

**LUCAS 2022**  
**(Land Use / Cover Area Frame Survey)**

Technical reference document C3  
Classification  
(Land cover & Land use)

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DOCUMENT CHANGE RECORD			
ISSUE	DATE	CHANGE AUTHORITY / AUTHOR	REASON FOR CHANGE AND AFFECTED SECTIONS
0.1	2014/04/24	Eurostat / E4.LUCAS	
0.2	2014/12/02	Eurostat / E4.LUCAS	Comments from LUCAS contractors, in sequence of the kick-off meeting and request from JRC to code LC2 in case of (e.g.) bridges over non artificial areas.
0.3	2015/01/28	Eurostat / E4.LUCAS	Changes related to moving of B19e – Corn-Cob mix from other cereals into B16 – Maize (without need for species separation).  Minor corrections to U112 (species code was not mentioned for buckwheat and sorghum)
1.0	2015/02/27	Eurostat / E4.LUCAS	Clarifications and corrections after the Project managers training
1.1	2016/07/29	Eurostat / E4.LUCAS	Corrections mentioned in the FAQ document: FAQ29; FAQ30; FAQ31;FAQ105
	2017/09/18	Eurostat / E4.LUCAS	Subdivision of abandoned areas
2.0	2020/12/07		Update of document. regular, irregular grazing
2.1	2021/05/26	Eurostat / E4.LUCAS	Clarified that irregular grazing can take place on fallow land (but no regular grazing)
3.0	2022/03/01	Eurostat / E4.LUCAS	Update of document. Correction on tree+shrub canopy percentage for E10

# 1 Scope and Introduction

This document is part of a series of reference documents defining the framework of the Land Use / Cover Area frame statistical Survey (LUCAS). The LUCAS reference documents are continuously improved and adapted taking into account the experience from the implemented surveys and the requirements of the LUCAS data & information users.

This document gives detailed information about the land cover and land use classification system of the LUCAS survey. Information about the implementation of the survey in general and of all other parameters and the way how they should be surveyed can be found in reference document C-1 *Instructions for Surveyors and Photointerpreters*.

The LUCAS Survey classification has separate classification systems for land cover (LUCAS SU LC) and land use (LUCAS SU LU). Land cover is the physical cover of the Earth's surface and land use is the socio-economic function of the land.

The same classification is applied in all EU countries in the LUCAS survey. It also allows comparisons in time. It is as much as possible compatible with the existing land cover/use systems (e.g. FAO, NACE and Farm Structure Survey).

## Land cover

Land cover has 8 main categories, which are indicated by letter:

- A: Artificial land
- B: Cropland
- C: Woodland
- D: Shrubland
- E: Grassland
- F: Bareland
- G: Water
- H: Wetlands

Every main category has subclasses, which are indicated by the combination of the letter of the category and digits. The most detailed class is to be used during the survey. Each class is described by the following characteristics:

- code and title of the class
- short definition of the class
- inclusions ("This class includes")
- exclusions ("This class excludes")
- the "Links with land use".

## Land use

Land use is the description of the same areas in terms of their socio-economic function. For rare and exceptional combinations, please consult the annexes of document C1. Land use classes are indicated by the combination of the letter "U" and three digits. Each class is described by the following characteristics:

- code and title
- short definition of the class
- inclusions ("This class includes") according to the NACE classification<sup>1</sup> (Rev. 2) if it is possible,

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<sup>1</sup> [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-RA-07-015/EN/KS-RA-07-015-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-015/EN/KS-RA-07-015-EN.PDF)

- and exclusions ("This class excludes") with the respective land use code.

## LUCAS survey classification comparison 2009 - 2012

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The LUCAS 2012 Survey classification is not fundamentally different from the 2009 survey classification.

### Main changes for land cover are the following:

- Energy crops (e.g. Miscanthus) are assigned to B84 Permanent Industrial Crops
- In the class B43 Fresh vegetables all roots-bulbs-tubers (carrots [*Daucus carota*], garlic [*Allium sativum*], onions [*Allium cepa*], radishes [*Raphanus sativus*], red beet [*Beta vulgaris* var. *conditiva*], shallots [*Allium ascalonicum*], turnips [*Brassica rapa*]) were moved to B23 Other root crops
- The forest types according to the EEA Forest Types ([http://www.eea.europa.eu/publications/technical\\_report\\_2006\\_9](http://www.eea.europa.eu/publications/technical_report_2006_9)) remains to be assigned under the condition that the woodland exceeds 0.5ha in size and 20m in width.
- Introduction of new LC classes:
  - o spruce (C21) and pine (C22) dominated coniferous and other coniferous (C23) woodland;
  - o this implies introduction of spruce (C31) and pine (C32) dominated as well as other woodland (C33).
- Due to the introduction of these new LC classes in woodland, the forest types codes have changed accordingly and the prefix "CX" was updated to "CXX"
- Introduction of new LC classes under F00 Bare land and lichens/moss:
  - o F10 Rocks, F20 Sands, F30 Lichens and Moss & F40 Other bare soil.
- Change in definition
  - o Wet forests are to be classified in CXX and not in HXX
  - o E00 is no longer including temporary grassland

### Main changes for land use are the following:

- Suppression of classes:
  - o U150 Hunting has been suppressed (moved to special status in field form)
  - o U364 Nature Reserve has been suppressed (moved to special status in field form)

## LUCAS survey classification comparison 2012 - 2015

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The LUCAS 2015 Survey classification is not fundamentally different from the 2012 survey classification.

### Main changes for land cover are the following:

- New class A30 Other built-up: includes all constructions not covered in the other AXX classes
- Class B77j was dropped as it referred to "Abandoned citrus orchards" (when abandoned is to be classified as a use)

- Clarified that turnips (as a root crop) are to be classified as B23e and not B23n. Also that B23 refers to species of turnips planted as root crops as opposed to rape and turnip rape (*Brassica rapa var. oleifera*) which are planted for their seed.
- Clarified that chervil (*Anthriscus cerefolium*) mentioned in B37d is the aromatic plant also known as "garden chervil". A previous mention to chervil in B43b was removed, as it referred to the root crop B23l – tuberous chervil.
- Clarified that B43f corresponds to cultivated mushrooms (including all cultivated truffle) whereas B43g refers to the collection of wild products (truffles in the wild included).
- B83 Nurseries now includes also forest nurseries. Sub-classification (B83a..f) was created for specialized nursery types.
- Cropland, and namely energy crops (B84) are no longer linked to U210 Energy production
- Harmonization of the woodland definition: in 2012 CXX included forest nurseries (now to be classified under B83) and young plantations, even if they do not reach a canopy of 10%. In order to have a coherent definition, areas below 10% of trees are to be classified according to the existing land cover.
- Disaggregation of G10-Inland water bodies into classes G11-Inland fresh water bodies and G12-Inland salty water bodies in order to better map to INSPIRE PLCC classes (namely PLCC 017 – Salty waters, which includes inland salty lakes)
- Disaggregation of G20-Inland running water into classes G21-Inland fresh running water and G22-Inland salty running water in order to better map to INSPIRE PLCC classes (namely PLCC 017 – Salty waters)
- Renaming of G30-Coastal waters to G30-Transitional waters, since in LUCAS coastal waters (also known as "open sea") are not relevant. In fact, the definition for G30 in 2012 was already compatible with the definition for transitional waters under the Water Framework Directive (Directive 2000/60/EC).

**Main changes for land use are the following:**

- All NACE categories have been covered
- U111 Agriculture no longer includes NACE 81.3 Landscape care and maintenance (which is now included in U342)
- U120 Forestry now explicitly includes extraction of cork (cork oak trees)
- U130 Fishing refers only to commercial fishing
- New class U150 Other primary production
- For all industrial activities (U22X) it has been specified in which main INSPIRE category it has to be included: raw industry, heavy end product industry or light end product industry (Land use type)
- U226 Machinery and equipment now includes also wooden furniture (formerly U227) and excludes reproduction of recorded media (now U228)
- U227 no longer includes printing and reproduction (now U228), nor manufacture of furniture (U226)
- New class U228 Printing and reproduction (includes NACE 18 and NACE 58)
- Docks are part of the specific transport sector they belong to, as other related infrastructure (they were an exception before and were excluded from the specific transport sector)



- New class U319 Electricity, gas and thermal power distribution (includes parts previously included in U210 Energy production, as far as the network is concerned)
- Split class U340 into U341 Commerce and U342 Financial, professional and information services
- Included class U363 Holiday camps into U341 Commerce

## **LUCAS survey classification comparison 2015 – 2018**

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The LUCAS 2015 Survey classification is not fundamentally different from the 2012 survey classification.

**Main changes for land cover are the following:**

- U410 Abandoned areas has been further subdivided :

U411 Abandoned industrial areas

U412 Abandoned commercial areas

U413 Abandoned transport areas

U414 Abandoned residential areas

U415 Other abandoned areas

## **LUCAS survey classification comparison 2018 – 2022**

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The LUCAS 2022 Survey classification is not fundamentally different from the 2018 survey classification.

Main changes include a specific classification for the Photointerpretation campaign and the addition of a new module on Landscape Features. Rest of changes are related to:

- Gully erosion
- Extended Grassland
- Simplified Copernicus module
- Simplified Grassland module
- Grazing has been divided in regular grazing (agricultural use) and irregular grazing on fallow land, semi-natural and natural areas.

Please note that the definition of fallow land in LUCAS does not necessarily coincides with other definitions of fallow land. However, with the help of the different parameters assessed in LUCAS specific classes, e.g. fallow land with irregular grazing, can be filtered out if needed.

## **Land cover and land use: general explications**

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In general, the establishment of classifications follows some principles:

- Spatial consistency: the data shall be comparable over different regions and applicable to different regions. It means that the classification is applicable to any region, knowing that there will be classes without any entry because not all classes exist in all regions.
- Temporal consistency: Observation of stocks allows change detection over time, e.g. construction site of a road is a construction site and not yet a road.

- Compatibility with existing systems (e.g. FSS, NACE, FAO, INSPIRE). This means that when defining classes, existing classifications shall be taken into account. It does not mean that any class definition from another nomenclature can be taken one-to-one. There is a trade-off to be done.
- Independency from observation method. The observation method shall not interfere in the definition of the classification. On the contrary, the observation method shall be chosen to enable best the data collection according to the chosen classification. Of course, there is always a trade-off to be made due to time/budget constraints. This can imply the collection of data at different detail resolution level of the classification, if the data collection method does not allow retrieving the level of detail expected. For example remote sensing is hard to be used for the LUCAS classification at the 3<sup>rd</sup> level of detail.
- No gaps and no overlaps:
  - exhaustive list of categories: no category “unclassified”
  - each object belongs to only one category

It means that for any type of land cover or land use, the classification needs to provide a class. This implies that there shall be a possibility to include new classes, for example at a more detailed level. Hierarchical classifications provide for that.

- Hierarchy of the classification:

Another principle applied at the LUCAS classification is that of a hierarchy in the classification system. This allows collecting information at different levels of detail. If there is no information available for a certain category at a 3<sup>rd</sup> or 4<sup>th</sup> level of the classification, there is still the possibility to extrapolate data on the upper level.

## Specific to the LUCAS classification

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In LUCAS, the concept of land is extended to inland water areas (lakes, rivers, coastal areas: estuaries, lagoons). The land concept does not embrace uses below the earth’s surface (mine deposits, subways, mushroom beds, underground levels of buildings).

In the LUCAS classification, there is a clear distinction between land COVER and land USE.

LAND COVER (LC) = physical cover (“material”) observed at the earth’s surface

LAND USE (LU) = socio-economic function of the observed earth’s surface

This separation enables a greater flexibility of the classification, i.e. it allows combining different LC and LU classes to retrieve specific information. For example: a sealed track within arable land that is mainly used by the farmer to access the fields can be retrieved by a combination of LC1=A22 (non built-up linear feature) with LU1=U312 (road) and LU2= U111 (agriculture).

Detailed definitions of the categories for both land use and land cover are to be found in the following chapters.

## The basic unit and the extended window of observation

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As the LUCAS Survey is a point survey, the size of the point in the real world needs to be defined.

The “point” (or **basic unit of observation**) is in fact a circle with a radius of 1,5m corresponding to an identifiable point on an orthophoto.

As we have not only homogeneous classes that we would like to observe, for example forests (forest definition requires observing a certain area to define the crown coverage or canopy of the trees) or orchards (which may consist in more than one tree species etc.), the LUCAS observation framework also

specifies an observation area, the “**extended window of observation**” which is the area defined by a 20m radius around the point, for specific classes.

There are many more rules defined for the data collection survey, which are detailed in the LUCAS Reference Document C1 - Instructions for Surveyors.

To aid in the identification of plant species, a Plant Identification Guide (LUCAS Reference Document C5) was produced.

## 2 Land Cover Classification (LUCAS SU LC)

### A00 ARTIFICIAL LAND

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Areas characterized by an artificial and often impervious cover of constructions and pavement.

#### A10 ROOFED BUILT-UP AREAS

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Roofed constructions which can be entered by persons.

##### A11 Buildings with one to three floors

Roofed constructions with one to three floors or less than 10 meters of height in total. Only buildings of more than 3m of width are to be registered

 **This class includes**

- Single-family houses
- Summer cottages
- Industrial or cultural buildings or stores
- Agricultural buildings
- Market halls
- Temporary constructions
- Visitor stations or centers

of less than 10 m of height

 **This class excludes**

- small constructions, tool-sheds, etc. less than 3m wide
- industrial constructions or technical infrastructure without a roof

 **Links with Land Use**

- A11 ➤ U111 Small agricultural buildings, farms, stables, poultry yards
- A11 ➤ U120 Small buildings used for forestry purpose
- A11 ➤ U130 Small buildings used for fishery production
- A11 ➤ U140 Small buildings used for mining and quarrying purposes
- A11 ➤ U210 Small buildings used for energy production purposes
- A11 ➤ U22x Small industrial plants and buildings
- A11 ➤ U31x Small buildings used for transport purposes
- A11 ➤ U32x Small buildings used for waste and water treatment
- A11 ➤ U330 Small buildings in construction
- A11 ➤ U341 Small buildings used for commercial purposes
- A11 ➤ U342 Small buildings used for financial, professional and information services
- A11 ➤ U350 Small buildings used for community services
- A11 ➤ U36X Small buildings used for recreation
- A11 ➤ U370 Individual residential houses
- A11 ➤ U410 Abandoned buildings

##### A12 Buildings with more than three floors

Roofed constructions with more than three floors, or more than 10 meters of height in total.

