

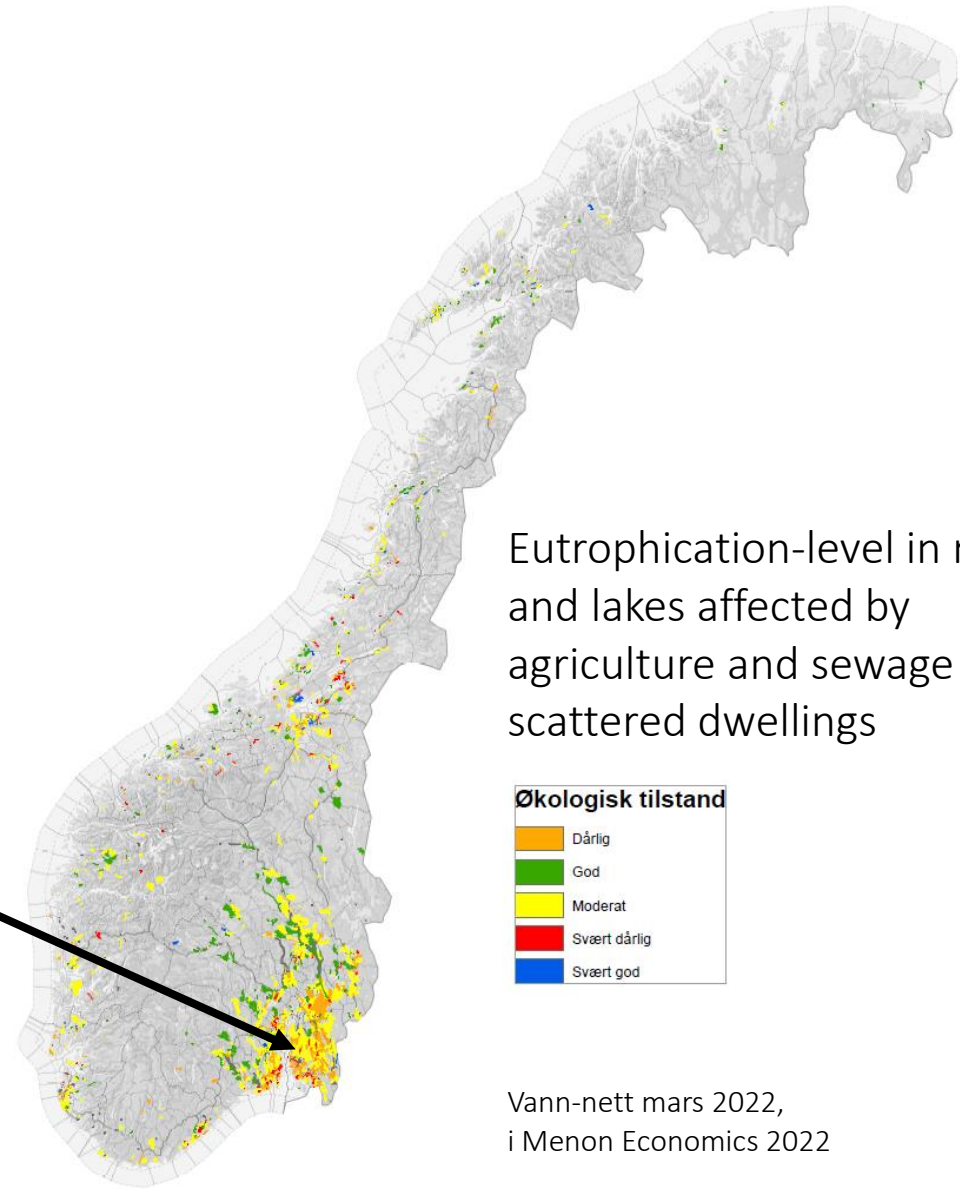
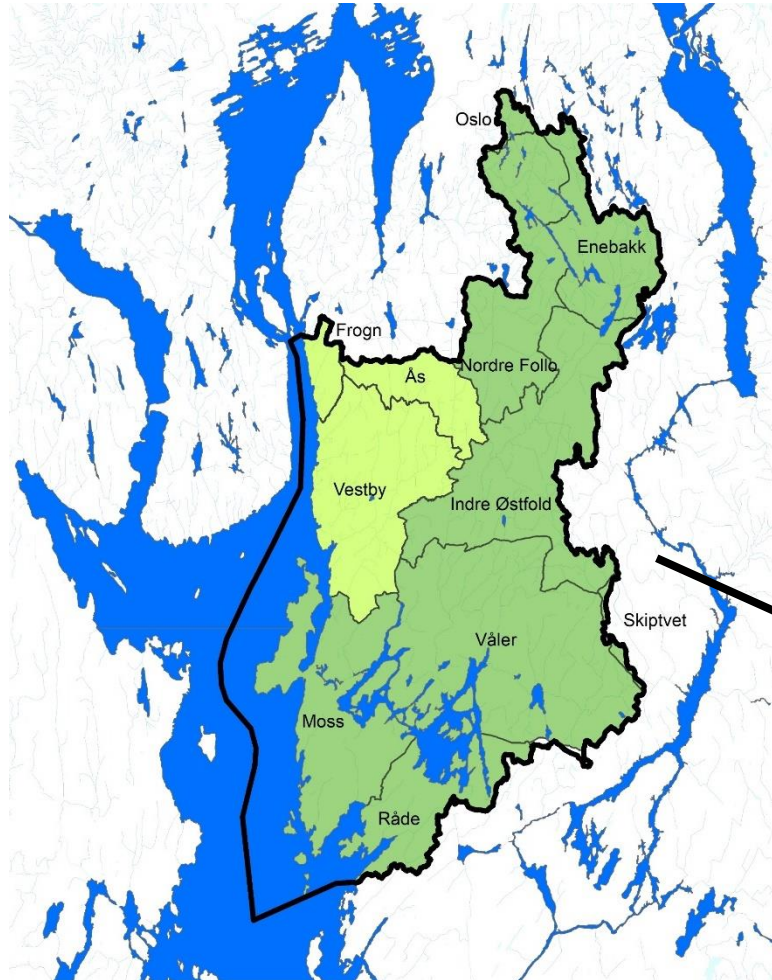
Eutrophication – Morsa, Norway

