

## INFO BRIEFING

### Great Haze II – the karmic winds of change?

- The Southeast Asian haze is an annual, seasonal phenomenon that is now in its 17<sup>th</sup> year. The first event in 1997 can be dubbed “Great Haze I”, during which Singapore’s PSI measure peaked at 226. The 2013 enviro-pollution season can be regarded as “Great Haze II” with PSI reaching just over 400.
- In the previous haze episodes, NGO analysis placed responsibility (direct and indirect) at 65-80% on various types of corporate plantations and with 20% of responsibility on small farmers. The first 2-year Indonesia-Norway moratorium on deforestation and peat land development might have had an unintended consequence. Well-connected owners are thought to have received a slew of concessions to beat the moratorium deadline. They have been clearing the land. Now, Indonesian authorities say they think that 32 company concessions are on fire. Eight thought to be involved in starting fires have been identified and their names will be released in the coming days.
- While the gloomy view is that little real action will be taken, we think that the mood is different from the approach taken back in the late 1990s – early 2000s. Will Singapore continue to leave it to the Indonesian authorities to solely deal with any Singapore-invested plantations found with open fires in their concessions? Or will these karmic winds that inflict the haze upon Singapore, bring a change in policy?

#### An annual seasonal affair

The Southeast Asian haze is an annual, seasonal phenomenon that is now in its 17<sup>th</sup> year. It is caused by peat fires associated with land clearance in the mid-year dry period before the start of the rainy season. The Malay Peninsula has been plagued for decades by forest fires in Sumatra to the west and Kalimantan on Borneo island to the east.” (20 June 2013, bloomberg.com).

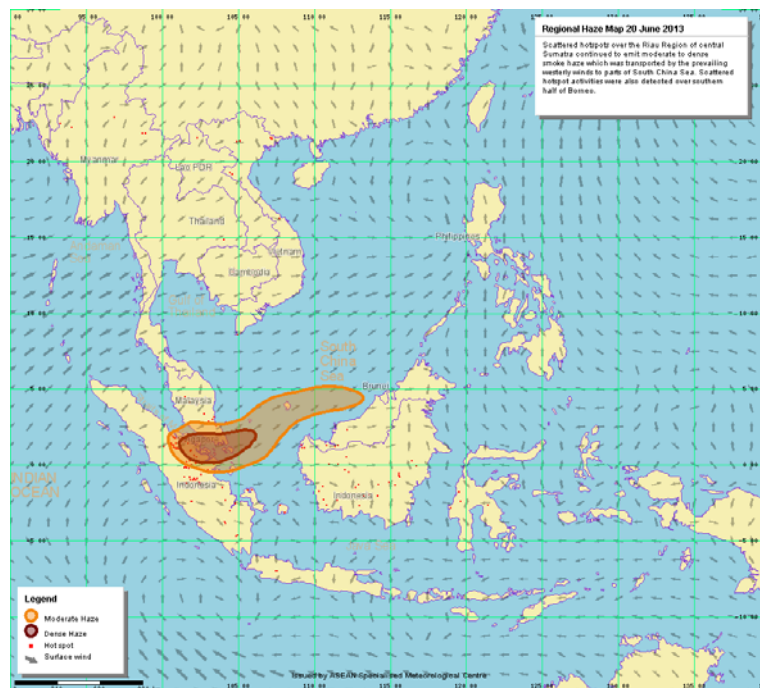


**Figure 1: Smoke Engulfs Singapore, Jun 21, 2013.**

Smoke from fires in Sumatra shrouded Singapore and southern Malaysia in thick plumes of smoke in June 2013.

Source: <http://earthobservatory.nasa.gov/IOTD/>

The smoke haze is back in the world headlines as new record high readings engulf Singapore in smog. The city state is the regional financial centre for the region, the regional HQ for many multi-nationals and it houses a large expatriate high talent workforce. Singapore's Pollutant Standards Index (PSI) has reached over 400. A reading above 300 is deemed "hazardous." The first event in 1997 can be dubbed "Great Haze I", during which Singapore's PSI measure peaked at 226. The 2013 enviro-pollution season can be regarded as "Great Haze II". Scattered hotspots in the Riau Region of Sumatra are emitting smoke haze which the westerly winds are transporting. Hotspots are also scattered over southern Kalimantan.



