



## METHODOLOGICAL EXPLANATION

### FOREST ACCOUNTS

*This methodological explanation relates to the data releases:*

- Forest accounts, Slovenia, annually (First Release)

Content:

1. PURPOSE
2. LEGAL BASIS
3. UNIT DESCRIBED BY THE PUBLISHED DATA
4. SELECTION OF OBSERVATION UNIT
5. SOURCES AND METHODS OF DATA COLLECTION
6. DEFINITIONS
7. EXPLANATIONS
8. PUBLISHING
9. REVISION OF THE DATA
10. OTHER METHODOLOGICAL MATERIALS

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Last updated: 28 September 2017

## 1 PURPOSE

The purpose of the Forest Accounts data release is to show the value of forests and forest resources from an economic and environmental point of view. Forest Accounts include physical and monetary tables of forest and other wooded land area and timber stocks, economic accounts for forestry, forestry output by type of production, supply and use of forestry products and tables of forest damage and carbon stocks in woody biomass. Data represent a statistical framework for forest resources data collection and a link between environmental and economic activities related to forest resources. In the Forest Accounts, the standing and harvested timber are accounted for the forestry industry, while the value of forests and forest resources is reflected in a complex, wider environmental framework.

The purpose of the Economic Accounts for Forestry data release is to show the system of interrelated accounts describing economic developments of forestry activity: production – primary distribution of income – secondary distribution (redistribution) of income - accumulation. The purpose of release is therefore to show the satellite accounts of the National Accounts (NA) – based on the concept of economic activity. Economic Accounts for Forestry represent data basis for the calculations of income indicators and modelling. They enable the national forestry industry comparisons, international comparability of data and insight into the forestry activity, which is important for determining and directing the forestry policy.

Main variables of the Economic Accounts for Forestry survey are:

- forest and other wooded land area
- value of forest and other wooded land area
- quantity of timber stocks in forest and on other wooded land
- value of timber stocks in forest and on other wooded land
- value of forestry output,
- value of intermediate consumption,
- gross value added,
- value of factor income,
- value of operating surplus/mixed income,
- value of fixed capital consumption,
- value of gross fixed capital formation,
- employment
- value of forestry output by type of production
- value of supply and use of wood in the rough.

## 2 LEGAL BASIS

- [Annual Programme of Statistical Surveys \(LPSR\)](#) (only in Slovene)
- [National Statistics Act](#) (OJ RS, No. 45/95 and 9/01)
- Economic Accounts for Agriculture and Forestry 97, Rev. 1.1 (EAA/EAF), based on European System of Accounts 95 (ESA 1995 and ESA 2010) (international methodological manual)
- European Framework of Integrated Environmental and Economic Accounts for Forests (IEEAF) (international methodological manual).

Data sent to Eurostat do not differ from data published in a SI-STAT data portal.

### **3 UNIT DESCRIBED BY THE PUBLISHED DATA**

Unit, described in the Forest Accounts are forests and tree stands on other wooded land, which represent economic and environmental potential. For described unit, area, timber stocks, forestry output, supply and use of wood in the rough, forest damage and carbon stocks in above ground and underground wood biomass are valued.

Unit, described by the Economic accounts for forestry is forestry activity, which equals to the value of the forestry goods output, the value of forestry services output and the value of inseparable secondary non-forestry activity. Forestry activity is valued on the production and consumption side. On the basis of data the income indicators are calculated (gross value added, factor income).

### **4 SELECTION OF OBSERVATION UNIT**

Coverage is complete. Forest Accounts include all forest and other wooded land areas, which represent the basis for valuation of forest stands, other wooded land and other forest resources from an economic and wider environmental point of view, since forests, in addition to economic, perform many other roles (environmental, social, recreational,...).

In the Economic Accounts for Forestry all units, that perform forestry activity, are included in the Economic Accounts for Forestry survey. In Slovenia forestry activity is performed by: enterprises, registered in forestry activity, entrepreneurs and agricultural holdings that meet a definition of the European comparable agricultural holding that has:

- at least one hectare of utilised agricultural area, or less than 1 hectare of utilised agricultural area but:
- at least 0.1 hectare of utilised agricultural area and 0.9 hectare of forest.

