



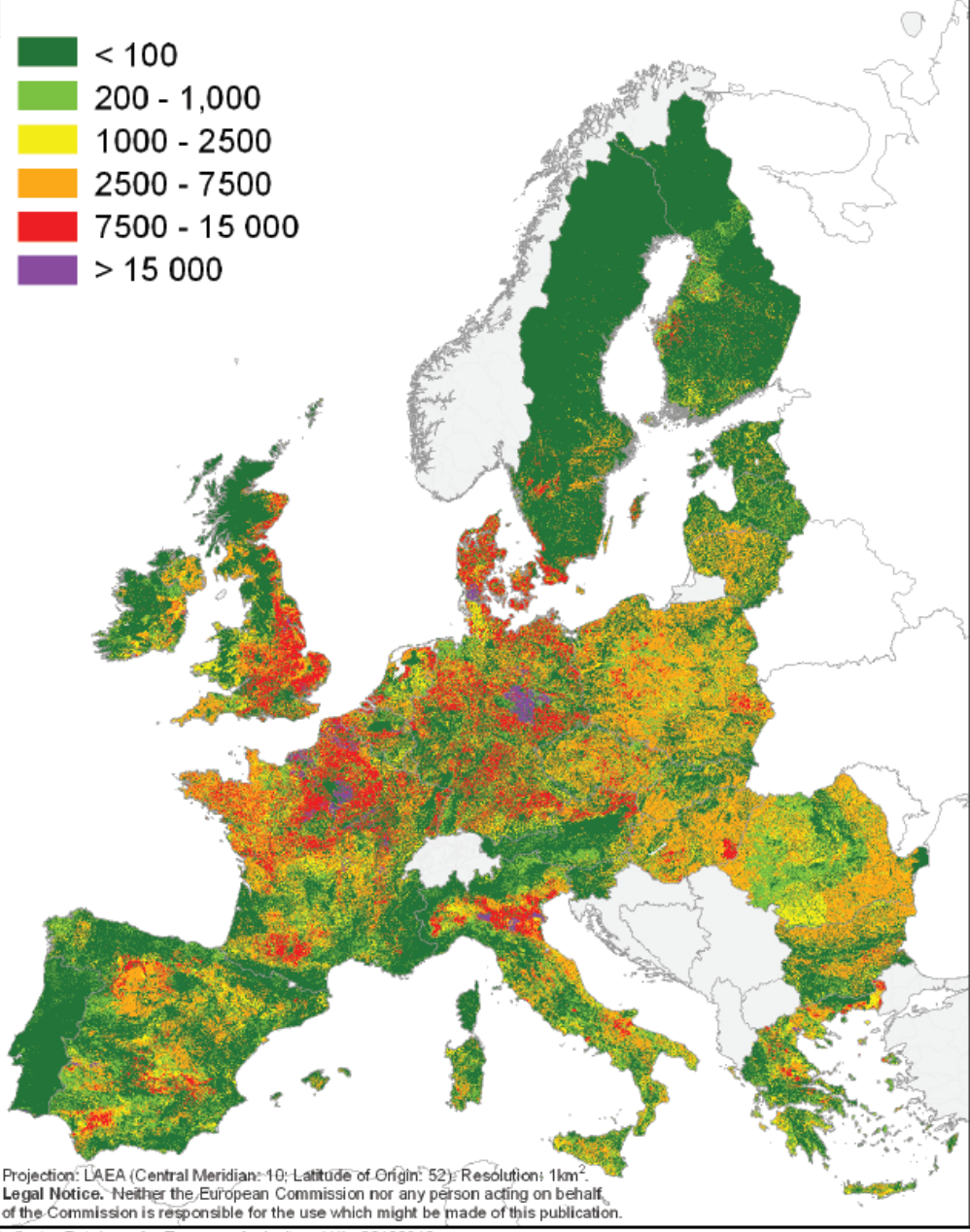
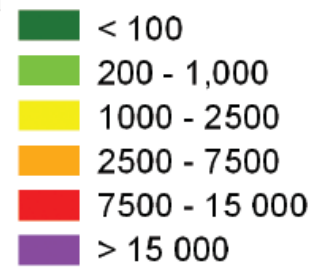
Nitrogen, agriculture, SDG

Jesper Bak, Aarhus University



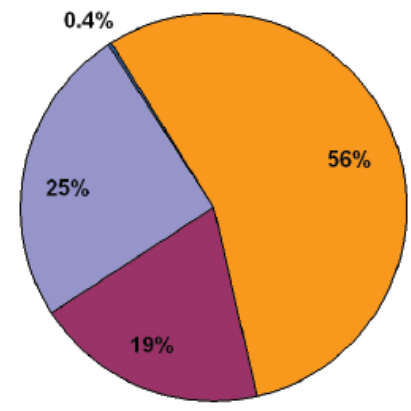
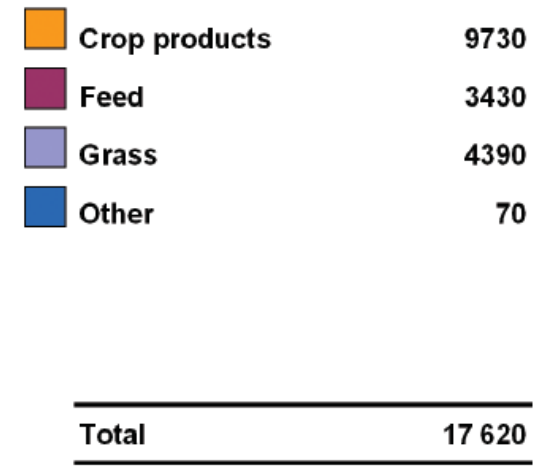


Total land productivity [kg N km⁻²yr⁻¹]

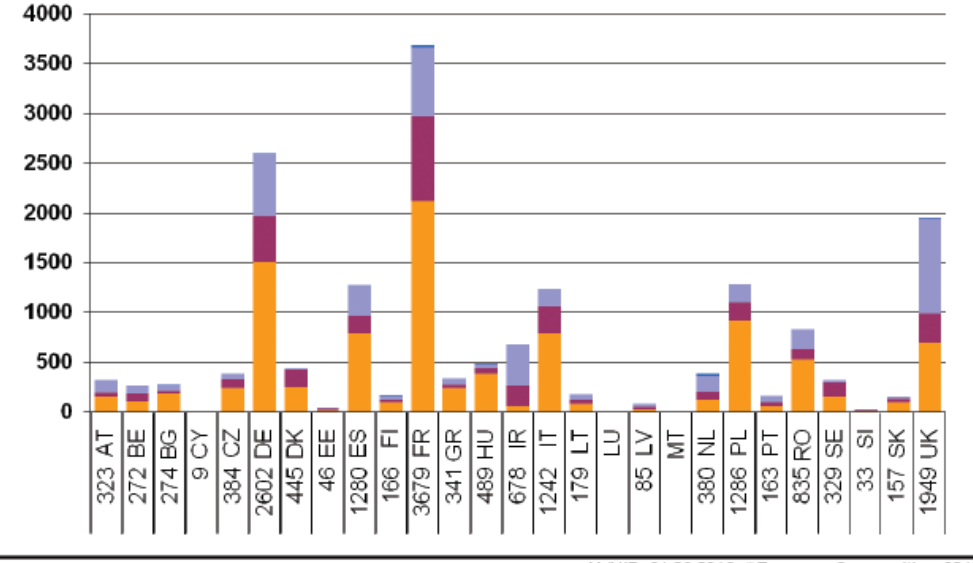


Projection: LAEA (Central Meridian: 10; Latitude of Origin: 52); Resolution: 1km².
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 Indicator Database for European Agriculture V1b 20100312

