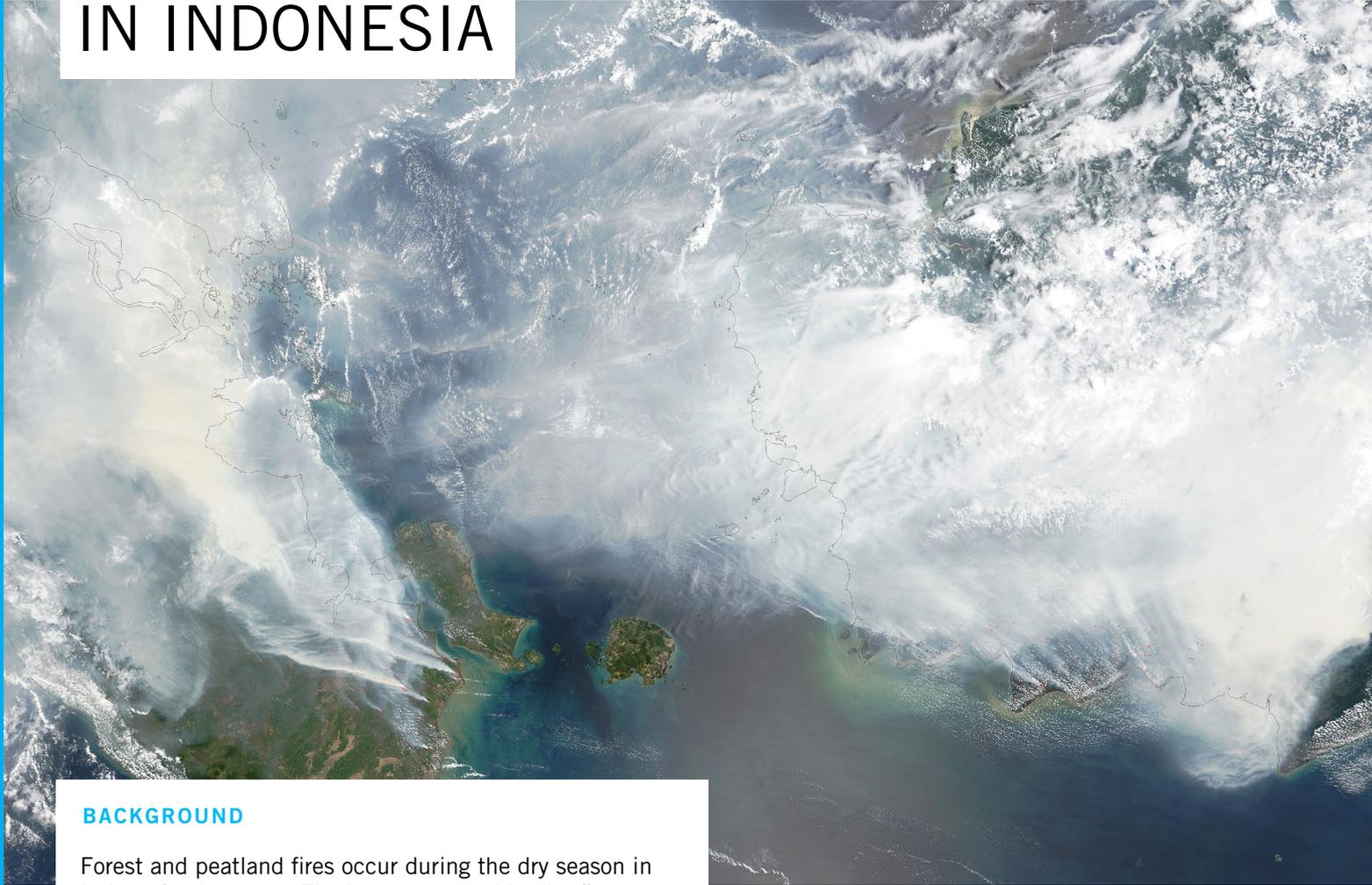


PULSE LAB JAKARTA'S RESEARCH INITIATIVES ON THE HAZE CRISIS IN INDONESIA



BACKGROUND

Forest and peatland fires occur during the dry season in Indonesia every year. The haze generated by the fires, that spreads to other countries, is no longer restricted to drought years and has become increasingly frequent due to on-going land conversion activities. Fires begin and spread for many reasons, so it is misleading to think of 'fires' as the problem, or even as a single problem. Complex socio-economic, ecological and governance factors are involved, meaning that the drivers, and the solutions, go beyond who actually lights the match.

