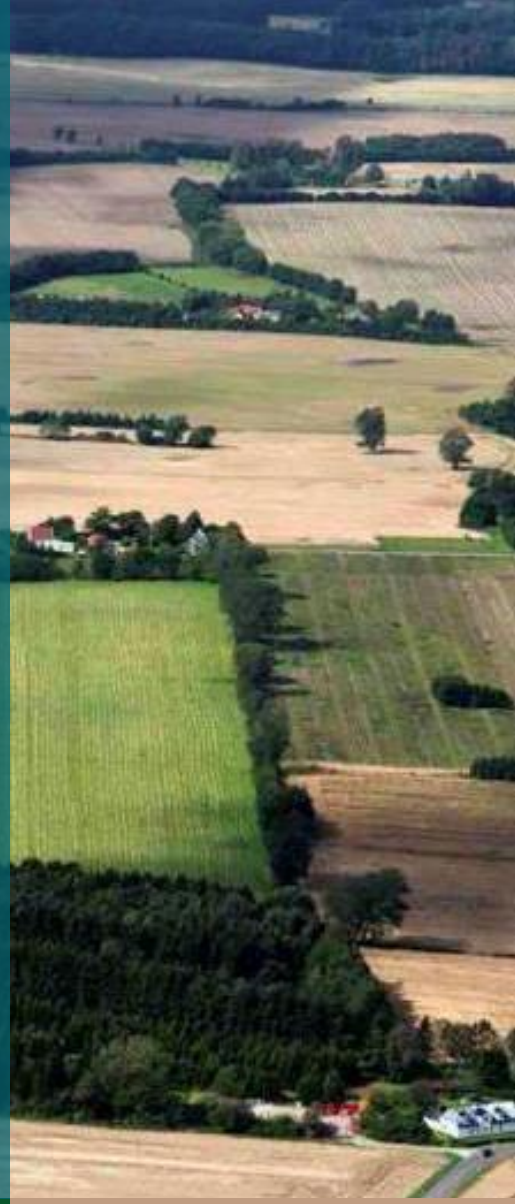
Danish agricultural regulation

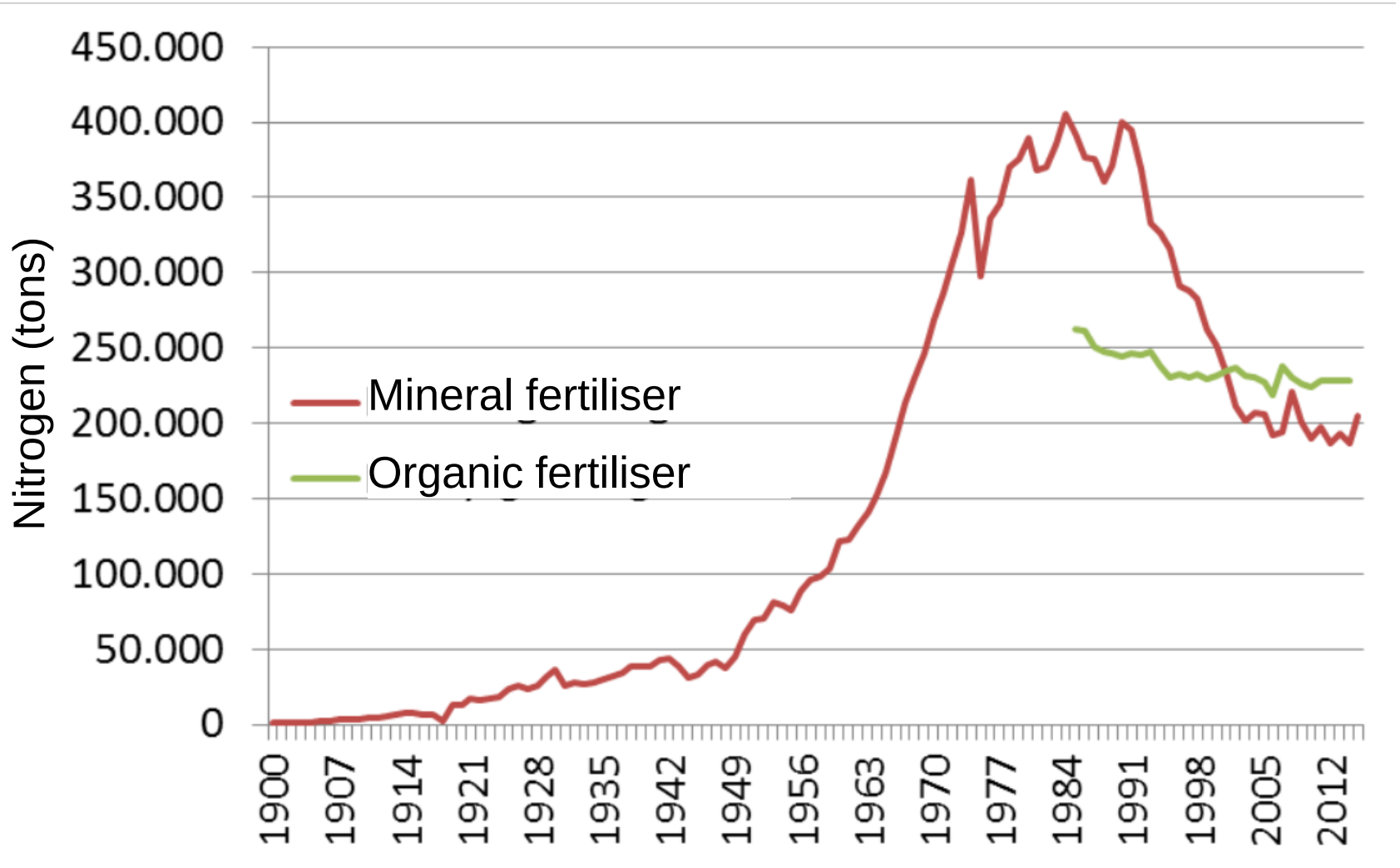
Kristoffer Piil, SEGES - Crop innovation



