



Agricultural areas in the Netherlands

A selection from the SEEA-EEA accounts

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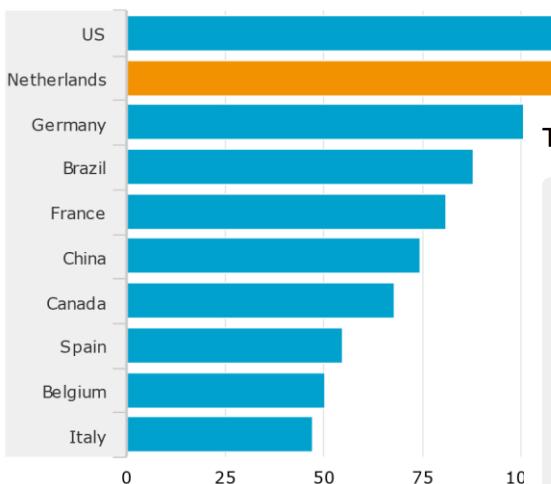


Ecosystem accounts

- Extent account
- Carbon account
- ESS supply/use – physical
- ESS supply/use – monetary
- Condition account
- Biodiversity account

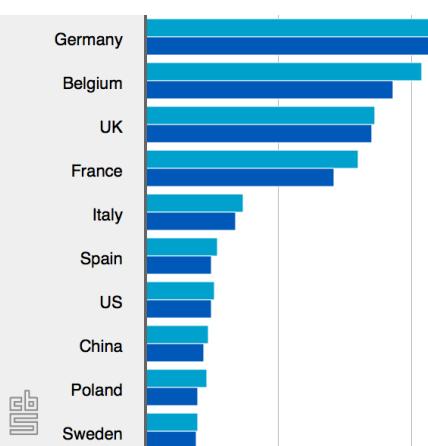


Top ten exporting countries agricultural products, 2014



Source: WTO

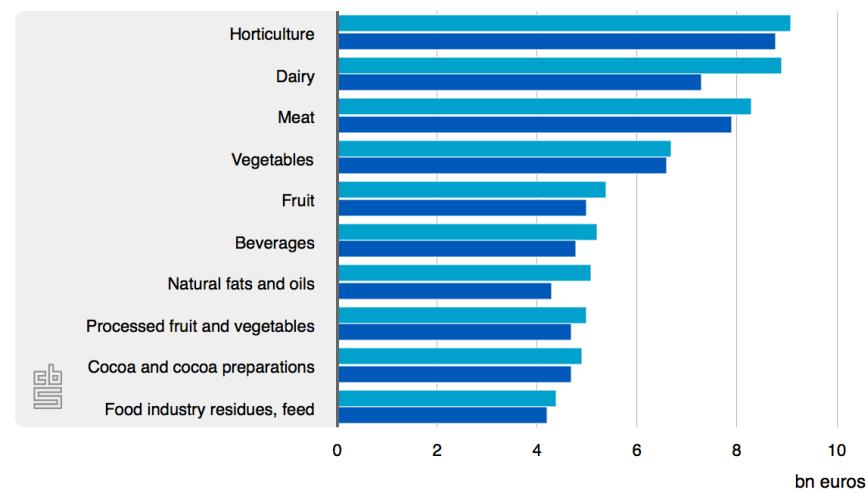
Top 10 destinations in Dutch agricultural exports



Source: CBS until Nov. 2017, estimates Nov. and Dec. 2017



Top 10 Dutch agricultural exports



Source: CBS until Nov. 2017, estimates for Nov. and Dec. 2017 by Wageningen Economic Research and CBS

2017 2016

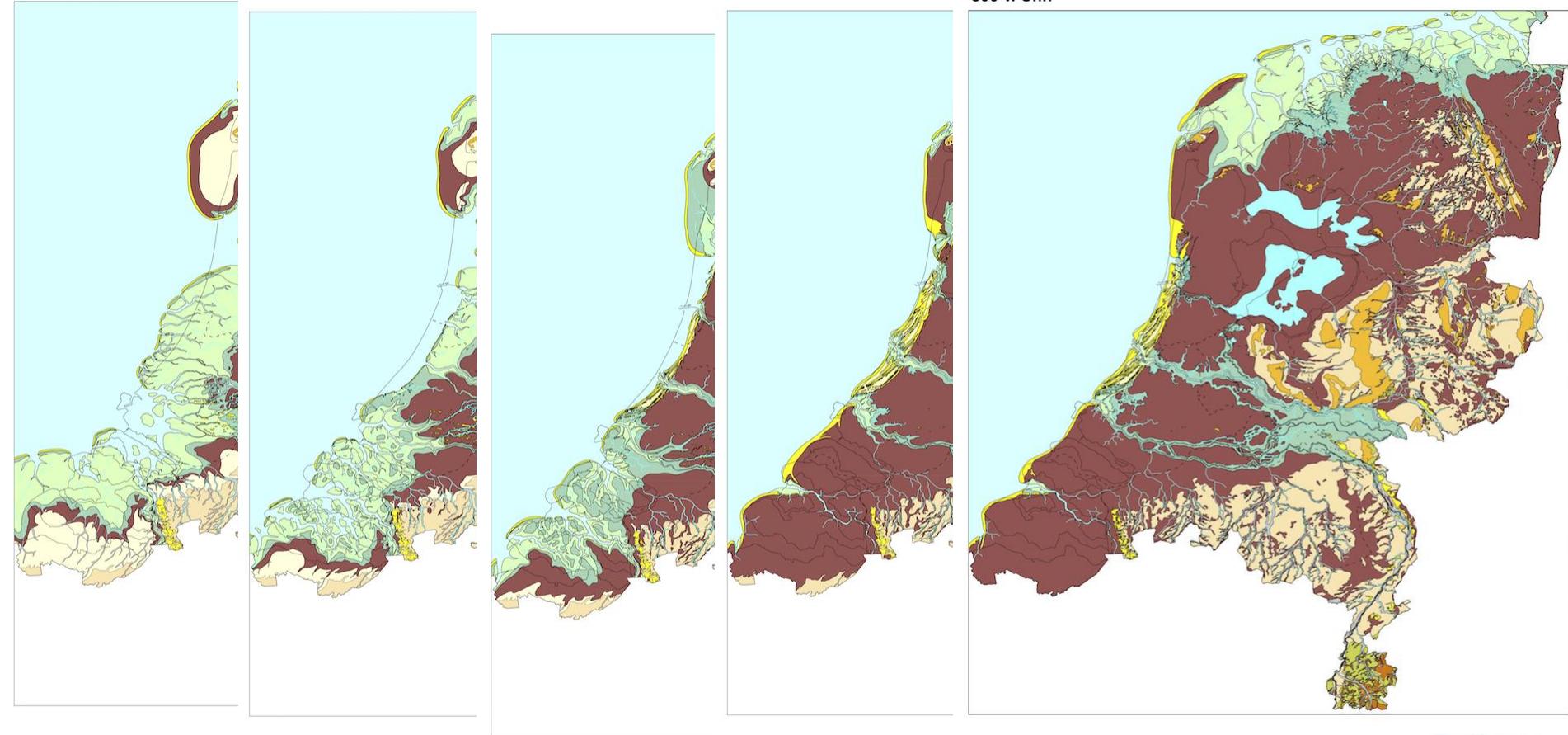
5500 v. Chr.

3850 v. Chr.

2750 v. Chr.

1500 v. Chr.

500 v. Chr.



