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# Methodology for Import-source Estimates of Illegally Sourced Wood Imports: Thailand, South Korea and India

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## BACKGROUND

Chatham House has developed a detailed methodology (termed import-source analysis) for estimating the amount of likely illegally sourced timber and wood products (including pulp and paper) imported by consumer and processing countries. This method has been developed as part of a Chatham House project to assess levels of illegal logging and trade around the world, and the response of governments and the private sector.

The import-source analysis technique was developed in order to provide quantitative estimates of the scale and nature of imports of illegally sourced wood by key countries, and to assess how these have changed over time. In 2010 Chatham House used the technique to assess illegally sourced wood imports by five consumer countries (France, Japan, the Netherlands, the United Kingdom and the United States) and two processing countries (China and Vietnam) between 2000 and 2008.<sup>1</sup> Chatham House has now extended the assessment to cover two additional consumer countries (South Korea and India) and one additional processing country (Thailand). Imports to these countries were assessed for the years 2000–12.

This paper provides additional background data and information used to formulate the estimates of illegally sourced wood imports for South Korea, India and Thailand. However, it is illustrative of the process also applied for the 2010 study.

## METHODOLOGY OVERVIEW

Quantifying trade in illegally sourced wood can never be perfectly accurate, but the Chatham House import-source analysis technique is the most sophisticated estimation methodology devised to date. While the figures produced (in terms of volumes and values) for individual flows of illegal wood can only be estimated, the method does provide a useful picture of the general scale of the trade, what the most important flows are, and how these have changed over time.

The Chatham House import-source analysis involves calculating roundwood equivalent volumes (RWE) and US dollar values for individual import flows (source country/product) from official import data (for timber products, wood furniture, and pulp and paper), and then multiplying these by estimates of the proportion of wood considered likely to be illegally sourced in each individual wood flow in each year.

Individual illegality percentages are applied to specific wood product flows, depending on the source country, the wood product involved and the destination country. The baseline for these percentages is an estimate of the level of illegality in the source country in each year (sourced from Chatham House's own research or third-party research). In some cases, however, adjustments are made to reflect how different species and different products are more or less likely to have been illegally sourced, to reflect the fact that disproportionate amounts of illegally sourced wood may be consumed domestically, and to reflect that flows to different destination countries are also more or less likely to be illegally sourced, as a result of differences in the amount of due diligence applied by importers.

For the current Chatham House analysis, more than 50 supplier countries where illegal logging is known to be a problem were assessed, and many thousands of individual illegality estimates were created. This document provides the 'baseline' illegality estimates used for the most important source countries (including variations for specific products, source regions and time periods) and also provides information on adjustments made (if any) for specific destination countries. The document also provides the justification used for these estimates. The source countries detailed below collectively represent 91% of the total imports of illegal wood estimated in the import-source analysis for Thailand, 94% of estimated imports for India and 98% for South Korea.

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<sup>1</sup> Lawson, S., and MacFaul, L. (2010): *Illegal Logging and Related Trade: Indicators of the Global Response*, pp. 103–110. London: Chatham House.

## DEFINITIONS

**Illegally sourced:** These are estimates for timber that was illegal at some stage of the supply chain (i.e. it could have been illegally harvested, bought, sold or transported). The vast majority of illegally sourced wood is laundered as 'legal' by the time it is exported. Very little of the estimated volumes of illegally sourced wood was considered illegal by the government of the source country at the time it was exported.

**Illegal:** These estimates include all wood that was harvested, bought, sold or transported in contravention of regulations in the country of origin or in a third-party processing country. While some timber may be harvested without a licence of any kind, most will have been harvested under a licence but nevertheless have been cut, processed or transported in contravention of regulations. For instance: the licence may have been illegally issued (sometimes corruptly); the company may not have obtained all the proper post-licence permits before beginning harvesting; or the company may be logging in prohibited areas within its concession, felling prohibited species, felling under-diameter trees, or harvesting more trees than allowed. A company may also be failing to declare in full the quantity extracted or exported, in order to avoid taxes, or be exporting some logs in excess of quota.

**Wood product:** In this report, the term wood product includes primary and secondary timber products, other wood manufactures, and pulp and paper.

## ESTIMATES OF PERCENTAGES OF SOURCE ILLEGALITY IN THE MOST IMPORTANT WOOD FLOWS (BY SOURCE COUNTRY)

### China

Chatham House's own analysis of China's wood imports in 2010 showed that the country imports large volumes of high-risk wood from many of the countries most badly affected by illegal logging. The baseline estimate for the proportion of China's exports that are illegally sourced is based partly on Chatham House's estimates of China's imports that are illegally sourced. The wood balance analysis published in 2010 estimated that China imported 20.4 million cubic metres of illegal wood products in 2008, representing around 20% of all imports. In other years the proportion of imports estimated to be illegal ranged as high as 26%. A much smaller – but significant – percentage of Chinese domestic production is also likely to be illegal in some way.

