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The SEEA EEA biophysical ecosystem service supply-use account for the Netherlands

Paper for the London group meeting 2017 in Costa Rica

This paper for the London Group is the executive summary of the report that will be published in the last quarter 2017. Reported in the tables are some preliminary results that still may change in the final version of the report.

Roy Remme

Marjolein Lof

Linda de Jongh

Lars Hein

Sjoerd Schenau

Rixt de Jong

The supply of ecosystem services by ecosystem assets and the use of these services by economic units, including households, is one of the central features of ecosystem accounting (UN et al., 2014a; UN et al., 2014b; UN et al., 2017). These are the flows that reflect the link between ecosystem assets and economic and human activity. Their measurement is thus central to the ambition to integrate environmental information fully into the existing national accounts.

In this study the biophysical ecosystem service supply and use account for the Netherlands for 2013 is presented, developed within the project 'Ecosystem Accounting for the Netherlands' by Statistics Netherlands and Wageningen University. This account records the flows of ecosystem services from ecosystems to society, and is one of the Dutch ecosystem accounts under development. Ecosystem accounting is an approach to systematically measure and monitor ecosystem services and ecosystem condition over time for decision making and planning, and follows the framework of the United Nations the System of Environmental Economic Accounting – Experimental Ecosystem Accounting (SEEA EEA). The biophysical supply and use account is one of the core ecosystem accounts and provides the basis for monetary ecosystem service supply and use account.

High-resolution spatial models were developed for a broad range of ecosystem services. Thirteen ecosystem services were modelled (see table i): five provisioning services, six regulating services and two cultural services. These ecosystem services were analysed and maps were produced (see figure 1 for an example). Based on the results from the spatial models biophysical supply tables are developed and analysed. The ecosystem services supply tables were developed for ecosystem types and for the Dutch provinces. Use tables are set up for the different economic sectors that benefit from the ecosystem services.

Table i: Ecosystem services included in the biophysical supply and use account for the Netherlands.

Provisioning services

- Crop production
- Fodder production
- Wood production
- Biomass from non-agricultural sources
- Drinking water

Regulating services

- Carbon sequestration in biomass and soil
- Pollination
- Natural pest control
- Erosion control
- Air filtration
- Protection against flooding due to heavy rainfall

Cultural services

- Nature recreation (hiking)
- Nature tourism

The biophysical supply tables show that forests and agricultural land supply the highest total quantities of ecosystem services, mainly because these ecosystem types cover the largest extents. More natural ecosystem types (e.g. dunes, heath and broad leafed forest) supply higher average

quantities of ecosystem services (per ha) compared to less natural ecosystem types. The supply of ecosystem services from Dutch provinces is highly heterogeneous, with each province providing a different set of services, in part due to differences in dominant ecosystem types. Limburg has a relatively high supply of ecosystem services per ha, supplying all ecosystem services at or above national average levels.