**Figure 2: Latest Haze Map**

1. The hotspots depicted in the map are derived from the NOAA-18 satellite. Hotspots go undetected when the area is not covered in the satellite pass or under cloudy / overcast conditions.
2. The surface winds (depicted by arrows in the map) are valid for 0600 UTC on the date indicated in the map. The length of the arrow represents the relative wind speed - longer arrows correspond to stronger winds. Click here for corresponding 0630 UTC satellite picture.
3. This map is updated by 1000 UTC (6 pm SGT) daily.

Source: <http://www.weather.gov.sg/wip/web/ASMC> (accessed 6.20pm on 21 June 2013)

## A health hazard

South Malaysia and parts of Indonesia have taken measures to reduce the exposure of its people to the damaging peat smog, including temporarily shutting schools. Severe air pollution is usually associated with mortality rate increases. Other stark examples include those in China, Moscow's severe peat smog in 2010, and London in 1952-53.

The greatest health risk is due to a "high concentration of PM 2.5 – particulate matter that is small enough to lodge deep into the lungs and enter the bloodstream, causing respiratory infections, asthma, lung cancer, cerebrovascular disease, and possibly damaging children's development" (16 February 2013, guardian.co.uk) Bloomberg.com (20 June 2013) reports that, "(PM2.5) was in a range between 232 and 291 micrograms per cubic meter, according to a 24-hour NEA reading as at 12 p.m. WHO recommends exposure to concentrations of no more than

25. The PSI measures PM10, according to the NEA website. PM2.5 refers to particulates less than 2.5 micrometers in diameter while PM10 refers to those of less than 10 micrometers, according to definitions by the U.S. Environmental Protection Agency.”



**Figure 3: Smog at Hazardous Levels as Singapore Spars With Jakarta on Fires.**

Office workers walk through a haze blanketing the Singapore Central Business District, or CBD, in the background, on Thursday, June 20, 2013. Singapore urged people to remain indoors amid unprecedented levels of air pollution Thursday as a smoky haze wrought by forest fires in neighboring Indonesia worsened dramatically. (AP Photo/J Nair). Source: <http://www.bloomberg.com/news/2013-06-20/singapore-smog-reaches-hazardous-all-time-high-on-fires.html>

### **It's not just about oil palm**

The start of the palm oil sustainability movement is often attributed to the SE Asian haze of 1997. Back then, the clearance of land by small farmers and localised open burning were mostly blamed by defensive, mostly state-controlled national press units. Palm oil plantations put up spirited denials but subsequent NGO reviews of hot spot locations found fires in plantation concessions. NGOs placed responsibility (direct and indirect) at 65-80% on various types of plantations and with 20% of responsibility on small farmers. The big plantations pointed out that neither their staff nor their contractors were at fault, attributing the fires to third-parties. Admitting no fault, they emphasized “zero burn” policies and promised to strengthen fire prevention efforts<sup>1</sup>.

