Market analysis
Availability of forest products and by-products
Belarus

Client:

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1. Introduction

SGS has been assigned by Electrabel to analyse the market availability of the feedstock used to produce wood pellets in Belarus, 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.

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

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

The industrial activities concerned by those materials are:

- sawmills
- pulp and paper
- wood panels production

The geographic range covered by the analysis includes the Republic of Belarus.

All the FAOstat values are an aggregate of official, semi-official, estimated or calculated values.

2. Production volumes

According to the latest available data from the FAO (Figure 1), the production of roundwood from Belarusian forests approaches 20 million m³ with a total of 19,568,000 m³ in 2014. The values on the graphic do not follow any linear trend. Before 1995, the production seemed to follow small decline but showed signs of stabilization. After that, the total roundwood production increased significantly up to 17,585,000 m³ in 1997. An enormous decline followed this increase down to 5,902,000 m³ in 1998. This fall can be explained by the significant financial crisis distress from that period. It is considered as a result of the financial and economic crisis in Russia. It caused the devaluation of the national currency, a decline in trade with Russia and the other CIS countries[1], growth in inter-enterprise arrears and overall deterioration of the country's balance of payments[2]. A small growth occurred from 1998 to 2004 followed by an almost stagnation until 2009. The roundwood production sector did not seem to suffer from the global economical crisis from 2008. After a small growth in 2010 and stagnation in 2011, the trend underwent a giant raise from 10,364,200 m³ in 2011 to 18,067,000 m³ in 2012. The production continues to increase until 2014.

[1] CIS region countries : Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine.
[2] https://en.wikipedia.org/wiki/Economy_of_Belarus#Economic_background