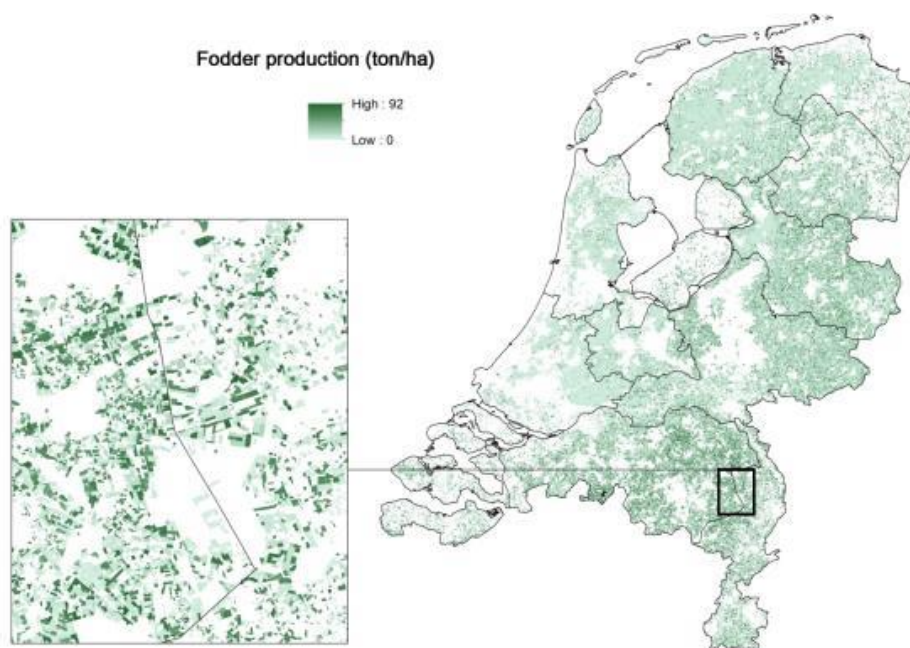


Figure i Example of ecosystem supply model result map. Fodder production in the Netherlands (tons/ha/yr), comprising maize and grass production for livestock.

The biophysical use table reflects which economic sectors are the most important users of the various ecosystem services. The use of ecosystem services erosion control and protection against flooding from heavy rainfall has been allocated to sectors based on land ownership. The ISIC sector Agriculture, forestry and fisheries uses the most ecosystem services (seven), followed by households (four).

Data availability and models on or related to ecosystem services are rapidly improving, increasing the possibilities to account for ecosystem service supply and use. Given current national efforts to model ecosystem services, future supply and use accounts can include a larger number of ecosystem services.

The results from the biophysical supply and use account can be used for multiple policy applications, providing information for spatial planning, developing a circular economy, and assessing particular sectors, and providing a basis for monitoring existing policies. For example, new residential or infrastructure investments can be designed in such a way that the negative effects on natural capital providing ecosystem services can be minimized. In addition, land owners can use the accounts to

assess where other, comparable, areas provide more ecosystem services in order to adjust their land use. As an example, the accounts demonstrate that small forest patches and hedgerows in agricultural landscapes are very important for crop production since they contribute to pollination of crops and to natural pest control. The importance of these services for crop production, and thereby the importance of the small landscape elements may often be overlooked in spatial planning.

The accounts also provide detailed information on material flows from ecosystems to the economy, and allow closing such flows for example for wood and other biomass. The accounts specify that there are several sources of such materials where use can possibly be increased without affecting the sustainability of this specific use (e.g. currently only around one third of the regrowth in Dutch forest is harvested). Simultaneously, the accounts can also provide insight into changes in the supply of other ecosystem services if the use of a specific service is increased.

The high level of detail and expected regular repetition of the accounts provides the possibility to assess supply and use from national to local level and monitor changes over time. The accounts include maps of ecosystem services supply and use that are at such a fine resolution (10 meters for many services) that they also are relevant for ecosystem management in Dutch municipalities and provinces. However, at the same time, even though the models are all state-of-the art and represent the most accurate representation that can be given at national scale given current availability of data, the accuracy of most models is not yet verified. Therefore it is not yet well understood if the maps are sufficiently accurate to also provide meaningful information at the level of the municipality. In the third year of the Ecosystem Accounting project for the Netherlands (i.e. 2018/2019) this accuracy will be tested and discussions with a broad group of potential users will be held in order to verify the relevance of the product for local scale natural capital management.

In addition, the authors concur with the UN SEEA that the SEEA EEA approach greatly increases its potential to support policy making if the accounts are produced on a regular basis (e.g. two or three year cycles). This is in line with the national accounts that record the use of human and produced capital (and of some natural capital, i.e. subsoil assets such as oil and gas), which are produced on an annual basis. Many if not all models developed in this project can be reproduced if and when the accounts are to be updated in the future.

Table 1 Biophysical ecosystem service supply account 2013 for the Netherlands, with total biophysical supply per ecosystem unit

