

Greenpeace Briefer on the 2015 Forest and Peatlands Fire & Smoke Haze
17 Sept 2015

Summary: who's to blame for the fire crisis and how to fix it

1. What is the crisis?

- [Indonesia's deforested peatlands are going up in smoke](#)
- [National parks and moratorium areas are also burning](#)
- [This is killing people](#)
- [And destroying the climate](#)

2. Who is responsible?

- [The plantation sector created this crisis by draining peatlands for pulp and palm oil production](#)
- [The government handed out forests and fragile peatlands to companies and turns a blind eye to rampant illegal destruction](#)

3. What is the solution and who needs to deliver it?

- [Prevention is better than cure](#)
- [What companies need to do](#)
- [What the Indonesian government needs to do](#)
- [What the ASEAN region needs to do together](#)

Summary: who's to blame for the fire crisis and how to fix it

Protecting all peatland and forests is the only long-term solution we have to stop the fires and avoid a public health and environmental disaster in the future.

The thick smoke haze from thousands of fires in Sumatra and Kalimantan is testament to the government's continued failure to fulfil its commitment to end forest and peatland destruction. Greenpeace's analysis shows that so far this year, 40% of fire hotspots across Indonesia have been in peatlands, which make up a fraction of the nation's landmass. In the year up to April 2014, 75% of fire alerts in Sumatra were on peatlands.¹

Left in its natural waterlogged condition, peatland rarely burns. Untouched tropical rainforest is similarly fire-resistant. However, two decades of forest and peatland destruction by the plantation sector have made parts of Indonesia into a giant tinderbox.

Peatland soils store a massive amount of carbon. When peatlands are cleared and drained for plantations, they degrade and the carbon they store starts to be released into the atmosphere as CO₂ emissions. If peat soils catch fire, they can smoulder away below the soil surface, which is exceedingly difficult to extinguish. This low temperature smouldering releases around

¹<http://www.wri.org/blog/2014/04/preventing-forest-fires-indonesia-focus-riau-province-peatland-and-illegal-burning>

GREENPEACE

**Greenpeace
Asia Tenggara**

Mega Plaza Building Lt. 5,
Jl. HR. Rasuna Said Kav. C3
Kuningan, Jakarta Selatan,
Indonesia 12920

three times more smoke per kilogramme of material burned than regular high temperature forest fires.²

These fires are a threat to the health of millions. Smoke from landscape fires kills an estimated 110,000 people every year across Southeast Asia, mostly as a result of heart and lung problems, and weakening newborn babies.³ The impact is even worse during El Niño years – such as 2015, which the Australian Bureau of Meteorology estimates is turning out to be the worst El Niño in 20 years – due to extended drought conditions in Indonesia.⁴

Indonesia's annual forest and peat fires are a man-made crisis, with devastating health impacts for Indonesia and its Southeast Asian neighbours as well as the global climate. Operating under weak and poorly enforced laws, plantation companies and other actors continue their reckless expansion – clearing forests and draining wet, carbon-rich peatlands – that lays the foundations for these fires. The unwillingness of the Indonesian government to put concession maps in the public domain makes it harder to identify those responsible for the fires or the destructive practices that cause them.

The destruction continues despite commitments from many of the larger traders and producers of Indonesian commodities such as palm oil and pulp to end deforestation and peatland degradation and impose strict no fire policies. Indeed, reportedly, many fires are burning within the concessions of companies that have 'no deforestation' policies – a stark reminder that the plantation sector's legacy of forest clearance and peatland degradation will take years to remedy.

Ultimately, these fires will continue until plantation companies stop deforestation and start restoring forests and peatlands. Commodities traders and their customers must work together to deliver an industry-wide ban on trade with companies that continue to destroy forests and peatlands, eliminating the economic incentive for forest clearance. Companies that use, trade and produce Indonesian commodities must support massive programmes to restore and protect forest and peatlands and stop the fires before they start. Indonesia's government must support these initiatives, publish concession maps to allow those responsible for fires to be held to account, and reform the plantation sector to halt the destruction and degradation of Indonesia's forests and peatlands.

