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Leading countries in tropical timber trade and consumption in EU. A quantitative analysis.

Panagiotis P. Koulelis¹

The EU is an important market for both legally and illegally harvested timber entering international trade. The demand from the European countries for tropical wood for national consumption or for trade reasons possibly is connected with illegally harvested tropical timber from origin countries in the Tropics, with the known subsequent degradation of forestland. In this study the trade in tropical timber that takes place in the EU is analyzed, and more specifically with four separate tropical categories. The leading EU countries in imports, re-exports and consumption are presented in order to underline their basic trading role in the European tropical timber market. Belgium is indicated as one of these together with France, Italy, Netherlands and UK. Belgium's trade role was found to be significant, taking the leading role as re-exporter in sawnwood, veneer and industrial roundwood. The leader in consumption per capita seems to be the Netherlands regarding sawnwood and plywood, while Portugal ranked first in tropical industrial roundwood consumption per capita on average during the examined period. Italy seems to be a large consumer of tropical veneer. An analysis of some trade flows is also applied to better understand the role of the other trade partnerships inside the EU. The role of the EU in general with the parallel construction of policy instruments to combat illegal logging is also highlighted.

Keywords: tropical wood, illegal logging, timber flows, timber consumption

INTRODUCTION

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While demand in the EU is affected by the deteriorating economic situation in the eurozone, the tropical timber trade is facing a decline. Declines in tropical timber imports in most major markets are observed. In the UK and in a number of EU countries, austerity measures are expected to continue to weaken consumption of tropical timber (ITTO, 2012). On the other hand, the potential influence from policies that are trying to avoid global illegal logging seems to be connected with this change in trade. International policy instruments such as FSC, FLEGT and the EUTR – by reducing the amount of illegally sourced timber placed on the market and by promoting sustainable forest management – can, to some extent, be associated with the above trend. Increased ambiguity in trade seems to have side effects like substitution of oak lumber for tropical lumber and diversion of exports of tropical timber to regions with less stringent regulatory framework than the EU (Giourca et al., 2013). Furthermore, the major market of EU is losing points to the markets of other regions. For example, Asia-Pacific continues to dominate the tropical sawnwood trade but has increasingly diverted trade relations from the EU to China (ITTO, 2012). On the other hand, there are indications that importers in the EU are already shifting from high- to low-risk sources, importing timber from verified legal and sustainable sources (ibid). It is obvious that tropical timber in the EU will never be as strong as timber trade harvested from EU forests. Intra-EU trade is very important, accounting for around 80% of the total EU trade in timber (EC, 2003). European consumers can satisfy their consuming needs harvesting from European forests, trading with neighboring countries and develop sustainable EU forest resources. This development has a crucial connection with job creation, bolstering the national and EU economy and keeping the traditional relationships between population and forests. A significant proportion of the global trade in tropical primary wood products (logs, sawnwood, veneer and plywood) is conducted within the Asia-Pacific region (ITTO, 2012), and only a part of the global trade in tropical wood concerns the EU. Nevertheless, the EU is an important market for both legally and illegally harvested timber entering international

trade (EC, 2003). The value of tropical wood imports into the EU-27 reached a peak of €2.3 billion in 2007, before falling by 14.8 % in 2008 and by a considerably greater amount (40%) at the height of the financial and economic crisis, illustrating how the recession hit these high-value imports, following by a modest recovery in 2010 and 2011 (EUROSTAT, 2015). Thus, this trade seems quite significant as having economic influence inside the European economy but simultaneously is creating ecological impacts through the tropical imports for industrial use, into the countries between the Tropics.

Tropical forest loss and degradation has become an issue of major global concern (e.g. McDermott 2014). Possibly more than half of all the logging activities in the most vulnerable regions are conducted illegally and global estimates suggest that illegal activities may account for over a tenth of the total global timber trade, itself worth over US\$150 billion a year (Brack, 2005). Figure 1 presents the EU imports of tropical wood in tonnes. Brazil as an origin country is not included². The particular figure includes all tropical wood products listed under Chapter 44 “wood and wood products” of the Harmonized System (HS) of Commodity Classification. The largest quantities of tropical wood to the EU originated from Cameroon with 578,000 tonnes, second is Indonesia with 492,000 tonnes, and third is Malaysia with 451,000 tonnes. Gabon also exported on average 447,000 tonnes to the EU for the selected period. This is followed by Congo, Côte d’Ivoire, Democratic Republic of the Congo, Ghana, Liberia, and other African, South East Asian and South American countries, with exported quantities under 150,000 tonnes. Despite considerable reductions in deforestation rates, wood balance analysis and a survey of experts suggest that illegal logging represents between 22% and 35% in Cameroon and 59% and 65% in Ghana, of the total logging activities (Lawson & MacFaul, 2010).

² Data on tropical wood imports covers Cameroon, the Central African Republic, Ghana, Indonesia, Liberia and the Republic of Congo (Brazzaville). These countries have already signed or agreed Voluntary Partnership Agreements (VPAs) with the EU, as part of the EU's policy to fight illegal logging and associated trade. This policy was defined in 2003 with the [Forest Law Enforcement, Governance and Trade \(FLEGT\) action plan](#) (Brazil is not in the VPAs Countries).