Ecosystem unit \ Ecosystem service	Unit	Null	Agriculture - annual crops	Agriculture - perennial crops	Agriculture - glass houses	Agriculture - grassland	Agriculture - buffer strips	Agriculture - built-up	Dunes with permanent vegetation	Beach, sand and active dunes	Broad leaved forest	Coniferous forest	Mixed forest	Heath	Sand	Wetlands	Non-agricultural grassland
Area	ha	379	781.401	79.228	11.790	927.216	36.492	35.491	15.943	33.946	109.142	81.923	118.571	40.813	2.364	34.346	54.010
Crop production	ktons	0	15.177	1.081	0	0	0	0	0	0	0	0	0	0	0	0	0
Fodder production	ktons	0	9.517	0	0	6.181	0	0	0	0	0	0	0	0	0	0	0
Wood production	ktons	0	0	0	0	0	0	0	45	0	502	195	393	0	0	0	0
Biomass production	ktons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Drinking water production	mln m3	0	2.991	453	10	4.845	151	141	3.119	7.742	1.526	2.780	3.809	1.405	83	143	434
Carbon sequestration in biomass	ktons	0	0	23	0	167	6	0	23	0	158	119	172	8	0	8	10
Pollination ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural pest control ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erosion control	ktons soil	0	-3	21	6	930	79	47	195	-546	468	317	517	167	-24	32	163
Air filtration	ktons PM10	0	2.725	287	0	3.266	127	0	463	0	4.063	5.014	5.835	145	114	192	252
Protection against heavy rainfall	mln liters in 1 hour	134	171.713	23.731	953	193.341	8.166	5.019	10.895	16.799	48.138	57.441	79.896	23.636	1.161	7.156	16.841
Nature recreation (hiking)	x1000 hikers	0	29.126	5.762	651	42.238	2.103	3.397	11.406	16.922	27.937	25.474	32.975	11.826	703	6.290	6.022
Nature tourism	x1000 tourists	0	798	97	0	1.042	46	2	367	704	148	168	240	87	6	31	73

Ecosystem unit Cont'd \ Ecosystem service	Unit	Public green space	Other unpaved terrain	Floodplains	Salt marshes	Residential area	Offices and companies - industry	Offices and companies - services	Offices and companies - government	Roads, parking lots and other paved areas	Offices and companies - forestry	Offices and companies - fisheries	Offices and companies - non-commercial	Sea	Lakes, ponds and other inland water bodies	Rivers	unknown	Total
Area	ha	68.416	294.931	73.306	11.139	250.417	66.518	89.774	1.093	111.811	206	115	19.723	381.509	123.277	297.559	1.231	4.154.080
Crop production	ktons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.259
Fodder production	ktons	0	0	340	0	0	0	0	0	0	0	0	0	0	0	0	0	16.039
Wood production	ktons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.134
Biomass production	ktons	0	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	360
Drinking water production	mln m3	1.197	3.223	1.172	0	2.434	581	843	8	1.032	3	0	325	0	695	166	1	41.313
Carbon sequestration in biomass	ktons	17	53	15	45	0	0	0	0	0	0	0	0	0	0	0	0	823
Pollination ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural pest control ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erosion control	ktons soil	153	733	103	11	247	73	90	1	315	0	0	16	0	33	2	0	4.150
Air filtration	ktons PM10	1.071	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.832
Protection against heavy rainfall	mln liters in 1 hour	26.424	97.947	14.316	3.009	52.535	6.304	14.440	142	21.683	66	21	3.592	0	0	0	0	905.497
Nature recreation (hiking)	x1000 hikers	40.406	41.810	4.862	523	50.777	10.399	16.557	237	19.104	40	19	4.385	199	16.013	1.291	74	429.526
Nature tourism	x1000 tourists	90	334	88	7	11	2	4	0	23	0	0	1	1	57	78	0	4.505

¹ Pollination and pest control cannot be added in this table due to set-up of the indicator. They are added in table 4.1.2, however.

Table 2 Biophysical ecosystem service supply account 2013 for the Netherlands, with mean biophysical supply per ha per ecosystem unit