Noget at leve af. Noget at leve for.

Time	Plan	Significant elements in legislation:
1985	NPO-plan	-regulation of allowed animal unit per ha. - min. storage capacity for animal manure
1987	Water Environm. Plan I	-50 pct reduction in N-leaching from agr. -65 pct ”autumngreen fields” -Slurry in autumn only to wintercov. fields
1992	Action plan for sustainable agriculture	-Slurry only to grass or oilseed rape in autumn -Max. N-standards for crops (N-quata per farm) -Min. utilisation of nitrogen in animal manure -Fertilizer plans and -accounts.
1998	Water Environm. Plan II	-10 pct decrease of N-standards (The N-quota) - 6 percent ”super” green fields in autumn -15 pct higher utilization of N in animal manure
2003	Water Environm. Plan III	-Target for decrease of P surplus -More wetlands - 10/14 pct. covercrops (10 at <80kg manure-N pr ha., 14 at >80 kg manure N pr. ha)
2011-2013	WFD	-More cover crops -Establishment of wetlands
2016	Agricultural package WFD 2. gen plans	- Area specific regulation based on need to obtain ”Good Ecological Quality” - N-standards back to financially optimal levels (gain of ~160$ pr. ha) - Raised N-standards compensated by 140.000 ha of cover crops - Max. 170 kg N pr. ha (previously 140) for pig production

Nitrogen use in Danish agriculture



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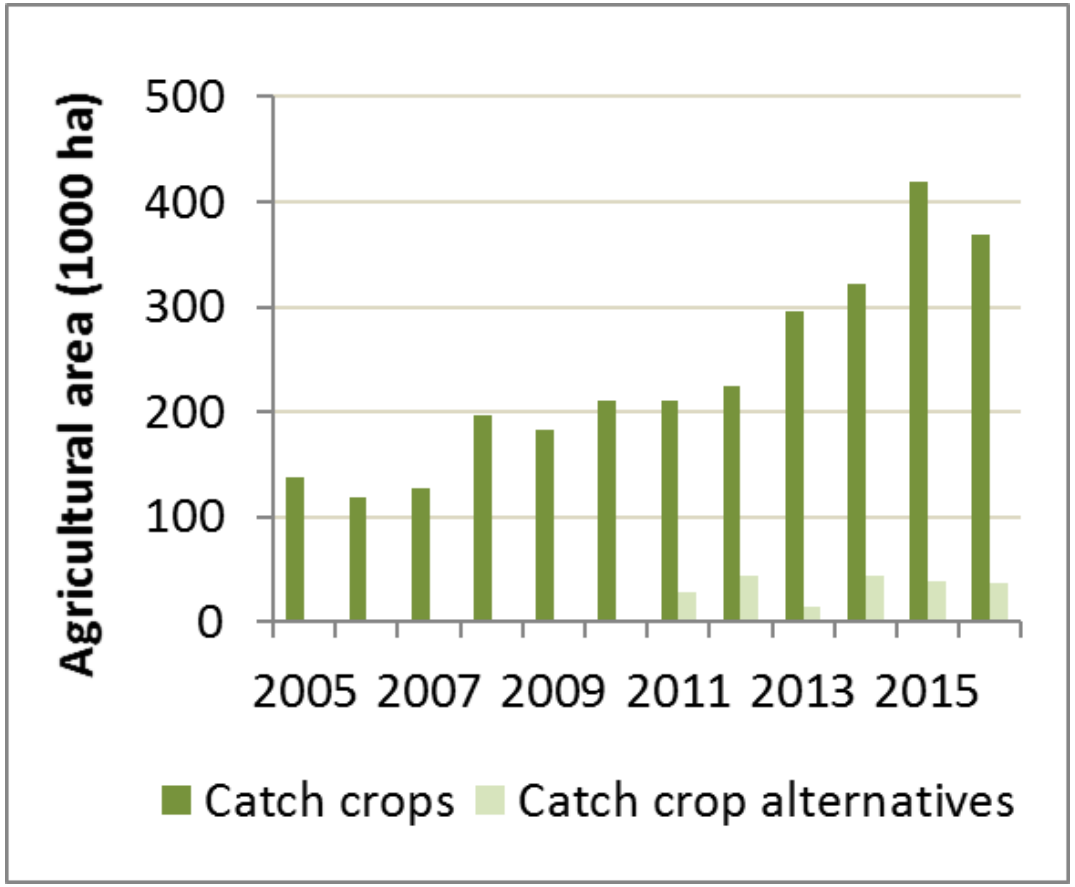
Catch crops