Agricultural holdings perform forestry activity as a main or secondary activity.

Economic Accounts for Forestry cover the entire forestry activity, which is separable by definition, irrespective of the institutional sector, in which it takes place. Because they are based on the concept of activity, all production units that perform activity as a primary or secondary, and are registered in the same class of Standard Classification of Activities (NACE 2008), are included. Silviculture and other forestry activities (A 02.100), logging (A 02.200), harvesting of wild growing non-wood products (A 02.300) and forestry services (A 02.400) are included in forestry activity (A 02).

### **5 SOURCES AND METHODS OF DATA COLLECTION**

Forest Accounts are carried out on the basis of numerous statistical surveys:

- statistical surveys of agricultural and forestry statistics: AGRICULTURAL CENSUS (2000 and 2010), Questionnaire for survey Purchase of Wood KME-LES,

Questionnaire for survey for Forestry Activity GOZD-MEHAN, Questionnaire for survey Farm Structure Survey KME-JUNSTRK/3L (until 2015), Questionnaire for forestry on agricultural holdings (GOZD-KME) (from 2016), Questionnaire for survey Purchase of Agricultural Products KME-ODK/M,

- social statistics: Household Budget Survey (HBS), Survey on Living Conditions (SILC),
- industrial statistics: Questionnaire for Industrial Production IND-L,
- external trade statistics on imports and exports of goods,
- annual accounts of companies and organisations, final accounts of sole traders,
- national accounts: Supply-use tables,
- and administrative data sources:
  - tax records,
  - data on realisation of the national budget from Ministry of Finance (MF),
  - Record of the actual use of agricultural and forest land from Ministry of Agriculture, Forestry and Hunting (MAFF)
  - data on production of raw wood categories from Ministry of Agriculture, Forestry and Hunting (MAFF),
  - expert estimates and data on production of wood products and forestry output estimation model by type of production from Slovenian Forestry Institute (SFI),
  - data on fellings, wood increment, tending of forests, areas of special purpose forests and protective forests, change of forest edge area according to the intersections of forest stand maps, increment and removals estimations on other wooded land from Slovenian Forestry Service (SFS),
  - data on average stumpage prices and rents in forestry activity from Fund of Agricultural Land and Forests (until 2015),
  - data on average stumpage prices (Slovenian state forests company from 2016),
  - data on forest land values (Geodetic administration of the Republic of Slovenia)
  - expert estimation of the bare forest land prices (Society of the judicial appraisers for forestry),
  - and other sources.

The input data Economic Account for Forestry are collected from March to August of the current year (t), and are compiled for the previous year (t-1).

## 6 DEFINITIONS

**Forest** is a total land area, which according to the Slovene Law on forests corresponds to the land covered by forest trees or other wooded land in the form of a stand providing any function of the forest. Forest consists of stands, which can reach a height of at least 5 meters and cover a minimum area of 0.25 hectares, with canopy cover more than 75%. Forest also includes overgrown areas which are as a forest included in the spatial part of the forest management plans (if they have not been used for agricultural purposes the last 20 years and the cover of forest trees and other forest vegetation exceeds 75%).

**Other wooded land** is a total land area, which according to the Slovene Law on Forests corresponds to the land covered by forest trees or other forest vegetation, with a minimum area of 0.25 hectares, which is not forest and in the last 20 years has not been used for agricultural purposes. Land classified as forest pens for breeding wildlife

and land lines in the woods with a minimum area of 0.25 hectares are also classified in this category.

**Stumpage price** is equal to the roadside price of wood, from which the production costs (logging and harvesting) are excluded.

**Output of the forestry** industry equals to the value of the forestry goods output (standing timber, saw logs and veneer logs, wood fuel which includes wood for charcoal, pulpwood and other forestry products), the value of the forestry services output and the value of inseparable secondary non-forestry activities. It is calculated for an individual calendar year and is valued at basic prices, which means that all taxes on products and services are excluded and all subsidies on products and services are included. Output of the forestry industry is composed of market production (purchase) and own final consumption.

**Basic price** is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax on product payable, and plus any subsidy on product receivable referring to that unit.