Nordic Water Framework Directive Conference, 26. September 2024

Carina Rossebø Isdahl, the Morsa catchment



The Morsa catchment



Vann-nett mars 2022,
i Menon Economics 2022

Background

Poor water quality in lake Vansjø

- Drinking water
- Important recreational area
- 2001-2007: Heavy blooms of toxin-producing cyanobacteria, leading to bathing bans and a local concern for the health of the lake

The «Morsa-project» was established in 1999

- Local, regional, and national authorities joined forces with research organizations to develop a knowledge-based mitigation plan to reduce nutrient loading to the lake.
- Cooperation between 9 municipalities to implement the necessary measures to improve the water quality in lake Vansjø.



Giftige blågrønne alger farget vestre og nedre Vansjø grønn, og førte til badeforbud fra 2001-2007. Foto: Eva Skarbøvik/Bioforsk

Important measures

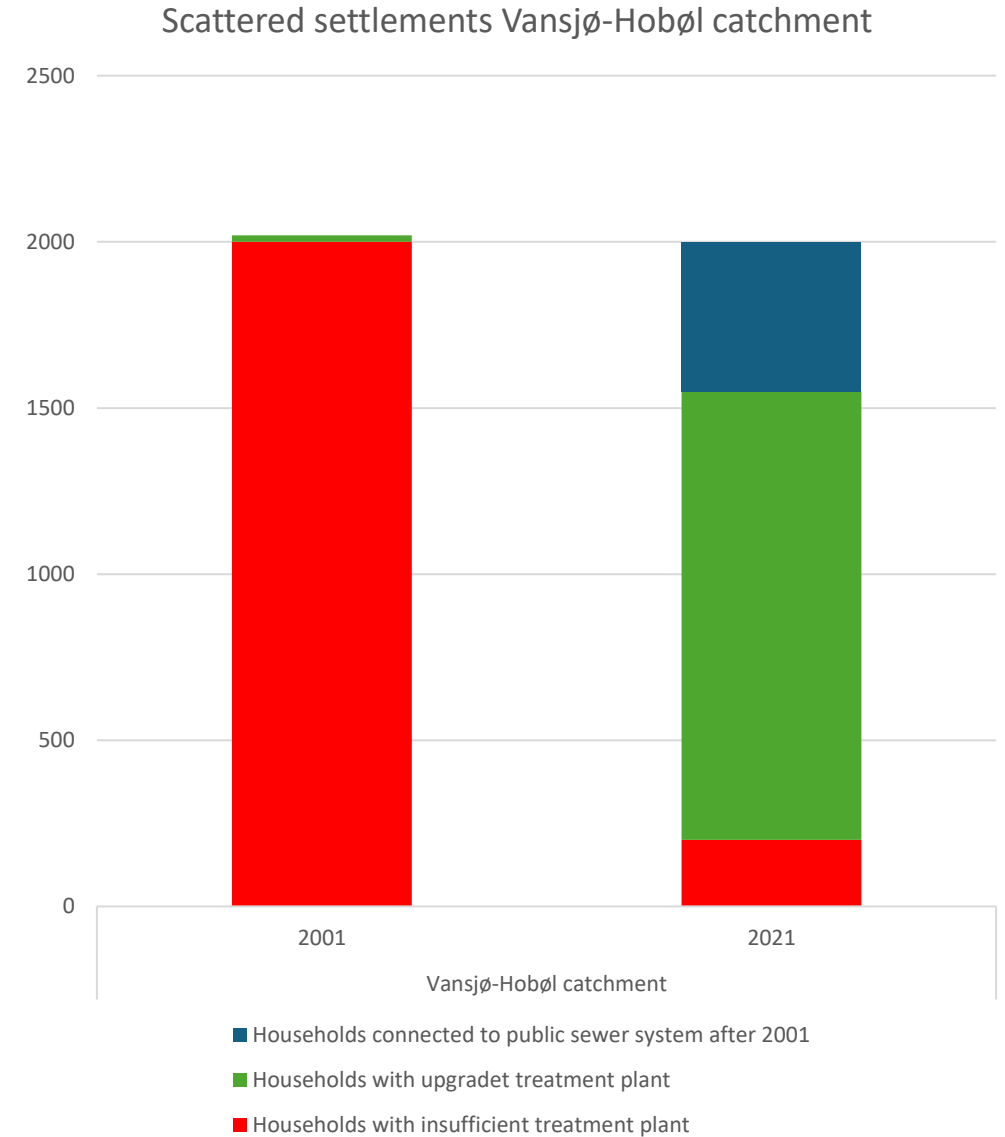
- Agriculture
- Waste water
 - Scattered settlements
 - Upgrades of the public sewage systems
- Other measures and projects



