In terms of size, the NGO EIA-Telapak suggested in 2004 that around 8.2 million hectares of production forest and 1.8 million hectares of protected forest in Kalimantan had been decimated heavily. Others suggest that encroachment into protected forest zones is still happening, although sporadically.

From the Indonesian side, timber smuggling has made the country suffer Rp 36.2 trillion (US\$4.16 billion) in total losses, with Rp 25.4 trillion lost in landslide impacts and Rp 10.8 trillion from the loss of ecosystem and water regulation functions. That number may be higher due to subsequent droughts, floods and fires.

Extensive forest destruction that comes with timber smuggling will also mean the loss of livelihoods among the local communities. This is particularly true for indigenous forest dwellers who have been living in the area and long-dependant on forest resources to support their day-to-day life.

These communities are not only "poor" by poverty indicators but also fragile, as they lack skills needed to survive in a no-forest scenario, and therefore cutting down the whole forest means destroying their feeding grounds and hence their existence.

Is it easy to tackle this problem? The answer is certainly not, and this is because there are a lot of things going on at the ground level that cannot be simply stopped by putting in place some regulations, erecting fences or shooting guns. If we consider timber smuggling at the frontier as a dependant variable, than there are a number of independent variables that we need to take into account.

The first independent variable is the demand from Malaysian wood industries. Malaysia currently has 11.8 million hectares of production forests, and this is certainly not enough to sustainably supply its current industrial installed capacity.

UN Economic Commission for Europe and the FAO reports said that in 2007 alone, Malaysia had to import 5 million cubic meters of round wood and 3 million cubic meters of sawn wood to fulfill the demand of its industries because it lacked supplies from its production forests.

If wood industries along the other side of the borders are economically rational, they will certainly consider getting timber from the nearby forests to save costs. The Indonesian government once approached its Malaysian counterpart to take necessary steps to ensure that its industries procure logs only from legal sources.

In response, the Malaysian government banned round wood imports from Indonesia in 2002 and sawn timber imports in 2003.

Still, these did not have much affect in lowering the timber-smuggling rate. Indonesia might accuse Malaysia of failing to firmly enforce the bans, but Malaysia can also argue that Indonesia's standard of timber legality is too weak, and falsification and manipulation of timber

verification documents (SKSHH) and exporter licenses (ETPIK) are rampant.

Others believe that smuggling continues because there is no procedure agreed upon between the countries for timber legality verification, and this makes it very difficult to define which timber is legal or illegal.

In addition, some argue that the definition of legality may be blurred because communities across the border are still influenced by the implementation of a free trade zone (FTZ) and barter trade zone (BTZ) such as in Sarawak, in which timber may be listed as freely traded goods.

As the smuggling cases perpetuate and may expand toward a state security issue, Indonesia has implemented a more stringent approach using military force. For a while, this seemed to slow the rate of smuggling, but was unable to stop it totally.

Some problems with the efforts arose: first, because military operations cost too much and the military elites themselves apparently benefited and played a role behind the timber smuggling. Second, military operations were inefficient because of the difficult terrain and poor road infrastructure.

It was also suggested that the military had a poor understanding of the social aspects in play, such as routes people had traditionally used to smuggle timber. At the same time, local governments also took part by selling timber that came from infrastructure development to middlemen who then channeled the logs to industries in Malaysia. Overall, in 2004-2008 timber smuggling perpetuated even along with military operation.

We are now seeing external facilitators such as Europe-based UK-DFID and EU-FLEGT to help both Indonesia and Malaysia develop better law enforcement, governance and trading policies in the forestry sector.

However, the Indonesian government should also look at the other side of the story, such as high levels of poverty among people living across the borders and the weak capacity of local governments and local stakeholders to take part in law enforcement.

The central government should be aware of the fact that 26 out of 199 regencies located at cross-border zones are categorized as disadvantaged regions, some with economic growth of less than 3 percent per annum.

Indonesian resident across the Kalimantan border have a per capita income of less than US\$300, far lower than their Malaysian neighbors who enjoy per-capita income of between \$4,000 and \$7,000. Poverty is obviously a strong push factor of timber smuggling.

The central government also needs to increase efforts to enhance the capacity of local governments and local stakeholders if efficiency and effectiveness of law enforcement are expected.

Weak capacities of local governments and stakeholders have long been speed bumps to efforts in minimizing forest crimes.

In particular, capacities in managing forest resources data and in monitoring changes of forests over time are crucial aspects that need to be strengthened to continuously control timber smuggling and other forest crimes.

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