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TechnicalDocuments

2015

LUCAS 2015

(Land Use / Cover Area Frame Survey)

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

Regional statistics and
Geographic Information
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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

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*.

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[1] (Rev. 2) if it is possible,

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[1] *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

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) 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

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

Land cover and land use: general explications

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 3rd 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 3rd or 4th level of the classification, there is still the possibility to extrapolate data on the upper level.

Specific to the LUCAS classification

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

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

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

A10 ROOFED BUILT-UP AREAS

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

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

Areas where crops are planted and cultivated.

B10   CEREALS

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 (*Echinocloa 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

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

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 exludes 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 re 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

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 annuum*, *Capsicum fructescens*, *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, Gypsophilia, Hibiscus, Hosta, Ilex, Limonium, Melaleucea, Molluccela, 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 tipically used for fodder or for grazing, and refer to areas wich 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**

B54 ➢ U111   Agricultural production

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

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

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
B83f ➢ U120	Forest tree nurseries

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

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

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	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: 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: grazingC22 ➢ 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)
C22 ➢ U420	Not used wooded areas

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: 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: 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: 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: grazingC33 ➤ 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

FOREST TYPES (LUCAS SU FT)

If the forest is larger than 0.5 ha, the height of trees is above 5 m at maturity and the width of the wooded feature is more than 20 m, the surveyor has to indicate the forest cover code in the respective "LC plant species" field, according to the forest type classification of the European Environment Agency[2].

CXX1	Boreal forest

Coniferous and mixed broadleaved-coniferous forest of the Boreal (climate) zone of Europe, known also as taiga. Two conifer species, Scots pine (*Pinus sylvestris*) and Norway spruce (*Picea abies*) dominate the boreal forest zone; both of them have quite broad habitat amplitudes and may grow from very dry to wet habitats. Pine generally prevails on drier soils, in areas with a more continental climate and with a high fire frequency. Spruce, on the other hand, prevails on more nutrient-rich, mesic-moist soils, in areas with a more oceanic climate and on sites with a low fire frequency. Birch species (e.g. *Betula pubescens, Betula pendula*) as well as other deciduous trees, such as aspen, rowan and grey alder can be frequently found growing amongst the conifers. Admixtures of spruce or pine with birch species are also typical of the pioneer stages of the forest succession.

🗁 **This class includes**

✂ **This class excludes**

- Alpine forests in Scandinavia (CXX3)

➤◄ **Links with Land Use**

CXX1➤ U111 Agricultural use: grazing
CXX1 ➤ U120 Forestry (wood production)
CXX1 ➤ U350 Wooded areas connected to community services
CXX1 ➤ U36x Wooded areas managed for recreational purposes
CXX1 ➤ U370 Wooded areas in residential areas (urban parks)
CXX1 ➤ U420 Not used wooded areas

CXX2	Hemiboreal forest and nemoral coniferous forest and mixed broadleaved-coniferous forest

The hemi-boreal zone is a transitional zone between the boreal and temperate forest of nemoral Europe. It is characterized by the coexistence of boreal coniferous — on poor soils — and temperate broadleaved tree species (*Fraxinus excelsior, Ulmus glabra, Tilia cordata, Quercus robur*) on the most fertile soils. The structure and composition of hemiboreal forest is maintained by a complex admixture of natural and cultural disturbances.

The type is characterized by mixtures of Scots pine (*Pinus sylvestris*) and Norway spruce (*Picea abies*) with broadleaves deciduous trees such as Birch (*Betula spp.*), aspens (*Populus tremula*), alder (*Alnus spp.*) and rowan (*Sorbus aucuparia).* The broadleaved trees generally characterize early to mid-successional stages; with age the dominance of coniferous species increases.

