

European Forest Accounts:

Explanatory notes

(version June 2021)

1. Introduction

These notes provide information to facilitate the compilation of the tables included in the European Forest Accounts (EFA) questionnaire.

Boxes are provided below each table for your feedback on the basic data used, your comments on any difficulties encountered when estimating specific items, the techniques used, the quality of the estimates, any other problems and suggestions for improving the questionnaire.

2. Set of tables in the EFA questionnaire

The set of tables is the result of the pilot study run in 2015, the recommendations of the Task Force on the review of IEEAF (Integrated Environmental and Economic Accounting for Forests), and a comparison with the data collected in 2015 by FAO Forest Resources Assessment and Forest Europe, as published on the UNECE data base.

A set of ten integrated economic and environmental tables are included in the questionnaire, of which five are core tables required by Eurostat for national accounts, forest accounts and environmental accounts.

3. Overview of the tables

The tables are grouped as follows:

A	Assets	A1 Wooded land – physical and monetary	(2 core tables)
		A2 Timber – physical and monetary	(2 core tables)
B	Economy	B1 Aggregates of the forestry and logging industry	(a core table)
		B2 Output of the forestry and logging industry by type	
		B3 Monetary supply and use of wood in the rough	
C	Material flow	C1 Physical supply and use of wood in the rough	

4. Details of the tables and variables

Table A1 – Wooded land

The scope of land in Table A1 is all 'wooded' land, i.e. forest and other wooded land as defined in FAO FRA 2015 (FAO, 2012). Unless otherwise indicated, these terms and definitions apply. A table on land is included in SEEA-CF 2012 (UN, 2014a).

In order to cover all of the land used for timber production – the characteristic product of the economic activity "Forestry and logging" – some types of "Other land with tree cover" (FAO FRA 2015) are added.

The sub-categories of land are

- Available for wood supply

- Not-available for wood supply

Within land available for wood supply, 'cultivated' and 'uncultivated' areas are distinguished. Cultivated land is defined according to the ESA definition (Eurostat, 2013).

Of the "Other land with tree cover" that is available for wood supply, only the land used for agro-forestry, short-rotation forestry and short-rotation coppices is covered, excluding orchards of fruit or nut trees.

Changes in land area are obtained from

- Increases of any kind, both human-induced and natural, such as afforestation and natural colonisation
- Decreases of any kind, both human-induced and natural, such as deforestation and natural regression
- Changes in classification, including all changes in use/status of wooded land, e.g. from available for wood supply to not available for wood supply.

The available area and annual changes (stocks and flows) may have a lower periodicity of calculation in the countries and may be drawn up every inventory year for FRA (FAO, 2012) or national purposes. In this case, the changes can be cumulated over the period between two inventories. Annual estimates of afforestation and deforestation are normally available: data from administrative sources may be incomplete (only subsidised afforestation, only registered deforestation) but may provide useful indicators to which grossing-up factors can be applied.

Valuation:

In general, different prices apply to different types of land. Land available for wood supply is normally valued on the basis of market transactions, either directly or as a ratio of known values of forest real estate.

The land value integrates not only wood production values but also all other ESA values, as available from market transactions.

Wooded land not available for wood supply may thus receive a positive value. When forests are bought for environmental protection purposes, if the felling of standing timber is prohibited, the value of standing timber is part of the value of the land.

Changes in value due to economic activities (afforestation, deforestation), other changes (natural colonisation or regression, other changes) and changes in use/status are recorded in the respective rows and columns.

Revaluation records changes in the value of land due to changes in prices between the beginning and the end of the period.

Data on land reported in Table A1 must be coherent with other data provided at European and international level (national accounts, Forest Europe, FAO, and OECD).

See Eurostat-OECD (2015), FAO (2012) and UN (2014a).

Table A2 – Timber

Table A2 describes the changes in the volume of the growing stock of timber between the beginning (opening stock) and the end (closing stock) of the reference year, due to increment and fellings, as defined in FAO FRA 2015 (FAO, 2012) 2015. Removals of wood in the rough, as defined in the CPA Ver. 2.1 2015

(Eurostat, 2015) and the Joint Forest Sector Questionnaire (JFSQ), are also covered. Changes in classification are to be reported. A table on timber is also part of SEEA-CF 2012 (UN, 2014a). The rows are the same as in Table A1: the standing volume therefore corresponds to the volume growing on the categories of land of Table A1.

The volume of growing trees includes the stem and the larger branches that can be used for timber, measured at a minimum diameter at breast height of 0 cm. The unit of measurement is 1000 m³ over bark.

