The report offers an analysis of timber export from the Russian Far East (Khabarovsky, Primorsky, Amurskaya, and Evreyskaya Provinces) from 2004 until 2014 based on the following parameters: main importing markets, the type of timber (pinewood, softwood and valuable species) and the depth of processing (roundwood, sawn wood, and plywood/veneer/OSB).

The analysis reveals least two patterns: 1) the declining diversification of the buyers market for timber from RFE; 2) the enduring model of exporting raw or crudely processed timber despite the efforts of the Russian government to reverse this model with introducing new tariffs on the exports of roundwoods and calling for investments in the domestic timber processing industry. This model is unsustainable for RFE forest industry and for its natural/intact forests as it creates incentives for illegal logging. The report offers recommendations on mutual efforts between WWF Russia and China on responsible timber trade to ensure legality of timber original and encourage ethical investment in the RFE processing industry producing timber commodities bound for export to China.

**RECOMMENDATIONS**

1. To raise awareness among Chinese producers and consumers on the importance of timber product legality.
2. Promote FSC certified products and establish rigorous system of 3rd party confirmation of legality.
3. Joint work between Chinese and Russian customs to streamline the chain of custody for CITES listed species — Mongolian oak and Manchurian ash.
The Russian Far East (RFE) has an enormous geography defined by great distances and abundant natural resources with forest resources being most significant, with 11.1 billion cubic meters (m³) of timber. The total forest coverage of the RFE is 280 million hectares, which is about 40% of all forested area of Russia. The overwhelming majority of RFE forests are pinewoods, with 52% of all larch and 20% of all spruce in Russia growing in the RFE. Temperate mixed forests are more predominant in the south with 20% of all Russia’s valuable hardwoods such as oak and ash growing here (Sheingauz 2007). The south part of the Russian Far East contains famous temperate Korean pine-broadleaf forests home for the endangered Amur tiger and the Far Eastern leopard.

The RFE forestry industry is a significant contributor to the regional economy responsible for 5-10% of its GDP. The immediate proximity of fast-growing Asian markets with high population levels and growing consumer demands, large distances from densely populated European markets, and very low levels in local demands for timber products create strong incentives for the establishment of export-oriented forestry industry supplying the entire Asia-Pacific. What have been the main trends in patterns in FRE timber export in the last decade and what trends have been particularly negative for establishing a sustainable forestry governance?

The analysis reveals that the overall volume of timber export from the RFE significantly decreased, from 13.3 million m³ in 2004 to 7.4 million m³ in 2013, although the shape of export fluctuations followed an inverted u-curve model – increasing up to 17.5 million of m³ in 2007 (the highest point) and then dropping to 9.3 million m³ in 2009 and to 7.3 million m³ in 2013 (the lowest point). The dramatic reductions in the volume of timber exports from RFE is a function of at least two things: the 2008 global financial crisis causing the dropping consumer demands for timber products and the introduction by the government of Russia of new tariffs on exporting roundwoods, in order to encourage domestic wood processing. In 2014, timber export from RFE increased again, by a small margin, first time in the last six years, which is likely due to weakening Russian rouble as compared to US dollar and Chinese yuan.

The decreases in cross-border sales, however, did not contribute to saving more intact FRE forest landscapes, as their degradation continued unabated. The current export-oriented model is based on logging practices with very low productivity – hunting for large, high quality logs and new forests and thus impacting more forested areas than necessary.

The overwhelming majority of timber commodities exported from RFE were high quality unprocessed or crudely processed wood products. Even though the share of sawn wood went up from 2% in 2004 to almost 22% in 2014 whereas the share of logs went down from 97% to 75% (in response to new tariffs in exporting roundwoods), in principle the current exporting model remains a continuation of the paradigm adopted in the 1990s and based on selling raw or crudely processed natural resources with low value added. At the same time, neighbouring Chinese provinces experienced construction and manufacturing boom, fuelled by increased timber volumes. From 2004 to 2014, the share of RFE timber products sold to China went up from 54% to 83%.

The established model, of selling raw resources to the neighbouring market with low consumer pressures for environmental standards encourages illegal logging practices, which are almost guaranteed in the context of poor forest governance. What can and should be done, to minimize the damage to the unique and diverse intact forests of the RFE caused by illegal and harmful logging methods, while also keeping the regional forest economy lively and sustainable in a long-run? Finding a solution to this dilemma requires efforts on the both side of the equation — supply (Russia) and demand (China), societies increasingly linking their economies while sharing the same ecoregion of the Amur Heilong. The report offers policy-related recommendations on how to ensure and establish responsible timber trade between Russia and China.