🗁 **This class includes**

➤◄ **Links with Land Use**

CXX2 ➤ U111 Agricultural use: grazing
CXX2 ➤ U120 Forestry (wood production)

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[2] *See the document: European forest types. Categories and types for sustainable forest management reporting and policy. EEA Technical Report No 9/2006) downloadable at http://reports.eea.europa.eu/technical_report_2006_9/en*

CXX2 ➢ U350   Wooded areas connected to community services
CXX2 ➢ U36x   Wooded areas managed for recreational purposes
CXX2 ➢ U370   Wooded areas in residential areas (urban parks)
CXX2 ➢ U420   Not used wooded areas

CXX3	Alpine coniferous forest

Forests occurring in the alpine biogeographical region dominated by coniferous trees, mainly Norway spruce (*Picea abies),* Silver fir *(Abies alba),* Scots pine *(Pinus sylvestris)*, Swiss stone pine *(Pinus cembra)*, mountain pine (*Pinus mugo, Pinus uncinata),* Macedonian pine *(Pinus peuce)* and Bosnian pine *(Pinus heldreichii)*. Included in this category is the forest vegetation of high altitudinal vegetation belts of the central European mountain ranges dominated by spruce (*Picea abies),* silver fir *(Abies alba)* and, under local microclimatic and edaphic conditions, termophilous pure Austrian pine *(Pinus nigra)* forests of the southern Alps.

📂   **This class includes**

- Alpine forests in Scandinavia

✂   **This class excludes**

- Boreal forests (CXX1)

➢⤙   **Links with Land Use**

CXX3 ➢ U111   Agricultural use: grazing
CXX3 ➢ U120   Forestry (wood production)
CXX3 ➢ U350   Wooded areas connected to community services
CXX3 ➢ U36x   Wooded areas managed for recreational purposes
CXX3 ➢ U370   Wooded areas in residential areas (urban parks)
CXX3 ➢U420   Not used wooded areas

CXX4	Acidophilous oak and oak-birch forest

Acidophilous oakwoods and mixed oak‑birch forest characteristic of oligotrophic soils of the nemoral forest zone. The main areas of distribution of the class are the Atlantic and Continental biogeographical regions. Lowland to submountainous forests are dominated by acidophilous oaks (*Quercus petraea* and *Quercus robur*) and birch (*Betula pendula*). In the wide natural range of distribution of beech trees (*Fagus sylvatica*) oakwoods are pushed back to areas with poor acid soils, with variable soil moisture or thin soil layers. Pioneers such as birch (*Betula pendula, Betula pubescens*) are important during the regeneration phase in the western parts of the area of occurrence. In the eastern parts pine *(Pinus spp.)* and locally spruce *(Picea spp.)* can form together with oak the tree layer. In the south‑western areas of occurrence some Mediterranean species can participate in the tree layer. Aspen (*Populus tremula*), rowan *(Sorbus aucuparia)*, Norway maple *(Acer platanoides)*, ash (*Fraxinus excelsior*), linden (*Tilia cordata*) and Wych elm (*Ulmus glabra*) can be found in the southern boreal region.

📂   **This class includes**

➢⤙   **Links with Land Use**

CXX4 ➢ U111   Agricultural use: grazing
CXX4 ➢ U120   Forestry (wood production)
CXX4 ➢ U350   Wooded areas connected to community services
CXX4 ➢ U36x   Wooded areas managed for recreational purposes
CXX4 ➢ U370   Wooded areas in residential areas (urban parks)
CXX4 ➢ U420   Not used wooded areas

CXX5   Mesophytic deciduous forest

Forests, typically with mixed canopy composition, on rich and moderately rich soils. The category includes forests dominated by mixtures of Hornbeam (*Carpinus betulus),* Sessile oak *(Quercus petraea),* Pedunculate oak *(Quercus robur),* ash *(Fraxinus excelsior, Fraxinus angustifolia),* hedge *(Acer campestre)* maple *(Acer pseudoplatanus)* and linden (*Tilia cordata).*