Overall imports and imports from high-risk countries are known to have expanded since 2008, while domestic harvesting has remained static.<sup>2</sup> Around two-thirds of total wood demand is now being met from imports.<sup>3</sup> Tax incentives and the nature of domestic timber supply (in terms of species and quality) mean that a disproportionate share of wood product exports can be expected to have been produced using imported timber.

In addition to illegalities in domestic production and in source countries of imports, there are additional illegalities that can occur post-harvest or post-point of import. There is known to be substantial fraud in the wood sector in order to avoid taxes, for instance. Overall, considering all the above factors, Chatham House estimates that 30% of China's wood product exports are illegally sourced. This matches with independent published estimates.<sup>4</sup> China imports illegally sourced wood of all kinds, so no variations from the baseline illegality proportion are ascribed to different products. The baseline illegality proportion is estimated to have remained static over time.

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<sup>2</sup> Environmental Investigation Agency (2013): *Liquidating the Forests: Hardwood Flooring, Organized Crime and the World's Last Siberian Tigers*, Figs 9 and 11. Washington DC: EIA

<sup>3</sup> *Ibid.*, p. 46.

<sup>4</sup> Seneca Creek and Wood Resources International, (2004): *'Illegal' Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry*. Poolesville; Bothell: Seneca Creek and Wood Resources International.

Given the lack of government and private sector action in South Korea, Thailand and India to prevent imports of illegal wood (see Chatham House illegal logging indicator country report<sup>5</sup>), relative to other major markets such as the United States and Europe, the analysis assumes that the proportion of illegality in wood flows from China to the three countries is slightly higher (1%) than the baseline.

## Indonesia

A log export ban was imposed in Indonesia in late 2001, so all reported imports of logs from Indonesia since that date are assumed to be illegal. A ban on exports of sawn timber was also imposed in Indonesia in 2003. Although some types of sawn timber appear to be exempt, Indonesia has recorded very low levels of exports since that time. Based on the export ban, and on the major discrepancies seen between recorded imports of sawn timber in destination countries and reported exports from Indonesia, the analysis assumes that 90% of all sawn timber imports from Indonesia since 2003 are illegal (on the basis that they were illegally exported). For other wood products from Indonesia, the analysis uses a baseline estimate of illegality of 70% for 2000 (based on wood balance analyses for that year). Based on various indicators (including wood balance evidence, major enforcement increases and expert perceptions), the analysis assumes a gradual decline in this baseline illegality rate, to 66% in 2004, then a rapid drop to 47% between 2004 and 2007 (the period in which evidence suggests illegal logging declined the most) and a gradual further decline since then, to a level of 41% in 2012. For further information on the evidence and indicators mentioned here, see Chatham House's 2010 illegal logging indicators report.<sup>6</sup>

For the 2012 assessment of imports by South Korea, Thailand and India, no specific adjustments were made to the baseline illegality estimates given above. Chatham House's study of these three countries found very limited take-up of independent certification and verification, and little or no regulatory drivers from government. As such, it is unlikely that these countries' imports are any less likely than average to be illegally sourced.

## Malaysia

Because of large variations in likely illegality between different parts of the country (see assessment of Malaysia in Chatham House's 2010 illegal logging indicators report<sup>7</sup>) and big differences in export destinations, trade flows for Malaysia were split into three separate major source regions/states: Peninsular Malaysia, Sabah and Sarawak. For each importing country, the proportion of imports classified as originating in 'Malaysia' that actually came from each region has been identified using disaggregated data from the Malaysian authorities. Different estimates of illegality have been applied to the resulting figures. No adjustments have been made for exports to different countries, since there is no evidence to suggest that exports to Thailand, India and South Korea are any more or less likely than average to be illegally sourced.