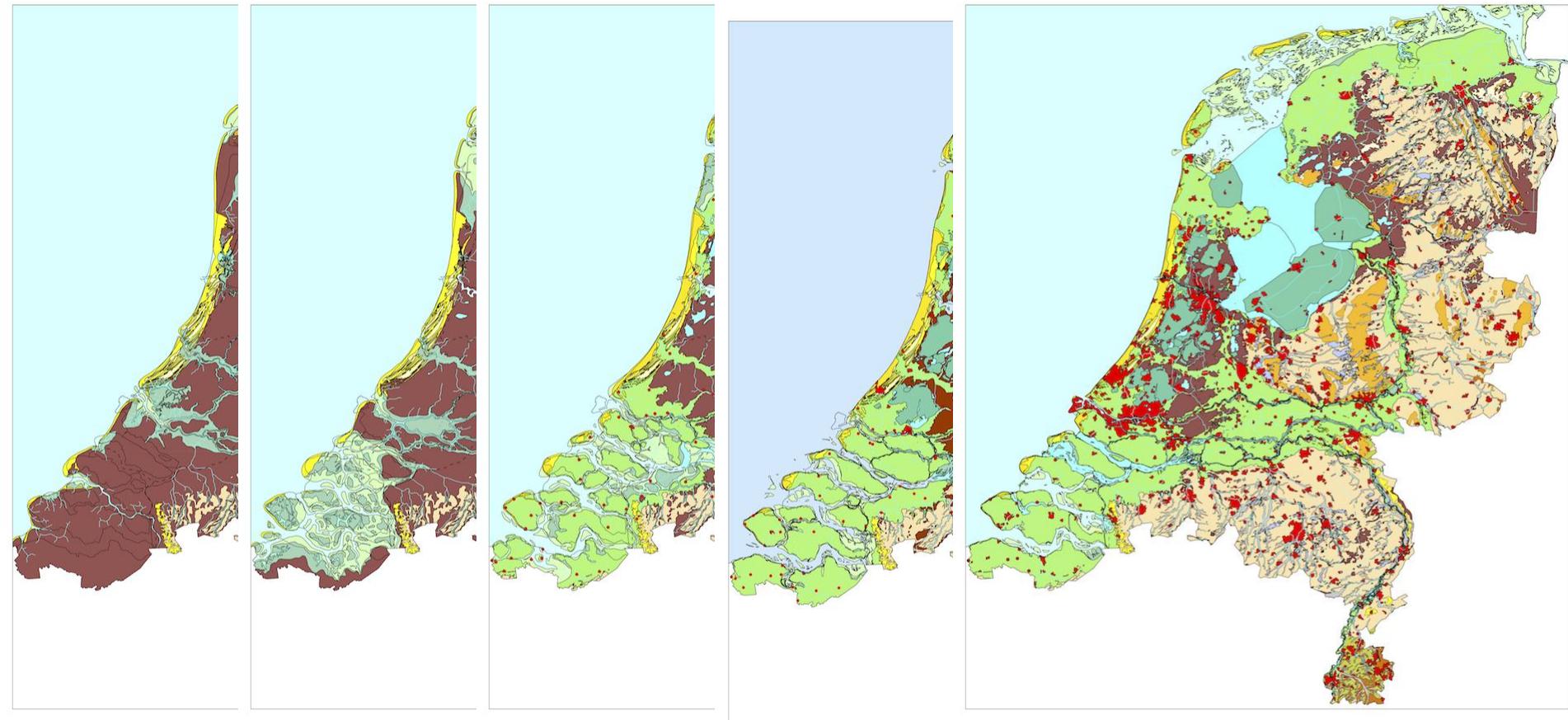
100 n. Chr.

800 n. Chr.

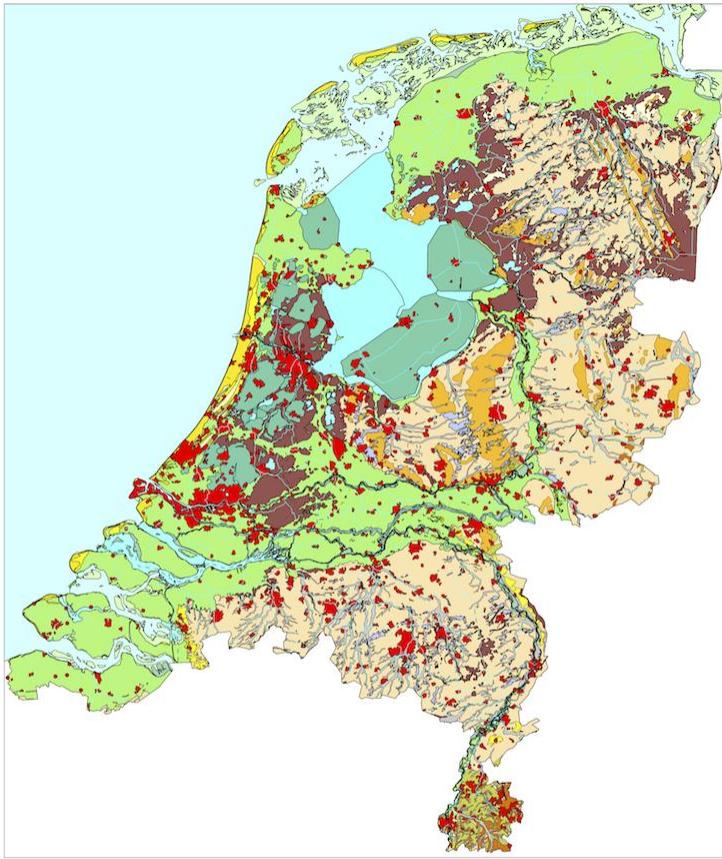
1500 n. Chr.

1850 n. Chr.

2000 n. Chr.



2000 n. Chr.



Current ET classification

- Agriculture
 - Non-perennial plants
 - Perennial plants
 - Greenhouses
 - Meadows (grazing)
 - Bushes and hedges bordering fields
 - Farmyards and barns
- Dunes and Beaches
- Forests and other (semi-) natural environments
- Built-up areas
- Water