📁   **This class includes**

⤡   **Links with Land Use**

CXX5 ➢ U111	Agricultural use: grazing
CXX5 ➢ U120	Forestry (wood production)
CXX5 ➢ U350	Wooded areas connected to community services
CXX5 ➢ U36x	Wooded areas managed for recreational purposes
CXX5 ➢ U370	Wooded areas in residential areas (urban parks)
CXX5 ➢ U420	Not used wooded areas

CXX6	Beech forest

Beech forests are characterised by the dominance of beech (*Fagus sylvatica, L.*) or its transitional hybrids with oriental beech (*Fagus orientalis, Lipsky)* in the eastern and southern parts of the Balkan Peninsula, and along the eastern periphery of the Carpathians. These latter were described as Balkan beech (*Fagus moesiaca, Csecz*.), Podolian or Moldovian beech (*Fagus podolica, Yap.)* and Crimean beech (*Fagus taurica, Popl.).* Specific elevation range (from lowlands to submountainous, 0 to 600(–800) meters above sea level) and the lack of conifers define this type often referred to as lowland and submountainous beech forest. Important additional tree species include Norvay maple (*Acer platanoides),* Sycamore Maple *(Acer pseudoplatanus),* birch *(Betula pendula),* hornbeam *(Carpinus betulus),* Sweet chestnut *(Castanea sativa),* ash *(Fraxinus excelsior),* aspen *(Populus tremula),* wild cherry *(Prunus avium),* oak *(Quercus petraea, Quercus robur),* rowan *(Sorbus aucuparia),* linden *(Tilia cordata, Tilia platyphyllos),* Wych elm *(Ulmus glabra).*

🗁 **This class includes**

⤲ **Links with Land Use**

        CXX6 ➢ U111   Agricultural use: grazing
        CXX6 ➢ U120   Forestry (wood production)
        CXX6 ➢ U350   Wooded areas connected to community services
        CXX6 ➢ U36x   Wooded areas managed for recreational purposes
        CXX6 ➢ U370   Wooded areas in residential areas (urban parks)
        CXX6 ➢ U420   Not used wooded areas

CXX7	Mountainous beech forest

Mountainous beech forests are defined by the altitudinal range of distribution, by the dominance of *Fagus* and, in most cases, by the presence of coniferous species (*Abies alba* and/or *Picea abies*) as important components. Locally important additional tree species include Norvay maple (*Acer platanoides),* Sycamore Maple *(Acer pseudoplatanus),* birch *(Betula pendula),* hornbeam *(Carpinus betulus),* Sweet chestnut *(Castanea sativa),* ash *(Fraxinus excelsior),* aspen *(Populus tremula),* wild cherry *(Prunus avium),* oak *(Quercus petraea, Quercus robur),* rowan *(Sorbus aucuparia),* linden *(Tilia cordata, Tilia platyphyllos),* Wych elm *(Ulmus glabra),* oriental beech (*Fagus orientalis, Lipsky)* and Goat willow. *(Salix caprea).* depending on trophic status and/or successional phase.

📂 **This class includes**

⤬ **Links with Land Use**

   CXX7 ➢ U111 Agricultural use: grazing
   CXX7 ➢ U120 Forestry (wood production)
   CXX7 ➢ U350 Wooded areas connected to community services
   CXX7 ➢ U36x Wooded areas managed for recreational purposes
   CXX7 ➢ U370 Wooded areas in residential areas (urban parks)
   CXX7 ➢ U420 Not used wooded areas

CXX8	Thermophilous deciduous forest

Forest dominated by deciduous or semideciduous thermophilous species, mainly Downy Oak *(Quercus pubescens*); other oaks associate with or replace (*Q. pubescens* in submediterranean woods: *Quercus faginea, Q. pyrenaica* and *Q. canariensis* (Spain), *Q. cerris* (Italy), *Q. frainetto, Q. trojana* (Greece)). The species typically associated in these oak woods are maples (*Acer monspessulanus, Acer opalus, Acer obtusatum*) and, in eastern areas, Hop-hornbeam (*Ostrya carpinifolia*), Manna ash (*Fraxinus ornus*), Oriental hornbeam (*Carpinus orientalis*). Forest dominated by thermophilous deciduous oaks, under local microclimatic or edaphic conditions, are found also far north in the Atlantic region, Pannonic and Continental regions.