### *Peninsular Malaysia*

Almost all selective harvesting of natural tropical timber in Peninsular Malaysia is now independently certified as legal and sustainable under Malaysia's national certification scheme (Malaysian Timber Certification Scheme – MTCS). Most of the certification took place in the early-to-mid-2000s. In addition, a large proportion of overall log production is sourced from rubber plantations, and this is the principal source for most of Peninsular Malaysia's exports of wooden furniture and panels other than plywood. There are no indications of illegality relating to rubber plantation production. During the early 2000s evidence suggested that significant volumes of illegal

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5 Lawson, S. (2014): *Illegal Wood Import and Re-export: The Scale of the Problem and the Response in Thailand, South Korea and India*. London: Chatham House

6 Lawson, S., and MacFaul, L. (2010): *Illegal Logging and Related Trade: Indicators of the Global Response*.

7 Ibid.

timber from Indonesia were being imported into Peninsular Malaysia. This trade was reduced significantly in the middle part of the decade, however, following regulatory action in Malaysia and enforcement in Indonesia.<sup>8</sup> The Chatham House wood balance analysis assumes an illegality rate of between 10% and zero for exports from Peninsular Malaysia during the first half of the 2000s, depending on the product, declining steadily to at most 3% by 2012.

### Sarawak

Almost all of Sarawak's exports come from natural tropical forests. None is certified legal and sustainable, and there are major issues with legality. Most logging in Sarawak is controlled by a handful of large companies and evidence of widespread breaches of regulations by a number of these companies has been exposed in recent years.<sup>9</sup> For instance, an investigation of the largest logging company – Samling – in 2009, on behalf of the Norwegian Ministry of Finance, found evidence of multiple, serious illegalities in every one of the concessions examined.<sup>10</sup> There have also been allegations of high-level corruption in relation to the licensing of both logging and timber exports in Sarawak,<sup>11</sup> and there are more than 200 court cases pending in which local people claim that logging is taking place in contravention of their land rights.<sup>12</sup> In the early 2000s, furthermore, plentiful evidence also showed that large volumes of illegal timber from Indonesia were being imported into Sarawak and re-exported as wood products. This illegal trade declined dramatically in the mid-2000s, following enforcement in Indonesia.<sup>13</sup> The Chatham House import-source analysis assumes that between 30% and 50% of Sarawak's timber exports were illegal in 2000, depending on the product, declining to 20–40% during the second quarter of the 2000s as a result of reduced imports of illegal wood from Indonesia.

### Sabah

Forest governance in Sabah is worse than in Peninsular Malaysia, but better than in Sarawak. Some forest is Forest Stewardship Council-certified (as is a pulpwood plantation) and sustainability has been an explicit objective for the last few years when allocating logging concessions (reflecting exhaustion of Sabah's forest and continuing pressure for re-entry logging and conversion). Some export products are made primarily from legal plantation-grown timber. The Chatham House import-source analysis uses an illegality estimate ranging from zero to 25%, depending on the product, for exports from Sabah. The analysis assumes a decline from the second quarter of the last decade to at most 13% by 2012, reflecting an increased proportion of production originating from maturing plantations

### Burma

There are very few published quantitative estimates of illegal logging in Burma (Myanmar). Measuring illegal logging in Burma is especially challenging because of the lack of reliable information on legal logging. One 2007 OECD report on illegal logging cited a study showing that 80% of logging in Burma is illegal.<sup>14</sup> A 2004 report for the American Forest & Paper Association quoted a figure of 50%, but without providing a reference.<sup>15</sup> Certainly, large areas of the country where timber originates are not under the full control of the central government. Past comparisons of trade data have shown that more than 90% of the Burma–China border trade in logs and sawnwood is illegal.<sup>16</sup> For the purposes of the Chatham House import-source analysis, it was

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8 Lawson, S., and MacFaul, L. (2010): *Illegal Logging and Related Trade: Indicators of the Global Response*.

9 Global Witness, (2012): *In the future, there will be no forests left*. London: Global Witness

10 Council on Ethics, The Government Pension Fund Global, (2010). *Recommendation of 22 February 2010, on the exclusion of the company Samling Global Ltd*. Oslo: Council of Ethics, The Government Pension Fund Global.

11 Global Witness, (2012): *In the future, there will be no forests left*.

12 SACCESS, (2012). *Guidebook on reclaiming Sarawak NCR lands in Courts*. Kuching: SACCESS.

13 Lawson, S., and MacFaul, L. (2010): *Illegal Logging and Related Trade: Indicators of the Global Response*.

14 Contreras-Hermosilla, A, et al. (2007): *The Economics of Illegal Logging and Associated Trade*. Paris: OECD.

15 Seneca Creek and Wood Resources International, (2004): *'Illegal' Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry*

16 Global Witness, (2009): *A Disharmonious Trade: China and the continued destruction of Burma's northern frontier forests*. London: Global Witness.

assumed that 80% of all timber from Burma is illegal. The same proportion was applied to all years, to all products and to all destinations.