Extent account

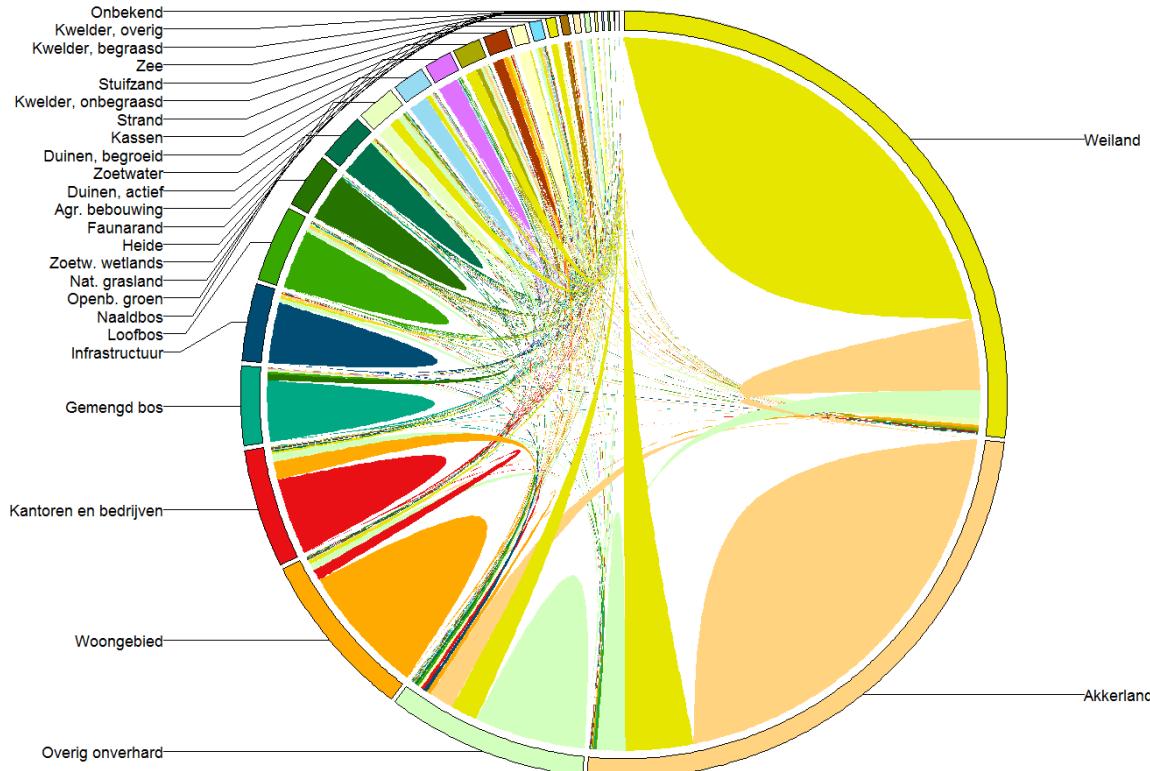


Extent account

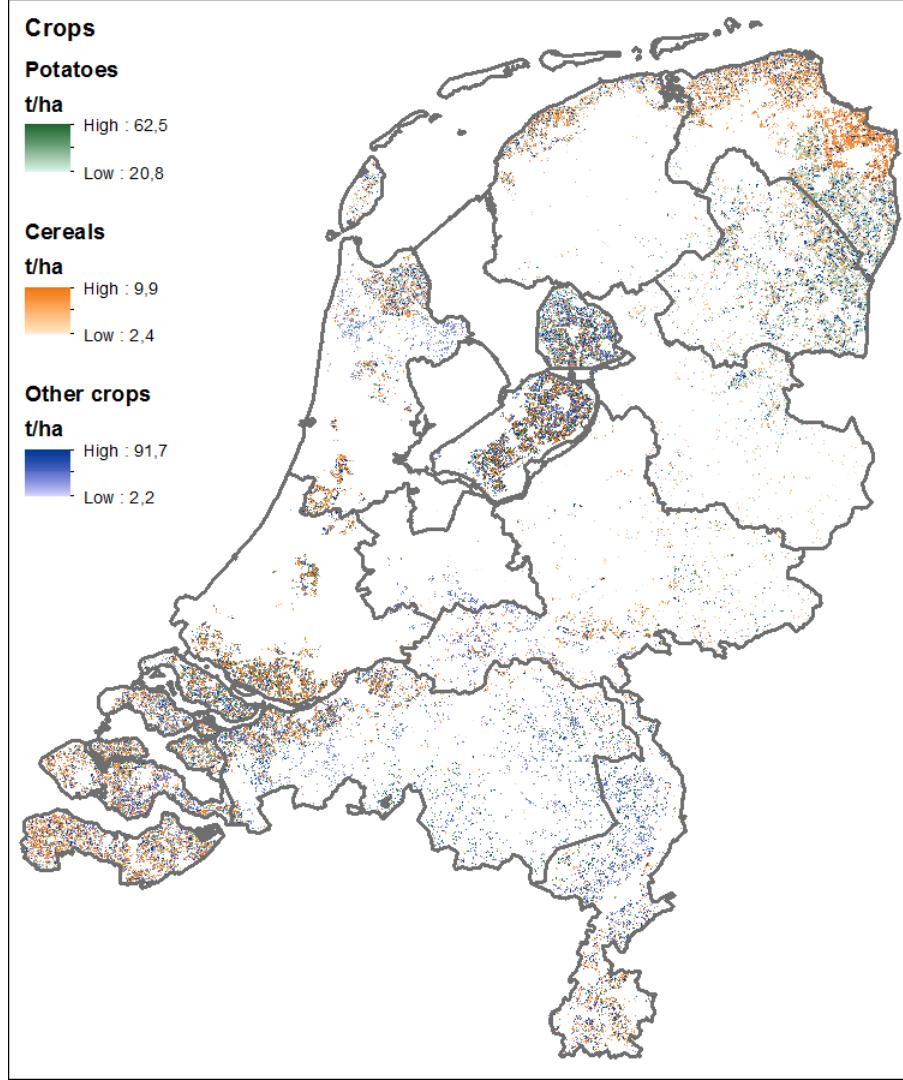
Ecosystem Unit	Area (km2)			Area (percentage)		
	2006	2013	Δ	2006	2013	Δ
Agriculture	19174	18811	-363	46,16	45,29	-0,87
Forest	3207	3216	8	7,72	7,74	0,02
Heath	394	427	33	0,95	1,03	0,08
Sand	356	358	2	0,86	0,86	0,00
Wetlands	461	580	119	1,11	1,40	0,29
Other nature	4061	4007	-54	9,78	9,65	-0,13
Public green areas	710	708	-1	1,71	1,70	0,00
Built-up and paved	5236	5410	175	12,60	13,03	0,42
Inland water	4088	4199	111	9,84	10,11	0,27
Sea	3846	3815	-31	9,26	9,18	-0,08
Unknown/null	6	8	2	0,01	0,02	0,00
The Netherlands	41539	41539	0			0,00