The main scope of this paper is to define as effectively as possible which European countries are the leaders in trade and which are the leaders in consumption at national level in order to discover the deeper meaning of the demand for tropical timber at the EU level. For the first objective a quantitative analysis based on the great importers, the great re-exporters and a partial description of some trade flows will be applied. For the second objective a short analysis of the tropical consumption per capita will be implemented. A further description related to the illegally harvested tropical timber based on literature review will be developed without attributing negative meaning to the particular trade,

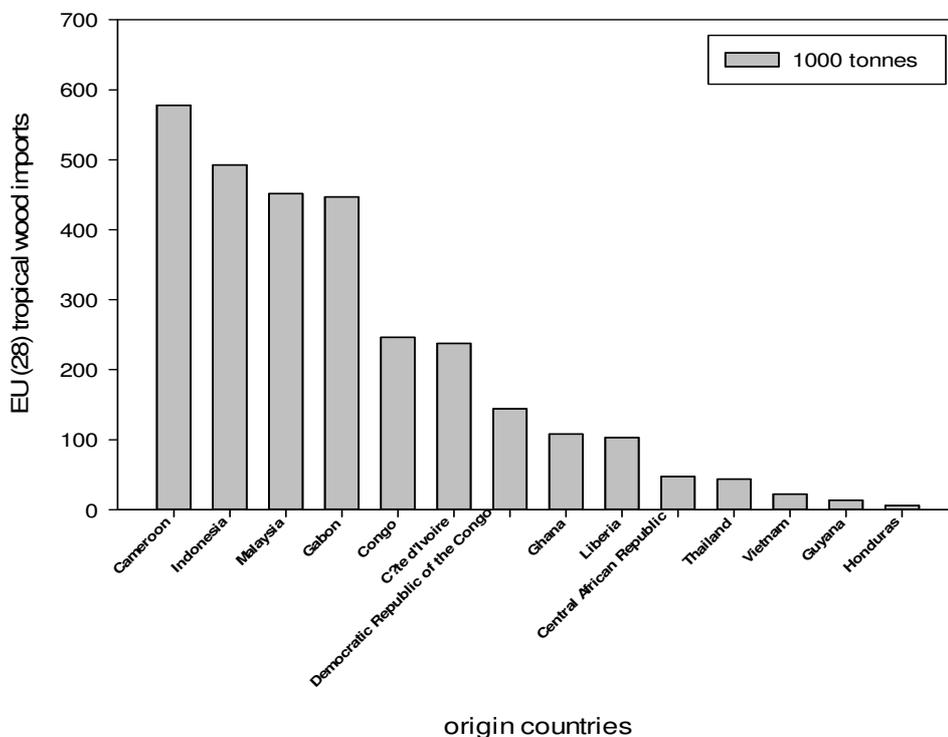


Figure 1. EU(28) tropical wood import weights (average) and origin countries for the period 2000-2012. (EUROSTAT, 2015)

especially when it is known worldwide that EU efforts through its policy instruments to try to exclude illegal products from its imports and to build markets for verifiably legal products are continuant and important.

DATA AND METHODS

Trade data analysis and literature review were used to describe flows, consumers and exposure to imports from risk countries. The data on tropical timber imports and exports for the European countries were drawn from the FAOSTAT and ITTO database for the period 2000–2013 (FAOSTAT, 2015; ITTO, 2015). For the first part of the analysis four basic tropical timber categories were used: sawnwood, veneer, plywood and industrial roundwood. An average for the examined period was calculated in order to summarize the results in a table, and rank the countries firstly according to the size of imports and secondly according to the percentage of imports that are re-exported. It is obvious that these re-exports don't only supply countries in the EU but possibly many regions in the world, following some specific trade flows that every country has developed over the years, although these "re-exports" could be characterized as an indicator of significant trade points of tropical timber inside the EU. This ranking is significant as imports are having an ecological impact on the origin countries. Following this rationale an evaluation of the first ten countries per timber category was applied.

For the examination of the tropical wood trade flows inside EU/EEA countries, only the case of tropical industrial roundwood Rwd Wir (NC) was analyzed, because it was the only one available from FAO's database (FAOSTAT, 2015). These trade flows could present one general trade between the countries but certainly cannot embody the total tropical trade inside the EU. According to FAO definitions, industrial Rwd Wir (NC) tropical (all roundwood except wood fuel) category is more representative for production and not for trade, and due to the national classification systems, components such as saw logs, veneer logs, etc. do not appear in trade (FAO, 2010). Conclusively, at least part of the "trade" evaluated in this study is regarding flows.

RESULTS

a) Leaders in trade

During the period examined the major importers of sawnwood on average are France, the Netherlands and Italy with 395,160 m³, 372,240 m³ and 280,290 m³ imports, respectively. Spain, Belgium and UK follow with over 200,000 m³ imports of sawnwood on average. In addition it is important to mention that for the particular period, Belgium seems to be the most important re-exporter. 60.18% of sawnwood imports were re-exported, reaching the levels of 148,030 m³ on average. Also Germany re-exported almost 43% of its imports of tropical sawnwood. The trade importance of those two countries is confirmed also by ITTO where it is reported that, with the exception of Belgium and Germany, all the major importing countries in the EU region reported declining imports in 2011, and all countries' imports were significantly lower than pre-crisis levels (ITTO, 2012). On the other hand, it is confirmed that Belgium, as a large importer of tropical sawnwood, plays an important role in distribution of this product to other parts of Europe (ETTF, 2011). Italy, France, Spain and Germany are the leading veneer importers in the EU. Italy imported 66,900 m³, France 54,320 m³, Spain 38,910 m³ and Germany 26,740 m³ on average during the examined period. Belgium seems to be again an important trade point, with re-exports touching 69%. Although the above exports are not the largest in the EU, Germany, Spain and France re-exported almost double the quantity of Belgium's re-exports. Germany seems to be a more important trader regarding veneer. The country re-exported almost 47% of the imports, with exports that reached 12,440 m³ on average until 201