1. What is the crisis?

Indonesia's deforested peatlands are going up in smoke

This year, 40% of fires are on peatland. More than three-quarters of those fires are on deforested peatland.

Greenpeace mapping analysis shows that so far this year, 40% of fire hotspots across Indonesia have been in peatlands, which make up just 10% of Indonesia's landmass. In the year up to April 2014, 75% of fire alerts in Sumatra were on peatlands.⁵

Greenpeace analysis shows a clear link between forest fire hotspots and deforested peatland in Sumatra and Kalimantan. Hotspots in 2015 have been 3.4 times more frequent on peat than that was

² <http://environmentalresearchweb.org/cws/article/news/62044>

³ Johnston, F., Henderson, S., Chen, Y., Randerson, J., Marlier, M., DeFries, R., Kinney, P., Bowman D & Brauer, M. 2012. Estimated global mortality attributable to smoke from landscape fires. *Environmental Health Perspectives* 120: 695-701.

⁴ <http://media.bom.gov.au/releases/203/enso-updatea-strong-el-nio-and-record-warm-indian-ocean-continue/>

⁵ <http://www.wri.org/blog/2014/04/preventing-forest-fires-indonesia-focus-riau-province-peatland-and-illegal-burning>

not forested as of 2013 than on forested peatland. Much of this will have been cleared to feed the plantation sector.

Although the province of Riau accounts for just 5% of Indonesia's land area, Greenpeace analysis found that in 2014, Riau recorded 40% of all fire hotspots and nearly three-quarters of all fire hotspots on peat. The majority of these fires are concentrated in just a few districts.

In 2013-2014, the districts of Bengkalis, Rokan Hilir, Pelalawan and Siak accounted for over half of all fire alerts across the whole of Indonesia.⁶

The fires in Riau are heavily associated with pulp and palm oil development. Riau is home to a significant portion of Indonesia's plantation sector. It is the largest palm oil producing province in Indonesia. Riau also hosts the two largest pulp mills in the country.

Beyond Riau, this year has seen heavy fire concentrations in West and Central Kalimantan, Jambi and South Sumatra - all provinces which host substantial peatland landscapes.

National parks and moratorium areas are also burning

National parks are burning, and nearly one-third of fires are in moratorium areas.

National parks and other areas theoretically protected from clearance have not been spared from fires. In July and August 2015, fires were widespread across Riau's Tesso Nilo National Park – an area of vital tiger habitat that has been devastated by illegal encroachment including palm oil development. Fires are now smouldering in Central Kalimantan's Tanjung Puting National Park, a world-famous refuge for orang utan.

Although the government has had in place a moratorium on permits for new concessions in primary forests and peatlands since May 2011,⁷ the policy has too many exceptions and no penalties, and has not translated into added protection for forests and peatlands.

Greenpeace analysis reveals that nearly 30% of fire hotspots both in 2014 and this year actually occurred in areas meant to be protected under the moratorium. Of all fire hotspots on moratorium land, over 60% occurred on peatland.

This is killing people

Air pollution from these fires not only disrupts people's lives, it kills people across the region.

In Southeast Asia, fires associated with deforestation, especially of peat forests, are the primary source of haze in the region.⁸ They add considerably to existing urban air pollution, particularly in El Niño years when drought increases the extent and longevity of fires.⁹

⁶ WRI (2014) Preventing Forest Fires in Indonesia: Focus on Riau Province, Peatland, and Illegal Burning, World Resources Institute, April 3, 2014
<http://www.wri.org/blog/2014/04/preventing-forest-fires-indonesia-focus-riau-province-peatland-and-illegal-burning>

⁷ President of the Republic of Indonesia 2013. Instruksi Presiden Republik Indonesia Nomor 6 Tahun 2013 Tentang Penundaan Pemberian Izin Baru Dan Penyempurnaan Tata Kelola Hutan Alam Primer Dan Lahan Gambut, <http://sipuu.setkab.go.id/PUUdoc/173769/Inpres0062013.pdf>.