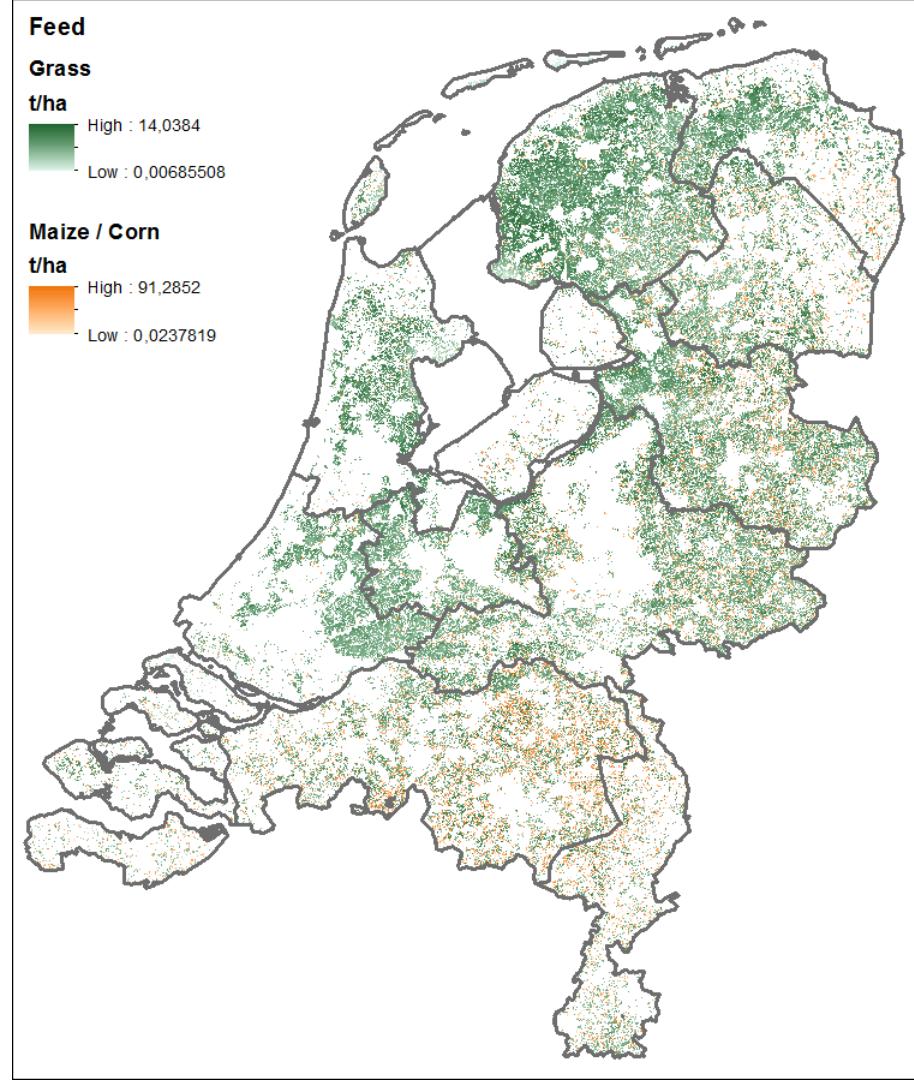
Extent account



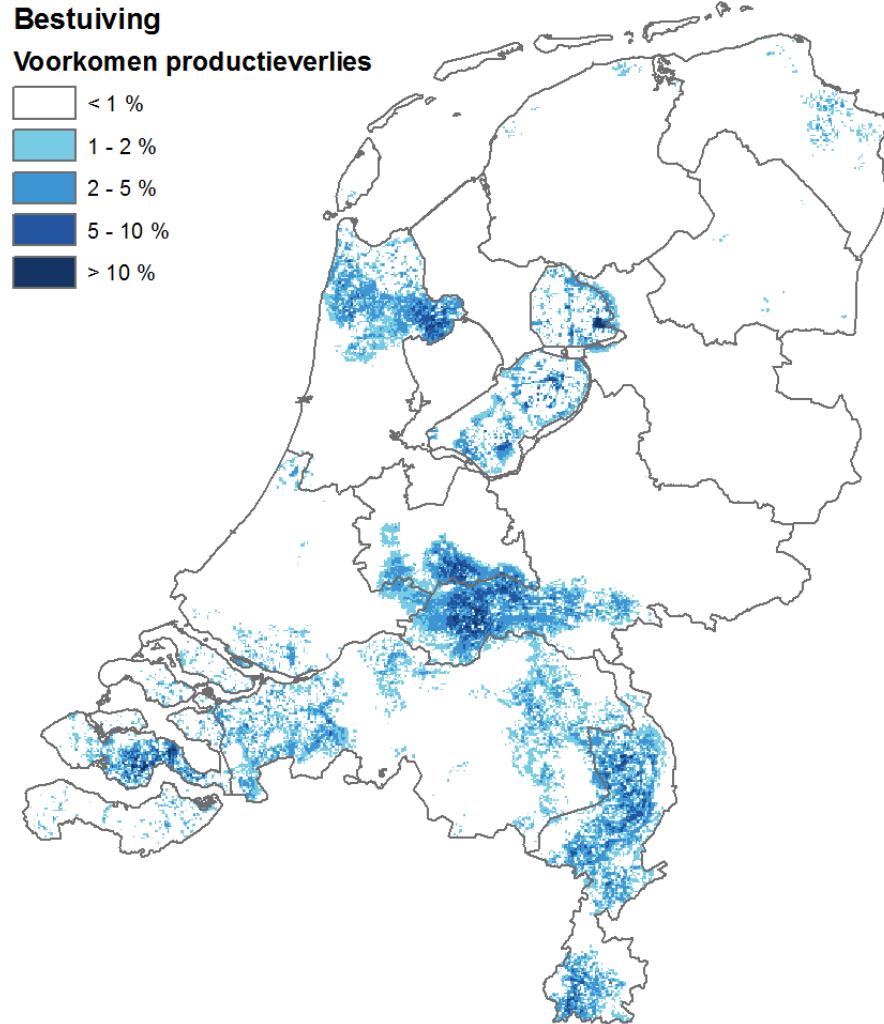
Agricultural ESS: - food



Agricultural ESS: - feed



Regulating ESS: - Pollination



Carbon account

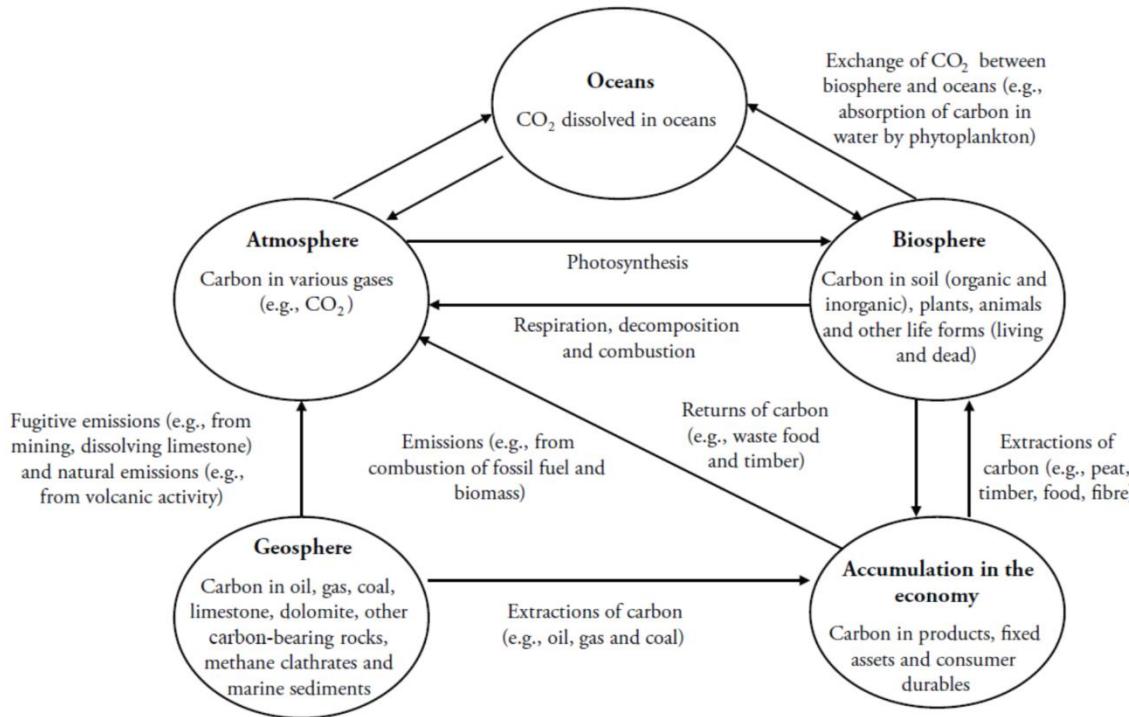


Figure 1.2.1 Main components of the carbon cycle, and the carbon flows between these components. Source: SEEA EEA.

Carbon account

Table 6.1.1: Carbon account for the Netherlands (2013) in Mton C. Grey cells are null by definition.

	Geocarbon				Biocarbon				Carbon in the economy			Carbon in the atmosphere		Total
	oil	gas and shalegas	coal	limestone and marl		Forests	Cropland / meadows	Other ecosystems	Total biocarbon	Inventories	fixed assets, consumer durables	Waste	Total	
Opening stock	54	627	12717		13398	48	206	123	377	24	24		3193	16993
Additions to stock	0	0	0	0	0	0.6	0.2	0.2	1.0	251	2	10	263	58.9
Natural expansion						0.6	0.2	0.2	1.0					324
Managed expansion						50				50				1.8
Discoveries	0	0	0		0									0
Upwards reappraisals	0	0	0		0									0
Reclassifications						15	2	6	23					23
Imports						186	2	4	190					190
Reductions in stock	1	41	0	0	42	0.6	1.3	0.6	2.4	78	0	8	85	9.4
Natural contraction						0.1	1.3	0.5	1.9					140
Managed contraction	1	40	0	0	41	0.5	0.0	0.0	0.5	59	3	62		1.0
Downwards reappraisals	0	1	0		1					12	0	5	17	3
Reclassifications						6	2	0	6					112
Exports														1
Net carbon balance	-1	-41	0	0	-42	0.0	-1.1	-0.4	-1.4	174	2	2	178	49.5
Closing stock	53	587	12717		13356	48	205	122	376	198		203		3243
														17177



Carbon account

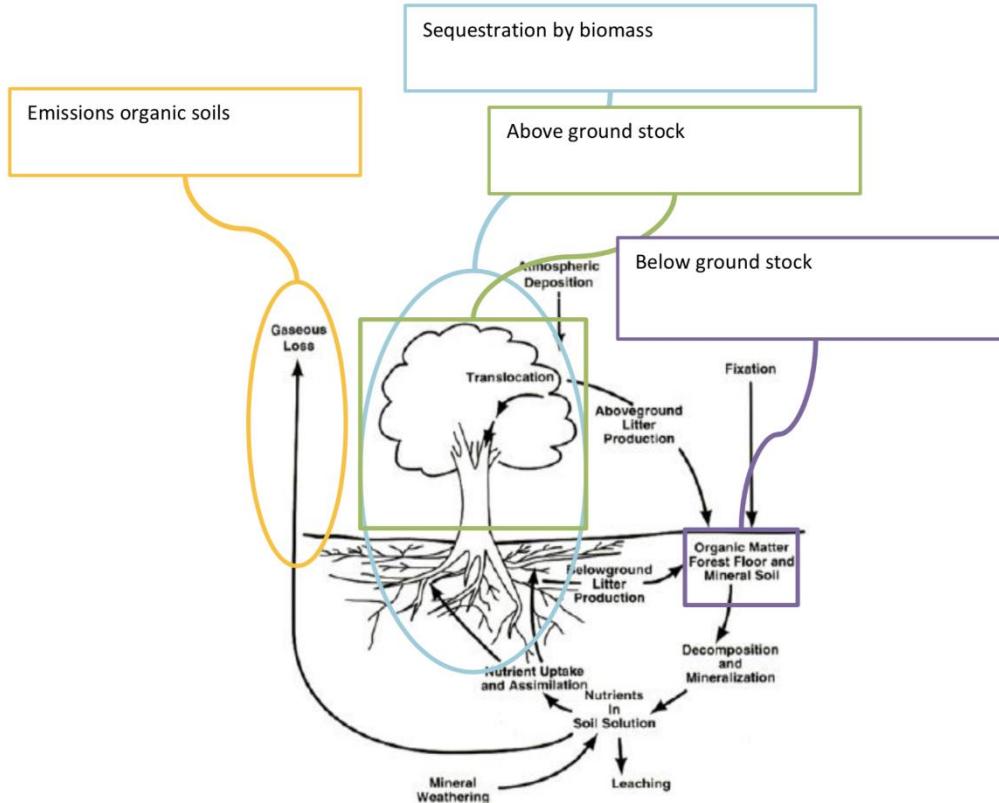
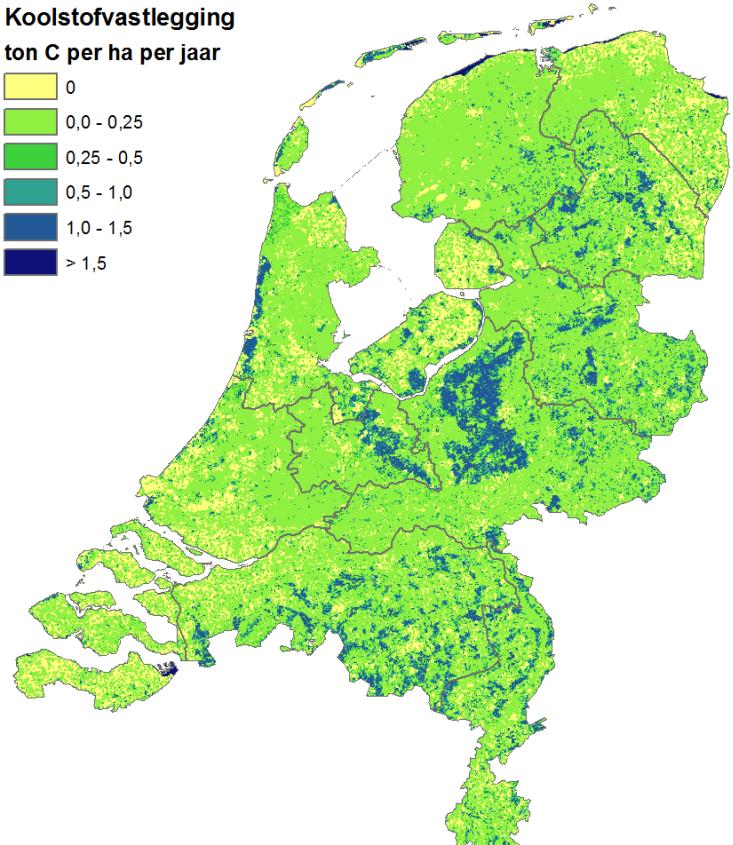
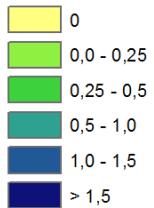