Ecosystem unit \ Ecosystem service	Unit	Null	Agriculture - annual crops	Agriculture - perennial crops	Agriculture - glass houses	Agriculture - grassland	Agriculture - buffer strips	Agriculture - built-up	Dunes with permanent vegetation	Beach, sand and active dunes	Broad leaved forest	Coniferous forest	Mixed forest	Heath	Sand	Wetlands	Non-agricultural grassland
Area	ha	379	781.401	79.228	11.790	927.216	36.492	35.491	15.943	33.946	109.142	81.923	118.571	40.813	2.364	34.346	54.010
Crop production	tons/ha	0	19,4	13,7	0	0	0	0	0	0	0	0	0	0	0	0	0
Fodder production	tons/ha	0	12,2	0	0	6,7	0	0	0	0	0	0	0	0	0	0	0
Wood production	tons/ha	0	0	0	0	0	0	0	2,8	0	4,6	2,4	3,3	0	0	0	0
Biomass production	tons/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,04
Drinking water production	m3/ha	0	3.828	5.717	854	5.226	4.146	3.974	195.637	228.071	13.983	33.934	32.124	34.417	34.960	4.170	8.034
Carbon sequestration in biomass	tons/ha	0	0	0,3	0	0,2	0,2	0	1,5	0	1,4	1,4	1,4	0,2	0	0,2	0,2
Pollination	%	0	0	0	0	0,9	1,6	0	0,5	0,1	2,0	0,6	0,8	0,6	0,1	0,6	1,5
Natural pest control	%	0	0	0	0	0	0	0	2,1	0	17,7	9,6	11,2	0	0	0	0
Erosion control	tons soil/ha	0,1	0,0	0,3	0,5	1,0	2,2	1,3	12,3	-16,1	4,3	3,9	4,4	4,1	-10,2	0,9	3,0
Air filtration	tons PM10/ha	0	3,5	3,6	0	3,5	3,5	0,0	29,1	0,0	37,2	61,2	49,2	3,6	48,3	5,6	4,7
Protection against heavy rainfall	mm/m2 in 1 hour	35	22	30	8	21	22	14	68	49	44	70	67	58	49	21	31
Nature recreation (hiking)	hikers/ha	0	37	73	55	46	58	96	715	499	256	311	278	290	297	183	111
Nature tourism	tourists/ha	0	1,0	1,2	0	1,1	1,3	0,1	23,0	20,8	1,4	2,0	2,0	2,1	2,4	0,9	1,3

Ecosystem unit Cont'd \ Ecosystem service	Unit	Public green space	Other unpaved terrain	Floodplains	Salt marshes	Residential area	Offices and companies - industry	Offices and companies - services	Offices and companies - government	Roads, parking lots and other paved areas	Offices and companies - forestry	Offices and companies - fisheries	Offices and companies - non-commercial	Sea	Lakes, ponds and other inland water bodies	Rivers	unknown	Total	
Area	ha	68.416	294.931	73.306	11.139	250.417	66.518	89.774	1.093	111.811	206	115	19.723	381.509	123.277	297.559	1.231	4.154.080	
Crop production	tons/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,9
Fodder production	tons/ha	0	0	4,6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,9
Wood production	tons/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,3
Biomass production	tons/ha	0	1,21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,09
Drinking water production	m3/ha	17.502	10.926	15.983	0	9.718	8.740	9.395	7.725	9.227	14.805	1.900	16.483	0	5.639	559	520	9.945	
Carbon sequestration in biomass	tons/ha	0,2	0,2	0,2	4,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,2
Pollination	%	0,8	1,2	1,8	0,6	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5
Natural pest control	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,0
Erosion control	tons soil/ha	2,2	2,5	1,4	1,0	1,0	1,1	1,0	0,8	2,8	1,9	1,3	0,8	0,0	0,3	0,0	0,0	1,0	
Air filtration	tons PM10/ha	15,7	0,9	0	0	0,0	0,0	0,0	0	0,0	0	0	0,0	0	0,0	0	0,0	5,7	
Protection against heavy rainfall	mm/m2 in 1 hour	39	33	20	27	21	9	16	13	19	32	19	18	0	0	0	0	22	
Nature recreation (hiking)	hikers/ha	591	142	66	47	203	156	184	216	171	194	169	222	1	130	4	60	103	
Nature tourism	tourists/ha	1,3	1,1	1,2	0,6	0	0	0	0	0,2	0,2	0	0	0	0,5	0,3	0	1,1	

