1. Name of the indicator			
Land cover and land use			
Last updated:	22/10/2021	**Version:**	1.2

2. Area	
Main area	Environment and surroundings
Sub-area	Healthy environment

3. Definition
This indicator provides information on the surface area of the main types of soil cover in municipalities in the Girona area.

4. Calculation formula
Not applicable

5. Description
This indicator identifies the surface area of the main types of soil cover in a municipality, from the different types of urban and agricultural areas to the different types of forest areas and bodies of water, with a total of 40 categories.

6. Periodicity
Variable. Information is currently available for the years 2009 and 2018.

7. Source
Institut Cartogràfic i Geològic de Catalunya (ICGC)

Amb el suport de:
Diputació de Girona
Generalitat de Catalunya
Unió Europea
Fons Europeu de Desenvolupament Regional

8. Constraints

Geographical ☐	Time ☒	Statistical confidentiality ☐

Description of constraints
The original data used to do the calculation are only available for the years 2009 and 2018.

9. SDGs

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☒	☒	☐	☐

Mark the sub-SDGs that can be related to this indicator.

11.3, 11.4; 11.7; 14.5; 15.1, 15.2, 15.9;

10. Comments and observations

The data used to calculate this indicator are taken from the ICGC Map of Land Cover of Catalonia (MCSC).

Code Level 1	Group	Code Level 2	Category	Definition	Observations
1	Agricultural areas	111	Arable or Grass Crops	Land under a relatively homogenous cropping system, covered by plants whose aerial part is herbaceous in consistency. They occupy the land for relatively short periods and often need to be re-sown after each harvest. Includes rice fields (flooded fields) and fallow land (land left unplanted) surrounded by crops currently under cultivation. Excludes market gardens, nurseries and forced crops.	Examples: cereals, fodder, industrial crops, leguminous crops, etc.
		112	Market gardens, nurseries and forced crops	Areas occupied by: market gardens, irrigated land with a mosaic structure consisting of small plots planted predominantly with vegetables and some fruit trees, in many cases for own consumption; nurseries, outdoor plots where plants are grown to a suitable size; greenhouses and crops under plastic with permanent or temporary structures that allow growing conditions to be modified.	Examples of greenhouse farming: strawberries, flowers, etc. Examples of market gardening: tomatoes, lettuce, aubergines, pumpkins fig trees, etc. Examples of nurseries: tree nurseries, ornamental plant nurseries, fruit tree nurseries, etc.
		113	Vineyards	Cultivated land area planted with vines (woody vines of the genus *Vitis*), which	In general, the planting pattern is

				produce grapes. Includes terraced vineyards.	with the vines spaced evenly apart, although smaller olive trees can be found closer together in rows.
		114	Olive groves	Area of land planted with olive trees (arboreal plants of the genus *Olea*) that bear olives as fruit. Includes terraced olive groves.	In general, the planting pattern is with the trees spaced evenly apart, although smaller olive trees can be found closer together in rows.
		115	Other woody crops	Land area cultivated with bushes or trees excluding vines, olive groves, forest trees and their plantations. It includes terraced crops and mixed crops that are not dominated by vineyards or olive groves.	Examples: citric fruits, sweet fruit (apple, pear, peach), hard-shelled fruit (almond, hazelnut, etc.).
		116	Crop conversion	Area of agricultural land in transition where no particular type of crop production is visible. Includes ploughed land. It does not include abandoned crops or fallow land.	
2	Forest and natural spaces	221	Dense aciculifolia forests	Tree cover exceeding 20% of the area (fraction of canopy cover) and dominated (>50%) by conifers, usually with acicular (needle-shaped) leaves. Includes regeneration areas (areas dominated by young trees), plantations and buffer strips. Does not include forest nurseries.	Examples: spruce, Aleppo pine, Scots pine, stone pine, Laricio pine, tall junipers, etc.
		222	Dense deciduous, broad-leaved forests	Tree cover exceeding 20% of the area (fraction of canopy cover) and dominated (>50%) by deciduous and soft-leaved trees. Includes regeneration areas (areas dominated by young trees), plantations (especially poplar and plane trees) and buffer strips. Does not include forest nurseries.	Examples: beech, chestnut, oak forests, etc.
		223	Dense sclerophyllous and laurel forests	Tree cover exceeding 20% of the area (fraction of canopy cover) and dominated (>50%) by evergreen and deciduous trees. Includes regeneration areas (areas dominated by young trees), plantations and buffer strips. Does not include forest nurseries.	Examples: holm oak groves, cork oak groves, holly trees, laurel trees, holm oak plantations for truffle cultivation, etc.
		224	Scrubland	Plant cover dominated by bushy plants provided that tree cover, if present, is less than 5%. Does not include open woodland	Examples: Mesophytic scrub, heathland, sclerophyllous scrub, etc.

