



Market analysis

Availability of forest products and by-products

Estonia

Client:

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CONTENTS

1. Introduction.....	3
2. Production volumes.....	4
3. Forest exploitation levels.....	6
4. Price of wood resources.....	8
5. Import and export of wood resources.....	9
6. Conclusion.....	15

FIGURES

Figure 1 : production of round wood in Estonia (1992-2015).....	4
Figure 2 : production levels of pulp for paper (tonnes), sawnwood (m ³) and wood-based panels (m ³) in Estonia between 1990 and 2015.....	5
Figure 3 : Removals, annual increment and felling volumes in Estonia (Statistics Estonia 2014, Purret 2014).....	7
Figure 4 : Mont based estimated net standing timber prices by species between 2008 and 2017 (EUR/m ³ excluding VAT).....	8
Figure 5 : imports, exports and production of round wood in Estonia (1992-2015).....	9
Figure 6 : Production, imports and exports of pulp and paper in Estonia (1992-2015).....	11
Figure 7 : Production of polywood, veneer, particule and fiberboard (Statistical Estonia 2014, Raudsaar et al. 2014).....	12
Figure 8 : Production, imports and exports of wood-based panels in Estonia (1992-2015).....	13
Figure 9 : Production, imports and exports of sawnwood in Estonia (1992-2015).....	14

1. Introduction

SGS has been assigned by Electrabel to analyse the market availability of the feedstock used to produce wood pellets in Estonia, in order to assess to what extent the use of those materials for energy purpose might compete with the industrial use of those resources both locally and internationally. The wood energy subsector is very developed in Estonia.

This report will cover the following wood resources used as raw material by pellet producers in Estonia:

- Wood processing residues
- Round from forest thinning & harvesting
- Residues of forest exploitation

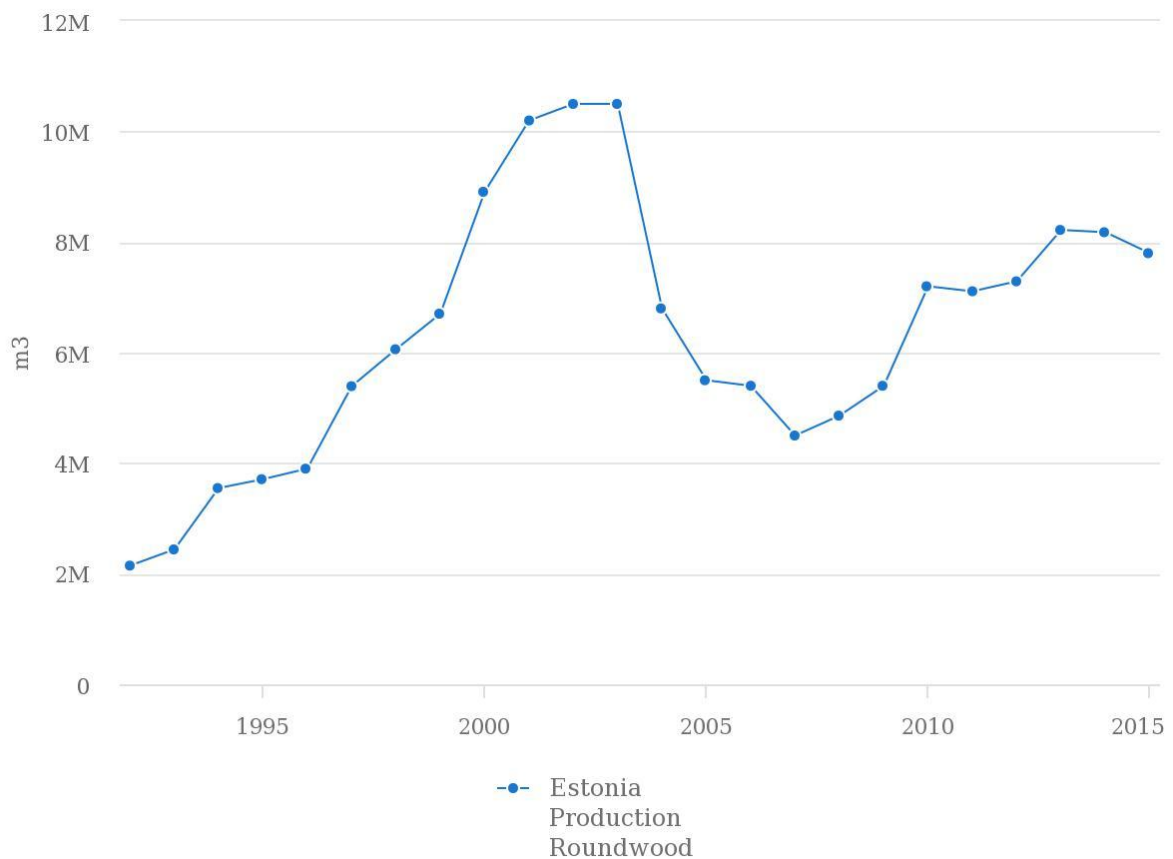
The industrial activities concerned by those materials are:

- pulp and paper
- wood panels production

The geographic range covered by the analysis includes the state of Estonia.