Figure 2.1.1 Processes in the biocarbon cycle.

Carbon account

Koolstofvastlegging

ton C per ha per jaar



C sequestration per ecosystem type

ton C / ha

Salt marshes: 4.6%

4

3

2

1

0

Forests: 60%

Coastal dunes: 3.1%

Misc. unpaved: 5.4%

Agriculture: 21%



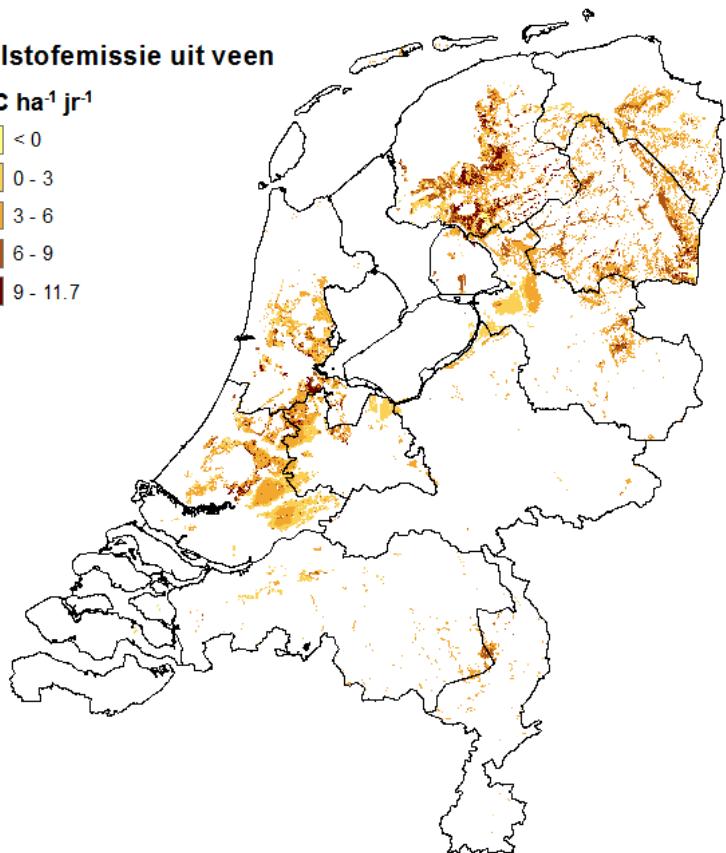
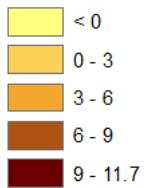
Relative extent



Carbon account

Koolstofemissie uit veen

ton C $\text{ha}^{-1} \text{ jr}^{-1}$



C emissions per ecosystem type

ton C / ha

Wetlands: 2.1%

(semi)-natural grassland: 3.3%

Heath / driftsand: 1.3%

Misc. unpaved: 7.8%

Parks: 1.5%

Forests: 4.0%

Urban: 9.3%

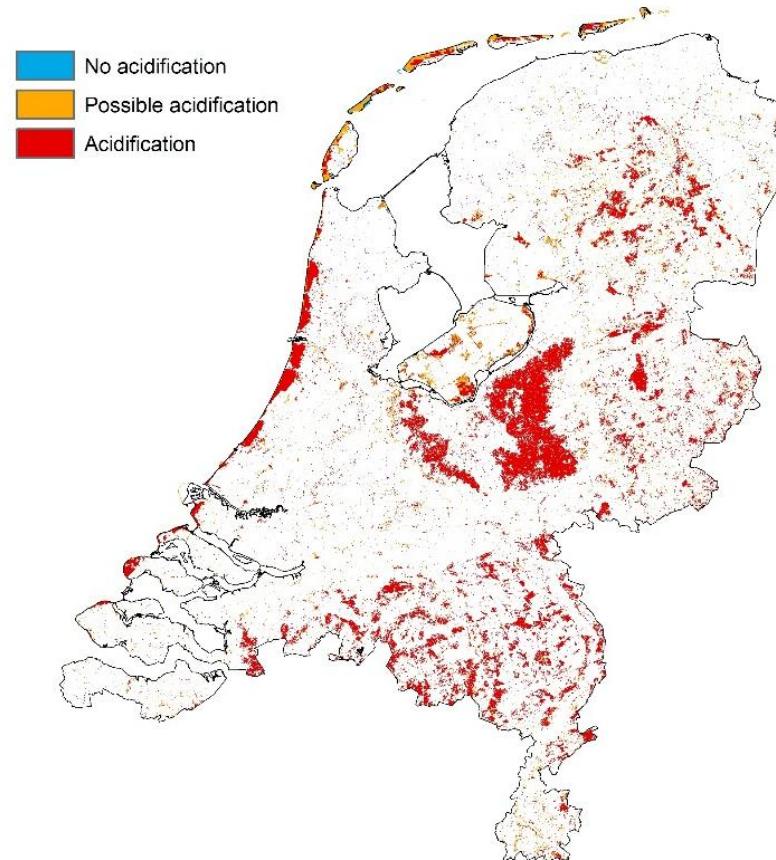
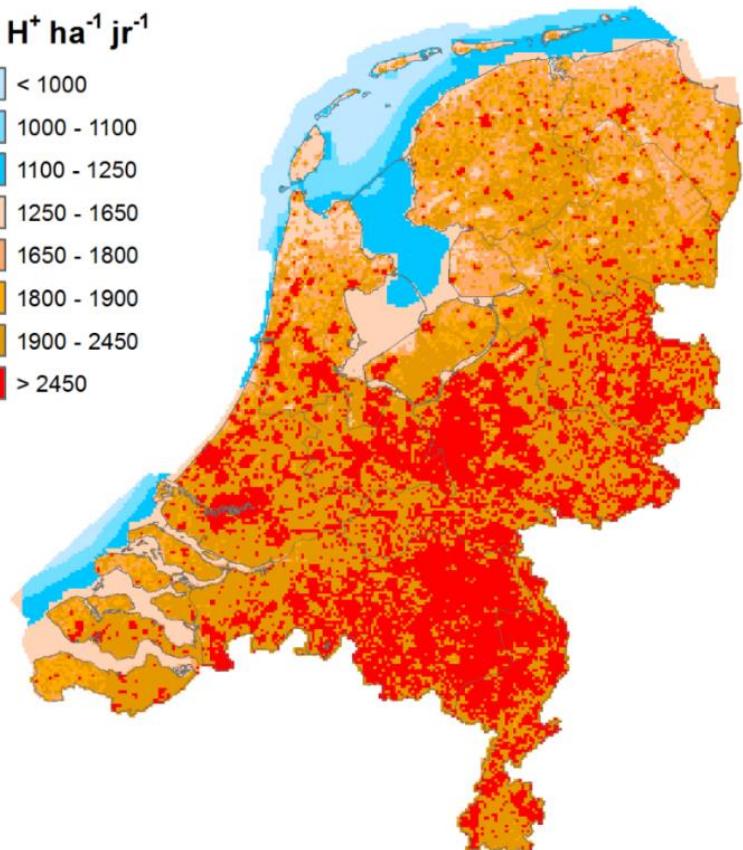
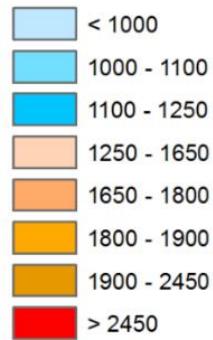
Agriculture: 70%