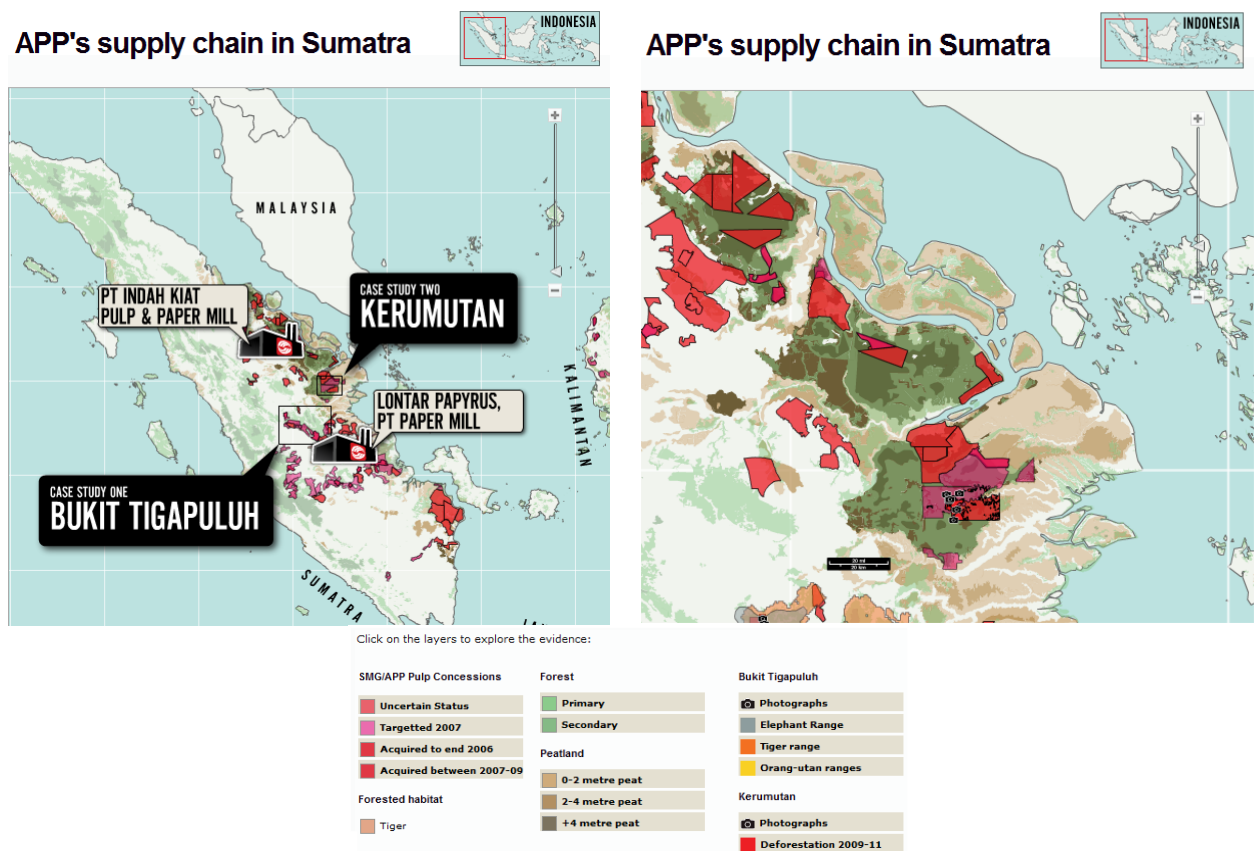
Nowadays, it is a lot less likely for large plantation companies to skip such rules as we will soon be approaching the 10<sup>th</sup> year of the palm oil sustainability movement. Lead by the efforts of the Roundtable on Sustainable Palm Oil (RSPO) it has signed on most of the largest plantation companies for its voluntary certification standard whose principles aim to improve socio-environmental indicators. This has spurred on the introduction of national certification schemes. Indonesia Sustainable Palm Oil is mandatory and it has a tough deadline for implementation. A voluntary scheme for Malaysia is due to be launched by end 2013.

Still, companies in the palm oil sector are often under a cloud of suspicion. “Singapore’s prime minister said the fires were caused by errant companies and were not likely to just be smallholders slashing and burning” (21 June 2013, bloomberg.com). “A senior official in the Indonesian president's office said fires had been spotted on land owned by 32 companies in the region, some of them based in Malaysia and Singapore” (21 June 2013, bbc.co.uk).

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<sup>1</sup> Dr. Helena Varkkey, our research associate, covers this topic in detail in her works published in academic journals.

A case study of the work of Greenpeace showcases the relatively advanced usage of geospatial technology in recent years, and the depth of work of concession area mapping done by the NGO sector in certain segments. The environmental pressure group had a campaign in June 2011 dubbed “Toying with extinction” in which they targeted major toy companies over their “wrapping toys in cheap packaging that regularly contained Indonesian rainforest fibre”. These included Mattel, Hasbro, Disney and Lego and their bugbear was supplier company Asia Pulp & Paper (APP). Greenpeace said that “these major toy brands were fuelling climate change and pushing Sumatran tigers and orang-utans towards the brink of extinction” (greenpeace.org). The environmental group’s presentation included detailed maps of APP’s concession areas (see immediately below) and. The press (see Appendix 2) reports that APP concession areas have been linked to hot spots in the current haze episode<sup>2</sup>. The maps below are also useful in showing the extent of peat land areas (the brown shaded areas, some of which have forest overlay, marked with green).



**Figure 4: Greenpeace’s Map of APP’s Supply Chain in Sumatra (overview and closeup)**

The map study includes information on the status of SMG/APP Pulp Concessions (uncertain status, targeted 2007, acquired to end 2006, acquired 2007-09); the location of forested habitat for tiger and orang-utan; key forest zones (primary and secondary) and peat land zones (0-2 metre peat, 2-4 metre peat, +4 metre peat).