 **This class includes**

- Industrial buildings
- Stores
- Technical infrastructures
- Residential or cultural buildings
- Agricultural buildings
- Visitor centers

of more than 10 m of height

#### ✂ This class excludes

- industrial constructions or technical infrastructure without a roof

#### ➤ Links with Land Use

- A12 ➤ U111 Tall agricultural buildings, farms, stables, poultry yards
- A12 ➤ U120 Tall buildings used for forestry purpose
- A12 ➤ U130 Tall buildings used for fishery production
- A12 ➤ U140 Tall buildings used for mining and quarrying purposes
- A12 ➤ U210 Tall buildings used for energy production purposes
- A12 ➤ U22X Tall industrial plants and buildings, coking plants, blast furnaces
- A12 ➤ U31X Tall buildings used for transport purposes: Railway stations, hangars, airport buildings
- A12 ➤ U32X Tall buildings used for waste and water treatment
- A12 ➤ U330 Tall buildings in construction
- A12 ➤ U341 Tall buildings used for commercial purposes: garages, supermarkets, banks, stores, hotels, restaurants, offices
- A12 ➤ U350 Tall buildings used for community services: Administrative buildings, parliaments, ministries, town halls, law courts, fire brigade and police barracks, military buildings, hospitals, clinics, sanatoria, orphans, schools, universities, churches, monasteries
- A12 ➤ U36X Tall buildings used for recreational purposes: e.g. Libraries, Museums, Cinemas, Theatres, Stadiums, Sport halls, Visitor Centers
- A12 ➤ U370 Collective residential houses
- A11 ➤ U410 Abandoned buildings

### A13 Greenhouses

Installations of glass, plastic or any other material which is translucent but impervious to water. If crops are identified inside the greenhouse, they should be registered using the corresponding land cover category (double codification greenhouse + crop)

#### 📁 This class includes

- All greenhouses, used or not
- Greenhouses temporarily uncovered in Spring or Summer

#### ✂ This class excludes

- Crops covered by protection fabric without raised structures

#### ➤ Links with Land Use

- A13 ➤ U111 Greenhouses used for agricultural production
- A13 ➤ U113 Kitchen garden
- A13 ➤ U120 Forestry

- A13 ➤ U341 Greenhouses used for commercial purposes
- A13 ➤ U361 Greenhouses of botanical gardens
- A13 ➤ U410 Abandoned greenhouses

## **A20 ARTIFICIAL NON-BUILT UP AREAS**

Non built-up areas characterized by an artificial and/or impervious cover of hard artificial materials, concrete, gravel

### **A21 Non built-up area features**

Non built-up area features characterized by an artificial and/or impervious cover of hard artificial materials, concrete, gravel

#### **This class includes**

- Yards
- Farmyards
- Cemeteries
- Car parking areas (even if existing cover is "natural" as e.g. grass)
- Artificialised areas of railway station precincts and aerodromes
- Dams
- Quays
- Loading and unloading zones
- Dry docks

#### **This class excludes**

- Built up parking lots with several floors (A1X)
- Bare land in areas which are not artificial land (FXX)

#### **Links with Land Use**

- A21 ➤ U111 Farmyards and parking areas attached to agricultural buildings
- A21 ➤ U120 Yards, parking areas attached to buildings used for forestry purpose
- A21 ➤ U130 Yards and parking areas attached to buildings used for fishery purpose
- A21 ➤ U140 Yards, parking areas, storage areas used for mining, quarrying
- A21 ➤ U210 Yards, parking areas, storage areas on industrial sites for energy production
- A21 ➤ U22X Yards, parking areas, storage areas on industrial sites
- A21 ➤ U31X Yards, parking areas, storage areas attached to railway stations, airports, motorways,
- A21 ➤ U32X Yards, parking areas, storage areas attached to installations of waste and water treatment
- A21 ➤ U330 Yards, parking areas, storage areas attached to installations for construction
- A21 ➤ U34X Parking areas of supermarkets, business, banks,...
- A21 ➤ U350 Parking areas of administrations; cemeteries
- A21 ➤ U36x Parking areas of leisure and recreation activities, tennis courts
- A21 ➤ U370 Yards and parking areas of residential zones
- A21 ➤ U410 Abandoned non built-up area features

### **A22 Non built-up linear features**

Non built-up linear features characterized by an artificial and/or impervious cover of hard artificial material, concrete or gravel. Only linear features of more than 3m of width are to be registered

#### **This class includes**

- Roads (even if not sealed, or with "natural" cover as e.g. grass)
- Railways

- Airport runways

if wider than 3m

✂ **This class excludes**

- Linear features less than 3m of width (not registered as land cover)

➤✂ **Links with Land Use**

A22 ➤ U31X Roads, railways, airport runways

## A30 OTHER ARTIFICIAL AREAS

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Other artificial areas.

📁 **This class includes**

- Bridges and viaducts
- Mobile homes
- Solar panels
- Power plants
- Electrical substations
- Pipelines
- Water sewage plants
- Open dump sites

✂ **This class excludes**

- Roofed buildings (A1X)

➤✂ **Links with Land Use**

A30 ➤ U210 Energy production (e.g. a power sub-station)

A30 ➤ U311 Railway transport on a bridge

A30 ➤ U312 Road transport on a viaduct

A30 ➤ U318 Protection works

A30 ➤ U321 Water supply and treatment

A30 ➤ U322 Open dump site (waste treatment)

A30 ➤ U410 Open dump site (abandoned)

## B00 CROPLAND

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Areas where crops are planted and cultivated.

### B10 CEREALS

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For detailed instructions on the identification of cereals see document C5-Plant Identification Guide

#### B11 Common wheat

Areas where common wheat (*Triticum aestivum*) is planted, whether as spring or as winter wheat

 **This class includes**

- Spelt (*Triticum spelta*)

 **Links with Land Use**

- B11 ➤ U111 Agricultural production
- B11 ➤ U113 Kitchen garden

#### B12 Durum wheat

Areas where durum wheat (*Triticum durum*) is planted

 **This class includes**

- Emmer (*Triticum turgidum*)
- Einkorn (*Triticum monococcum*)

 **Links with Land Use**

- B12 ➤ U111 Agricultural production
- B12 ➤ U113 Kitchen garden

#### B13 Barley

Areas where barley (*Hordeum vulgare*) is planted

 **Links with Land Use**

- B13 ➤ U111 Agricultural production
- B13 ➤ U113 Kitchen garden

#### B14 Rye

Areas where rye (*Secale cereale*) is planted

 **Links with Land Use**

- B14 ➤ U111 Agricultural production
- B14 ➤ U113 Kitchen garden

#### B15 Oats

Areas where oats (*Avena sativa*) is planted

 **Links with Land Use**

- B15 ➤ U111 Agricultural production
- B15 ➤ U113 Kitchen garden



## B16 Maize

Areas where maize (*Zea mays*) is planted

### This class includes

- Corn-cob-mix (*Zea mays* L. harvested as humid grain)

### Links with Land Use

- B16 ➤ U111 Agricultural production
- B16 ➤ U113 Kitchen garden

## B17 Rice

Areas where rice (*Oryza sativa*) is planted

### Links with Land Use

- B17 ➤ U111 Agricultural production
- B17 ➤ U113 Kitchen garden

## B18 Triticale

Areas where triticale (*x Triticosecale*) is planted

### Links with Land Use

- B18 ➤ U111 Agricultural production
- B18 ➤ U113 Kitchen garden

## B19 Other cereals

Areas where other cereals are planted. The surveyor must note the cereal species in the LC plant species field.

### This class includes

- **B19a** - Sorghum (*Sorghum bicolor*)
- **B19b** - Buckwheat (*Fagopyrum esculentum* Mill.)
- **B19c** - Common, golden or proso millet (*Panicum miliaceum* L.)
- **B19d** - Canary grass (*Phalaris canariensis* L.)
- **B19f** - Quinoa (*Chenopodium quinoa*)
- **B19g** - Fonio (*Digitaria* spp.)
- **B19h** - Other cereals not specified elsewhere
  - - Barnyard or Japanese millet (*Echinochloa frumentacea*);
  - - Ragi, finger or African millet (*Eleusine coracana*) ;
  - - Teff (*Eragrostis abyssinica*)
  - - Koda or ditch millet (*Paspalum scrobiculatum*) ;
  - - Pearl or cattail millet (*Pennisetum glaucum*) ;
  - - Foxtail millet (*Setaria italica*)

### This class excludes

- Common wheat (B11)
- Durum wheat (B12)
- Barley (B13)
- Rye (B14)

- Oats (B15)
- Maize (B16)
- Rice (B17)
- Mixed cereals for fodder (B54)

➤< **Links with Land Use**

- B19 ➤ U111 Agricultural production
- B19 ➤ U113 Kitchen garden

## B20 ROOT CROPS

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### B21 Potatoes

Areas where potatoes (*Solanum tuberosum*) are planted

 **This class includes**

- Early potatoes and seeds

 **Links with Land Use**

- B21 ➤ U111 Agricultural production
- B21 ➤ U113 Kitchen garden

### B22 Sugar beet

Areas where sugar beet (*Beta vulgaris var. altissima*) is planted

 **Links with Land Use**

- B22 ➤ U111 Agricultural production
- B22 ➤ U113 Kitchen garden

 **This class excludes**

- Fodder beet (B23)

### B23 Other root crops

Areas where other root crops are planted. The surveyor must note the root crop species in the LC plant species field.

 **This class includes**

- **B23a** - Fodder beet (roots of *Beta vulgaris*)
- **B23b** - Fodder kale (*Brassica oleracea L.*)
- **B23c** - Swedes (*Brassica napus L. var. napobrassica (L.) Robb.*)
- **B23d** - Carrots (roots of *Daucus carota L.*)
- **B23e** - Turnips (roots of *Brassica rapa L.*)
- **B23f** - Jerusalem artichoke (*Helianthus tuberosus L.*)
- **B23g** - Sweet potatoes (*Ipomoea batatas (L.) Lam.*)
- **B23h** - Fodder parsnips (*Pastinaca sativa L.*)
- **B23i** - Yam (*Discorea spp.*)
- **B23j** - Manioc, Cassava (*Manihot esculenta Crantz, syn. M. utilissima*)
- **B23k** - Horseradish (*Cochlearia armoracia*)
- **B23l** - Tuberous chervil (*Chaerophyllum bulbosum*)
- **B23m** - Other tropical tubers
- - Taros (*Colocasia esculenta*),
- **B23n** - Other root or tuber crops not specified elsewhere
  - Garlic (*Allium sativum*) ,
  - Onions (*Allium cepa*) ,
  - Radishes (*Raphanus sativus*) ,
  - Red beet (*Beta vulgaris var. conditiva*) ,

- Shallots (*Allium ascalonicum*),
- Mangolds and beet (*Beta vulgaris var. alba*)

✂ **This class excludes**

- Potatoes (B21)
- Sugar beet (B22)
- Rape (*Brassica napus*) and turnip rape (*Brassica rapa var. oleifera*) (B32)

➤< **Links with Land Use**

- B23 ➤ U111 Agricultural production
- B23 ➤ U113 Kitchen garden

## B30 NON-PERMANENT INDUSTRIAL CROPS

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### B31 Sunflower

Areas where sunflower (*Helianthus annuus*) is planted

#### ➤< Links with Land Use

B31 ➤ U111 Agricultural production

B31 ➤ U113 Kitchen garden

### B32 Rape and turnip rape

Areas where rape (*Brassica napus*) and turnip rape (*Brassica rapa var. oleifera*) are planted. It excludes other species of turnips planted as a root crops.

#### 📁 This class includes

- Turnip rape (*Brassica rapa var. oleifera*)
- Rape (*Brassica napus*)

#### ✂ This class excludes

- Turnips as root crops (B23e)

#### ➤< Links with Land Use

B32 ➤ U111 Agricultural production

B32 ➤ U113 Kitchen garden

### B33 Soya

Areas where soya beans (*Glycine soja*) are planted

#### ➤< Links with Land Use

B33 ➤ U111 Agricultural production

B33 ➤ U113 Kitchen garden

## B34 Cotton

Areas where cotton (*Gossypium spp.*) is planted

### ➤< Links with Land Use

- B34 ➤ U111 Agricultural production
- B34 ➤ U113 Kitchen garden

## B35 Other fibre and oleaginous crops

Areas where other fibre and oleaginous crops are planted. The surveyor must note the fibre and oleaginous crop species in the LC plant species field.

### 📁 This class includes

- **B35a** - Flax (*Linum usitatissimum straw*)
- **B35b** - Hemp (*Cannabis sativa straw*)
- **B35c** - Poppy seeds (*Papaver somniferum L.*)
- **B35d** - Mustard seeds (*Sinapis alba L., Sinapis nigra*)
- **B35e** - Safflower (*Carthamus tinctorius L.*)
- **B35f** - Earth almond (*Cyperus esculentus L.*)
- **B35g** - Sesame (*Sesamum indicum*)
- **B35h** - Jute (*Corchorus spp.*)
- **B35i** - Ramie (*Boehmeria nivea*)
- **B35j** - Sisal (*Agave sisalana*)
- **B35k** - Kenaf (*Hibiscus cannabinus*)
- **B35l** - Bird rape (*Brassica rapa var. silvestris*)
- **B35m** - Castor beans (*Ricinus communis*)
- **B35n** - Other fibre and oleaginous crops not elsewhere specified

### ✂ This class excludes

- Sunflower (B31),
- Rape seeds (B32),
- Soya (B33),
- Cotton (B34),
- Olive groves (B81)

### ➤< Links with Land Use

- B35 ➤ U111 Agricultural production
- B35 ➤ U113 Kitchen garden

## B36 Tobacco

Areas where tobacco (*Nicotiana tabacum*) is planted

### Links with Land Use

B36 ➤ U111 Agricultural production

B36 ➤ U113 Kitchen garden

## B37 Other non-permanent industrial crops

Areas where other non-permanent industrial crops are planted. The surveyor must note the non-permanent industrial crop species in the LC plant species field.

