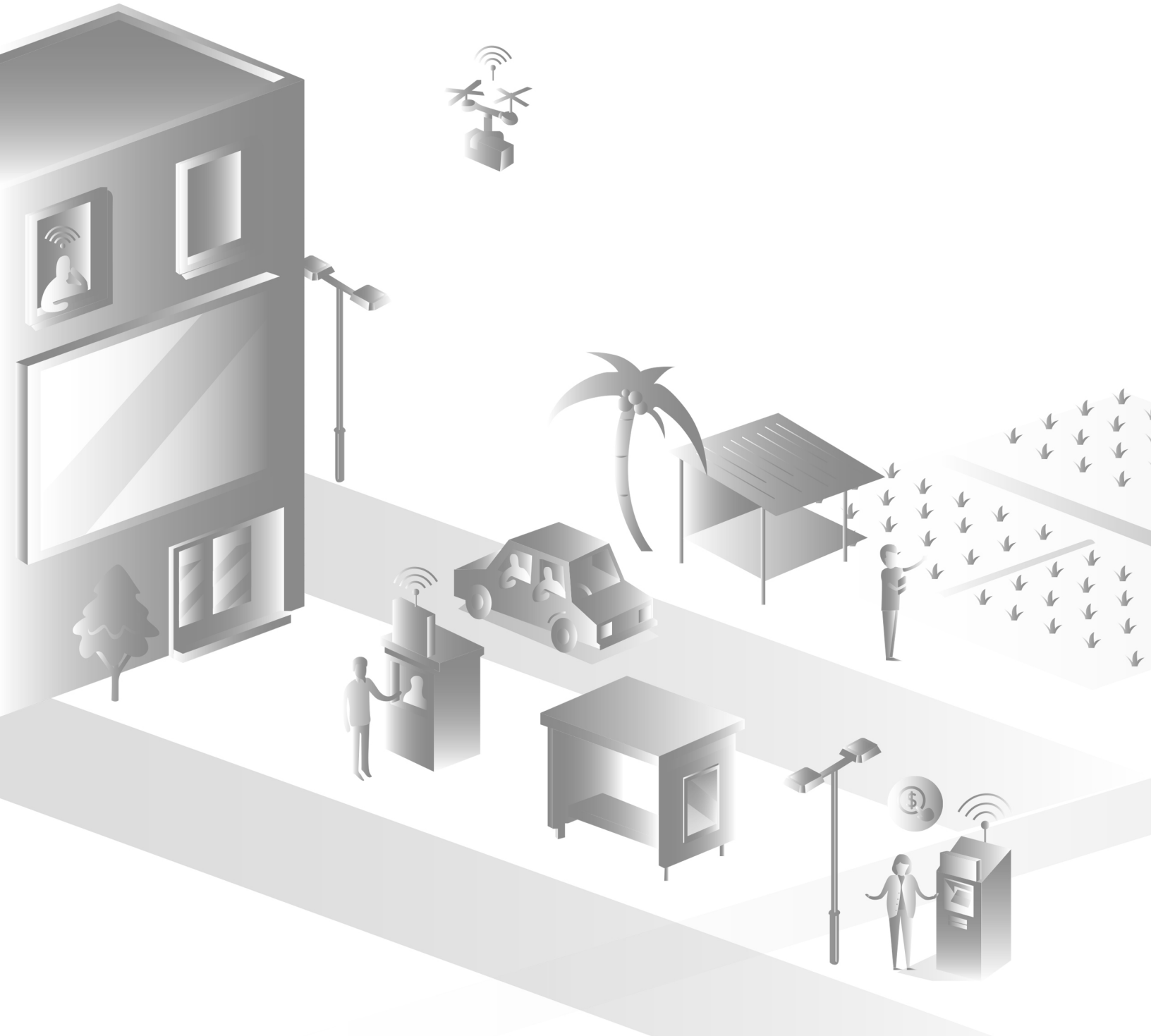
Annual Report

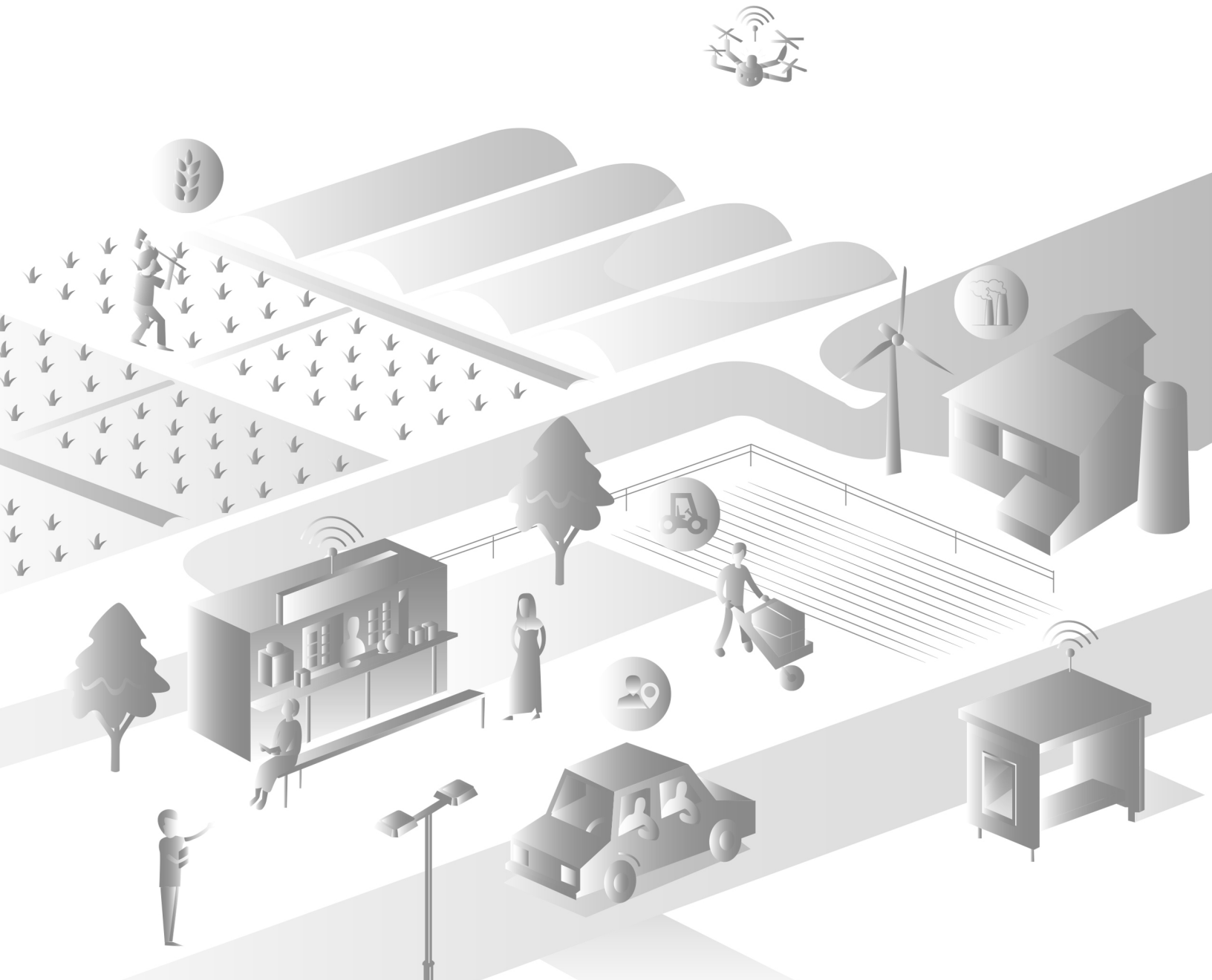
2016

HARNESSING BIG DATA FOR DEVELOPMENT AND HUMANITARIAN ACTION

PULSE LAB JAKARTA



ANNUAL REPORT 2016



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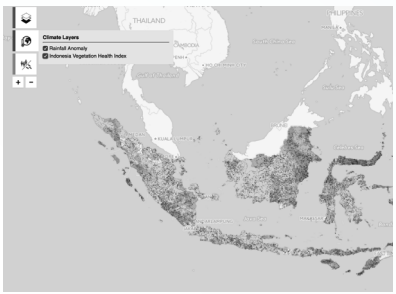

