

Ecosystem Service	Abiotic filtration, sequestration and storage of	
	waste	
CICES class name	Mediation by other chemical or physical means (e.g., via	
	filtration, sequestration, storage or accumulation)	
CICES Section	Regulation & Maintenance (Abiotic)	
CICES Class code	5.1.1.3	

Brief Description

- Natural processing of wastes by abiotic ecosystem elements
- Mediation of waste, toxic substances and other nuisances, by natural chemical and physical processes that can contribute to people's wellbeing

Sample Indicators

Indicator values from			
Experiment or direct measurement	B	Survey	(1))) (1)))
Expert assessment		Statistical- or census data	áÍ
Model or GIS	ţ	Literature values	Щ
Stakeholder participation		Not provided	\otimes

Table 1: Regional Scale

Indicator	Unit	Indicator values from
^[3] Nitrate leaching	kg * ha ⁻¹ * yr ⁻¹	<u>L</u>
^[2] Risk of nitrate leaching: exchange frequency of the soil water in the root layer. Infiltration rate divided by field capacity	%	Ţ
^[1] Mechanical filtration capacity: infiltration capacity, calculated as:	cm * d ⁻¹	
$IC = Perm_{Soil} * (1 - s)$		🕮 <u>íð</u>
With: IC – infiltration capacity, Perm _{Soil} – soil permeability [cm*d ⁻¹], s – share of anthropogenic surface sealing		
^[1] Physicochemical filtration capacity, calculated as:	cmol(+) * kg dm ⁻¹	ற ளி
$IC_{physicochem} = CEC_{eff} * (1 - s)$		<u>, 000</u>



Impact Area & Indicator Factsheet: Ecosystem Services

With: IC _{physicochem} – physicochemical filtration capacity, CEC _{eff} – effective cation exchange capacity, s – share of anthropogenic surface sealing)		
^[4] Volume of purified water	m ³ / (km ² *year)	\otimes
^[4] Mass of a specific nutrient retained	ton/ (km ² * year)	0
^[5] Area of undisturbed creek banks that serve as buffers to pesticide and fertilizer runoff	Not provided	0



<u>References</u>

No.	Citation
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3	Kay S, Crous-Duran J, Ferreiro-Domínguez N, García de Jalón S, Graves A, Moreno G, Mosquera-Losada MR, Palma JHN, Roces-Díaz JV, Santiago-Freijanes JJ, Szerencsits E, Weibel R, Herzog F (2018) Spatial similarities between European agroforestry systems and ecosystem services at the landscape scale. Agroforestry Systems 92(4): 1075-1089. DOI: 10.1007/s10457-017-0132-3
4	Gasparatos A, Romeu-Dalmau C, von Maltitz GP, Johnson FX, Shackleton C, Jarzebski MP, Jumbe C, Ochieng C, Mudombi S, Nyambane A, Willis K (2018) Mechanisms and indicators for assessing the impact of biofuel feedstock production on ecosystem services. Biomass & Bioenergy 114: 157-173. DOI: 10.1016/j.biombioe.2018.01.024
5	Groot JCJ, Yalew SG, Rossing WAH (2018) Exploring ecosystem services trade-offs in agricultural landscapes with a multi-objective programming approach. Landscape and Urban Planning 172: 29-36. DOI: 10.1016/j.landurbplan.2017.12.008