### This class includes

- **B37a** - Chicory roots (*Cichorium intybus var. sativum*)
- **B37b** - Hops (*Humulus lupulus*)
- **B37c** - Medicinal plants
  - Common balm (*Melissa officinalis*),
  - Common lungwort (*Pulmonaria officinalis*),
  - Common mallow (*Malva silvestris*),
  - Marshmallow (*Althaea officinalis*),
  - Poison hemlock (*Conium maculatum*),
  - Pot marigold (*Calendula officinalis*),
  - Purple foxglove (*Digitalis purpurea*),
  - Soapwort (*Saponaria officinalis*),
  - Sweet chamomile (*Chamaemelum nobile*),
  - Valerian (*Valeriana officinalis*),
  - Vervain (*Verbena officinalis*)
- **B37d** - Spices and aromatic plants
  - Anise (*Pimpinella anisum*),
  - Badain, star anise (*Illicium verum*),
  - Basil (*Ocimum basilicum*),
  - Coriander (*Coriandrum sativum*),
  - Dill (*Anethum graveolens*),
  - Tarragon (*Artemisia dracunculus*),
  - Fennel (*Foeniculum vulgare*),
  - Garden chervil (*Anthriscus cerefolium*),
  - Cumin (*Cuminum cyminum*),
  - Marjoram (*Origanum spp.*),
  - Parsley (*Petroselinum crispum*),
  - Rosemary (*Rosmarinus officinalis*),
  - Spearmint (*Mentha spp.*),
  - Sorrel (*Rumex acetosa*),
  - Sage (*Salvia officinalis*),
  - Thyme (*Thymus vulgaris*);
- **B37e** - Sugar cane (*Saccharum officinarum*)

- **B37f** - Other non-permanent industrial crops not specified elsewhere

✂ **This class excludes**

- Tobacco (B36)
- Permanent industrial crops (B84)

➤ **Links with Land Use**

- B37 ➤ U111 Agricultural production
- B37 ➤ U113 Kitchen garden



## B40 DRY PULSES, VEGETABLES AND FLOWERS

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### B41 Dry pulses

Areas where dry pulses are planted

 **This class includes**

- Dry peas, garden pea (*Pisum sativum*) ,
- Chickpea, garbanzo bean (*Cicer arietinum*) ,
- Cowpea (*Vigna sinensis*; *Dolichos sinensis*) ,
- Pigeon pea (*Cajanus cajan*)
- Field peas (*Pisum arvense*) ,
- Field beans (*Vicia faba* spp.) ,
- Lentils (*Lens culinaris*) ,
- Lentil vetches (*Vicia ervilia*)
- Vetches, spring or common vetch (*Vicia sativa*, *Vicia villosa*)
- Lupins (*Lupinus* spp.)
- Peanuts (*Arachis hypogaea*)

 **This class excludes**

- Soya (B33)

 **Links with Land Use**

- B41 ➤ U111 Agricultural production
- B41 ➤ U113 Kitchen garden

### B42 Tomatoes

Areas where tomatoes (*Lycopersicon esculentum*) are planted

 **Links with Land Use**

- B42 ➤ U111 Agricultural production
- B42 ➤ U113 Kitchen garden

### B43 Other fresh vegetables

Areas where other fresh vegetables are planted. The surveyor must note the fresh vegetable species in the LC plant species field.

 **This class includes**

- **B43a** – Brassicas
  - Cabbages (*Brassica oleracea* spp.) ,
  - Cauliflowers (*Brassica oleracea* var. *botrytis*)
- **B43b** - Leaf and stalked vegetables other than brassicas
  - Artichokes (*Cynara scolymus*) ,
  - Asparagus (*Asparagus officinalis*) ,
  - Cardoons (*Cynara cardunculus*) ,
  - Celery (*Apium graveolens*) ,
  - Chicory (*Cichorium intybus* var. *foliosum*) ,

- Cress (*Lepidium sativum*) ,
- Endives (*Cichorium. endivia var. crispa*) ,
- Garden orache (*Atriplex hortensis*) ,
- Leeks (*Allium porrum*) ,
- Lettuce (*Lactuca sativa*) ,
- Rhubarb (*Rheum spp.*) ,
- Purslane (*Portulaca oleracea*) ,
- Spinach (*Spinacia oleracea*) ,
- Rocket (*Eruca sativa*) ,
- Watercress (*Nasturtium officinale*)
- **B43c** - Leguminous vegetables, including production for tins
  - Green beans (*Phaseolus spp., Vigna spp.*)
  - Green peas (*Pisum sativum*)
- **B43e** - Vegetables cultivated for fruit other than tomatoes
  - Melons (*Cucumis melo*)
  - Cucumbers (*Cucumis sativus*)
  - Egg-plants (*Solanum melongena*)
  - Okras (*Abelmoschus esculentus, Hibiscus esculentus*) ,
  - Peppers (*Capsicum annum, Capsicum frutescens, Pimenta officinalis*)
  - Pumpkins (*Cucurbita spp.*)
  - Watermelons (*Citrullus vulgaris*)
- **B43f** - Cultivated mushrooms
  - *Boletus edulis*
  - *Agaricus campestris*
  - *Morchella spp.*
  - Truffle (e.g. *Tuber magnatum*) when cultivated
- **B43g** - Wild products
  - Truffle
  - Water chestnut
- **B43h** - Other fresh vegetables not specified elsewhere

✂ **This class excludes**

- Tomatoes (B42),
- Strawberries (B45),
- Horseradish (B23)

➤◀ **Links with Land Use**

- B43 ➤ U111 Agricultural production
- B43 ➤ U113 Kitchen garden

## **B44 Floriculture and ornamental plants**

Areas where flowers and ornamental plants are planted

📁 **This class includes**

- Bulbs and tubers, cut-flowers

*Alstroemeria, Amaranthus, Anemone, Anthurium, Campanula, Celosia, Centaurea, Cymbidium, Dendranthema, Dianthus, Echinops, Eryngium, Euphorbia, Forsythia, Gerbera, Gladiolus, Helianthus,*

*Hydrangea, Hyacinthus, Iris, Liatris, Lilium, Lysimachia, Muscari, Narcissus, Papaver, Paphiopedilum, Protea, Ranunculus, Rosa, Strelitzia, Tulipa, Veronica, Zantedeschia, Zinnia*

- Cut- leafage

*Acacia, Achillea, Alchemilla, Arbutus, Asparagus, Aspidistra, Aster, Camellia, Cedrus, Cornus, Cyperus, Erica, Gypsophila, Hibiscus, Hosta, Ilex, Limonium, Melaleuca, Molluccella, Panicum, Pennisetum, Philodendrum, Physalis, Rhododendron, Ruscus, Salix, Sedum, Solidago, Solidaster, Syringe, Thuya, Trachelium, Viburnum, Weigela*

- Ornamental plants

*Abelia, Agapanthus, Araucaria, Azalea, Begonia, Berberis, Betula, Bougainvillea, Callistemon, Chamaecyparis, Chamaerops, Croton, Cupressus, Cycas, Cyclamen, Cymbidium, Deutzia, Dimorphoteca, Dracaena, Eounymous, Euphorbia, Euryops, Ficus, Forsythia, Grevillea, Hydrangea, Lavandula, Leptospermum, Lonicera, Morus, Myrtus, Olea, Paphiopedilum, Pelargonium, Petunia, Phoenix, Photinia, Pyracanta, Rosmarinus, Saintpaulia, Scindapsus, Spiraea, Syngonium, Viburnum, Washingtonia, Wisteria, Yucca*

✂ **This class excludes**

- Nurseries (B83)

➤➤ **Links with Land Use**

- B44 ➤ U111 Agricultural production
- B44 ➤ U361 Leisure (allotments)
- B44 ➤ U370 Ornamental plants in gardens of residential areas

**B45 Strawberries**

Areas where strawberries (*Fragaria spp.*) are planted

➤➤ **Links with Land Use**

- B45 ➤ U111 Agricultural production
- B45 ➤ U113 Kitchen garden

## B50 FODDER CROPS

B50 groups the agriculturally improved grassland and temporary pastures. These areas are typically used for fodder or for grazing, and refer to areas which are included in the agricultural rotation (which differentiates them from permanent grassland areas, not included in the rotation, that are to be classified either as E10 or E20).

### B51 Clovers

The various species of clover (annual or perennial) cultivated alone or mixed with other clover species.

 **This class includes**

- Crimson clover (*Trifolium incarnatum* L.)
- Red clover (*Trifolium pratense* L.)
- White clover (*Trifolium repens* L.)
- Egyptian clover (*Trifolium alexandrinum*)
- Persia clover (*Trifolium resupinatum*)

and mixes of clovers

 **This class excludes**

- Mixes of clovers with other species (B53)

 **Links with Land Use**

B51 ➤ U111 Agricultural production

### B52 Lucerne

The various types of lucerne cultivated alone.

 **This class includes**

- Lucerne (*Medicago sativa* L., *Medicago falcata* L. and hybrids)

 **Links with Land Use**

B52 ➤ U111 Agricultural production

### B53 Other leguminous and mixtures for fodder

Other leguminous or mixtures of predominantly leguminous (normally > 80 %) forage crops and grass plants, harvested green or as dried hay. It is accepted that legumes can be associated with graminaceous plants, i.e.

- at the time of the setting up when the germination of the legume is protected by an annual graminaceous plant
- at the time of the setting up with a view to an association between the two families of plants

Included here are: annual crops belonging to other families such as the cruciferous and that are not mentioned elsewhere, e.g. the California bluebell (*Phacelia tanacetifolia* Benth), if they are harvested green. The surveyor must note the dominant species in the LC plant species field.

 **This class includes**

- **B53a** - Sainfoin (*Onobrychis viciifolia* Scop.)

- **B53b** - Sweet clover or Trefoil (*Lotus corniculatus* L.)
- **B53c** - Chickling vetch (*Lathyrus sativus*)
- **B53d** - Black medick (*Medicago lupulina* L.)
- **B53e** - Melilot (*Melilotus alba* Lam.)
- **B53f** - Serradella (*Ornithopus sativus*)
- **B53g** - Fenugreek (*Trigonella foenum-graecum*)
- **B53h** - Sulla (*Hedysarium coronarium*)
- **B53i** - Sweet lupins (*Lupinus albus*, *Lupinus angustifolius*, *Lupinus luteus*)
- **B53j** - California bluebell (*Phacelia tanacetifolia*)
- **B53k** - Other leguminous and mixtures for fodder not specified elsewhere

✂ **This class excludes**

- Mix of cereals for fodder (B54)
- Temporary grassland (B55)

➤➤ **Links with Land Use**

B53 ➤ U111 Agricultural production

## **B54 Mixed cereals for fodder**

Mix of more than two cereals used in most cases for fodder, often as winter crop and harvested green.

📁 **This class includes**

- Common wheat (B11),
- Durum wheat (B12),
- Barley (B13),
- Rye (B14),
- Oats (B15),
- Maize (B16),
- Triticale (B18),
- Other cereals (B19)

if mixed and harvested for fodder

✂ **This class excludes**

- Common wheat (B11)
- Durum wheat (B12)
- Barley (B13)
- Rye (B14)
- Oats (B15)
- Maize (B16)
- Rice (B17)
- Triticale (B18)
- Other cereals (B19)

if only one or two species are sown and harvested for human consumption

➤➤ **Links with Land Use**

## **B55 Temporary grasslands**

Land occupied by temporary (and artificial) pastures, occupying the ground for at least one crop year and less than five years, the seeds being either pure or mixed grass, on cropland areas (ie, making part of the crop rotation). If the soil is ploughed and/if the grass is sown the same year, the grassland is very likely temporary and not permanent.

### **This class includes**

- Italian ryegrass
- Other ryegrasses
- Cock's foot
- Fescues
- Timothy
- Other temporary pastures on agricultural areas/cropland

### **This class excludes**

- Permanent grassland (EXX)
- Mix of legumes with gramineous plants for fodder (B53)
- Mix of cereals for fodder (B54)

### **Links with Land Use**

- B55 ➤ U111 Agricultural production
- B55 ➤ U113 Kitchen garden

## **B70 PERMANENT CROPS: FRUIT TREES**

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### **B71 Apple fruit**

Surfaces occupied by apple trees

 **This class includes**

- *Malus pumila*
- *Pyrus malus*
- Abandoned apple orchards

 **Links with Land Use**

- B71 ➤ U111 Agricultural production
- B71 ➤ U113 Kitchen garden
- B71 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B71 ➤ U410 Abandoned

### **B72 Pear fruit**

Surfaces occupied by pear trees

 **This class includes**

- *Pyrus communis*
- Abandoned pear orchards

 **Links with Land Use**

- B72 ➤ U111 Agricultural production
- B72 ➤ U113 Kitchen garden
- B72 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B72 ➤ U410 Abandoned

### **B73 Cherry fruit**

Surfaces occupied by cherry trees (for fruit)

 **This class includes**

- *Prunus cerasus*
- *Cerasus acida*
- Abandoned cherry orchards

 **This class excludes**

- Cherry trees for forestry / wood production (CXX + U120)

 **Links with Land Use**

- B73 ➤ U111 Agricultural production
- B73 ➤ U113 Kitchen garden
- B73 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B73 ➤ U410 Abandoned

## B74 Nuts trees

Surfaces occupied by nuts trees (for fruit)

### This class includes

- Almonds (*Prunus amygdalus*)
- Chestnuts (*Castanea* spp.)
- Hazelnuts (*Corylus avellana*)
- Pistachios (*Pistacia vera*)
- Walnuts (*Juglans* spp.)
- Abandoned nuts trees orchards

### This class excludes

- Nuts trees for forestry / wood production (CXX + U120)

### Links with Land Use

- B74 ➤ U111 Agricultural production
- B74 ➤ U113 Kitchen garden
- B74 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B74 ➤ U410 Abandoned

## B75 Other fruit trees and berries

Surfaces occupied by other fruit trees and berries. The surveyor must note the fruit tree/berry species in the LC plant species field.

### This class includes

- **B75a** - Apricot (*Prunus armeniaca*)
- **B75b** - Cornel (*Cornus mas*)
- **B75c** - Figs (*Ficus carica*)
- **B75d** - Juneberry (*Amelanchier vulgaris*)
- **B75e** - Kiwi (*Actinidia chinensis*)
- **B75f** - Loquat (*Eriobotrya japonica*)
- **B75g** - Medlar (*Mespilus germanica*)
- **B75h** - Mirabella (*Prunus insititia* var. *syriaca*)
- **B75i** – Peach, nectarine, platerine (*Prunus persica*; *Amygdalus persica*; *Persica laevis*)
- **B75j** - Persimons (*Diospyros kaki*)
- **B75k** - Plums (*Prunus domestica*)
- **B75l** - Pomegranates (*Punica granatum*)
- **B75m** - Oleaster (*Eleagnus* spp.)
- **B75n** - Quinces (*Cydonia oblonga*)
- **B75o** - Sloes (*Prunus spinosa*)
- **B75p** - Small fruits and berries
  - Blackberries (*Morus nigra*)
  - Black currants (*Ribes nigrum*)
  - Blueberries (*Vaccinium myrtillus*)
  - Cowberries (*Vaccinium vitis-idaea*)
  - Cranberries (*Vaccinium macrocarpon*)
  - Dangleberries (*Gaylussacia* spp.)
  - Dewberries (*Rubus arcticus*)



- Gooseberries (*Ribes uva-crispa*)
- Mulberries (*Morus alba*; *Morus rubra*)
- Myrtle berries (*Myrtus communis*)
- Raspberries (*Rubus idaeus*)
- **B75q** - Tropical fruits
- Bananas (*Musa spp.*)
- Avocado (*Persea americana*)
- **B75r** - Other fruit trees and berries not specified elsewhere
- Abandoned orchards

✂ **This class excludes**

- Apples (B71)
- Pears (B72)
- Cherries (B73)
- Nuts (B74)
- Strawberries (B45)
- Citrus fruits (B76, B77)

➤✂ **Links with Land Use**

- B75 ➤ U111 Agricultural production
- B75 ➤ U113 Kitchen garden
- B75 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B75 ➤ U410 Abandoned

## **B76 Oranges**

Surfaces occupied by orange trees

📁 **This class includes**

- Orange (*Citrus sinensis*)
- Bitter orange (*Citrus aurantium*)
- Abandoned orange orchards

➤✂ **Links with Land Use**

- B76 ➤ U111 Agricultural production
- B76 ➤ U113 Kitchen garden
- B76 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B76 ➤ U410 Abandoned

## **B77 Other citrus fruit**

Surfaces occupied by other citrus fruit trees. The surveyor must note the citrus species in the LC plant species field.