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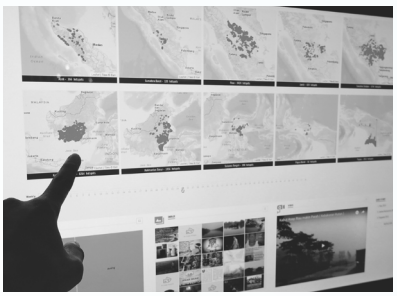

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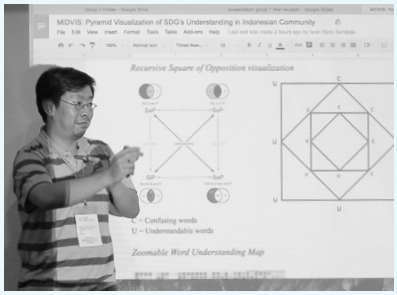

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2016 at a Glance

Over the course of a few short years since we first opened the doors of the lab, we have seen Indonesia's data innovation landscape evolve and change dramatically. In 2016 especially, we saw a more widespread realisation of how real-time data can complement existing government datasets to yield new insights needed to respond to the fast-paced, complex and dynamic development landscape that is Indonesia.

The quiet adoption and ownership of the data revolution by the Government of Indonesia seems to be quite established, as apparent by the increased public discourse on using new sources of data and increasing demand for advanced data analytics. What is also encouraging is the level at which the data revolution has permeated down through the echelons of bureaucracy. Success stories are springing up all across the Indonesian archipelago, where local governments are using technology and new sources of data to strengthen their relationship with their constituents and to deliver services more effectively.

In navigating this landscape, we tried to develop a deeper understanding of the drivers of demand for advanced data analytics, and what the information needs were for our counterparts. We took some of our early proof-of-concepts a step further, combining them with more recent research results to create interactive data tools like Haze Gazer, which is now available for public use at hazegazer.org. Other platforms that we developed - such as the regional vulnerability assessment and monitoring tool we collaborated with the World Food Programme and the Food and Agriculture Organisation on - were eventually adopted by government partners, who then added additional data and functionality. What we have found most valuable from this process though, is not only how to expand proof-of-concepts into working platforms, but how to build trust and understanding.

From our earlier forays in trying to understand the information needs and priority issues of our government counterparts, we realised that we needed to complement the Lab's core data analytics with a more in-depth understanding of how people make sense of data. We were delighted to partner with GIZ's TRANSFORMASI

program in 2016 to facilitate and accelerate innovative approaches targeted at improving services at the sub national level in Indonesia, particularly focused on public sector reform. This included the utilisation of data to provide insights for better decision making and it enabled us to test different approaches in applying user research and human-centered design to encourage innovation in public service.

Building on this experience, we explored further how to augment our findings from big data with qualitative insights from user research. We delved deeper into the analytics provided by Haze Gazer and several other tools, and identified several trends and interesting behaviours from previous severe haze events of which we wanted to gain better contextual understanding. We then teamed up with United Nations Children's Fund (UNICEF) and Reality Check Approach (RCA) to use the results of our collective knowledge to identify new opportunities that have the potential to bring about a different perspective on tackling haze. This nexus between big data and "thick data" is an exciting area of work that we will continue to pursue in 2017.

Our own efforts to innovate with data are a very small part of the bigger picture. Part of our work in catalysing the data ecosystem this year has involved building up a broader demand for advanced data analytics and connecting the different actors in this vast landscape. Our Research Dives with academics and public agencies build links and help to nudge forward the research and development agenda in fields as diverse as disaster management and computational linguistics. Identifying data privacy experts in Indonesia and relying on their expertise in this area has helped balance out the demand for ethical standards for the use of data with the need to utilise new digital data sources for more agile development. We have also learned that when we combine forces with other development initiatives - like the Australia-Indonesia Partnership for Economic Governance, the Indonesia Infrastructure Initiative, and the Knowledge Sector Initiative - our chances

"...we realised that we needed to complement the Lab's core data analytics with a more in-depth understanding of how people make sense of data."

