



MINISTRY OF AGRICULTURE
OF THE CZECH REPUBLIC

Information on Forests and Forestry in the Czech Republic by **2014**

**INFORMATION
ON FORESTS AND FORESTRY
IN THE CZECH REPUBLIC
BY**

2014



CONTENTS

| | | | |
|---|-----------|--|-----------|
| 1 General Macroeconomic Conditions in the Czech Republic and Forestry Position in National Economy | 5 | 4 Forest Sector Economy | 16 |
| 1.1 General Macroeconomic Conditions of the National Economy | 5 | 4.1 Economic Situation of Forest Owners | 16 |
| 1.2 Forest Ownership Structure | 7 | 4.2 Social Aspects in the Forest Sector | 16 |
| 2 Forest Sector Overview | 9 | 4.3 State Budget Funds for the Forest Sector | 16 |
| 2.1 Forest Reproductive Material | 9 | 5 Timber Market | 20 |
| 2.2 Forest Regeneration and Reforestation | 10 | 5.1 Domestic Timber Market | 20 |
| 2.3 Timber Harvest | 10 | 5.2 Timber Export and Import | 20 |
| 2.4 Certification of Sustainable Forest Management | 10 | 6 Other Forest-based Activities and Sectors | 22 |
| 3 Major Indicators in Timber Production | 12 | 6.1 Game Management | 22 |
| 3.1 Changes in Forest Land Area | 12 | 6.2 Timber Processing Industry | 22 |
| 3.2 Forest Categories by Their Functions | 12 | 6.3 Pulp and Paper Industry | 23 |
| 3.3 Species Composition of Forests | 13 | 7 Abbreviations | 25 |
| 3.4 Growing Stock and Increments | 13 | 8 Contacts to Selected Forestry Organisations | 27 |





I GENERAL MACROECONOMIC CONDITIONS IN THE CZECH REPUBLIC AND FORESTRY POSITION IN NATIONAL ECONOMY

I.1 General Macroeconomic Conditions of the National Economy

In the year 2014, the Czech Republic surpassed the two-year-long economic recession and recorded a year-on-year growth in GDP by 2.0% at constant prices. The real GDP growth in the Czech Republic in 2014 was higher than both in the euro area¹ (0.9%) and the entire EU 28 (1.3%).

As stated by Eurostat, the Czech Republic reached 82% of the average GDP volume index per capita in the purchasing parity of the EU 28 in the year 2013. Expressed in euro per capita, the country reached 56% of the EU 28² average in 2013, while in 2014, in relation with the intervention of the Czech National Bank in November 2013 and subsequent weakening of the Czech koruna against the euro, it was 54%.



Macroeconomic indicators of national economic development

| National economy | Unit | 2013 | 2014 |
|---|--------------------|---------|---------|
| GDP in current prices | CZK billion | 4 086.3 | 4 266.1 |
| | year-on-year index | 101.0 | 104.4 |
| GDP in constant prices 2005 (adjusted for season variations) | year-on-year index | 101.9 | 98.8 |
| Relative GDP per capita ¹⁾ | EU 28 = 100 | 82 | |
| Average monthly earnings (nominal) ²⁾ | CZK | 25 078 | 25 686 |
| | year-on-year index | 100 | 102.4 |
| Average inflation rate | % | 1.4 | 0.4 |
| Mean interest rates on bank credits ³⁾ | % | 3.19 | 3.00 |
| Trade balance ⁴⁾ | CZK billion | 167.0 | 238.9 |
| Current account of balance of payments | CZK billion | -21.8 | 26.1 |
| Balance of the state budget | CZK billion | -81.3 | -77.8 |
| Consolidated gross debt in the sector of state institutions ⁵⁾ | CZK billion | 1 839.7 | 1 816.1 |
| Deficit in the sector of state institutions ⁵⁾ | % GDP | -1.16 | -2.00 |
| Debt in the sector of state institutions ⁵⁾ | % GDP | 45.02 | 42.57 |
| Unemployment rate (mean) ⁶⁾ | % | 7.0 | 6.1 |
| Parity (mean) - CZK/€ | CZK | 25.974 | 27.533 |
| - CZK/\$ | CZK | 19.565 | 20.746 |

¹⁾ Eighteen EU Member States formed the euro area in 2014 - Belgium, Finland, France, Ireland, Italy, Luxembourg, Germany, the Netherlands, Portugal, Austria, Spain, Greece, Slovenia, Cyprus, Malta, Slovakia, Estonia, and Latvia.

²⁾ Eurostat no longer publishes the data for the former EU 15, i.e. the Member States before the enlargement of 1 May 2004.

Notes:

¹⁾ Data published by 2 April 2014.

²⁾ Purchasing power parity, preliminary data for 2013 (Eurostat).

³⁾ Average monthly gross nominal earnings on a full-time equivalent number of employees in the national economy.

⁴⁾ Interest rates on CZK-denominated loans - situations of trades, 12-month average.

⁵⁾ Balance in the sector of state institutions (ESA 1995).

⁶⁾ Share of unemployed persons in total labour force by Eurostat and ILO.

Source: Czech Statistical Office, Czech National Bank, Eurostat


Share of agriculture¹⁾, forestry²⁾, fishery³⁾ and food industry⁴⁾ on the GVA in basic prices (%)

| Year | Agriculture | Forestry | Fishery | Food industry |
|-------------------------|-------------|----------|---------|---------------|
| Current prices | | | | |
| 2008 | 1.57 | 0.55 | 0.012 | 2.23 |
| 2009 | 1.30 | 0.51 | 0.014 | 2.48 |
| 2010 | 1.08 | 0.59 | 0.013 | 2.33 |
| 2011 | 1.62 | 0.74 | 0.020 | 2.31 |
| 2012 | 1.81 | 0.76 | 0.017 | 2.25 |
| 2013 | 1.81 | 0.78 | 0.019 | 2.27 |
| 2014 | 1.82 | 0.78 | 0.020 | 2.25 |
| Constant prices of 2010 | | | | |
| 2008 | 1.03 | 0.61 | 0.011 | 2.25 |
| 2009 | 1.41 | 0.63 | 0.013 | 2.32 |
| 2010 | 1.08 | 0.59 | 0.013 | 2.33 |
| 2011 | 1.04 | 0.62 | 0.020 | 2.44 |
| 2012 | 1.09 | 0.63 | 0.017 | 2.30 |
| 2013 | 0.96 | 0.62 | 0.019 | 2.35 |
| 2014 | 1.01 | 0.61 | 0.018 | 2.32 |

Notes:¹⁾ CZ-NACE 01 Crop and animal production, hunting and related activities.²⁾ CZ-NACE 02 Forestry and logging³⁾ CZ-NACE 03 Fishing and aquaculture.⁴⁾ CZ-NACE 10+11+12 Manufacture of food products, beverages and tobacco products.**Source:** Czech Statistical Office, quarterly accounts results; revised data

1.2 Forest Ownership Structure

Equally to the preceding years, the year 2014 did not bring any substantial changes in the ownership structure of forest land.