📂 **This class includes**

- Other deciduous non-alluvial formations of meso- and supra‑Mediterranean zone, dominated by *Fraxinus spp.*, *Ostrya carpinifolia*, *Carpinus orientalis*, *Acer spp.*, *Tilia spp.*, *Carpinus betulus*, *Aesculus hippocastanus* and *Juglans regia*
- *Castanea sativa* dominated forests, represented, for the most part, by old established and naturalised plantations.

➤⊰ **Links with Land Use**

CXX8 ➢ U111   Agricultural use: grazing
CXX8 ➢ U120   Forestry (wood production)
CXX8 ➢ U350   Wooded areas connected to community services
CXX8 ➢ U36x   Wooded areas managed for recreational purposes
CXX8 ➢ U370   Wooded areas in residential areas (urban parks)
CXX8 ➢ U420   Not used wooded areas

CXX9	Broadleaved evergreen forest

Forests characteristic of the Mediterranean and warm temperate humid zones of Macaronesia biogeographical regions, dominated by broadleaved sclerophyllous or lauriphyllous evergreen trees. Broadleaved evergreen forests can be dominated by the evergreen sclerophyllous oaks (*Quercus suber, Q. ilex, Q. rotundifolia, Q. coccifera, Q. alnifolia*).

Cork oak and holm oak form the most widespread evergreen woodland in the Mediterranean Region.

Forest dominated by holm oak (*Quercus ilex*), are typical of the meso-Mediterranean level, but ingression to the supra‑mediterranean level is also common. Holm oak woodland is often, but not necessary, calcicolous.

Cork oak (*Quercus suber*) dominated woodland has a west‑Mediterranean distribution and is associated to siliceous substrates. It is usually more thermophilous and hygrophilous than holm oak woodland. In some areas, holm‑oak and cork‑oak woodland are closely related and the two oaks occur in mixed stands.

Arborescent formations dominated by Kermes oak (*Quercus coccifera, Quercus calliprinos, Quercus pseudococcifera*) or Golden oak (*Quercus alnifolia*); occurring in the Iberian Peninsula, Greece and eastern Mediterranean (Cyprus, Anatolia).

Thermo‑Mediterranean woodland dominated by arborescent tree layer, often open, of wild olive (*Olea europaea ssp. europaea var. sylvestris*), carob (*Ceratonia siliqua*) or a mixture of the two; found in southern Spain (Andalucia, Menorca, Maiorca), southern Italy (Puglia, Calabria, Sardinia, Sicilia), Crete, Cyprus and Turkey.

Woods, often riparian, formed by palm trees of the Mediterranean and Macaronesian zones, *Phoenix theophrasti* of Crete and western Anatolia, and *Phoenix canariensis* of the Canary Islands.

📂 **This class includes**

⤬ **Links with Land Use**

CXX9 ➢ U111	Agricultural use: grazing
CXX9 ➢ U120	Forestry (wood production)
CXX9 ➢ U350	Wooded areas connected to community services
CXX9 ➢ U36x	Wooded areas managed for recreational purposes
CXX9 ➢ U370	Wooded areas in residential areas (urban parks)
CXX9 ➢ U420	Not used wooded areas

CXXA	Coniferous forest of the Mediterranean region

The category covers a wide range of xerophytic forests dominated by coniferous species (pines, firs, junipers, cypress, cedar) found in the Mediterranean, Anatolian and Macaronesian biogeographical Regions.