2. Production volumes

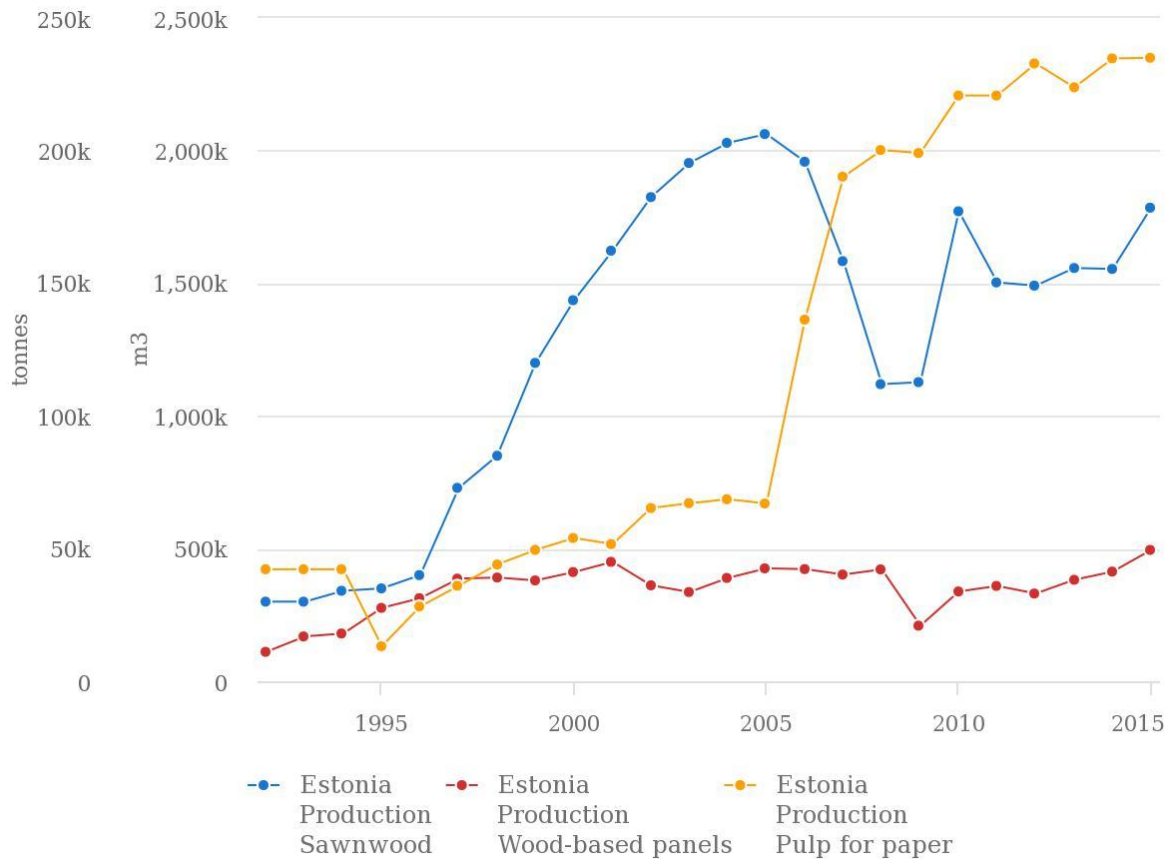
According to the most recent statistics available from the FAO to data¹ (Figure 1) the production of round wood from forest's Estonia increased between 2007 and 2017 and slightly decrease since 2013. In 2015, this production was 7,8 million m³. The general trend of the production of round wood shows a constant increase from 1991 (Soviet Union's dissolution and Estonia independence) to 2003 and then a drop between 2003 and 2007. Yet, this production stayed low during the global economic crisis until 2010. The best production level was reached in 2003 with 10,5 million m³.



Source: FAOSTAT (Jun 08, 2017)

Figure 1 : production of round wood in Estonia (1992-2015)
(source : FAOstat)

¹ http://faostat3.fao.org/faostat-gateway/go/to/browse/F/*E



Source: FAOSTAT (Jun 08, 2017)

Figure 2 : production levels of pulp for paper (tonnes), sawnwood (m³) and wood-based panels (m³) in Estonia between 1990 and 2015
 (source : FAOstat)

Residues from sawmills are the main feedstock for pellet production. In 2013, about 1,79 million m³ in of sawnwood were produced of which 0,9 million were exported. The production of wood-based panels stayed more or less constant over recent year to reach 495.000 m³ in 2015. However, this production slightly suffered during the global economic crisis. Concerning the production of pulp for paper, the production had growth quickly between 2005 and 2007 from 67.000 tons to 190.000 tons. The production increased further until 2015 to reach 495.000 tons.