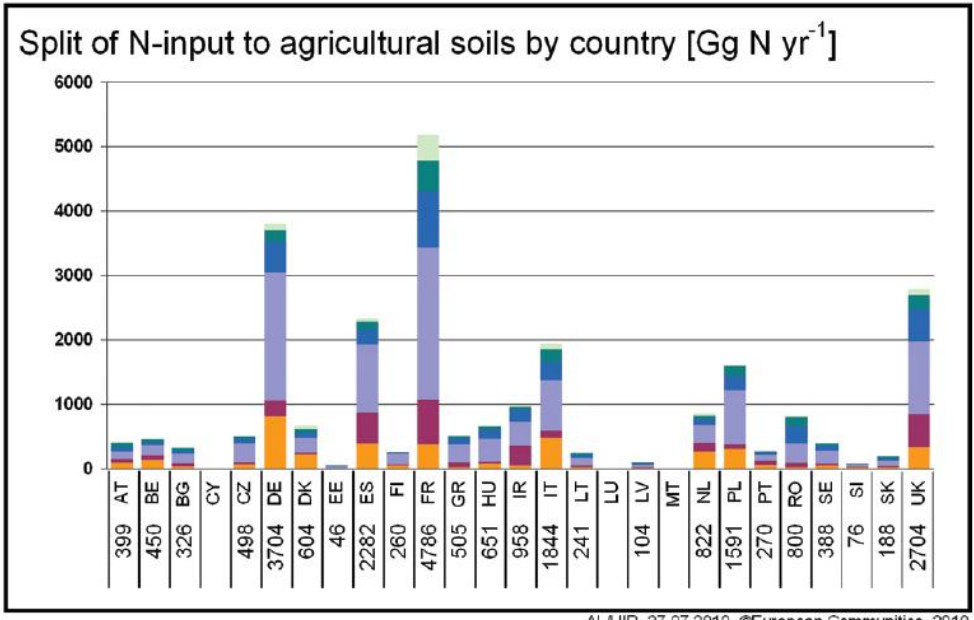
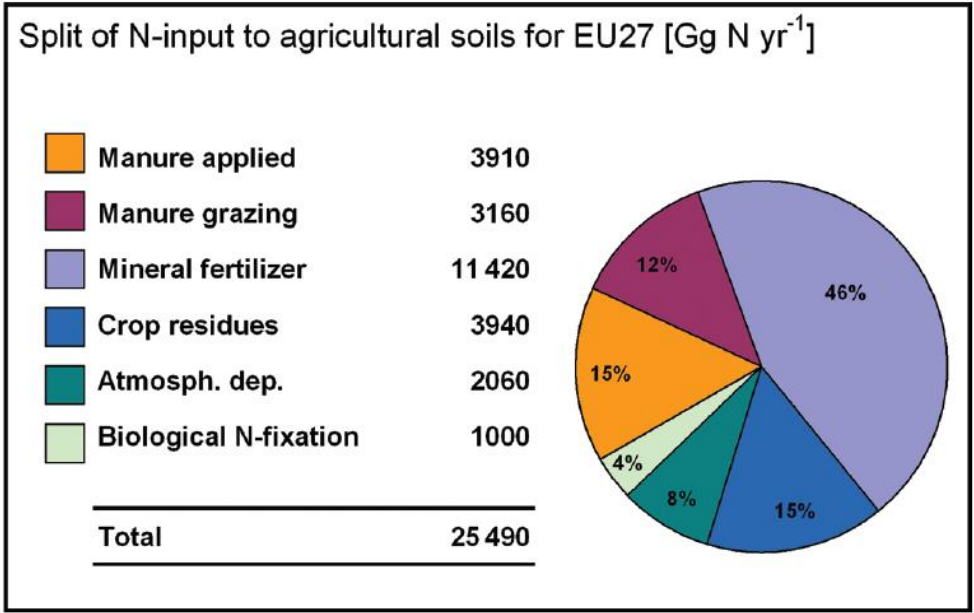
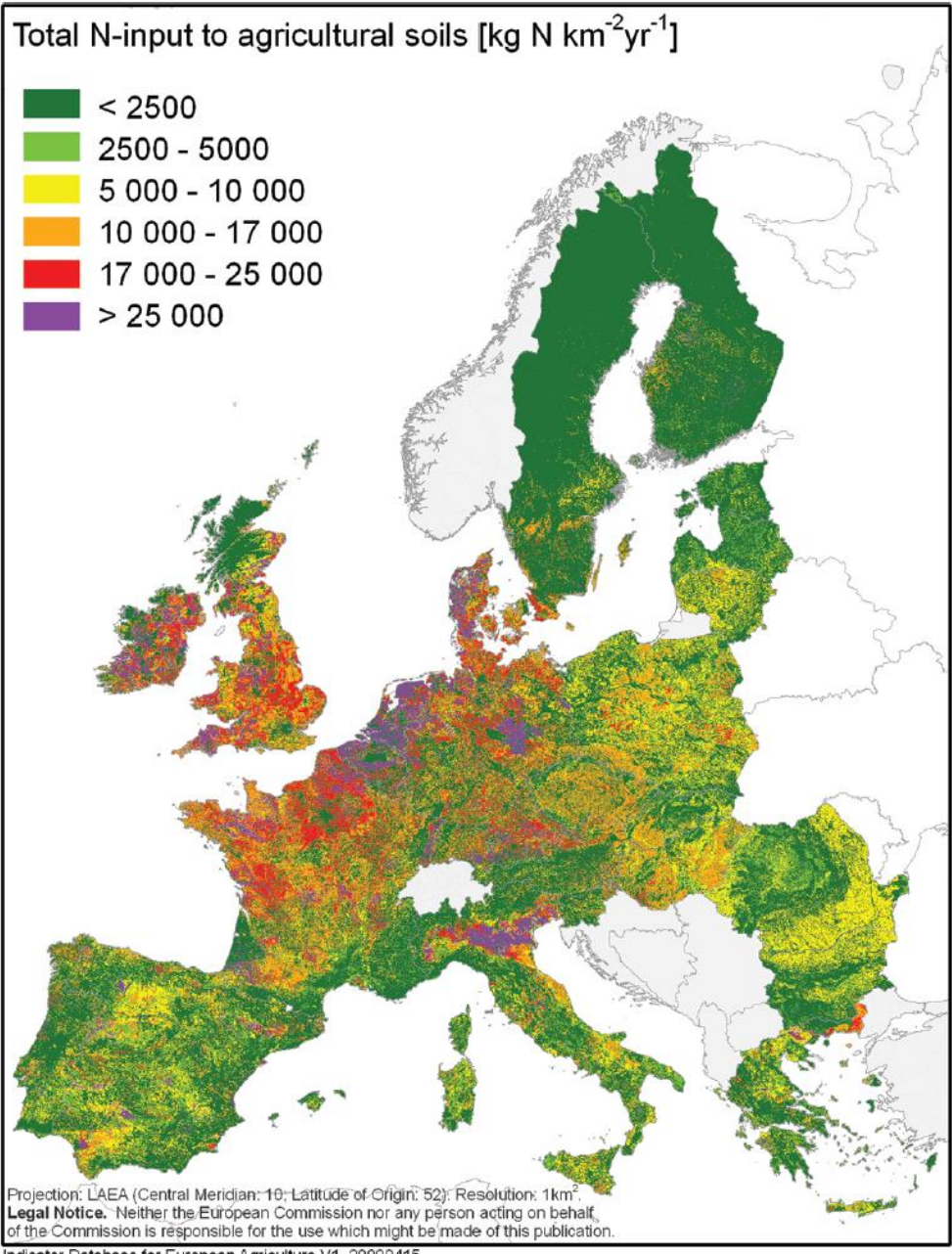
Split of land productivity for EU27 [Gg N yr⁻¹]



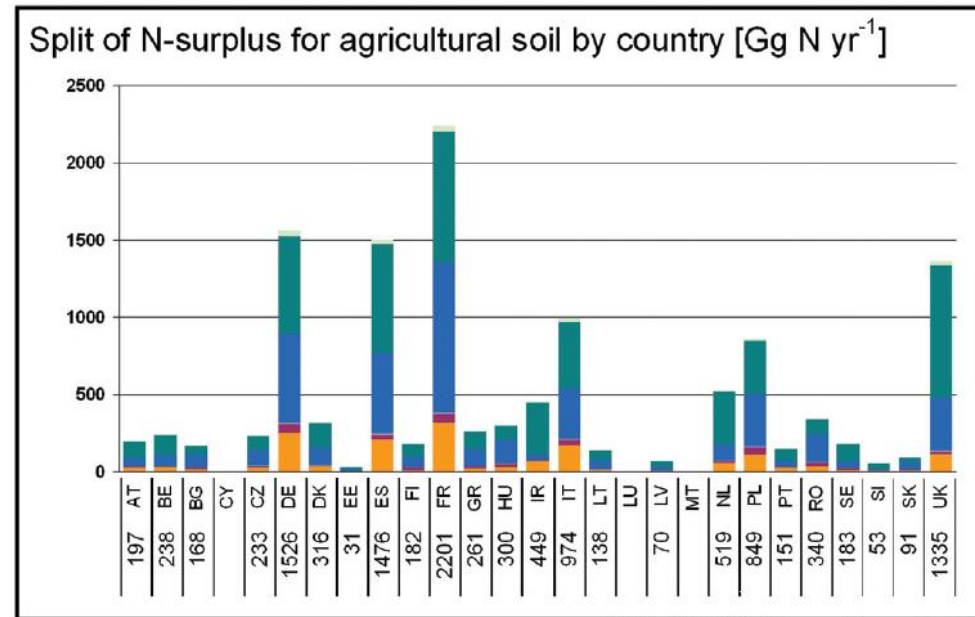
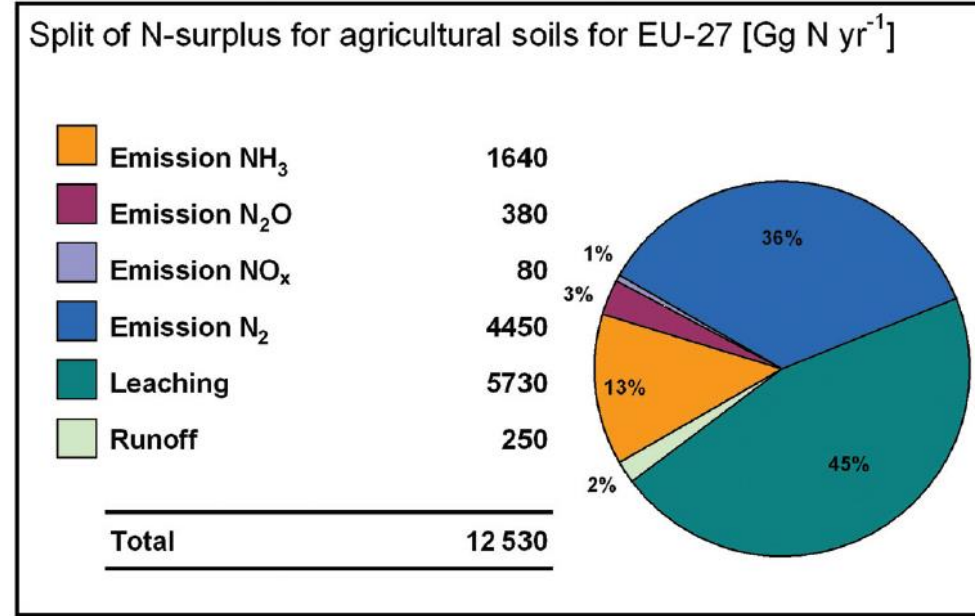
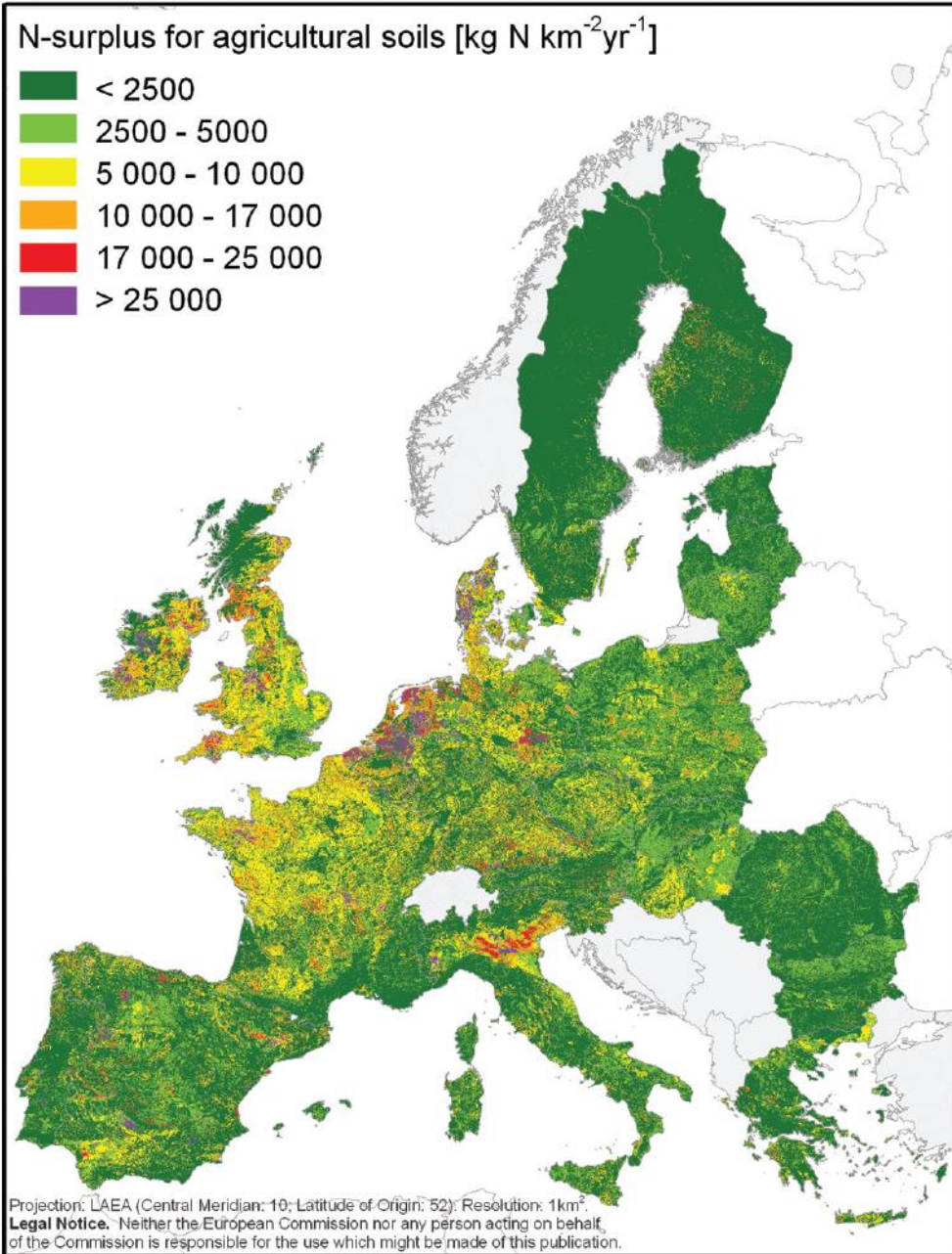
Split of land productivity by country [Gg N yr⁻¹]