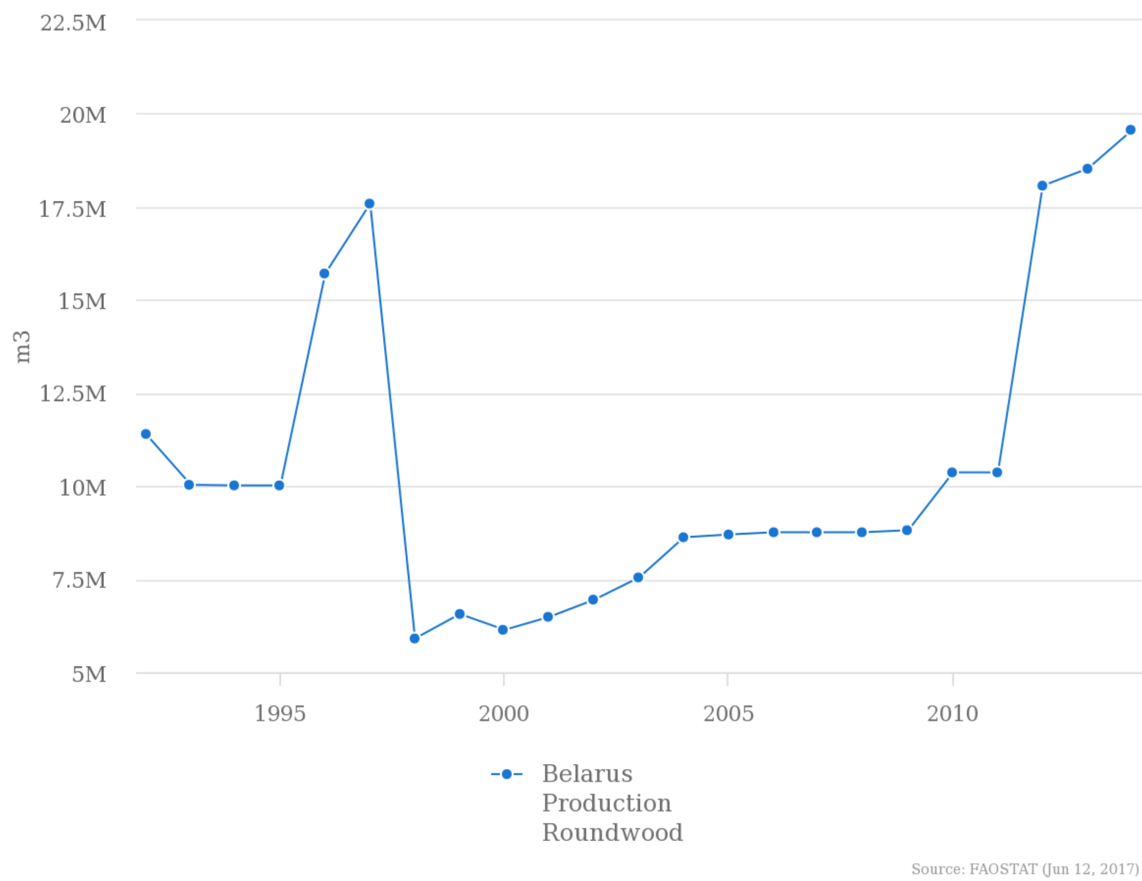

Figure 1 : Roundwood production in Belarus (1992-2015)
(source : FAOstat)

The levels of sawnwood and wood-based panels productions are shown on Figure 2.
In 2014, sawnwood dominated the volume of production with 2,557,350 m³. The trend has been stable for the previous five years. The production is mainly viewed as an increase from the 1992, even though; it underwent several decreases and stagnation phases. The two major declines occurred in 1999 and 2005; the economical crisis of 2008 did not affect the production much.
Wood-based panels volume was 1,705,200 m³ compared to sawnwood production volume. From 1992 to 1994, it suffered from a small decrease followed by a stagnation until 1997. It then increased up to 861,400 m³ in order to stagnate until 2008. It suffered from the economical crisis and did not grow for three years. Finally, the trend shows a massive increase for the last three years until 2014.