TABLE 1. Tropical wood trade and consumption per capita in EU during the period 2000-2013 (average in 1000 cum)

Country	sawnwood imports	sawnwood exports	% re-exports	consumption per capita (cum/cap)	Country	Veneer imports	Veneer exports	% re-exports	consumption per capita (cum/cap)
France	395,16	25,75	6,52	0,006	Italy	66,90	6,69	10,00	0,001
Netherlands	372,24	69,79	18,75	0,018	France	54,32	9,42	17,33	0,001
Italy	280,29	17,65	6,30	0,004	Spain	38,91	12,28	31,55	0,001
Spain	253,06	15,37	6,07	0,005	Germany	26,74	12,44	46,54	0,000
Belgium	245,98	148,03	60,18	0,009	Portugal	12,49	4,70	37,64	0,001
U.K.	212,35	7,04	3,31	0,003	Netherlands	8,78	3,67	41,77	0,000
Germany	147,38	63,24	42,91	0,001	Belgium	7,94	5,45	68,70	0,000
Portugal	89,41	8,34	9,33	0,008	Greece	7,87	0,65	8,30	0,001
Ireland	55,02	2,06	3,74	0,012	Denmark	6,70	1,07	15,95	0,001
Denmark	46,44	8,57	18,46	0,007	U.K.	6,56	1,83	27,85	0,000
Country	plywood imports	plywood exports	% re-exports	consumption per capita (cum/cap)	Country	Ind.roundwood imports	Ind.roundwood exports	% re-exports	consumption per capita (cum/cap)
U.K.	293,04	25,82	8,81	0,004	France	415,02	15,89	3,83	0,006
Belgium	195,74	134,04	68,48	0,006	Portugal	199,31	5,86	2,94	0,018
Netherlands	191,24	23,64	12,36	0,010	Italy	132,85	2,73	2,06	0,002
Germany	147,34	37,74	25,62	0,001	Spain	93,11	1,10	1,18	0,002
France	119,64	118,91	99,39	0,000	Germany	78,76	18,39	23,35	0,001
Italy	78,10	55,24	70,73	0,000	Belgium	60,23	21,79	36,18	0,004
Ireland	36,15	0,26	0,73	0,008	Greece	38,23	0,12	0,31	0,003
Denmark	28,88	7,10	24,58	0,004	Netherlands	25,09	8,03	31,98	0,001
Austria	10,16	3,15	30,97	0,001	U.K.	20,65	0,19	0,92	0,000
Spain	10,04	30,05	-*	-	Austria	12,74	3,32	26,08	0,001

Source: ITTO, FAOSTAT (*Spain's plywood trade data are not considered as reliable in this case due to that re-exports are more than imports)

EU-27 imports of tropical plywood increased 9% in 2010 to 980,000 m³, but this recovery was short-lived as imports slowed in 2011 and plunged in 2012 to 626,000 m³, the lowest level in ITTO's statistical records (ITTO, 2012). EU imports were mostly accounted for by the UK, Belgium, the Netherlands, Germany and France, with 393,040 m³, 195,740 m³, 191,240 m³, 147,340 m³ and 119,640 m³ of imports, respectively (table 1). The largest re-exports are observed in Belgium and France with 134,040 m³ and 118,910 m³, respectively. The re-exports of France are 99% of the country's imports, thus the role of French plywood re-exports seems to be the most significant in the EU. Likewise, Belgium follows this as it re-exported 68% of the tropical plywood which it imported. Also, in the Mediterranean region Italy seems to re-export almost 71% of its imports.

According to Table 1, the major importers of tropical industrial roundwood are France, Portugal and Italy, with 415,020 m³, 199,310 m³, and 132,850 m³ imports, respectively. Spain, Germany and Belgium follow, with imports that are over 60,000 m³ on average for the examined period.

Furthermore, regarding re-exports, Belgium, Germany and France are the leading major re-exporters at least during the examined period. Belgium exports almost 21,790 m³, Germany 18,390 m³ and France almost 15,890 m³. The other countries export even lower amounts of tropical roundwood. Regarding industrial roundwood, it is observed that Belgium again is the leading re-exporter. After 2000 the country re-exported 36.18% of its imports. The Netherlands follows with 31.98% and 25,090 m³ of re-exports, although German exports are larger than the Netherlands and ranked second after Belgium.

At this stage of the analysis, the first 6 of the 10 countries (with important quantities in perspective) according to trade of industrial roundwood were selected in order to describe the trade flows inside EU/EA. In the following figures these flows are analyzed for every country.

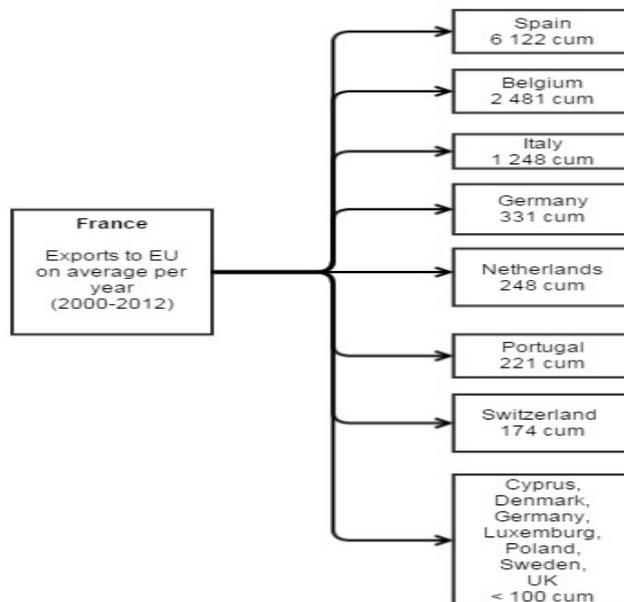


Figure 2. Tropical Industrial Roundwood(NC) re-exports to EU/EEA from France (FAOSTAT, 2015)