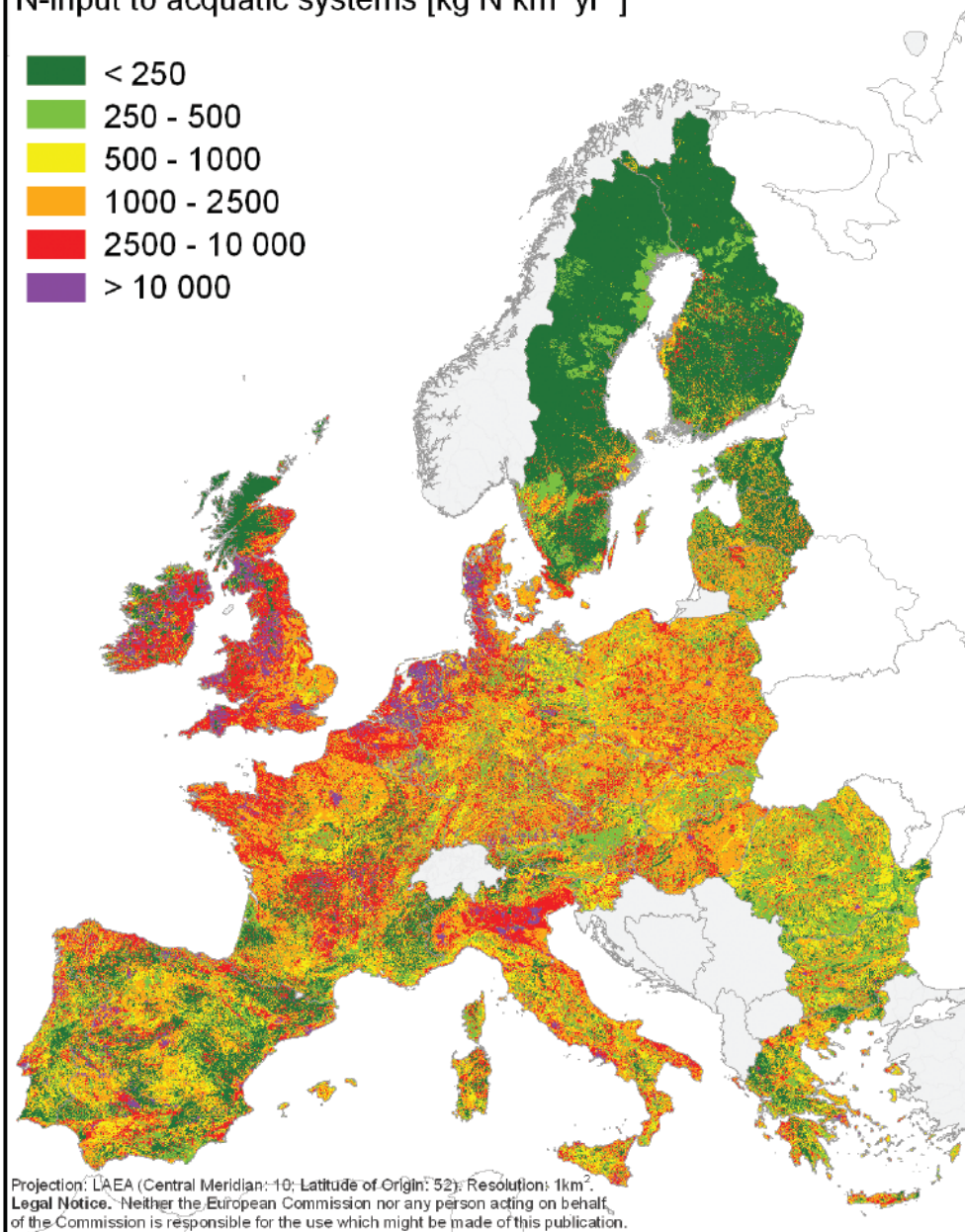
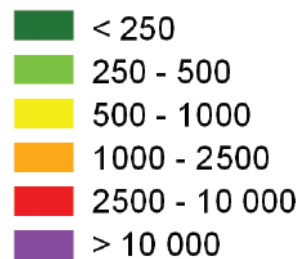
AL/HR, 01.08.2010. ©European Communities, 2010



AL/HIR, 27.07.2010. ©European Communities, 2010



N-input to aquatic systems [kg N km⁻²yr⁻¹]

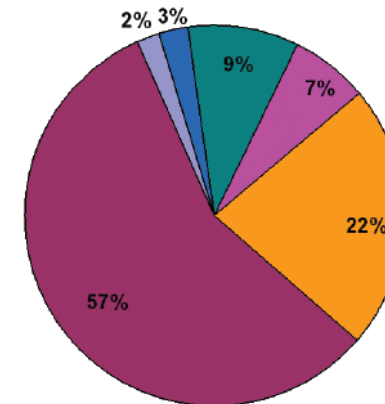


Projection: LAEA (Central Meridian: 10; Latitude of Origin: 52); Resolution: 1km².
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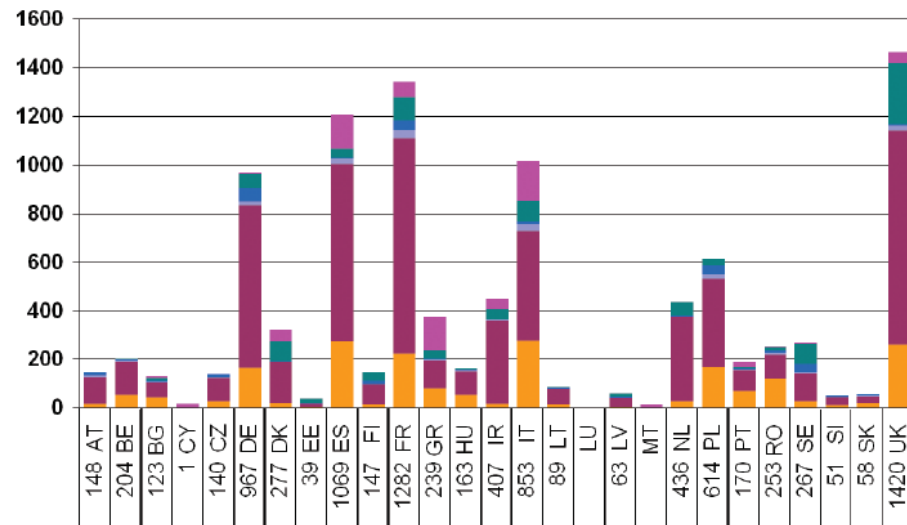
IDEAg.V1, INTEGRATOR and EMEP MSAC-W model rv3_3

Split of N-input to aquatic systems for EU27 [Gg N year⁻¹]

■ Direct sewage	2350
■ Diffuse agric. soils	5980
■ Diffuse agric. livestock	200
■ Diffuse - forests	290
■ N-dep. inland/shelf	970
■ N-dep. ocean	710
Total	10 500

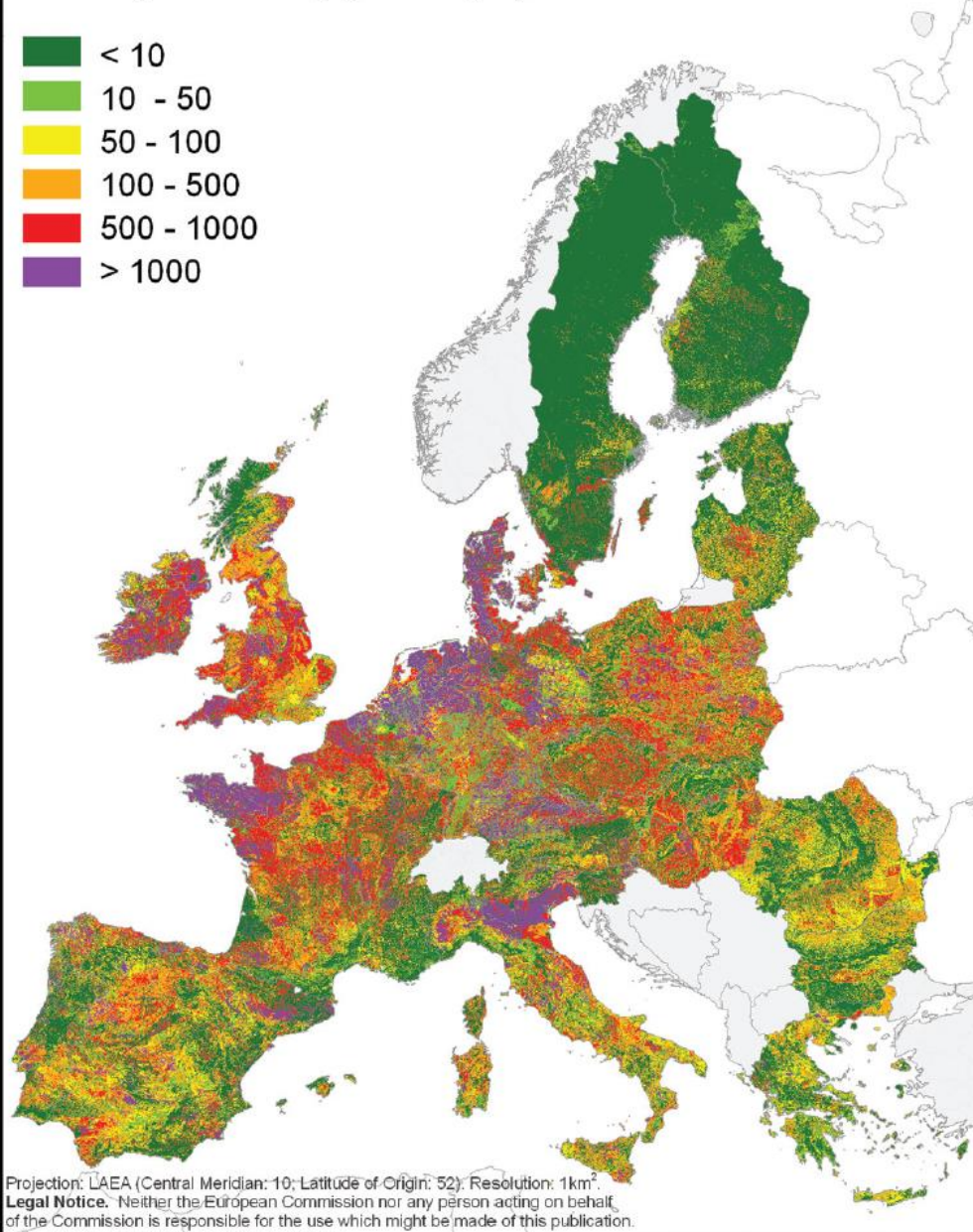
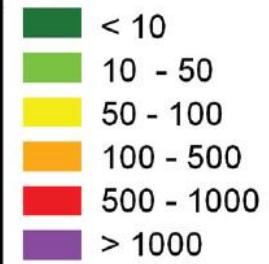