Most forest land is owned by the state and is predominantly managed by Lesy České Republiky. Private entities and municipalities represent other major forest owners, while the remaining forms of ownership are rather marginal and statistically less significant. More substantial modifications in the ownership structure are to come in the following years as a result of restitution of forest property to Churches.



Forest ownership structure in the Czech Republic 2014

| Ownership | | Area of forest stands | |
|--|--|-----------------------|--------|
| | | (ha) | % |
| State forests | | 1 551 441 | 59.62 |
| of which | LČR, s. p. | 1 305 343 | 50.16 |
| | Vojenské lesy a statky ČR, s. p. (military forests) | 123 915 | 4.76 |
| | Ministry of the Environment (National Parks) | 95 031 | 3.65 |
| | Regional forests (secondary schools and other) | 1 649 | 0.06 |
| | Other | 24 229 | 0.93 |
| | Ministry of the Environment (Nature Conservation Agency of the Czech Republic) | 1 274 | 0.05 |
| Legal persons | | 77 729 | 2.99 |
| Municipal forests | | 440 220 | 16.92 |
| Forests owned by Churches and other religious entities | | 1 621 | 0.06 |
| Forest cooperatives and associations | | 30 530 | 1.17 |
| Forests owned by individuals | | 500 851 | 19.25 |
| Other forests (not listed elsewhere) | | 4 | 0.00 |
| TOTAL | | 2 602 395 | 100.00 |

Source: FMI





2 FOREST SECTOR OVERVIEW

2.1 Forest Reproductive Material

Recognised Sources of Forest Reproductive Material

The central records of recognised sources of forest reproductive material in the Czech Republic are managed by the Forest Management Institute (hereinafter referred to as the “FMI”), an authorised person, which keeps the so-called Register of Recognised Sources of Reproductive Material. For each approved unit, the Institute registers the tree species, category of reproductive material, type of source, registration number, location, altitude or altitudinal zone, area, origin, and in case of tested reproductive material also information whether the organism is genetically modified or not.

The Register of Recognised Sources of Reproductive Material is a web application named ERMA2, with its public section accessible through the web portal of the Ministry of Agriculture www.eagri.cz.

Sources of identified reproductive material

As at 31 December 2014, the registered reduced tree area (i.e. the tree area fully useable for standing volume production) amounted to 71 002.50 ha of source type “stand” in total 7 485 recognised units. Total 478 recognised units of type “seed source” were registered.

The volume of identified reproductive material has been constantly increasing in the recent years, in particular negatively affecting the total area of selected reproductive material. As this category is the least convenient source of reproductive material, the mentioned trend is considered unfavourable. The use of forest reproductive material (hereinafter referred to as the “FRM”) from these sources for forest regeneration or reforestation is, in long terms, the worst possible investment forest owners can make.

Sources of selected reproductive material

As at 31 December 2014, the registered reduced tree area was 71 109.22 ha of source type “stand” in 6 991 recognised units. Approved stands of phenotype category “A” covered 8,514.79 ha, while the phenotype category “B” represented an area of 62 594 ha.

Sources of qualified reproductive material

Parent trees / clones

As at 31 December 2014, the Register of Recognised Sources of Reproductive Material recorded total 8 688 clones, namely 6 080 clones of conifers and 2 608 clones of broadleaves. The Register comprises clones of total 34 tree species, i.e. 10 conifers and 24 broadleaves.

Clones are mainly registered as recognised for the purposes of establishment of seed orchards. Projects involving establishment of seed orchards thus relate to such registration of clones.

Seed orchards

At 31 December 2014, the Register of Recognised Sources of Reproductive Material listed total 130 recognised seed orchards of total 308.35 ha, which are established for 9 conifer and 13 broadleaf tree species.

Clone mixtures

Total 25 recognised clone mixtures for 5 tree species were registered in the Czech Republic in 2014, covering an overall area of 17.77 ha. In the same year, the FMI approved one new clone mixture of *Populus nigra*.

Sources of tested reproductive material

The first source of reproductive material was recognised as “tested” in 2005, which was a mixture of poplar clones, sections *Aigeiros* and *Tacamahaca* established and managed by the Forestry and Game Management Research Institute (hereinafter referred to as the “FGMRI”) – Research Station Kunovice. This source of tested reproductive material may be utilised in any part of the country with respect to the natural climatic conditions. All the currently existing recognised sources of tested reproductive material of cultivated poplars originate from this source. No source of tested reproductive material of any tree species significant for forestry has been approved yet.

Forest Nursery Practice

Licences

The basic prerequisite for handling with FRM is a respective licence. As at 31 December 2014, the central register of seed suppliers of the Ministry of Agriculture listed total 575 licence holders, namely 275 individuals and 300 legal persons.

Based on the data submitted to the authorised entity (FMI) by licence holders entitled to marketing the forest reproductive material, there were total 252 suppliers owning at least one production plant operating in the sector of forest nursery practice in 2014.

Area of forest nurseries

On the date of 31 December 2014, the total area of forest nurseries marketing FRM amounted to 1 816.52 ha, the actual production area covering 1 453.73 ha. In addition to open production areas, the records listed 3.90 ha of glass greenhouses, 18.9 ha of plastic greenhouses and 9.22 ha of hotbeds.

The National Programme of Conservation and Reproduction of Forest Tree Species Gene Pool

On 1 July 2014, the Ministry of Agriculture launched the National Programme of Conservation and Reproduction of Forest Tree Species Gene Pool for the period 2014-2018 (hereinafter referred to as the “National Programme”).

The National Programme lays down the conditions and practice in conservation and reproduction of the gene pool of forest tree species native to the Czech Republic and complements the legal and organisational framework indispensable for efficient and sustainable use of the gene sources of forest tree species in conformity with the needs of forestry and the principles of sustainable forest management. As part of the national wealth, the forest tree species gene pool is of high importance for the future of all forests in the territory of the Czech Republic, whether we consider its crucial influence on the future yields or the climate change and the adaptability and ecological stability of forest stands (ecosystems).

The conditions of conservation and reproduction of forest tree species gene pool were established by an amendment to the Act on Marketing of the Reproductive Material of Forest Woody Plants (Act No. 149/2003 as amended by Act No. 232/2013 Coll.), which also served to put into force the actual National Programme. The rules for granting and use of financial aid for the management and utilisation of genetic resources of forest tree species are defined for individual participants of the National Programme in the so-called "Principles" issued for the respective purposes by the Ministry of Agriculture in August 2014.

The FMI is responsible for coordination of the National Programme, which shall promote the existence and management of genetic bases, existence and management of sources of qualified reproductive material (family parent tree, ortet or clone, seed orchard and clone mixture) and selected reproductive material. Another significant measure towards conservation and reproduction of the forest tree species gene pool involves support to establish and operate the National Bank of Seeds and Explants of forest tree species. Under the decision of the Ministry of Agriculture the responsibility to operate this Bank was delegated to the FGMRI.

