2019
Oct

Q&A: INDONESIA FIRES SHOULD BE A CONCERN EVERY YEAR, NOT JUST BAD YEARS

Nindita Hapsari | Research Associate

Fires in parts of Kalimantan and Sumatra in Indonesia have consumed an estimated 328,000 hectares of forest and peatland since August. The flames sent up a cloud of smoke and haze that blanketed metropolitan areas including Singapore and Kuala Lumpur and jeopardized the health of close to a million. They erupted barely a month after flames scorched swaths of the Brazilian Amazon in August. EII research associates Nindita Hapsari and Triyoga Widiastomo in Jakarta, and Matt Warren in San Francisco, say the fires highlight the need for long-term strategies that focus on fire prevention rather than fire suppression.

Image available online: view image

Fires consume deforested peatlands in Riau, Sumatra. (Credit: Matt Warren)

How would you describe the response to the fires in Indonesia?

Whenever there is a bad fire year, there is a reaction to the emergency rather than measures to prevent the emergency. So, instead of focusing on public education for prevention and improved fire management, the focus has typically been to criminalize the use of fire. Since 2015, Indonesian President Joko Widodo has announced on multiple occasions that regional police chiefs and military commanders who fail to control fires in their areas should be replaced. That same law enforcement approach remains largely in place today.

A more systemic approach to fire is being developed by the Peat Restoration Agency (BRG), created by the Indonesian government in 2016 and tasked with restoring 24,000 square kilometers of degraded, fire-prone peatlands. Since then, the agency has been implementing interventions focused on peat rewetting (achieved by blocking drainage canals), revegetation, and enhanced livelihood programs for villagers, and by introducing production systems that exclude the use of fire as a land clearing tool. The agency is also installing thousands of deep wells to provide a critical source of water to battle ground fires soon after they start. These efforts provide a more positive path forward, and appear to be showing signs of improvement.

How are the fires in Indonesia similar to the Amazon fires?

As in Brazil, land conversion in Indonesia is being driven by the demand for agricultural commodities like palm oil, or timber for paper and pulp. Extreme fire years in both regions follow a somewhat predictable cycle. Fires in Indonesia and Brazil in 1997-1998 were exacerbated by El Niño conditions – when the dry season becomes more severe – and were a global ecological disaster. Fires in 2015-2016 were also driven by an El Niño year. Data from those years revealed that many of the fires were not only occurring in large industrial plantation areas and adjacent community managed lands, but also in protected areas like Tanjung Puting National Park and Sebangau National Park in Central Kalimantan. The fires occurring in these national parks were most likely caused by flames escaping from land clearing activities conducted around the parks during the long dry season. In both cases the fires have largely occurred on previously cleared agricultural land, degraded land, or areas where forests were cut and left to dry.

Image available online: view image

Efforts to restore degraded peatlands include this 2 ha plot in Riau Province planted with pineapple and equipped with sensors that will help gauge the effectiveness of restoration work. (Credit: Nindita Hapsari)

How do the peatland fires in Indonesia differ from forest fires in Brazil?

Indonesia's peatlands, which account for 36% of the world's total tropical forest peatlands, are among the most carbon dense ecosystems on the planet. Because waterlogged soils prevent the full decomposition of organic matter (leaves, roots, twigs, etc.), the residual material accumulates over thousands of years into thick layers of peat soil. When dried, the peat normally contains over 50% carbon – about the same amount (or a little more) as solid wood. If you take all the aboveground biomass in a peatland forest – all the trees, everything – an equivalent amount of carbon is stored in just 35 cm of peat, and peat layers are often several meters thick.

As peatlands are converted into agricultural land (by digging large canals that dry the terrain, which is often later burned) they become a very strong carbon source because you are liberating thousands of years of carbon accumulation into the atmosphere in a few weeks. In addition, rather than combust like dry grasses and shrubs on mineral soils, peatland fires smolder, producing smoke and air pollution that is much worse than typical biomass burning. Because of this smoldering, it is also very hard to detect and put out peat fires, as they do not burn hot enough to be detected by satellites and can spread underground. To completely extinguish the fires, we must simply wait for rain.

What do the data show about the extent and severity of the fires?

When you look at fires this year in Brazil, they were up over 84% compared to last year. But if you look longer-term — over the past two decades — what you see is that the fires in the Amazon are levelling off compared to past years. (The years from 2003-2007 as well as 2010 have seen cumulatively more fires up to this point.) If you use the same measure that was used for the Amazon, fires in Indonesia are up over 110% this year over last year. But again, if you look at the historic record, it's similar to the Amazon. It's a very bad year, the third worst in at least in a decade (and the sharp spike in August and September has been surprising) but 2019 is not unprecedented or historic.

Image available online: view image

Cumulative monthly fire count over the past decade for Indonesia (left) and Brazil (right). There was a rapid increase in the number of fires detected in Indonesia for the months of August and September, whereas fires in Brazil have tapered off since the rapid increase in July and August. (Source: Global Fire Emissions Database)

What are we to make of that?

Fire is a pan-tropical livelihood issue that occurs year after year, is related to deforestation and is something we should be concerned about every year, not just in bad years. We need to have long-term strategies to deal with it. Fire will probably get much worse in a warming world.

What is EII doing to mitigate fire danger in Indonesia?

EII is initiating a forest and land fire study comparing the effectiveness of the different fire prevention and control approaches implemented by Indonesia, Brazil and Peru. We are aiming to document and assess the approaches to the prevention and control of tropical forest and peat fires that have been implemented to identify what works and what doesn't work, and then to share our findings with government agencies, companies and NGOs that are actively engaged in these issues. The study will be the basis for the development of strategies for preventing and controlling forest and peat fires in the Amazon region and Indonesia.

Do you see a role for the private sector in helping address the challenge of fire in Indonesia?

Larger companies can take responsibility over their own supply chains by working with communities to control fire and bring smallholders up to best practices for RSPO certification. Several companies, such as those that are part of the Fire Free Alliance, have already used this opportunity to assist local communities in reducing and controlling fires through village-level incentive schemes, community awareness programs and support for local champions working on fire prevention and suppression efforts. If there could be more investments like these into medium and small-scale suppliers and

producers, working with them on fire prevention and management, that would be the way forward, rather than companies pulling out and saying it’s too risky. That would be a license for business as usual.