Source: greenpeace.org (accessed 2 June 2013)

The names of the companies associated with the fires are being released. In addition to state-run geospatial information units, NGOs have the capacity and datasets to accurately overlay current hot spots with multiple concession maps. In our checks with this sector, experts point

<sup>2</sup> We accessed the company’s “news & media” page at 2pm on 22 June 2013, and the company has yet to publicly announce problems with hot spots on its land. Weblink: <http://www.asiapulppaper.com/news-media>.

out that companies clear a lot of peat. Their preliminary checks show that this is in line with the hotspot pattern over the past week, which concentrates on fringes of Riau's last peat forest blocks. Many of these fires also seem to occur in other type of concessions, and it is not just about oil palm.<sup>3</sup>

### **Why is the haze so severe this time? Is fire prevention the key?**

A major difference this year is the severity of the peat smoke haze. Why is it so bad this time? Experts think that the first 2-year Indonesia-Norway moratorium on deforestation and peat land development might have had a short-term perverse effect. The current severe haze may be the unintended consequence of the land clearance of concessions awarded ahead of the moratorium. The moratorium was pledged in 2009 but the start was quite delayed. The Presidential Decree gave instructions to specific government agencies regarding a two-year suspension of new permits on areas of primary natural forest and peat land shown in the "Indicative Map of New License Suspension" (a copy of the map is shown in Appendix 1). Key parts of Riau in Sumatra are in the moratorium.

Did it hasten the issuance of concessions between then and when it started in May 2011? Academic research suggests that "the reason for the delayed implementation of the moratorium was so that central and local governments could release a large amount of primary forests and peat lands to selected well-connected companies before the moratorium came into force."<sup>4</sup> If this is reflective of recent land concession awards in Riau, some big name companies (i.e. those well-connected) could be among the 32 linked to peat fire hot spots.

Notwithstanding such concerns, there should not be a direct causal link of well-connected concessionaires with more haze. In fact, it should be the reverse as many now have sustainability policies. If plantations have been using "zero burn" policies for some time, why are we in Great Haze II? Thus, we need to ask how relevant these policies are. Specialists say that even if "zero burn" is in place, the drought-dried land clearance debris and peat soils are a fire hazard at this time of year. It is also probable that many companies may not even have the legally required fire prevention systems in place, especially when they clear land for the first time. After the plantation is planted, hotspots will hardly (if ever) occur.<sup>5</sup> Thus, it seems that there may be a policy gap to fill.

### **Companies named so far**

Starting Friday 22 June 2013, barely two days after Singapore measured hazardous PSI readings, Indonesia started to "name names" of companies associated with the peat smoke smog. At this stage, there is no analysis of the cause of the fires or who was at fault. However, Indonesia says that it has identified eight companies which may be involved in starting the forest fires in

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<sup>3</sup> Our interview with NGO sector technical expert, 21 June 2013.

<sup>4</sup> "Oil Palm Plantations and Transboundary Haze: Patronage Networks and Land Licensing in Indonesia's Peatlands," Helena Varkkey, 18 April 2013, Wetlands (Society of Wetland Scientists).

<sup>5</sup> Our interview with NGO sector expert, 21 June 2013.

Sumatra, and it expects to name the companies within the next few days (21 June 2013, [channeneewsasia.com](http://channeneewsasia.com)).

From the background information given on the perversity of the moratorium effort, it is perhaps no surprise to some analysts that some big name companies have concessions on fire (with no blame attributed), and these include:

- PT Sinar Mas Agro Resources and Technology (SMART), whose parent is Singapore-listed Golden Agri Resources Ltd; mostly with palm oil business and some other commodities.
- Asia Pulp & Paper (APP), part of Indonesia's Sinar Mas Group.
- Riau Andalan Pulp and Paper (RAPP), a subsidiary of Asia Pacific Resources International (APRIL); owner RGE Pte Ltd has offices in Singapore, Indonesia and China.
- First Resources Ltd, a Singapore-listed palm oil group; its businesses are mostly in Indonesia.

These names have been mentioned by Indonesian authorities and NGOs. Please refer to Appendix 2 for details.

