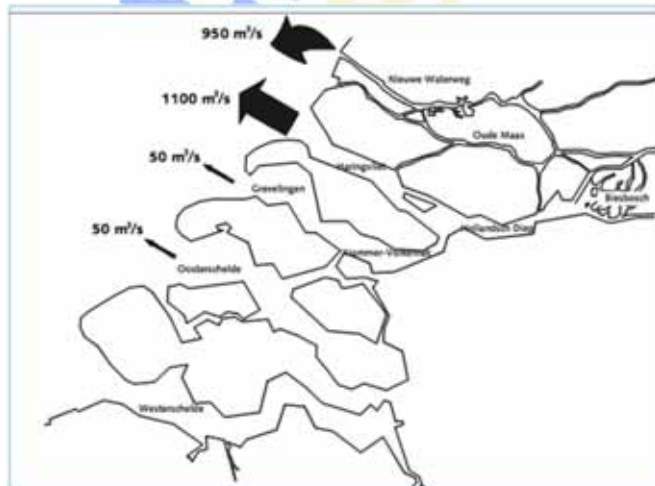
Deltawerken coastal protection system in the Rhine delta



In the 1990s, the Netherlands started to **review and re-think** this systems against storms (= floods) and climate change (sea water rise - altered availability of freshwater for drinking and agriculture):

- Re-build or partly re-open some of the huge barriers they built before.

Original situation - open delta



Present situation

Benefit of the dam

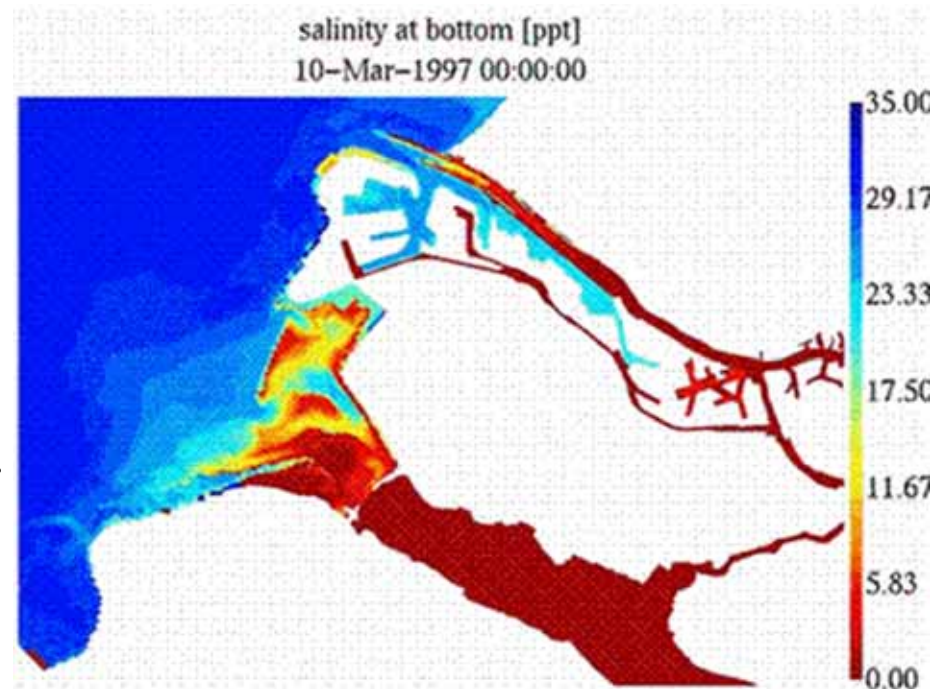


Closing off the Haringvliet estuary arm (of the river Rhine) in 1971 ensured a freshwater supply and protection against sea floods.

Changed perspective

The Haringvliet dam caused also important disadvantages:

- Disappearance of the brackish water transitional area - unique flora and fauna.
- Disappearance of tidal effects resulted in banks caving in.
- Fish migration ceased strongly.



Preferred solution for dam re-opening

Four options for opening up the Haringvliet sluices were reviewed from 1994 to 1998 (including environmental assessments):

Keeping some of sluices open (“*Kierbesluit*”) most of the time was the preferred option!

This should be tested in order to first gain experience.

Effect: 1 metre tidal difference and the restoration of the tidal effects and of the original ecological system in the western part of the Haringvliet.

So the eastern part of the Haringvliet could maintain its supply for local communes and agriculture.

Haringvliet re-opening

The aim of this so-called "kierbesluit" is to relaunch the migration of fish, especially salmon from the sea into the river.

Before the dam can be reopened, 2 fresh water intakes still have to be moved upstream: budget gap!



Yes or no?

Government decision to re-open it: 2000; re-affirmed in 2008.

But repeated discussions in NL to keep the Haringvliet sluices closed.

Political pressure from upstream countries (CH and DE - *Intl. Rhine Protection Commission: joint* commitment under WFD-RBMP 2009), and threat of claims: The government had to give in!

September 2012: a new national government

Dec. 2012: The new minister will review the investment needs by April 2013

Surprise: The local government at Haringvliet publicly demanded from the government to now find this extra money to re-open the dam as soon as possible: They expect that the restored water quality and fish migration will improve the attractiveness of the estuary area for new residents and recreating people.

WWF therefore believes that at latest in 2015 the partial re-opening of the Haringvliet gates will be started.

Nagara River Estuary Dam

Nagara estuary habitats are lost

Degraded freshwater habitats
upstream of Nagara dam



Brackish water habitats at
nearby Ibi river

Local fisheries are in decline



Nagara Estuary River Dam Issues

System of 3 de-regulated rivers (de Rijke 1842):

- Separated/isolated flood management of 3 rivers
- Saltwater intrusion: no problem on Ibi, Kisu rivers

Dam altered the hydro-morphology and saline mix

- Decaying ecology and biodiversity:
 - Loss of tidal effects and brackish water habitats
 - Fish in serious decline: much more stress - no brackish water to adapt their physiology
- Affected economy: fisheries, tourism
- Expensive operation: who pays and who benefits?

Fish by-passes

Impressive facilities but are they **effective (best)** operated from fish ecology point of view?

➤ Staff of dam facility needs biologists (fish, limnology)

Serious decline in fish migration:

o Can the by-passes compensate the real problem?