Blicher-Mathiasen

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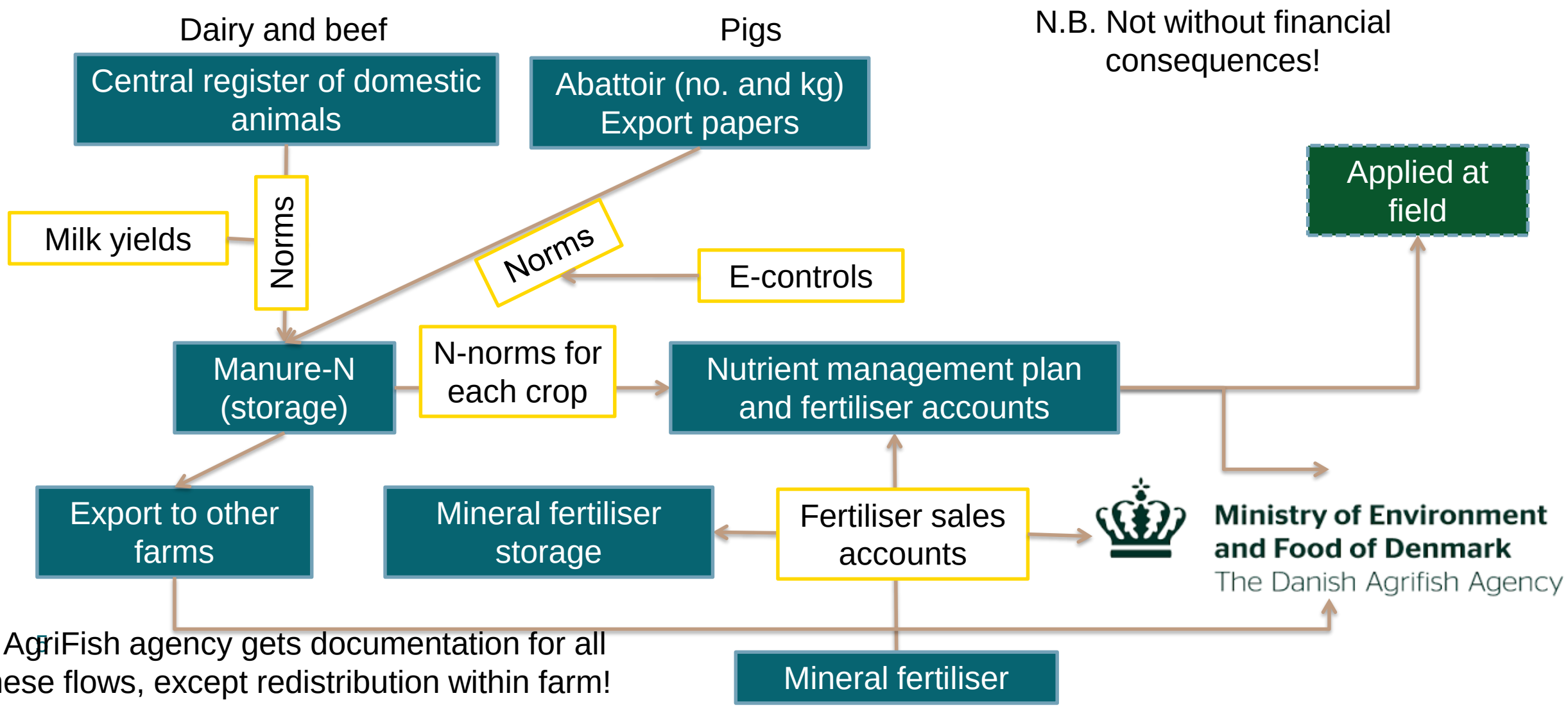
Danish fertiliser accounts and nutrient management plans – a closed mass balance based on register data