Wastewater - scattered settlement

All the municipalities had to prioritize to work with scattered settlement – upgrade separate sewage system to a modern solution or, if possible connection to the public sewage system.

Most households upgraded their sewage system between 2002-2010





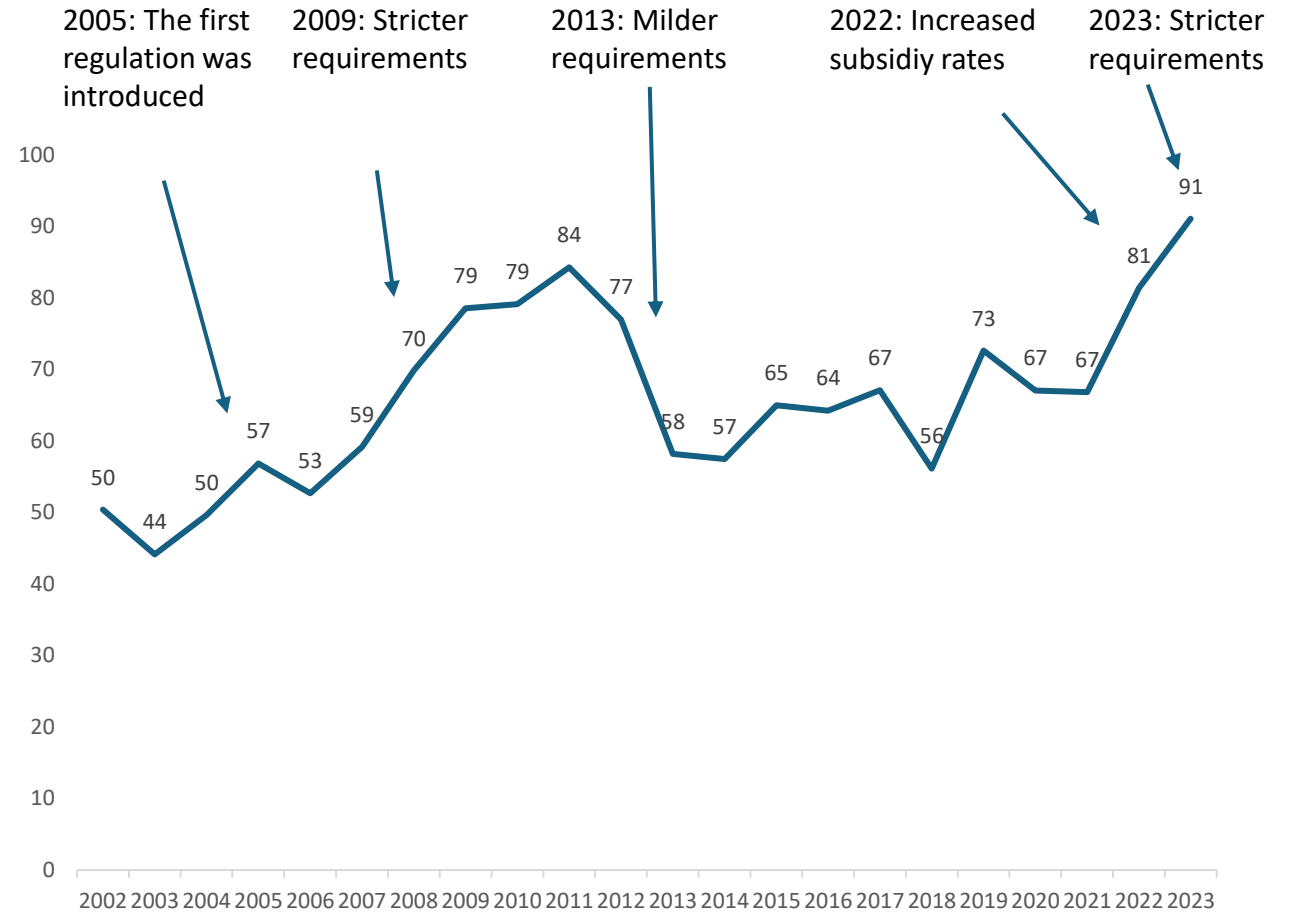
Agricultural measures

Important measures:

- No tilling in autumn
- Grass covered buffer zones and waterways
- Correct use of fertilizer, amount and timing