1. INTRODUCTION
2. METHODS AND RESULTS

We employed all-Russia yearly custom data on timber exports and imports from 2004 to 2014, from which we extracted the segment on the four Far Eastern provinces: Primorsky, Khabarovsky, Amurskaya and Evresyskaya. Then we ran an analysis on exporting timber volumes (measured in m³) separately for each year and broken down into following categories: 1) timber commodities broken down by types and depth of processing, and 2) largest importers of RFE timber.

To simplify the categorization of timber products we constructed a classification code based on two measures – the type of wood (pinewood, softwood, valuable hardwoods, and others) and the depth of processing (logs, crude sawn wood, and processed timber products including plywood, veneer and oriented stand boards-OSB) (Table 1).

### Table 1: Classification of timber products based on timber types and processing depth

<table>
<thead>
<tr>
<th></th>
<th>Roundwoods</th>
<th>Crude sawnwood</th>
<th>Processed products including plywood, veneer, OSB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinewoods (larch, fir, spruce, pine)</td>
<td>1,1</td>
<td>1,2</td>
<td>1,3</td>
</tr>
<tr>
<td>Valuable wood (oak, ash, linden and elm)</td>
<td>2,1</td>
<td>2,2</td>
<td>2,3</td>
</tr>
<tr>
<td>Softwood (birch, poplar and aspen)</td>
<td>3,1</td>
<td>3,2</td>
<td>3,3</td>
</tr>
<tr>
<td>Others</td>
<td>4,1</td>
<td>4,2</td>
<td>4,3</td>
</tr>
</tbody>
</table>

A separate analysis was conducted for the species with high value for both the timber processing industry and for regional conservation. This includes Manchurian ash (Fráxinus mandshurica), Mongolian oak (Quercus mongolica), and Korean pine (Pinus koraiénsis). Mongolian oak and Manchurian ash are included in CITES (Appendix III) mandating exporters of these species to obtain a CITES permit and submit a documentation to the Far Eastern Federal District’s Federal Service for Supervision over Natural Resources (Rosprirodnadzor). Manchurian ash is highly esteemed in industry for its high trunk and flexible homogenized texture used for furniture and flooring. Mongolian oak is also covered by CITES while being on high demand by industry for the production of high quality flooring, furniture and interior design. Finally, another CITES-listed species, Korean pine has very high ecological value as source of food (pine nuts) for humans and many forest species. The commercial logging in Korean pine broadleaf forest stands was suspended as early as in 1988 yet some selected logging had continued. In 2010 all logging of the Korean pine was banned. These three tree species are the basis for the Korean-pine broadleaved forests.

3. DISCUSSION

In the last decade timber export from the Russian Far East was not linear. First, it steadily grew from roughly 13.3 million m³ in 2004 to 17.5 million m³ in 2007 – a record volume for timber export from the RFE ever. Three decades ago, in 1985, when the RFE forest industry was booming with many people employed in high-value added timber processing jobs, producing veneer, and wood panels, only 8 million m³ of timber (mostly logs) was exported. During the 1990s, the time of severe economic downturn in Russia, the RFE forest industry was impacted more than other economic sectors. But in the end of the 1990s and the early 2000s, the levels of timber export soared again, to the very high new levels. Partly it was explained by the fact that regional timber processing capacity was lost during the economic collapse of the 1990s, and never fully recovered since then, so there was less very little local demand for logs and sawn timber.
In 2007, only 2% of actual harvest level could be processed within the RFE region (Simeone 2013). But mostly the spikes in the exports of RFE roundwoods was driven by the boom in the wood processing industry of neighbouring China which was rapidly becoming a world manufacturing centre for furniture and flooring materials. In 2007, the level of timber export from the RFE reached a record level, of 13.5 million m$^3$, with 73% of it going to China (mostly logs).

In 2009, timber exports from RFE collapsed to 9.3 million m$^3$, which was mainly the function of two things: the 2008 global financial crisis and newly introduced tariffs on log exports. By 2013, export had decreased to 7.4 million m$^3$, the lowest level since late 1990s. Generally, the share of Russian timber in Asian markets vis-à-vis their major selling competitors, the US, Canada and New Zealand, has shrunk from 59% in 2007 to 20% in 2013 (УК РФП Групп 2014). In 2013, China imported 73 million m$^3$ roundwood and sawn wood from Russia (EIA 2013, p. 48), of which 8 million m$^3$ was from the Russian Far East, accounting for 10% of all timber imported to China.