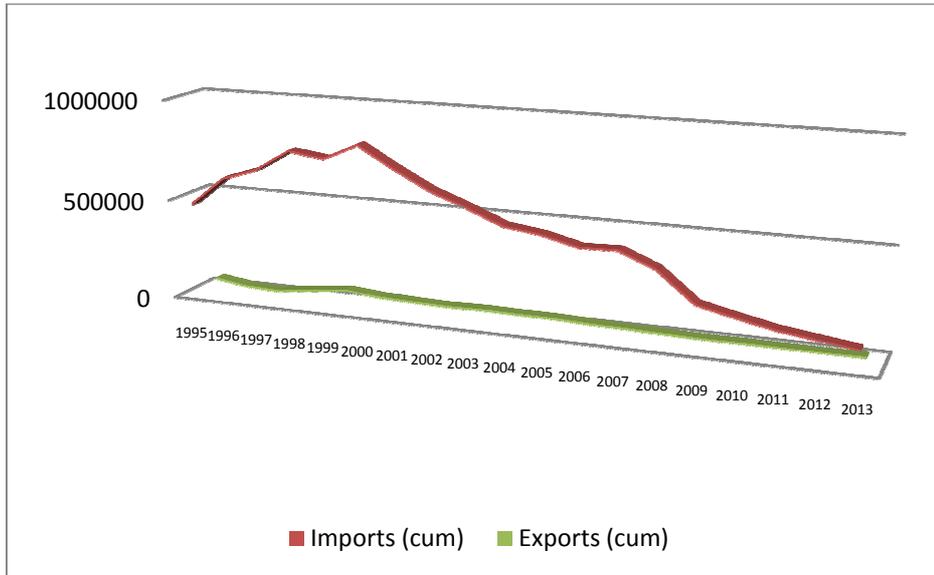


Figure 2.1 Tropical Industrial roundwood (NC) trade historical trends for France (FAOSTAT, 2015)

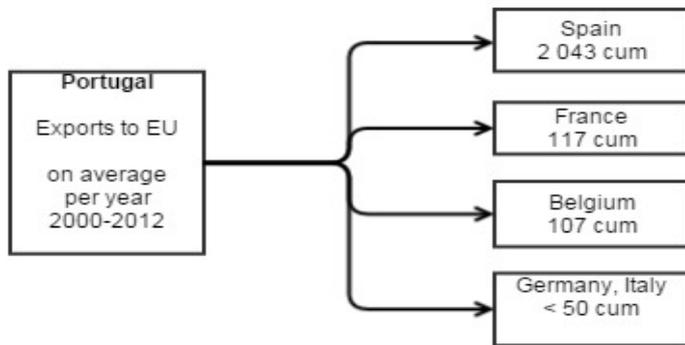


Figure 3. Tropical Industrial Roundwood(NC) re-exports to EU/EEA from Portugal (FAOSTAT, 2015)

According to Figure 2, France, the largest European importer of tropical roundwood, is spreading its imports mostly to Spain, Belgium and Italy, with exports of 6,122, 2,481 and 1,248 m³/year respectively. Also some of the above imports are re-exported to Germany, the Netherlands, Portugal and Switzerland. In addition, France maintains stable trade relations with Cyprus, Denmark, Germany, Luxembourg, Poland, Sweden and the UK regarding smaller quantities of roundwood (less than 100 m³/year). It is remarkable to mention that all the analysis proved that France as a major importer is also the major supplier to the EU/EEA countries. There is no doubt that France plays an important role as a supplier of tropical timber in Europe, although the above trade seems to be weaker after 2000. Figure 2.1 presents the trend of imports and exports of France after 1995. It is observed that there is a major and continuous decline in imports and a more stable trend in exports for this period. The demand in the EU was affected by the deteriorating economic situation in the eurozone, so the above trend could indicate a turn of preference of the consumers to timber other than tropical, or just a decline in demand or supply from the origin countries. For example, there are reports that log and sawnwood exporters in Africa are shifting their focus to markets outside the EU which consume wood products domestically rather than re-manufacturing wood products for export to the EU (ITTO, 2012).

Figure 3 presents the tropical re-exports of Portugal. Although Portugal is the second larger importer, with quite a large quantity of the product (2,043 m³/year) being exported to Spain, m³ the country's role in EU/EEA tropical trade does not seem very –important-. Except for the trade relations with neighboring Spain, Portugal doesn't seem to have trade connections with many countries. France, Belgium, Germany and Italy appear to be other trade partners but with only small quantities of timber being traded. In addition, the percentage of re-exports (Table 1) fluctuated at low levels on average (2.94%) if we compare it with the other countries in the table. The quantity of tropical industrial wood imported on average is large but no one could say with certainty that this quantity of wood consumed at

national level or re-exported out of the borders of EU. More detailed data about these re-exports are needed to conclude with certainty that there is a specific consuming culture in the country.

