

Water Management in Cooperation with Agriculture – Challenges and Solutions in Lower Saxony

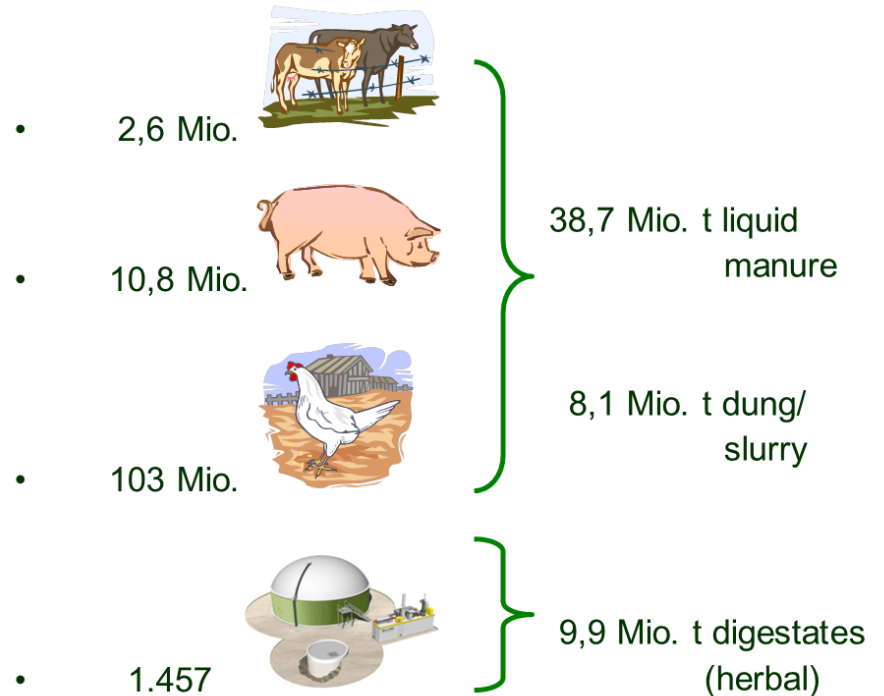
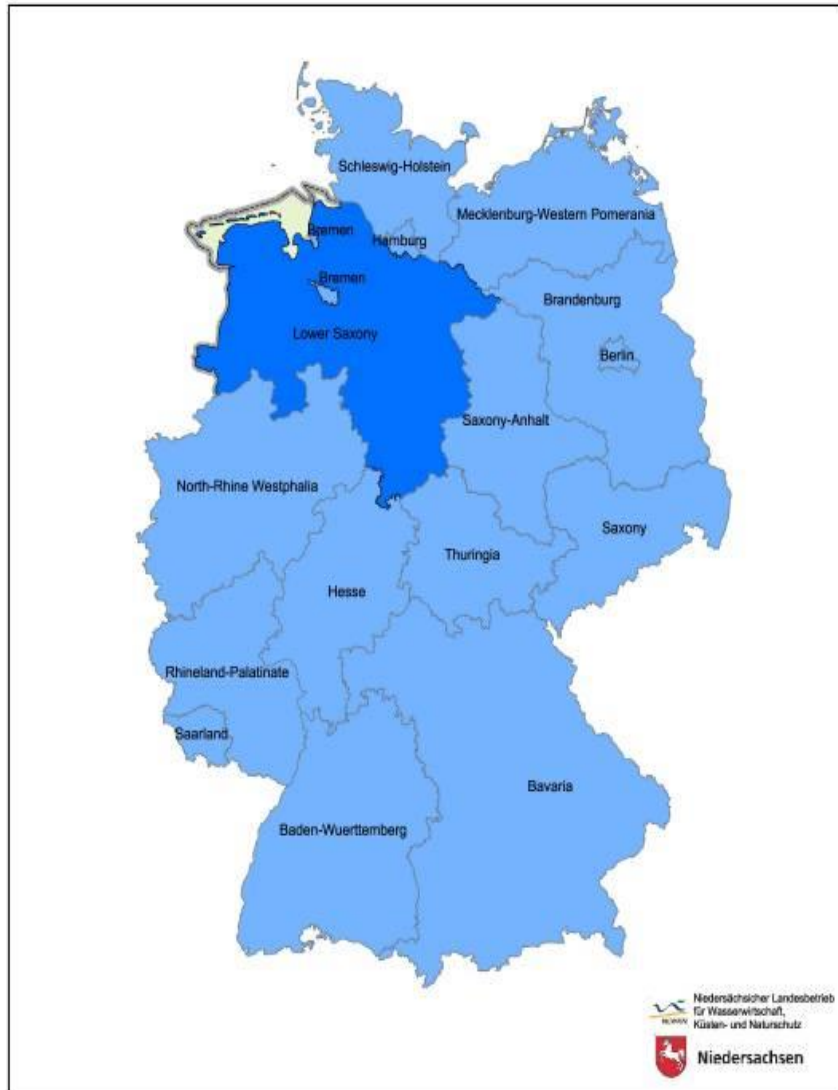
Resource Efficiency in Practice – Closing Mineral Cycles