⁸ Johnston, F., Henderson, S., Chen, Y., Randerson, J., Marlier, M., DeFries, R., Kinney, P., Bowman D & Brauer, M. 2012. Estimated global mortality attributable to smoke from landscape fires. *Environmental Health Perspectives* 120: 695-701.

⁹ Johnston, F., Henderson, S., Chen, Y., Randerson, J., Marlier, M., DeFries, R., Kinney, P., Bowman D & Brauer, M. 2012. Estimated global mortality attributable to smoke from landscape fires. *Environmental Health Perspectives* 120: 695-701; Marlier, M., DeFries, R., Voulgarakis, A., Kinney, P., Randerson, J., Shindell, D., Chen, Y. & Faluvegi, G. 2013. El Niño and health risks from landscape fire emissions in Southeast Asia. *Nature Climate Change* 3: 131-136.

Smoke from these fires affects people's health not only in neighbouring villages, but also in urban areas across the region. Modelling attributes an average of 110,000 deaths a year across Southeast Asia to these fires, primarily associated with long-term seasonal exposure to smoke particles. This estimate rose to 296,000 deaths for the 1997/8 El Niño year¹⁰ under climatic conditions which are predicted to be matched by this year's El Niño.¹¹

And destroying the climate

Peat is one of the world's richest carbon stores. Peatland clearance and drainage, largely for the plantation sector, creates the conditions in which fires will smoulder, releasing a lot of CO₂.

Tropical peat consists of partially decayed, dead vegetation accumulated over thousands of years. Peatlands are therefore a massive carbon store, locking carbon underground and preventing it from being released into the atmosphere.

Tropical rainforests and peatlands do not typically burn. However, forest clearance and drainage dry them out and increases their vulnerability to fires. Local drainage often affects an entire peat landscape, not just the area targeted. Burning is often used to clear such areas.

When peatlands are drained, the carbon they store is unlocked, launching a degradation process whereby it is released back into the atmosphere. While degraded tropical forests and peatlands might release their stores of carbon over decades, burning releases carbon into the atmosphere rapidly. It also damages the capacity of the ecosystem to recover and begin to absorb more carbon again.

Drained peatland can smoulder slowly whilst vegetation (especially in degraded forests) catches light easily and fires can spread rapidly.¹²

Because peatland fire can spread deep into the soil, such fires can be hard to extinguish, and sometimes burn for months. They produce rapid and massive emissions of greenhouse gases, as well as smog.

Indonesia's peatlands store nearly 60GtC (in addition to the carbon in the forests).¹³ This is equal to six times the amount of carbon released every year by fossil fuels.

Fires in Indonesia release globally significant concentrations of greenhouse gases. The Indonesian government itself estimates that more than 20% of national emissions are from peat fires alone.¹⁴

¹⁰ Johnston, F., Henderson, S., Chen, Y., Randerson, J., Marlier, M., DeFries, R., Kinney, P., Bowman D & Brauer, M. 2012. Estimated global mortality attributable to smoke from landscape fires. *Environmental Health Perspectives* 120: 695-701.

¹¹ <http://media.bom.gov.au/releases/203/enso-update-a-strong-el-nio-and-record-warm-indian-ocean-continue/>

¹² Field, R.D., van der Werf, G.R. & Shen, S.S.P. 2009. Human amplification of drought-induced biomass burning in Indonesia since 1960. *Nature Geoscience* doi: 10.1038/NGEO443.

¹³ Page, S.E., Rieley, J.O. & Banks, C.J. 2011. Global and regional importance of the tropical peatland carbon pool. *Global Change Biology* 17: 798-818.