## Papua New Guinea<sup>17</sup>

During 2003–04, at the request of the government of Papua New Guinea (PNG) and the World Bank, an independent team visited 14 major logging concessions in PNG, and examined all aspects of legal compliance. The concessions assessed covered 3.2 million hectares and together were responsible for 65% of log exports in 2004. None of the 14 concessions was found to be in compliance with all of the key legality criteria assessed, and only one met more than half of the criteria. Chatham House's own 2013 study of illegal logging in PNG notes that most of the concessions previously exposed continue to operate; and that there is little reason to believe that the level of legality has improved, given that levels of monitoring and enforcement have not changed and that none of the concessions involved has sought to obtain voluntary independent verification of legality of production. It also notes that there is no reason to believe that compliance in other concessions not assessed in 2003–04 is any better. Only around 4 per cent of production is currently independently verified as legal.

In recent years, a rapidly increasing proportion of PNG's log exports have been originating from land clearance under Special Purpose Agricultural and Business Leases (SABLs). In response to evidence of widespread illegality, allocations of SABLs have been suspended pending the results of a parliamentary inquiry. The draft summary results of that inquiry, released in September 2013, showed that 90% of the SABLs examined had been issued illegally. Meanwhile, PNG judicial authorities have described the agency responsible for granting SABL applications as 'entirely corrupt'. By 2012 almost one-third of all of PNG's log exports were originating from SABL land clearance.

In summary, Chatham House's analysis of PNG concluded that all timber exports from PNG must be considered 'high-risk'. Based on this and the information above, Chatham House has estimated in its latest import-source analysis that 80% of PNG's timber exports are illegally sourced, and that this proportion has not changed over time.

## Russia

A 2004 summary review of available evidence on the extent of illegal logging in Russia noted that estimates for the eastern part of the country are much higher than those for western Russia, and that most NGOs use a figure of 20-30% illegal as an average for the country as a whole. The review's authors concluded that around 15-20% of production was probably illegal, while 25% of log exports were also illegal.<sup>18</sup>

A recent WWF study found that in 2010 twice as much oak was exported from the Primorsky Krai and Khabarovsk Krai provinces of the Russian Far East than was officially licensed for harvesting, implying that at least half of exports were illegal.<sup>19</sup> Undercover investigators from the Environmental Investigation Agency, meanwhile, were told by multiple traders and other sources during recent research in the Russian Far East that around 80% of harvesting is illegal.<sup>20</sup>

For the purposes of the Chatham House import-source analysis, a baseline illegality rate of 20% is assumed for all products, for all years. Because South Korea's imports of Russian timber are mostly from the Russian Far East, where the situation is worse, the illegality rate assumed for

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<sup>17</sup> All information provided in this section is sourced from Lawson, S. (2014): *Illegal logging in Papua New Guinea*. London: Chatham House

<sup>18</sup> Seneca Creek and Wood Resources International, (2004): *'Illegal' Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry*.

<sup>19</sup> Smirnov, D. Y. (ed.), Kabanets, A. G., Milakovsky, B. J., Lepeshkin, E. A., and Sychikov, D. V. (2013): *Illegal logging in the Russian Far East: global demand and taiga destruction*. Moscow: WWF.

<sup>20</sup> Environmental Investigation Agency, (2013): *Liquidating the Forests: Hardwood Flooring, Organized Crime and the World's Last Siberian Tigers*.



primary timber products is increased to 25%. While there is some FSC production in the Russian Far East, which is much less likely to be illegal, little of this production is likely to be destined for Korea.

## Laos

A recent WWF study found that actual harvesting in one province of Laos in 2010–11 exceeded the officially recorded harvest volume up to ninefold.<sup>21</sup> As much as 60% of the country's timber production may now be originating from logging in areas that are due to be flooded by dam projects;<sup>22</sup> studies have shown that it is common for illegal timber from other areas to be 'laundered' under such licences.<sup>23</sup> NGO investigations in Vietnam have shown that 0.5 million cubic metres of illegal logs are being imported from Laos each year in contravention of the country's log export ban.<sup>24</sup> Sawn timber exports are also supposed to be banned, yet sawn timber represents the majority of Laos's exports to Thailand. For the current analysis, Chatham House has estimated that 70% of timber exports from Laos are illegal. This rate is applied for all products, for all years, and for all destination countries examined.

## Vietnam

Some 80% of Vietnam's timber supply is imported;<sup>25</sup> and many of the most important supplier countries suffer badly from illegal logging, among them Laos, Burma, Malaysia and PNG. Laos is by far the largest source country for Vietnamese imports.<sup>26</sup> Vietnam also imports large volumes of wood from China. (For information on illegal logging rates in these supplier countries, see the individual subsections of this report.) Illegal logging is also widespread within Vietnam's remnant natural forests,<sup>27</sup> although most domestic production is from low-risk plantation forests (which supply most of Vietnam's wood chip exports).<sup>28</sup> A significant percentage of Vietnam's exports of wooden furniture are now made wholly from FSC-certified wood, with much lower risk than other imports. For the present import-source analysis, Chatham House estimated that 30% of Vietnamese wood furniture exports are made from illegally sourced wood, as are 40% of other timber sector product exports and 5% of wood chip exports. These rates were applied to all years and no adjustments were made for different destination countries.