Changes in timber volume are obtained from

- Increment or natural growth: the volume of gross biological growth during the period. It is generally calculated by modelling (based on opening stocks by age and species, biological parameters, etc.). Annual variations of natural growth may be high due to climatic variation – therefore averages over several years (e.g. 5 years) should be used. The average annual mortality of the growing stock is to be subtracted from the gross biological growth, to obtain the net increment to be reported.
- Planned fellings according to the national forest inventory plan.
- Unplanned fellings that occur through windthrow and other natural catastrophes, including fires. Felling residues are also to be included here. Part of the unplanned fellings will be removed and used as timber, so this item also covers a kind of "storage" of timber for later removal. Irrecoverable losses of timber are reported here, even if their irretrievability only becomes apparent in later years and the data must be revised.
- Changes in classification: they refer to changes in the volume due to changes in use/status of the corresponding land area in Table A1. They are recorded twice: as a decrease in the row corresponding to the initial category and, as an increase in the row corresponding to the final category. They may also refer to the occasional fellings of standing timber located on land 'not available for wood supply'. In this case a positive flow is recorded in the column "Statistical re-classification", which is the counterpart of the negative flow recorded under "Fellings".

As an additional variable, the table includes "Removals", defined in the JFSQ as the timber of felled trees that is removed from wooded land or other felling sites during the period. Included are removals of trees felled during an earlier period, and removals of trees killed or damaged by natural causes, i.e. unplanned fellings.

Data on timber reported in Table A2 must be coherent with the data on land reported in Table A1 and other data on timber provided at European and international level (Forest Europe, FAO, UNECE, and OECD).

See FAO (2012) and UN (2014a).

Valuation:

1) Increment of timber

The value of the annual increment of (standing) timber, i.e. the output produced by forest trees (CPA 2015 code 02.10.3), is reported in Tables A2b and B1. It is considered as an output in national accounts (ESA 2010).

According to the ESA 2010 definitions adopted in EU national accounts, only the increment produced in cultivated forests by the forestry and logging industry is to be reported in Table B1.

If local Kind of Activity Units (KAUs) with a principal activity in other industries (agriculture, paper and pulp industry, etc.) carry out this production, the increment is reported in Table B3 (supply).

The total growth of timber, including also timber in wild forests (i.e. uncultivated forest land), is reported in quantity and value in Table A2a and A2b.

The distribution of this aggregate among the different categories depends on how production is organised in a country.

If all forests are uncultivated, this value is nil in Tables B1 and B3.

In national accounts, this product is considered an addition to work-in-progress and is valued at the current 'basic' price of the finished product, that is the price receivable by the producers from the purchaser for a unit of a good produced as output (excluding taxes, transport cost, other costs, and including subsidies on the product; see ESA 2010 for the definition).

The value of (trees for) timber can be approximated by using stumpage prices, as suggested in the IEEAF manual.

2) How to record timber

Timber is recorded in physical and monetary terms in the asset, economic and material flow tables A2, B1, B3 and C1. While Tables A2a and A2b record all timber and its value, the economic tables (B) follow the rules of ESA 2010: we record the timber available in the national economy or imported, to be sold on the market for several intermediate and final uses (the "timber available for wood supply" of Table A2).

Timber in the economic tables is the main product of the forestry and logging activity (NACE Rev. 2, Division A02), mainly produced by the forestry and logging industry, that means by local Kind of Activity Units (local KAUs) with a principal activity in A02 (for a definition of industry see Eurostat, ESA, 1.58, p. 12 and 2.150, p. 50). Timber is recorded as Forest trees (code 02.10.3 in the CPA 2015 Ver. 2.1 classification).

It is then included in several economic aggregates as a result of transactions of products (P): Output (P.1), Intermediate consumption (P.2), Changes in inventories of work-in-progress and Finished products (P.52).

In Output we record the growth of cultivated standing timber on wooded land (indicated in the tables as Increment of timber). The area of wooded land to be considered is included in Table A1 – Wooded land, while the total volume of timber is recorded in Table A2. Note that the growth of uncultivated timber (wild growth) is excluded from Table B1 because it is not produced in economic terms.

Timber is also recorded in the Output when it is removed from uncultivated forests. In Table B1, such timber is also to be recorded under Forest trees (code 02.10.3).

In Intermediate consumption, on the other hand, we record the overall timber (cultivated or not) removed by the logging activity (if it is not exported to other countries), to be used in the production and supply of wood in the rough (CPA code 02.20.1). Logging activity performs the first transformation of standing timber.