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Chamber of Agriculture (modified)

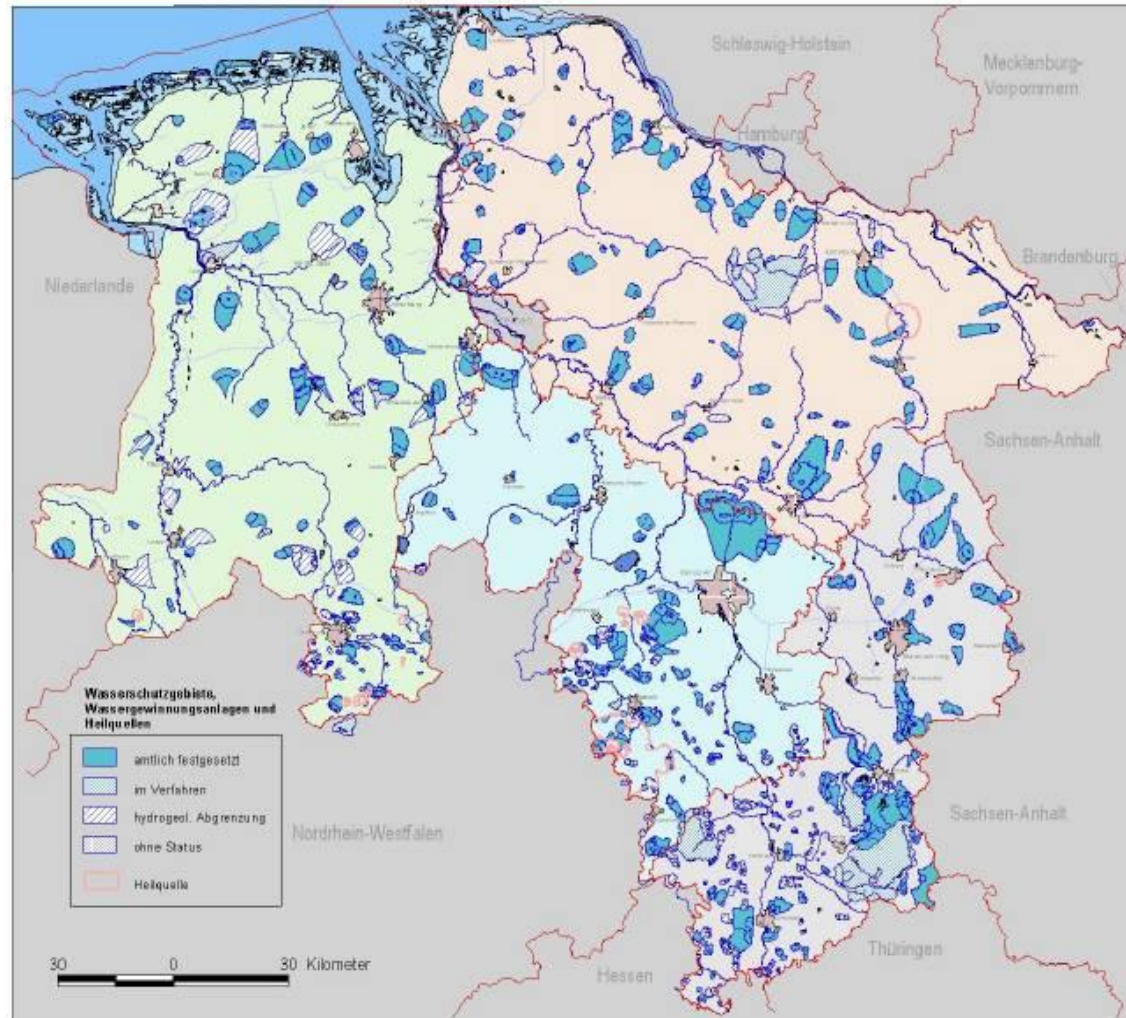
1. The Challenge

- Diffuse Pollution from Agriculture
- Major Pollutant **Nitrate**

2. The Cooperative Approach

Milestones 1992 – 2005 – 2010...