Table 1 : Production of wood products²

Production	2014	2015 (estimate)
Sawn wood	1.605.000 m ³	1.730.000 m ³
Polywood	47.000 m ³	50.000 m ³
Particle board (including OSB)	182.000 m ³	180.000 m ³
Fiberboard	78.000 m ³	77.000 m ³
Paper and paperboard	73.000 m ³	75.000 m ³
Wood pulp	230.000 m ³	240.000 m ³

3. Forest exploitation levels

The volume of timber harvested annually from Estonia's forests had been stable since 2009. 9,8 million m³ was felled in 2014 and 9,5 million m³ in 2015³. These figures may vary from source to source (figure 3 shows the difference between felling documentation and the national forest inventory). The global economic crisis caused a fall in roundwood prices. This led to a drastic reduction of timber harvested. After these crisis years, the wood and wood products sectors recovered due to competitiveness improvements and export opportunities.

The comparison between the volumes of annual feelings and the annual net growth is described in more details in SGS's report on forest sustainability. The current Forestry Development Program (FDP) until 2020 has raised the optimal harvest level to 15,8 million m³. This exceeds the calculated annual increment, but at the moment there are plenty of old growth forests that need to be harvested in order to avoid compromising wood quality in the future⁴. Indeed, the growing stock in 2013 was estimated at 458 million m³.

² https://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/Estonia_2014.pdf

³ https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Wood%20Sector%20in%20Estonia_Warsaw_Estonia_12-20-2016.pdf

⁴ <http://www.metla.fi/julkaisut/workingpapers/2014/mwp312.pdf>

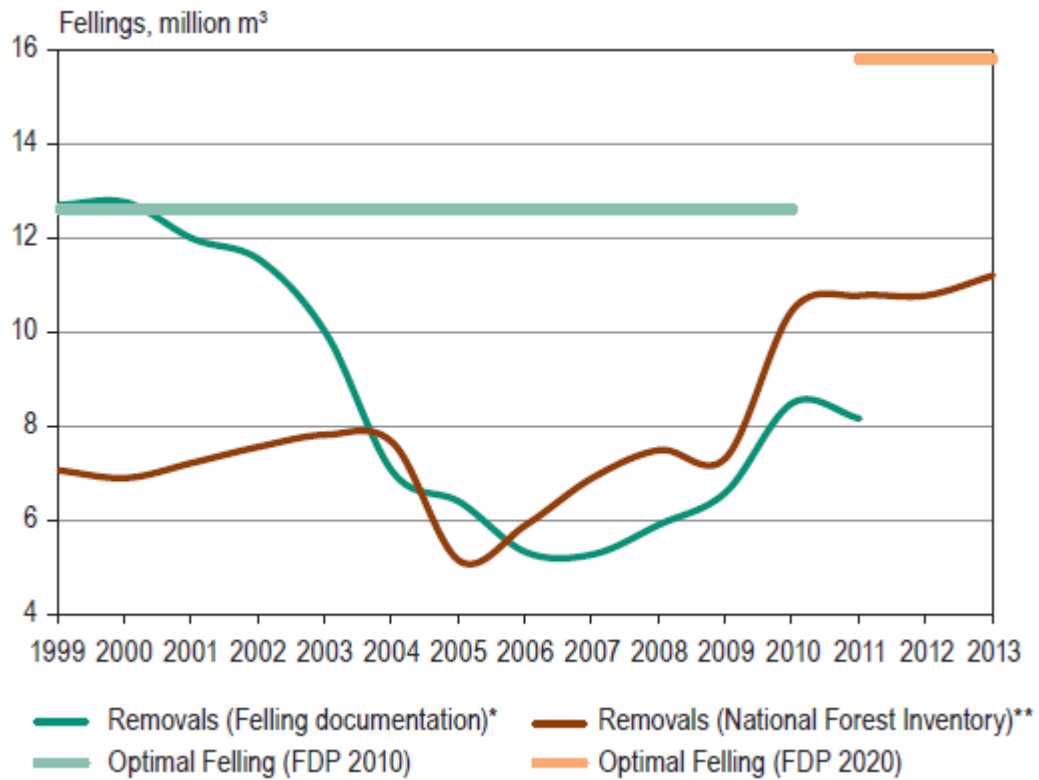


Figure 3 : Removals, annual increment and felling volumes in Estonia (Statistics Estonia 2014, Purrett 2014)

source : <http://www.metla.fi/julkaisut/workingpapers/2014/mwp312.pdf>

4. Price of wood resources

Timber prices in Estonia have fallen between 2008 and 2009 in relationship with the global economic crisis. Even though they have not yet recovered up to the levels of March 2008, the trend since shows a relative stabilisation of prices between 2011 and 2015 for most species. Since 2015, prices appear to be more volatile.