2.2 Forest Regeneration and Reforestation

Against the preceding year, the area of regenerated forest stands noted a slight decline to 25 929 ha. Nevertheless, it remains comparable to the previous years and reflects the total volume of logging in the past period.

In long terms, the share of broadleaves in artificial regeneration may be considered stable. The year 2014 recorded use of 38.6% of broadleaves in total artificial regeneration, representing a minor decrease by 0.7%.



Forest regeneration (ha)

| Method of regeneration | 2000 | 2010 | 2012 | 2013 | 2014 |
|------------------------|--------|--------|--------|--------|--------|
| Artificial | 21 867 | 21 859 | 19 903 | 19 920 | 20 203 |
| of which Replanting | 4 371 | 3 087 | 3 751 | 4 327 | 4 634 |
| Natural | 3 422 | 5 127 | 5 561 | 6 112 | 5 726 |
| Total | 25 309 | 26 986 | 25 464 | 26 032 | 25 929 |

Source: Czech Statistical Office

2.3 Timber Harvest

The raw timber harvested in the Czech Republic in 2014 totalled 15.48 million m³. Compared to 2013, this was 0.15 million m³ more. Salvage cutting substantially contributed to that volume with its share of 29% and totalled 4.5 million m³, which rather worsened the conditions for forest management planning.

Comparing the volumes of logged timber in individual species, the volume of harvested broadleaves stagnated, reaching approximately 13% of total felling. The proportion between harvested hardwood and softwood is mainly given by the demand on the timber market and by the structure of available reserves in mature stands.

Total annual timber harvest

| Harvest | Unit | 2000 | 2010 | 2012 | 2013 | 2014 |
|--------------------|------------------------|-------|-------|-------|-------|-------|
| Conifers | million m ³ | 12.85 | 15.07 | 13.06 | 13.23 | 13.47 |
| Broadleaves | | 1.59 | 1.67 | 2.01 | 2.10 | 2.00 |
| Total | | 14.44 | 16.74 | 15.06 | 15.33 | 15.48 |
| Per capita | m ³ | 1.41 | 1.59 | 1.43 | 1.46 | 1.47 |
| Per 1 ha of forest | | 5.48 | 6.30 | 5.66 | 5.76 | 5.80 |

Note: Volumes are given in m³ under bark, minimum top diameter 7cm.

Source: Czech Statistical Office

2.4 Certification of Sustainable Forest Management

Overview of certified forests in the Czech Republic

| Ownership | PEFC | FSC |
|-------------------|--------------------------------|--------|
| | Area of certified forests (ha) | |
| State forests | 1 483 733 | 35 116 |
| Individuals | 89 184 | 4 |
| Legal entities | 55 685 | 10 384 |
| Municipal forests | 188 807 | 4 133 |
| Total | 1 817 409 | 49 637 |

Source: FMI



3 MAJOR INDICATORS IN TIMBER PRODUCTION

3.1 Changes in Forest Land Area

The total area of forest land in the Czech Republic has been constantly increasing. This is partly thanks to afforestation

of new land, which exceeds the extent of transformation of forest land for other purposes, and partly thanks to the improvements as to the precision of data from the Land Register. In 2014, the forest land area increased in year-on-year terms by 2 645 ha.

Changes in forest land area (ha)

| Year | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------|-----------|-----------|-----------|-----------|-----------|
| Forest land area | 2 657 376 | 2 659 837 | 2 661 889 | 2 663 731 | 2 666 376 |

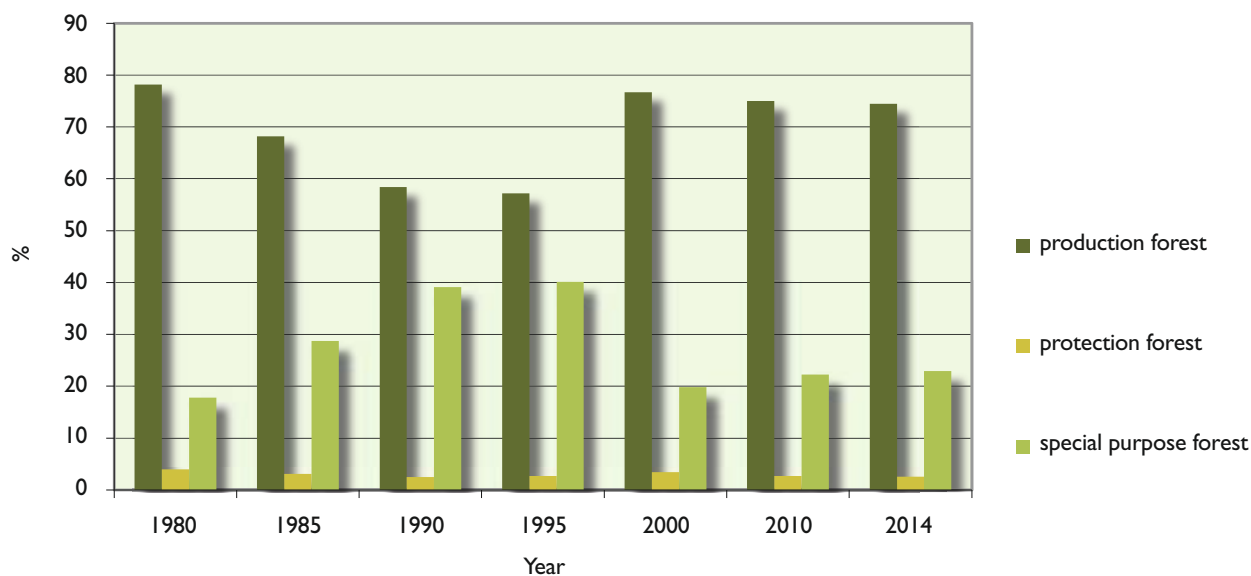
Source: Czech Office for Surveying, Mapping and Cadastre

3.2 Forest Categories by Their Functions

Individual categories of forests are distinguished by their prevailing functions. A slight but persistent increment in the category of special purpose forests may be observed. Among other factors,

this is caused by increasing demands of the society on non-wood forest functions. The total area of protection forests grew by 1 452 ha against 2013, reversing the declining trend of the previous years. Taking into account the relatively stable natural conditions, it may be assumed that the existing potential to designate new protection forests is being utilised more efficiently.

Development of forest categories



Source: FMI



3.3 Species Composition of Forests

The total area of main coniferous species, i.e. spruce, pine and larch, further declined, while the share of fir has been continuously showing a slight growth. In contrast, the share of broadleaves, particularly beech, has been augmenting.

When assessing the species biodiversity of national forests, the overall proportion of individual tree species is the major

indicator, along with the distribution of forest stand mixtures within individual units of spatial arrangement of forests. The proportion between individual tree species within a unit has been continuously increasing in favour of mixed forest stands and forest stands with prevailing broadleaves, which was also the case in the year 2014. This increasing trend is a result of foresters' permanent efforts to acquire an optimum species composition of forests, a practice that enjoys a long-term support under a goal-oriented national subsidy policy.