## Brazil

For the analysis of imports from Brazil, Chatham House assessed where possible only non-coniferous wood imports, in order to exclude (to the extent possible) low-risk plantation timber from the analysis. The percentages of illegality used for individual products reflect this.

Chatham House's own estimates for illegal logging in the Brazilian Amazon in 2008, based on wood balance analysis and expert perceptions surveys, range from 35% to 72%.<sup>29</sup> The same research demonstrated a substantial reduction in illegal logging in Brazil between 2004 and 2008.<sup>30</sup> Taking into account the fact that some low-risk, plantation-grown wood could not be excluded from

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21 Smirnov, D., (2013): *Overview of illegal logging in Laos and related trans-boundary trade*, 20 August 2013, WWF.

22 PROFOR, (2011): *Improving Forest Governance in the Mekong Region*, Volume 2 Proposed Activities. Washington DC: PROFOR.

23 Smirnov, D, et al., (2013): *Illegal logging in the Russian Far East: global demand and taiga destruction*.

24 Environmental Investigation Agency, (2008): *Borderlines: Vietnam's Booming Furniture Industry and Timber Smuggling in the Mekong Region*. London: EIA.

25 Forest Trends, (2010): *Timber Markets and Trade between Laos and Vietnam: A Commodity Chain Analysis of Vietnamese-Driven Timber Flows*. Washington DC: Forest Trends.

26 UN COMTRADE data.

27 Forest Trends, (2013): *Small-Scale Illegal Logging in Vietnam: Implications for FLEGT and REDD+*. Washington DC: Forest Trends.

28 Forest Science Institute of Vietnam/FAO, (2009): *Vietnam Forestry Outlook Study*. Bangkok: FAO

29 Lawson, S., and MacFaul, L. (2010): *Illegal Logging and Related Trade: Indicators of the Global Response*.

30 Ibid.

the analysis, and that a slightly disproportionate share of illegally harvested timber may be expected to be being consumed domestically, for the current import-source analysis Chatham House has used a baseline illegal estimate of 40%, declining gradually in 2000–05 and more rapidly thereafter, to reach 28% in 2012. In addition to reduced illegal logging, the decline also recognizes an increased supply of non-coniferous plantation timber. For India, a steeper decline in the percentage of illegality was assumed, on the basis that India's imports are likely to have included a disproportionately large percentage of low-risk plantation timber.

## Solomon Islands

There are no published quantitative estimates of illegal logging in Solomon Islands, but a wealth of anecdotal information suggests that logging companies routinely flout logging regulations, including harvesting in excess of licensed volumes and outside of licensed areas, cutting of protected species, logging on steep slopes and fraudulently avoiding taxes. There is also evidence that logging licences have been issued illegally.<sup>31</sup> Timber harvesting in Solomon Islands exceeded sustainable levels as much as fivefold for many years,<sup>32</sup> and the increasing scarcity of legal timber has reportedly led to higher levels of illegal logging.<sup>33</sup> Log production from tree plantations, the largest of which are now FSC-certified, has declined from roughly 15% of the volume of logs exported during 2002 to less than 5% since 2010. For the import-source analysis, Chatham House has estimated that 70% of all timber exports from Solomon Islands are illegally sourced; the same proportion is applied to all products for all years.

## ABOUT THE AUTHOR

Sam Lawson is an independent researcher and founding director of Earthsight, an organization that specializes in researching and investigating environmental and social crime and injustice. He has been researching and investigating illegal logging and associated trade for 15 years, for various international NGOs and development agencies, and is the author of a number of influential reports on the subject. He has researched illegal logging in many countries across Asia, Latin America and Africa, and has been actively engaged with international initiatives to tackle the problem. In his role as Associate Fellow within the Energy, Environment and Resources Programme at Chatham House, he led the organization's work on illegal logging indicators between 2006 and 2013.

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31 See for instance, comments from a former Solomon Islands Commissioner of Forests carried in *Solomon Star*, 21 July 2010, 'We thrive on money from illegal logging'.

32 FAO (2009): *Solomon Islands Forestry Outlook Study*. Bangkok: FAO

33 *Solomon Star*, 21 July 2010, 'We thrive on money from illegal logging'.