Split of N-input to aquatic systems by country [Gg N year⁻¹]



AL/HIR, 10.08.2010. ©European Communities, 2010

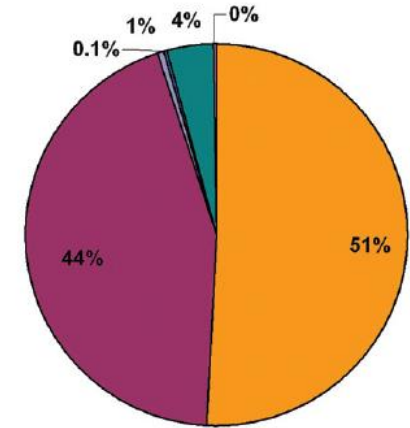
Total NH₃ emissions [kg N km⁻²yr⁻¹]



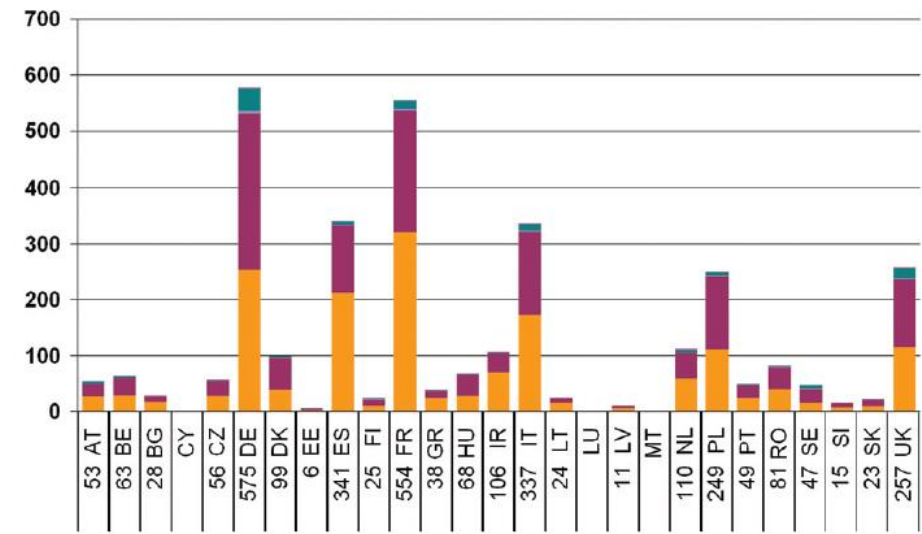
Projection: UAEA (Central Meridian: 10; Latitude of Origin: 52); Resolution: 1km².
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 IDEA_g V1, INTEGRATOR and EDGAR-CIRCE

Split of total NH₃ emissions for EU27 [Gg N yr⁻¹]

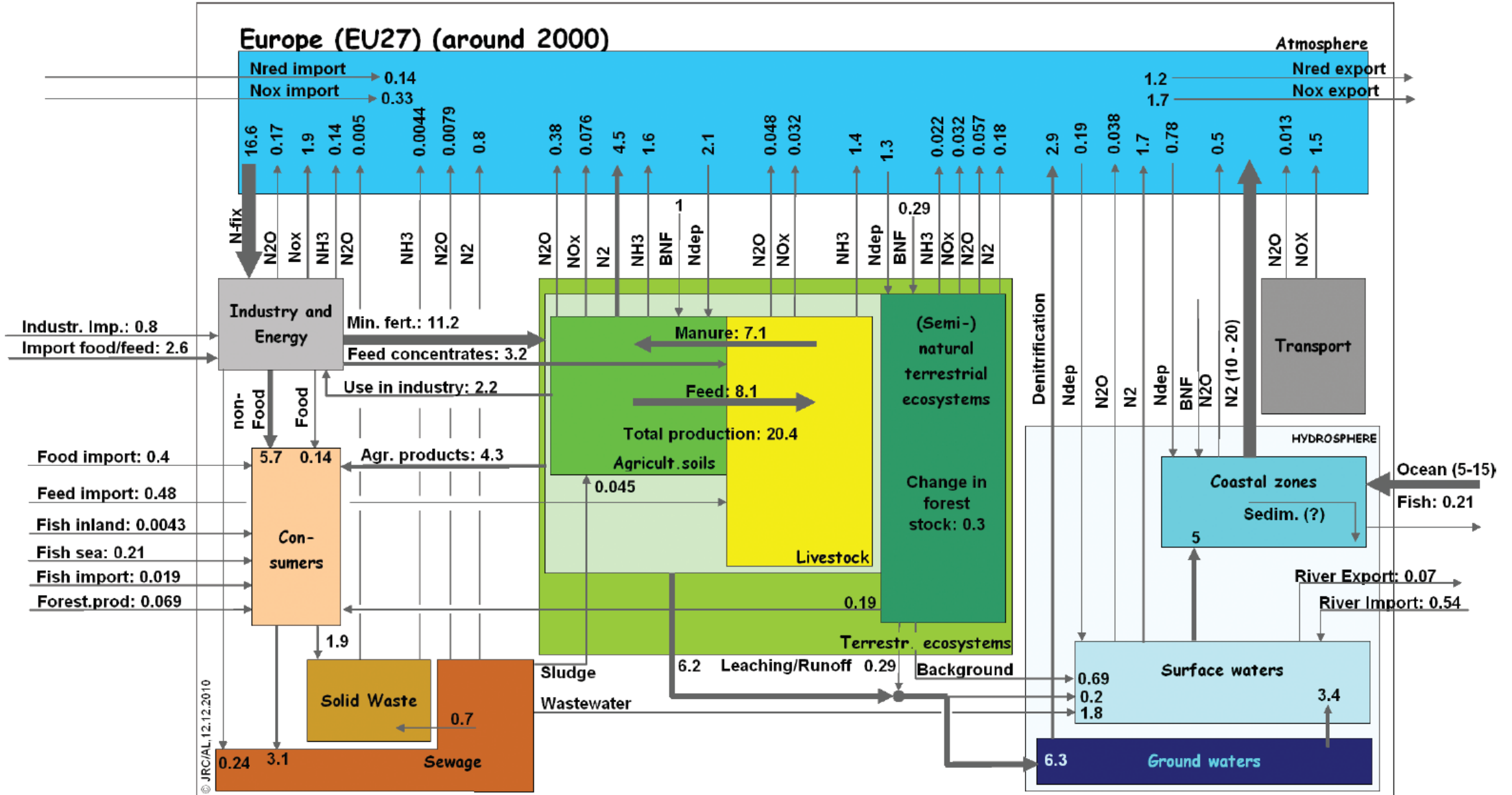
■ Agriculture - soils	1640
■ Agriculture - manure	1430
■ Forest soils	22
■ Waste	4
■ Energy	123
■ Chemical industry	13
Total	3232



Split of total NH₃ emissions by country [Gg N yr⁻¹]



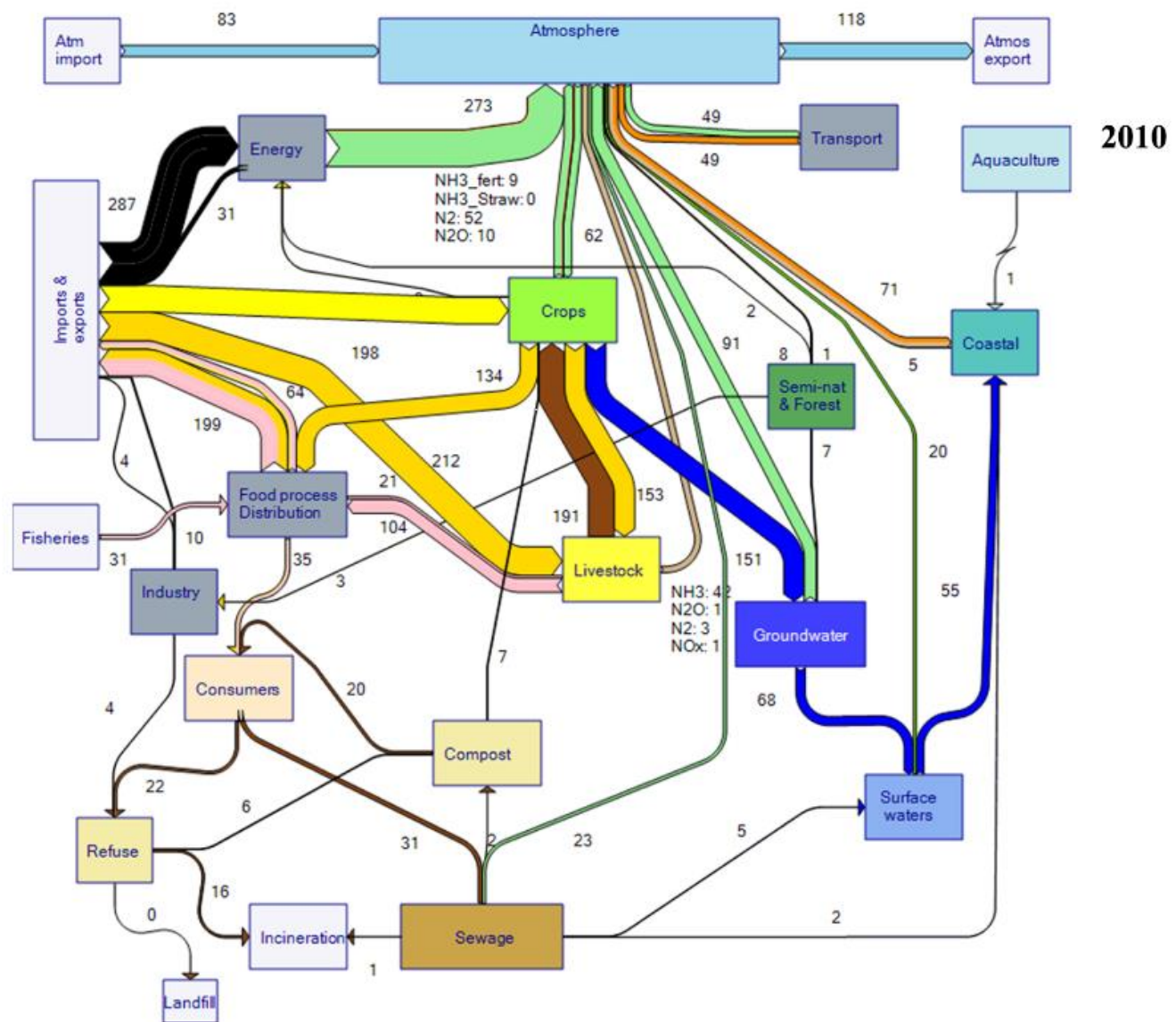
AL/HIR, 27.07.2010. ©European Communities, 2010