Tree species composition of total timber land (ha and %)

| Species | Year | | | | |
|-----------------------------|-------------------------|-----------|-----------|-----------|-----------|
| | 2000 | 2010 | 2012 | 2013 | 2014 |
| | Timber land in ha and % | | | | |
| Norway spruce | 1 397 012 | 1 347 239 | 1 334 417 | 1 327 398 | 1 319 733 |
| | 54.1 | 51.9 | 51.4 | 51.1 | 50.7 |
| Fir | 23 138 | 25 869 | 26 859 | 27 509 | 28 251 |
| | 0.9 | 1.0 | 1.0 | 1.1 | 1.1 |
| Pine | 453 159 | 436 308 | 432 915 | 431 721 | 429 636 |
| | 17.6 | 16.8 | 16.7 | 16.6 | 16.5 |
| Larch | 97 170 | 100 761 | 100 956 | 100 917 | 100 749 |
| | 3.8 | 3.9 | 3.9 | 3.9 | 3.9 |
| Other conifers | 4 586 | 6 352 | 6 941 | 7 048 | 7 755 |
| | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 |
| Total conifers | 1 975 065 | 1 916 529 | 1 902 088 | 1 894 593 | 1 886 124 |
| | 76.5 | 73.9 | 73.2 | 72.9 | 72.5 |
| Oak | 163 761 | 178 466 | 182 327 | 184 180 | 184 441 |
| | 6.3 | 6.9 | 7.0 | 7.1 | 7.1 |
| Beech | 154 791 | 189 998 | 198 652 | 202 638 | 207 595 |
| | 6.0 | 7.3 | 7.7 | 7.8 | 8.0 |
| Birch | 74 560 | 72 264 | 71 026 | 71 628 | 71 779 |
| | 2.9 | 2.8 | 2.7 | 2.8 | 2.8 |
| Other broadleaves | 183 696 | 209 559 | 213 145 | 215 602 | 219 363 |
| | 7.1 | 8.1 | 8.2 | 8.3 | 8.4 |
| Total broadleaves | 576 808 | 650 287 | 665 151 | 674 048 | 683 178 |
| | 22.3 | 25.1 | 25.6 | 25.9 | 26.3 |
| Total excl. unstocked areas | 2 551 873 | 2 566 816 | 2 567 239 | 2 568 641 | 2 569 302 |
| | 98.8 | 98.9 | 98.9 | 98.8 | 98.7 |

Source: FMI

3.4 Growing Stock and Increments

Compared to 1930, the total growing stock in Czech forests more than doubled. The factors contributing to the fact are a higher increment and more precise determination using new methods and instruments implemented in the 60's and 70's of the 20th century.

The total growing stock in Czech forests continued to extend also in the year 2014. This was thanks to a slight increase in stand stocking, an increase in the percentage of older stands, and a growth in the current increment. However, not all the stock is equally accessible for felling. The volume of felled timber in protection and special purpose forests is limited by fulfilment of protective functions or by special purpose management. In most cases, no felling operations may be carried out in forests

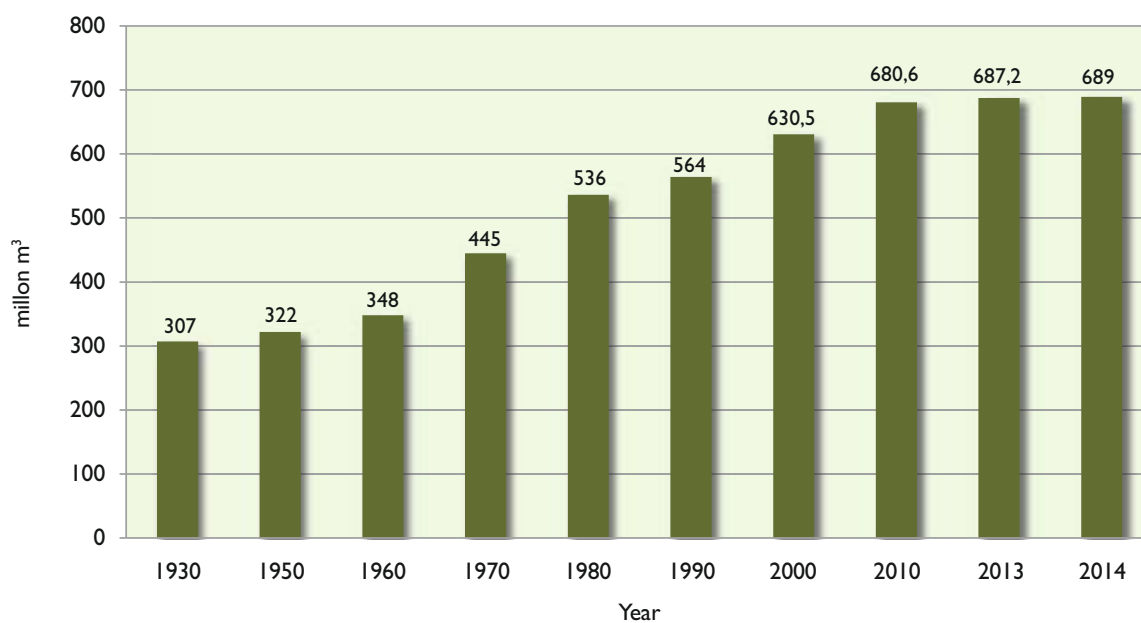
with an increased protection regime, in nature reserves, and in first zones of national parks. The average growing stock per ha of forest land (i.e. growing stock on timber land including clear-cuts) is 265 m³.



Growing stock volume (million m³)

| Growing stock volume | | | | | | | | | |
|------------------------|------|------|------|------|------|------|-------|-------|-------|
| Year | 1930 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2014 |
| million m ³ | 307 | 322 | 348 | 445 | 536 | 564 | 630.5 | 680.6 | 689.0 |

Note: Volume in m³ u. b., min. top diameter of 7 cm.

Development of growing stock volume

Source: FMI

Total mean and total current annual increments

| Increment | Year | | | | | | |
|---------------|---|------|------|------|------|------|------|
| | 1950* | 1970 | 1980 | 1990 | 2000 | 2010 | 2014 |
| | million m ³ u.b. annually | | | | | | |
| Total mean | 9.0 | 13.5 | 16.0 | 16.3 | 16.8 | 17.7 | 17.9 |
| Total current | 9.2 | 14.8 | 17.1 | 17.0 | 19.8 | 21.2 | 21.8 |
| | m ³ u. b. per ha of timber land annually | | | | | | |
| | 1950* | 1970 | 1980 | 1990 | 2000 | 2010 | 2014 |
| | | | | | | | |
| Total mean | 3.7 | 5.3 | 6.2 | 6.3 | 6.5 | 6.8 | 6.9 |
| Total current | 3.8 | 5.8 | 6.7 | 6.6 | 7.7 | 8.2 | 8.4 |

Note: * Including forests under 10 ha of size, forests not intended for wood supply and afforested non-forest land.