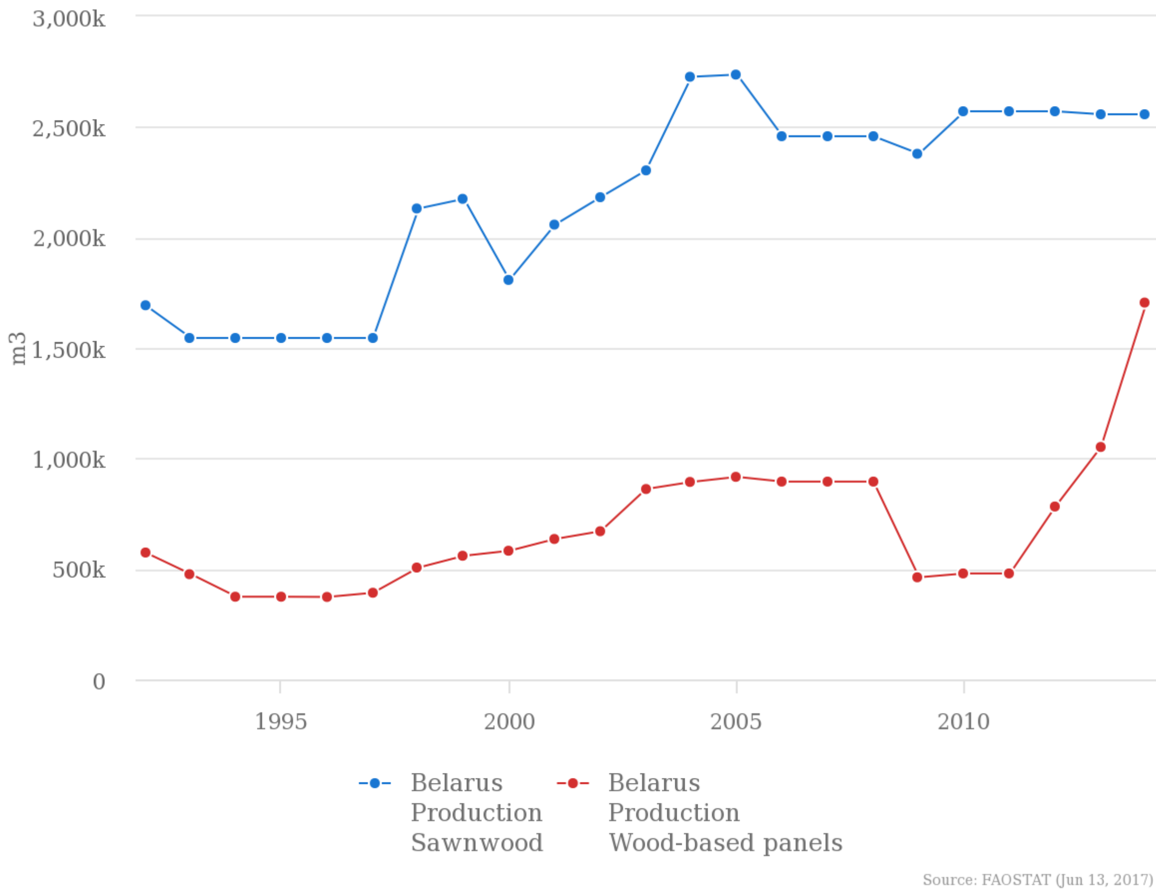

Figure 2 : production levels of sawnwood (m³), wood-based panels (m³) and pulp for paper (tonnes) in Belarus between 1992 and 2014
(source : FAOstat)

The pulp for paper production approximates 33,000 t in 2014. The trend begins with a decline in 1992 in order to attain its lowest value in 1993 with 26,000 t. After it, the mass of pulp produced grew and stagnated until 1997. A major raise followed and slowed down in 2005 in order to rise again to attain its highest value from 2006 to 2008. The economical crisis hit hard the pulp production sector with a decline down to 45,100 t. It rose again until 2012 in order to face another major decline down to 32,900 t.

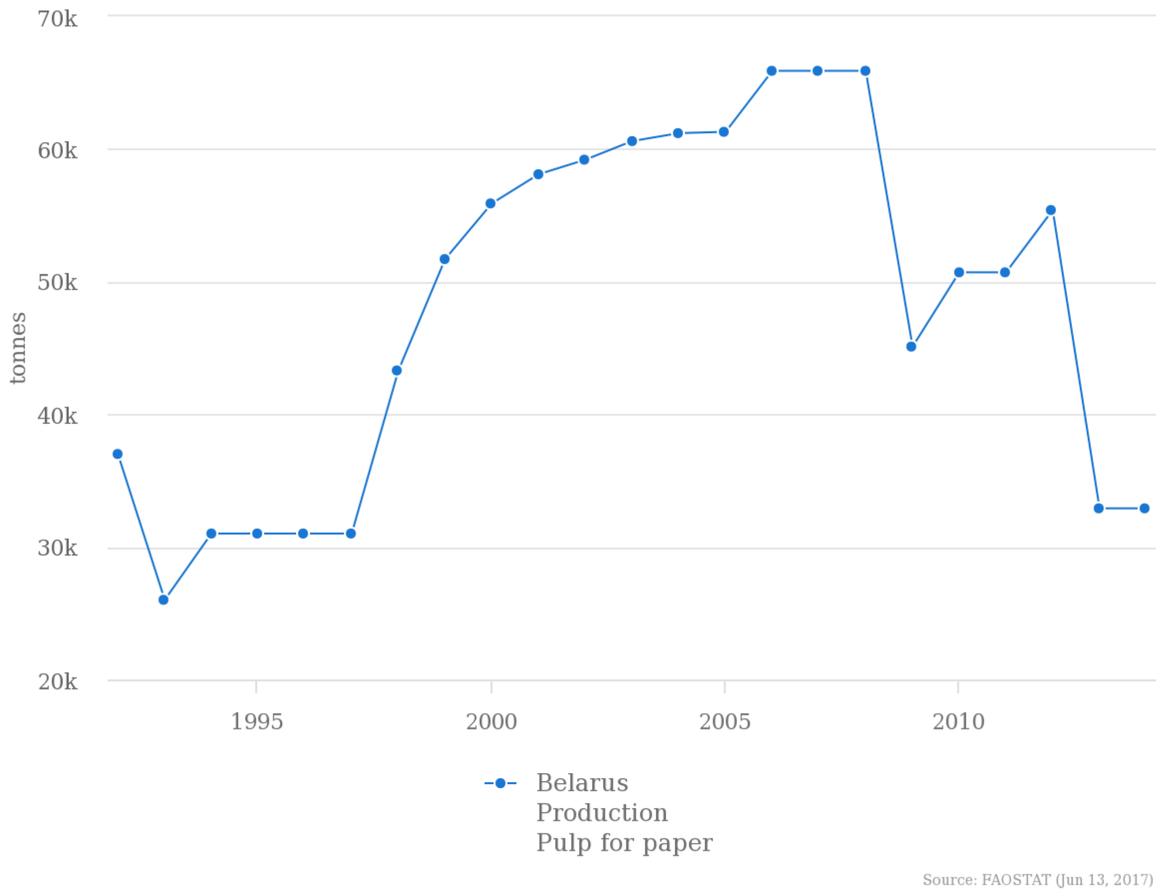

Figure 3 : production levels of pulp for paper (tonnes) in Belarus between 1992 and 2014 (source : FAOstat)