As for the structure of timber export, there were some changes as compared to the previous decades, especially since the introduction by Russian government of export tariffs on roundwood in 2008. Since then sawn wood has become more predominant reaching 22% of all export volume in 2013, as compared to only 2% in 2008 and earlier. Consequently, the share of logs went down from 98% in 2008 to 75% in 2013 (Table 2). These changes can be seen as a positive trend pointing to at least some value-added activities performed on raw timber. Yet looking more closely at types of these sawn wood commodities suggest very little, if any, value-added activities performed – these are mostly crudely processed or unplanned boards. By 2013, only 3% of exported commodities consisted of veneer, plywood and OSB – deep processing activities which requiring skilled labour and technological upgrade.

As in the previous decades, the most prevalent timber commodities were pinewoods (80%) dominating by larch. In 2004, the export of valuable hardwood logs, including oak and ash, was 10% (1.3 million m$^3$), going up to 13% of all export volume in 2007 (2.3 million m$^3$), and then falling to 4.4% of all export in 2009, when the sales of oak, ash and Korean pine fell to roughly 300,000 m$^3$. Beginning with 2010, the export of Korean pine halted entirely, after Russian government introduced a ban on all logging of this tree species. Starting from 2011, the export levels for both Manchurian ash and Mongolian oak were on increase, by almost 60% in the last two years. Despite the relatively low share of these valuable hardwoods in all Far Eastern export, their significance for the vitality of temperate Korean pine broadleaf forests, home for tigers and leopards, is very high. The stock of high quality standing oak suitable for commercial logging has been depleted, which is a problem not only for forest diversity but also for the long-term sustainability of timber production in the region.

Yet steadily growing demands for valuable hardwoods in foreign markets is likely to continue to drive the increases in the exports of these commodities, even in the face of new control and monitoring measures introduced by Russian government for Mongolian oak and Manchurian ash in 2014, after these two species were included in CITES. The proximity of capacious and rapidly growing market, with the level of China’s GDP growth projected at 7% a year (IMF 2014), there are only a handful alternatives for timber export from RFE. If in 2004, China purchased 54% of timber from the Russian Far East, in 2013 more than 80% of FRE roundwood and sawn wood went to China (Figure 4). With growing China, the share of Japan among major importers was decreasing from 34% in 2004 to 3% in 2014. After the adoption of new export tariffs on logs, the volume of Russia timber commodities bound to Japan dried up as Japanese manufacturers are not interested in purchasing sawn wood produced in Russia – they do not meet their standards. Japanese buyers prefer unprocessed logs. Yet timber from RFE continue to make its way to Japan, via China (EIA 2013a). In the last years, the share of South Korea among main timber importers went up, from 6% in 2008 to 15% in 2013. There is very little amount of timber, less than 1%, imported by the European Union.

Despite the lack of direct export routes to consumer powerhouses such as the US and the EU, a significant share of Russian Far Eastern
timber end up there as finished products manufactured in China. Russia is one of the main hardwood suppliers for Chinese manufacturing sector. In 2012, China exported furniture and flooring materials made of natural wood for the total of 20 billion dollars. 33% of these products were shipped to the US, 17% went to Europe and 7% to Japan (EIA 2013b). It is hard to estimate the share of these products made of RFE timber, due to the lack transparency in the timber production-consumption chains. Frequently such production chains involve several countries and many “middle men,” which complicates the tracking process. To give an example: even such a direct transaction as selling timber over the Russian-Chinese border often involves three and more intermediary agents who are mostly interested in keeping the cost low rather than purchasing FSC timber with guaranteed legality (Voropaev and Smirnov 2010). By expert estimates, US imports of Chinese furniture made from RFE hardwoods are likely to be in the hundreds of millions of dollars. Often these imports include high-risk hardwoods: flooring, furniture, plywood and veneer made of Mongolian oak, Manchurian ash, Japanese elm, and Amur and Manchurian linden. The growth in trade of sawn timber between RFE and China, as opposed to trade in logs, indicates the developing of at least some wood processing capacity on the Russian side of the border. Indeed, some investments were made, including by Chinese businesses, to open new sawmills to produce crudely processed sawn woods for shipping them across the border, to Heilongjian province, for subsequent deep processing. Yet the investments made with the use of Chinese capital in RFE sawn mills were mostly short-lived, low value-added and does not require investments in technology or in skilled labour.