Woodland dominated by thermophilous Pine species (*Pinus pinaster ssp. pinaster, Pinus pinea, Pinus halepensis, Pinus brutia*). These pinewoods constitute thermo‑Mediterranean pioneer formations, largely widespread in the coasts and lowlands of the circumediterranean regions. Woods dominated by Black pine (*Pinus nigra*), characteristic of the mountainous level of the Mediterranean and Anatolia regions. Scots pine forest (*Pinus sylvestris*) in the Mediterranean region have a mountainous and oro−Mediterranean distribution. Local treeline formations of Bosnian pine (*Pinus heldreichii and Pinus leucodermis*) are restricted to the southern Balkans, northern Greece and southern Italy. Fir woods (*Abies spp.*) are distributed along the rim of the southern Mediterranean basin and western Anatolia. Woods dominated by junipers (*Juniperus spp.*) of the Mediterranean and Anatolian mountains. Pure or mixed forests of Lebanon cedar (*Cedrus libani*) of the southern Anatolia and locally north-eastern Anatolia (subpontic forests) and endemic endangered *Cedrus brevifolia* forest of Cyprus.

🗁   **This class includes**

➢⊰   **Links with Land Use**

       CXXA ➢ U111   Agricultural use: grazing
       CXXA ➢ U120   Forestry (wood production)
       CXXA ➢ U350   Wooded areas connected to community services
       CXXA ➢ U36x   Wooded areas managed for recreational purposes
       CXXA ➢ U370   Wooded areas in residential areas (urban parks)
       CXXA ➢ U420   Not used wooded areas

CXXB	Mire and swamp forests

Coniferous or broadleaved forested wetlands, located mainly in Fennoscandia with scattered occurrences on peaty soils throughout Europe. Forested wetlands consist of a heterogeneous complex of wet and moist forest types, and they are characterized by a high water table of variable duration. The terminology used to characterize them differs between countries. In Sweden, for example, swamp forests are classified as forests and not as mires if the annual forest productivity exceeds 1 m3 per ha or if the tree layer has a crown projection exceeding 30 %. In Finland, however, the classification is based on botanical and hydrological criteria. As a consequence, wet and moist forests are assigned to the mire series regardless of forest productivity and tree cover. Therefore, many herb-rich vegetation types are included in this category.

The dominating trees are spruces (*Picea spp.*) and birches (*Betula spp.)* in swamps or pines (*Pinus spp.* in bogs. Swamp forests can be dominated by alder (*Alnus spp.*), birch (*Betula spp.*), pedunculate oaks (*Quercus robur*) or aspen (*Populus tremula*).

📂 **This class includes**

✂ **This class excludes**

- Peat bogs (H12)

⤚ **Links with Land Use**

        CXXB ➢ U111   Agricultural use: grazing
        CXXB ➢ U120   Forestry (wood production)
        CXXB ➢ U350   Wooded areas connected to community services
        CXXB ➢ U36x   Wooded areas managed for recreational purposes
        CXXB ➢ U370   Wooded areas in residential areas (urban parks)
        CXXB ➢ U420   Not used wooded areas

CXXC	Floodplain forest

Alluvial and riparian woodlands and galleries close to main European river channels. These are species-rich often multi-layered communities characterised by different assemblages of forest dominant trees. Forest composition and structure largely depends on the frequency of flooding.

Included are those forest communities typically associated with alluvial or riparian woodlands that may constitute locally important forest types e.g. in Bulgaria, the dense forests of field elm and ashes associated to alluvial and riparian mixed forests.

Riparian forests of the boreal, boreo‑nemoral and nemoral zone growing on low‑lying areas and organic soils frequently flooded and close to river channels. Characteristically dominated by species of alder (*Alnus spp.*), birch (*Betula spp.*), aspens (*Populus tremula*) and willows (*Salix spp.*).

In the Mediterranean and Macaronesian regions additions local species (e.g. *Fraxinus angustifolia*, *Platanus orientalis*, *Alnus orientalis*, *Nerium Oleander, Tamarix, Liquidambar* and *Flueggea tinctoria*) exist.