📁 **This class includes**

- **B77a** - Bergamot (*Citrus bergamia*)
- **B77b** - Citron (*Citrus medica var. cedrata*)
- **B77c** - Grapefruit and pomelo (*Citrus maxima*, *Citrus grandis*, *Citrus paradisea*)
- **B77d** - Lemons (*Citrus limon*)
- **B77e** - Limes (*Citrus aurantifolia*, *Citrus limetta*)
- **B77f** - Satsumas (*Citrus unshiu*)

- **B77g** - Mandarines (*Citrus deliciosa*, *Citrus nobilis*)
- **B77h** - Clementines (*Citrus clementina*)
- **B77i** - Kumquats (*Fortunella spp.*)
- **B77k** - Other citrus fruit not specified elsewhere
- Abandoned citrus orchards

✂ **This class excludes**

- Oranges (B66)

➤◀ **Links with Land Use**

- B77 ➤ U111 Agricultural production
- B77 ➤ U113 Kitchen garden
- B77 ➤ U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B77 ➤ U410 Abandoned

## B80 OTHER PERMANENT CROPS

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
### B81 Olive groves

Surfaces occupied by olive groves

 **This class includes**

- Olive (*Olea europea*)
- Abandoned olive groves

 **Links with Land Use**

- B81  U111 Agricultural production
- B81  U113 Kitchen garden
- B81  U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B81  U410 Abandoned





### B82 Vineyards

Surfaces occupied by vineyards

 **This class includes**

- Vine (*Vitis vinifera*)
- Abandoned vineyards

 **Links with Land Use**

- B82  U111 Agricultural production
- B82  U113 Kitchen garden
- B82  U361 Amenities, museum, leisure (e.g. parks, botanical gardens)
- B82  U410 Abandoned

### B83 Nurseries

Surfaces occupied by young plants for transplantation. The type of main plant/tree has to be noted in the species field.



 **This class includes**

- **B83a** – Horticultural nurseries
- **B83b** - Vine and root-stock nurseries
- **B83c** - Fruit trees nurseries
- **B83d** - Ornamental plants nurseries
- **B83e** - Trees and bushes nurseries (for planting in gardens, parks, embankments)
- **B83f** - Forest tree nurseries
- **B83g** – Other, non-specialized nurseries

 **This class excludes**

- Wildings / use of natural regeneration for transplanting (CXX)

 **Links with Land Use**

- B83a  U111 Horticultural nurseries
- B83e  U111 Production of ornamental trees and bushes for gardens, parks

**B84 Permanent industrial crops**

Surfaces occupied by permanent industrial crops. The surveyor must note the permanent industrial crop species in the LC plant species field.

 **This class includes**

- **B84a** - Reeds, canary grass (*Phalaris arundinacea*) when cultivated and not natural
- **B84b** - Other plants for plaiting
  - Osier
  - Rushes
  - Rattans
- **B84c** - Coffee
- **B84d** - Tea
- **B84e** - Other industrial plants for beverages
  - Cocoa
  - Mate
- **B84f** - Industrial plants for oil
  - Coconut
  - Palm
- **B84g** - Permanent aromatic plants
  - Black or red pepper
  - Cinnamon
  - Cloves
  - Ginger
  - Vanilla
  - Cardamom
- **B84h** - Permanent textile plants
  - Abaca
  - Agave
  - Kapok
- **B84i** - Plants for rubber and tannin
  - Hevea
  - Red quebracho
- **B84j** - Rose trees cultivated for rose-oil production (not as ornamental plants)
- **B84k** - Other permanent industrial crops
  - Lavender (*Lavandula spp.*)
  - Citronella
  - Sage
  - Quinine
  - Areca nuts
  - Mulberries for silk production
  - Carobs
  - Stevia (*Stevia rebaudiana*)
- **B84l** - Miscanthus (*Miscanthus giganteus*)
- **B84m** - Willow

➤➤ **Links with Land Use**

- B84 ➤ U111 Agricultural production
- B84 ➤ U113 Kitchen garden

## C00 WOODLAND

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Areas covered by trees with a canopy of at least 10%. Also woody hedges and palm trees are included in this class.

NB: Height of trees at maturity and width of woody features have to be assessed

### C10 BROADLEAVED WOODLAND

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Areas with a tree canopy cover of at least 10% and composed of more than 75% of broadleaved species

#### This class includes

Stands with the following species

- Acacia (*Acacia spp.*)
- Alder (*Alnus spp.*)
- Ash (*Fraxinus excelsior*)
- Aspens (*Populus tremula*)
- Beech trees (*Fagus sylvatica*)
- Birch (*Betula spp.*)
- Carob (*Ceratonia siliqua*)
- Elm (*Ulmus spp.*)
- Eucalyptus (*Eucalyptus globulus*)
- Hedge (*Acer campestre*)
- Hornbeam (*Carpinus betulus*)
- Linden (*Tilia spp.*)
- Maple (*Acer spp.*)
- Palm trees of the Mediterranean and Macaronesian zones (*Phoenix theophrasti*, *Phoenix canariensis*)
- Poplars (*Populus spp.*)
- Oaks (*Quercus spp.*)
- Rowan (*Sorbus aucuparia*)
- Wild olive (*Olea europaea*, *L. ssp. europaea var. sylvestris*)
- Willows (*Salix spp.*)

#### This class excludes

- Forest tree nurseries (B83f)
- Young plantations or natural stands (< 10% canopy cover), dominated by shrubs (D10)
- Young plantations or natural stands (< 10% canopy cover), dominated by grass (E10)

#### Links with Land Use

- C10 ➤ U111 Regular grazing (e.g. pigs/sheep grazing on oak acorns/cut branches)
- C10 ➤ U120 Forestry (wood production)
- C10 ➤ U341 Wooded areas connected to commercial areas
- C10 ➤ U350 Wooded areas connected to community services
- C10 ➤ U36x Wooded areas specifically managed for recreational purposes
- C10 ➤ U370 Wooded areas in residential areas (urban parks)
- C10 ➤ U420 Not used wooded areas

## C20 CONIFEROUS WOODLAND

Areas with a tree canopy cover of at least 10% and composed of more than 75% of coniferous species.

### C21 Spruce dominated coniferous woodland

Coniferous stands where >75% of the part of coniferous trees are spruce

#### This class includes

Stands with the following species

- Spruce (*Picea spp.*)
- Christmas trees (if spruce dominated)

#### This class excludes

- Forest tree nurseries (B83f)
- Young plantations or natural stands (< 10% canopy cover), dominated by shrubs (D10)
- Young plantations or natural stands (< 10% canopy cover), dominated by grass (E10)
- Christmas trees if not dominated by spruce.

#### Links with Land Use

- C21 ➤ U111 Agricultural use: regular grazing (of fruit or leaves)
- C21 ➤ U120 Forestry (wood production)
- C21 ➤ U341 Wooded areas connected to commercial areas
- C21 ➤ U350 Wooded areas connected to community services
- C21 ➤ U36x Wooded areas specifically managed for recreational purposes
- C21 ➤ U370 Wooded areas in residential areas (urban parks)
- C21 ➤ U420 Not used wooded areas

### C22 Pine dominated coniferous woodland

Coniferous stands where >75% of the part of coniferous trees are pine species

#### This class includes

Stands with the following species

- Pines (*Pinus spp.*)
- Black pine (*Pinus nigra, Arnold*)
- Maritime pine (*Pinus pinaster*)
- Mediterranean stone pine, umbrella pine (*Pinus pinea*)
- Scots pine (*Pinus sylvestris, L.*)
- Siberian pine (*Pinus sibirica*)
- Weymouth pine (*Pinus strobus*)

#### Links with Land Use

- C22 ➤ U111 Agricultural use: regular grazing
- C22 ➤ U120 Forestry (wood production)
- C22 ➤ U341 Wooded areas connected to commercial areas
- C22 ➤ U350 Wooded areas connected to community services
- C22 ➤ U36x Wooded areas specifically managed for recreational purposes
- C22 ➤ U370 Wooded areas in residential areas (urban parks)

**C23 Other coniferous woodland**

Coniferous stands where none of the previously mentioned coniferous species (pine or spruce) is represented >75%

 **This class includes**

Stands with the following species:

- Aleppo pine (*Pinus halepensis*)
- Brutia pine (*Pinus brutia*)
- Cedars (*Cedrus spp.*)
- Corsican pine (*Pinus nigra var. maritima*)
- Cypresses (*Cupressus sempervirens*)
- Douglas firs (*Pseudotsuga menziesii*)
- Firs (*Abies spp.*)
- Larches (*Larix spp.*)
- Mediterranean stone pine, umbrella pine (*Pinus pinea*)
- Pines (*Pinus spp.*)
- Spruce (*Picea spp.*)
- Xerophyte conifers
- Christmas trees (if not belonging to the other CXX classes)

 **This class excludes**

- Forest tree nurseries (B83f)
- Young plantations or natural stands (< 10% canopy cover), dominated by shrubs (D10)
- Young plantations or natural stands (< 10% canopy cover), dominated by grass (E10)

 **Links with Land Use**

- C23 ➤ U111 Agricultural use: regular grazing (of fruit or leaves)
- C23 ➤ U120 Forestry (wood production)
- C23 ➤ U341 Wooded areas connected to commercial areas
- C23 ➤ U350 Wooded areas connected to community services
- C23 ➤ U36x Wooded areas specifically managed for recreational purposes
- C23 ➤ U370 Wooded areas in residential areas (urban parks)
- C23 ➤ U420 Not used wooded areas



## **C30 MIXED WOODLAND**

Areas with a tree canopy cover of at least 10% and composed of broadleaved and coniferous trees comprising both >25% of the tree canopy.

### **C31 Spruce dominated mixed woodland**

Mixed stands where >75% of the coniferous trees are spruce

#### **✂ This class excludes**

- Forest tree nurseries (B83f)
- Young plantations or natural stands (< 10% canopy cover), dominated by shrubs (D10)
- Young plantations or natural stands (< 10% canopy cover), dominated by grass (E10)

#### **➤< Links with Land Use**

- C31 ➤ U111 Agricultural use: regular grazing (of fruit or leaves)
- C31 ➤ U120 Forestry (wood production)
- C31 ➤ U341 Wooded areas connected to commercial areas
- C31 ➤ U350 Wooded areas connected to community services
- C31 ➤ U36x Wooded areas specifically managed for recreational purposes
- C31 ➤ U370 Wooded areas in residential areas (urban parks)
- C31 ➤ U420 Not used wooded areas

### **C32 Pine dominated mixed woodland**

Mixed stands where >75% of the coniferous trees are pine

#### **✂ This class excludes**

- Forest tree nurseries (B83f)
- Young plantations or natural stands (< 10% canopy cover), dominated by shrubs (D10)
- Young plantations or natural stands (< 10% canopy cover), dominated by grass (E10)

#### **➤< Links with Land Use**

- C32 ➤ U111 Agricultural use: regular grazing (of fruit or leaves)
- C32 ➤ U120 Forestry (wood production)
- C32 ➤ U341 Wooded areas connected to commercial areas
- C32 ➤ U350 Wooded areas connected to community services
- C32 ➤ U36x Wooded areas specifically managed for recreational purposes
- C32 ➤ U370 Wooded areas in residential areas (urban parks)
- C32 ➤ U420 Not used wooded areas

### **C33 Other mixed woodland**

Mixed stands where less than 75% of the coniferous trees are spruce or pine trees

#### **✂ This class excludes**

- Forest tree nurseries (B83f)
- Young plantations or natural stands (< 10% canopy cover), dominated by shrubs (D10)
- Young plantations or natural stands (< 10% canopy cover), dominated by grass (E10)

#### **➤< Links with Land Use**

- C33 ➤ U111 Agricultural use: regular grazing
- C33 ➤ U120 Forestry (wood production)
- C33 ➤ U341 Wooded areas connected to commercial areas
- C33 ➤ U350 Wooded areas connected to community services
- C33 ➤ U36x Wooded areas specifically managed for recreational purposes
- C33 ➤ U370 Wooded areas in residential areas (urban parks)
- C33 ➤ U420 Not used wooded areas

## D00 SHRUBLAND

---

Areas dominated (at least 10% of the surface) by shrubs and low woody plants normally not able to reach more than 5m of height, include sparsely occurring trees with a canopy below 10%.

### D10 SHRUBLAND WITH SPARSE TREE COVER

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Areas dominated (at least 10% of the surface) by shrubs and low woody plants, including sparsely occurring trees with a canopy equal or above 5 and less than 10 %.

 **This class includes**

- Scrub land (pines, rhododendrons, maquis, matorral and deciduous thickets)
- Heathland with gorse, heather or broom

 **This class excludes**

- Shrubland where tree canopy is at least 10% (CXX)
- Shrub-like crops
- Berries orchards(B75)
- Vineyards in production (B82)

 **Links with Land Use**

- D10 ➤ U111 Agricultural use: regular grazing
- D10 ➤ U112 Shrub areas in fallow land
- D10 ➤ U120 Forestry (Wood production)
- D10 ➤ U36x Leisure areas
- D10 ➤ U420 Natural shrubland areas and areas outside agricultural areas not used

## D20 SHRUBLAND WITHOUT TREE COVER

---

Areas dominated (at least 10% of the surface) by shrubs and low woody plants, including sparsely occurring trees that cover less than 5% of the area.

### This class includes

- Scrub land (pines, rhododendrons, maquis, matorral and deciduous thickets)
- Dwarf shrub tundra with dwarf birches and willows
- Heather and dwarf juniper vegetation
- Garrigues with strawberry trees, thyme, white rock rose, lavender and rosemary
- Heathland with gorse, heather or broom
- Spiny mediterranean heaths (*Phrygana spp.*)
- Xerophytic areas with succulents

### This class excludes

- Shrubland where tree canopy is at least 10% (CXX)
- Shrubland where tree canopy is between 5 and 10% (D10)
- Shrub-like crops
- Berries orchards (B75)
- Vineyards (B82)

### Links with Land Use

- D20 ➤ U111 Agricultural use: regular grazing
- D20 ➤ U112 Shrub areas in fallow land
- D20 ➤ U120 Forestry (Wood production)
- D20 ➤ U36x Leisure areas
- D20 ➤ U420 Natural shrubland areas and areas outside agricultural land not used

## E00 GRASSLAND

---

Land predominantly covered by communities of grassland, grass-like plants and forbs.