3. Forest exploitation levels

The volume of harvested wood compared to its increment in Belarus is presented on Figure 4. The ratio of wood harvest compared to wood increment was above 100% until the years 1950. For the years 2010, it equals less than 60% of the forest increment justifying an extent of the forests areas in Belarus. This is partly explained by several causes such as[3]:

- *The structure of forest industry in Belarus has relatively low demand for pulpwood, especially soft deciduous tree species (birch, aspen, alder)*
- *The development of protected natural areas in the forests and the provision of its special protected forest areas: 18% of forest area is fully or partly restricted to wood harvesting*
- *Radioactive contamination of 22% of forest area; wood harvesting is permitted in forests with a density of contamination up to 185 kBq/m²*
- *Inaccessibility of swamp forests: wood harvesting in 17% of forest area is directly linked to weather conditions and is possible during frosty winters and dry summers*

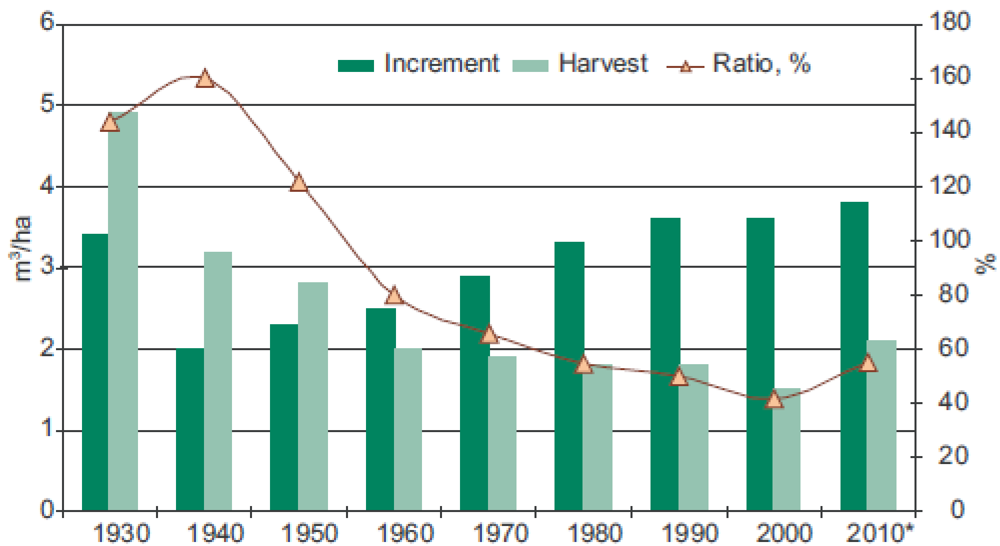

Figure 4 : Development of forest use in Belarus (1930-2010)
(source : Central , Y. & Karjalainen, T., 2010. Atlas of the forest sector in Belarus.)

The area and volume of annually harvested timber can be seen on Table 1. From 2000 to 2011, the area of forest felling increases from 415,400 ha up to 578,300 ha. From 2011, it declined to 466,900 ha in 2015. It differs from the trend of the marketable timber harvest volume which increases from 10.8 million m³ in 2000 to 19.5 million m³ in 2014. 2015 sees this volume decrease to 18,5 million m³.

[3] Central , Y. & Karjalainen, T., 2010. Atlas of the forest sector in Belarus.

Area (000 ha)	***2000***	***2005***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***
Forest felling area	415,4	441	462,4	578,3	545	535,3	523,9	466,9
… of which final cutting	20,4	25,1	25,4	28,9	28,1	30,5	37,5	31,3
Volume (1000 m³)								
Marketable timber harvest by all types of cutting	10787	14109	15473	17670	18059	18521	19550	18473
… of which final cutting	4303	5213	5863	6523	6522	7143	7786	7480

Table 1 : Area of forest felling and volume of marketable timber harvest (2000-2015)
(source : Statistical yearbook of the Republic of Belarus 2016)

The evolution of forest area and growing stock in Belarus is more developed in the report on Forest sustainability in Belarus.