UN Global Pulse, through Pulse Lab Jakarta, is engaged in several research initiatives connected to forest and peat fire management, as well as in understanding the social and economic impacts of the phenomenon on populations in haze-prone areas in Indonesia. This paper highlights Pulse Lab Jakarta's former and on-going research activities in this area.¹

EXPLORATION ON SOCIAL MEDIA USAGE AND PUBLIC SENTIMENT

Together with the UN Office for REDD+ Coordination in Indonesia (UNORCID), Pulse Lab Jakarta has engaged in three research initiatives.

The first, in 2014, in collaboration with UNORCID, investigated whether **social media can be used in forest and peat fire management**. Specifically, the study sought to explore early signals from Twitter relating to

"People complain about haze all the time on Facebook and Twitter, but for action people usually create an open Whatsapp group"

- Rama, Student

major forest fires or haze events with a view to understanding the relation between communications trends and on-the-ground events. The research found a strong correlation between

the content of tweets and events. In particular, residents in haze-affected areas tweeted about their physical environment (including topics such as the status of haze, hotspots and

¹ CIFOR (2014) Fire and Haze: Context, Bogor: CIFOR, accessed on 3rd November 2015 [<http://www.cifor.org/fire-and-haze/research/context/>].

air pollution), their social environment (including topics such as haze-related deaths/injuries, personal status, the health of affected persons, crime, public health threats and the need for food or water) and support (including from the Government or NGOs, community assistance and private sector funding). The study concluded that analysis of social media could make significant contributions to emergency response activities.²

An on-going project, also in collaboration with UNORCID, is **investigating the mobility and health impacts of haze events on affected populations**, as articulated by social media. Initial findings suggest that it is possible to identify haze intensity from twitter conversations, as well as confirming a strong temporal correlation between fire and haze hotspots and the number of identified conversations. The preliminary results also suggest that mobility patterns as a result of haze events are discernable in social media data, in terms of response strategies such as remaining indoors in-situ or evacuating. As this research is on-going it is too soon to draw any firm conclusions from the findings, which will be published in full in 2016.

Pulse Lab Jakarta also deployed an ethnographer to **capture the human stories behind the trends and anomalies contained within the data**, complementing

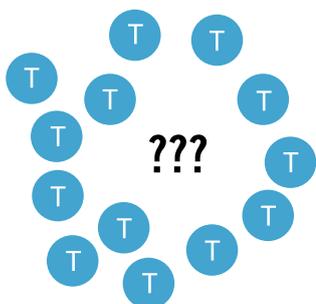


'I think that there's no one who relocates because of health reasons. The people who relocate are usually exposed to fire-risk since they live near hotspots.'

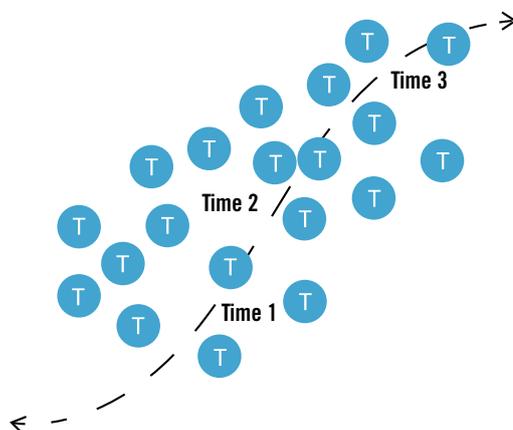
- Reza, District Government Official

the research using big data. This study is essential to incorporate the sentiment of populations living in affected areas and produce practical as well as real-time information which is helpful to both policymakers and citizens. The researcher found a sense of frustration and powerlessness within and among haze-affected communities. Evidence of transport cancellations and knock on effects such as food and water undersupply and associated price increases were apparent. Anecdotal evidence of adverse policy outcomes was also evident, such as school cancellations with the hope of protecting children from the worst of the haze conversely resulting in greater exposure to the smoke as the children remained outside. These anecdotes highlight the complexity of haze impacts and the need for multi-agency action in both prevention and response.

Geographic analysis



Geo-temporal analysis



MOVING FORWARD

Pulse Lab Jakarta will continue to collaborate with the Government of Indonesia and its sister UN agencies to understand better the manifold and trans-boundary impacts of forest and peat fires in order to inform short and medium-term responses to the haze crisis.

² UN Global Pulse (2015) Feasibility Study: Supporting Forest and Peat Fire Management using Social Media, New York: UN Global Pulse, accessed on 3rd November 2015 [http://www.unglobalpulse.org/projects/forest-and-peat-fire-management-social-media].