In Changes in inventories of work-in-progress, we record the net growth in cultivated timber: that is the entries (increment of standing timber) minus withdrawals (removals) and recurrent losses (not extraordinary ones). Note that there could be an increase (positive figure) or a reduction (negative figure) in work-in-progress and inventories in certain years.

Finally, there is no separate accounting for ready-to-use cultivated timber (finished products) in the inventories. For the sake of simplicity, they continue to be part of work-in-progress stocks in the asset accounts.

Table B1 – Economic aggregates of the forestry and logging industry [former Table 3c]

Table B1 is to be drawn up for the transactions of the forestry and logging industry, as recorded in national accounts and Eurostat's European Forest Accounts (EFA). The national accounts transaction code is reported in square brackets after the transaction name, whenever it exists.

This table records the output related to the land reported in Table A1, i.e. output from all activities that take place on wooded land. Note that not all of the output is recorded: only the output from the forestry and logging industry following the classification NACE Rev. 2 (Eurostat 2008c) is recorded. It includes secondary activities in this industry (see below). It excludes the activities of other industries.

The output and intermediate consumption are broken down by product according to the statistical Classification of Products by Activity CPA Ver. 2.1 (Eurostat 2015). For the activities classified as characteristic of the forestry and logging industry, see NACE Rev. 2 (Eurostat 2008c).

Natural growth of cultivated timber is to be added to the output of the forestry industry. The stumpage value of the timber withdrawn by logging from the stock of standing volume is to be added to the intermediate consumption of the logging activity.

It should be noted that the output of other production activities may be reported in this table if it is produced by a local Kind-of-Activity Unit (KAU) that has forestry and logging as its principal activity, with other secondary connected non-forestry activities.

As far as possible, the table must be entirely filled in; some estimation may be necessary for products that are not regularly collected from economic statistics or national accounts. All 'other' items have to be explained in the area specified below the table.

Q & A from the 2015 pilot study:

1) Felling and transport of timber

Felling and transport of timber from the forest to the roadside or to timber storage, if it is a separate service provided by local Kind of Activity Units (KAUs) specialized in logging, it is part of the output of the forestry and logging industry and it is recorded in Support services to forestry.

The work performed to produce wood in rough is not recorded separately and the value is part of the price of the wood.

2) Forest owner and recording of 'natural' growth of forest

The owner of the cultivated forest is not relevant for EFA.

It is relevant to know if the local Kind of Activity Unit (KAU) that cultivates the forest is doing forestry activity as the only or the principal activity. In these cases, the 'natural' growth of the cultivated forest is included in Table B1. Note that there could be other secondary activities in this unit: they are included in the same table in row 'Other products from connected secondary activities in the local KAU'.

If forestry activity is not the principal activity of the local KAU, it is not to be included in Table B1 but in Table B3 under column 51.1. Table A2 and B3 cover the total growth in all cultivated forests.

Note that we have secondary activities only when is not possible to separate the activities economically (and in the accountancy of the unit) into separate local KAUs.

Lastly, if the forest activity in the local KAU can be separated from the other activities, there will be two or more local KAUs. In this case the local KAU with the forestry activity is fully included in Table B1.

For more details and definitions, see ESA 2010.

3) Pulpwood

"Pulps of wood or other fibrous cellulosic material" (code 17.11.1 in the CPA 2015 Ver. 2.1 classification) are included under "Paper and paper products" (code 17). It is the same in the CPC Ver. 2.1. This product is outside of the scope of the characteristic products of the forestry and logging industry considered in Table B1.

It can be included in the output if it is part of the secondary activity of some local Kind of Activity Unit (KAU) with its principal activity in forestry and logging (02 in NACE Rev. 2). It can be included in "Other products from connected secondary activities in the local KAU" (with explanations in the box at the end of the table).

"Pulpwood" in the JFSQ is industrial roundwood that will be used for pulp production. This product is included in "Wood in rough" (code 02.20.1) under "Logs" and is approximated by the roundwood removed from the forest by the logging activity.

If a first transformation of wood in the forest, such as chipping, is relevant, their value can be included in "Other products" (always providing explanations). The same should be done for sliced wood or felling residues that have some value.

In IEEAF, Table 3c item "Pulpwood and other industrial roundwood" covered the wood removals for pulp and other industrial uses and approximated "Logs" in the CPC classification. In the JFSQ, the same terms cover roundwood that will be used for the production of pulp, particleboard or fibreboard, either as roundwood, split wood or as wood chips made directly in the forest from roundwood. In the JFSQ, "Wood in the rough" is the target variable as defined in CPA classification, but chips or slices made directly in the forest for the same purposes are also to be added to that wood in the rough, so the boundaries of the JFSQ products are not as clear as in EFA.