Table 3: Ecosystem service supply account 2013, per province

Province		Groningen	Friesland	Drenthe	Overijssel	Flevoland	Gelderland	Utrecht	Noord-Holland	Zuid-Holland	Zeeland	Noord-Brabant	Limburg	Netherlands
Ecosystem service	Unit													
Area ¹	ha	238.959	352.786	268.033	340.527	146.609	511.786	144.291	285.761	305.507	183.387	505.311	220.967	3.503.923
Crop production	ktons	2.178	590	1.950	310	2.605	611	71	1.067	1.241	2.429	2.010	1.199	16.259
Fodder production	ktons	786	1.839	1.258	2.657	216	2.879	557	591	562	330	3.353	1.012	16.039
Wood production	ktons	50	56	133	110	95	281	53	51	12	13	199	81	1.134
Biomass production	ktons	23	25	24	25	21	41	19	43	46	19	47	26	358
Drinking water production	mln m3	53	1.415	3.205	4.893	0	7.734	3.102	6.737	7.462	338	3.233	3.142	41.314
Carbon sequestration in biomass	ktons	35	83	67	85	29	176	39	51	37	28	132	59	823
Pollination ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural pest control ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erosion control	ktons soil	166	217	235	362	77	1.024	243	155	119	89	514	950	4.150
Air filtration	ktons PM10	775	1.258	1.861	2.417	877	5.650	1.209	1.165	982	629	4.902	2.107	23.832
Protection against heavy rainfall	mln liters in 1 hour	44.842	67.017	80.544	107.805	23.926	176.331	33.035	53.929	37.205	30.710	181.528	67.806	904.677
Nature recreation (hiking)	x1000 hikers	4.866	6.340	5.954	13.024	4.083	26.366	16.487	29.333	41.643	4.684	32.861	17.202	202.842
Nature tourism	x1000 tourists	67	429	378	358	61	797	151	629	291	542	278	455	4.436

¹ The surface area is excluding large water bodies such as the sea and the IJsselmeer since this report focusses on terrestrial ecosystem services. Including large water bodies in the total area would distort the average rates.

² Pollination and pest control cannot be added in this table due to set-up of the indicator. They are added in table 4.2.2, however.

Table 4.2.2 Ecosystem service supply account 2013, with mean biophysical supply per ha per province

Province		Groningen	Friesland	Drenthe	Overijssel	Flevoland	Gelderland	Utrecht	Noord-Holland	Zuid-Holland	Zeeland	Noord-Brabant	Limburg	Netherlands
Ecosystem service	Unit													
Area ¹	ha	238.959	352.786	268.033	340.527	146.609	511.786	144.291	285.761	305.507	183.387	505.311	220.967	3.503.923
Crop production	tons/ha	9,1	1,7	7,3	0,9	17,8	1,2	0,5	3,7	4,1	13,2	4,0	5,4	4,6
Fodder production	tons/ha	3,3	5,2	4,7	7,8	1,5	5,6	3,9	2,1	1,8	1,8	6,6	4,6	4,6
Wood production	tons/ha	0,2	0,2	0,5	0,3	0,6	0,5	0,4	0,2	0,0	0,1	0,4	0,4	0,3
Biomass production	tons/ha	0,10	0,07	0,09	0,07	0,14	0,08	0,13	0,15	0,15	0,10	0,09	0,12	0,10
Drinking water production	m3/ha	223	4.012	11.958	14.370	0	15.111	21.500	23.576	24.424	1.841	6.398	14.217	11.791
Carbon sequestration in biomass	tons/ha	0,1	0,2	0,2	0,2	0,2	0,3	0,3	0,2	0,1	0,2	0,3	0,3	0,2
Pollination	%	0,2	0,1	0,1	0,1	1,1	0,7	0,8	0,8	0,3	0,9	0,7	1,5	0,6
Natural pest control	%	0,8	0,3	2,2	1,2	1,7	1,0	0,5	0,3	0,2	0,6	2,1	2,7	1,2
Erosion control	tons soil/ha	0,7	0,6	0,9	1,1	0,5	2,0	1,7	0,5	0,4	0,5	1,0	4,3	1,2
Air filtration	tons PM10/ha	3,2	3,6	6,9	7,1	6,0	11,0	8,4	4,1	3,2	3,4	9,7	9,5	6,8
Protection against heavy rainfall	mm/m2 in 1 hour	19	19	30	32	16	34	23	19	12	17	36	31	26
Nature recreation (hiking)	hikers/ha	20	18	22	38	28	52	114	103	136	26	65	78	58
Nature tourism	tourists/ha	0,3	1,2	1,4	1,1	0,4	1,6	1,0	2,2	1,0	3,0	0,6	2,1	1,3

¹ The surface area is excluding large water bodies such as the sea and the IJsselmeer since this report focusses on terrestrial ecosystem services. Including large water bodies in the total area would distort the average rates.

