

APPENDIX 2

Detailed information about the supply of ES by each land use across spatial scales.

Fig. S1. Relative contribution to the provision of ES by land use type at each spatial scale. Pie size represents the relative value in relation to the reference pie chart (the maximum value of the data). Note that empty slices represent the minimum relative value to the contribution of that particular ES. (Abbreviations: AC=abandoned crops; DC=dry cereal crops; FG=fruit groves; IC=irrigated cereal crops; PG=poplar groves; RF=riparian forest; UA=urban areas).

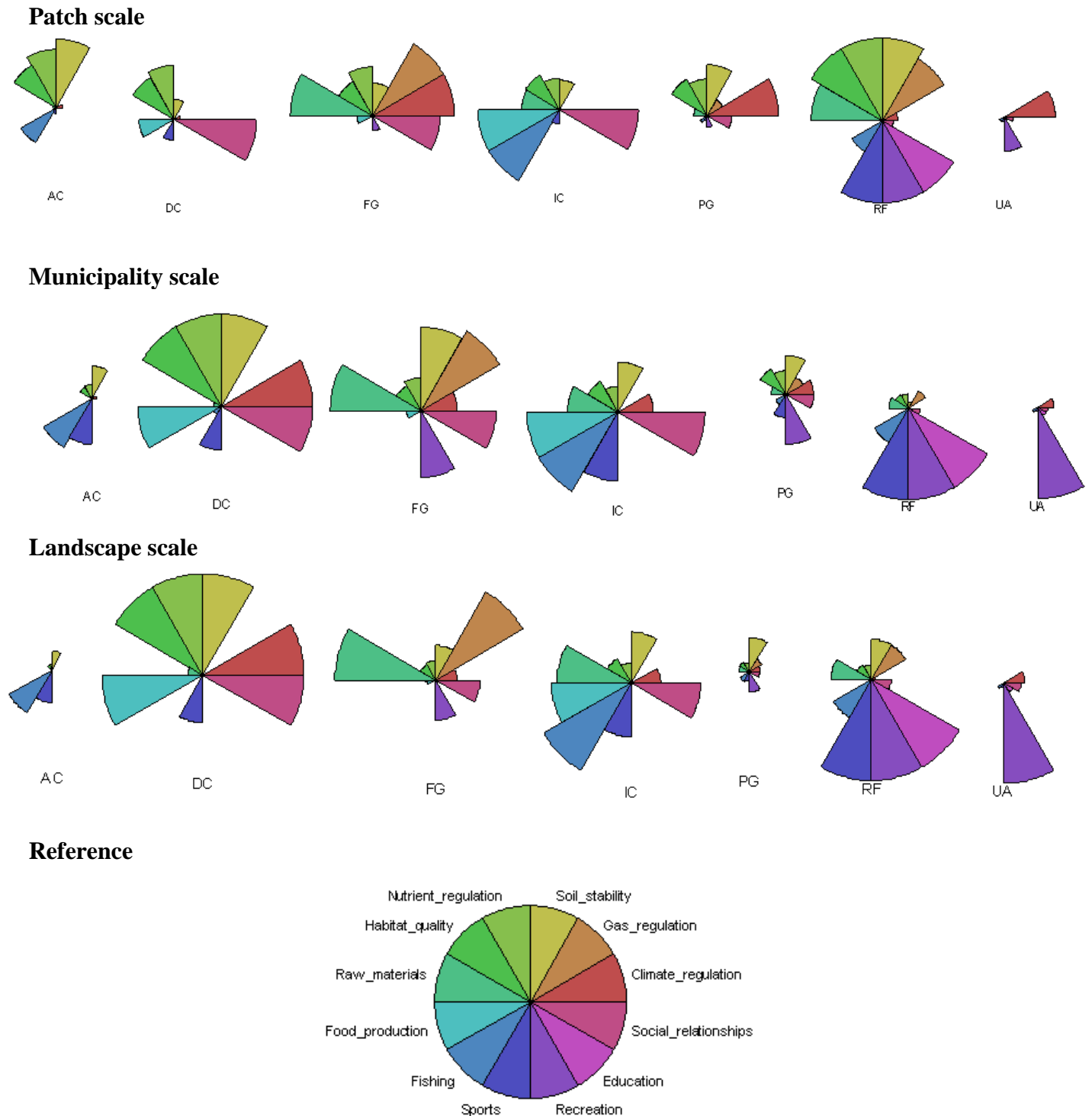


Table S1. Ecosystem services delivered based on the estimated proportion of each land use type at each spatial scale (patch, municipality and landscape). (Abbreviations: AC=abandoned crops; DC=dry cereal crops; FG=fruit groves; IC=irrigated cereal crops; PG=poplar groves; RF=riparian forest; UA=urban areas).