4) Wood in the rough

This is one of the characteristic products of the logging activity and it is defined by CPA 2015 Ver. 2. in line with CPC Ver. 2.1.

It is recorded as output in Table B1 when it is produced by local Kind of Activity Units (KAUs) with a principal activity in the forestry and logging industry.

If local KAUs with a principal activity in other industries (agriculture, pulp production, etc.) carry out this production, wood in the rough is reported in Table B3 (supply).

It is recorded as a use (intermediate or final consumption, capital formation or exports) in Table B3.

It is recorded in physical terms, as supply and use in Table C1.

5) Timing and valuation

In output, cultivated timber is recorded as being produced continuously over the entire period of production and not only when it is harvested (Eurostat, ESA 2010, 3.54, p. 61). On the other hand, non-cultivated timber is recorded when it is removed.

In intermediate consumption, timber is recorded when it is removed.

In the asset and economic tables (A and B) timber has to be valued and reported in national currency.

Timber is valued at current basic prices of the finished product, which is the price of standing timber ready to be removed.

The basic price is the price receivable by the producer (producer price) from the purchaser for a unit of good produced as output, minus any tax (i.e. taxes on products) payable on that unit as a consequence of its production or sale, plus any subsidy (i.e. subsidies on products) receivable on that unit as a consequence of its production or sale. It excludes any logging and transport charges invoiced separately by the producer (Eurostat, ESA 2010, 3.44, p. 60).

For the growth of cultivated timber in output and work-in-progress, the valuation should be done by discounting the future proceeds of selling the timber as standing timber at current prices (i.e. excluding other logging and transport costs).

This valuation method is replaced by valuing the annual growth with the 'stumpage price'; this is the price paid for timber as it stands – before being cut – in the forest, differentiated by different categories (types of trees, size class, standing or blown down and broken, quality of the wood, topography of the site, etc.).

If these market prices for standing timber are not available, they can be estimated from roadside pickup prices for wood ready to be transported to the user, minus all logging costs (felling, skidding to the roadside, stacking the wood, etc.).

The removed timber is valued at the current basic price, as indicated before.

More information on valuation can be found in the IEEAF manual (paragraph 'Valuation issues', 3.124-3.170, p. 33-38).

Note that the EAA/EAF manual (for example, paragraph 2.06.14) that is still used to produce agricultural accounts must be used with caution because even though there are no changes with respect to timber between ESA 1995 and ESA 2010, some practical indications were invalidated by the IEEAF manual. Information in the 'explanatory notes' of the former Table 3c in IEEAF are also obsolete and should be used with caution.

6) Timber removed by logging and trees sales for timber

The value of trees bought for timber (i.e. to produce wood in the rough after felling and a primary transformation of the timber by the logging activity to be ready for removal) is reported in Table B1 under code 2.1.1. It is considered an intermediate consumption by national accounts (see ESA 2010).

It is recorded only if the trees are bought by local Kind of Activity Units (KAUs) that belong to the forestry and logging industry.

The value of timber 'removed' from any forest land by the logging activity of the industry is used as a proxy of trees sales used (i.e. bought) for timber.

This value is not recorded if the timber is consumed in the same local KAU (i.e. the forestry and logging activities are not separate), as noted in ESA 2010.

It is also not recorded in Table B1, but is recorded in Table B3, if it is consumed in local KAUs not belonging to the forestry and logging industry (e.g. in agriculture, exported, or consumed by households).

In national accounts, products used for intermediate consumption are recorded and valued at the time they enter the process of production. They are valued at the purchasers' prices for similar goods or services at the time (see ESA 2010).

The value of (trees for) timber can be approximated by using the stumpage price, as suggested in the IEEAF accounts.

Finally, in some cases trees sales for timber are recorded as output in Table B1 when trees are removed from uncultivated forests.

Local KAUs that perform this production have to belong to the forestry and logging industry. If they belong to other industries, the sales are recorded in Table B3.

The total timber removed is recorded in monetary and physical terms in Table A2.

It is also reported in physical terms, as supply and use of wood in the rough, in Table C1.

Some critical economic variables explained:

Products

Products are goods and services created in the economy, within the production boundary, for intermediate or final uses. These products are supplied to the market or, in some cases, for own-final used (i.e. used in two different local Kind-of-Activity Units (local KAUs) belonging to the same institutional unit).