Cooperative Approach in Water Catchments



376 Catchments

160 Water Suppliers

74 Co-operations

12.760 Farmers

Agricultural Land
308.000 ha (12% of LS)

Round Table – Members of the Cooperation



Chamber of Agriculture (modified)

Free Consultancy Service for the Farmers

Measure Planning, implementation and impact monitoring based on statewide standards

→ Handbook for groundwater protection

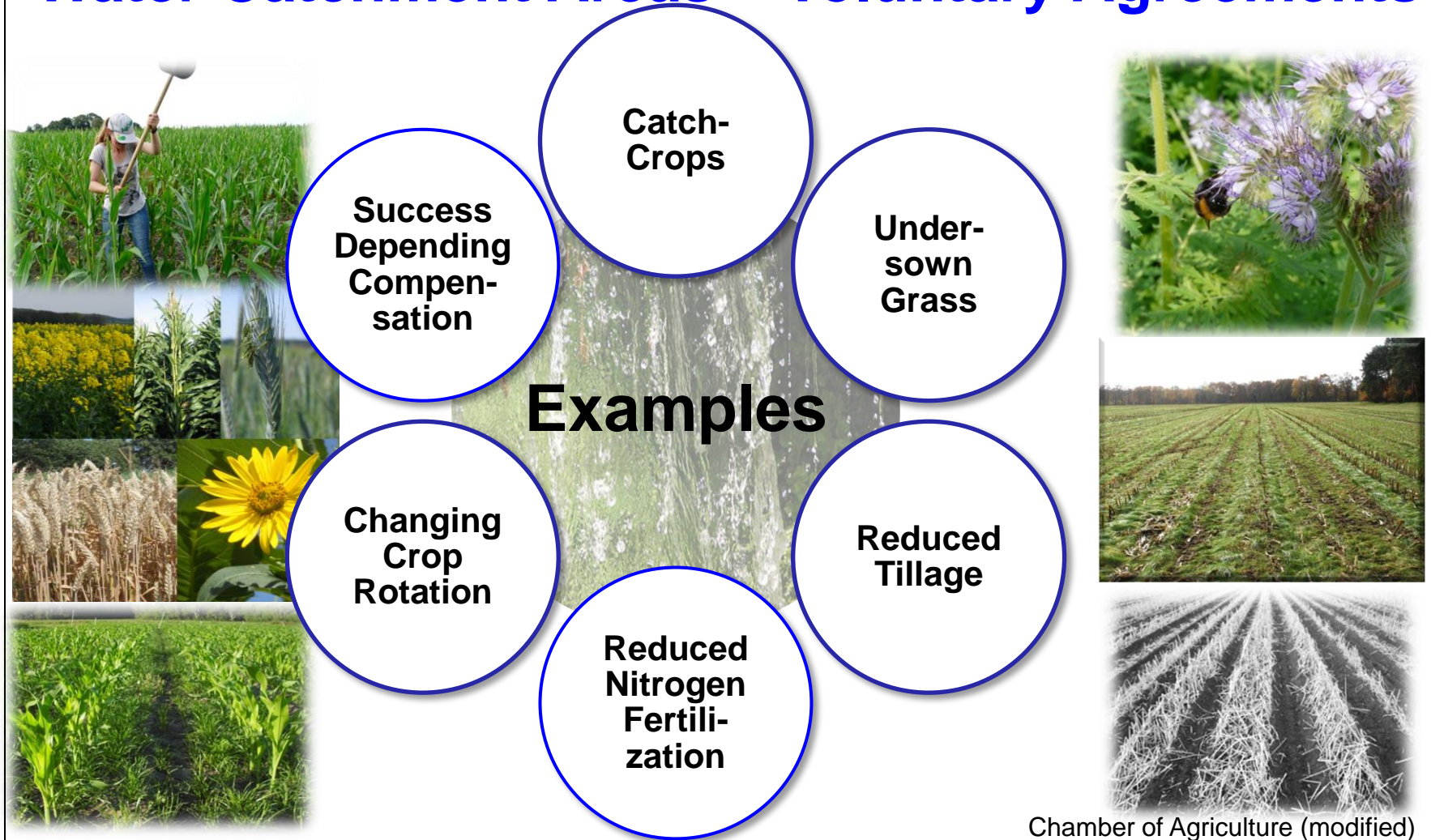
→ Outcomes from pilot projects

Data collection and assessment

→ Annual reports



Water Catchment Areas – Voluntary Agreements



Chamber of Agriculture (modified)

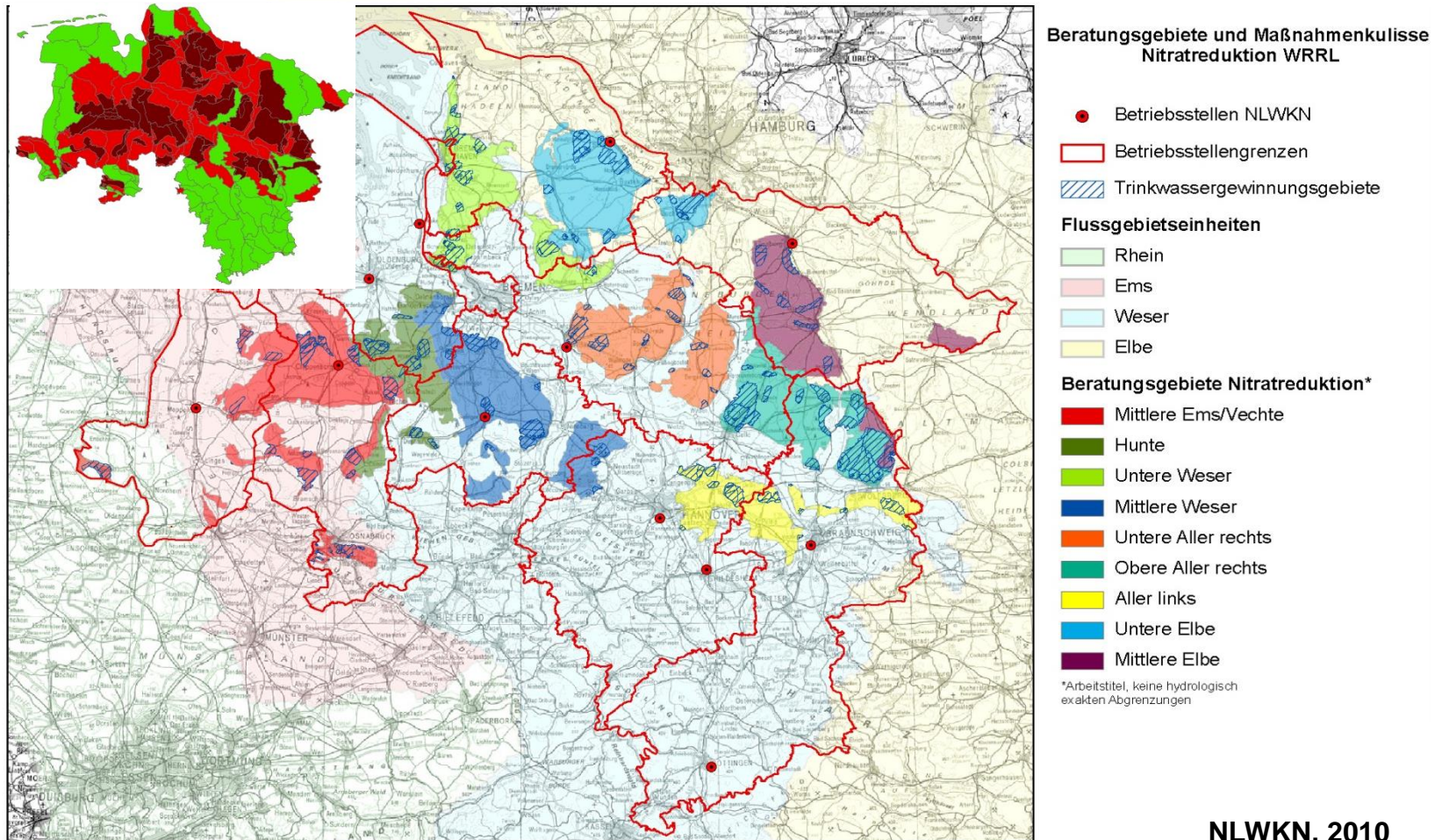
EU Life Project *WAgriCo* (2005-2008)