Source: FMI





4 FOREST SECTOR ECONOMY

4.1 Economic Situation of Forest Owners

The economic situation of forest owners involved in forest management and other forest-based activities noted further improvement following the positive trend from 2010–2013 and recovering from a serious recession with unfavourable economic results in 2006–2009. Forests owned by the state repeatedly generate the highest profit (including granted contributions and subsidies). In 2014, this was CZK 5 884/ha, followed by private forests (CZK 2 541/ha). Municipal forests recorded the lowest profit (CZK 1 801/ha). The considerable improvement in the economic situation of forest owners was mainly induced by growing average prices of decisive timber assortments (in the Czech Republic and mainly abroad).

Average prime costs of selected operations (CZK/unit)

| Operation | Unit | 2011 | 2012 | 2013 | 2014 |
|------------------------------|----------------|--------|--------|--------|--------|
| Forest regeneration | ha | 77 825 | 66 221 | 66 469 | 66 747 |
| Tending of young plantations | ha | 9 173 | 9 051 | 8 881 | 8 650 |
| Juvenile thinning | ha | 8 401 | 8 493 | 8 882 | 9 083 |
| Forest protection | ha | 90 | 103 | 102 | 131 |
| Total silviculture | of forest | 1 822 | 1 820 | 1 797 | 1 949 |
| Felling | m ³ | 202 | 193 | 191 | 195 |
| Skidding | m ³ | 230 | 229 | 222 | 228 |
| Hauling | m ³ | 181 | 174 | 172 | 156 |
| Road repairs and maintenance | ha of forest | 731 | 737 | 856 | 762 |

Source: Ministry of Agriculture

Profit of forest owners only from forest activities (excl. subsidies for forests management) (CZK/ha)

| Profit before taxation | 2011 | 2012 | 2013 | 2014 |
|------------------------|-------|-------|-------|-------|
| State forests | 4 017 | 4 119 | 3 822 | 5 910 |
| Municipal forests | 2 696 | 2 523 | 2 881 | 3 310 |
| Private forests | 3 195 | 3 371 | 4 008 | 3 899 |
| Average | 3 610 | 3 698 | 3 724 | 4 984 |

Source: Ministry of Agriculture

Profit of forest owners only from forest activities (including subsidies for forests management) (CZK/ha)

| Profit before taxation | 2011 | 2012 | 2013 | 2014 |
|------------------------|-------|-------|-------|-------|
| State forests | 4 110 | 4 209 | 3 955 | 5 989 |
| Municipal forests | 3 305 | 2 937 | 3 300 | 3 814 |
| Private forests | 3 515 | 3 702 | 4 276 | 4 122 |
| Average | 3 839 | 3 895 | 3 933 | 5 166 |

Source: Ministry of Agriculture

4.2 Social Aspects in the Forest Sector

Labour Market in Forestry

Number of employees in forestry

| | 2011 | 2012 | 2013 | 2014 |
|---------------------|--------|--------|--------|--------|
| Total forest sector | 14 138 | 13 792 | 13 339 | 13 320 |
| of which | | | | |
| State | 4 937 | 4 967 | 4 997 | 5 044 |
| Private | 7 162 | 6 823 | 6 317 | 6 285 |
| Municipal | 2 039 | 2 002 | 2 025 | 1 991 |

Source: Czech statistical office

Average Earnings in Forestry

Compared to the preceding year, the average monthly earnings of individuals working in the forest-based sector rose by 3.9% and thus surpassed those in industry (by 1.1%) and in the national economy (by 1.5%). Nevertheless, in absolute numbers, the average earnings of individuals in forestry and forest-based activities, in both entrepreneurial and non-entrepreneurial entities, still lag behind the average earnings in industry (by CZK 1 246) and in the national economy (by CZK 279). The highest average earnings in forestry are recorded in the public sector, where they surpass the average of the private sector by CZK 7 246 and of the sector of municipal forests by CZK 6 705.

Average monthly earnings (CZK)

| | 2011 | 2012 | 2013 | 2014 | 2014/2013 |
|------------------------|--------|--------|--------|--------|-----------|
| | CZK | | | | % |
| Forestry | 22 154 | 23 037 | 23 628 | 24 559 | 103,9 |
| of which | | | | | |
| State forests | 26 346 | 27 696 | 28 048 | 28 981 | 103,3 |
| Private forests | 19 976 | 20 385 | 20 968 | 21 735 | 103,7 |
| Municipal forests | 19 655 | 20 518 | 21 021 | 22 276 | 106,0 |
| Industry | 24 068 | 24 908 | 25 104 | 25 805 | 102,8 |
| National economy total | 23 628 | 24 272 | 24 246 | 24 838 | 102,4 |

Source: Czech statistical office

4.3 State Budget Funds for the Forest Sector

Government Financial Obligations Subject to the Forest Act

In 2014, the state allocated total CZK 203.9 million under the obligations determined by the Forest Act. The amount of CZK 12.4 million was granted as part payment to cover the increased costs of planting the minimum number of soil

improving and stabilising tree species on the total area of 2 297 ha of regenerated forest stands. CZK 155.1 million was paid to cover the activities of licensed forest managers who manage forests of up to 50 ha in case these did not contract their own licensed forest manager. The allocated amount corresponds the work of licensed forest managers on total 403 371 ha of forests. The state reimburses the costs of forest management guidelines to forest owners who own a total forest area of up to 50 ha and do not have a forest management plan drawn up for their property. The overall amount allocated for such forest owners reached CZK 11.9 million and provided for management guidelines for total 31 337 ha of forest land. The data stated above apply to forest management guidelines valid from 1 January 2015 with the funds allocated in 2014. An amount of CZK 24.5 million was granted to support measures relating to soil improvement and torrent control carried out upon a decision of a state forest administration body in the public interest. Such measures were adopted to control torrents of 6 km in length, and to build or repair water reservoirs of total water retention capacity of 16 thousand m³. No measures involving forest soil improvement through water regime control were taken in 2014. The data regarding the above-mentioned measures relate to actions completed in 2014 and supported from the state budget in the preceding years.

Government financial obligations subject to the Forest Act (CZK million)

| Activities | 2011 | 2012 | 2013 | 2014 |
|--|-----------|-------|-------|-------|
| | Allocated | | | |
| Soil-improving and stabilising species | 14.7 | 12.3 | 11.3 | 12.4 |
| Licensed forest managers | 157.2 | 156.5 | 155.2 | 155.1 |
| Forest management guidelines | 26.5 | 20.6 | 17.6 | 11.9 |
| Soil improvement and torrent control | 38.0 | 34.8 | 28.0 | 24.5 |
| Total | 236.4 | 224.2 | 212.1 | 203.9 |

Source: Ministry of Agriculture

State Services Supporting Forest Management

The state provides services free of charge to help forest owners improve the standards of forest management and ensure forest protection against damaging agents. Within its consulting services, the state mainly supplies forest owners with up-to-date information concerning preventive protection of their forests and potential protective measures against damaging agents.