- Sedimentation ponds
- Catch crops
- Restoring riparian zones

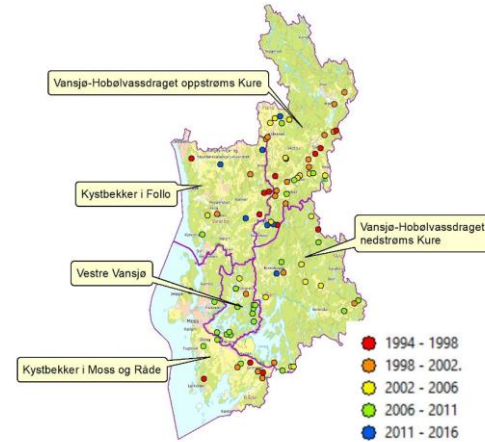
Environmental regulations are necessary!

- Environmental regulations since 2005, varying requirements
- Subsidies
- Environmental counselling for farmers

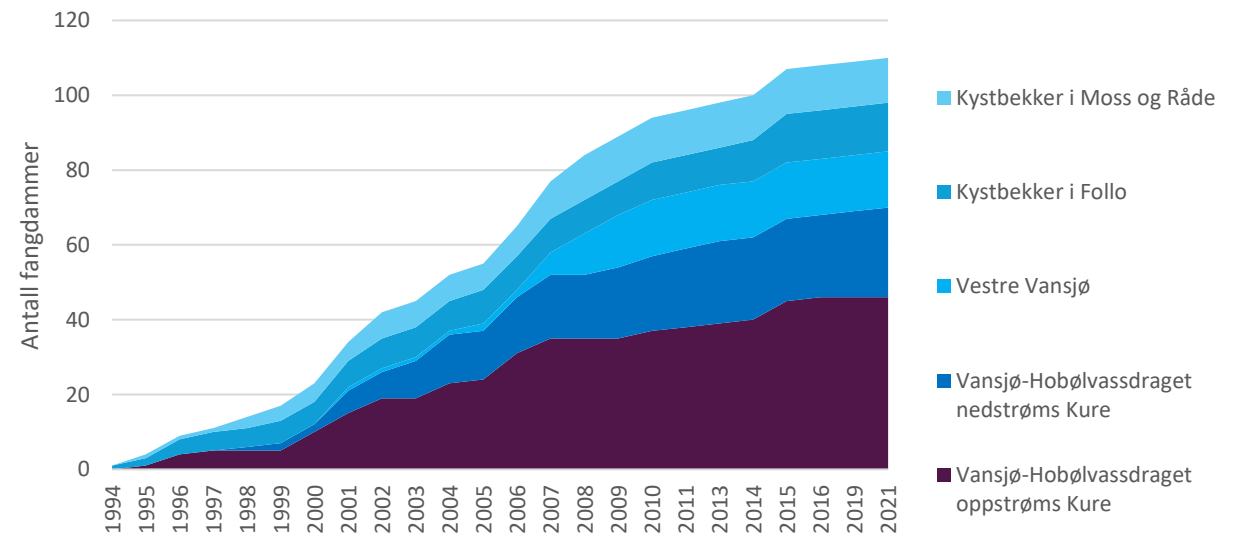


**% of grain area with no tilling in autumn
Vansjø-Hobøl cathment**

Sedimentation ponds



- Established 110 sedimentation ponds in the Morsa catchment
- Maintenance of the ponds are important