A set of products is the output of the principal and secondary activities of local KAUs in the economy (should secondary activities exist). The sub-set of products from the principal activity is characteristic of the forestry and logging industry.

Products are classified according to the Classification of Products by Activity (CPA Ver. 2.1). All the CPA categories for the products characteristic of the forestry and logging activity are reported in the questionnaire. Other possible products from inseparable secondary activities are also included.

The CPA code for each product is reported in rounded brackets after the product name, if it exists.

See Eurostat (2013).

Output [P.1]

All products are valued at basic prices (i.e. excluding invoiced VAT or any other tax on the product, plus subsidies on the product).

See Eurostat (2013).

Output for own final use [P.12]

Consists of goods or services that are retained either for own final consumption or for capital formation by the same institutional unit.

See Eurostat (2013).

Live forest tree plants (02.10.11)

This is a new category of goods introduced by the CPA 2008, that is included in the corresponding CPC 2008 category "Live plants; bulbs, tubers and roots; cuttings and slips; mushroom spawn" (01961).

See Eurostat (2008a; 2008b).

Fuel wood (02.20.14)

Wood to be used for energy purposes either directly or indirectly, in logs, billets, twigs, faggots or similar forms.

See Eurostat (2008b).

Services characteristic of the forestry and logging activity

These are normally services related to planting, thinning, forest inventories, fire protection, and logging services, e.g. felling, debarking, skidding, that are supplied as products (see definition of products). On the other hand, the same services are recorded as inputs of the users of these services. Reminder: only supply from and use by a local KAU with a principal activity in the forestry and logging activity is recorded here.

Forest trees nursery services (02.10.2)

This subcategory includes the operation of forest tree nurseries.

See Eurostat (2008a).

Support services to forestry (02.40.10)

This subcategory includes:

- forestry services:
 - forest inventories;
 - forest management consulting services;
 - timber evaluation;
 - forest fire fighting and protection;
 - forest pest control;
- logging services:
 - transport of logs within the forest;
- provision of forestry machinery with crew and operators;
- This subcategory excludes:
 - operation of forest tree nurseries (see 02.10.20);
 - draining of forestry land (see 43.12.11);
 - clearing of building sites (see 43.12.11).

See Eurostat (2008a).

Nature reserve services including wildlife preservation services (96422)

This subclass includes:

- operation of national parks, nature parks and reserves, including supervision, access and visiting services;
- conservation and maintenance services of national parks, nature parks and reserves.

See Eurostat (2008a).

Intermediate consumption [P.2]

Intermediate uses of products are recorded at purchasers' prices (i.e. excluding deductible VAT).

See Eurostat (2013).

Lubricating petroleum oils; heavy preparations not elsewhere classified (n.e.c.) (19.20.29)

Lubricating petroleum oils and oils obtained from bituminous minerals, other heavy petroleum oils and heavy oils obtained from bituminous minerals (other than crude), and heavy preparations n.e.c. containing not less than 70% by weight of petroleum oils or oils obtained from bituminous minerals (other than crude), these oils being the basic constituents of the preparations (CPC code 33380).

See Eurostat (2008a; 2008b).

Fertilisers and soil improvers

This subclass includes straight and compound fertilizers, and organic fertilisers. The following products are included:

- Fertilisers containing three nutrients: nitrogen, phosphorus and potassium (20.15.71)
- Diammonium hydrogen orthophosphate (diammonium phosphate) (20.15.72)
- Monoammonium phosphate (20.15.73)
- Fertilisers containing two nutrients: nitrogen and phosphorus (20.15.74)
- Fertilisers containing two nutrients: phosphorus and potassium (20.15.75)
- Potassium nitrates (20.15.76)
- Mineral or chemical fertilisers containing at least two nutrients (nitrogen, phosphate, potash) n.e.c. (20.15.79)
- Mineral or chemical fertilisers containing at least two nutrients (nitrogen, phosphate, potash) n.e.c. (20.15.79)
- Animal or vegetable fertilisers n.e.c. (20.15.80)
- Other fertilisers

Soil improvers include: e.g. lime, peat, sand, sludge, synthetic foams.

See Eurostat (2008a).

Plant protection products and pesticides

This subclass includes:

- Insecticides (20.20.11);
- Herbicides (20.20.12);
- Fungicides (20.20.15)

See Eurostat (2008a).

Services input

Further non-forestry and logging services are included in this input category.

See Eurostat (2013).

