



Ecosystem Service	Groundwater for drinking
CICES class name	Ground (and subsurface) water for drinking
CICES Section	Provisioning (Abiotic)
CICES Class code	4.2.2.1

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
^[23] Groundwater replenishment	$m^3 * m^{-2} * yr^{-1}$	
^[5, 22] Annual total drainage	$mm * yr^{-1}$	
^[6] Seepage rate: the amount of water that leaves the rooting zone toward the groundwater table	$mm * yr^{-1}$	
^[7] Seepage rate: the amount of water that leaves the rooting zone toward the groundwater table	$mm * yr^{-1}$	

Table 2: Farm Scale



Indicator	Unit	Indicator values from
^[14] Aquifer recharge from irrigation channels: Four-level index based on the share of water lost through seepage in open channel irrigation [%]. The higher the value, the higher the recharge	poor-fair-good-excellent	
^[14] Aquifer recharge from irrigation channels: Four-level index based on the share of irrigation channels that are unlined [%]. The higher the value, the higher the recharge	poor-fair-good-excellent	



Table 3: Regional Scale

Indicator	Unit	Indicator values from
[1] Groundwater recharge, calculated with the soil-water balance model (SWBM) by the U.S. Geological Survey	mm	
[15] Provisioning of water: Groundwater recharge rate calculated from water balance	mm	
[2] Groundwater recharge, calculated as: (Precipitation - Evapotranspiration) * (1 - Share of anthropogenic surface sealing) / (Discharge factor). Discharge factor [-] is determined based on distance from the surface to groundwater and slope.	mm * yr ⁻¹	
[12] Groundwater recharge: mean annual infiltration rate	l * m ⁻²	
[19] Groundwater recharge: Share of precipitation not used by evapotranspiration or surface-runoff	%	
[4, 16] Freshwater supply: Annual groundwater recharge	cm * yr ⁻¹	
[21] Groundwater recharge rate	mm * ha ⁻¹ * yr ⁻¹	
[10] Groundwater recharge: values for land cover classes. The matrix defined by Burkhard et al., 2012 (DOI:10.1016/j.ecolind.2011.06.019) was adapted and used in this study.	Index 0-5	
[20] Water yield: calculated as annual precipitation - evapotranspiration	m ³ * area ⁻¹ * yr ⁻¹	
[9] Precipitation – Evapotranspiration, calculated with InVEST model	1000 m ³	
[21] Annual average water yield	mm * yr ⁻¹	
[21] Annual sectoral water yield (e.g., domestic, agriculture and industry)	mm * yr ⁻¹	
[22] Annual total drainage	mm	
[10] Freshwater supply: values for land cover classes. The matrix defined by Burkhard et al., 2012 (DOI:10.1016/j.ecolind.2011.06.019) was adapted and used in this study.	Index 0-5	
[18] Water for drinking and non-drinking uses: expert based index for ecosystem service supply by land cover class [1-5], multiplied by the area of the land cover class [km ²]	Index 1-5 * km ²	, ,
[18] Water for drinking and non-drinking uses' value: expert based index for ecosystem service supply by land cover class [1-5], multiplied by the area of the land cover class [km ²] and a literature-based monetary value of the ecosystem service	\$ * ha ⁻¹ * yr ⁻¹	, ,
[3] Water purification and provision: NPP × (1–VCNPP) × ICs × Scf; where NPP: Net Primary Production calculated from NDVI-values and expressed on a relative scale set to (0 - 1000), VCNPP: coefficient of variation of NPP (0 - 1), ICs: soil	-	









infiltration capacity (0 - 1), Scf: slope average correction factor of the study area (0 - 1)		
^[21] Leakage of nutrients	kg * ha ⁻¹ * yr ⁻¹	
^[21] Total dissolved solids	mg * l ⁻¹	
^[8] Designated drinking water protection areas	ha	
^[17] Runoff: renewable water supply. Values were normalized [0-1] using benchmark values where available and observed values otherwise	mm	

Table 4: Multinational Scale

Indicator	Unit	Indicator values from
^[13] Groundwater recharge: Corine land cover classes based on values published by Burkhard et al. (2009; DOI: 10.3097/LO.200915) and modified for the context of riparian zones	Index 0-5	
^[13] Freshwater: Corine land cover classes based on values published by Burkhard et al. (2009; DOI: 10.3097/LO.200915) and modified for the context of riparian zones	Index 0-5	



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* The ecosystem service discussed on this factsheet is not a focus of the cited paper



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