### **Will the reaction be different this time?**

This year, the Singapore and Indonesian authorities have already publicly exchanged words over the alleged role of Singapore-based companies. While the gloomy view is that little real action will be taken, we venture a guess that the mood might be a bit different from the approach taken a decade ago. Then, some companies were named but little action was taken for lack of proof. In the end, the manager of one Malaysian-owned company was personally taken to task by the courts after a lengthy process but with reduced penalty for want of deliberate intention.<sup>6</sup>

Firstly, many companies (especially large concession holders) are now quite heavily involved in sustainability efforts. Instead of knee-jerk blanket denials, many plantations have affirmed zero-burn policies. Cargill is the first owner to give out its geo-coordinates, overlaying it with maps to show they have no hot spots<sup>7</sup>. We can expect similar moves by others in an effort to reassure their buyers. Many key buyers have their regional HQ or key operating units in Singapore, where their staff and families will have to cope with the health hazards of Great Haze II. So far, two plantation groups that are RSPO members are associated with the choking fires. Will more be announced? It will be important to see how the certification program (led by WWF and Unilever) and others in the NGO sector responds to the companies caught in the limelight of a regional environmental crisis. On 22 June 2013, "Greenpeace calls on big palm oil companies such as Malaysia-based Sime Darby and Singapore-based Wilmar International to check whether their suppliers are involved in the burning or not. Fine words only go so far, but can these companies guarantee that they are not laundering dirty palm oil onto international markets?"

The public discourse differs. So far, instead of laying down majority blame on small farmers and holding to this line for some time, the challenge to name names has been strongly and quickly picked up. Within two days of record PSI readings in Singapore, Indonesia started to release

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<sup>6</sup> Our interview with academic specialist, 22 June 2013.

<sup>7</sup> Press release by Cargill

names of companies linked with hot spots. Also, the word “negligence” has been mentioned by Hadi Daryanto, the general secretary of Indonesia’s Forestry Ministry who is heading Indonesia’s efforts. This should scare the corporate sector. Furthermore, Singapore’s Foreign Affairs Minister said that “companies behind the fires would find no refuge in Singapore” while mentioning the limitations of international law. However, we suspect that there is room for some “moral-suasion”: to encourage higher voluntary standards on companies which are working in high-risk peat fire zones.

The second important factor is that technology has matured and its usage has expanded. Proof can be a lot more easily established as satellite imagery of hot spots locations are overlaid on concession maps. Furthermore, they should be able to make use of daily or even more frequent satellite images to better identify where fires started and how they spread. Bad news can no longer be so easily contained and inconvenient truths obscured. We reckon that the state and the corporate sectors understand these implications.

Thirdly, SE Asia has undergone a great deal of democratization since the late 1990s. This may shape how SE Asia’s political elites choose to align with private and public interests. In Indonesia, will it be the “no intentional / deliberate burning” defence used in the early 2000s or will consideration of “negligence” be applied? How will the home investor countries react if any of their companies are among the companies identified as linked to fires in Indonesia? How will they balance the utility of taking a business-as-usual or light-touch approach on a company versus the reputation and interests of other companies in several large resource-based sectors (palm oil, pulp & paper and others), other affected sectors such as tourism, and public health and safety concerns?

So far, Singapore has been heavily affected, and Kuala Lumpur is just starting to face the haze hazard. The authorities in these countries could ask for corporate investment to better comply with (and exceed) any legally required fire prevention measures in risky zones. Will Singapore continue to leave it to the Indonesian authorities to solely deal with any Singapore-invested plantations found with open fires in their concessions? Or will these karmic winds that inflict the haze upon Singapore, bring a change in policy?

### Appendix 1: Indonesia's "Indicative Map of New License Suspension"

The Presidential Decree in May 2011 gave instructions to specific government agencies regarding a two-year suspension of new permits on areas of primary natural forest and peat land shown in the below. The Indonesia-Norway deal has recently been renewed for another two years, despite business lobbying against it. The green (forest) and red (peat land) areas are "no go."