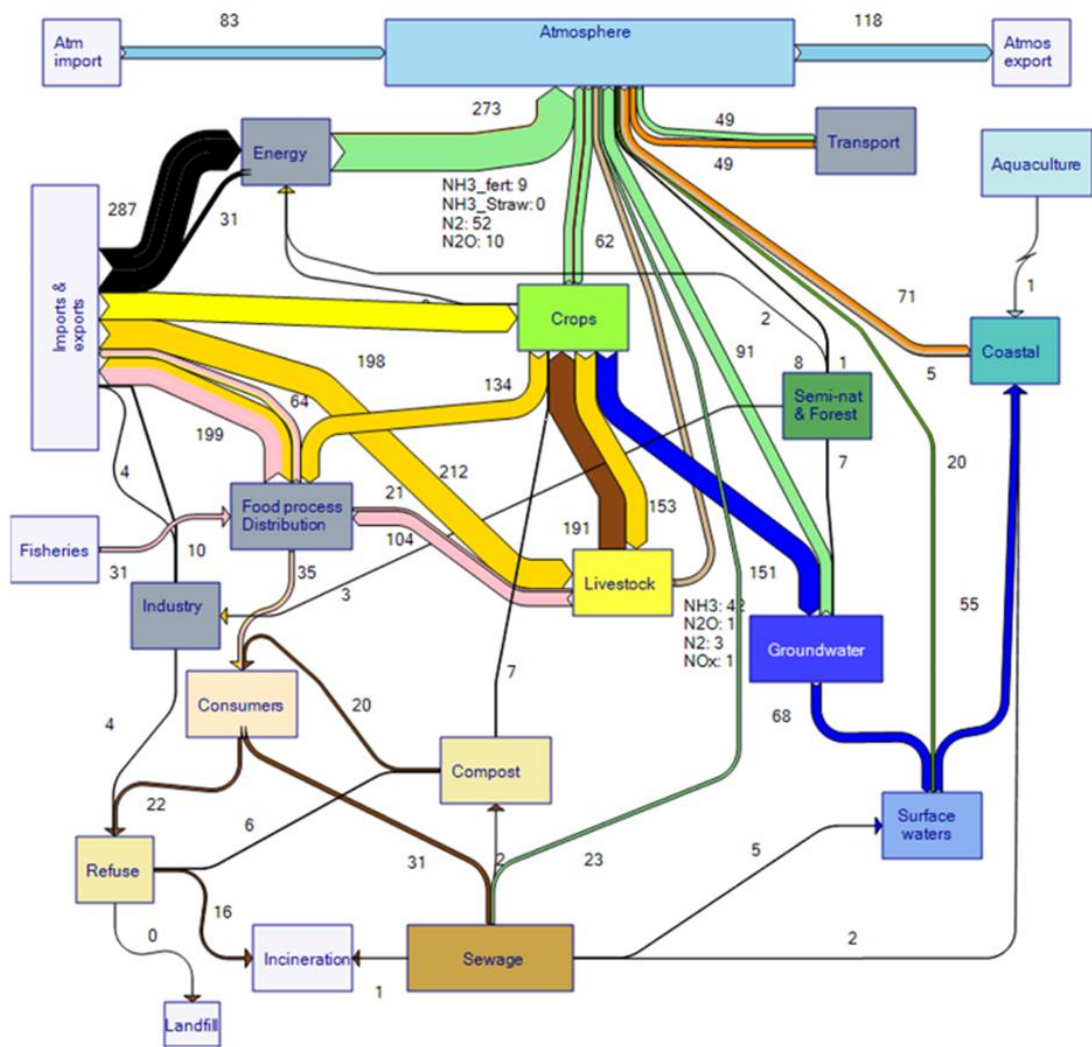


© JRC/AL, 12.12.2010

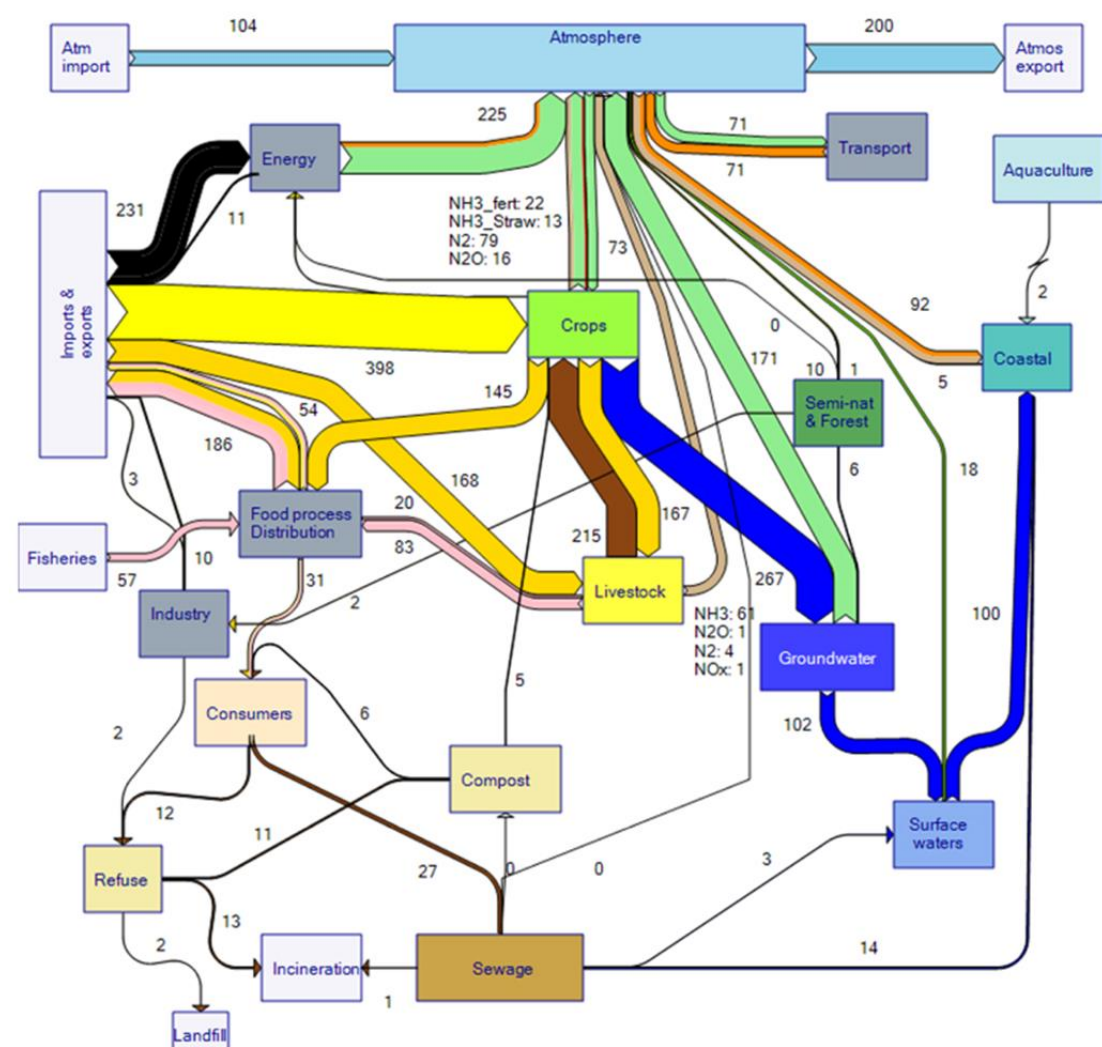
Unit: Mt N/year

ENA-European Nitrogen Budget

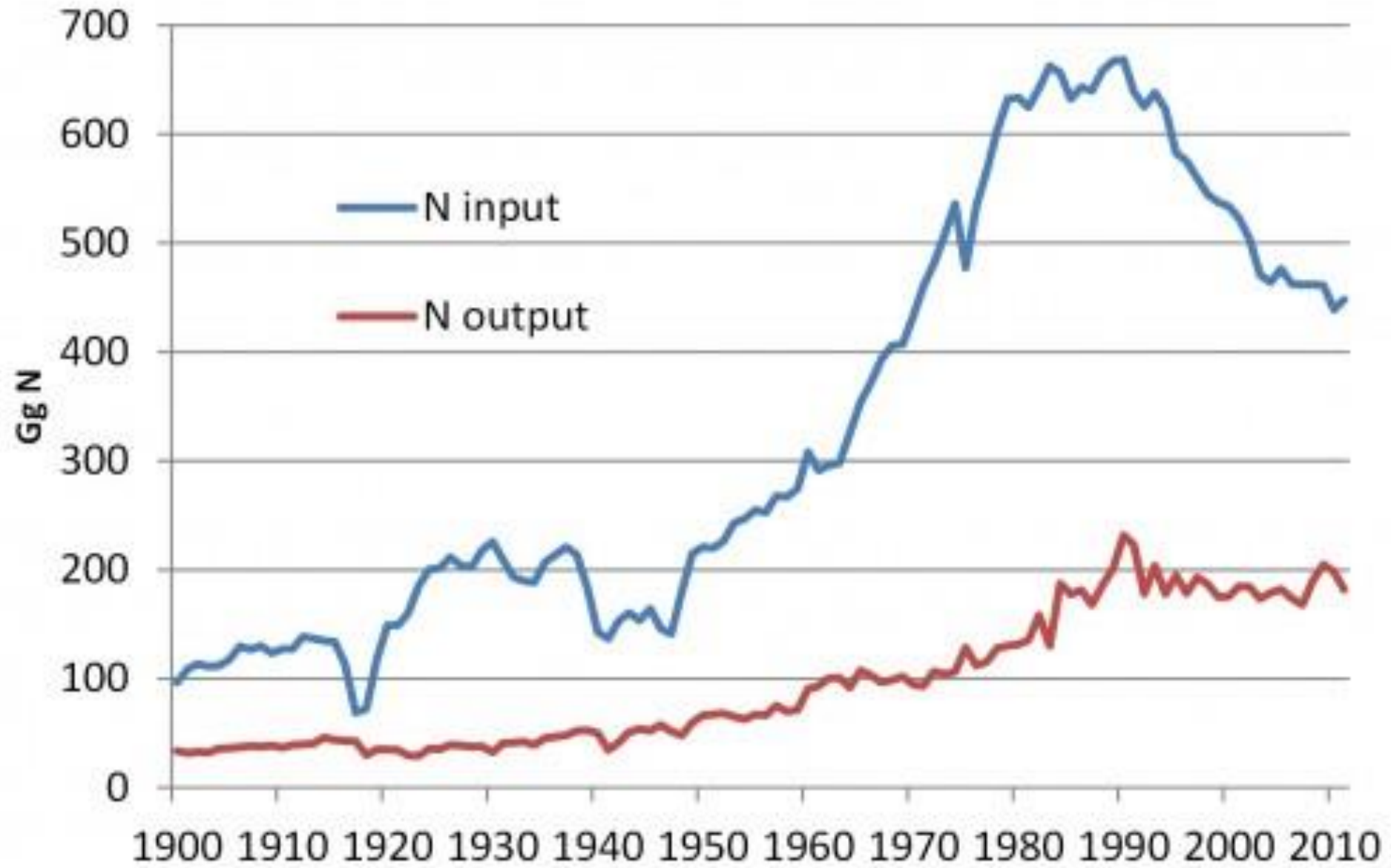




2010

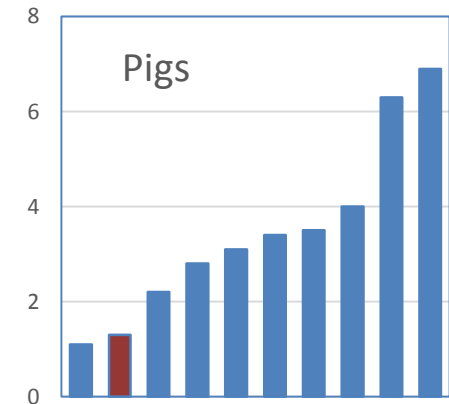
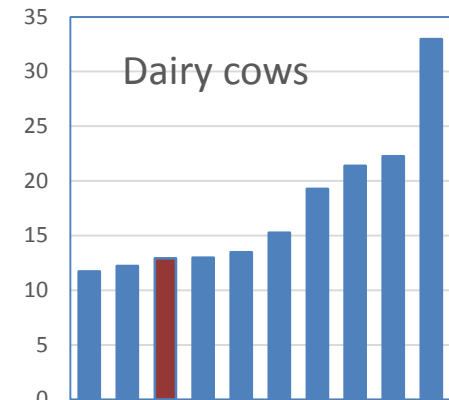


1990

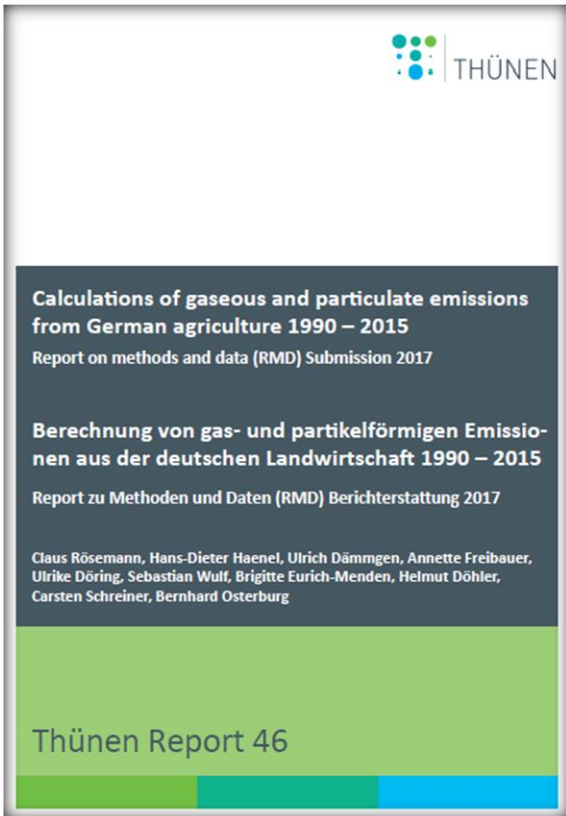


Large differences in ammonia emissions / animal place between countries
 Countries with large industrial farms are lowest
 (submitted data to UNFCCC, De 2017, other countries 2016)
 In some cases numbers might include losses from application