This class includes permanent grassland and permanent pasture that is not part of a crop rotation (normally for 5 years or more), which can be used to grow grasses and other herbaceous forage naturally (self-seeded) or through cultivation (sown).

It may include sparsely occurring trees within a limit of a canopy below 10% and shrubs within a limit of of a canopy below 10% and the total limit of of trees and shrubs cover of 18%. These can themselves be also grazed, provided that grasses and other herbaceous forage remain predominant as well.

### E10 GRASSLAND WITH SPARSE TREE/SHRUB COVER

---

Land predominantly covered by communities of grassland, grass-like plants and forbs including sparsely occurring trees (the total of the tree+shrub canopy is between 5 and 18% of the area).

#### This class includes

- Dry grasslands
- Dry edaphic meadows
- Steppes with gramineae and artemisia
- Plain and mountainous grassland
- Wet grasslands
- Alpine and subalpine grasslands
- Saline grasslands
- Arctic meadows

#### This class excludes

- Temporary grassland and fodder crops (B5X)
- Spontaneously re-vegetated surfaces (E30)

#### Links with Land Use

- E10 > U111 Agriculture: permanent pastures, regular grazing, alpages, meadows
- E10 > U120 Clear cuts within previously existing forests
- E10 > U31X Associated areas of transport areas
- E10 > U34X Grassland attached to commerce, finance or business areas
- E10 > U350 Grassland attached to community service areas
- E10 > U36X Grassland for recreation: public gardens, golf courses
- E10 > U370 Grassland attached to residential areas
- E10 > U4X0 Natural grassland or abandoned grassland outside agricultural areas not used

### E20 GRASSLAND WITHOUT TREE/SHRUB COVER

---

Land predominantly covered by communities of grassland, grass like plants and forbs without trees and shrubland (tree+shrub canopy is less than 5%).

#### This class includes

- Dry grasslands
- Dry meadows and steppes

- Plain and mountainous grassland
- Wet grasslands
- Alpine and subalpine grasslands
- Saline grasslands
- Arctic meadows
- Temporarily unstocked areas within forests (clear cuts) covered by grassland without sparse tree/shrub cover

✂ **This class excludes**

- Temporary grassland and fodder crops (B5X)
- Spontaneously re-vegetated surfaces (E30)

➤➤ **Links with Land Use**

- E20 ➤ U111 Agriculture: Permanent pastures, regular grazing, alpages, meadows
- E20 ➤ U120 Clear cuts within previously existing forests
- E20 ➤ U31x Associated areas of transport areas (e.g. aerodromes)
- E20 ➤ U34x Grassland attached to commerce, finance or business areas
- E20 ➤ U350 Grassland attached to community service areas
- E20 ➤ U36x Grassland for recreation or sports: public gardens, golf courses, sports fields
- E20 ➤ U370 Grassland attached to residential areas
- E20 ➤ U410 Abandoned grassland outside agricultural areas (not used)
- E20 ➤ U420 Natural grassland

## **E30 SPONTANEOUSLY RE-VEGETATED SURFACES**

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It consists of mostly agricultural land which has not been cultivated this year or the years before. It has not been prepared for sowing any crop this year. This class can also be found on clear-cut forest areas, industrial “brownfields”, storage land and of course on abandoned or unused land etc.

Main case is agricultural land not providing a crop during the entire year or abandoned earlier agricultural surfaces. It is occupied by spontaneous vegetation in case of set-aside arable land, with some tall herbs or weeds. This class applies as well for former grassland or hedge margins which are currently not used anymore but covered by tall herbs fringes. There might be some bare land pockets or crop residues and spontaneous re-grown crops of the before management period.

Only surfaces which have not been deliberately sown and do not have any fodder crops like mixed cereals or are temporary grasslands classify for this land cover class.

Tree+shrub canopy is less than 5%.

📁 **This class includes**

- Set aside land within agricultural areas
- Unused artificial land where revegetation is occurring
- Spontaneous secondary land cover in areas dominated by trees or shrubs

✂ **This class excludes**

- Other legumes and mixtures for fodder (B53)
- Mixed cereals (B54)
- Temporary grassland (B55)
- Grassland without tree/shrub cover (E20)
- Bare land (FXX)

➤➤ **Links with Land Use**

- E30 ➤ U112 Spontaneous vegetation on fallow land
- E30 ➤ U120 Clear cuts within previously existing forests
- E30 ➤ U140 Mining and quarrying if in use
- E30 ➤ U2XX Energy and industrial production surfaces with spontaneous vegetation cover if still in use
- E30 ➤ U31X Transport, storage, water and waste treatment etc. surfaces with spontaneous vegetation cover if in use
- E30 ➤ U420 Unused, spontaneously vegetated land

## F00 BARE LAND AND LICHENS/MOSS

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Areas with no dominant vegetation cover on at least 90% of the area or areas covered by lichens/moss.

### F10 ROCKS AND STONES

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 **This class includes**

- Inland rock cliffs
- Areas of rock outcrop and limestone parent
- Scree
- Block litter and mountain top debris
- Land covered with recent volcanic features

 **Links with Land Use**

- F10 ➤ U140 Scrapped or excavated areas for quarrying, mining purposes
- F10 ➤ U21x Rocky areas attached to energy production
- F10 ➤ U22x Rocky areas attached to industrial use
- F10 ➤ U31x Rocky areas attached to transport areas
- F10 ➤ U330 Construction sites
- F10 ➤ U34x Rocky areas attached to commercial services
- F10 ➤ U350 Rocky areas attached to community services
- F10 ➤ U36x Rocky areas used for recreational and leisure purposes
- F10 ➤ U370 Rocky areas attached to residential areas
- F10 ➤ U4x0 Rocky areas not used (inland rocks, top mountains)

### F20 SAND

---

 **This class includes**

- Areas of sand, shingle and mud: beaches, dunes, sand hills
- Gravel or sand banks above water level

 **This class excludes**

- Intertidal areas (H23)

 **Links with Land Use**

- F20 ➤ U120 Clear cuts within previously existing forests
- F20 ➤ U140 Scrapped or excavated areas for quarrying, mining purposes
- F20 ➤ U21x Sandy areas attached to energy production
- F20 ➤ U22x Sandy areas attached to industrial use
- F20 ➤ U31x Sandy areas attached to transport areas
- F20 ➤ U330 Construction sites
- F20 ➤ U34x Sandy areas attached to commercial services
- F20 ➤ U350 Sandy areas attached to community services
- F20 ➤ U36x Sandy areas used for recreational and leisure purposes
- F20 ➤ U370 Sandy areas attached to residential areas
- F20 ➤ U420 Natural sandy areas not used

### F30 LICHENS AND MOSS

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Areas covered by lichens/moss even if these are covering more than 10% of the ground. No other vegetation is present with over 10% coverage.



 **This class includes**

- Areas covered by lichens, even if more than 10% of coverage
- Areas covered by moss, even if more than 10% of coverage

 **This class excludes**

- Areas covered by lichens or moss where other vegetation is covering more than 10% of the ground (e.g. EXX, or DXX or CXX)

 **Links with Land Use**

- F30 ➤ U120 Clear cuts within previously existing forests
- F30 ➤ U140 Scrapped or excavated areas for quarrying, mining purposes
- F30 ➤ U21x Areas attached to energy production
- F30 ➤ U22x Areas attached to industrial use
- F30 ➤ U31x Areas attached to transport areas
- F30 ➤ U330 Construction sites
- F30 ➤ U341 Areas attached to commercial services
- F30 ➤ U350 Areas attached to community services
- F30 ➤ U36x Areas used for recreational and leisure purposes
- F30 ➤ U370 Areas attached to residential areas
- F30 ➤ U4x0 Areas not used (inland rocks, top mountains)

## **F40 OTHER BARE SOIL**

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 **This class includes**

- Bare arable land
- Temporarily unstocked areas within forests (clear cuts) with bare soil
- Burnt areas
- Secondary land cover for tracks and parking areas/yards with bare land cover (if the soil is not sealed)

 **This class excludes**

- Impervious cover (A2x)
- Dune grassland (E20)
- Dunes with heaths or scrub (DXX)
- Peat bogs (H12)

 **Links with Land Use**

- F40 ➤ U111 Agricultural bare land, tilled and/or prepared for seeding
- F40 ➤ U112 Fallow land with crop residues
- F40 ➤ U120 Clear cuts within previously existing forests
- F40 ➤ U140 Scrapped or excavated areas for quarrying, mining purposes
- F40 ➤ U21x Bare areas attached to energy production
- F40 ➤ U22x Bare areas attached to industrial use
- F40 ➤ U31x Bare areas attached to transport areas
- F40 ➤ U330 Construction sites
- F40 ➤ U34x Bare areas attached to commercial services
- F40 ➤ U350 Bare areas attached to community services
- F40 ➤ U36x Bare areas used for recreational and leisure purposes
- F40 ➤ U370 Bare areas attached to residential areas

F40 ➤ U4x0 Bare areas abandoned or not used

## G00 WATER AREAS

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Inland or coastal areas without vegetation and covered by water and flooded surfaces, or likely to be so over a large part of the year. If temporary dry, the outlines of the water areas have to be clearly visible on the orthophotos.

Temporarily submerged islands and sandbanks are to be assigned in FXX classes, with a remark "temporarily flooded".

### G10 INLAND WATER BODIES

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Inland areas of still standing surface water. In order to comply with INSPIRE some sub-class is separate into fresh and salty water bodies. As in INSPIRE, the LUCAS definition does not distinguish between natural water bodies and artificial or heavily modified water bodies (which are mentioned as separate classes in the Water Framework Directive).

#### G11 Inland fresh water bodies

Inland areas of fresh water

 **This class includes**

- Lakes
- Ponds
- Meres
- Reservoirs

with fresh water

 **Links with Land Use**

- G11 ➤ U111 Small ponds attached to agricultural use
- G11 ➤ U130 Fishing or collecting of water organisms (for commercial purposes)
- G11 ➤ U140 Gravel and sand extraction under water
- G11 ➤ U210 Energy production
- G11 ➤ U22x Industrial bodies of water, dockyards
- G11 ➤ U313 Bodies of water used for transport
- G11 ➤ U32x Decanters, reservoirs
- G11 ➤ U34x Bodies of water attached to commercial services
- G11 ➤ U350 Bodies of water attached to community services
- G11 ➤ U361 Swimming pools in recreation centers
- G11 ➤ U362 Swimming pools in sports centers
- G11 ➤ U370 Swimming pools in residential areas
- G11 ➤ U4x0 Abandoned or not used bodies of water

#### G12 Inland salty water bodies

Inland areas of salty or brackish water (e.g. in areas of geothermal activities or salty steppe lakes where evaporation is higher than water inflow.)

 **This class includes**

- Lakes
- Ponds
- Meres

with salty water

## ➤< Links with Land Use

- G12 ➤ U111 Small ponds attached to agricultural use
- G12 ➤ U130 Fishing or collecting of water organisms (for commercial purposes)
- G12 ➤ U140 Gravel and sand extraction under water
- G12 ➤ U210 Energy production
- G12 ➤ U22x Industrial bodies of water, dockyards
- G12 ➤ U313 Bodies of water used for transport
- G12 ➤ U32x Decanters, reservoirs
- G12 ➤ U34x Bodies of water attached to commercial services
- G12 ➤ U350 Bodies of water attached to community services
- G12 ➤ U361 Swimming pools in recreation centers
- G12 ➤ U362 Swimming pools in sports centers
- G12 ➤ U370 Swimming pools in residential areas
- G12 ➤ U4x0 Abandoned or not used bodies of water

## **G20 INLAND RUNNING WATER**

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Inland channels of running water

### **G21 Inland fresh running water**

Inland channels of fresh water

#### This class includes

- Rivers
- Streams
- Springs
- Canals

with fresh water

## ➤< Links with Land Use

- G21 ➤ U111 Agriculture
- G21 ➤ U130 Fishing or collecting of water organisms (for commercial purposes)
- G21 ➤ U140 Gravel and sand extraction under water
- G21 ➤ U313 Rivers, canals used for transport
- G21 ➤ U361-2 Recreation, leisure, sport
- G21 ➤ U4x0 Abandoned or not used

### **G22 Inland salty running water**

Inland channels of salty or brackish water (e.g. in areas of geothermal activities, thermal springs, etc.)

#### This class includes

- Rivers
- Streams
- Springs
- Canals

with salty water

## ➤< Links with Land Use

- G22 ➤ U111 Agriculture
- G22 ➤ U130 Fishing or collecting of water organisms (for commercial purposes)
- G22 ➤ U140 Gravel and sand extraction under water
- G22 ➤ U313 Rivers, canals used for transport
- G22 ➤ U361-2 Recreation, leisure, sport
- G22 ➤ U4x0 Abandoned or not used

## **G30 TRANSITIONAL WATER BODIES**

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These areas correspond to the transitional waters as defined in the water framework directive (Directive 2000/60/EC): bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows.

It includes water surfaces in estuaries (the wide portion of rivers at their mouths subject to the influence of the sea into which the water course flows: the limit is fixed at the point where width is less than 5 km at high tide and greater than 3 km at low tide) and lagoons (water areas cut off from the sea by coastal banks or other forms of relief with, however, certain possible openings).

These areas are not part of the NUTS definition.

### **This class includes**

- Estuaries
- Lagoons

### **Links with Land Use**

- G30 ➤ U130 Aquaculture
- G30 ➤ U313 Bodies of water used for transport
- G30 ➤ U361-2 Specific leisure, recreational or sports equipment
- G30 ➤ U420 Unused

## **G40 SEA AND OCEAN**

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Zone seaward of the lowest tide limit.

These areas are not part of the NUTS definition.

### **This class excludes**

- archipelago of lands located inside sea/ocean areas
- sea water areas as part of port areas which include sea water to reach a zone >25 ha

### **Links with Land Use**

- G40 ➤ U130 Fishing or aquaculture
- G40 ➤ U313 Bodies of water used for transport
- G40 ➤ U361-2 Specific leisure, recreational or sports equipment
- G40 ➤ U420 Unused

## **G50 GLACIERS, PERMANENT SNOW**

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Areas covered by glaciers (generally measured at the time of their greatest expansion in the season) or permanent snow

### **Links with Land Use**

A30 + G50 ➤ U361-2    Ski tows on glaciers  
G50 ➤ U420            Unused

## H00 WETLANDS

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Wetlands are areas that fall between land and water. These are areas that are wet for long enough periods that the plants and animals living in or near them are adapted to, and often dependent on, wet conditions for at least part of their life cycle.

Wetlands are defined as land that is:

- Inundated with water on a temporary or permanent basis.
- Inundated with water that is usually slow moving or stationary.
- Inundated with water that is shallow.
- Inundated with water that may be fresh, brackish or saline.