4. Price of wood resources

The prices of the different wood products can be seen on Table 2. For the whole period all the prices for wood products increased. Some prices in 2015 equal almost 1000% of the values from 2005. The consequences of the economical crisis can not be seen as the values are not given. From 2012 the rate of growth decreases.

	2005	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***
Edged timber, per m^3	7,1	18,6	39,8	54,0	63,2	65,6	69,1
Unedged timber, per m^3	5,0	12,8	26,7	37,8	40,7	42,1	45,6
Fibreboard, per m^2	0,1	0,2	0,6	0,7	0,8	0,9	1,1
Particle board, per m^3	7,7	25,2	81,9	89,9	108,5	110,9	112,8
Plywood, per m^3	33,6	77,1	194,4	256,7	258,0	265,0	274,0
Window blocks, per m^2	13,1	17,9	44,1	55,8	60,7	71,8	85,6
Door blocks, per m^2	3,7	10,5	24,2	31,6	32,6	34,2	37,6

1 USD = 18,736.06 BYR (rate of 12-06-2017)

Table 2: Average purchase prices of wood products between 2005 and 2015 (in USD)
(source : Producer prices in the Republic of Belarus 2015)

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 and exports of roundwood are very low compared to the production. The exports are higher than the imports and seem to progressively get away from imports. In 2014, the production of roundwood was 19.6 million m³, of which 2.6 million m³ for exports. The imports were only of 11.7 thousand m³. Imports never exceeded 151 thousand m³. We do notice that the exports of roundwood didn't suffer during the economic crisis of 2008.
We can conclude that the domestic production allows meeting the local demand and allows generating exports.