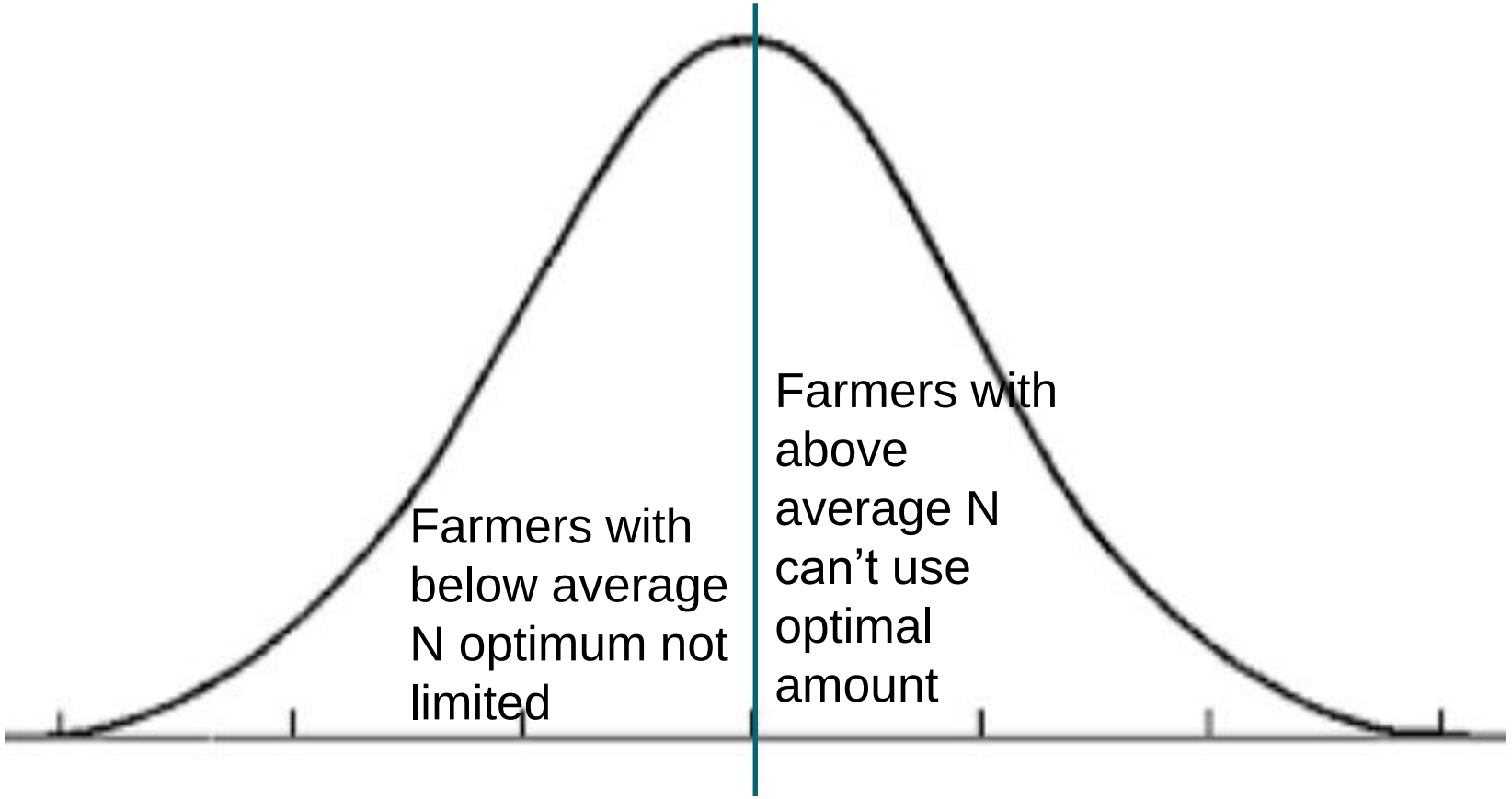
The AgriFish agency gets documentation for all of these flows, except redistribution within farm!

N quota system

Quotas are set at the financially optimal N fertilization rate

From 1998 to 2015 quotas were set 10 – 20 % below the economic optimum

Due to high financial farmer, quotas have been increased to optimal rates since harvest 2017.