Table 4.1.1 Biophysical ecosystem service supply account 2013 for the Netherlands, with total biophysical supply per ecosystem unit

Opmerking [RR1]: -Bij de tabellen: ze blijven lastig te doorgronden. Daarbij komen niet alle getallen even geloofwaardig over. B.v. landbouw-grasland als belangrijkste leverancier van verblijfsrecreatie-dienst? Maar het voert me te ver, om die allemaal te bekijken.

Ecosystem unit \ Ecosystem service	Unit	null	Agriculture - annual crops	Agriculture - perennial crops	Agriculture - glass houses	Agriculture - grassland	Agriculture - buffer strips	Agriculture - built-up	Dunes with permanent vegetation	Beach, sand and active dunes	Broad leaved forest	Coniferous forest	Mixed forest	Heath	Sand	Wetlands	Non-agricultural grassland
Area	ha	379	781	79.2	11.7	927	36.4	35.4	15.9	33.9	109	81.9	118	40.8	2.36	34.3	54.0
Crop production	ktons		15.1	1.08													
Fodder production	ktons		0	77	1	0	0	0	0	0	0	0	0	0	0	0	0
Wood production	ktons		9.51			6.18											
Biomass production	ktons		0	0	0	0	0	0	45	0	502	195	393	0	0	0	0
Drinking water production	mln m3		2.99			4.84			3.11	7.74	1.52	2.78	3.80	1.40			
Carbon sequestration in biomass	ktons		0	0	23	0	167	6	0	23	0	158	119	172	8	0	8
Pollination ¹	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural pest control ¹	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erosion control	ktons soil		0	-3	21	6	930	79	47	195	-546	468	317	517	167	-24	32
Air filtration	ktons PM10		2.72			3.26					4.06	5.01	5.83				
Protection against heavy rainfall	mln liters in 1 hour		171	23.7		193	8.16	5.01	10.8	16.7	48.1	57.4	79.8	23.6	1.16	7.15	16.8
Nature recreation (hiking)	x1000 hikers		134	713	31	953	341	6	9	95	99	38	41	96	36	1	6
Nature tourism	x1000 tourists		0	26	2	651	38	3	7	06	22	37	74	75	26	703	0

Ecosystem unit \ Ecosystem service	Unit	Public green space	Other unpaved terrain	Floodplains	Salt marshes	Residential area	Offices and companies - industry	Offices and companies - services	Offices and companies - government	Roads, parking lots and other paved areas	Offices and companies - forestry	Offices and companies - fisheries	Offices and companies - non-commercial	Sea	Lakes, ponds and other inland water bodies	Rivers	unknown	Total	
Area	ha	68.4	294	73.3	11.1	250	66.5	89.7	1.09	111			19.7	381	123	297	1.23	4.154	
Crop production	ktons		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.25
Fodder production	ktons		0	0	340	0	0	0	0	0	0	0	0	0	0	0	0	0	16.03
Wood production	ktons		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.134
Biomass production	ktons		0	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	360
Drinking water production	mln m3		1.19	3.22	1.17	2.43			1.03										41.31
Carbon sequestration in biomass	ktons		17	53	15	45	0	0	0	0	0	0	0	0	0	0	0	0	823
Pollination ¹	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural pest control ¹	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erosion control	ktons soil		153	733	103	11	247	73	90	1	315	0	0	16	0	33	2	0	4.150
Air filtration	ktons PM10		1	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.83
Protection against heavy rainfall	mln liters in 1 hour		26.4	97.9	14.3	3.00	52.5	6.30	14.4	21.6			3.59						905.4
Nature recreation (hiking)	x1000 hikers		24	47	16	9	35	4	40	142	83	66	21	2	0	0	0	0	97
Nature tourism	x1000 tourists		40.4	41.8	4.86	50.7	10.3	16.5	19.1				4.38		16.0	1.29			429.5

	tourists	
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Pollination and pest control cannot be added in this table due to set-up of the indicator. They are added in table 4.1.2, however.