State services supporting forest management (CZK million)

| Type of service | 2011 | 2012 | 2013 | 2014 |
|---|------|------|------|------|
| Aerial liming and fertilisation | 1.7 | 0.0 | 0.0 | 0.0 |
| Aerial fire control services | 27.7 | 27.7 | 1.2 | 1.2 |
| Large-scale measures in forest protection | 0.7 | 0.7 | 0.0 | 0.0 |
| Consultancy | 35.7 | 21.6 | 19.5 | 7.5 |
| Other services | 8.8 | 0.1 | 0.8 | 4.9 |
| Total | 74.6 | 50.1 | 21.5 | 13.6 |

Source: Ministry of Agriculture

Subsidies from the State Budget

Support in form of subsidies granted for forest management and selected game management activities was newly provided from the state budget under the Government Decree No. 30/2014 Coll., on determining binding rules for granting subsidies to forest management and selected game management activities (hereinafter referred to as the "Government Decree"). In compliance with Section Two of the Government Decree, such subsidies are granted to forest owners (or persons having the rights and obligations of a forest owner as established by the Forest Act), and in compliance with Section Three of the Government Decree, they are granted to users of hunting grounds, owners of hunting dogs or owners of breeding stations of hunting birds of prey.



Subsidies for forest management and specific game management activities granted from the budget of the Ministry of Agriculture and the budgets of individual regions by their purpose and ownership category (CZK million)

| Purpose of subsidy | Ownership category | 2011 | 2012 | 2013 | 2014 |
|--|--------------------|-------|-------|-------|-------|
| Regeneration of forests affected by air pollution | Municipal | 8.5 | 7.3 | 4.3 | 9.9 |
| | State | 0 | 0 | 0 | 0 |
| | Other | 2.1 | 1.4 | 0.9 | 8.1 |
| | Total | 10.5 | 8.7 | 5.2 | 18.0 |
| Regeneration, establishment and tending of stands | Municipal | 76.5 | 68.8 | 43.0 | 59.0 |
| | State | 0.5 | 0.2 | 0.4 | 0.4 |
| | Other | 132.4 | 118.5 | 91.7 | 93.1 |
| | Total | 209.5 | 187.5 | 135.1 | 152.5 |
| Green and environmentally friendly technologies | Municipal | 4.9 | 4.3 | 3.7 | 2.9 |
| | State | 0.08 | 0.05 | 0.07 | 0.0 |
| | Other | 12.5 | 13.0 | 14.6 | 8.7 |
| | Total | 17.4 | 17.3 | 18.4 | 11.6 |
| Subsidies for hunting grounds | Municipal | 0.01 | 0.01 | 0.01 | 0 |
| | State | 0.7 | 0.8 | 0.8 | 0.6 |
| | Other | 8.9 | 10.0 | 9.7 | 8.3 |
| | Total | 9.5 | 10.8 | 10.5 | 8.9 |
| Elaboration of forest management plans | Municipal | 8.5 | 10.2 | 6.7 | 9.8 |
| | State | 0 | 0 | 0 | 0 |
| | Other | 12.9 | 15.2 | 8.7 | 8.5 |
| | Total | 21.4 | 25.4 | 15.4 | 18.3 |
| Other forest management | Municipal | 0.06 | 0.06 | 0.08 | 0 |
| | State | 1.7 | 1.4 | 1.7 | 1.8 |
| | Other | 0.5 | 0.2 | 0.2 | 0.1 |
| | Total | 2.2 | 1.6 | 1.9 | 1.9 |
| Breeding and training of national hunting dog breeds and hunting birds of prey | Municipal | 0 | 0 | 0 | 0 |
| | State | 0 | 0 | 0 | 0 |
| | Other | 2.3 | 2.1 | 1.9 | 2.1 |
| | Total | 2.3 | 2.1 | 1.9 | 2.1 |
| Total subsidies | Municipal | 98.5 | 90.4 | 57.8 | 81.6 |
| | State | 2.9 | 2.5 | 3.0 | 2.8 |
| | Other | 171.6 | 160.6 | 127.6 | 129.0 |
| | Total | 272.9 | 253.5 | 188.4 | 213.4 |

Source: Ministry of Agriculture



5 TIMBER MARKET

5.1 Domestic Timber Market

The total timber supplies experienced a year-on-year rise by 145 thousand m³ amounting to 15 476 thousand m³, while softwood supplies represented 13 472 thousand m³ and hardwood supplies totalled 2 004 thousand m³.

Timber supplies (1 000 m³)

| Supplied assortments (excl. imports) | | 2012 | 2013 | 2014 |
|--------------------------------------|----------|--------|--------|--------|
| Roundwood ^{x)} | | 8 621 | 8 645 | 8 548 |
| of which | Softwood | 7 911 | 7 925 | 7 955 |
| | Hardwood | 710 | 720 | 593 |
| Pulpwood | | 4 420 | 4 504 | 4 817 |
| of which | Softwood | 3 949 | 4 037 | 4 351 |
| | Hardwood | 471 | 467 | 466 |
| Fuelwood | | 2 020 | 2 182 | 2 111 |
| of which | Softwood | 1 196 | 1 267 | 1 166 |
| | Hardwood | 824 | 915 | 945 |
| Total timber supplies | | 15 061 | 15 331 | 15 476 |
| of which | Softwood | 13 056 | 13 229 | 13 472 |
| | Hardwood | 2 005 | 2 102 | 2 004 |

Note: x) Including pole and mine timber.

xx) Including groundwood.

The volumes of logging residues and chips approximately 1.9 million m³ in 2012, 1.8 million m³ in 2013 and 1.8 million m³ in 2014 are not included in the total supplies of roundwood.

Source: Czech Statistical Office, Ministry of Agriculture

5.2 Timber Export and Import

Timber exports and imports in the Czech Republic (1 000 m³)

| Assortment | | Exports | Imports |
|-------------------------------------|--------|---------|---------|
| Softwood roundwood and pulp | | 4 601 | 2 058 |
| of which | Spruce | 3 757 | 1 740 |
| | Pine | 609 | 265 |
| | Others | 235 | 53 |
| Hardwood roundwood and pulp | | 330 | 381 |
| of which | Oak | 28 | 101 |
| | Beech | 246 | 139 |
| | Poplar | 34 | 7 |
| | Birch | 21 | 73 |
| | Others | 1 | 61 |
| Industrial roundwood | | 4 931 | 2 439 |
| Charcoal | | 2 | 20 |
| Fuelwood | | 169 | 22 |
| Chips, particles | | 316 | 308 |
| Sawdust, Wood Waste, Residues | | 205 | 150 |
| Wood pellets and other agglomerates | | 1 294 | 592 |
| Total | | 6 917 | 3 531 |