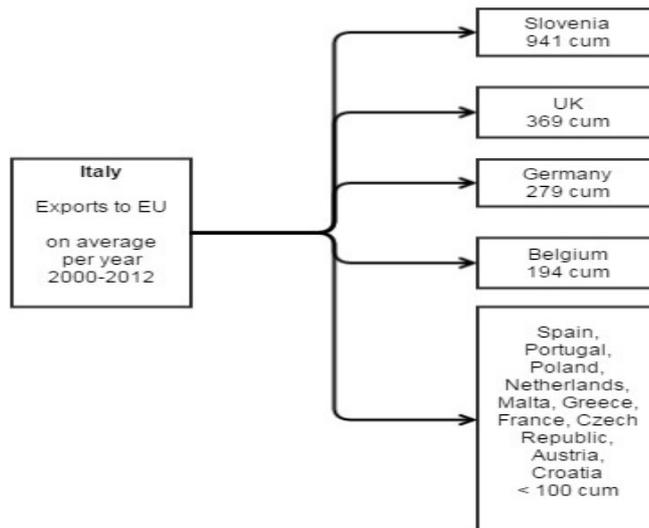


Figure 4. Tropical Industrial Roundwood(NC) re-exports to EU/EEA from Italy (FAOSTAT, 2015)

Italy (Figure 3) as a major producer of furniture in Europe and worldwide (the country's furniture industry has output valued at \$17.6 billion), exports mostly to Slovenia, UK, Germany and Belgium (Figure 4). Italy also has trade connections with many other EU countries with smaller quantities of exports. For the examined period the exports to Slovenia are calculated at 941 m³/year, a fact that could be easily explained due to geographical reasons, although the re-exports from Italy are small (Table 1), if we consider the imports that country does, and could possibly be explained by the demands of the internal furniture industry. Nevertheless, Italy remains a substantial importer in the EU countries and these

imports are at high levels, especially from high-risk regions (SE Asia, Central Africa, etc.) and CIS countries (Forest Trends, 2013). These imports will continue to support the internal industry. Furthermore, it is reported that due to the scale of production, wood, furniture and the pulp and paper industries need continuous, homogeneous and reliable timber provisions, which can only be guaranteed by foreign supply (Pettenella et al., 2014).

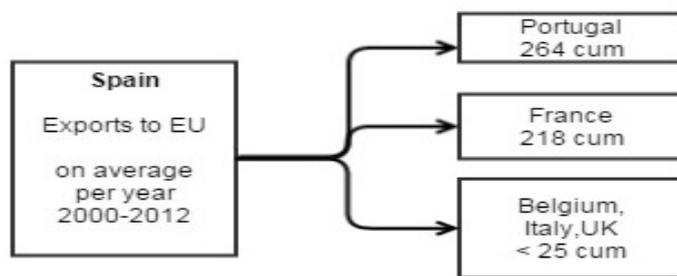


Figure 5. Tropical Industrial Roundwood(NC) re-exports to EU/EEA from Spain (FAOSTAT, 2015)

Spain before 2008 imported quite significant quantities of tropical wood (100,000 to 180,000 m³ per year). The economic crisis after 2008 pushed down imports to very low levels such as 61,000 m³ in 2008 and almost 10,000 m³ in 2013 (FAOSTAT, 2015). The recession may also be responsible for the low level of imports appearing for Spain, m³ on average (93,113 m³/year) (Table 1). Along these lines, Spain maintains a stable tropical timber trade with Portugal, France, Belgium, Italy and the UK (Figure 5). It is also important to mention that the above exports could easily be characterized as small if we compare them with the imports/year. So possibly we could conclude that Spain maintains important trade connections with countries outside the EU (that are not examined in the particular study) and supplies them with industrial tropical roundwood, or that Spain traditionally consumes tropical wood, more so it seems if we consider the low level of re-exports by the country (Table 1).

According to Figure 6, Germany and the Netherlands have important trade relations at least regarding tropical industrial roundwood. In this trade relationship Germany plays the role of the re-exporter with exports that reached to 2,944 m³/year in the examined period. On the other hand, the Netherlands for the same period exported to Germany 3,599 m³/year (Figure 7).

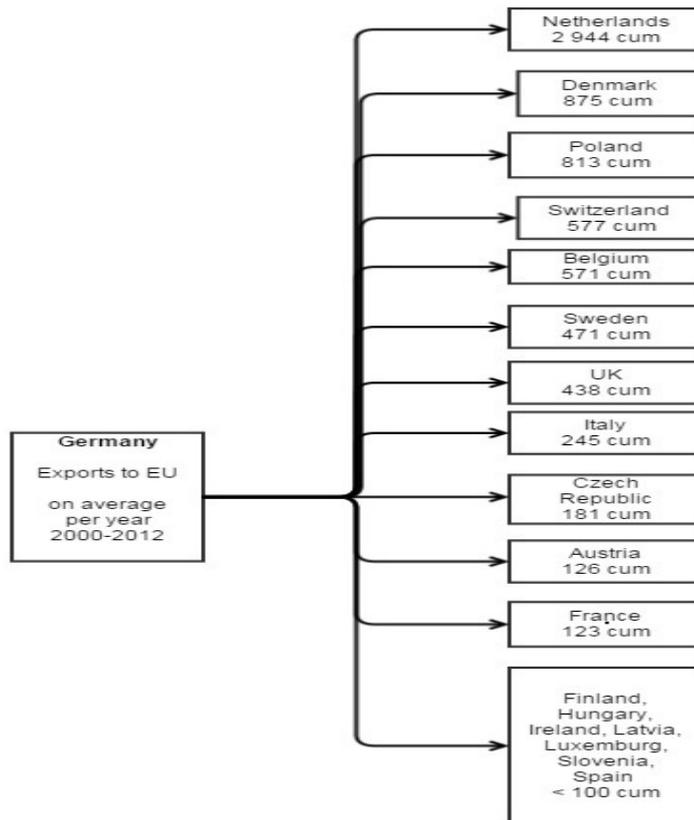


Figure 6. Tropical Industrial Roundwood(NC) exports to EU/EEA from Germany (FAOSTAT, 2015)