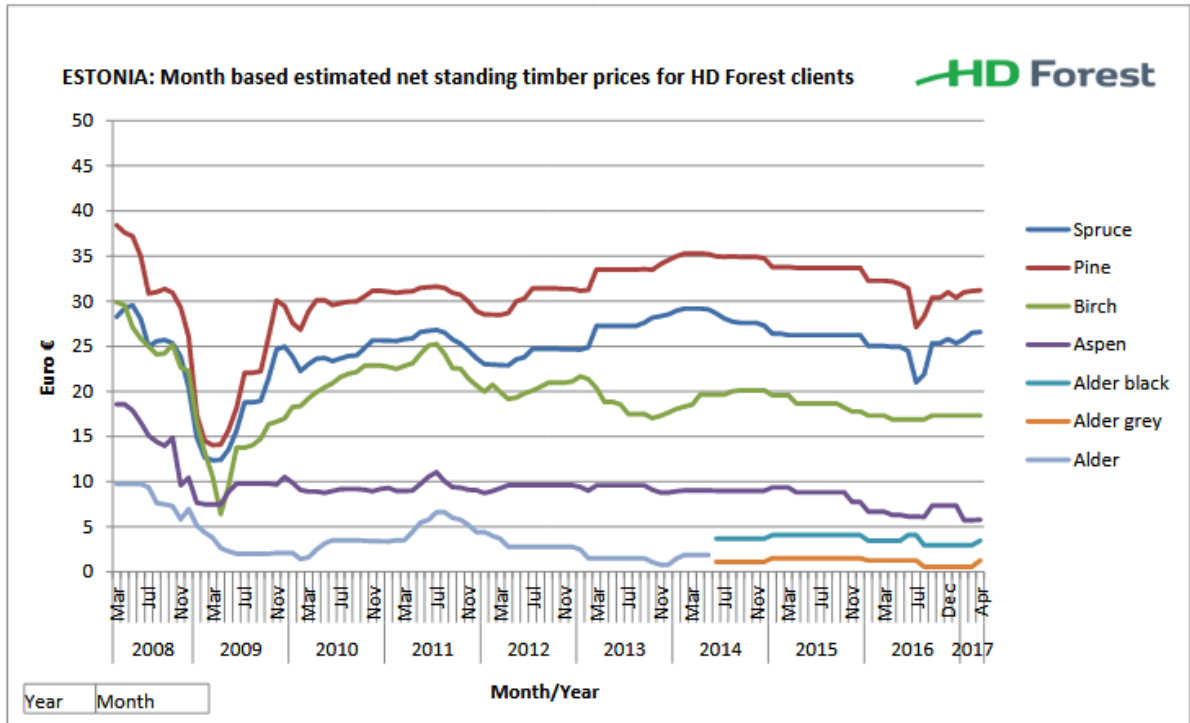
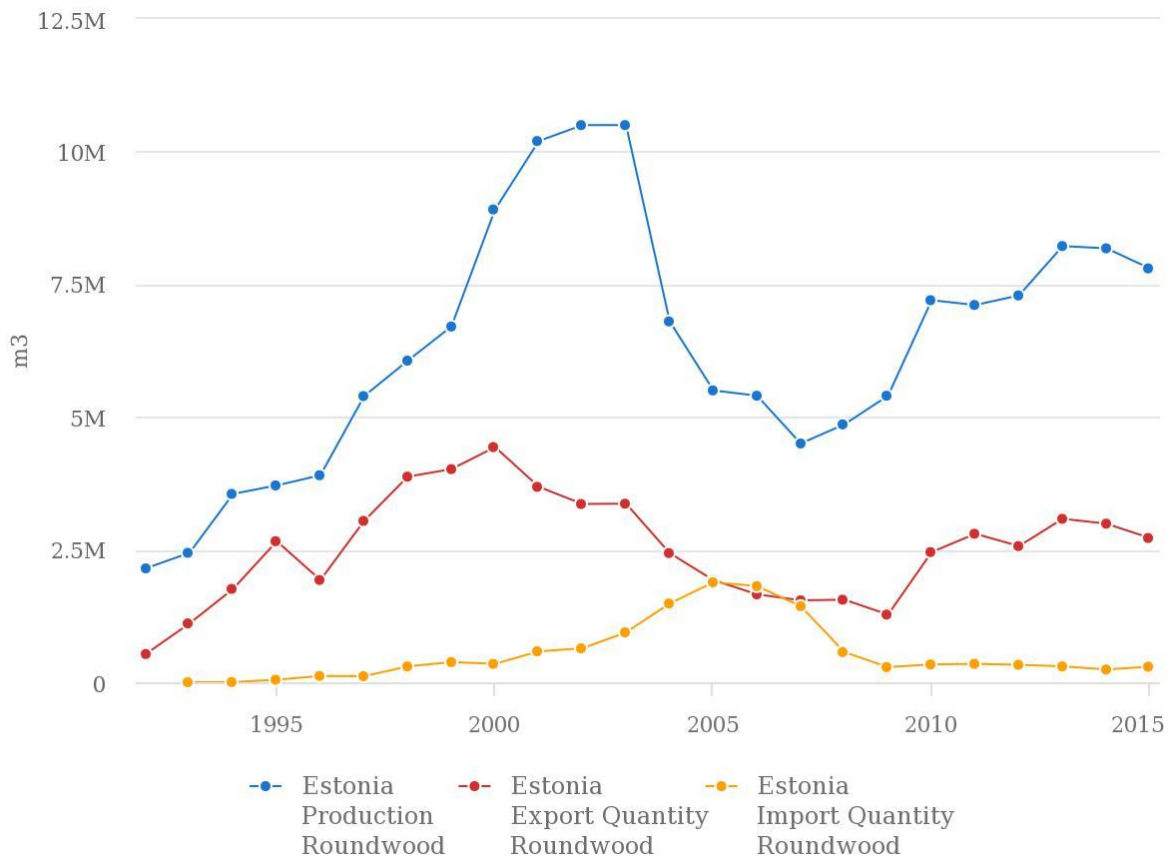