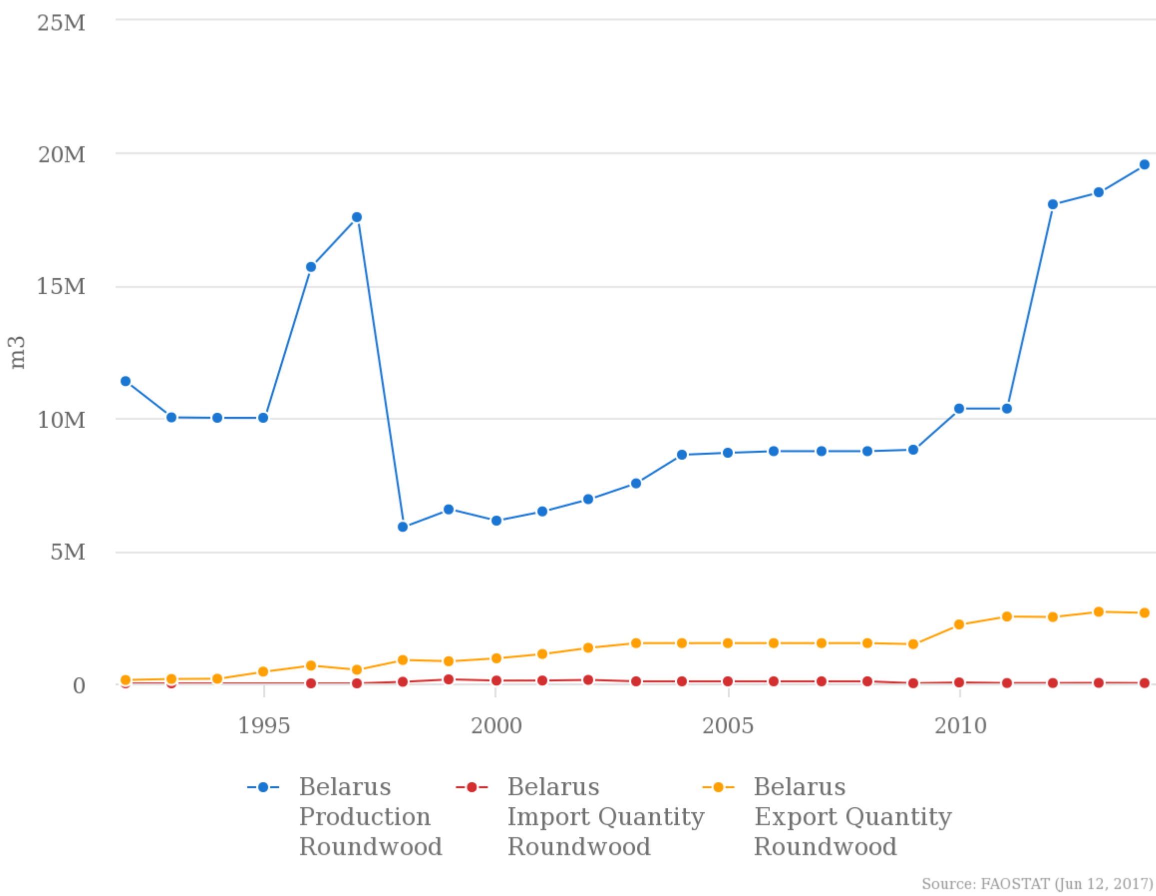

Figure 5 : imports, exports and production of roundwood in Belarus (1992-2014)
(source : FAOstat)

The forestry industry in Belarus on represents 2.7% of all exportations. According to the observatory of economic complexity, the total exportation was valued around 26.1 billion USD which means forestry industry accounts for 704.7 million USD in 2015[4].

According to the FAO, sawnwood exports accounts for 43% of wood products exports and wood-based panels account for 34%.

According to the Observatory of Economic Complexity (OEC) in 2015, the main part of exported sawnwood went to Germany (30%), Lithuania (18%), Latvia (13%); and Belgium and Luxembourg (8.9%). The majority of particle boards were exported to Russia (64%) and Poland (19%). Considering Rough wood more than half of the exported production went to Poland (51%) and Latvia (26%). Wood Fiberboard was mainly exported to Russia (50%) and Poland (20%). Fuel wood was exported to Poland (42%), Latvia (15%), Lithuania (15%)[5]. In general most of the exported wood products was directed to European countries and in particular neighboring ones.

The production, exports and imports of sawnwood are presented on Figure 6. The exports, while still low compared to the production, underwent a big increase in 1998. This increase could be attributed to the economical crisis and the devaluation of the currency. It continued to grow until 2007 where it suffered from a major decline (probably linked to the global economic crisis) from the maximal value of 1,196,900 m^3 to 280,520 m^3 in 2008. From that point exports began to grow again to reach 1,150,098 m^3 in 2014. While exports of sawnwood change over time almost according to the production, the imports stay very low from 1992 to 2014, with a small increase between 1998 and 2001; and a decrease in 2008 followed by stagnation. The volume of imports in 2014 was 24,900 m^3. This trend shows that the national need of sawnwood is almost completely sustained by local production.

[4] http://atlas.media.mit.edu/en/profile/country/blr/

[5] http://atlas.media.mit.edu/en/visualize/tree_map/hs92/export/blr/all/show/2015/