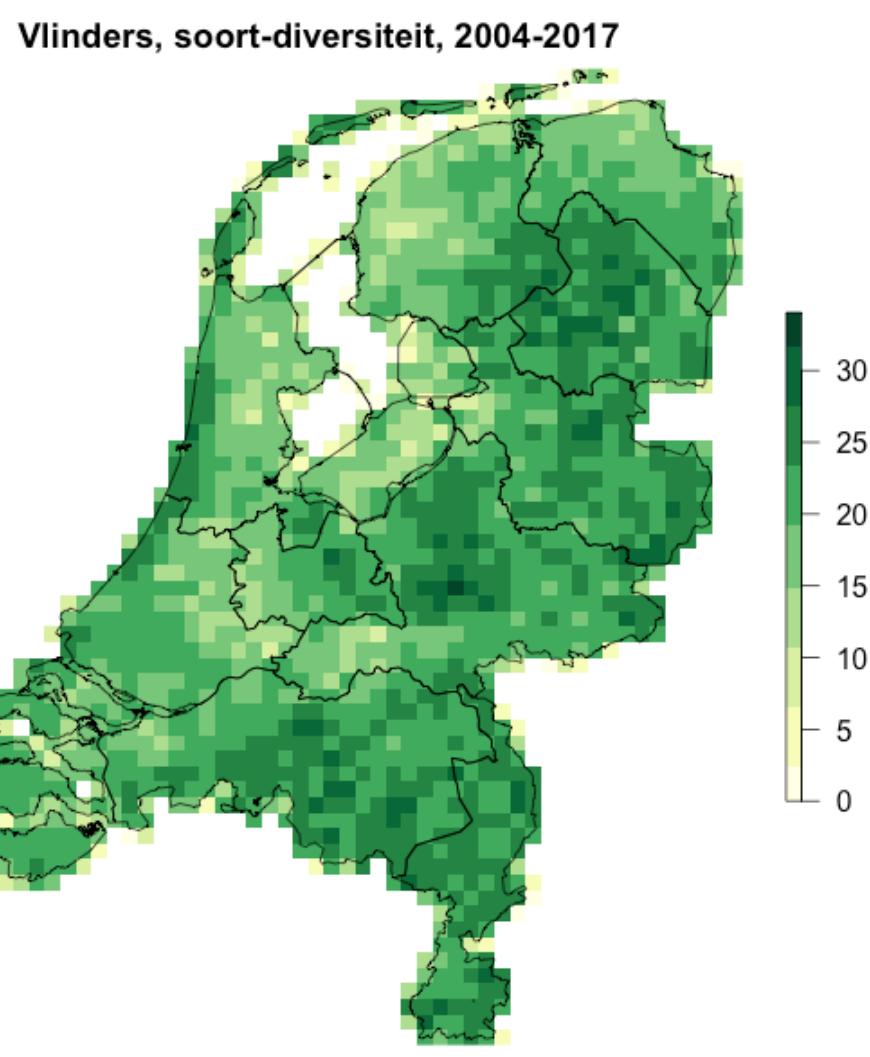
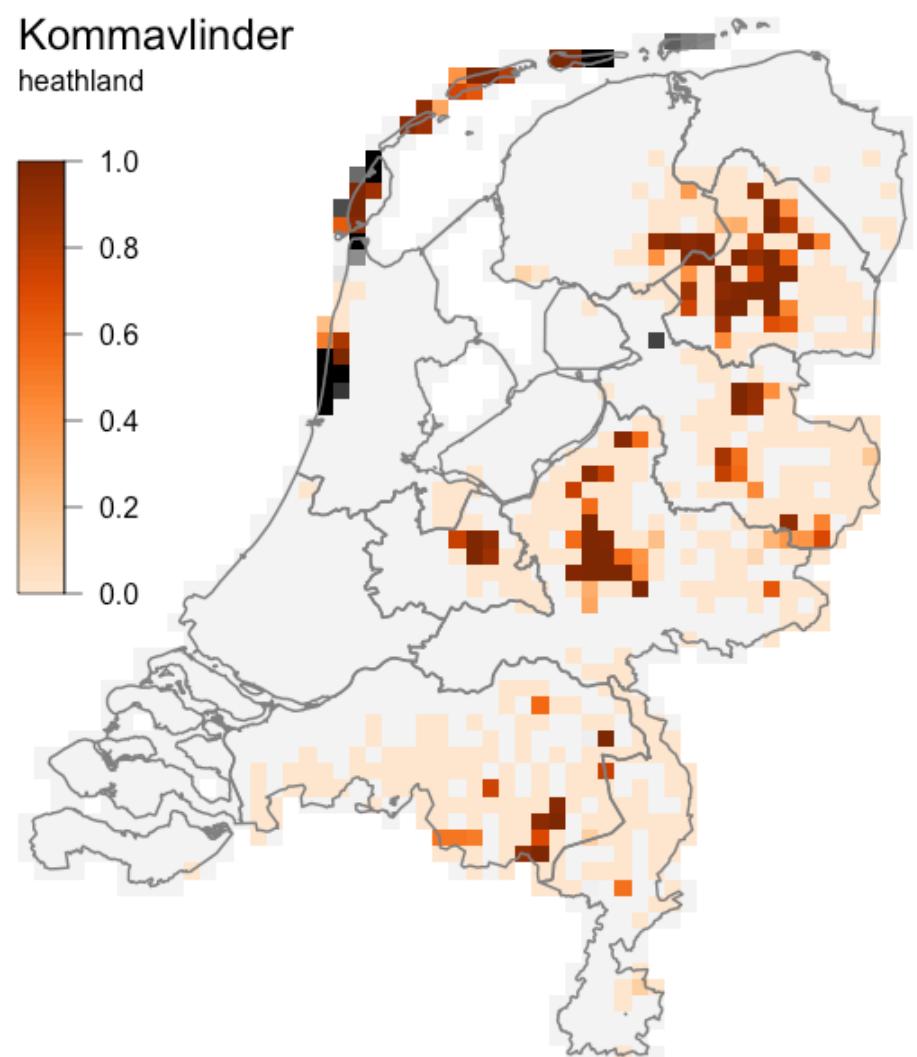
Relative extent