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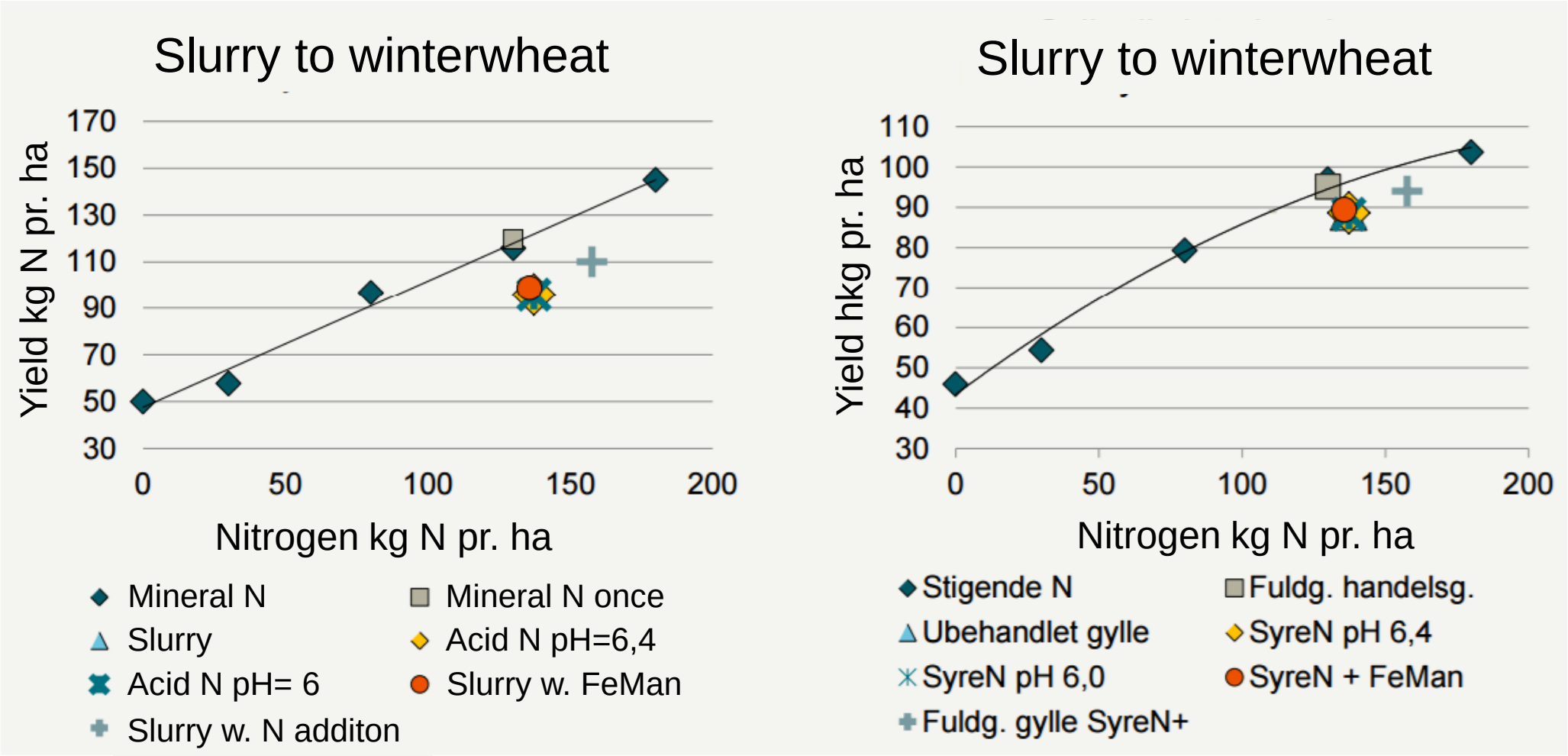
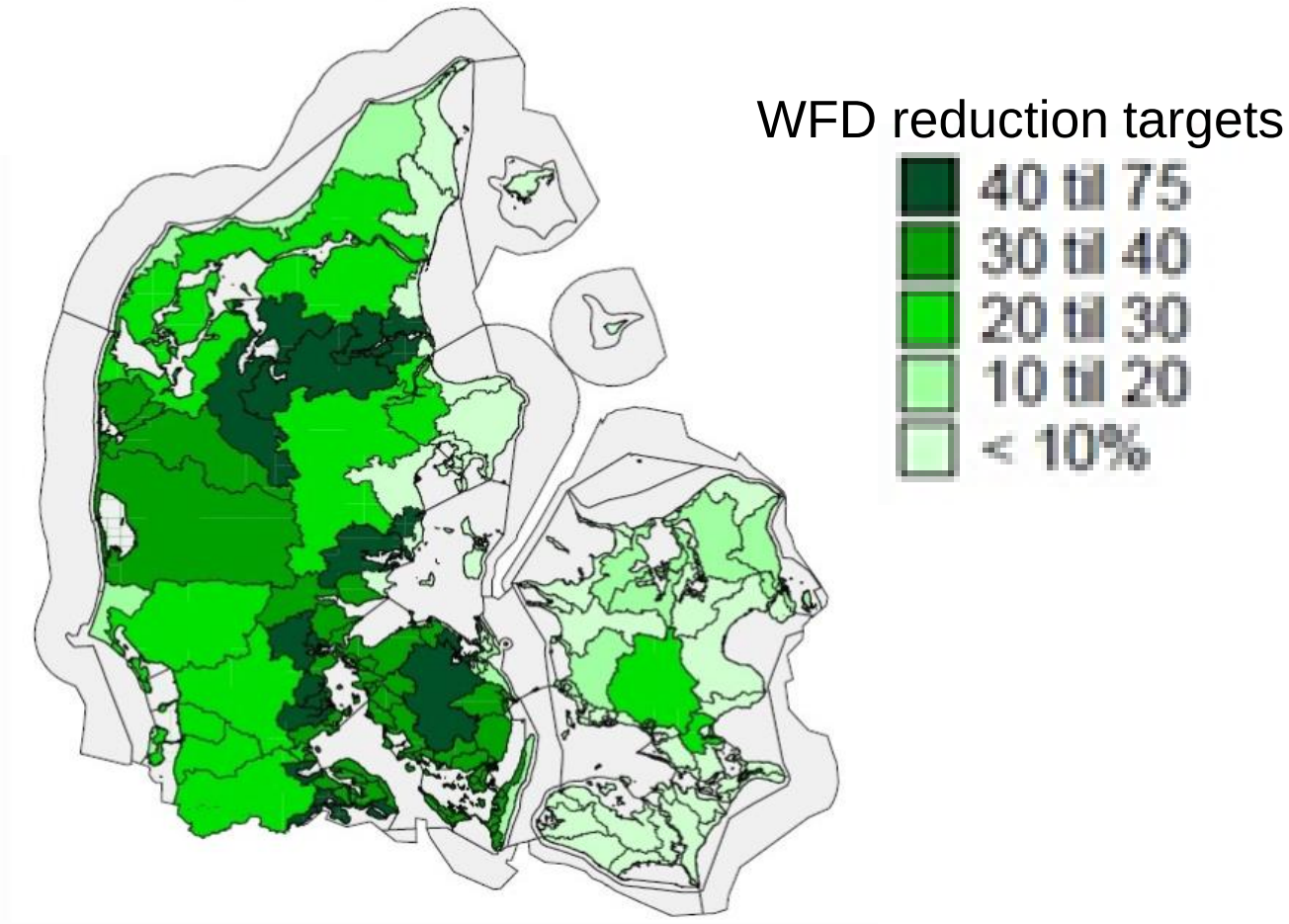
Utilisation of slurry– field trials