 Differences / produced kg might be higher

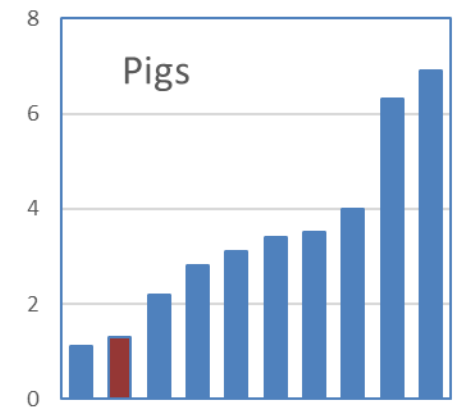
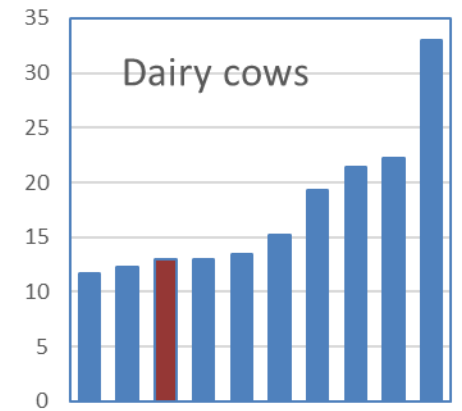
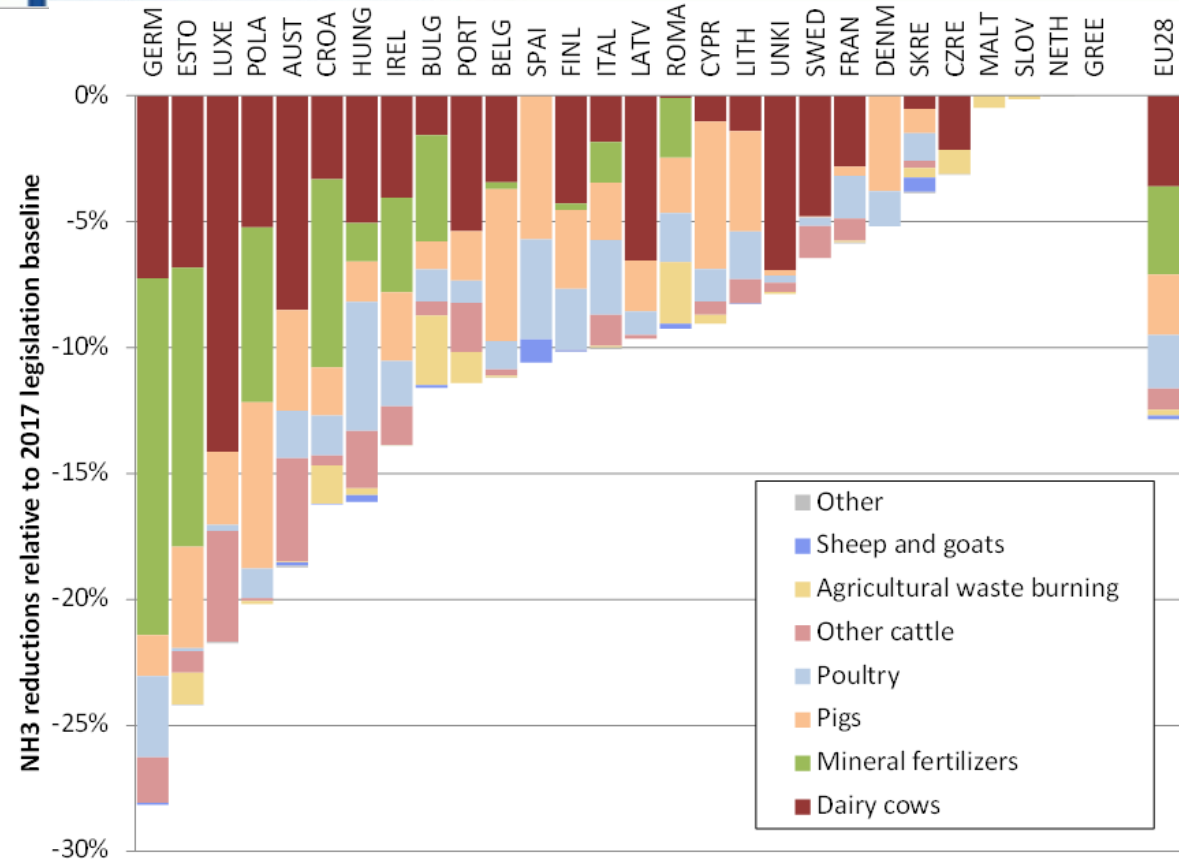
kg pl ⁻¹ a ⁻¹	Dairy cows	Other cattle	Pigs	Poultry
Austria	13.48	6.69	2.2	0.218
Belgium	12.23	4.27	3.1	0.108
Czech Republic	22.25	20.29	6.3	0.266
Denmark	12.93	3.3	1.3	0.117
France	32.97	11.29	3.4	0.252
Germany	15.26	8.28	4	0.171
Netherlands	11.73	4.19	1.1	0.103
Poland	21.37	15.99	6.9	0.145
Switzerland	19.27	7.8	3.5	0.117
United Kingdom	12.98	4.59	2.8	0.088