Source: Czech Statistical Office, Ministry of Agriculture



Timber exports and imports in the Czech Republic

| | Exports | Imports | Balance | Exports | Imports | Balance | Exports | Imports |
|----------|-------------|---------|---------|----------------------|---------|---------|----------------------------------|---------|
| | CZK million | | | 1 000 m ³ | | | Average price CZK/m ³ | |
| Total | 10 909 | 5 323 | 5 586 | 6 917 | 3 541 | 3 376 | 1 577 | 1 503 |
| of which | | | | | | | | |
| | 10 834 | 4 685 | 6 149 | 6 877 | 2 994 | 3 883 | 1 575 | 1 505 |
| Germany | 5 030 | 622 | 4 511 | 3 245 | 465 | 2 780 | 1 550 | 1 337 |
| Austria | 5 255 | 125 | 5 336 | 3 430 | 113 | 3 317 | 1 532 | 1 111 |
| Slovakia | 123 | 1 828 | -1 705 | 151 | 1 072 | -921 | 815 | 1 705 |

Source: Czech Statistical Office, Ministry of Agriculture



6 OTHER FOREST-BASED ACTIVITIES AND SECTORS

6.1 Game Management

In 2014, the country registered 5 792 hunting grounds under game management with their total area of 6 874 450 ha. These comprised 198 game preserves of total 47 287 ha and 294 pheasantries of total 97 234 ha. An average area of a hunting ground was 1 187 ha, of a game preserve 238 ha, and of a pheasantry 331 ha.



Hunting of main game species (pcs)

| Game species | 2010 | 2011 | 2012 | 2013 | 2014 |
|--------------|---------|---------|---------|---------|---------|
| Red Deer | 21 820 | 20 961 | 23 120 | 23 593 | 23 378 |
| Fallow Deer | 14 209 | 13 305 | 14 742 | 16 570 | 16 848 |
| Mouflon | 9 368 | 8 398 | 9 378 | 9 446 | 9 313 |
| Roe Deer | 120 206 | 113 915 | 108 616 | 105 686 | 100 395 |
| Wild Boar | 144 305 | 109 563 | 185 381 | 152 468 | 169 483 |
| Duck | 272 422 | 277 390 | 268 485 | 256 375 | 262 381 |
| Pheasant | 528 878 | 524 674 | 518 208 | 459 412 | 479 659 |
| Hare | 62 848 | 47 739 | 56 310 | 37 694 | 39 956 |

Source: Ministry of Agriculture, Ministry of the Environment, Czech Statistical Office

Spring stocks of main game species (pcs)

| Game species | 2010 | 2011 | 2012 | 2013 | 2014 |
|--------------|---------|---------|---------|---------|---------|
| Red Deer | 30 865 | 30 838 | 31 818 | 26 618 | 27 666 |
| Fallow Deer | 26 415 | 26 611 | 27 745 | 27 774 | 28 598 |
| Mouflon | 21 196 | 21 294 | 21 318 | 19 435 | 20 076 |
| Roe Deer | 312 321 | 302 206 | 305 052 | 290 661 | 288 656 |
| Wild Boar | 60 500 | 59 295 | 64 848 | 59 175 | 59 517 |

Source: Ministry of Agriculture, Ministry of the Environment, Czech Statistical Office



6.2 Timber Processing Industry

The total log breakdown in the Czech Republic reached the volume of 6.400 million m³ of softwood and hardwood roundwood, which was used to produce 3.610 million m³ of softwood sawn wood and 0.251 million m³ of hardwood sawn wood. The total production of softwood and hardwood sawn wood hence fell against the preceding year by 176 thousand m³. Export of softwood and hardwood sawn wood experienced a year-on-year fall by 169 thousand m³ while imports were up 167 thousand m³. The domestic consumption of sawn wood thus partly improved, namely by 160 thousand m³, which is a result of a revival in the Czech building industry.

Log breakdown and sawn wood production (1 000 m³)

| | 2012 | 2013 | 2014 |
|----------------------|-------|-------|-------|
| Log breakdown | 6 800 | 6 700 | 6 400 |
| Sawn wood production | 4 259 | 4 037 | 3 861 |

Source: Ministry of Agriculture

Market with timber products (1 000 m³)

| Product | Year | Production | Import | Export | Consumption |
|----------------------------------|------|------------|--------|--------|-------------|
| Softwood roundwood ^{x)} | 2012 | 7 911 | 1 000 | 2 571 | 6 340 |
| | 2013 | 7 925 | 1 146 | 2 797 | 6 274 |
| | 2014 | 7 955 | 1 044 | 3 058 | 5 941 |
| Hardwood roundwood ^{x)} | 2012 | 710 | 90 | 233 | 567 |
| | 2013 | 720 | 108 | 234 | 594 |
| | 2014 | 593 | 149 | 156 | 586 |
| Softwood sawn wood | 2012 | 3 997 | 502 | 2 910 | 1 589 |
| | 2013 | 3 760 | 399 | 3 225 | 934 |
| | 2014 | 3 610 | 569 | 3 075 | 1 104 |
| Hardwood sawn wood | 2012 | 262 | 178 | 242 | 198 |
| | 2013 | 277 | 180 | 243 | 214 |
| | 2014 | 251 | 177 | 224 | 204 |
| Particle boards | 2012 | 1 033 | 480 | 1 335 | 178 |
| | 2013 | 1 032 | 638 | 1 335 | 335 |
| | 2014 | 1 036 | 690 | 1 342 | 384 |
| Plywood | 2012 | 178 | 71 | 117 | 132 |
| | 2013 | 180 | 78 | 119 | 139 |
| | 2014 | 181 | 82 | 124 | 139 |
| Fibreboards | 2012 | 41 | 211 | 85 | 167 |
| | 2013 | 41 | 235 | 91 | 185 |
| | 2014 | 41 | 236 | 91 | 186 |
| Softwood pulpwood ^{xx)} | 2012 | 3 949 | 749 | 1 040 | 3 658 |
| | 2013 | 4 037 | 1 020 | 1 189 | 3 868 |
| | 2014 | 4 351 | 1 014 | 1 543 | 3 822 |
| Hardwood pulpwood | 2012 | 471 | 36 | 68 | 439 |
| | 2013 | 467 | 168 | 72 | 563 |
| | 2014 | 466 | 232 | 174 | 524 |

Note: x) Including pole and mine timber.
xx) Including groundwood.

Source: Ministry of Agriculture

6.3 Pulp and Paper Industry

The consumption of softwood timber for pulp production reached 4 010 thousand m³, i.e. 2 772 thousand m³ of softwood pulp and 1 238 thousand m³ of softwood chips and particles. The pulp and paper industry produced total 445 thousand tons of pulp in 2014, chemical pulp representing 442 thousand tons. Pulp production thus generally remained at the level of 2013 (decline by mere 4 thousand tons) but still dropped by total 247 thousand tons (36%) against 2012.