		Climate regulation	Gas regulation	Soil stability	Nutrient regulation	Habitat quality	Raw materials	Food production	Fishing	Sports	Recreation	Education	Social relationships
Scale	Land use	°C ⁻¹	CO ₂ eqTons/Ha	Cm	Ppm	Score	Tons/Ha	Kcal/Ha	m	Ha	Items	Items	Number
Patch	AC	0,015	0,637	0,303	0,066	13,423	1,169	0,000	5,486	0,415	0,000	0,000	0,034
	DC	0,009	0,000	0,049	0,037	7,357	0,453	1589132,782	0,124	0,775	0,000	0,000	0,183
	FG	0,004	9,198	0,029	0,014	2,190	5,298	259907,184	0,001	0,010	0,001	0,000	0,056
	IC	0,004	0,000	0,033	0,011	2,750	3,040	1695297,085	2,803	0,251	0,000	0,000	0,080
	PG	0,006	3,264	0,073	0,015	3,687	1,393	0,000	0,373	0,128	0,001	0,000	0,039
	RF	0,011	27,372	0,258	0,071	15,901	15,842	0,000	3,356	3,685	0,936	0,144	0,052
	UA	0,004	0,000	0,000	0,000	0,456	0,000	0,000	0,178	0,081	0,003	0,002	0,015
Municipality	AC	0,000	0,021	0,010	0,002	0,434	0,038	0,000	0,177	0,013	0,000	0,000	0,001
	DC	0,019	0,000	0,112	0,083	16,636	1,023	3593165,719	0,281	1,753	0,000	0,000	0,413
	FG	0,005	12,210	0,039	0,019	2,907	7,032	345005,039	0,001	0,014	0,001	0,000	0,074
	IC	0,010	0,000	0,089	0,029	7,329	8,102	4518511,742	7,472	0,669	0,000	0,000	0,212
	PG	0,002	1,297	0,029	0,006	1,465	0,553	0,000	0,148	0,051	0,001	0,000	0,016
	RF	0,003	6,360	0,060	0,016	3,694	3,681	0,000	0,780	0,856	0,217	0,033	0,012
	UA	0,003	0,000	0,000	0,000	0,401	0,000	0,000	0,157	0,071	0,002	0,002	0,013
Landscape	AC	0,001	0,045	0,021	0,005	0,950	0,083	0,000	0,388	0,029	0,000	0,000	0,002
	DC	0,020	0,000	0,118	0,088	17,660	1,087	3814539,896	0,299	1,861	0,000	0,000	0,439
	FG	0,005	12,700	0,041	0,020	3,023	7,315	358857,140	0,001	0,014	0,001	0,000	0,077
	IC	0,007	0,000	0,060	0,020	4,896	5,413	3018947,437	4,992	0,447	0,000	0,000	0,142
	PG	0,003	1,807	0,040	0,008	2,042	0,771	0,000	0,206	0,071	0,001	0,000	0,022
	RF	0,002	5,008	0,047	0,013	2,909	2,898	0,000	0,614	0,674	0,171	0,026	0,009
	UA	0,005	0,000	0,000	0,000	0,617	0,000	0,000	0,242	0,109	0,004	0,003	0,020

Table S2. Comparison across spatial scales of the supply of ES per hectare by each land use type. See Fig. S2 for details.

Scale	Summary
Patch	Riparian forest was the land use supplying most ES per hectare and with the highest values per hectare: gas regulation, nutrient regulation, habitat quality, raw materials, sports, recreation and education. Abandoned crops supplied the most climate regulation, soil stability and fishing areas, irrigated cereal crops produced the most part of food whereas dry cereal crops comprised most social relationships.
Municipality	Dry cereal crops were the main supplier of climate regulation, soil stability, nutrient regulation, habitat quality, sports and social relationships per hectare; fruit groves supplied the most of gas regulation; irrigated cereal crops supplied the most of food, raw materials and fishing; and riparian forest was the main supplier of recreation and education per hectare.
Landscape	Most ES per hectare were supplied by dry cereal crops (climate regulation, soil stability, nutrient regulation, habitat quality, food production, fishing areas, sports and social relationships). Minor contributors were riparian forests (recreation and education), fruit groves (gas regulation and raw materials).

Table S3. Significant factors in the supply of ES per hectare across three spatial scales. Significance codes: '***' for 0; '**' for 0.001; '*' for 0.01; '.' for 0.05.

Ecosystem service	Term	Chisq	Df	Pr(>Chisq)	Significance
Climate regulation	Land use	0,34	6	1,00	
	Scale	0,00	2	1,00	
	Land use-Scale	0,27	12	1,00	
Gas regulation	Land use	85,83	6	2,23E-16	***
	Scale	25,77	2	2,53E-06	***
	Land use-Scale	39,91	12	7,46E-05	***
Soil stability	Land use	6,71	6	0,35	
	Scale	5,03	2	0,08	.
	Land use-Scale	14,60	12	0,26	
Nutrient regulation	Land use	4,71	6	0,58	
	Scale	0,56	2	0,76	
	Land use-Scale	3,41	12	0,99	
Habitat quality	Land use	177,97	6	<2e-16	***
	Scale	2,64	2	0,268	
	Land use-Scale	116,60	12	<2e-16	***
Raw materials	Land use	81,36	6	1,87E-15	***
	Scale	5,77	2	0,06	.
	Land use-Scale	41,11	12	4,70E-05	***
Food production	Land use	1,10	10	1,00	
	Scale	27,16	6	0,00	***
	Land use-Scale	0,16	12	1,00	
Fishing	Land use	56,92	6	1,90E-10	***
	Scale	2,86	2	0,24	
	Land use-Scale	24,21	12	0,02	*
Sports	Land use	23,31	6	0,00	***
	Scale	0,57	2	0,75	
	Land use-Scale	7,83	12	0,80	
Recreation	Land use	0,58	8	1,00	
	Scale	2,57	4	0,63	
	Land use-Scale	0,02	12	1,00	
Education	Land use	0,19	8	1,00	
	Scale	0,31	4	0,99	
	Land use-Scale	0,01	12	1,00	
Social relationships	Land use	4,03	6	0,67	
	Scale	0,22	2	0,90	
	Land use-Scale	0,52	12	1,00	

Fig. S2. Comparison in the supply of ES per hectare by each land use at three different spatial scales: patch, municipality and landscape. Horizontal axis shows land uses and vertical axis shows ES indicators (numbers express relative values per hectare). Lines are provided to improve scale differentiation. Note that most ES were delivered at patch scale, and only food production and social relationships were supplied mainly at municipality scale. Abbreviations: AC=abandoned crops; DC=dry cereal crops; FG=fruit groves; IC=irrigated cereal crops; PG=poplar groves; RF=riparian forest; UA=urban areas.