Maintenance of materials

This subclass includes the regular maintenance and repair services of fixed assets used in production, such as motor vehicles (45.20), forestry machinery (33.12.21), other vehicles, machinery and items of equipment. It includes:

- Spare parts (e.g. sparking-plugs, batteries, saw blades, tyres);
- Labour charges (e.g. for blacksmiths, mechanics, electricians);
- Total costs borne by forestry and logging units in respect of overall payments to other units (e.g. material, labour charges, management earnings and profits).

This subclass excludes major improvements of fixed assets used in production.

See Eurostat (2008a; 2013).

Maintenance of buildings

This subclass includes the regular maintenance and repair services of fixed assets used in production (non-residential buildings [AN.112] and structures):

- Material used (e.g. cement, sand, bricks, tiles, glass);
- Labour charges (e.g. for painters, builders' labourers, carpenters, joiners, plumbers, electricians);
- Total costs borne by forestry and logging units in respect of overall payments to other units (e.g. material, labour charges, management earnings and profits).

Include here the maintenance of forest roads and bridges, etc.

This subclass excludes major improvements and extensions of buildings and structures used in production.

See Eurostat (2008a; 2013).

Financial services (FISIM) [P.119]

Financial Intermediation Services Indirectly Measured (FISIM) is the way to measure the output of financial intermediation (banking) in national accounts. The estimation of FISIM is done by national accounts and reported in EFA accounts.

FISIM are measured as the difference between the 'reference rate' and the rate actually paid to depositors and charged to borrowers. The 'reference rate' of interest is the rate at which both lender and borrower would be happy to strike a deal and it lies between bank interest rates on deposits and on loans. It does not correspond to an arithmetic average of the rates on loans or deposits. The rate prevailing for inter-bank borrowing and lending is a suitable choice.

FISIM are imputed for all loans and deposits. These indirect charges apply only to loans and deposits provided by, or deposited with, financial institutions. The allocation of FISIM among user industries is done based on the stocks of loans and deposits of each industry and, if this information is not reliable, on the output of each industry.

See Eurostat (2013).

Other goods and services used as inputs

This includes materials, small tools and rental costs of fixed assets (e.g. the operational leasing of machines, cars, software).

It excludes payments for licences for using natural resources (e.g. land) that are treated and recorded later in the questionnaire as rents (i.e. as a payment of property income).

See Eurostat (2013).

Property income (received) [D.4]

All income received by forestry and logging producers as interest, distributed dividends and other income of corporations, reinvested earnings on foreign direct investment, other investment earnings and rent from land or subsoil assets (see below).

See Eurostat (2013).

Property income (paid) [D.4]

All income paid by forestry and logging producers as interest on loans (taken out in connection with their economic activity) and rent paid on land or subsoil assets (see below).

See Eurostat (2013).

Rent [D.45]

Rent is the income receivable by the owner of a natural resource for putting the natural resource at the disposal of another institutional unit. Rent on land and on subsoil resources are considered.

Rent is a form of property income.

Rent does not include the rentals of buildings and of dwellings situated on the land; those rentals are treated as the payment for a market service provided by the owner of the building or dwelling to the tenant, and are recorded in the accounts as output of the owner and intermediate or final consumption of the tenant.

If there is no objective basis on which to split the payment between rent on land and rental on the buildings situated on it, the whole amount is treated as rent when the value of the land is estimated to exceed the value of the buildings on it and as rental otherwise.

See Eurostat (2013).

Gross fixed capital formation (excluding VAT) [P.51g]

Gross fixed capital formation (GFCF) consists of resident producers' acquisitions less disposals of fixed assets during the year plus certain additions to the value of non-produced assets realised by the productive activity of producer or institutional units. This includes:

- improvements to existing fixed assets beyond ordinary maintenance and repairs
- costs of acquisition of produced assets (such as machinery and equipment)¹
- costs of ownership transfer on non-produced assets (such as land, contracts, leases and licences)

Fixed assets are produced assets used in production for more than one year.

The following types of assets are included (see also Annex 1 on the GFCF correspondence table):

- Machinery and equipment (such as tractors, cars, chainsaws, computers, etc.)
- Buildings and structures
- land improvements: consolidation of fragmented holdings with costs borne by forestry, road construction, dyke construction, clearing, drainage, other soil improvements, installation of irrigation, and other construction or engineering work for soil improvement

¹ Buying of land is not included (land is not produced)

- R&D (including the production of freely available R&D), forest exploration and evaluation
- Computer software and databases
- Cultivated biological resources for repeat production² (e.g. planting of trees that are intended for repeat production and changes in trees cultivated year after year, such as rubber and cork trees) (see Annex 2 for guidance on cultivated biological resources and EFA item “Plant resources yielding repeat products”)

A positive value of GFCF indicates, for instance, a new or existing fixed asset purchased; a negative value indicates e.g. that an existing fixed asset is sold or scrapped.