Restoring riparian zones

- Vegetation along the watercourses has many positive effects on the environment
- Morsa offers landowners trees for free
- Planted more than 23.000 trees in the Morsa catchment

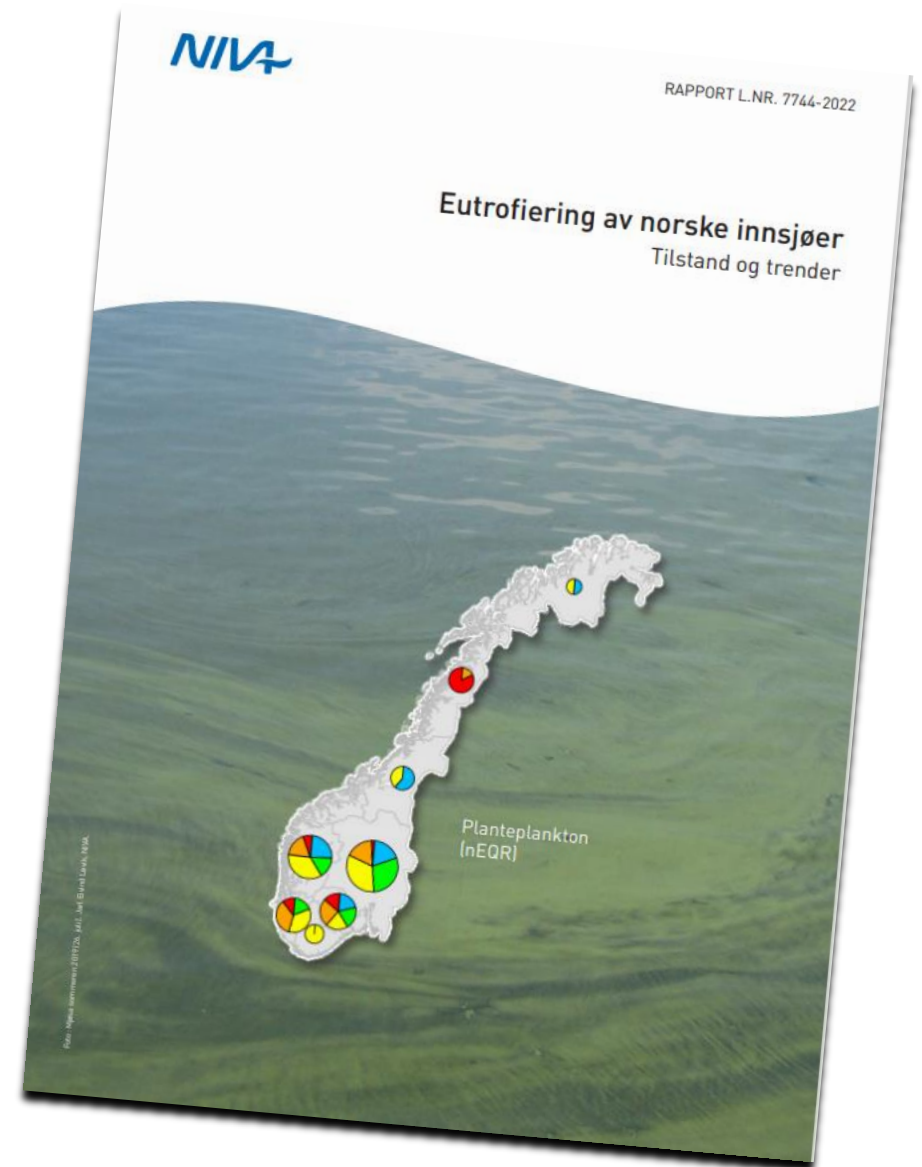


Effect of implementation of measures over time

NIVA-report 2022:

Development in eutrophic lakes in Norway

- Found improvement in lakes for phosphorus and chlorophyll-a in three different catchments in Norway;
Morsa, Haldenvassdraget and Jæren
- Sewage- and agriculture measures have been carried out in a long time in these catchments



The efforts pays off!



Giftige blågrønne alger farget vestre og nedre Vansjø grønn, og førte til badeforbud fra 2001-2007. Foto: Eva Skarbøvik/Bioforsk

NYHETER

Fikk endelig badeplassen tilbake



F.h. Henrik L. Guterud, Sara Johansen, Sander Cornelius Linder Halmes og Julie Dahl koste seg stort med å bade i Nesparken i går.