### H10 INLAND WETLANDS

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Wetlands located inland and having fresh water.

#### H11 Inland marshes

Inland marshes are wetlands usually saturated with fresh water around the year and seasonally flooded dominated by grasses or grasslike plants.

 **This class includes**

- Inland marshes
- Reeds (inland)

 **This class excludes**

- Peatbogs, fens (H12)
- Salt marshes (H21)
- Rice fields (B17)
- Plantations of plants for plaiting including reeds (B84)

 **Links with Land Use**

- H11 ➤ U321 Water supply and treatment
- H11 ➤ U4x0 Abandoned or Unused

#### H12 Peatbogs

Bogs accumulate acidic peat, a deposit of dead plant material—usually mosses.

 **This class includes**

- Turf
- Peat bogs
- Fens

 **This class excludes**

- Mire and swamp forests (CXX)
- Alluvial forests (canopy more than 10 %) (CXX)
- Lichens (F30)

 **Links with Land Use**

- H12 ➤ U140 Mining and quarrying: Peat extraction
- H12 ➤ U4x0 Abandoned or Unused

## H20 COASTAL WETLANDS

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Wetlands located on marine coasts or having salty or brackish water, as well as areas of a marine origine (chemical deposits).

### H21 Salt marshes

A salt marsh is a type of marsh that is a transitional intertidal area between land and salty or brackish water.

 **This class includes**

- Salt marshes
- Marine reeds

 **This class excludes**

- Inland marshes (H11)
- Salines (H22)

 **Links with Land Use**

- H21 ➤ U111 regular grazing (e.g. in German West coast)
- H21 ➤ U4X0 Abandoned or Unused



## **H22 Salines and other chemical deposits**

Actively used or abandoned salt evaporation ponds and salt pans with clear parcels and embankment systems, naturally occurring salt surfaces, as well as other crystalline loose chemical residuals (e.g. lime, gypsum, soda etc.) not yet having the character of solid geological stone formation.

### **This class includes**

- Active or abandoned salines

### **This class excludes**

- Salt marshes (H21)

### **Links with Land Use**

- H22 ➤ U140 Salt extraction
- H22 ➤ U410 Abandoned

## **H23 Intertidal flats**

Normally unvegetated mud, sand or rock flats located between high and low tide water marks.

### **This class includes**

- Rock, sand and mud flats affected by tides

### **This class excludes**

- Salt marshes (H21)
- Active or abandoned salines (H22)
- Stony beaches normally above the water level (F10)
- Sandy beaches (F20)

### **Links with Land Use**

- H23 ➤ U130 Fishing or collecting of water organisms (for commercial purposes)
- H23 ➤ U420 Unused

# 3 Land Use Classification (LUCAS SU LU)

## U100 Primary sector

### U110 AGRICULTURE

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#### U111 Agriculture (excluding fallow land and kitchen gardens)

Areas used for agricultural purposes (NACE Section A01) and field construction (e.g. agricultural land terracing, drainage, preparing rice paddies etc. - NACE 43.12 as far as related to agricultural activities).

This class includes the production of crop products and production of animal products. This class includes growing of crops in open fields as well as in greenhouses. The preparation of products for the primary markets is included here. These areas are normally harvested with use of agricultural machinery (exc. delicate crops).

#### This class includes

- A01.1 Growing of non-perennial crops
- Growing of cereals (except rice), leguminous crops and oil seeds
- Growing of rice
- Growing of vegetables and melons, roots and tubers
- Growing of sugar cane
- Growing of tobacco
- Growing of fiber crops
- Growing of fodder crops (including temporary grassland)
- Growing of other non-perennial crops (including industrial reed beds)
  
- A01.2 Growing of perennial crops (except A01.29 which is U120 forestry)
- Growing of grapes
- Growing of tropical and subtropical fruits
- Growing of citrus fruits
- Growing of pome fruits and stone fruits
- Growing of other tree and bush fruits and nuts
- Growing of oleaginous fruits
- Growing of beverage crops
- Growing of spices, aromatic, drug and pharmaceutical crops
  
- A01.3 Plant propagation
- Growing of plants for planting
- Growing of plants for ornamental purposes, including turf for transplanting
- Growing of live plants for bulbs, tubers and roots; cuttings and slips; mushroom spawn
  
- A01.4 Animal production (includes raising (farming) and breeding of all animals, except aquatic animals)
- Raising of dairy cattle (including the grazing areas)
- Raising of other cattle and buffaloes (including the grazing areas)

- Raising of horses and other equines (including the grazing areas)
- Raising of sheep and goats (including the grazing areas)
- Raising of swine/pigs
- Raising of poultry
- Raising of other animals (including the grazing areas)
  
- A01.5 Growing of crops combined with farming of animals (mixed farming)
- Crop growing in combination with farming of livestock at mixed activity units with a specialization ratio in either one of less than 66%
  
- A01.6 Support activities to agriculture and post-harvest crop activities
- Support activities for crop production
- Support activities for animal production
- Post-harvest crop activities
- Seed processing for propagation

**✂ This class excludes**

- Any subsequent processing of the agricultural products beyond that needed to prepare them for the primary markets
- Manufacture of food products and beverages and tobacco products (U221)
- Manufacturing of textile products (U222)
- Fallow agricultural land (U112)
- Kitchen gardens (U113)

### **U112 Fallow land**

Agricultural land (cropland) not used for the entire year for crop production, as part of the field rotation. Also, all agricultural land which is set aside long-term is included. If the land is regularly grazed, it falls under agricultural production and must be classified as U111.

**📁 This class includes**

- Set aside within agricultural areas
- Bare land for agricultural use (used in other years)
- Land with spontaneous natural growth (may be used as feed or ploughed in)
- Green fallow (land sown exclusively for production of green manure, possible species including clover (eg. annual sweet clover) (B51), vetches (*vicia*) (B41), buckwheat (B19b), winter green manure crops as oats (B15) and rye (B14), alfalfa=lucerne (B52), lupin (B41), millet (B19c), mustard (B35), sorghum (B19a) or soybean (B33))
- Irregular grazing on fallow land

**✂ This class excludes**

- Grazing of lucerne, clover, sainfoin, trefoil (*Lotus corniculatus*), black medick (*Medicago lupulina*), etc (U111)
- Regular grazing (U111)
- Abandoned permanent crops (U410)

### **U113 Kitchen garden**

Gardens, where the crops are planted heterogeneously and mainly for own consumption. These areas are mostly fenced (by metal fences or hedges) and mostly situated in residential areas or as allotment gardens.



**This class includes**

- Allotment gardens
- Kitchen gardens and fruit/nut trees (around the house)



**This class excludes**

- Industrial agriculture (U111)

## U120 FORESTRY

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### U120 Forestry

Areas used for forestry purpose (NACE A02 and A01.29)

This class includes the production of round wood, coppices and forest services. The extraction and gathering of wild growing non-wood forest products (for commercial purposes) is now classified under U150.

Besides the production of timber, forestry activities result in products that undergo little processing, such as firewood, charcoal (made by traditional processes) and round wood used in an unprocessed form (e.g. pit-props, pulpwood etc.). These activities can be carried out in natural or planted forests. This class can also include temporarily un-stocked areas (clear cuts) and firebreaks.

#### This class includes

- Growing of standing timber: planting, replanting, transplanting, thinning and conserving of forests and timber tracts
- Growing of coppice, pulpwood and fire wood
- Logging: felling of timber and production of wood in the rough such as pit-props, split poles, pickets or fuel wood (NACE A02.2)
- Support services to forestry (NACE A02.4)
- Growing of christmas trees (NACE A01.29)
- Growing of cork oak trees and extraction of cork
- Growing of rubber trees for latex, or growing of trees for sap
- Growing of trees for plaiting
- Operation of forest tree nurseries (NACE A02.10)
- Forest services (forest inventory, fire fighting, pest protection, transport of logs in the forest)

#### This class excludes

- Further processing of wood beginning with sawmilling and planning of wood (U227)

## U130 AQUACULTURE AND FISHING

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### U130 Aquaculture and Fishing

Areas used for commercial fishing and aquaculture (NACE A03)

This class includes capture fishery and aquaculture, covering the use of fishery resources from marine, brackish or freshwater environments, with the goal of capturing or gathering fish, crustaceans, mollusks and other water organisms and products (e.g. aquatic plants, pearls, sponges).

#### This class includes

- Commercial fishing
- Aquaculture (e.g. fish farming)

#### This class excludes

- Leisure fishing (U362)

## U140 MINING AND QUARRYING

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### U140 Mining and quarrying

Areas used for mining and quarrying purposes (NACE Section B).

Mining and quarrying include the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation etc. This section includes supplementary activities aimed at preparing the crude materials for marketing, for example, crushing, grinding, cleaning, drying, sorting, concentrating ores, liquefaction of natural gas and agglomeration of solid fuels.

#### This class includes

- Mining of coal and lignite
- Extraction of crude petroleum and natural gas
- Mining of metal ores
- Quarrying of stone, sand and clay
- Mining of chemical and fertiliser minerals
- Extraction of peat
- Extraction of salt
- Other mining and quarrying n.e.c.
- Mining support service activities

#### This class excludes

- Areas of waste disposal and treatment (U322)
- Processing of the extracted materials
- Coal, oil and metal processing (U223)
- Production of non-metal mineral goods (U224)
- Chemical and allied industries and manufacturing (U225)
- Usage of the extracted materials without a further transformation for construction purposes (U330)

## U150 OTHER PRIMARY PRODUCTION

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### U150 Other primary production

Professional hunting, gathering of wild growing non-wood forestry products for commercial purposes, husbandry of migratory animals and any other primary production not included elsewhere.

#### This class includes

- Professional hunting (NACE A01.7)
- Gathering of mushrooms and other wild growing non-wood forest products (NACE A02.30)
- Husbandry of migratory animals

#### This class excludes

- Grazing of lucerne, clover, sainfoin, trefoil, black medick, etc (U111)
- Leisure activities (e.g. picking berries for own consumption) (U361)

## U200 Secondary sector

### U210 ENERGY PRODUCTION

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#### U210 Energy production

Areas used for producing and generating energy (NACE D35.11, D35.21 and parts of D35.30).

This class includes the activity of producing electric power, steam, hot water and the like in energy production plants, based on fossil fuels, nuclear energy or renewable energy such as hydropower, solar and wind power as well as biogas. This class also includes the manufacturing of gas by purification, blending and other processes from gases and production of gas for the purpose of gas supply by carbonation of coal or from by-products of agriculture or from waste.

#### This class includes

- Production of electricity (including renewable energy)
- Manufacturing of gas by purification
- Production of steam

and the relevant attached areas

#### This class excludes

- Areas used for electricity, gas and thermal power distribution (U319)
- Operation of water and sewage utilities (U321)
- Typically long-distance transport of gas, water, *etc.* through pipelines (U315)

### U220 INDUSTRY AND MANUFACTURING

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According to INSPIRE , industry and manufacturing can be divided into:

- Raw industry: industrial activities transforming the output of the primary sector into manufactured raw products
- Heavy end product industry: activities transforming raw manufactured products into heavy manufactured products
- Light end product industry: activities transforming raw manufactured products into light manufactured products

Therefore, for this class the surveyor must note the respective land use type (U22XR, U22XH or U22XL) in the LU Type field.

#### U221 Manufacturing of food, beverages and tobacco products

Areas used for production of food and beverage products (NACE C10, C11, C12).

This class covers only light end product industry and includes the processing of the products coming from the primary sector (e.g. agriculture, forestry ...) into food for humans or animals. Some activities are considered manufacturing (for example, those performed in bakeries, pastry shops, and prepared meat shops etc. which sell their own production) even though there is retail sale of the products in the producers' own shop. This class also includes the manufacture of beverages and mineral water, as well as the processing of tobacco for final consumption.

#### This class includes

- **U221L** - Manufacture of food products

- **U221L** - Manufacture of beverages
- **U221L** - Manufacture of tobacco products
- and the relevant attached areas

**✂ This class excludes**

- Preparation of meals for immediate consumption, such as in restaurants (U341).

## **U222 Manufacturing of textile products**

Areas used for manufacturing of textile products (NACE C13, C14, C15)

This class includes raw industry and light end product industry. Manufacture of wearing apparel is part of the light end product industry and includes: leather clothes, workwear, other outerwear, underwear, other wearing apparel and accessoires. It also includes the manufacture of wearing apparel made of fur, knitted and crocheted hosiery. Other light end product industry included in this class are the manufacture of luggage, handbags and the likem saddler and harness, the production of footwear and the production of carpets, rugs and other made-up textile articles (e.g. bed, table and kitchen linen).

The preparation and spinning of textile fibres as well as textile weaving, finishing of textiles, dressing and dyeing of fur and the transformation of hides into leather by tanning or curing and fabricating the leather into products for final consumption are included in raw industry.

**📁 This class includes**

- **U222R** - Tanning and dressing of leather (NACE C15.11)
- **U222R** - Manufacture of textiles (NACE C13.1 – C13.91, parts of C13.95, C13.96 & C13.99)
- **U222L** - Manufacture of household linen, blankets, carpets and rugs, ropes, shoe laces (NACE C13.92 – C13.94, parts of C13.95, C13.96 & C13.99)
- **U222L** - Manufacture of wearing apparel (NACE C14)
- **U222L** - Manufacture of luggage, handbags, saddlery and harness (NACE C15.12)
- **U222L** - Manufacture of footwear (NACE C15.2)
- and the relevant attached areas

## **U223 Coal, oil and metal processing**

Areas used for coal, oil and metal processing (NACE C19, C24, C25)

This class is covering mainly raw industry and includes the transformation of crude petroleum and coal into usable products (petroleum refining), manufacture of gases as products of petroleum refineries. It also includes the activities of smelting and/or refining ferrous and non-ferrous metals and the manufacture of "pure" metal products (such as parts, containers and structures). This class also includes manufacture of weapons and ammunition (NACE 25.4), which is classified as heavy end product industry.

**📁 This class includes**

- **U223R** - Manufacture of coke and refined petroleum products
- **U223R** - Manufacture of basic metals
- **U223R** - Manufacture of fabricated metal products, except machinery and equipment
- **U223H** - Manufacture of weapons and ammunition (NACE C25.4)
- and relevant the attached areas

**✂ This class excludes**



- The manufacture of petrochemicals from refined petroleum (U225)
- Manufacture of machinery and equipment (U226)

## **U224 Production of non-metal mineral goods**

Areas used for manufacturing of non-metal mineral goods (NACE C23)

This class includes manufacturing activities related to a single substance of mineral origin. It includes the manufacture of glass and glass products (e.g. flat glass, hollow glass, fibres, technical glassware etc.), ceramic products, tiles and baked clay products, and cement and plaster, from raw materials to finished articles. The manufacture of shaped and finished stone and other mineral products is also included in this class. This class is covering exclusively raw industry.