- **Communication and participation structures**
 - **Measure testing** and continuous improvement
 - Estimation of the **reduction requirements**
 - Concept for **impact monitoring**
 - **Implementation** of measures into the current **AES** in LS
 - National / international **knowledge exchange and transfer** of results
- **Key messages and layman report**
- **Corner stones for the measure implementation starting 2010!**

www.wagrico.de www.wagrico.org

2010 – Measure Implementation in the WFD Target Areas for GW

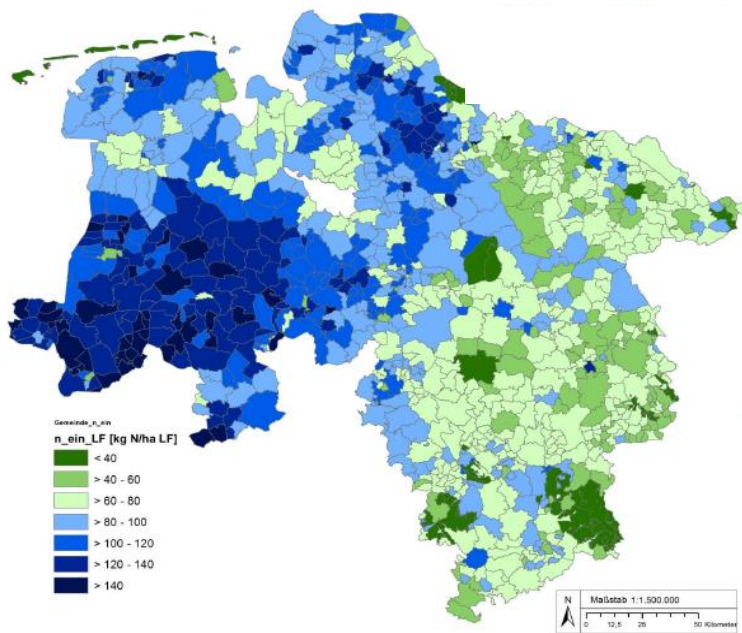


NLWKN, 2010

3. Success And Lessons Learned

- Success by the consultancy service – high acceptance
- Evident reduction of diffuse pollution by the cooperative approach in Lower Saxony e. g.
 - *N-reduction of farmgate and field plot balances*
 - *Improved organic fertilizer management*
 - *Less mineral fertilizer input*
 - *Decreasing nitrate concentration in wells*
- ➔ **Consultancy Service plays a key role!**
- Low acceptance of agri-environmental measures
 - EU co-financed – administrative constraints e.g. 5-year contracts
 - compensation payments vs. dynamic agricultural market

4. Current Constraints And Need For Action



1. Average **N-surplus** on agricultural land [kg/ha] in 2007/2010 is **approx. 85 kg N/ha statewide**

2. The **individual fertilizing practice** is approx. 30 kg N/ha above good agricultural practice (gap)

3. High density of **biogas plants** (ca. 1500 in the Weser Ems region) – reflux of the digestates onto the fields

Remarkable N-reduction by *Basic Measures* (WFD, Art. 11, [3] is inevitable:

- Strict compliance with „gap“- enforced controls
- Adequate allowance of organic fertilizer in the fertilizer management
- Increased N-efficiency by substitution of mineral by organic fertilizer
- Common consideration of N and P (P as a limiting factor)
- Qualified and controllable mass flux management for organic fertilizer
- Comparable indicators for basic and supplementary measures
- Strict regulations by the amendment of the fertilization ordinance

6. Final Conclusions

- The cooperative approach in LS is a success story
- Stronger focus on result oriented measures
- Strict compliance of good agricultural practice
- In addition to nitrate also pesticides are in the focus
- The goals of the WFD can only be reached by **basic** and **supplementary measures** going hand in hand!

Thank You for Your Attention!



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