Ecosystem Service	**Pest control (including invasive species)**
CICES class name	Pest control (including invasive species)
CICES Section	Regulation & Maintenance (Biotic)
CICES Class code	2.2.3.1

Sample Indicators

Indicator values from			
Experiment or direct measurement		Survey	
Expert assessment		Statistical- or census data	
Model or GIS		Literature values	
Stakeholder participation		Not provided	

Table 1: Field Scale

Indicator	**Unit**	**Indicator values from**
[1] Injuries by root-lesion nematodes: Number of root-lesion nematode in 100 g of roots	# * $100g^{-1}$	
[1] Injuries by root-knot nematodes: Number of root-knot nematode in 100 g of roots	# * $100g^{-1}$	
[7] Level of injury severity, fruit loss, leaf loss, LAI loss	%	,
[9] Damage from pests six weeks after planting. Based on visual inspection of 40 randomly selected plants.	Index 1-3	
[5] Biological control: total number of plant species	#	
[15] Nematode abundance	Not provided	
[9] Weed cover	kg * ha^{-1}	
[15] Weed biomass	Not provided	
[15] Weed density	Not provided	
[7] Rates of predation by natural enemies, rates of parasitism by parasitoids	Not provided	,

[7] Indicators or models to assess the impact of pesticides	Not provided	,
[11] Abundance of ladybird beetles (natural enemies of aphids and other sap-sucking pest species)	Not provided	
[11] Plant Simpson diversity as predictor of beetle abundance	Not specified	
[11] Abundance of birds from species that are known insectivores in agricultural fields	Not provided	
[11] Ant species richness as predictor of the abundance of birds, including those from species that are known insectivores.	Not provided	
[12] Indicator value calculated as: $$I = \frac{\sum \lvert \log(\frac{i}{i_{max}}) \rvert}{n}$$ With: i – variable i measured, i_{max} – maximum ecologic potential of variable i in benchmark reference, n – number of variables. Where performance is considered better than in the benchmark and deviation, therefore, has a positive effect, $\lvert \log(\frac{i}{i_{max}}) \rvert$ is subtracted from the sum instead of added. For this ecosystem service, variables were: -Soil organic matter [% dw] -pH in KCl -Number of nematode taxa [-] -Number of micro-arthropod taxa [-] -Density of nematode plant-parasites [number per 100 g soil]	-	,
[14] Aphid biocontrol index; based on pairwise pot experiment introducing and exposing twenty-four aphids over a five-day period. The number of pests in an open treatment was divided by the number of pests in a caged treatment that excluded ground-dwelling and flying natural enemies. Values were standardized to a maximum value of 1.	Index 0-1	
[14] Use of bundles of indicator species identified for a certain region. Species may belong to different taxonomic groups	Not provided	

Table 2: Farm Scale

Indicator	**Unit**	**Indicator values from**
[6] Share of cropland area less than 100m from a non-cropland edge other than water or impervious surfaces. Values were scaled to [0-1]	%	,

[6] Share of farmers surveyed that clearly expresses a value and care for the health of the land. Values were scaled to [0-1]	%	,
[8] Vegetation diversity: four-level index based on the number of plant species	Index [poor-fair-good-excellent]	
[14] Aphid biocontrol index; based on pairwise pot experiment introducing and exposing twenty-four aphids over a five-day period. The number of pests in an open treatment was divided by the number of pests in a caged treatment that excluded ground-dwelling and flying natural enemies. Values were standardized to a maximum value of 1.	Index 0-1	
[14] Use of bundles of indicator species identified for a certain region. Species may belong to different taxonomic groups	Not provided	

Table 3: Regional Scale

Indicator	**Unit**	**Indicator values from**
[16] Pest abundance	Not provided	
[16] Pest richness	Not provided	
[16] Pest damage	Not provided	
[16] Natural enemy abundance	Not provided	
[16] Natural enemy richness	Not provided	
[16] Natural enemy diversity	Not provided	
[16] Direct natural enemy effects on pest reduction	Not provided	
[2] Capacity for biological regulation: number of habitats for pest control species	Not provided	
[3] Number of species providing natural control of invertebrate and rodent pest species	#	
[14] Aphid biocontrol index; based on pairwise pot experiment introducing and exposing twenty-four aphids over a five-day period. The number of pests in an open treatment was divided by the number of pests in a caged treatment that excluded ground-dwelling and flying natural enemies. Values were standardized to a maximum value of 1.	Index 0-1	
[13] Number of cases of reduced pest infestation in the locality	#	, ,

[6] Share of cropland area less than 100m from a non-cropland edge other than water or impervious surfaces. Values were scaled to [0-1]	%	
[6] Share of farmers surveyed that clearly expresses a value and care for the health of the land. Values were scaled to [0-1]	%	
[14] Use of bundles of indicator species identified for a certain region. Species may belong to different taxonomic groups	Not provided	
[17] Expert-/stakeholder rating of how much of this ES can be provided by a landscape (represented by a land use map)	6-point Lickert-scale (none - highest capacity)	
[17] Expert-/stakeholder rating based on pairwise comparisons of landscapes (represented by land use maps) in an Analytical Hierarchical Process (AHP). Experts select the landscape with higher capacity for providing this ES and rate the difference between the two landscapes	1 (equal capacity) – 9 (absolute preference of one landscape)	

Table 4: National Scale

Indicator	Unit	Indicator values from
[4] Resilience of pest control service: number of arthropod morphospecies from (primarily) carnivorous taxa divided by number of morphospecies from (primarily) herbivorous taxa. Two or more specimens are considered the same morphospecies if an entomologically trained person (but non-specialist for the respective species groups) cannot see external morphological differences	[-]	
[10] Density of hedgerows	m * ha^{-1}	

Table 5: Multinational Scale

Indicator	Unit	Indicator values from
[3] Number of species providing natural control of invertebrate and rodent pest species	#	

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