GFCF is valued at purchasers’ prices, including installation charges and other costs of ownership transfer. When produced on own-account it is valued at the basic prices of similar fixed assets, and if such prices are not available, at the cost of production plus a mark-up (except for non-market producers) for net operating surplus or mixed income.

See Eurostat (2013).

Changes in inventories [P.52]

Inventories consist of the following categories:

- Materials and supplies (consist of all products held in stock with the intention of using them as intermediate inputs in production)
- Work-in-progress (consists of output produced that is not yet finished such as, maturing trees and uncompleted structures. This refers to production that is not finished at the end of the reference year)
- Finished goods (e.g. ready for sale)

Changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and the value of any recurrent losses of goods held in inventories.

See Eurostat (2013).

Work-in-progress on cultivated biological assets (AN.1221)

Work-in-progress is output produced that is not yet finished. It occurs when production requires more than one year. Measurement requires that a production over several years is split into separate periods.

Work-in-progress includes trees and other vegetation yielding once-only products on destruction and immature cultivated assets yielding repeat products.

See Eurostat (2013).

Labour input [L]

Labour input used for production during the year (annual total). Full-time equivalence in terms of AWU is the available proxy to estimate employment in the forestry and logging industry.

An annual work unit (AWU) corresponds to the work performed by one person who is occupied in a forestry and logging local KAU on a full-time basis. Full-time means the minimum hours required by the relevant national provisions governing contracts of employment. To allow cross-country comparisons and

² Excluded are trees grown for timber as a one-off product upon destruction (these are included in inventories of work-in-progress).

the calculation of the EU aggregate, EFA uses a harmonized AWU representing 1800 working hours, equivalent to 225 working days, per year.

Eurostat publishes EFA country data in harmonized AWU as described above. The online EFA metadata will clarify this to users.

Table B2 - Output of the forestry and logging industry by type

Table B2 supports table B1 by identifying the units producing the output of the forestry and logging industry and separating the "commercial" part of the output to facilitate the evaluation of products (different prices are applied; Eurostat, 2013).

The approach is twofold. In the left part of the table, the output, as recorded in Table B1, is distributed according to its type:

- 'Market output' covers in particular the total value of the changes in inventories of finished products and work-in-progress intended for sale at economically significant prices (including natural growth of vegetable products). By convention, as it would be impossible to separate that part of natural growth which relates to market output, natural growth is always classified as market output;
- 'Output for own final use' covers the total value of goods and services that are retained either for final consumption or for gross fixed capital formation by the same institutional unit. In the forest context, it applies, for example, to wood in the rough removed for own final use (e.g. fuel wood);
- 'Other non-market output': this type of output exclusively refers to services, in particular to forest inventories, protection of forest against fires and recreational services.

In the right part of the table, the output is distributed according to the institutional sector to which the producer unit belongs. Using the information on the left side the distribution is straightforward for one part of the output. For natural growth, the proposal is to distribute the output according to ownership. However, for public ownership, the output would often be recorded under 'public non-financial corporations', and not under 'general government', except if sales of timber are explicitly recorded as secondary market output for some units of the general government sector.

See Eurostat (2013).

Tables B3 – Monetary supply and use of wood in the rough

These two tables are meant to record all output and consumption of wood in the rough from any industry that may be producing or consuming the timber reported in Table A2. They are an extension of Table B1, which refers only to the forestry and logging industry.

Table B3 follows the format of the 'Supply and use' table of national accounts (Eurostat, 2013): output by product and by industry at basic prices.

See also explanatory notes for Table B1.

See Eurostat (2013).

Tables C1 – Physical supply and use of wood in the rough

These two tables are the standard supply and use tables from national accounts, but in physical units. They describe the flows of products by industries, imports and exports and final uses. For a given product total supply has to be equal to the total use.

These tables have a greater detail of wood in the rough than Tables B3 because this information could be useful for material flow balances.

See Eurostat (1999) and UN (2014a).