The production of paper, paperboard, and cardboard under CEPI classification used in pulp and paper industry noted an increment by 95 thousand tons compared to 2013 amounting to total 704 thousand tons, which means an increase by 15.6%

**Consumption of wood for pulp production (1 000 m³)**

| Timber assortment | Consumption | | |
|---------------------|-------------|-------|-------|
| | 2012 | 2013 | 2014 |
| Chips and particles | 1 172 | 1 203 | 1 238 |
| Pulpwood | 2 287 | 2 374 | 2 772 |
| Total | 3 459 | 3 577 | 4 010 |

Source: Association of the Czech Pulp and Paper Industry

Pulp, paper, paperboard, and cardboard production (1 000 t)

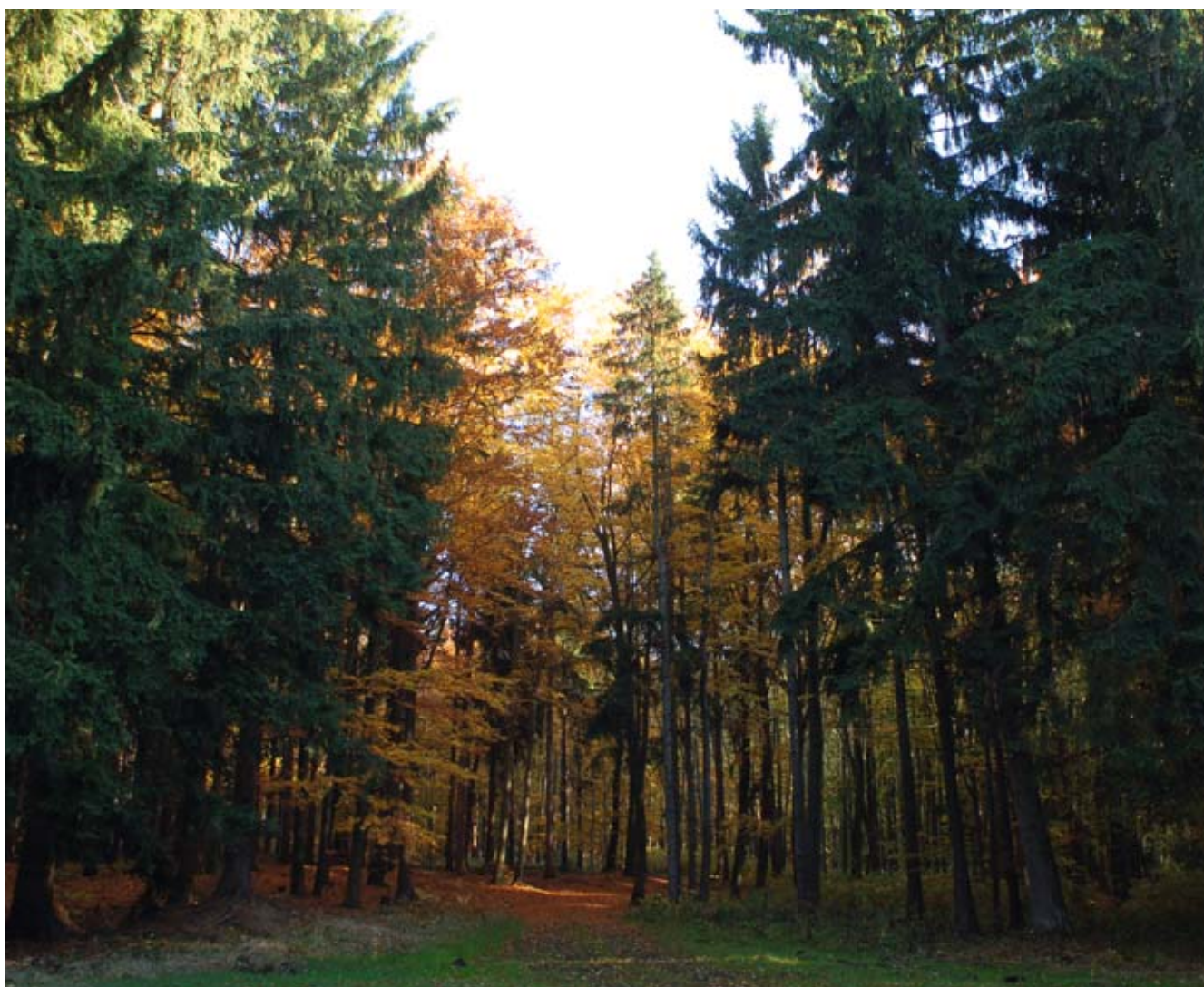
| Product | 2012 | 2013 | 2014 |
|----------------------------------|------|------|------|
| Mechanical pulp | 0 | 0 | 0 |
| Chemical pulp | 689 | 445 | 442 |
| Pulp of other fibres | 3 | 4 | 3 |
| Total | 692 | 449 | 445 |
| Paper, paperboard, and cardboard | 843 | 609 | 704 |

Source: Association of Czech Pulp and Paper Industry, Czech Statistical Office



7 ABBREVIATIONS

| | |
|---------|--|
| CEPI | Confederation of European Paper Industries |
| CZK | Czech koruna (currency) |
| ESA | European System of Accounts |
| EU | European Union |
| FGMRI | Forestry and Game Management Research Institute |
| FMI | Forest Management Institute |
| FRM | Forest Reproductive Material |
| FSC CR | Forest Stewardship Council - Czech Republic |
| GDP | Gross Domestic Product |
| GVA | Gross Value Added |
| ILO | International Labour Organization |
| PEFC CR | Programme for the Endorsement of Forest Certification Schemes – Czech Republic |





8 CONTACTS TO SELECTED FORESTRY ORGANISATIONS

Ministry of Agriculture

Těšnov 17, 117 05 Praha 1
info@mze.cz
www.eagri.cz

Ministry of the Environment

Vršovická 1442/65, 100 10 Praha 10
info@mzp.cz
www.mzp.cz

Czech University of Life Sciences Prague

Faculty of Forestry and Wood Sciences
Kamýcká 1176, 165 21 Praha 6 - Suchbát
www.fld.czu.cz/

Mendel University in Brno

Faculty of Forestry and Wood Technology
Zemědělská 3, 602 00 Brno
www.lfd.mendelu.cz/

Forest Management Institute

Nábřeží 1326 250 01 Brandýs nad Labem
podatelna@uhul.cz
www.uhul.cz

Forestry and Game Management Research Institute

156 04 Praha 5 – Zbraslav
admin@vulhm.cz
www.vulhm.cz

The Association of Municipal and Private Forest Owners in the Czech Republic

K Silu 1980 393 01 Pelhřimov
info@svol.cz
www.svol.cz

Lesy České republiky, s.p.

(Forests of the Czech Republic, State Enterprise)
Přemyslova 1106/19 500 08 Hradec Králové
lesycr@lesycr.cz
www.lesycr.cz

Vojenské lesy a statky ČR, s. p.

(Military Forests and Farms, State Enterprise)
Pod Juliskou 1621/5 160 00 Praha 6
info@vls.cz
www.vls.cz



MINISTRY OF AGRICULTURE
OF THE CZECH REPUBLIC

Published by Ministry of Agriculture of the Czech Republic,
Těšnov 17, 110 00 Praha 1
www.eagri.cz, info@mze.cz, +420 221 811 111

Editor in chief: Tomáš Krejzar
Photos by MoA and www.freeimages.com

Prague 2015

ISBN: 978-80-7434-245-5