### **This class includes**

- **U224R** - Manufacture of glass and glass products
- **U224R** - Manufacture of refractory products
- **U224R** - Manufacture of clay building materials
- **U224R** - Manufacture of other porcelain and ceramic products
- **U224R** - Manufacture of cement, lime and plaster
- **U224R** - Manufacture of articles of concrete, cement and plaster
- **U224R** - Cutting, shaping and finishing of stone
- **U224R** - Manufacture of abrasive products and non-metallic mineral products not mentioned elsewhere
- and the relevant attached areas

## **U225 Chemical and allied industries and manufacturing**

Areas used for industrial and manufacturing of chemical and related products (NACE C20-C22)

This class includes the transformation of organic and inorganic raw materials by a chemical process and the formation of products, also the production of basic pharmaceutical products and pharmaceutical preparations, medicinal chemical and botanical products, rubber and plastic products. This class is covering mainly raw industry, except for pharmaceutical preparations (NACE 21.20), which are part of the light end product industry .

### **This class includes**

- **U225R** - Manufacture of chemicals and chemical products
- **U225R** - Manufacture of basic pharmaceutical products
- **U225L** - Pharmaceutical preparations
- **U225R** - Manufacture of rubber and plastic products
- and the relevant attached areas

## **U226 Machinery and equipment**

Areas used for production of machinery and equipment (NACE C26-C32)

This class includes the manufacture of machinery and equipment: computers, electronic products, consumer electronics, measuring, testing and navigating equipment, magnetic and optical media, products that generate, distribute and use electrical power, of general-purpose and special machinery, of motor vehicles and transport equipment (boats, airplanes etc), the manufacture of furniture, other manufacturing.



#### **This class includes**

- **U226L** - Manufacture of computer, electronic and optical products (NACE C26)
- **U226H** - Manufacture of domestic appliances (NACE C27.5)
- **U226L** - Manufacture of other electrical equipment (other NACE C27)
- **U226L** - Manufacture of machinery and equipment not specified elsewhere (NACE C28.23), namely office machinery and equipment (except computers and peripheral equipment)
- **U226H** – Manufacture of machinery and equipment not specified elsewhere (other NACE C28), including engines, turbines, ovens, furnaces, cranes, elevators, cooling and ventilation equipment, agriculture and forestry machinery, etc.
- **U226H** - Manufacture of motor vehicles, trailers and semi-trailers (NACE C29)
- **U226H** - Manufacture of other transport equipment (NACE C30)
- **U226L** - Manufacture of furniture, including wooden furniture (NACE C31)
- **U226L** - Other manufacturing (NACE C32)
  
- and the relevant attached areas



#### **This class excludes**

- Areas where waste is sorted to prepare recycling of used material (U322)
- Repair and installation of machinery and equipment (U341)

### **U227 Wood based products**

Areas used for production of wood-based products and of articles of cork, straw and plaiting materials (NACE C16, C17)

This class covers only raw industry and includes the manufacture of wood products and prefabricated wood buildings. The production processes include sawing, planning, shaping, laminating, and assembling of wood products. This class also includes the manufacture of pulp, paper and converted paper products.



#### **This class includes**

- **U227R** - Manufacture of wood and of products of wood and cork (except furniture)
- **U227R** - Manufacture of paper and paper products
  
- and the relevant attached areas



#### **This class excludes**

- Manufacture of wooden furniture (U226L)
- Printing and service activities related to printing (U228L)

### **U228 Printing and reproduction**

Areas used for printing, reproduction and related services (NACE C18, I58)

This group covers only light end product industry and includes printing of products, such as newspapers, books, periodicals, business forms, greeting cards, and other materials, and associated support activities, such as bookbinding, plate-making services, and data imaging. Printing can be done using various techniques and on different materials. This group also includes the reproduction of recorded media, such as compact discs, videos, software on discs or tapes, records etc. Also included are all other publishing activities in all possible formats (e.g. in print, electronic format) : books, periodicals and other publishing activities, software.



**This class includes**

- **U228L** - Printing of products
- **U228L** - Associated support activities such as bookbinding, plate-making services, and data imaging
- **U228L** - Reproduction of recorded media
  
- and the relevant attached areas

# U300 Tertiary sector, transport, utilities & residential

## U310 TRANSPORT, COMMUNICATION NETWORKS, STORAGE, PROTECTION WORKS

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### U311 Railway transport

Areas used for railways transport (NACE 49.1, 49.2, parts of 52.2 as far as passengers are concerned)

 **This class includes**

- All types of railways
- TGV traces
- Railway stations
  
- and the relevant attached areas

 **This class excludes**

- Funiculars (U312)
- Tramways and tram stations (U312)

### U312 Road transport

Land areas used for roads (NACE H49.3, H49.4, parts of H52.2 as far as passengers are concerned)

 **This class includes**

- All types of areas used for road transportations (streets, roads, highways) and associated areas (e.g. rest areas)
- Car parking
- Bus stations
- Tramways and tram stations
- Funiculars
  
- and the relevant attached areas

### U313 Water transport

Areas used for transport on water (NACE H50, parts of H52.2 as far as passengers are concerned)

 **This class includes**

- Channels
- Rivers used for ship transportation
- Lakes
- Estuaries
- Areas used for harbors and ports
  
- and the relevant attached areas

 **This class excludes**

- Areas used for storage of goods (U317)

### **U314 Air transport**

Areas used for air transport (NACE H51, parts of H52.2 as far as passengers are concerned)

 **This class includes**

- Airports for transportation of people and freight
- Airports with and without concrete runways
  
- and the relevant attached areas

 **This class excludes**

- Areas used for storage of goods (U317)

### **U315 Transport via pipelines**

Areas used for transport via pipelines (NACE H49.5, D35.12, D35.13, D35.22, D35.30). The surveyor must note the land use type in the respective LU Type field.

 **This class includes**

- **U315W** - Transport of water via pipelines
- **U315O** - Transport of other material via pipelines
- Transport of gas
- Transport of oil

### **U316 Telecommunication**

Areas used for postal services and telecommunication infrastructures (NACE H53, J61)

 **This class includes**

- Postal and courier activities
- Telecommunications networks

 **This class excludes**

- Production studios (TV, Movies), etc. (U342)

### **U317 Logistics and storage**

Areas used for logistics and storage of goods and warehousing (NACE H52.1, parts of H52.2 as far as freights are concerned)

This class includes warehousing and support activities for transportation related to freight, such as operating of transport infrastructure (e.g. airports, harbours, tunnels, bridges, etc.), cargo handling.

 **This class includes**

- Warehousing and storage
- Support activities for transportation related to freights.

 **This class excludes**

- Attached areas used in other transport categories

## U318 Protection infrastructures

Areas used for protection infrastructures

### This class includes

- Protection infrastructure against land slides or avalanches
- Dikes

## U319 Electricity, gas and thermal power distribution

Areas used for electricity, gas and thermal power distribution (NACE D35.12, D35.13, D35.22, parts of D35.30), excluding pipelines.

### This class includes

- Operation of electric and gas utilities
- Electric substations found along the distribution network
- Permanent infrastructure of mains (supply network)

### This class excludes

- Transport via pipelines (U315)

## U320 WATER AND WASTE TREATMENT

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### U321 Water supply and treatment

Areas used for water collection, treatment and supply (NACE E36, E37)

This class includes the collection, treatment and distribution of water for domestic and industrial needs. Collection of water from various sources, as well as distribution by various means is included. It also includes the operation of sewer systems or sewage treatment facilities that collect, treat, and dispose of sewage. Furthermore: recovering and purifying water: stations to raise water levels, for purifying waste water, decanters, spreader areas, storage (reservoir), extraction of water.

### This class includes

- Water collection, treatment and supply
- Sewerage

### This class excludes

- Distribution of water via pipeline (U315W)

### U322 Waste treatment

Areas used for waste treatment (NACE E38, E39)

This class includes the collection, treatment, and disposal of waste materials. This also includes local hauling of waste materials and the operation of materials recovery facilities.

### This class includes

- Waste collection, treatment and disposal activities; materials recovery (recycling)
- Remediation activities and other waste management services

### This class excludes

- Incineration stations for energy production (U210)

## U330 CONSTRUCTION

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### U330 Construction

Areas used for construction whatever the degree of completion (NACE F, except agricultural activities under F43.12)

This section includes general construction and specialized construction activities for buildings and civil engineering works. It includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature. Thus, the construction of entire dwellings, office buildings, stores and other public and utility buildings, farm buildings etc., or the construction of civil engineering works such as motorways, streets, bridges, tunnels, railways, airfields, harbors and other water projects, irrigation systems, sewerage systems, industrial facilities, pipelines and electric lines, sports facilities etc.

#### This class includes

- Construction of buildings
- Civil engineering
- Specialised construction activities (e.g. demolition)

#### This class excludes

- Field construction related to agriculture (e.g. agricultural land terracing, drainage, preparing rice paddies etc.)

## U340 COMMERCE, FINANCIAL, PROFESSIONAL AND INFORMATION SERVICES

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### U341 Commerce

Areas used for commercial activities, (NACE C33, G, I, L, D35.14 and D35.23)

This section includes wholesale and retail trade of any type of good, and rendering services incidental to the sale of merchandise. It includes the specialized repair of goods produced in the manufacturing sector with the aim to restore machinery, equipment and other products to working order, as well as the provision of general or routine maintenance (i.e. servicing) on such products.

This section also includes the provision of short-stay accommodation for visitors and other travelers and the provision of complete meals and drinks fit for immediate consumption. This group also includes real estate activities and trade related to utilities.

#### This class includes

- Repair and installation of machinery and equipment
- Wholesale and retail trade
- Real estate activities
- Hotels and similar accommodation
- Food and beverage service activities
- Holiday and other short-stay accommodation (holiday apartment lots)
- Camping grounds, recreational vehicle parks and trailer parks (also closed holiday camps)

#### This class excludes

Financial, professional and information services (U342)

## **U342 Financial, professional and information services**

Areas used for financial and general business activities (NACE J59, J60, J62, J63, K, M, N and S (except religious activities)).

This section covers financial service activities, including insurance, reinsurance and pension funding activities and activities to support financial services. This section also includes, specialized professional (e.g. legal, accounting, consultancy, translation), scientific (researchers) and technical (e.g. architecture, engineering, advertising) activities, which require a high degree of training, and make specialized knowledge and skills available to users. This section includes support general business operations (employment and travel agencies, private security activities, service to buildings and landscape, office services) as well as media production services and activities of membership organisations (except religious activities).

Some services might be provided through community services in which case they fall under U350.

### **This class includes**

- Financial and insurance activities
- Professional, scientific and technical activities
- Administrative and support service activities

### **This class excludes**

- Protection works (U318)
- Veterinary services, if provided through community services (U350)
- Religious activities (U350)

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## **U350 COMMUNITY SERVICES**

### **U350 Community services**

Areas used for public administration, local authorities, defense, education, health and social work, religion (NACE O, P, Q, U, S94.91), as well as other services if provided through community services.

This section includes activities of a governmental nature, normally carried out by the public administration, and extraterritorial, international organizations. This section includes education at any level or for any profession, public as well as private education. This section includes the provision of health and social work activities. Religious areas (like churches, graveyards) are falling under this category as well. Military areas belong also to this group.

### **This class includes**

- Veterinary services, if provided through community services
- Public administration, defense (military) and activities of extraterritorial organisations and bodies)
- Education
- Human health and social work activities
- Religion

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## **U360 RECREATION, LEISURE, SPORT**

### **U361 Amenities, museums, leisure**

Areas used for cultural purposes, amenities and leisure, recreation, amusement and show activities (NACE section R, except R93.1)

### **This class includes**



- Creative, arts and entertainment activities
- Library, archives, museum and other cultural activities
- Gambling and betting activities
- Preservation of historical sites, including botanical and zoological gardens
- Amusement and recreation activities, including parks and beaches

## **U362 Sport**

Areas used for sport activities (NACE R93.1)

### **This class includes**

- Sporting activities

## **U370 RESIDENTIAL**

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## **U370 Residential**

Areas used for housing purpose

### **This class includes**

- Residential gardens

### **This class excludes**

- Hotels (U341)
- Old people homes, children homes, prisons, monasteries, convents (U350)

# U400 Unused and abandoned areas

## U410 Abandoned areas

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This class consists of abandoned areas with signs or structures of previous use of any kind.

Areas belonging to the abandoned class are not in use and can't anymore be used for the original purpose without major reparation/renovation work.

### U411 Abandoned industrial areas

This class consists of abandoned industrial areas with signs or structures of previous industrial use.

#### ✂ This class excludes

- Abandoned commercial areas
- Abandoned transport areas (e.g. railways)
- Abandoned residential areas
- Abandoned residential gardens
- Abandoned agricultural areas, mainly permananet crops (e.g. orchards, vineyards)
- Abandoned construction sites
- Abandoned mining areas
- Fallow land (U112)
- Construction sites (U330)

### U412 Abandoned commercial areas

This class consists of abandoned commercial areas with signs or structures of previous commercial used.

#### ✂ This class excludes

- Abandoned industrial areas
- Abandoned transport areas (e.g. railways)
- Abandoned residential areas
- Abandoned residential gardens
- Abandoned agricultural areas, mainly permananet crops (e.g. orchards, vineyards)
- Abandoned construction sites
- Abandoned mining areas
- Fallow land (U112)
- Construction sites (U330)

### U413 Abandoned transport areas

This class consists of abandoned transport areas with signs or structures of previous transport use.

#### ✂ This class excludes

- Abandoned industrial areas
- Abandoned commercial areas
- Abandoned residential areas
- Abandoned residential gardens
- Abandoned agricultural areas, mainly permananet crops (e.g. orchards, vineyards)
- Abandoned construction sites

- Abandoned mining areas
- Fallow land (U112)
- Construction sites (U330)

#### **U414 Abandoned residential areas**

This class consists of abandoned residential areas with signs or structures of previous residential use.

##### **✂ This class excludes**

- Abandoned industrial areas
- Abandoned commercial areas
- Abandoned transport areas (e.g. railways)
- Abandoned agricultural areas, mainly permanent crops (e.g. orchards, vineyards)
- Abandoned construction sites
- Abandoned mining areas
- Fallow land (U112)
- Construction sites (U330)

#### **U415 Other abandoned areas**

This class consists of other abandoned areas not in U411, U412, U413, U414 with signs or structures of other previous use.

##### **✂ This class excludes**

- Abandoned industrial areas
- Abandoned commercial areas
- Abandoned transport areas (e.g. railways)
- Abandoned residential areas
- Abandoned residential gardens
- Fallow land (U112)
- Construction sites (U330)

#### **U420 Semi-natural and natural areas not in use**

This class includes areas which are in natural / semi-natural state and no signs of any use are visible, except irregular grazing.