Figure 4 : Mont based estimated net standing timber prices by species between 2008 and 2017 for HD clients (EUR/m³ excluding VAT)
(source : http://www.hdforest.com/media/Monthly_current_average_standing_timber_prices.pdf)

5. Import and export of wood resources

In this section, imports and exports are taken into account to assess the availability of the different kind of materials.

The imports of round wood are very low compared to the production. The exports are more important compared to the local production. We can conclude that the domestic production allows to meet the local demand and allows to generate significant exports.



Source: FAOSTAT (Jun 08, 2017)

Figure 5 : imports, exports and production of round wood in Estonia (1992-2015)

(source : FAOstat)

In 2015, the production of round wood was 7,8 million m³, of which 2,7 million m³ for exports. The imports were of 0,29 million m³. We also see on the figure above that production, the exports and the imports had decreased during the crisis in 2008. After this period, the production and the exports grew up until 2013. The imports stayed low until 2015.

The Estonian wood industry is strongly export oriented and Estonia is a net exporter. Export makes up nearly two thirds of sales for the Estonian timber industry. According to the Estonian Statistical Office, in 2015, total wood industry exports reached 1,83 billion euros⁵.

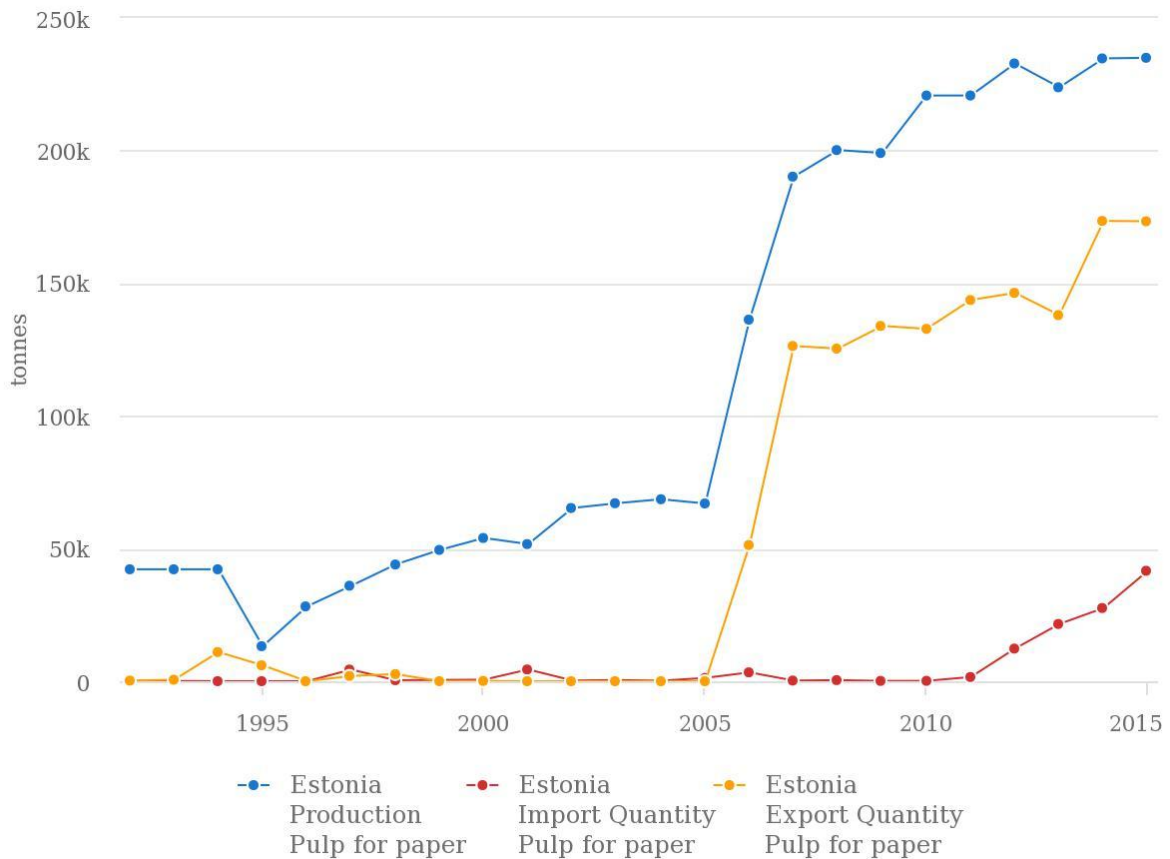
The main exported products are sawnwood, wooden furniture, pellets, roundwood and pulp. The main exports destinations are Scandinavian markets, neighbouring countries like Latvia and the main EU wood buyers like Germany, United Kingdom. Estonia sells its products also to Japan and South Korea⁶.