Pig or mink slurry, 8 field trials 2013-2015

Further demands for N loading reduction



Fra Erichsen m. fl., Vand og Jord, 2015

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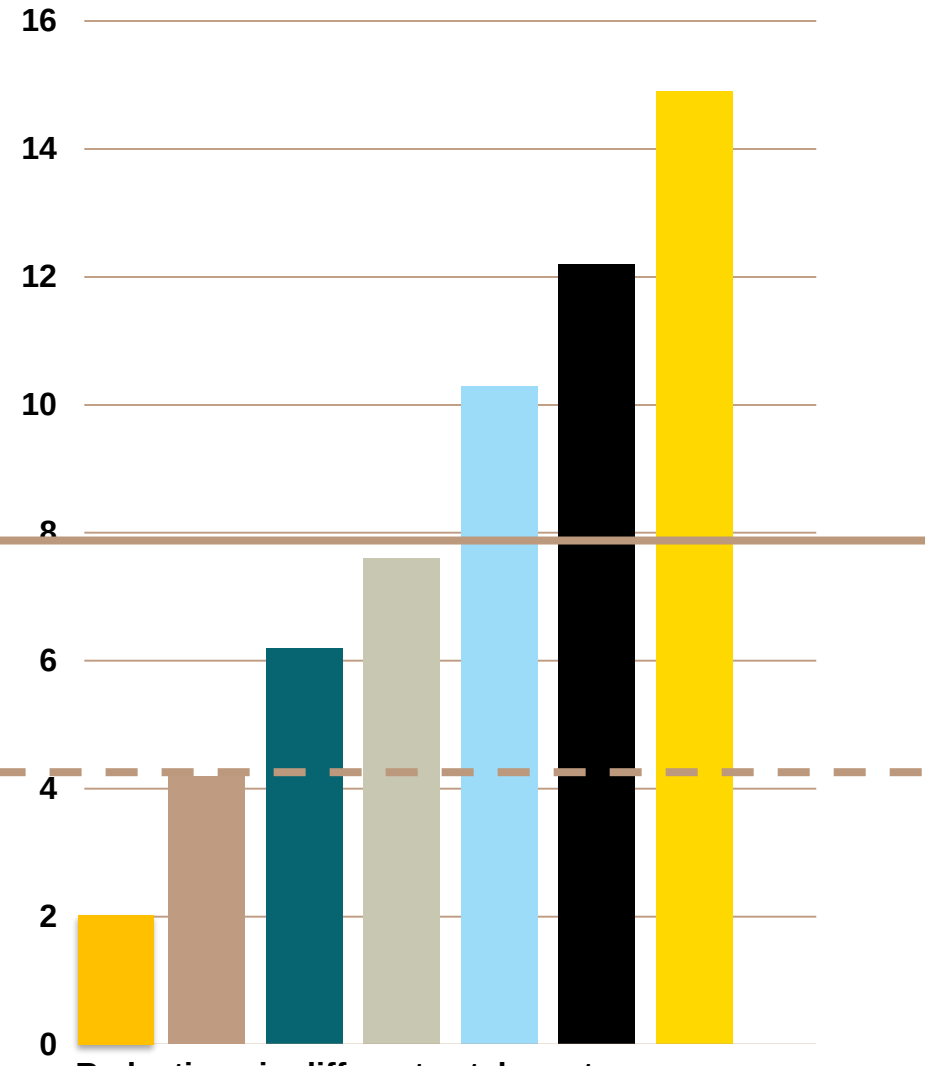
Regulation principles