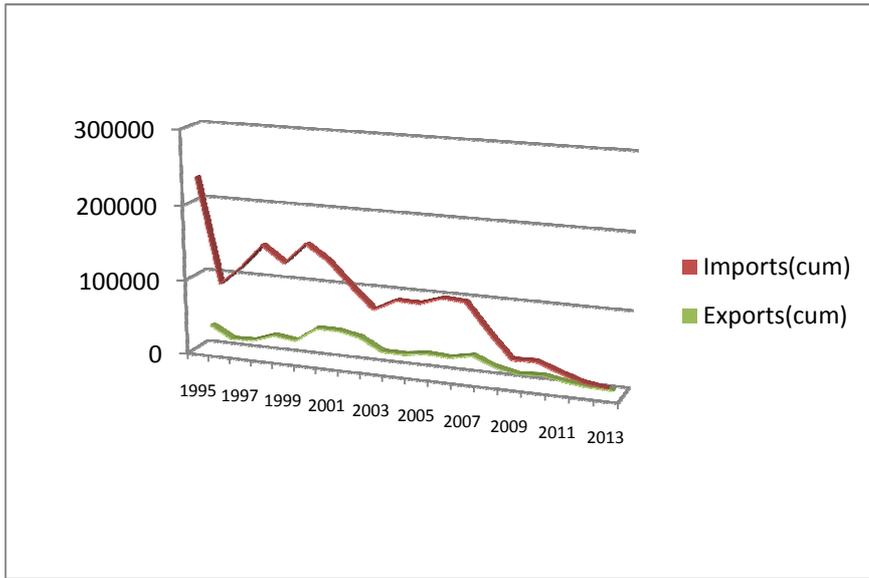


Figure 6.1 Tropical Industrial roundwood (NC) historical trends for Germany (FAOSTAT, 2015)

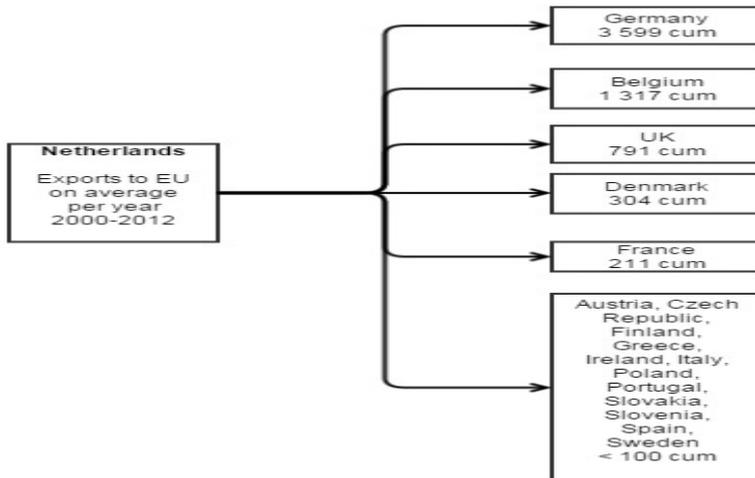


Figure 7. Tropical Industrial Roundwood (NC) exports to EU/EEA from Netherlands (FAOSTAT, 2015)

Germany's role in the EU tropical industrial roundwood trade seems to be important because it maintains trade with many EU/EEA countries from all around Europe. This characterizes Germany as an important supplier for European consumers. According to Table 1, German re-exports are close to 23.5% of the imports on average, ranking second after Belgium. Some of these are surely going to countries outside the EU and cannot be measured in the study, but the importance of Germany as a trade point remains significant even if we consider the number of countries that it cooperates with and the quantities of tropical wood that are traded; although following Figure 6.1, it is easy to understand that the position of Germany regarding the particular trade of tropical wood is on a downward trend. Especially after 2000, a negative trend is observed mostly in imports and less in exports of tropical wood. Some preference for the timber that is nationally produced could be one of the reasons which better explain this trend. A rise in demand for coniferous wood is expected in Germany during the next few years simultaneously with the prevention of job losses in the sector (BMELV, 2011), so maybe there is no space for further development of the tropical wood trade if we consider that the European economic crisis is still continuing to act negatively on trade. The important trade relationship between Germany and Netherlands is verified by Netherlands trade (figure 7). Although in that case smaller quantities are exported from Netherlands. Except Germany important tropical wood is exported from Netherlands to Belgium (1,317 m³/year) and UK (791 m³/year) on average.

Regarding individual exports from Belgium to Europe, the most important message that one could take from Figure 8 is that Belgium maintains a strong trade relationship with Germany, Netherlands, France and Italy. Some smaller quantities are exported almost all around Europe. Belgium exports to France 1,541 m³ per year and France exports to Belgium 2,481 m³ per year on average. On the other hand, Belgium exports to Germany 5,806 m³ per year and Germany only 571 m³ per year to Belgium (Figure 6). The same is observed for the Netherlands, France and Italy. Belgium, for example, exports to the Netherlands 5,781 m³

per year whereas the Netherlands exports to Belgium 1,317 m³ per year (Figure 7). It is also important to mention here that in the examined tropical categories (plywood excluded), Belgium maintains first position in the EU with the largest percentages of re-exports in sawnwood, veneer and plywood and the second largest in plywood after France. So, many could say that Belgium is leading regarding tropical trade as a supplier in the EU. The reasons for that could be discovered in historical trading links that the country has established over the centuries.