The pulp subsector become important since 2005. The majority of the production of pulp (over 70%) is produced by thermos-mechanical aspen pulpmill technology in Kunda. In 2004-2012, the production grew up from 67.000 tons to 232.859 tons. During the same period, export has a steady growth to reach 147.000 t. In 2011, only minor import of pulp (about 1.600 tons) took place, it rose gradually to reach 27.000 tons in 2014⁷.

⁵https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Wood%20Sector%20in%20Estonia_Warsaw_Estonia_12-20-2016.pdf

⁶https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Wood%20Sector%20in%20Estonia_Warsaw_Estonia_12-20-2016.pdf

⁷ https://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/Estonia_2014.pdf



Source: FAOSTAT (Jun 08, 2017)

Figure 6 : Production, imports and exports of pulp and paper in Estonia (1992-2015)

(source : FAOstat)

The produced, imported and exported volumes of wood-based panels have gradually increased these recent years since the global economic crisis in 2008. The graphic below shows the production of polywood, veneer, particle and fibreboard. Veneer and polywood use roundwood as raw material. Logs are purchased at standard lengths, cut into optimum measurements and then rotary cut into veneer sheets. Fiber and particle board producers buy some share of raw material from local sawmills (sawdust and woodships). However, Roundwood is still the main source because then the companies can control the quality of input by doing the chipping or shaving processes themselves⁸. In 2014, the production of polywood stayed for the third year at 47.000 m³ level. Export and import had both 13% decrease. Share of value of polywood exports from total value of wood products export was 2,1 %, share of imports 8,1%. The production of particle boards recovered to 182.100 m³. Export and import both rose, respectively 11,4% and 2,3%. Share of value of particle board exports from total value of wood products export was 1,1% , share of imports was 4,1% in 2014. There was no production of hardboard in 2014. Imports of hardboard increased 21% and exports of hardboard

⁸ <http://www.metla.fi/julkaisut/workingpapers/2014/mwp312.pdf>

decreased 12,4%. The production of insulating boards increased 12,6% in 2014, imports increased by 14,7% and exports increased by 18,8%. Share of value of total fibreboard exports from total value of wood products export was 1,1%, share of imports 3,8% in 2013⁹.