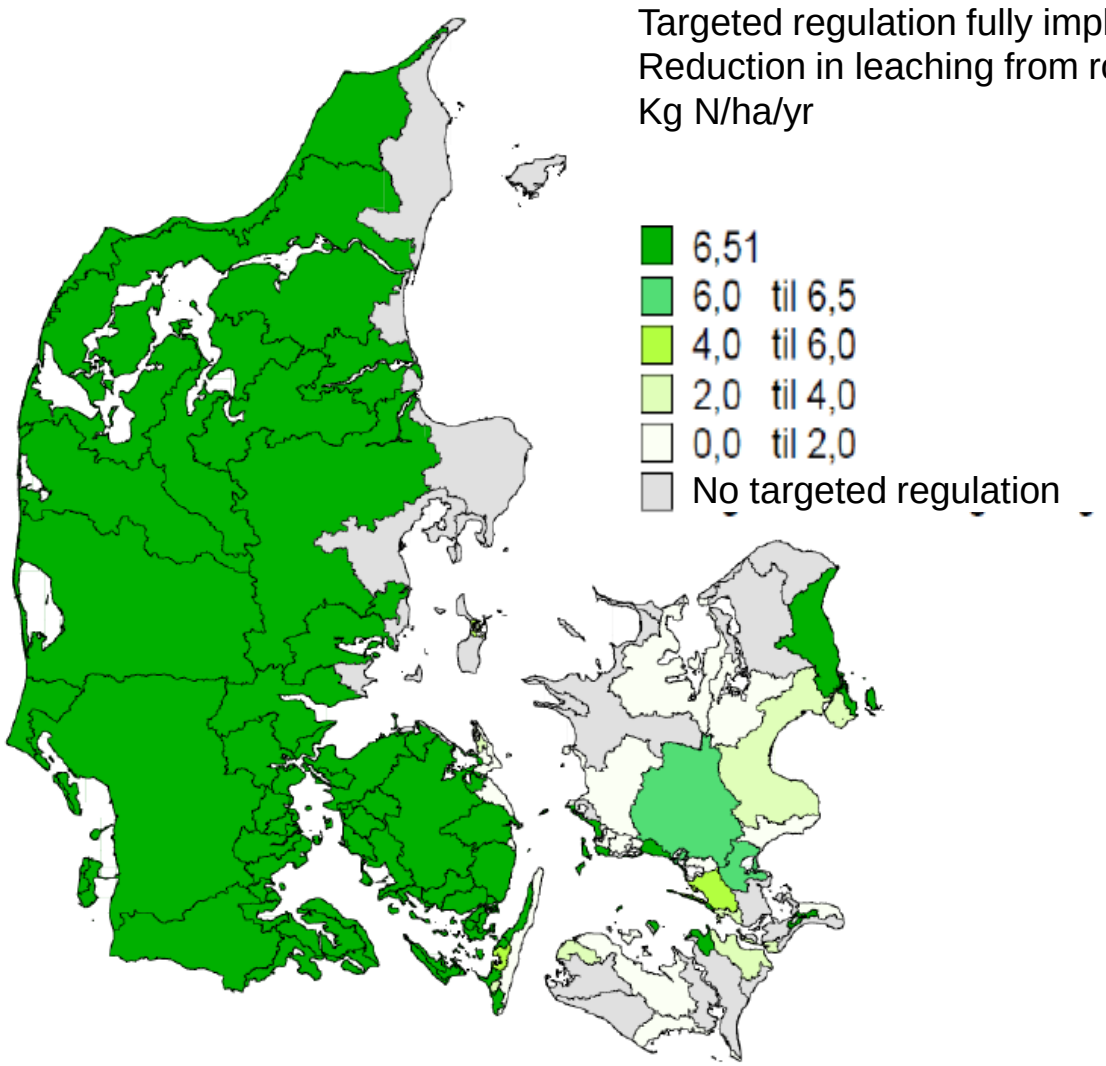
Category	Method	Effect, ton N
Delayed	-	Ca. 6.200
Targeted regulation	Catchcrops and other farm specific measures	Ca. 3.500
Collective measures	Wetlands, constructed wetlands, afforestation etc.	Ca. 3.400