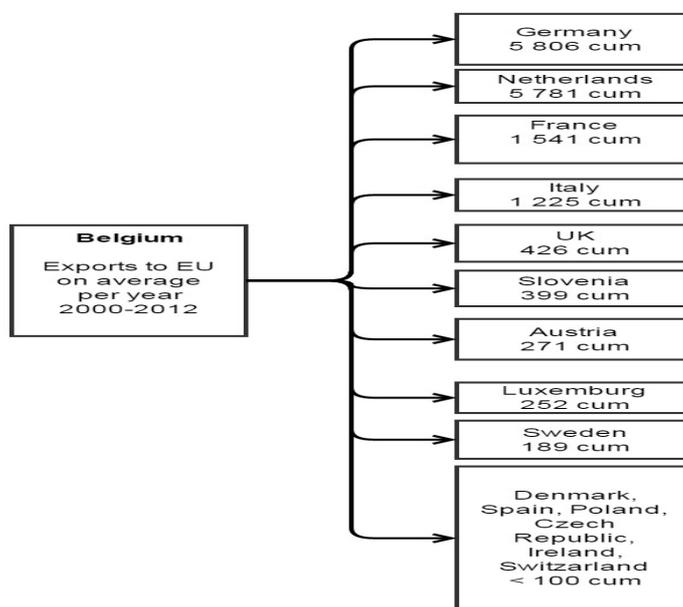


Figure 8. Tropical Industrial Roundwood(NC) exports to EU/EEA from Belgium (FAOSTAT, 2015)

b) Leaders in consumption

Continuing the analysis of the available data the question who is consuming more, seems very difficult to answer with certainty. An approach is presented here based on the consumption per capita for every tropical category. It is crucial to mention here that the distance between real consumption and apparent consumption could be very important but the calculation follows the methodology used worldwide. According to Table 1, the

consumption of tropical wood in EU countries seems to remain around very low levels during the examined period. More specifically, the consumption per capita was calculated. This particular calculation could possibly indicate which countries consume more at a national level, following one consuming culture to prefer one particular product for traditional reasons or just because it is more available in the market than others at a fair price. This hypothesis of course is not an absolute fact because there are many other reasons over a period that could drive the consumption of a product such as low prices, economic growth, seasonal particular use for a specific reason, very effective marketing, etc. All these could be reasons for a more focused consumption, e.g. the Netherlands are leading in the consumption of tropical sawnwood (0.018 m³/capita) and this is probably a reflection of the large volume of tropical sawnwood used in civil engineering applications such as sea defenses and bridges in the Netherlands (FAO, 1999). Ireland, Belgium and Portugal follow in terms of tropical sawnwood consumption with 0.012, 0.009 and 0.008 m³/capita on average, respectively. It is important to underline here that the Netherlands was found to be the second largest importer of this particular product after France. The combination of those two remarks could characterize the country as one of the leaders in consumption of tropical sawnwood, mostly to satisfy national needs and not just to supplement some trade flows. Regarding tropical veneer, the consumption/capita for the examined countries is really very low (almost near to zero), so the distinction and the characterization of a country as a leader in consumption is really impossible. The literature (FAO, 1999) provides some details on this, reporting that Italy has the largest consumption/capita, whereas this fact is not visible in the results on Table 1. Italy is presented as the largest importer of the product in Europe, and if we combine this with the huge demands that the Italian industry has, we can conclude that most of the veneers imported are consumed at national level and not re-exported. In terms of plywood, the Netherlands, Ireland and Belgium ranked in the top positions. Furthermore, the Netherlands is leading in consumption per capita with 0.01 m³/capita during the

examined period. The greatest share of tropical plywood consumption is held by the UK but the Netherlands has the highest per capita consumption of tropical plywood. The particular consumption is really limited for the other countries. Finally Portugal seems to be the leader in consumption/capita regarding industrial consumption with 0.018 m³/capita, followed by France and Belgium with 0.006 and 0.004 m³/capita, respectively.

c) Exposure to Illegal logging

It is known worldwide that during the last few years, the EU has introduced many policy instruments to prohibit the sale within the EU market of illegally harvested timber or timber products derived from such timber, although the problems are still there. There is high dependence on tropical hardwood from Cameroon and Congo Republic, where certification systems such as FSC and/or PEFC are widely used (ETTF, 2011); but on the other hand, 87% of wood imported into Belgium, for example, from outside the EU derives from countries with high perceived levels of corruption – notably China, Russia and Latin America. In addition it is reported that certification is still not widely used across these countries (ibid). In 2011, the EU-27 imported timber products valued at €2.19 billion from high-risk countries in South East Asia (approximately 18% of all timber product imports for the same year). Imports from the region came primarily from Indonesia, Malaysia, Vietnam and Thailand (Forest Trends 2013). Because of that, there are hard evidences that could correlate consumption in Europe with illegally harvested tropical timber and products through the largest European importers of tropical roundwood, sawnwood and veneer. The top six EU importers are the UK, the Netherlands, Germany, France, Belgium, and Italy, which together account for over 85% of all EU imports from high-risk countries in SE Asia (ibid).