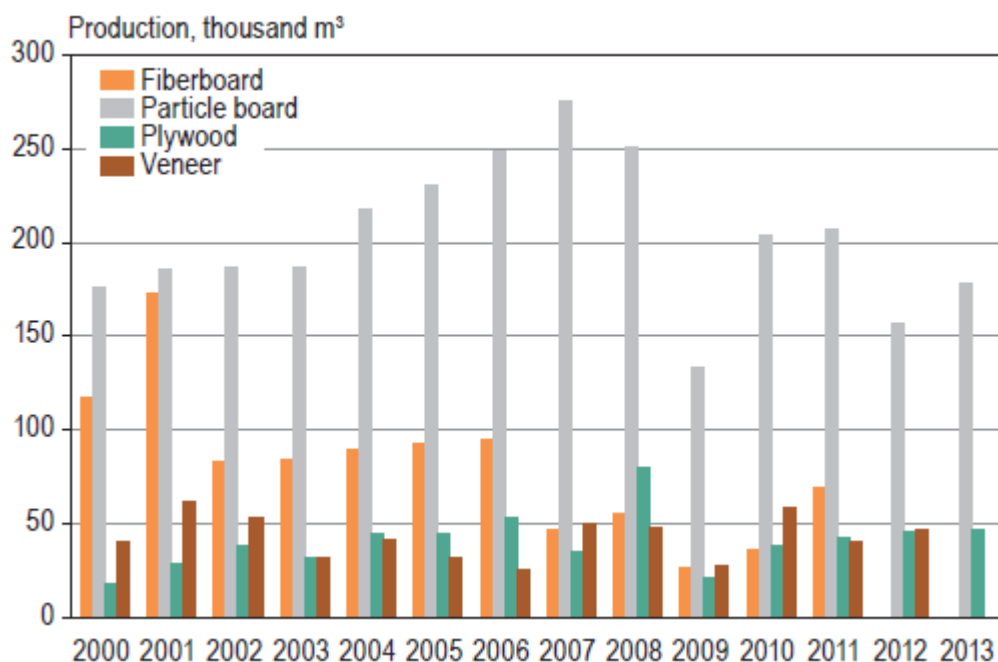
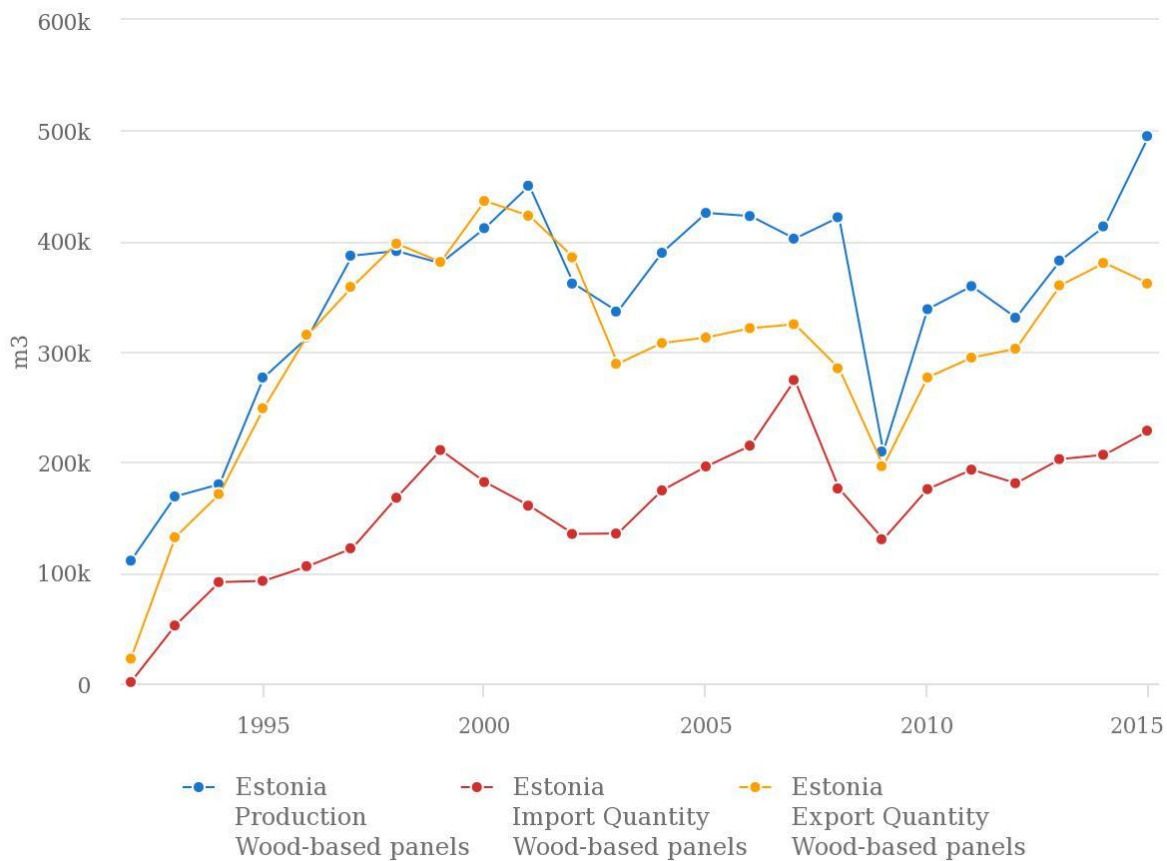


Figure 7 : Production of polywood, veneer, particule and fiberboard (Statistical Estonia 2014, Raudsaar et al. 2014)