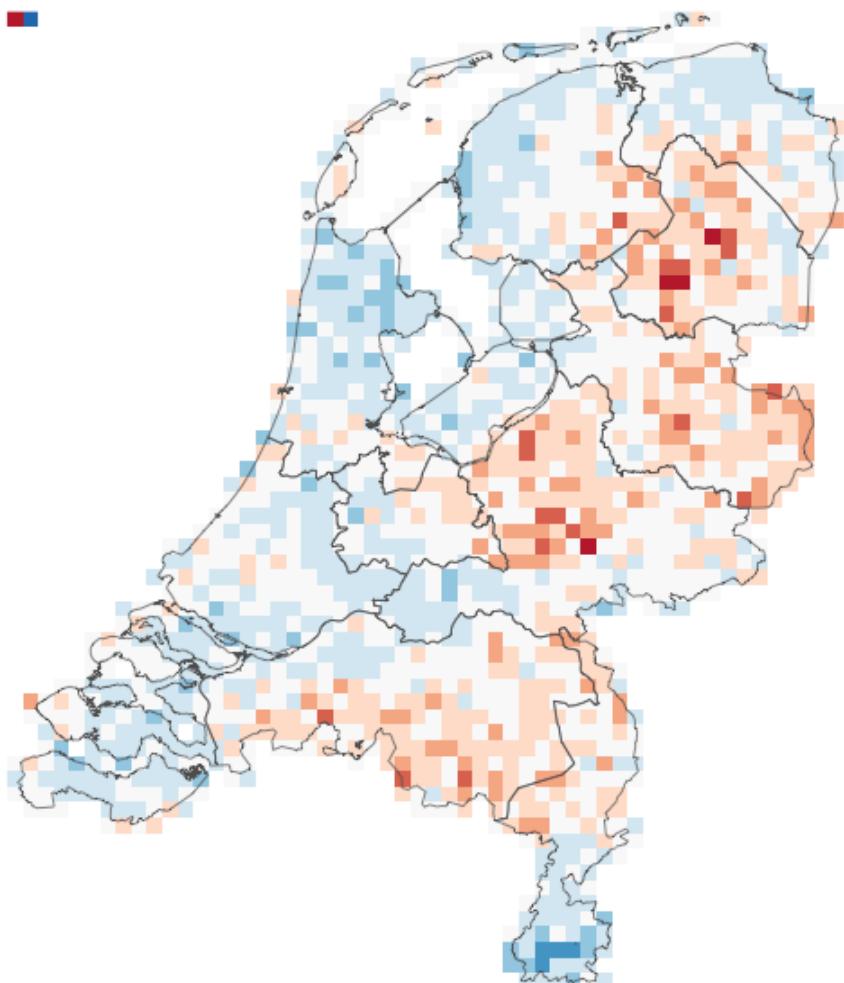
Condition account: acidification

$\text{mol H}^+ \text{ ha}^{-1} \text{ yr}^{-1}$

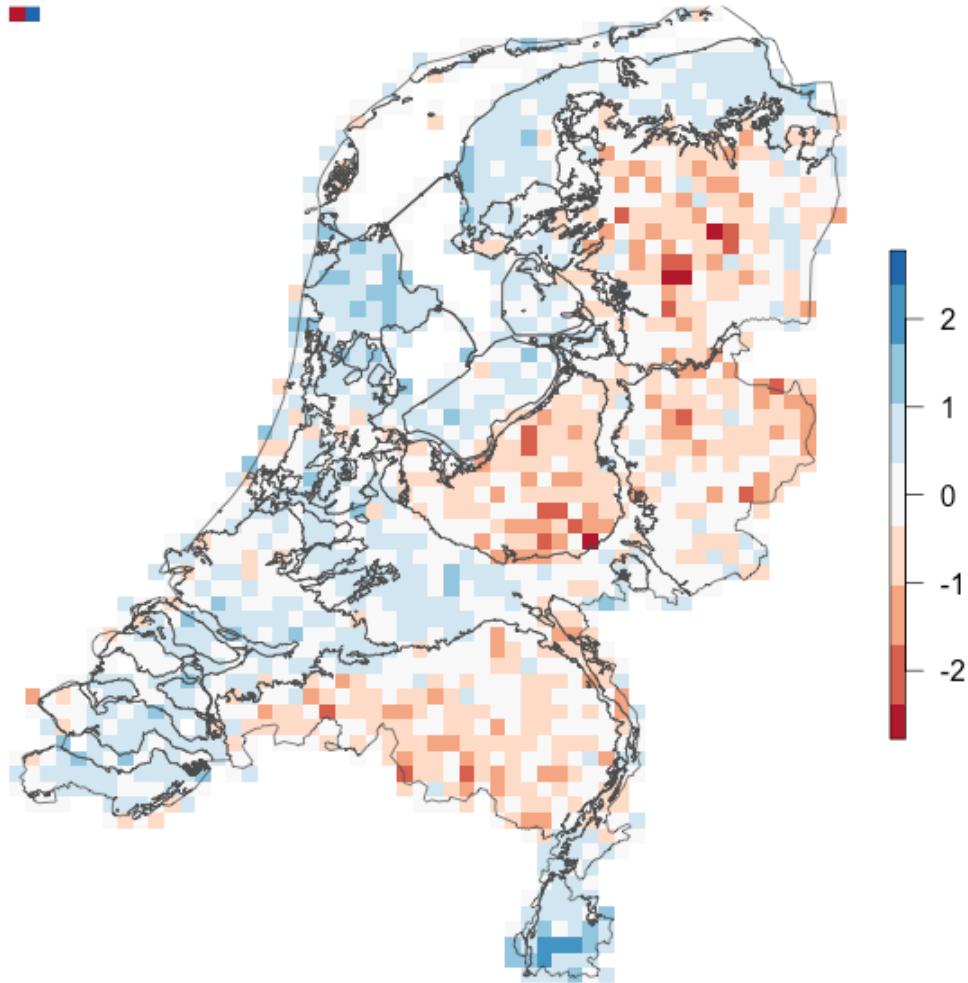


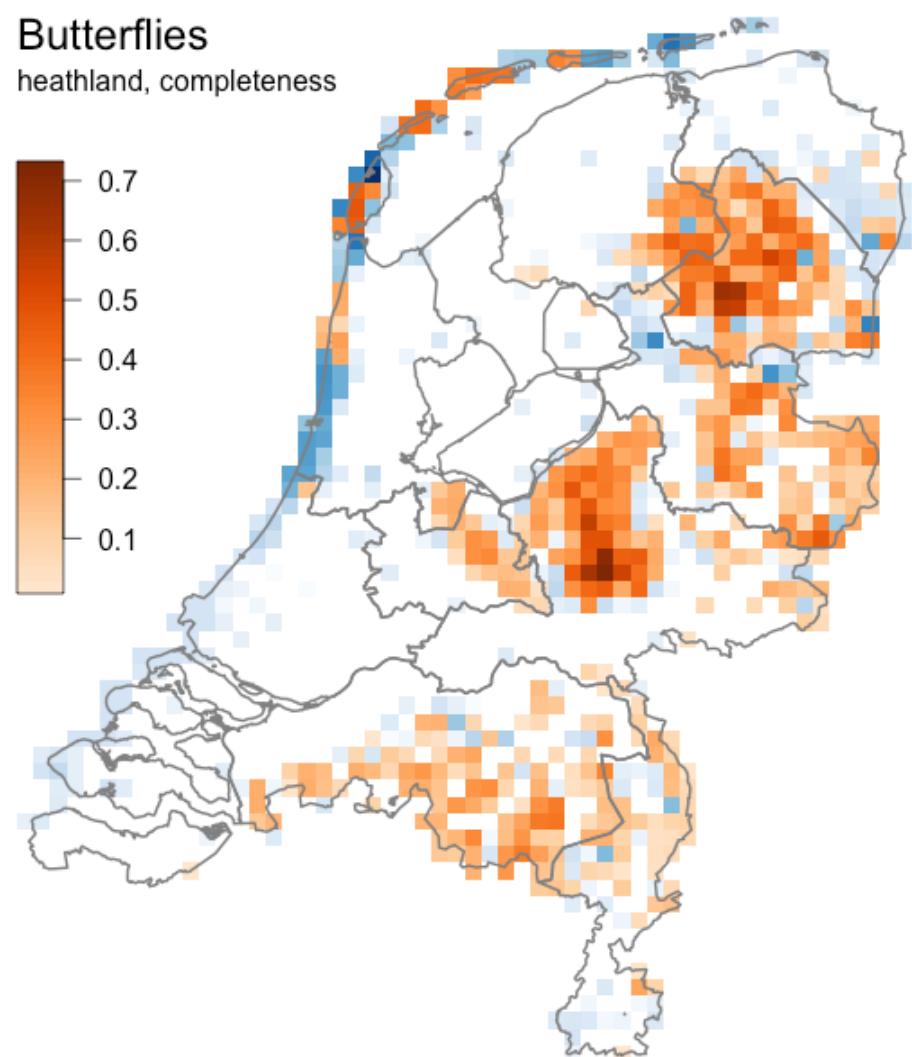
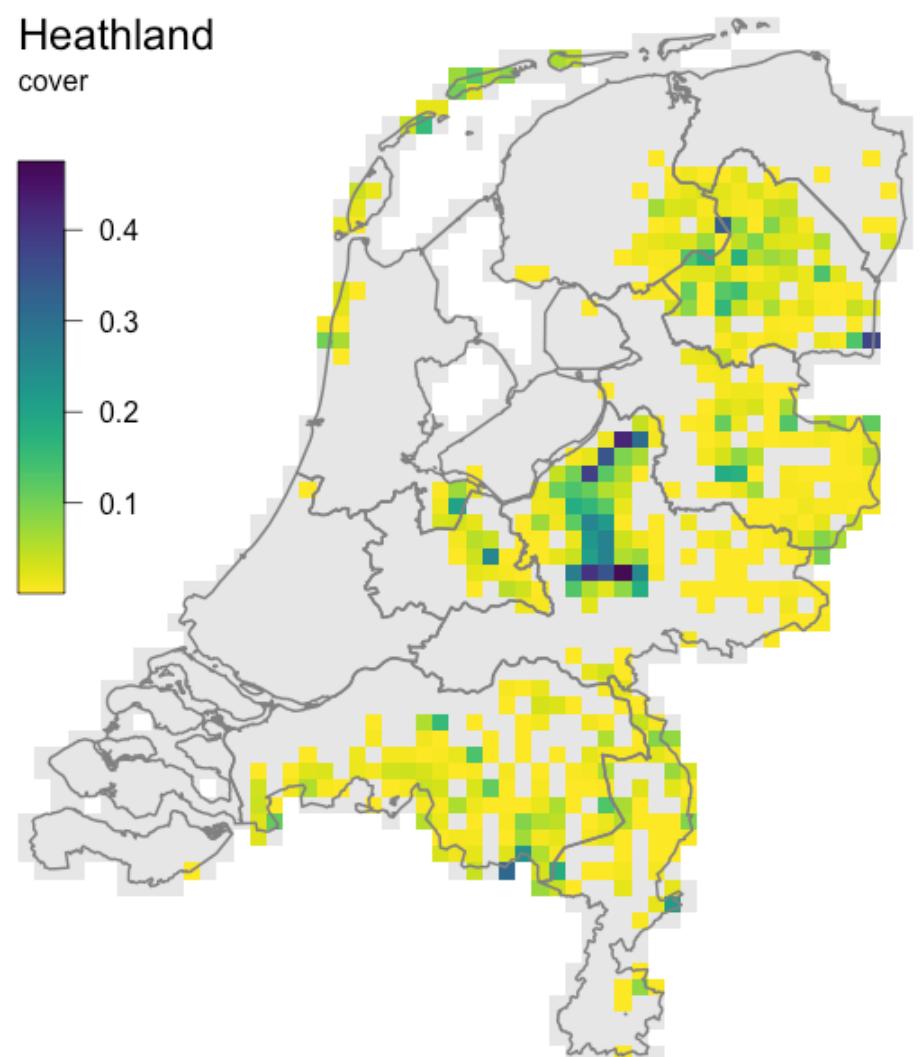