¹⁴ Secretariat RAN-GRK (2015) '[Hasil Kaji Ulang dan Penyusunan INDC](#)'

<http://ranradgrk.bappenas.go.id/rangrk/component/content/article/92-bahasa/informasi-sektoral/193-hasil-indc> 2010 emissions:

1,460MtCO₂e total

314MtCO₂e peat fire (21.5%)

245MtCO₂e peat decomposition (16.8%)

= 559MtCO₂e (38.2%) total peat

340MtCO₂e non-peat AFOLU/land use inc. forests (23.3%)

= 899MtCO₂e total land use (61.2%)

The situation in Indonesia worsens in El Niño years, which are characterised by periods of drought that increase the extent and longevity of fires. It is estimated that the extensive burning of peat and vegetation in the 1997 El Niño year released between 0.81 and 2.57GtC, then equivalent to a staggering 13–40% of global carbon emissions from fossil fuels. Global climate change is expected to increase the frequency of El Niño events.¹⁵

2. Who is responsible?

The plantation sector created this crisis by draining peatlands for pulp and palm oil production

Plantation companies have created a tinderbox.

Whether or not they actually light the match, companies have created the conditions in which forest and peatland fires thrive. Such fires may be accidental (for example being caused by lightning or human carelessness), or they may be started deliberately to clear land for cultivation or to increase its fertility. Whether accidental or deliberate, fires on drained and degraded peat can easily burn out of control, especially in periods of drought.

Continued forest and peatland destruction for commodities such as palm oil, including illegal clearance and clearance by small and mid-sized players, is considerable. Fires linked to such clearance may well originate outside industrial concessions (or within illegal enclaves within the concession). They can spread rapidly across concession areas in the drained peatland.

The government handed out forests and fragile peatlands to companies and turns a blind eye to rampant illegal destruction

The Indonesian government bears ultimate responsibility for the destruction of the country's forests and peatlands. Government officials fuel the problem by granting concession licences over forested and peatland areas. Ministries consistently failed to address destructive practices in the plantation sector, despite the devastating impacts on Indonesia's citizens and the global environment. Insufficient action has been taken to prevent illegal clearance and burning outside of concession areas. The government is also blocking civil society and private sector efforts to ensure concession maps are placed in the public domain; this lack of transparency makes it harder to hold those responsible for forest and peatland fires to account.

3. What is the solution and who needs to deliver it?

Prevention is better than cure

The solution is fire prevention, not fire fighting.

Keeping Indonesia's remaining large forest areas intact is a priority. This includes protecting and restoring surrounding vulnerable forest and peatland landscapes. Reflooding and restoring peat forests significantly reduces the chance of fires.

On 27 November 2014, President Joko Widodo visited Sungai Tohor, Riau and took part in community efforts to build a number of dams across drainage canals. Prior to this initiative, between January 2014 and November 2014 there were 1,158 fire hotspots recorded in the area. Since the handful of dams were constructed, just 22 fire hotspots have been recorded between 28 November 2014 to 7 September 2015.

¹⁵ Page, S.E., Siebert, F., Rieley, J.O., Boehm, H-D. V., Jaya, A. & Limin, S. 2002. The amount of carbon released from peat and forest fires in Indonesia during 1997. *Nature* 420: 61-65.

What companies need to do

Companies must halt forest and peatland clearance, start restoring forest and peatlands and demand the same of their suppliers.

Companies that produce, use or trade commodities from Indonesia have a responsibility to address the destructive practices that create the conditions for forest and peatland fires. Despite zero-deforestation commitments by many leading palm oil producers and traders, the sector is still fuelling forest and peatland destruction. Trade of oil originating with growers who are actively clearing continues, and the proximity of mills creates an incentive for further speculative deforestation. Commodities traders and their customers must work together to deliver an industry-wide ban on trade with companies that continue to destroy forests and peatlands, eliminating the economic incentive for forest and peatland destruction.