**Intermediate consumption** is valued at purchase prices. It presents the value of all products and services that foresters purchase and use in the process of forestry output. Intermediate consumption covers all products with the life span of one year and products the value of which does not exceed EUR 500.

**Purchasers' price** is the amount actually paid by the purchaser for a unit of a good or service. It differs (is higher) from the basic price for the value of trade and transport margins and net taxes (taxes less subsidies) on products.

**Other taxes on production** include all taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of the goods and services produced or sold. They may be payable on land, fixed capital goods or the labour employed.

**Subsidies** are current non-refundable payments by the state or the European Union to resident producers, in order to influence the level of production, their prices or the compensations to production factors. **Other subsidies on production** include subsidies other than subsidies on products received by resident production units for the purpose of engaging in production. Such subsidies do not support direct quantitative production, but refer to measures or factors for limiting the production, to compensations due to toppling and natural disasters. They refer to subsidies on payroll or workforce, grants for interest relief, subsidies to reduce pollution and others.

**Gross value added** at basic prices equals the output of the forestry industry at basic prices less intermediate consumption at purchase prices. Gross value added also equals the sum of fixed capital consumption, compensation of employees, other taxes on production and gross operating surplus/gross mixed income, while other subsidies on production are subtracted.

**Net value added** at basic prices equals the output of the forestry industry at basic prices less intermediate consumption at purchase prices less fixed capital consumption. Net value added also equals the sum of compensation of employees, other taxes on production and net operating surplus/net mixed income, while other subsidies on production are subtracted.

**Fixed capital consumption** is the component of the change in the value of assets. It presents a charge, wear and tear and obsolescence of the tangible and intangible fixed assets, improvements to non-produced assets and the costs associated with the transfer of ownership in the reference period.

**Financial intermediation services indirectly measured (FISIM)** is a category that shows the income from the differences in interest rates. FISIM is a payment for the primary services of banks, i.e. taking deposits and lending, assessed as the difference between interest paid on deposits and loans on one hand and taking into account reference interest rates on the other. FISIM on loans equals actual interest on loans minus interest having regard to the reference rate. FISIM is the production of the banking sector on one hand and final or intermediate consumption of consumer sectors on the other.

**Compensation of employees** is defined as total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the accounting period. It includes gross wages and salaries (in cash and kind) and employers' social contributions (actual and imputed).

**Factor income** is the amount left to pay off the production factors (factors): works, capital, and land. Factor income equals net value added less other taxes on production plus other subsidies on production. Factor income also equals the sum of net operating surplus and compensation of employees.

**Operating surplus** is the residual category that equals factor income of companies less compensation of employees. The category can be shown either as net or gross including fixed capital consumption.

**Mixed income** is the residual category on unincorporated enterprises and self-employed persons. Mixed income can be shown either as net or gross including fixed capital consumption.

**Entrepreneurial income** equals net operating surplus/net mixed income less paid rents and interest plus received interest that refers exclusively to forestry production. The category can be shown either as net or gross including fixed capital consumption.

**Gross fixed capital formation** include production assets intended for longer use in the production process (longer than one year) and higher values (more than EUR 500 at 1995 prices). It is valued at buyer's prices without VAT.

**Forestry labour input** includes all employed and self-employed persons that provide paid and unpaid labour input to residential units which perform the characteristic forestry and inseparable non-forestry secondary activities. Due to taking into account

part-time and seasonal work, labour force and its changes are measured in annual work units (AWU). One AWU equals one person in full-time employment in agriculture in one year (1,800 hours). Employment has an important influence on the calculation of the income indicators.

**Trade margins** are the value of output of wholesale and retail traders. They are the difference between the price realised on a good purchased for resale and its purchasing or replacement value. In the use table, where the flows are shown at purchasers' prices, trade margins are included by the uses of individual types of products. In the tables where the flows are shown at basic prices, trade margins are separated from these flows and shown in the rows for trade services.

**Transport margins** are the value of transport costs paid separately by the purchaser and included in purchasers' price, but not also in basic prices of manufacturer or in trade margins of wholesale or retail trader. In the same ways as by trade margins, in the use tables, where the flows are shown in purchasers' prices, transport margins are included by the uses of individual types of products. In the tables where the flows are shown at basic prices, transport margins are separated from individual flows and shown in the rows for transport services.