##### **✂ This class excludes**

- Unused land formerly developed, now vacant or derelict (U410)
- Fallow land, Agricultural land which is temporarily not used (U112)
- Regular grazing (U111)

## 4 Land Cover and Land Use Classification for PhotoInterpretation

The above Land Cover Land Use classification is used for the field survey, where registry should be made at the lowest level. Likewise the same method applies for the photointepretation campaign (whenever the observation type is either 3 or 7).

However, If the classification assessment, for LC\_LU or even for both, at the lowest level is not possible by means of photointerpretation (e.g. poor quality images, clouds, etc) then in this case aggregated options will be allowed. This means that LC\_LU classification could be attributed and accepted in an aggregate manner.

For example, if the LC of the point is B11 (Common wheat) but this is not clear via photointerpretation then the Land Cover could registered to the next higher level of classification i.e. B10 (cereals). If B10 (cereals) still not visible by photointepretation, it would be registered to next higher classification level as B00 (Cropland).

It should be reminded though whenever this option applies, a justified remark will be needed.

# 5 Index Land Cover

## A

Abaca; B84  
Abelmoschus esculentus; B43  
Actinidia chinensis; B75  
African millet; B19  
Agaricus campestris; B43  
Agave; B84  
Agave sisalana; B35  
Allium ascalonicum; B23  
Allium cepa; B23  
Allium porrum; B43  
Allium sativum; B23  
Almonds; B74  
Althaea officinalis; B37  
Amelanchier vulgaris; B75  
Amygdalus persica; B75  
Anethum graveolens; B37  
Anise; B37  
Anthriscus cerefolium; B37  
Apium graveolens; B43  
Apple trees; B71  
Apricot; B75  
Arachis hypogaea; B41  
Areca nuts; B84  
Artemisia dracunculus; B37  
Artichokes; B43  
Artificial pastures; B55  
Asparagus; B43

Asparagus officinalis; B43

Atriplex hortensis; B43

*Avena sativa*; B15

Avocado; B75

## B

Badain; B37

Bananas; B75

Barley; B13

Barnyard; B19

Basil; B37

Beet; B23

Bergamot; B77

Beta vulgaris; B22

Beta vulgaris , roots; B23

Beta vulgaris var. alba; B23

Beta vulgaris var. conditiva; B23

Bird rape; B35

Black currants; B75

Blackberries; B75

Blueberries; B75

Boehmeria nivea; B35

Boletus edulis; B43

Brassica napus; B32, B32

Brassica napus L. var. napobrassica (L.) Robb.;  
B23

Brassica oleracea L.; B23

Brassica oleracea spp.; B43

Brassica oleracea var. botrytis; B43

Brassica rapa L., roots; B23  
*Brassica rapa var. oleifera*; B32, B32  
Brassica rapa var. silvestris; B35  
Brassicas; B43  
Buckwheat; B19  
Bulbs and tubers, cut-flowers; B44

## C

Cabbages; B43  
Cajanus cajan; B41  
Calendula officinalis; B37  
California bluebell; B53  
Canary grass; B19  
Canary grass; B84  
Cannabis sativa straw; B35  
Capsicum annum; B43  
Capsicum frutescens; B43  
Cardamon; B84  
Cardoons; B43  
Carobs; B84  
Carrots; B23  
Carthamus tinctorius L.; B35  
Cassava; B23  
Castanea spp.; B74  
Castor beans; B35  
Cattail millet; B19  
Cauliflowers; B43  
Celery; B43  
*Cerasus acida*; B73  
Cereals, mix; B54  
Chaerophyllum bulbosum; B23  
Chamaemelum nobile; B37  
Chenopodium quinoa; B19

Cherry trees; B73  
Chestnuts; B74  
Chickling vetch; B53  
Chickpea; B41  
Chicory; B43  
Chicory roots; B37  
Cicer arietinum; B41  
Cichorium intybus var. foliosum; B43  
Cichorium intybus var. sativum; B37  
Cichorium. endivia var. crispata; B43  
Cinnamon; B84  
Citron; B77  
Citronella; B84  
Citrullus vulgaris; B43  
Citrus aurantifolia; B77  
*Citrus aurantium*; B76  
Citrus bergamia; B77  
Citrus clementina; B77  
Citrus deliciosa; B77  
Citrus fruit trees, other; B77  
Citrus grandis; B77  
Citrus limetta; B77  
Citrus limon; B77  
Citrus maxima; B77  
Citrus medica var. cedrata; B77  
Citrus nobilis; B77  
Citrus orchards; B77  
Citrus paradisea; B77  
*Citrus sinensis*; B76  
Citrus unshiu; B77  
Clementines; B77  
Clover; B51

Cloves; B84  
 Cochlearia armoracia; B23  
 Cock's foot; B55  
 Cocoa; B84  
 Coconut; B84  
 Coffee; B84  
 Colocasia esculenta; B23  
 Common balm; B37  
 Common lungwort; B37  
 Common mallow; B37  
 Common millet; B19  
 Common wheat; B11  
 Conium maculatum; B37  
 Corchorus spp.; B35  
 Coriander; B37  
 Coriandrum sativum; B37  
 Corn-cob-mix; B19  
 Cornel; B75  
 Cornus mas; B75  
 Corylus avellana; B74  
 Cotton; B34  
 Cowberries; B75  
 Cowpea; B41  
 Cranberries; B75  
 Cress; B43  
 Crimson clover; B51  
 Cucumbers; B43  
 Cucumis melo; B43  
 Cucumis sativus; B43  
 Cucurbita spp; B43  
 Cultivated mushrooms; B43  
 Cumin; B37  
 Cuminum cyminum; B37  
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 Cydonia oblonga; B75  
 Cynara cardunculus; B43  
 Cynara scolymus; B43  
 Cyperus esculentus L.; B35  
**D**  
 Dangleberries; B75  
 Daucus carota , roots; B23  
 Dewberries; B75  
 Digitalis purpurea; B37  
 Digitaria spp.; B19  
 Dill; B37  
 Diospyros kaki; B75  
 Discorea spp.; B23  
 Ditch millet; B19  
 Dolichos sinensis; B41  
 Dry peas; B41  
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 Earth almond; B35  
 Echinocloa frumentacea; B19  
 Egg-plants; B43  
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 Einkorn; B12  
 Eleagnus spp.; B75  
 Eleusine coracana; B19  
 Emmer; B12  
 Endives; B43

Eragrostis abyssinica; B19

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Eruca sativa; B43

## **F**

Fagopyrum esculentum Mill.; B19

Fennel; B37

Fenugreek; B53

Fescues; B55

Fibre, other; B35

Ficus carica; B75

Field beans; B41

Field peas; B41

Figs; B75

Finger; B19

Flax; B35

Flowers; B44

Fodder beet; B23

Fodder kale; B23

Fodder parsnips; B23

Foeniculum vulgare; B37

Fonio; B19

Fortunella spp.; B77

Foxtail millet; B19

*Fragaria* spp.; B45

Fresh vegetables, other; B43

Fruit trees and berries, other; B75

## **G**

Garbanzo bean; B41

Garden chervil; B37

Garden orache; B43

Garden pea; B41

Garlic; B23

Gaylussacia spp.; B75

Ginger; B84

*Glycine soja*; B33

Golden millet; B19

Gooseberries; B75

Gossypium spp.; B34

Grapefruit; B77

Green beans; B43

Green peas; B43

## **H**

Hazelnuts; B74

Hedysarium coronarium; B53

*Helianthus annuus*; B31

*Helianthus tuberosus* L.; B23

Hemp; B35

Hevea; B84

Hibiscus cannabinus; B35

Hops; B37

*Hordeum vulgare*; B13

Horseradish; B23

*Humulus lupulus*; B37

Hybrids of *Medicago sativa* L. *Medicago falcata* L.; B52

## **I**

*Illicium verum*; B37

*Ipomoea batatas* (L.) Lam.; B23

Italian ryegrass; B55

## **J**

Japanese millet; B19

Jerusalem artichoke; B23

*Juglans* spp.; B74

Juneberry; B75



Jute; B35

## **K**

Kapok; B84

Kenaf; B35

Kiwi; B75

Koda millet; B19

Kumquats; B77

## **L**

Lactuca sativa; B43

Lathyrus sativus; B53

Lavender; B84

Leaf and stalked vegetables; B43

Leeks; B43

Leguminous and mixtures for fodder, other; B53

Leguminous vegetables; B43

Lemons; B77

Lens culinaris; B41

Lentil vetches; B41

Lentils; B41

Lepidium sativum; B43

Lettuce; B43

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Linum usitatissimum straw; B35

Loquat; B75

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Lucerne; B52

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Lupinus spp.; B41

## **M**

Maize; B16

Malus pumila; B71

Malva silvestris; B37

Mandarines; B77

Mangolds; B23

Manihot esculenta Crantz; B23

Manihot utilissima; B23

Manioc; B23

Marjoram; B37

Marshmallow; B37

Mate; B84

Medicago falcata L.; B52

Medicago lupulina L.; B53

Medicago sativa L.; B52

Medicinal plants; B37

Medlar; B75

Melilotus alba Lam.; B53

Meliot; B53

Melissa officinalis; B37

Melons; B43

Mentha spp.; B37

Mespilus germanica; B75

Mirabellas; B75

Miscanthus; B84

Miscanthus giganteus; B84

Morchella spp.; B43

Morus alba; B75

Morus nigra; B75

Morus rubra; B75

Mulberries; B75

Musa spp.; B75

Mustard seeds; B35

Myrtle berries; B75

## N

Nasturtium officinale; B43

Nectarine; B75

*Nicotiana tabacum*; B36

Non-permanent industrial crops, other; B37

Nuts trees; B74

## O

Oat; B15

Ocimum basilicum; B37

Okras; B43

Olea europea; B81

Oleaginous crops, other; B35

Oleaster; B75

Olive groves; B81

Onions; B23

Onobrychis viciifolia Scop.; B53

Orange trees; B76

Origanum spp.; B37

Ornamental plants; B44, B44

Ornithopus sativus; B53

*Oryza sativa*; B17

Osier; B84

Other cereals; B19

Other cereals not specified elsewhere; B19

Other root crops; B23

Other root or tubers crops not specified elsewhere; B23

Other ryegrasses; B55

Other tropical tubers; B23

## P

Palm; B84

Panicum miliaceum L.; B19

Papaver somniferum L.; B35

Parsley; B37

Paspalum scrobiculatum; B19

Pastinaca sativa L.; B23

Peach; B75

Peanuts; B41

Pear trees; B72

Pearl millet; B19

Pennisetum glaucum; B19

Pepper; B84

Peppers; B43

Permanent industrial crops; B84

Persea americana; B75

Persia clover; B51

Persica laevis; B75

Persimons; B75

Petroselinum crispum; B37

Phacelia tanacetifolia; B53

Phalaris canariensis L.; B19

Phaseolus spp; B43

Pigeon pea; B41

Pimenta officinalis; B43

Pimpinella anisum; B37

Pistachios; B74

Pistacia vera; B74

Pisum arvense; B41

Pisum sativum; B41

Plums; B75

Poison hemlock; B37

Pomegranates; B75  
Pomelo; B77  
Poppy seeds; B35  
Portulaca oleracea; B43  
Pot marigold; B37  
Potatoes; 18  
Proso millet; B19  
Prunus amygdalus; B74  
Prunus armeniaca; B75  
*Prunus cerasus*; B73  
Prunus domestica; B75  
Prunus insititia var. syriaca; B75  
Prunus persica; B75  
Prunus spinosa; B75  
Pulmonaria officinalis; B37  
Pumpkins; B43  
Punica granatum; B75  
Purple foxglove; B37  
Purslane; B43  
*Pyrus communis*; B72  
Pyrus malus; B71

**Q**

Quebracho; B84  
Quinces; B75  
Quinine; B84  
Quinoa; B19

**R**

Radishes; B23  
Ragi; B19  
Ramie; B35  
Rape; B32  
Raphanus sativus; B23  
Raspberries; B75  
Rattans; B84  
Red beet; B23  
Red clover; B51  
Rheum spp.; B43  
Rhubarb; B43  
Ribes nigrum; B75  
Ribes uva-crispa; B75  
Rice; B17  
Ricinus communis; B35  
Rocket; B43  
Rosemary; B37  
Rosmarinus officinalis; B37  
Rubus arcticus; B75  
Rubus idaeus; B75  
Rumex acetosa; B37  
Rushes; B84  
Rye; B13

**S**

Saccharum officinarum; B37  
Safflower; B35  
Sage; B37  
Sago; B84  
Sainfoin; B53  
Salvia officinalis; B37  
Saponaria officinalis; B37  
Satsumas; B77  
*Secale cereale*; B14  
Serradella; B53  
Sesame; B35

Sesamum indicum; B35

Setaria italica; B19

Shallots; B23

Sinapis alba L.; B35

Sinapis nigra; B35

Sisal; B35

Sloes; B75

Soapwort; B37

Solanum melongena; B43

*Solanum tuberosum*; B21

Sorghum; B19

Sorghum bicolor; B19

Sorrel; B37

Soya beans; B33

Spearmint; B37

Spelt; B11

Spices and aromatic plants; B37

Spinach; B43

Spinacia oleracea; B43

Star anise; B37

Stevia; B84

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Sugar beet; B22

Sugar cane; B37

Sulla; B53

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Swedes; B23

Sweet chamomile; B37

Sweet clover; B53

Sweet lupins; B53

Sweet potatoes; B23

## T

Taros; B23

Tarragon; B37

Tea; B84

Teff; B19

Temporary grassland; B55

Thyme; B37

Thymus vulgaris; B37

Timothy; B55

Tobacco; B36

Tomato; B42

Trefoil; B53

Trifolium alexandrinum; B51

Trifolium incarnatum L.; B51

Trifolium pratense L.; B51

Trifolium repens L.; B51

Trifolium resupinatum; B51

Trigonella foenum-graecum; B53

Triticale; B18

*Triticosecale*; B18

*Triticum aestivum*; B11

*Triticum durum*; B12

*Triticum monococcum*; B12

*Triticum spelta*; B11

*Triticum turgidum*; B12

Tropical fruits; B75

Tuber magnatum; B43

Tuberous chervi; B23

Turnip rape; B32

Turnips; B23

## V

Vaccinium macrocarpon; B75

Vaccinium myrtillus; B75

Vaccinium vitis-idaea; B75

Valerian; B37

Valeriana officinalis; B37

Vanilla; B84

Verbena officinalis; B37

Vervain; B37

Vetches; B41

Vicia ervilia; B41

Vicia faba spp.; B41

Vicia sativa; B41

Vicia villosa; B41

Vigna sinensis; B41

Vigna spp; B43

Vineyards; B82

Vitis vinifera; B82

## **W**

Walnuts; B74

Watercress; B43

Watermelons; B43

White clover; B51

Willow; B84

## **Y**

Yam; B23

## **Z**

*Zea mays*; B16

*Zea mays* L. harvested as humid grain; B19