📁 **This class includes**

⤫ **Links with Land Use**

CXXC ➢ U111	Agricultural use: grazing
CXXC ➢ U120	Forestry (wood production)
CXXC➢ U350	Wooded areas connected to community services
CXXC ➢ U36x	Wooded areas managed for recreational purposes
CXXC ➢ U370	Wooded areas in residential areas (urban parks)
CXXC ➢ U420	Not used wooded areas

CXXD   Non-riverine alder, birch or aspen forest

Non-riparian, non-marshy forest formations dominated by alder (*Alnus glutinosa, Alnus incana, Alnus cordata*), birch (*Betula pendula, Betula pubescens, Betula celtiberica, Betula aetnensis*) or aspen (*Populus tremula*).

📁   **This class includes**

✄   **Links with Land Use**

> CXXD ➢ U111   Agricultural use: grazing
> CXXD ➢ U120   Forestry (wood production)
> CXXD ➢ U350   Wooded areas connected to community services
> CXXD ➢ U36x   Wooded areas managed for recreational purposes
> CXXD ➢ U370   Wooded areas in residential areas (urban parks)
> CXXD ➢ U420   Not used wooded areas

CXXE	Exotic forest

The class covers forest and self-sown stands of non‑native, often invasive, tree species.

📂 **This class includes**

- Eucalyptus (*Eucalyptus spp*.)
- Douglas fir (*Pseudotsuga menziesii*)
- Sitca spruce (*Picea sitkensis*)

✂ **This class excludes**

- Plantations of autochthonous species

✄ **Links with Land Use**

CXXE ➢ U111   Agricultural use: grazing
CXXE ➢ U120   Forestry (wood production)
CXXE ➢ U341   Wooded areas connected to commercial areas
CXXE ➢ U350   Wooded areas connected to community services
CXXE ➢ U36x   Wooded areas managed for recreational purposes(but not yet converted to more natural stands)
CXXE ➢ U370   Wooded areas in residential areas (urban parks)
CXXE ➢ 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. It may include sparsely occurring trees with a canopy below 10%.

D10   SHRUBLAND WITH SPARSE TREE COVER

Areas dominated (at least 10% of the surface) by shrubs and low woody plants, including sparsely occurring trees with a canopy between 5 and 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: 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. Sparsely occurring trees do not cover more 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: 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 total limit of cover (including trees) of 20%. 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 tree canopy is between 5 and 10% and the total of the tree+shrub canopy is between 5 and 20% 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, rough 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 (density of 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, rough 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

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.

📂 **This class includes**

- Set aside land within agricultural areas
- Unused artificial land where revegetation is occouring
- 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

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

F10   ROCKS AND STONES

📂   **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	Naural sandy areas not used

F30   LICHENS AND MOSS

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

📂　　**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

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

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

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

These areas correspond to the transitional waters as defined in the water framework diective (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

G50   GLACIERS, PERMANENT SNOW

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

➢⫤   **Links with Land Use**

G50 ➢ U361-2 Ski tows on glaciers
G50 ➢ U420   Unused

H00   WETLANDS

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

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

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   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

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 activites).

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 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))

✂   **This class excludes**

- Grazing of lucerne, clover, sainfoin, trefoil (*Lotus corniculatus*), black medick (*Medicago lupulina*), etc (U111)
- 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

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 temporarely 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

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

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

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

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

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: activites transforming raw manufactured products into heavy manufactured products

- Light end product industry: activites 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, elettronic format) : books, periodicals and other publishibg 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

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

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

U330   Construction

Areas used for construction whatever the degree of completion (NACE F, except agricultural activites 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

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 rouine 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 activites 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 (reasearchers) 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 activites of membership organisations (except religious activites).

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 activites (U350)

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

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

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

U400 UNUSED AND ABANDONED AREAS

U410   Abandoned areas

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.

📂   **This class includes**

- 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

✂   **This class excludes**

- 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

✂   **This class excludes**

- Unused land formerly developed, now vacant or derelict (U410)
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