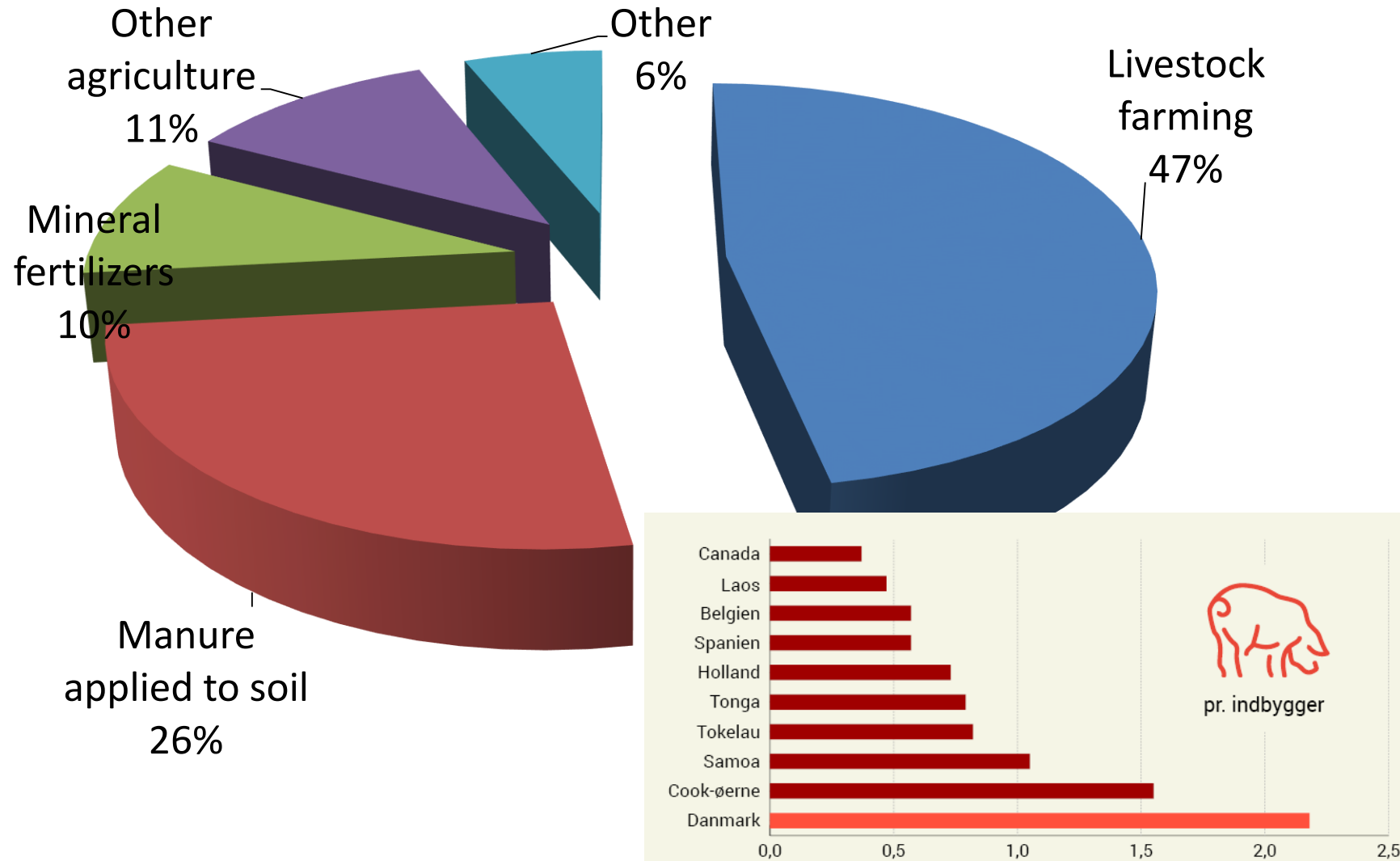
Denmark is also low on emissions from manure application and use of mineral N ..



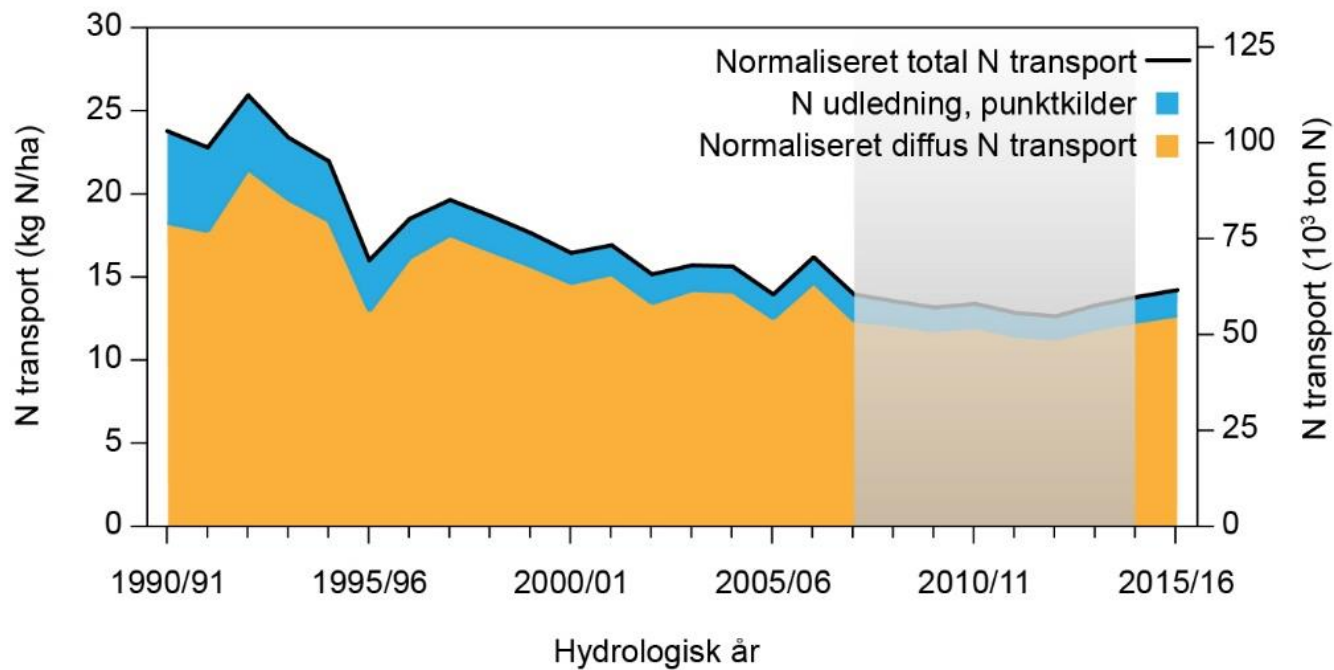
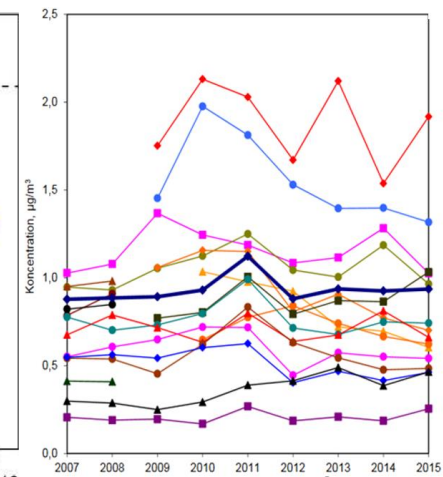
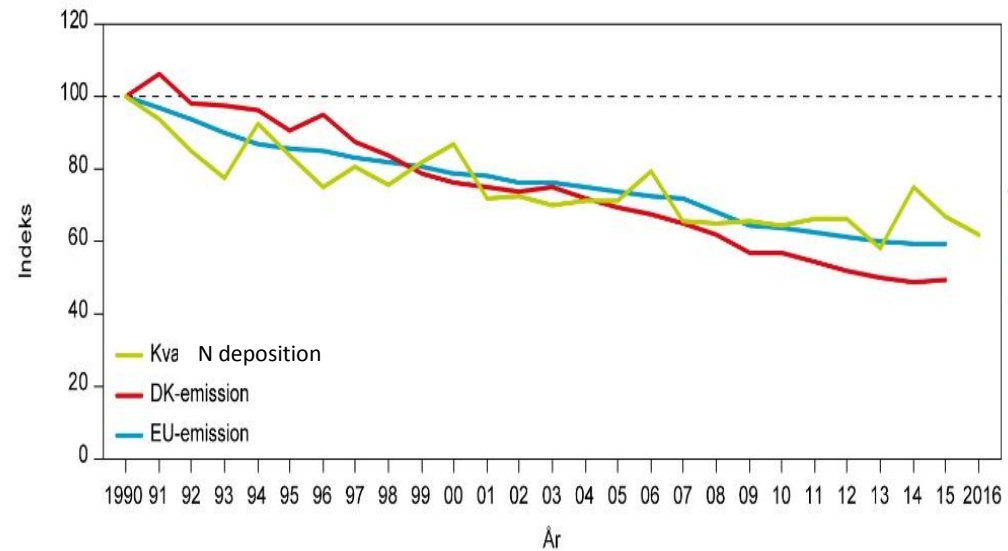
NH₃ reductions implied by the NECD in 2030



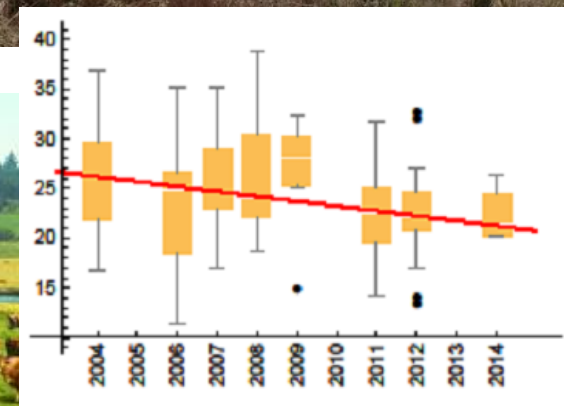
Sources of ammonia emission in Denmark



Some progress made in N load to nature



Less progress in nature and in public awareness



Timeline: 1986, 1987, 1991, 1995-96, 1998, 2000, 2004, 2009

DET STORE BEDRAG

HVEM VAR MORDEREN?

Forsiden Om Det Store Bedrag Nyheder Baggrund og fakta Kontakt os

Miljø-mismanagement i 27 år
07.06.2013

Det dominerende og langvarige problem i dansk miljøpolitik er, at myndighederne i snart 30 år har forudsat, at den såkaldte minimumslov (Justus von Liebig, 1855) kan anvendes ved udformning af strategien for forbedring af vandmiljøet. Men dette er langt fra tilfældet.

DET STORE BEDRAG
Københavns slamkvalitet hummeret
- Kvalitet fik skylden
- Samfundet fik regningen

FREMTIDENS
LANDBRUG
I BALANCE MED
NATUR OG MILJØ

The 2001 ammonia action plan, preamble

..there has *not previously been a particular focus on ammonia emissions*, which is up to one third of the amount of nitrogen lost from agriculture. Ammonia emissions are *a major source of air pollution* in large parts of the open country.

The present action plan is therefore included as one central element in the goal of creating *sustainable agriculture*.

.. also to be seen in conjunction with a number of objectives in international context, inter alia, *the EU Habitats Directive (92/43 / EEC)* to ensure international nature conservation areas against deterioration.