4. CONCLUSION AND RECOMMENDATIONS

The analyzed patterns of timber export from the Russian Far East from 2004 to 2014 suggest two long-term trends: the enduring export model based on trading raw or crudely-processed natural resources, and the increasing dependency of RFE forest sector on trading with China to where it forwards more than 80% of its wood commodities. Notably, this dependency is not mutual: unlike Russian Far East, China has a well-diversified sources of timber imports, increasingly dominated by forest traders from New Zealand, the US and Canada. Potentially China, being almost a single buyer of timber from RFE and thus having more leverage over it than vice versa, can impose strong consumer pressure on Russia in terms of demanding higher legality of its timber origin.

There is lots of room for improvement, particularly for establishing more responsible timber trade between Russia and China. Such trade relationship should evoke the power of market-based approaches, including raising consumer awareness in China and using consumer pressures to improve legality, environmental certification while investigating chains of custody tracing the legality of timber products from the production forest stands and all the way to final consumers. It is recommended for both Russian and Chinese nature protection community to:

- Work to raise awareness among Chinese producers, businesses and consumers on the importance of timber product legality and to demand products with FSC certification. Establish rigours system and 3rd party confirmation of legality. Local NGOs including WWF Amur experts can offer guidance on confirming legality.
- Investigate chain of custody: Specifically, WWF Russia and China should work together on improving sample collection and field testing of this instrument. These methods can trace the original of wood products with the precision of a forestry management unit (200,000 ha).
- Joint work between Chinese and Russian customs to streamline the chain of custody for CITES listed species – Mongolian oak and Manchurian ash.
- Responsible investing in RFE forest industry by Chinese businesses: encourage investors/entrepreneurs and investors to follow the “Guidelines for overseas responsible investment” adopted by the government of China in 2008.
Figure 1. Timber export from RFE, (%)

![Figure 1](image)

Table 2. Timber export by type of commodities

<table>
<thead>
<tr>
<th>Year</th>
<th>Roundwood (%)</th>
<th>Sawn wood (%)</th>
<th>Veneer, plywood, OSB (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>97</td>
<td>3</td>
<td>&lt;0.1</td>
<td>100</td>
</tr>
<tr>
<td>2007</td>
<td>98</td>
<td>2</td>
<td>&lt;0.1</td>
<td>100</td>
</tr>
<tr>
<td>2010</td>
<td>83</td>
<td>14</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>2014</td>
<td>75</td>
<td>22</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 2. Export of roundwood and sawn wood, (m³)

![Figure 2](image)
Figure 3. Timber export from RFE: leading importers, (%)

![Graph showing timber export from RFE: leading importers, (%)](image)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>53.6</td>
<td>62.7</td>
<td>64.4</td>
<td>72.8</td>
<td>80.2</td>
<td>85.2</td>
<td>86.8</td>
<td>80.3</td>
<td>80.8</td>
<td>80.5</td>
</tr>
<tr>
<td>Japan</td>
<td>33.6</td>
<td>25.4</td>
<td>23.5</td>
<td>18.9</td>
<td>12.9</td>
<td>7.6</td>
<td>6.9</td>
<td>6.2</td>
<td>5.3</td>
<td>3.3</td>
</tr>
<tr>
<td>South Korea</td>
<td>12.3</td>
<td>11.4</td>
<td>11.4</td>
<td>7.7</td>
<td>6.3</td>
<td>6.7</td>
<td>5.7</td>
<td>10.7</td>
<td>13.07</td>
<td>15.5</td>
</tr>
<tr>
<td>North Korea</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.19</td>
<td>0.05</td>
<td>0.06</td>
<td>0.05</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0.05</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.006</td>
<td>0.001</td>
<td>0.007</td>
<td>0.005</td>
<td>0.02</td>
<td>0.05</td>
</tr>
<tr>
<td>EU</td>
<td>0.001</td>
<td>0.002</td>
<td>0.06</td>
<td>0.008</td>
<td>0.005</td>
<td>0.08</td>
<td>0.27</td>
<td>1.03</td>
<td>0.6</td>
<td>0.35</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4. Export of selected species: Mongolian oak, Manchurian ash and Korean pine in 2004—2014, (m³)

![Graph showing export of selected species: Mongolian oak, Manchurian ash and Korean pine in 2004—2014, (m³)](image)
**Figure 5. Export of linden as roundwood, sawnwood and equivalent of harvested volume from Primorsky Province in 2004—2014**

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