Ecosystem Service	**Cultivated terrestrial plants for energy**
CICES class name	Cultivated plants (including fungi, algae) grown as a source of energy'
CICES Section	Provisioning (Biotic)
CICES Class code	1.1.1.3

Brief Description:

- Plant materials used as a source of energy
- The ecological contribution to the growth of cultivated crops that can be harvested and used as a source of biomass-based energy

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**
[3] Yield	kg * ha^{-1} * yr^{-1}	
[1] Biotic production	kg * m^{-2} * yr^{-1}	
[1] Net primary production (NPP)	kg dry matter * m^{-2} * yr^{-1}	
[2] Fuelwood production	volume * ha^{-1}	
[23] Net primary productivity (NPP): average of total above and below ground dry mass at harvest over a 30-years simulation period [Mg / hectare * year)]	Mg / (hectare * year)	

Table 2: Regional Scale

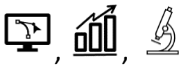
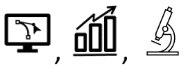
Indicator	Unit	Indicator values from
[6] Yield	kg * ha^{-1} * yr^{-1}	
[10] Biomass yield	t dry matter * ha^{-1} * yr^{-1}	
[18] Total biomass production on agricultural land	t dry matter	
[8] Yield potential	1: very low - 5: very high	
[4] Annual growth rates of woody species representative for a given land use type	t dry matter * ha^{-1}	
[12] Share of arable land use within each NUTS2 region	%	
[9] Number of areas and total area covered by firewood species	#, ha	
[10] Biomass stock in the landscape (crops and trees) at any one time	t dry matter * ha^{-1}	
[13] Energy output from agricultural biomass	MJ * ha^{-1}	
[7] Energy (biomass): values are assigned to 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	
[11] Percentage of the products of a land use class that is used for fuel	%	
[11] Rating of current service provision per land use class by expert-stakeholders	0 - 10	
[11] Rating of increases/decreases of service provision in scenarios, relative to the status quo	%	
[9] Number of households using biogas plants	#	
[21] Biomass: Energy output from agricultural biomass	MJ * ha^{-1}	
[22] Fraction of the plant component (e.g. sugar content) used for biofuel production	kg / (km^2 * year)	

Table 3: National Scale

Indicator	Unit	Indicator values from
[19] Yields of energy crops	t * ha^{-1}, t dry matter * ha^{-1}, MJ * ha^{-1}	⊘
[18] Total biomass production on agricultural land	t dry matter	
[19] Yields of grassland for energy production	t * ha^{-1}, t dry matter * ha^{-1}, MJ * ha^{-1}	⊘
[19] Production of biofuel, biodiesel, bioethanol	ktoe	⊘
[12] Share of arable land use within each NUTS2 region	%	
[19] Energy crop area	ha	⊘
[19] Grassland for energy area	ha	⊘
[17] Summed gross margin of production (area of crop multiplied by the gross margin per unit area)	$	,
[16] Expert assessment for each land use class based on the indicators: yield/hectare; light, water, nutrient, warmth availability; disturbances, climate change [units not given]	very negative (−3) to very positive (+3)	
[15] Historical analysis: Production of "ecosystem service products" in a region: firewood-hedges, firewood-trees, fuel-peat	Not provided	,

Table 4: Multinational Scale

Indicator	Unit	Indicator values from
[13] Biomass: Energy output from agricultural biomass	MJ * ha^{-1}	
[20] Crops: Values were assigned to 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	

[20] Wood fuel: Values were assigned to 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	
[12] Share of arable land use within each NUTS2 region	%	

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