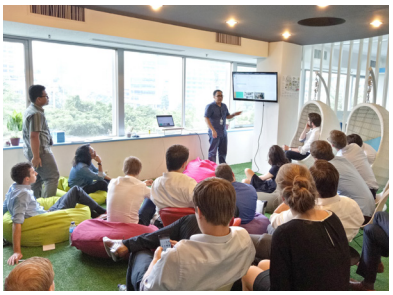
of tapping into the amazing potential for data innovation within Indonesia's government units becomes much, much higher.

We have also started working on better ways of measuring the impact of our work - and how we can better learn from both our successes and our failures to improve decision-making and create better products. Part of this work towards measuring impact has triggered some existential soul-searching on the future form of Pulse Lab Jakarta. We know that we need to plan the next stage of our operational model, moving from a donor-funded lab to a more sustainable model.

The work that we have done this year was made possible by funding from the Australian Government. PLJ is grateful for this support, which has enabled us to work flexibly, develop open lasting partnerships with a wide range of stakeholders, and experiment with new methods to seek creative solutions to complex problems. PLJ also extends its thanks to the United Nations Country Team and the Government of Indonesia, particularly the Ministry of National Development and Planning (Bappenas), for their continued guidance and support. Our thanks also to the UN Resident Coordinator in Indonesia who provides great support and leadership to Pulse Lab Jakarta.

This report provides an overview of the work of Pulse Lab Jakarta in 2016, which we hope to build on further for an even more exciting 2017!

About Us



GLOBAL PULSE

Global Pulse is an innovation initiative of the United Nations on Big Data and Data Revolution for sustainable development. Through a network of Pulse Labs in New York, Jakarta and Kampala, it aims to:

- Promote awareness of the opportunities of Big Data
- Forge public-private partnerships for data, tools and expertise
- Conduct joint research projects to evaluate the potential of new methodologies
- Build innovative tools for real-time monitoring
- Drive adoption of new approaches across the public sector

PULSE LAB JAKARTA

Pulse Lab Jakarta (PLJ) was established through a partnership between the United Nations through Global Pulse and the Government of Indonesia through the Ministry of National Development and Planning (Bappenas) in late 2012, and it was subsequently launched in 2013.

PLJ collaborates with the public sector, the UN country team, and leading private sector companies to explore how "Big Data" can support development and humanitarian action in Indonesia and beyond.

Pulse Lab Jakarta, the first innovation lab of its kind in Asia, tests new approaches and creates tools to support data-driven decision-making, responsive government and empowered communities. In short, PLJ assists partners to make sense of a complex and evolving world. Taking into account citizens' use of mobile technology and the increase in internet penetration over the past few years, as well as the variety of cultural and socio-economic characteristics within the country, and the willingness of the Government to host such an endeavour, Indonesia is a prime location for a Pulse Lab.

OBJECTIVES

The overarching objectives of this partnership are to enable policymakers and government agencies, including amenable sub-national governments, to use real-time 'big data' to inform policy making, planning and budgeting. The partnership also takes into account the need for timely information to protect vulnerable populations in times of crises. Within this framework, the Lab adopts a two-track strategy, aligned with that of the Global Pulse Lab network:

INNOVATION DRIVER

• Implement data innovation programmes through Pulse Labs to provide UN and development partners with access to the data, tools and expertise required to discover new uses of big data for development

• Develop toolkits, application and platforms to improve data-driven decision-making and support evaluation of promising solutions.

TRACK 1
INNOVATION DRIVER
DATA INNOVATION PROJECTS

TRACK 2
ECOSYSTEM CATALYST
POLICY, ADVOCACY & ADOPTION

ECOSYSTEM CATALYST

• Contribute to the development of regulatory frameworks and technical standards to address data sharing and privacy protection challenges.

• Engage key stakeholders on a priority innovation agenda.

• Provide public sector organisations with policy guidance and technical assistance to strengthen their capacity for integrating real-time insights into operations.

ACTIVITIES

In practice, the types of activities PLJ engages in along these two tracks include:

- Exploratory data science, data analytics and prototyping - including developing new tools and methods and disseminating findings
- Human-centred research - producing new insights and knowledge on the interface between humans and data
- Ideation activities - harnessing new and innovative ideas from citizens
- Ecosystem strengthening - contributing to the discourse on data for development and the interaction between key stakeholders
- Capacity strengthening and advisory support to key partners

GOVERNANCE

PLJ's activities are guided by a Steering Committee which is composed of representatives, in equal measure, of the Government of Indonesia and the UN in Indonesia. The Steering Committee provides overall guidance and strategic direction for the Lab. PLJ also has a Technical Committee which meets on a quarterly basis to discuss the progress of activities. The Technical Committee reports to the Steering Committee.