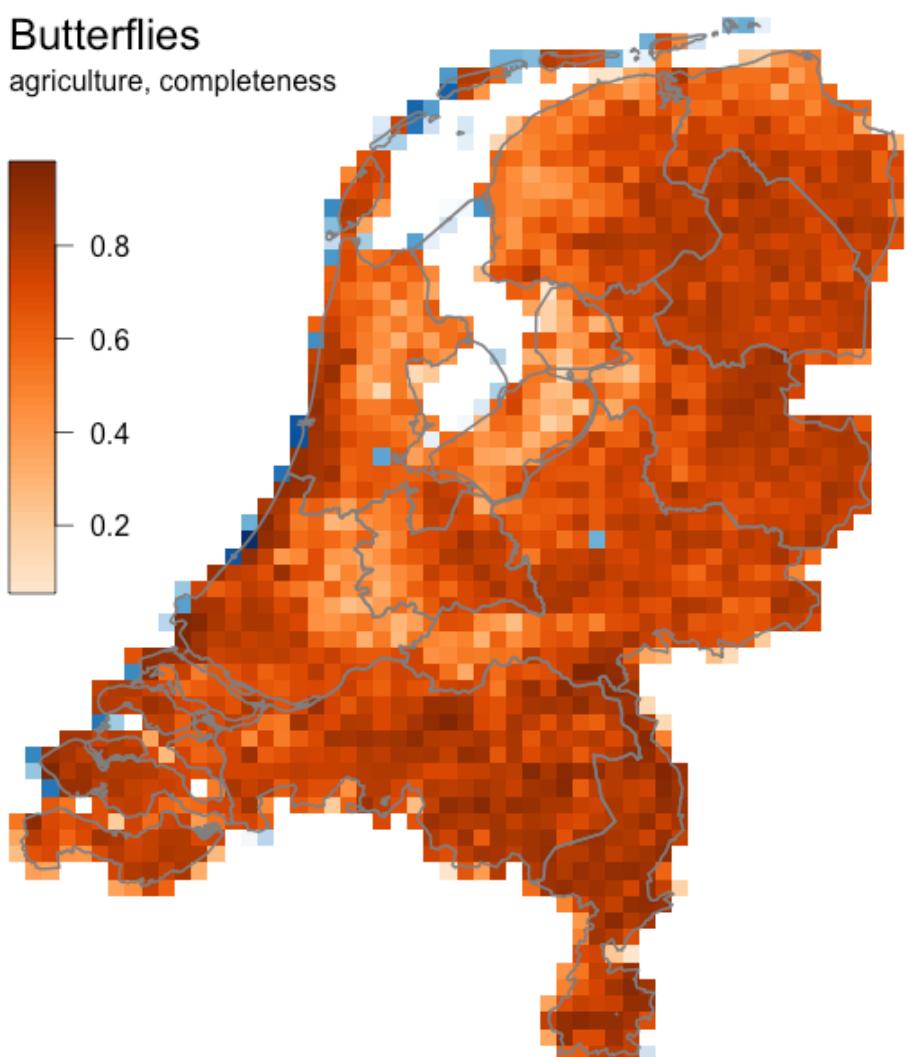
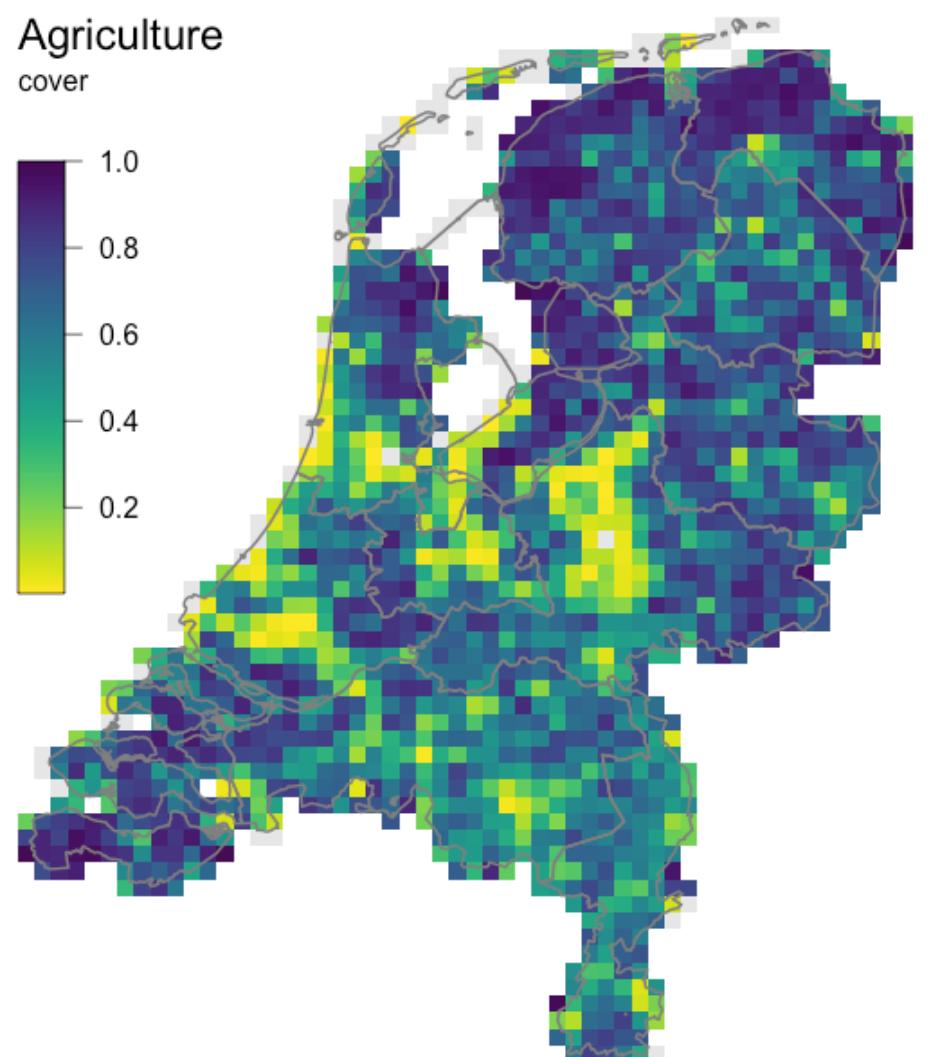
Vlinders, soort-diversiteit, 1990-2003 vs 2004-2017



Vlinders, soort-diversiteit, 1990-2003 vs 2004-2017







Conclusions

- Implicit links between ESS, ET and abiotics.
 - Co-evolution of geo-ecosystems
- Visualizations help in dissemination *and* analysis.
- ET classification currently a bit ad-hoc; no proper hierarchy