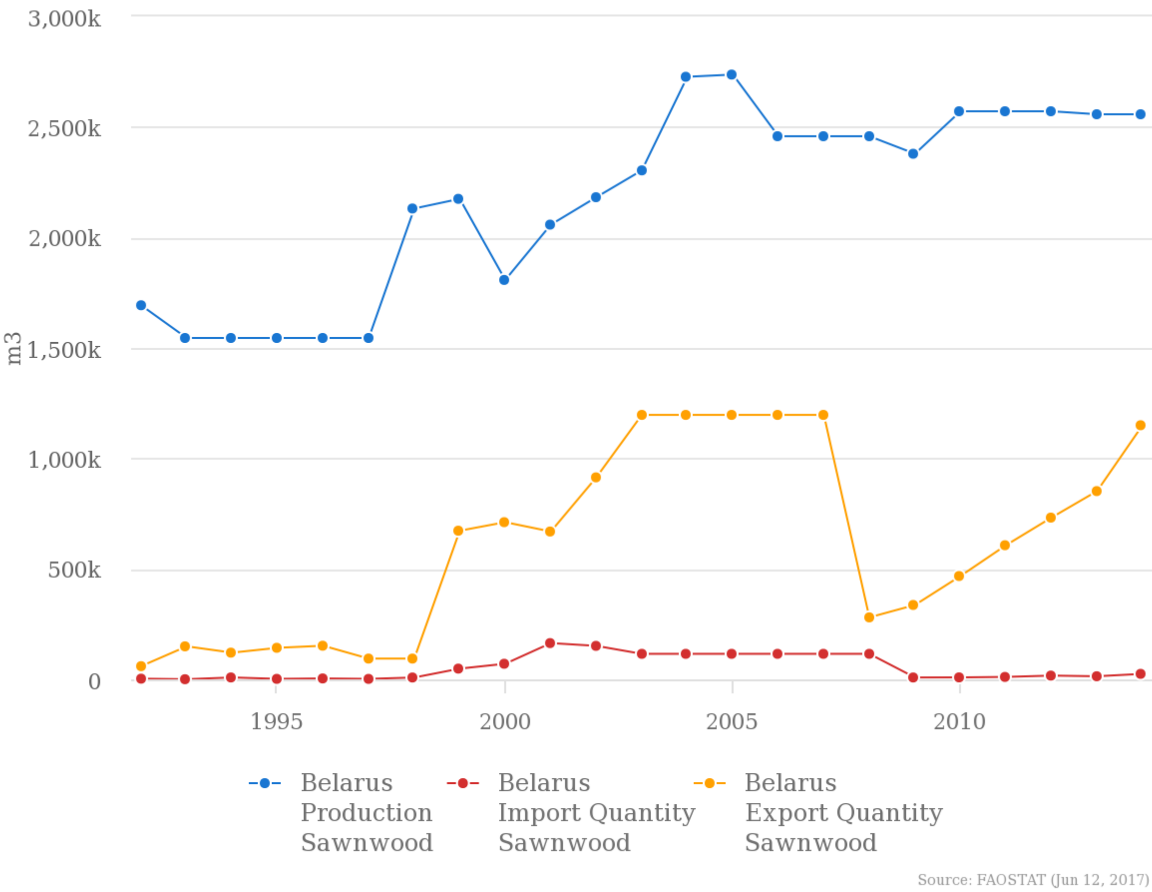

Figure 6 : Production, imports and exports of sawnwood in Belarus (1992-2014)
(source : FAOstat)

The production, imports and exports of wood-based panels is shown on Figure 7. From 1992 to 1997, exports underwent an increase and almost reached the production volumes with 392,000 m³ of panels produced and 377,200 m³ of exports. After it, it declined and increased again in order to stagnate between 2002 and 2011. For the last three years of the figure, exports followed production in its raise to attain 898.237 m³ in 2014. Imports stayed low until 1997, in accordance to the decrease of exports, it increased to 147,000 m³ in 1998, it declined a little just to increase to 182,800 m³ in 2001. From 2001 to 2008, it stagnated around 190,000 m³. In 2008, it increased and even surpassed production in 2010 and 2011 with 549,717 m³ and 494,260 m³ respectively. This may be linked to the economical crisis. After the explosion of production from 2011, imports began to decline again down to 345,422 m³ in 2014.

Figure 7 : Production, imports and exports of wood-based panels in Belarus (1992-2014)
(source : FAOstat)

The production, imports and exports of pulp for paper are minor compared to the other two industry sectors (Figure 8). In 1997, the exports of pulp faced a major raise from 1,820 t to 28,425 t in 1998 in order to reach its maximum value in 1999 with 34,800 t. After a decrease between 1999 and 2001, it increased a little and stagnated between 2003 and 2008, the economical crisis did not impact the sector much. Exports decreased from 25,900 t to 21,692 t. From that point it oscillated until 2014 to 21,012 t. Imports are close to zero for the whole period expect a slight increase beginning from 2011.