## Appendix 2: Naming companies linked to the hazardous peat smog of June 2013

Starting Friday 22 June 2013, barely two days after Singapore measured hazardous PSI readings, Indonesia started to “name names” of companies associated with the peat smoke smog. At this stage, there is no analysis of the cause of the fires or who was at fault.

| Fires have been spotted on land licensed to.....   | Excerpts from / source          |
|--|---------------------------------|
| <ul style="list-style-type: none"> <li>• A senior presidential aide Kuntoro Mangkusubroto said Friday that the fires happened in concession areas belonging to Asia Pulp &amp; Paper (APP) and Asia Pacific Resources International (APRIL).</li> <li>• "It is very clear that the fires are in APP concessions and APRIL. We need to settle this matter," he told reporters while showing the distribution of fires from 1 to 18 June in concession areas in Riau.</li> <li>• APP, the world's third-largest paper producer said in a statement late Friday that "ground verification" detected "only seven points that are actually forest fire, affecting around 200 hectares of land".</li> <li>• "They are under and being controlled by approximately a thousand fire fighting crews and their team. Our team's preliminary investigation found that five of the fires were set by the community to clear land for crops and two cases are still under investigation", APP added.</li> </ul> | 22 June 2013, AFP               |
| <ul style="list-style-type: none"> <li>• Indonesia blamed eight companies for the fires on Friday, including Jakarta-based PT Sinar Mas Agro Resources and Technology (SMART) and Asia Pacific Resources International (APRIL).</li> <li>• “The majority of hotspots in Riau are inside APRIL and Sinar Mas concessions,” Senior presidential aide Kuntoro Mangkusubroto told Reuters on Friday.</li> <li>• An analysis of satellite maps and government data by Reuters and the think-tank World Resources Institute also revealed spot fires on land licensed to Singapore-listed First Resources Ltd and Indonesia’s Provident Agro. The analysis did not reveal the cause of the fires or who was at fault.</li> <li>• A spokeswoman for Golden Agri Resources, SMART’s Singapore-listed parent, said it knew of no hotspots on its concessions.</li> </ul>  | 22 June 2013, Reuters. com      |
| <ul style="list-style-type: none"> <li>• A Greenomics Indonesia study identified 1,106 hotspots in areas managed by 57 HTI forest concession holders and plantations firms, including concessions run by Sinar Mas Group, the owners of Asia Pacific Pulp and Paper (APP), and Riau Andalan Pulp and Paper (RAPP), a subsidiary of APRIL, Elfian Effendi, the executive director of Greenomics Indonesia, said in a press statement released on Friday. The NGO also discovered fires in land owned by First Resources, one of Indonesia’s largest palm companies.</li> <li>• RGE Pte. Ltd., which owns APRIL and RAPP, has offices in Singapore, Indonesia and China. The company was founded by Sukanto Tanoto, a billionaire with New Order ties who, by all accounts, sprang from humble beginnings in Medan.</li> <li>• The Singapore-listed First Resources is owned by Tjiliandra Fangiono, Indonesia’s 38th richest man — worth \$1.05 billion according to Globe Asia.</li> </ul>         | 21 June 2013, jakartaglobe. com |

**Appendix 3: A study of the first SE Asian haze by Narayan Sastry, Demography, Volume 39-Number 1, February 2002**

This study concludes that:

*The 1997 forest fires in Southeast Asia were an environmental disaster of huge proportions, in terms of their intensity, extent, duration, and the number of people affected... In this study, I showed that the smoke haze from these fires had a deleterious effect on the health of the population in Malaysia.*

*The results concerning the relationship between air pollution and mortality are consistent with those from a variety of other settings. Focusing on increases in total mortality associated with a 100 g/m<sup>3</sup> increase in PM<sub>10</sub> concentrations—a standard measure in the literature—I found that for Kuala Lumpur, the associated relative risk is 1.07.7 In Schwartz's (1994a) meta analysis of 13 published studies of air pollution and daily mortality in the United States and Europe, the relative risk for a 100 g/m<sup>3</sup> increase in total suspended particulates (TSP) was 1.06...*

*A major question regarding the impact of smoke haze on health is the extent to which the increased mortality simply represented a "harvesting" effect, in which the observed deaths were displaced a few days. My results indicate that the displacement of deaths from the smoke haze was short term. However, for one segment of the Malaysian population— those aged 65–74 in Kuala Lumpur—there was an upward shift in mortality that lasted at least a few weeks. The overall mortality burden, in terms of days of healthy life lost, is nevertheless likely to be small. The mortality measures examined here, however, serve as sentinel indicators and are thus suggestive of wider short-term health impacts, particularly with respect to acute morbidity. It is difficult, though, to assess the precise magnitude and character of these health impacts without data on morbidity from an unbiased and representative sample, which were not collected. Regardless of the short-term mortality effects of high air pollution, there may be long-term health effects associated with exposure to elevated levels of air pollution over an extended period.*

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