Reductions in different catchments (aprox. 90 catchments)

Developed based on information from the Danish Ministry of Environment and Food

Targeted regulation



Farmers can choose between the different measures:

- Catch crops
- Early drilling
- Reduced N-quota
- Possibly constructed wetland, IBZ's and the like
- Possibly precision farming

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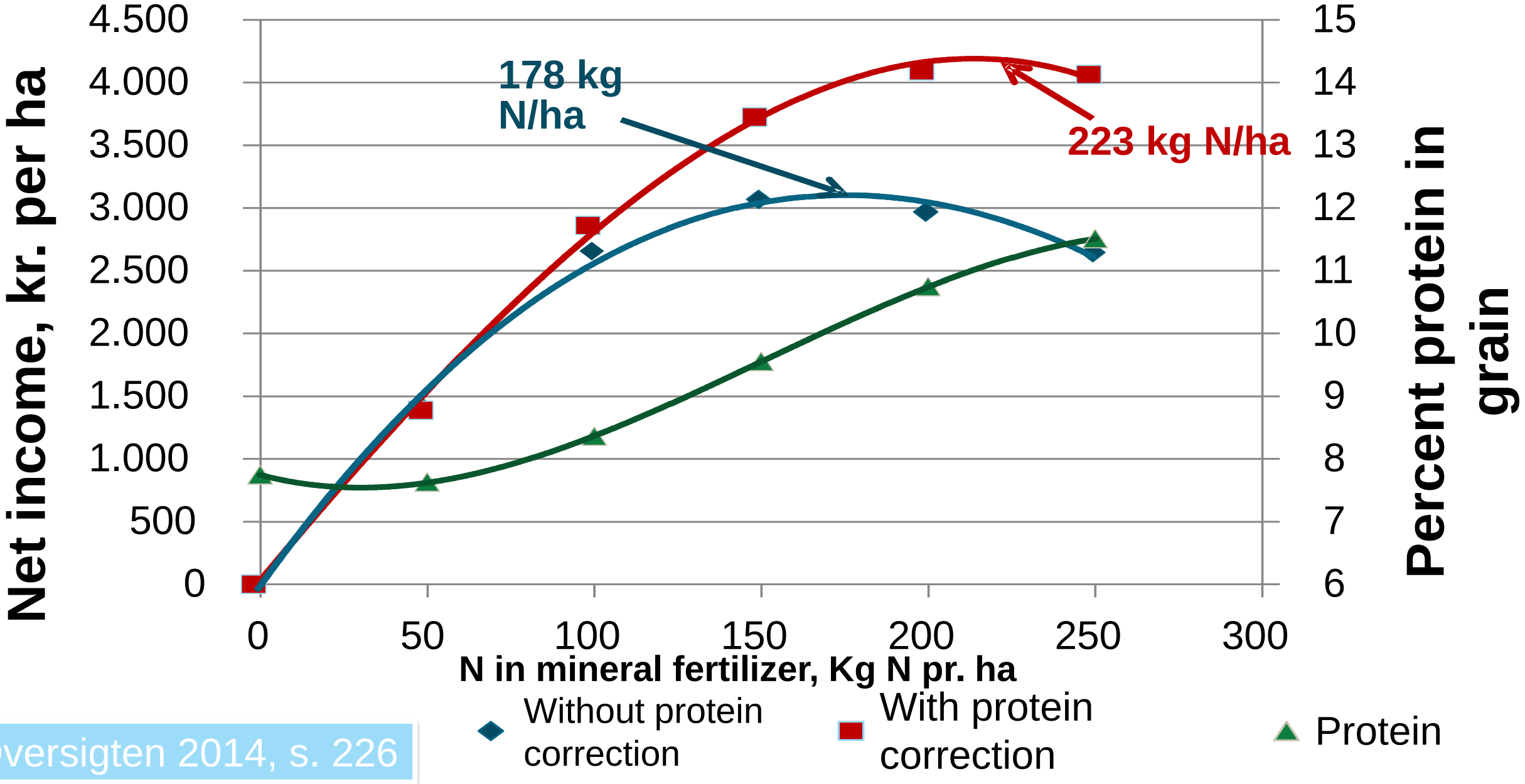
Conclusion

- Nitrogen losses have been reduced
- Regulation of nitrogen use is very tight
- However, further reductions are needed
- We need to reliably estimate the effectiveness of measures

N to winter wheat, 19 fs. 2014



Oversigten 2014, s. 226