Annex 1: Correspondence table between ESA 2010 (Eurostat, 2013) asset types and reporting items of EFA questionnaire

EFA item	ESA 2010 item (Annex 7.1)
6.1 Buildings, structures³ and land improvements	Other buildings and structures (AN.112), including: <ul style="list-style-type: none"> • Buildings other than dwellings (AN. 1121) • Other structures (AN. 1122) • Land improvements (AN. 1123), including the costs of transfer of ownership of land Dwellings (AN. 111) ⁴
6.2 Machinery and equipment	Machinery and equipment (AN. 113), including: <ul style="list-style-type: none"> • Transport equipment (AN.1131) • ICT equipment (AN.1132) • Other machinery and equipment (AN.1139)
6.3 Plant resources yielding repeat products	Tree, crop and plant resources yielding repeat products (AN. 1152)
6.4 Other GFCF	All other relevant items, in particular Intellectual property products (AN. 117), including: <ul style="list-style-type: none"> • Research and development (AN.1171) • Mineral exploration and evaluation (AN.1172) • Computer software and databases (AN.1173) • Entertainment, literary or artistic originals (AN.1174) • Other intellectual property products (AN.1179)

³ Including forest roads

⁴ This asset type, while probably not very relevant for forestry and logging, is included for the sake of comprehensiveness of the correspondence table. Its explicit inclusion has no effect on the value of sub-item “6.1 Buildings, structures and land improvements”.

Annex 2: Guidance on EFA item “6.3 Plant resources yielding repeat products”

GFCF in “Plant resources yielding repeat products” includes:

- Expenditure on planting of “plant resources yielding repeat products”, incurred with a view to using the plant resources (once mature) to generate output from the repeat products for more than one year (irrespective of whether the planting activities are undertaken on own account or by specialised companies offering their services on the market); for EFA reporting purposes, the plant resources yielding repeat products would represent predominantly cork oak and forest trees for repeat production of fuelwood (e.g. eucalypt), as well as fruit trees and other trees typical of agriculture if carried out by units classified in NACE A02;
- An increase in the value of the “plant resources yielding repeat products” up to their maturity, i.e., annual growth of the plant resources yielding repeat products up to the point when the plant reaches its highest potential with regard to the quantity or quality of the repeat products it yields (the latter might vary depending on the plant species, e.g. it differs between fruit trees, cork or eucalyptus trees).

GFCF in ‘Plant resources yielding repeat products’ excludes:

- Expenditure on planting and output recognised in relation to the growth of plant resources yielding once-only products on destruction carried out by units classified in NACE A02.
 - Expenditure on the planting activities is to be reported in EFA under intermediate consumption and compensation of employees (if carried out independently) or solely under intermediate consumption (if planting activities sub-contracted to a specialised company offering its services on the market); a corresponding entry to the output recorded for growth of the plant resources should be made under “work-in-progress on cultivated biological assets” (see also the guidance on the accrual recording of the output of forestry activities and net annual increment recognised in relation to the growth of forest trees in the EFA Explanatory notes).
 - This represents the vast majority of plantations and growth in forestry in most European countries.
- Expenditure on planting “plant resources yielding repeat products” carried out by units classified in NACE A02 with a view to their sale – before or once they reach maturity – to units that will use them to generate output from the repeat products for more than one year. The typical example is tree nurseries. Before the trees from such tree nurseries are sold, related expenditure and growth of the trees will be recorded under ‘work-in-progress on cultivated biological assets’ given that the main output of the producers are the trees (yet to be sold) rather than the repeat products that the latter yield.

Examples:

- Cork oak trees planted by a forestry/logging company with a view to growing and selling cork – expenditure on planting activities + net annual increment for the tree growth until the cork can be extracted is reported under GFCF in “Plant resources yielding repeat products” in EFA.
- Apple trees planted by a forestry/logging company with a view to growing apples for own use or for selling – expenditure on planting activities + net annual increment for the tree growth until the apples can be collected is reported under GFCF in “Plant resources yielding repeat products” in EFA.

- Spruce trees planted by a forestry/logging company with a view to felling the trees once they reach maturity – expenditure on planting activities is reported under intermediate consumption and compensation of employees (if carried out independently) or solely under intermediate consumption (if planting activities sub-contracted to a specialised company offering its services on the market); net annual increment for the tree growth is reported under changes in inventories in “work-in-progress on cultivated biological assets”.

Legend:

AWU	Annual Work Unit
CPA	Classification of Products by Activity
CPC	Central Product Classification of the UN
FISIM	Financial Intermediation Services Indirectly Measured
JFSQ	Joint Forest Sector Questionnaire (Eurostat, UNECE, FAO, ITTO)
KAU	Kind-of-Activity Unit
n.e.c.	not elsewhere classified
R&D	Research and Development
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-Added Tax

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