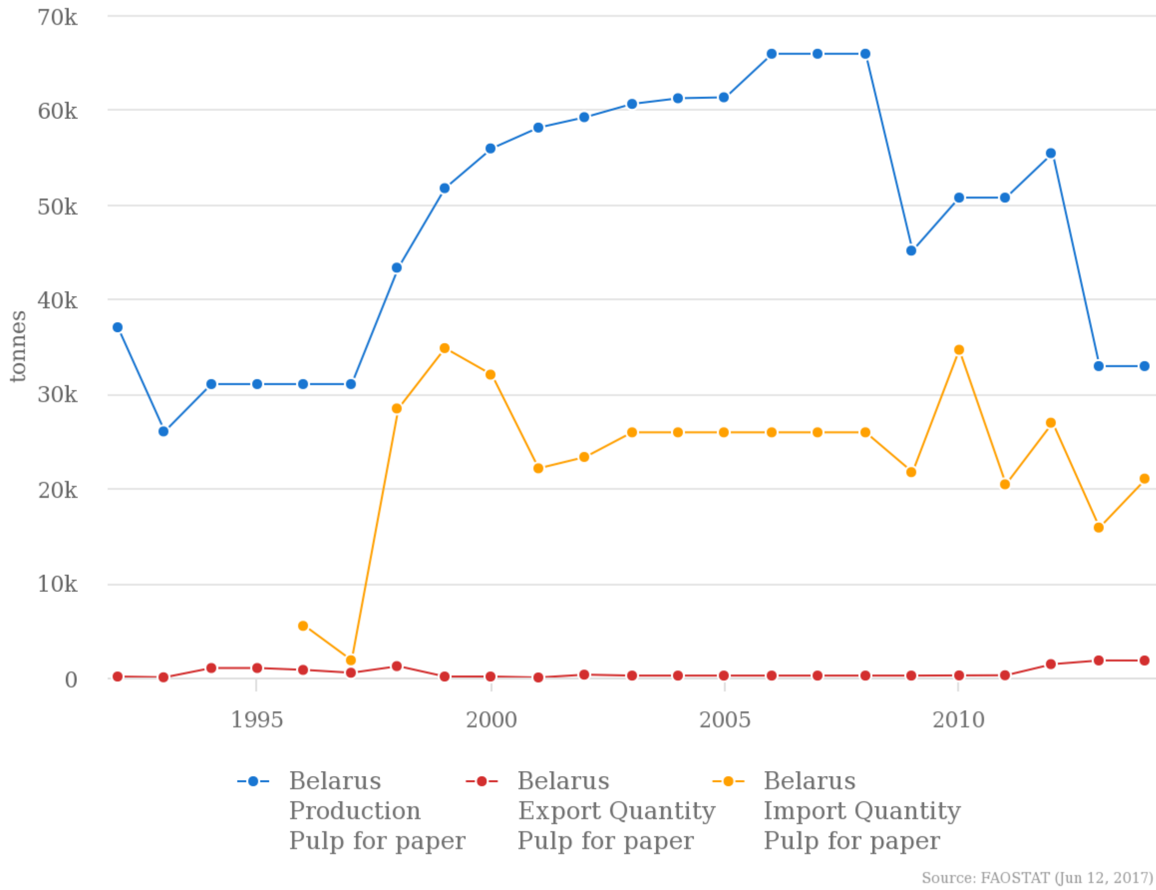

Figure 8 : Production, imports and exports of pulp for paper in Belarus (1992-2014)
(source : FAOstat)

6. Conclusion

After a collapse during the second half of the 20th century, the forestry sector in Belarus has been showing recovery since the beginning of the 21st century, with a significant increase of the harvested volumes since year 2000 and a good potential for further expansion, given the current balance between annual increase and harvested volumes. Roundwood available for harvesting grows in Belarus as the exploitation of forest is smaller than its increment.

Gradually, the economy around forestry and exportation is developing in the country in the recent years. The Belarusian government appears to want a process of improving the organization and upgrading wood processing industries[6].

The roundwood production did not seem to suffer from the global economic crisis in 2008 while some subsector of the industry seemed affected by it.

The production of pulp for paper, this subsector is extremely small in Belarus and has significally downscaled during the last 10 years. The large increase of harvested levels can make some residues available for energy purpose, but it is worth noting that the production of wood based panels has also increased very quickly, which can create some competition in terms of feestock availability.

A significant share of the production of sawnwood and panels is exported, which shows a large availability of processed wood on the domestic market.

The growing of industry activity in the recent years means that larger amounts of sawmill residues are available for transformation and energy production. The wood pellet industry is not as developed as some neighboring countries with 300,000 t of pellet produced and 115,716 t exported[7].

[6] Central , Y. & Karjalainen, T., 2010. Atlas of the forest sector in Belarus.
[7] FAOstat