		225	Clear aciculifolia forests	Tree cover between 5 and 20% of the area (fraction of canopy cover) and dominated (>50%) by conifers.	Examples: clear forests of spruce, Aleppo pine, Scots pine, stone pine, Laricio pine, tall junipers, etc.
		226	Clear deciduous broad-leaved forests	Tree cover between 5 and 20% of the area (fraction of canopy cover) and dominated (>50%) by deciduous trees.	Examples: clear forests of beech, chestnut, oak, etc.
		227	Clear sclerophyllous and laurel forests	Tree cover between 5 and 20% of the area (fraction of canopy cover) and dominated (>50%) by evergreen and deciduous trees.	Examples: clear groves of holm oak, cork oak, holly, laurel, etc.
		228	Meadows and grasslands	Mainly herbaceous vegetation with less than 5% of tree and/or shrub cover. Includes hay meadows. Does not include fodder crops.	
		229	Riverside forest	Forests and woodlands growing along the banks of water bodies (rivers, ponds, etc.) and subject to the influence of water. Confined to valley bottoms, following water courses. Does not include plantations.	Examples: alders, ash, elms, willows, poplars, etc.
		230	Bare forest soil	Natural land area without much vegetation or rocky ground. Includes unpaved forest tracks and roads, dry riverbeds, torrents and streams, firebreaks, etc., all with no vegetation, or less than 5%, and eroded areas. Does not include agricultural areas.	
		231	Burnt areas	Forest areas affected by recent fires (4 years or less).	Burnt areas persist for 4 years and then move to the corresponding stage of forest cover regeneration.
		232	Crags and snow patches	Surfaces covered with rocks or snow. Includes cliffs and cliff faces.	
		233	Beaches	Sea shores consisting of sand, gravel or pebbles without vegetation. Does not include dunes with more than 5% vegetation.	
		234	Wetlands	Marshlands, marshes, mudflats and other temporarily flooded (fresh or salt water) environments, more or less covered with water during the rest of the year. Includes reedbeds and rushes.	Torbera reeds. Listed in Catalonia, but apparently very specific.
3	Urban areas	341	Urban core	An area with buildings and streets, characterised by a dense, irregular layout. Often corresponding to the centre of cities or towns, it is made up of historic, monumental or newly-constructed buildings. Includes buildings, generally between party walls, small green areas and facilities.	
		342	The expansion district	A residential area with streets and buildings, which may include small shops or services, adjacent to urban	

				centres, which has generally grown in a planned and/or compact manner. Includes regular urban development, residential neighbourhoods made up of flats and mostly semi-detached single-family houses.	
		343	Detached urban areas	Areas with isolated residential houses or buildings in peri-urban areas encompassing courtyards, house car parks and landscaped areas or small allotments for household consumption.	Isolated residential areas or housing estates are excluded.
		344	Isolated buildings in rural areas	Generally residential settlements made up of houses and their outbuildings (warehouses, car parks, small gardens, landscaped areas, small farms, etc.). Includes dispersed settlements or clusters of small groups of houses and/or farmhouses.	Does not include farms or agricultural buildings larger than 500 m^2. Due to their structure and activity they are included in the "Industrial, commercial and/or service areas" category.
		345	Isolated residential areas.	Low-density residential settlements scattered throughout the territory, which occupy large areas and are mostly made up of single-family dwellings. They are normally isolated areas, away from urban centres, and have their own network of streets and roads. They often include landscaped areas, car parks and swimming pools.	Popularly known as "*urbanitzacions*" (housing estates).
		346	Green zones	Urban or non-urban landscaped areas. Includes areas that may be close to a house, farmhouse or isolated industrial building. Includes green space on roads, urban parks and landscaped cemeteries.	
		347	Industrial, commercial and/or service areas	Areas intended for industrial, commercial and/or service activities. Includes large buildings (warehouses), car parks, roads, etc.	Includes dams that exceed the minimum surface area.
		348	Sports and leisure areas	Basic buildings and facilities in areas adapted for the practice of sport, leisure and recreation. Includes both pedestrian and vehicle roads, car parks and service areas associated with the activity. Also includes adjoining landscaped areas of less than 500 m^2	Examples: Sports halls, athletics tracks, sports fields. Basic infrastructure of: campsites, golf courses, ski resorts, amusement parks, theme parks, zoos or other recreational areas. Does not include parts of campsites, golf courses or ski slopes.
		349	Mining extraction areas or landfill sites	Area affected by any type of extraction or opencast mining. Includes roads and infrastructures necessary for this activity. Does not include access roads. Mining extraction area: area affected	

				by any type of open-pit mining of minerals, rocks and aggregates and their associated deposits. Does not include salt evaporation pans. Landfill sites: surface or opencast dumping areas.	
		350	Transformation zones	Areas involving earthworks, construction works or demolition of buildings and/or infrastructure.	Not to be confused with the "Crop conversion" category.
		351	Road network	Motorways, dual carriageways and asphalt roads over 8 metres wide outside urban areas. Does not include service stations.	
		352	Urban open spaces	Unpaved, undeveloped urban areas with less than 5 % vegetation	
		353	Airport spaces	Space for air traffic, including runways, hangars, buildings and parking areas.	
		354	Railway network	Area with railways for trains with a track gauge broader than 8 metres. Does not include stations and related facilities.	
		355	Port areas	Areas with man-made docks and piers on a coast or river bank, which allow for the docking and undocking of vessels. Include roads, warehouses, loading and unloading areas and other buildings. Also include jetties in the water. The sea is not included.	
4	Water bodies	461	Reservoirs	Accumulations of water identified as water bodies, formed by the artificial retention of watercourses, but with a natural basin. The area concerned refers to the limit marked by the vegetation on the banks of the reservoir. It does not include reservoirs that exceed the minimum surface area.	
		462	Lakes and lagoons	Water bodies corresponding to naturally retained accumulations in a depression in the ground. It does not include wet areas with a high presence of vegetation.	
		463	Watercourses	Water courses draining catchments with constant or sporadic flow. Includes rivers, streams, brooks, creeks, etc. Does not include watercourses (riverbeds and banks) without water.	
		464	Ponds	Accumulations of water occupying a man-made reservoir and its structure. Includes agricultural ponds (such as irrigation ponds), urban and industrial ponds (such as swimming pools, fish farm ponds, ornamental ponds and sewage treatment plant ponds).	
		465	Artificial canals	A constant or sporadic waterflow passing through a linear artificial construction.	
		466	Sea	Area occupied by sea water. Includes marine areas enclosed by port infrastructure.	

Table based on MCSC technical specifications

To calculate areas of land cover for each municipality, adjustments have been made to coincide with IDESCAT reference data.