**Final use** is the sum of final consumption expenditures of individual institutional sectors, gross capital formation and exports.

**Final consumption expenditures of individual institutional sectors** are composed of expenditures for final consumption of households, non-profit institutions serving households (NPISH) and government.

**Supply** is the sum of domestic output and imports.

**Use** is the sum of intermediate consumption and final use.

## **BASIC AGREGATES OF THE ECONOMIC ACCOUNTS FOR FORESTRY**

**Gross value added** = output – intermediate consumption

**Net value added** = gross value added – consumption of fixed capital

**Factor income** = net value added – other taxes on production + other subsidies on production

**Operating surplus/mixed income** = factor income – compensation of employees

**Entrepreneurial income** = operating surplus/mixed income – rents paid – interest paid + interest received

## 7 EXPLANATIONS

### 7.1 CLASSIFICATIONS

Standard Classification of Activities (NACE 2008) -

<http://www.stat.si/StatWeb/en/mainnavigation/methods-and-classifications/classifications>

Classification is applied at the aggregated level of activity.

### 7.2 DATA PROCESSING

After receiving the input data, a comparative study of data values is done on the basis of a comparison of values between years and (potentially) existing related data sources. Any uncertainty regarding the data is previously verified with input sources, any error correction is carried out in cooperation with them. After checking and correcting, data are entered in prepared tables and worksheets of the Economic Accounts for Forestry. After completing the entry, tabulating of results is obtained with the preparation of tables, arranged according to the value of certain variables in standard format for transmission to Eurostat. Procedures (imputation, inserting, weighting) for any missing responses (non-response) are not conducted in this survey. Data are at the end checked again with values from previous years by individual variables, and any significant discrepancies are further examined.

### 7.3 OTHER EXPLANATIONS

Supply and use tables are a part of the input-output system, which is an integral part of National Accounts. The tables create a breakdown of good and services account, production account and generation of income account in the system of National Accounts.

There are two identities between supply and use tables:

- identity by industry: output by industry = inputs by industry;
- identity by product: total supply by product = total use of product.

The ESA 2010 methodology has introduced changes in 25 areas, but two changes had the most important impact on Slovenian National Accounts aggregates and supply and use tables: capitalizations of expenditures on research and development and changed treatment of imports and exports of goods for processing and merchanting abroad. Expenditures on research and development are no longer treated as intermediate consumption in production processes, but as capital formation. Also own-account research and development is treated as output and capital formation. These changes lowered the intermediate consumption and increased output, consumption of fixed capital, value added, capital formation and GDP.

## 8 PUBLISHING

Data are published:

### Annually:

- SI-STAT Data Portal: Environment and natural resources – Forestry and hunting –  
[http://pxweb.stat.si/pxweb/Database/Okolje/16\\_gozdarstvo\\_lov/01\\_16227\\_gozd\\_racuni/01\\_16227\\_gozd\\_racuni.asp](http://pxweb.stat.si/pxweb/Database/Okolje/16_gozdarstvo_lov/01_16227_gozd_racuni/01_16227_gozd_racuni.asp)
- First Release (Environment, Environmental Accounts and Agriculture, forestry, fishery, Forestry): »Economic Accounts for Forestry, Slovenia, annual«
- Statistical Office of the European Union (Eurostat)

## 9 REVISION OF THE DATA

### 9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA

Only final data are published.

### 9.2 BREAKS IN TIME SERIES

There were no breaks in time series, so all time points are comparable.

## 10 OTHER METHODOLOGICAL MATERIALS

- European System of Accounts ESA 2010  
[http://ec.europa.eu/eurostat/cache/metadata/Annexes/nasa\\_10\\_f\\_esms\\_an1.pdf](http://ec.europa.eu/eurostat/cache/metadata/Annexes/nasa_10_f_esms_an1.pdf)
- Methodological explanations: Input-output tables, Supply and use tables, theme: Economy, sub-theme: National accounts  
<http://www.stat.si/StatWeb/File/DocSysFile/8106/03-076-ME.pdf>