Massive restoration projects are also needed to address the decades of destruction that has sown the seeds of this crisis. Companies must work together to protect and restore forest and peatland landscapes, including reflooding critical peatland areas to reduce the fire risk. Companies also need to address smallholder deforestation by providing alternative development opportunities for local communities that do not depend on forest clearance.

What the Indonesian government needs to do

The government must end deforestation, restore forests and peatlands, support real development opportunities for communities and improve governance.

The Indonesian government must address the root causes of forest fires. Indonesia's president has repeatedly promised to act on plantation companies that were responsible for forest fires. But this has yet to translate into meaningful action to protect Indonesia's forests and peatlands.

Last November, when President Joko Widodo visited Sungai Tohor in Riau, one of the provinces most affected by peatland fires, he personally blocked one of the many canals dug to drain peatlands for plantations. He identified conversion of forests and peatlands as the main cause of the annual smoke haze, and promised a thousand canals would be dammed in Riau with the government's help. This year, while the area immediately upstream of the President's dam in Sungai Tohor has so far been safe from fire, the rest of the province's peatlands have not been so lucky, with only a handful of the thousand dams realised. Ensuring the rapid delivery of the remaining dams and rolling this scheme out nationwide must be an urgent priority.

As an immediate first step to reduce the risk of forest fires starting, the Indonesian government must fast-track the identification of opportunities for wildlife and community-friendly forest and peatland restoration in a number of priority landscapes including in Riau, West Kalimantan and Central Kalimantan. This needs to be established through a multi-stakeholder task force bringing together communities, government, companies and civil society. The government must ensure there is a mandate to deliver these initiatives along with other climate solutions.

The Indonesian government has a chance to address deforestation and forest fires as part of its Intended Nationally-Determined Contribution (INDC) submission to the COP21 climate summit. This is the country's international communication showing how it plans to deal with climate change in the context of its national priorities and circumstances.

Despite Indonesia's commitments under the New York Declaration on Forests and the soon-to-be-ratified Sustainable Development Goals, the recently released draft of the INDC shows a sharp shift in policy away from zero deforestation. It also makes no commitment to address forest fires, despite Indonesia's fires being a globally significant source of greenhouse gas emissions.

Unfortunately, the current INDC draft is a distraction from the real issues Indonesia and the world face as a result of climate change.¹⁶

Forest protection and monitoring is being hampered by the government's failure to respect its commitment to making concession information publicly available. President Joko Widodo must show leadership and uphold transparency and good governance, overturning ministries' attempts to prohibit companies publishing maps of their own concessions. The government must also accelerate its One Map initiative and support community mapping projects.

What the ASEAN region needs to do together

Governments must act to support the ASEAN Agreement on Transboundary Haze Pollution

Last year, Singapore passed the Transboundary Haze Pollution Act, which gives the Singaporean authorities the power to prosecute plantation companies (and other parties) found to be responsible for burning forests and peatlands and causing severe air pollution in Singapore. At the same time, Indonesia ratified the ASEAN Agreement on Transboundary Haze Pollution, committing to work with its neighbours to tackle the haze.

However, on 26 August 2015, Dr Nur Masripatin, director-general of climate change at the Ministry of Environment and Forestry, told the *Straits Times* that Indonesia cannot disclose any plantation concession information, even on a government-to-government basis, as part of attempts to combat fire hotspots.¹⁷ Withholding this information critically undermines efforts to hold plantation companies responsible for fires on their land.

Many of the companies whose plantations have cleared forests and peatlands and are now affected by fires are based in Malaysia and Singapore. The governments of these countries need to take action to make their companies accountable for their contribution to the regional haze.

¹⁶

<http://www.greenpeace.org/international/Global/international/briefings/forests/2015/Indonesia%20INDC%20Briefing.pdf>

¹⁷ <http://www.thejakartapost.com/news/2015/09/12/ri-refuses-singapore-s-help-forest-fires.html>