Table 4.1.2 Biophysical ecosystem service supply account 2013 for the Netherlands, with mean biophysical supply per ha per ecosystem unit

Ecosystem unit	Ecosystem service	Unit	Ecosystem units																
			Null	Agriculture - annual crops	Agriculture - perennial crops	Agriculture - glass houses	Agriculture - grassland	Agriculture - buffer strips	Agriculture - built-up	Dunes with permanent vegetation	Beach, sand and active dunes	Broad leaved forest	Coniferous forest	Mixed forest	Heath	Sand	Wetlands	Non-agricultural grassland	
Area	ha		379	781.401	79.228	11.790	927.216	36.492	35.491	15.943	33.946	109.142	81.923	118.571	40.813	2.364	34.346	54.010	
Crop production	tons/ha		0	19,4	13,7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fodder production	tons/ha		0	12,2	0	0	6,7	0	0	0	0	0	0	0	0	0	0	0	0
Wood production	tons/ha		0	0	0	0	0	0	2,8	0	4,6	2,4	3,3	0	0	0	0	0	0
Biomass production	tons/ha		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,04
Drinking water production	m3/ha		0	3.828	5.717	5.22854	4.146	3.974	195.637	228.071	13.983	33.934	32.124	34.417	34.960	4.170	8.034		
Carbon sequestration in biomass	tons/ha		0	0	0,3	0	0,2	0,2	0	1,5	0	1,4	1,4	1,4	0,2	0	0,2	0,2	
Pollination	%		0	0	0	0	0,9	1,6	0	0,5	0,1	2,0	0,6	0,8	0,6	0,1	0,6	1,5	
Natural pest control	%		0	0	0	0	0	0	2,1	0	17,7	9,6	11,2	0	0	0	0	0	
Erosion control	tons soil/ha		0,1	0,0	0,3	0,5	1,0	2,2	1,3	12,3	16,1	4,3	3,9	4,4	4,1	10,2	0,9	3,0	
Air filtration	tons PM10/ha		0	3,5	3,6	0	3,5	3,5	0,0	29,1	0,0	37,2	61,2	49,2	3,6	48,3	5,6	4,7	
Protection against heavy rainfall	mm/m2 in 1 hour		35	22	30	8	21	22	14	68	49	44	70	67	58	49	21	31	
Nature recreation (hiking)	hikers/ha		0	37	73	55	46	58	96	715	499	256	311	278	290	297	183	111	
Nature tourism	tourists/ha		0	1,0	1,2	0	1,1	1,3	0,1	23,0	20,8	1,4	2,0	2,0	2,1	2,4	0,9	1,3	

Ecosystem unit Cont'd	Unit	Public green space	Other unpaved terrain	Floodplains	Salt marshes	Residential area	Offices and companies - industry	Offices and companies - services	Offices and companies - government	Roads, parking lots and other paved areas	Offices and companies - forestry	Offices and companies - fisheries	Offices and companies - non-commercial	Sea	Lakes, ponds and other inland water bodies	Rivers	unknown	Total
Area	ha	68.416	294.931	73.306	11.139	250.417	66.518	89.774	1.093	111.811	206	115	19.723	381.509	123.277	297.559	1.231	4.154.080
Crop production	tons/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,9
Fodder production	tons/ha	0	0	4,6	0	0	0	0	0	0	0	0	0	0	0	0	0	3,9
Wood production	tons/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,3
Biomass production	tons/ha	0	1,21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,09
Drinking water production	m3/ha	17.502	10.926	15.983	0	9.718	8.740	9.395	7.725	9.227	14.805	1.900	16.483	0	5.639	559	520	9.945
Carbon sequestration in biomass	tons/ha	0,2	0,2	0,2	4,0	0	0	0	0	0	0	0	0	0	0	0	0	0,2
Pollination	%	0,8	1,2	1,8	0,6	0	0	0	0	0	0	0	0	0	0	0	0	0,5
Natural pest control	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,0
Erosion control	tons soil/ha	2,2	2,5	1,4	1,0	1,0	1,1	1,0	0,8	2,8	1,9	1,3	0,8	0,0	0,3	0,0	0,0	1,0
Air filtration	tons PM10/ha	15,7	0,9	0	0	0,0	0,0	0,0	0	0,0	0	0	0,0	0	0,0	0	0,0	5,7
Protection against heavy rainfall	mm/m2 in 1 hour	39	33	20	27	21	9	16	13	19	32	19	18	0	0	0	0	22
Nature recreation (hiking)	hikers/ha	591	142	66	47	203	156	184	216	171	194	169	222	1	130	4	60	103
Nature tourism	tourists/ha	1,3	1,1	1,2	0,6	0	0	0	0	0,2	0,2	0	0	0	0,5	0,3	0	1,1