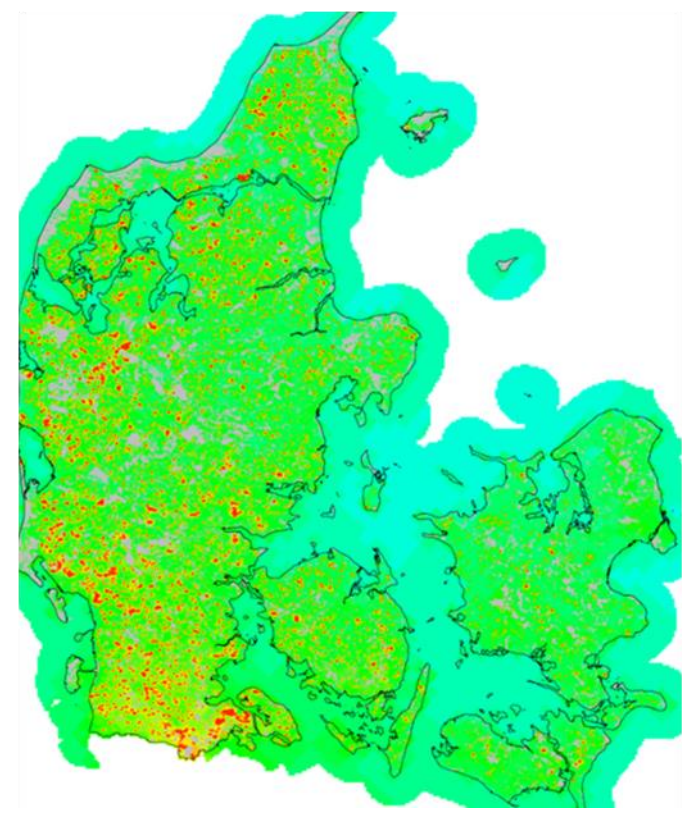
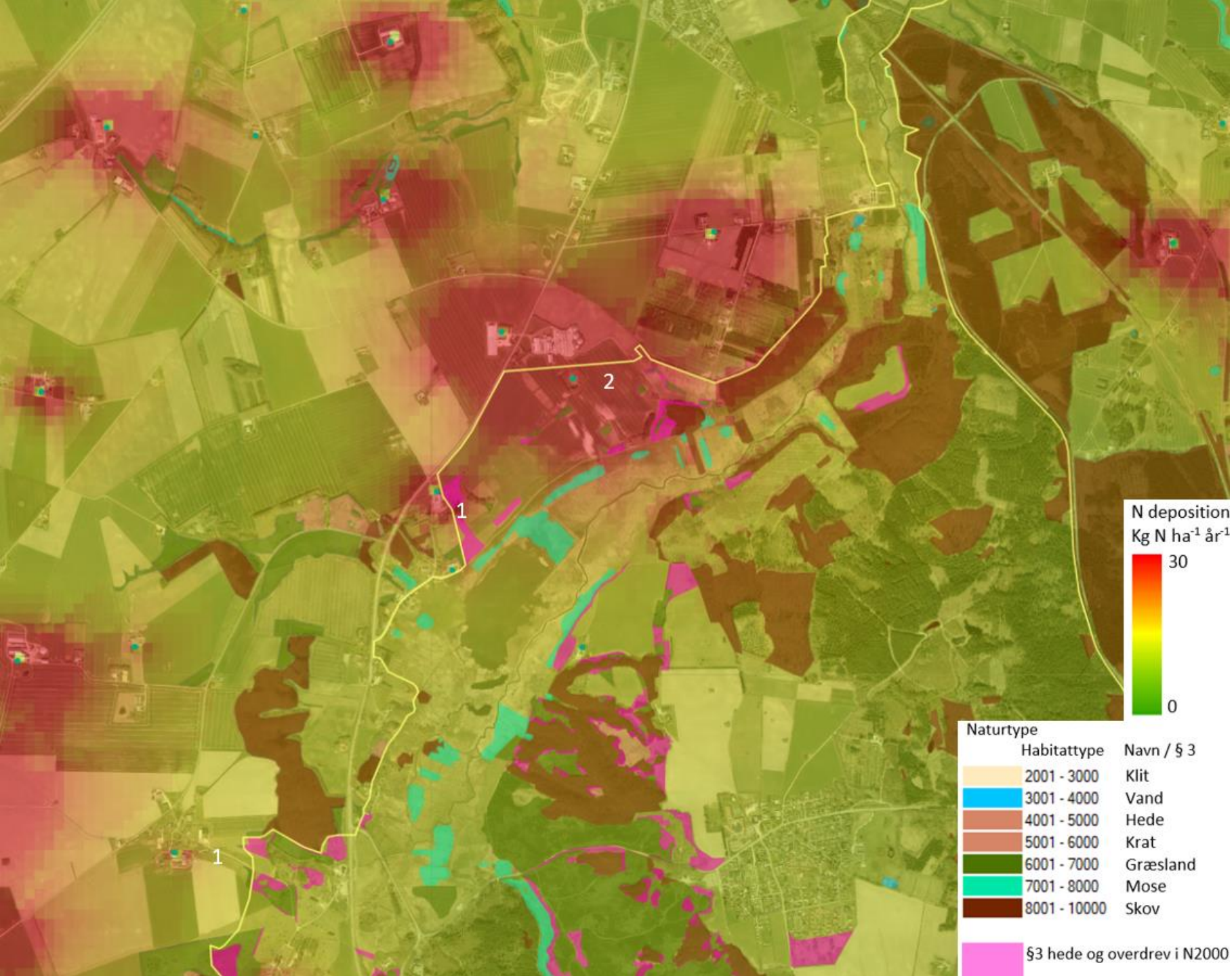
The plan will ensure that a variety of possibilities for reducing ammonia emissions are applied within a short deadline and encourage the use of better technology.

Additionally emphasis on *reducing ammonia emissions in areas where agricultural production takes place near vulnerable habitats*.

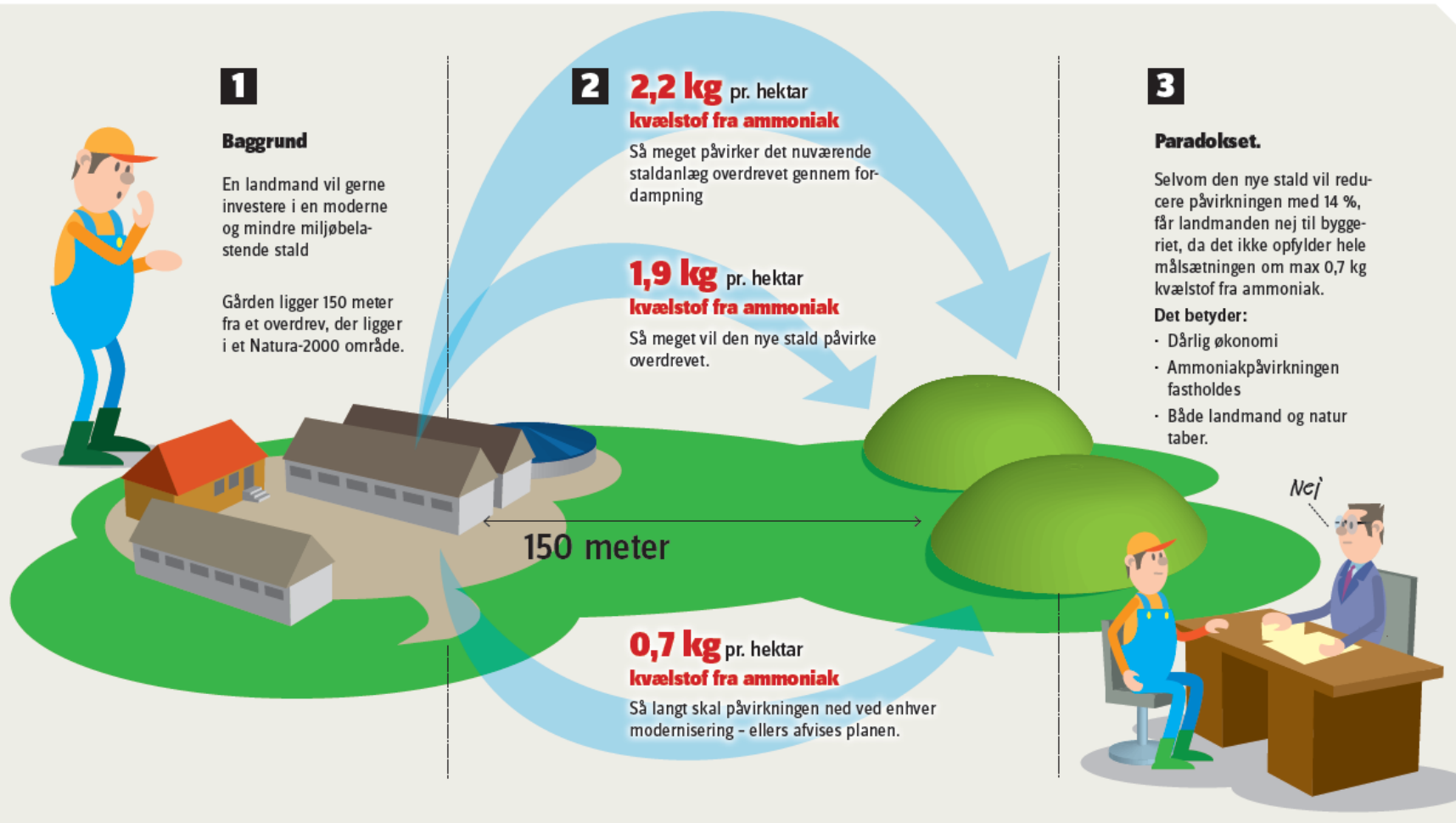


Local ammonia sources,
Natura 2000
and other nature protected
by the Danish Nature
Protection act.

N2k: total deposition from local
Other: extra deposition



Recent media campaign by Danish farmer's organisation



Landmandserfaringer

»Ingen vinder på, at jeg stopper produktionen«

Det er svært at forstå, at jeg ikke må udvikle produktionen på en måde, så både miljøet og velfærd for dyrene bliver bedre.

Mælkeproducent Michael Bay Hansen står på en af de karakteristiske hatbakker ved Lindøse på Langeland og udråber sig.

Bakken er et af to områder på hans bedrift, der er omfattet af husdyrlovens ammoniakregler. Da reglerne blev indført i 2011, blev Michaels bedrift derfor underlagt særligt skrappe krav for fordampning af ammoniak. Det vil imidlertid aldrig kunne lade sig gøre at fastholde produktionen og samtidigt reducere ammoniakfordampningen til det niveau, der kræves.



»Det er en svær situation, som selvfølgelig fylder meget hos mig.«

gang. Det er en svær situation, som selvfølgelig fylder meget hos mig. Jeg er 46 år og ville jo gerne forvænte som landmand og udvikle min produktion. Som landet ligger, er det umuligt, fastlår Michael Bay Hansen, der i dag kan ærgre sig over, at han har ladet 53 områderne afgræsse.

Kan ikke opfylde krav til miljøet. Jeg går så vil jeg ikke kunne komme ned på de maks. 0,7 kg ammoniak pr. ha., der er krævet. Jeg har et projekt liggende med en ny stald til afslutning af den gamle. Det vil reducere ud-

ledningen af ammoniak med mere end en tredjedel, men stadig være langt fra nok til at opfylde kravene, siger Michael Bay Hansen.

Når hans miljøgodkendelse skal revideres, vil der blive sat en frist for udvikling af produktionen.

»Min produktion bliver reelt værdiløs, og jeg sætter naturligvis ingen nye projekter i

Usikker fremtid Fremtiden på Rudbækgård er således usikker. En tilbygning til stuehuset for at give bedre plads til familiens børn er sat i bero. Og også de fem arbejdspladser er på sigt i spil.

»Jeg håber, vi skal forrette med at producere mælk. Sker det ikke, forsvinder der selvfølgelig også nogle arbejdspladser, og smedjen og maskinhandleren tjener heller ingen penge. Det vinder ingen på, så jeg synes, der må kunne findes løsninger, siger Michael Bay Hansen.

Ugens?

Er ammoniakreglerne en stor hindring for udvikling af husdyrproduktionen?

LandbrugsAvisen 19.04.2018

Recent analysis of the efficiency of buffer zone regulation