Source : <http://www.metla.fi/julkaisut/workingpapers/2014/mwp312.pdf>

⁹ https://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/Estonia_2014.pdf

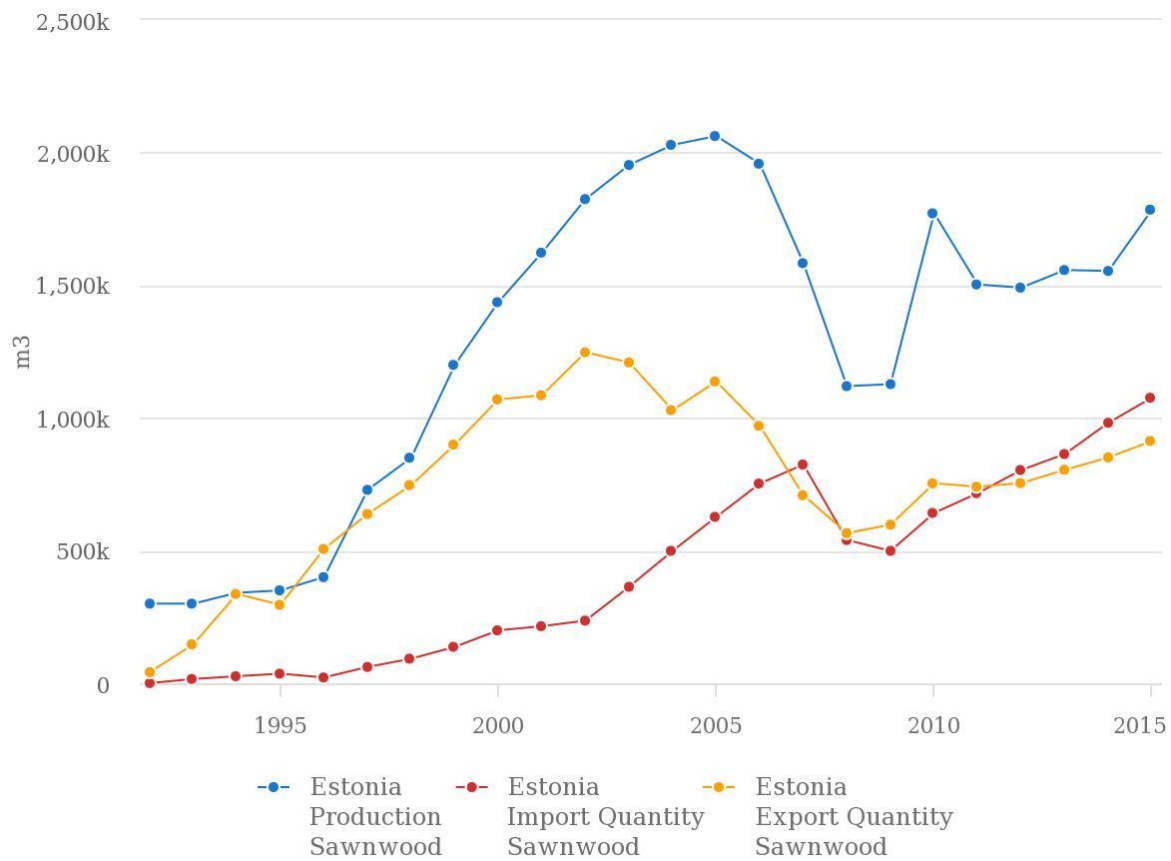


Source: FAOSTAT (Jun 09, 2017)

Figure 8 : Production, imports and exports of wood-based panels in Estonia (1992-2015)
(source : FAOstat)

Sawnwood production was at the peak in years 2003-2006 and then started to decrease due to the deficit of raw material and decreasing sales opportunities. In 2010-2013, sawnwood production stayed at 1,5 million m³ level. In 2014, production of sawnwood rose to 1,7 million m³. Earlier steady growth of imports turned to sudden 35% decrease in 2008. Sawnwood decreased to 0,5 million m³ level in 2009, but turned to growth again from 2010 to 2013. In 2014, import of sawnwood rose to a new peak at 0,98 million m³. The increase of sawnwood import indicates recovered demand from domestic and foreign further-processing companies. After being three years (2010 – 2012) at 0,75 million m³, sawnwood export had the row slight 6-7% increase to 0,85 million m³ in 2013 and 2014¹⁰.

¹⁰ https://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/Estonia_2014.pdf



Source: FAOSTAT (Jun 09, 2017)

Figure 9 : Production, imports and exports of sawnwood in Estonia (1992-2015)
(source : FAOstat)

6. Conclusion

Estonia has a forest industry essentially oriented to the export markets. The exported products are mostly sawnwood, particle/fibre boards and woodpulp and wood pellets. The main exports destinations are Scandinavian markets, neighbouring countries like Latvia and the main EU wood buyers like Germany, United Kingdom. Estonia sells its products also to Japan and South Korea.

2,21 million hectares are covered with forests and the growing stock is estimated at 458 million m³. At this moment there are plenty of old growth forests that need to be harvested in order not to lose wood quality in the future. This explains the high harvest level upper of the annual increment.

In recent years, the production and exports of sawnwood have been important in Estonia. However, previously, the loss of Russian raw material had an effect on the production and export, thus many companies had to decrease production already in 2007. Partially this might have eased the effects of 2008 financial crisis. Later, most companies have restored their volumes to prerecession times or have even increased in production¹¹.

Wood-based panels (mainly particle boards and fiberboard) accounted for an important part of the total export value of the woodworking sector. The production and export have wood-based panels have increased gradually over recent years, since 2009.

The analysis of the wood market in Estonia, shows that a major decrease of round wood production was triggered by the global economic crisis in 2008 and 2009. The exports also suffered much of this decrease. The import decreased during this period and stayed low until 2015. After this period, the production levels and exports have partially recovered afterwards. This production levels and exports stay growing until now, despite the Russia's restrictions imposed on food imports since 2015.

Concerning the production of pulp for paper, this subsector is important in Estonia since 2007. In 2015, the exports represented more that 173.000 tons.

The wood energy subsector is very developed in Estonia. In 2014, exports of wood pellets represented 641.000 m³

¹¹ <http://www.metla.fi/julkaisut/workingpapers/2014/mwp312.pdf>

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