Overall, it is understandable that there are indications of illegally harvested wood traded inside the European borders starting from the countries that import -in perspective-

large volumes and continuing with the countries which distribute the timber around EU/EEA countries.

d) Tackling illegal logging

EU continues to develop new policy tools such as EU/TR (implementation from 2013) in order to avoid illegal trade, to minimize the risk and to support the certified products, although these tools are not always enough. For example, FLEGT – VPAs (Voluntary Partnership Agreements) – are not quick fixes and in many cases they take several years to negotiate and implement (EFI, 2009). Furthermore, it is reported that some stakeholders in the EU find EUTR does not properly address the issue of illegal harvesting. It is reported that some of them see the EUTR as advantageous for their businesses, and others see it as an impediment and raise issues such as law enforcement, lack of guidance and bureaucracy (Giurca & Jonsson, 2015). In addition recently the European Commission warned Greece and Hungary to comply with EU rules to counter the trade in illegally harvested timber (EC, 2015). Delays are observed regarding the application of EUTR and Forest Law Enforcement Governance and Trade (FLEGT) Regulation. On the other hand there are strong evidences that this entire anti-illegal logging policy framework is working in order to avoid the placing of illegal timber on EU market. For example is reported (Boakyed, 2015) that markets in the West-African and Asia/Far East have already crippled the EU's share of timber products from the Tropics. For instance Ghana's³ wood exports to the EU dipped from 257,000 m³ (57% of total exports) in 2000 to 64,000 m³ (20% of total exports) in 2011 whilst the share of the West-African sub-region within the same period increased from 35,000 m³ (11.6% of total exports) to 163,000 m³ (51% of total exports) (TIDD 2000,2011). Contrary to the above, an emergence of a dual market is reported where the regulatory framework is not so demanding like China and India. After that, large quantity of wood is

³ The VPA between Ghana and EU was signed in Brussels on 2009. (source: Ghana FLEGT VPA)

processed and then re-exported into the EU and the USA (Masiero et al., 2015). Nevertheless the impact of legality measures on market trends seems to be unclear and hard to estimate.

CONCLUSIONS

The tropical wood trade in the EU has some established flows over the years. Belgium's role in the EU tropical market was underlined as an important supplier of tropical wood products in the EU mainly due to the significant re-exports that were calculated above. In addition, France ranked first in tropical roundwood imports and sawnwood and second in veneer during the examined period, and Italy ranked first in tropical veneer imports. Also France was indicated as the most important re-exporter of plywood and maintains stable trade relationships with Spain and Belgium, with significant roundwood quantities exported to them. Germany exports significant quantities to the Netherlands and maintains trade relationships with the greatest variety of EU countries. Finally the Netherlands exports significant quantities of industrial roundwood to Germany, Belgium, Netherlands, France and Italy.

The consumption/capita at national level plays a different role when someone wants to analyze the real demand of tropical wood in the EU resulting different "leaders" for the examined tropical categories. The Netherlands is presented above as a leader in sawnwood consumption/capita and plywood, and Portugal in roundwood consumption/capita. The results are not so clear for Italy regarding veneer but veneer's direct purchase by the furniture industry, the high level of imports by Italy and the huge Italian furniture industry (second in the world after China) are factors that support the leading character of Italy as a consumer of veneer.

It is known worldwide that the greater part of the EU's trade in timber and timber products occur between developed countries (i.e. from North America) and is not unduly

affected by illegal logging activities. Nevertheless, the tropical timber trade and the consumption at national level in the EU seem quite important for the European economy. Volumes of timber that are imported from Africa by the EU remain limited (less than 4% in value of world trade flows in wood products) but constitute an important trade for the region (EC, 2003). Also, EU imports from Asia and Latin America are less important (ibid).

The role of the leaders in both categories (traders and wood consumers) must also have better control along wood supply chains and give better information to the consumers about what they consume, and that seems to be a crucial need for European consumers. It is reported that Dutch, Czech and Swedish citizens are among the most doubtful about the legality of timber on the EU markets, with more than 80% saying they do not think the timber they buy is legal or are not sure about it. In the Mediterranean countries, support for the need for legality and new timber laws that can assure this is almost unanimous. Some 98% of Italians and Spanish and 99% of Portuguese want to be sure that the wood they buy is legal, and an average of 97% support the introduction of a new European law (WWF, 2009). The lack of information could create negative trends in consumption and in parallel weaken the trade. The high level of understanding of the EU's role in global tropical timber trade through the plethora of information and data that is related to origin, certification, forest conservation, fair prices and competitiveness of the sector could strengthen trade relationships, especially regarding the leading countries.

The study indicated which of the European countries are having a leading role in tropical timber trade in the EU/EEA region. More specifically the role of the leaders was limited to their importance as traders or consumers of four tropical wood categories. The trade flows were described regarding the tropical industrial roundwood only. The trade flows of the other tropical categories were not analyzed. In addition, secondary processed wood products were not included in the particular study. Their role is equal or greater in

trade and this could be the main scope for a future study. Regarding the consumption/capita, the calculation is about the apparent consumption/capita and this calculation could lead to an error regarding the real demand in the market.

The demand from the European countries for tropical wood for national consumption or for trade reasons surely is connected with exposure to illegal logging in the origin countries in the Tropics with the subsequent known degradation of forestland. At least literature confirms that there are some evidences of the truth of the above. In parallel all this anti-illegal policy framework seems not to be enough to restrict illegal logging wood incident in EU market. The increased ambiguity in trade seems to have side effects like substitution of oak lumber for tropical lumber and diversion of exports towards a dual market with less demanding rules. China and India probably supply EU with wood while the direct exports from risk countries due to the policy framework are declining.

On the other hand, this fact must not be an obstacle in the tropical timber trade if this is happening under the policy instruments that EU consciously constructs and everybody argues that the assessment of the impact of legality measures on market trends still seems not to be very clear.

The role of the above leading countries in trade or in consumption at national level is crucial in terms of trying to maintain the levels of certification, the quality of the data, the control of wood supply chains and the information to the consumers at a high level.

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