Areas of Work

The lenses through which PLJ has focussed this year's research and development activities are guided by the priority areas of the Government of Indonesia through the RPJMN and the UN through its Partnership Development Framework (UNPDF). This includes the Sustainable Development Goals as well as the recommendations of the Data Innovation Mission of August 2014, which was led by Bappenas and based on the Government of Indonesia's development agenda.

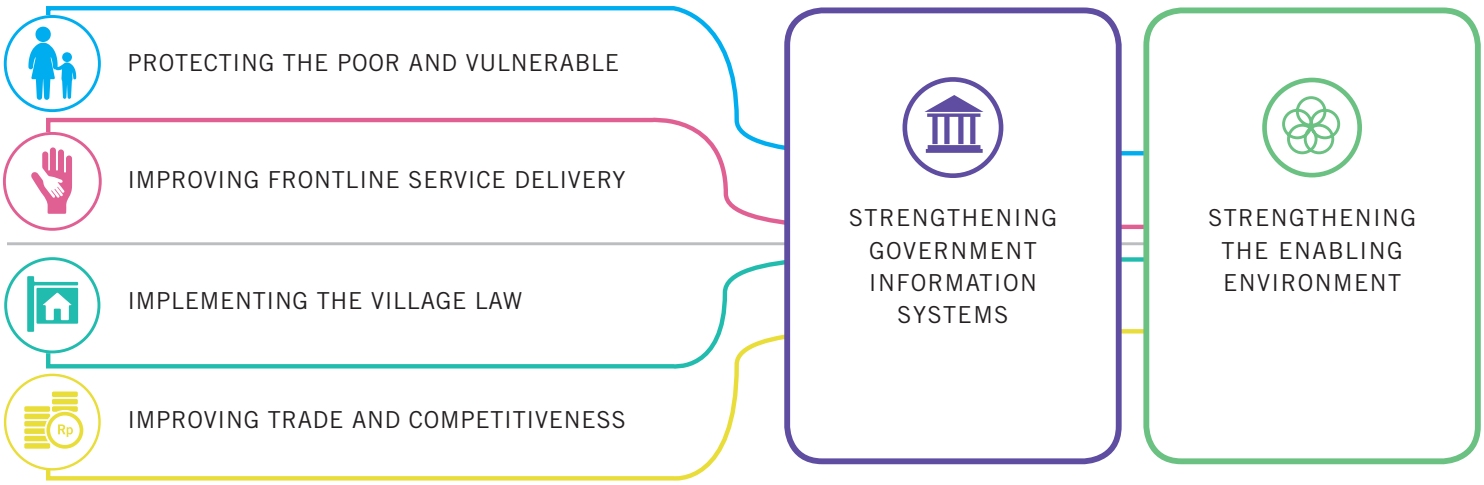
GLOBAL PRIORITIES

UN Global Pulse explores the innovative use of digital data through five sectoral and four cross-cutting programme areas with high potential for impact. Priority sectors include Food and Agriculture; Economic Well-being; Climate and Resilience; Humanitarian Action; and Public Health. Our work on cross-cutting issues include Data Privacy and Data Protection; Gender; Real-Time Evaluation; and the Sustainable Development Goals agenda.

The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, build on the Millennium Development Goals (MDGs) which were eight anti-poverty targets that the world committed to achieving by 2015. Enormous progress has been made against the MDGs, thus demonstrating the value of a unifying agenda underpinned by goals and targets. The new SDGs, and the broader sustainability agenda, go much further than the MDGs by addressing the root causes of poverty and the universal need for development that works for all people.[1]

With 17 goals and 169 targets to reach by 2030, one of the main challenges that will be faced is how to track progress against these goals, targets and corresponding indicators. Pulse Lab Jakarta is uniquely positioned to contribute to tracking progress by using new digital data sources. In fact, PLJ's portfolio of data innovation projects already covers 15 out of the 17 goals and could directly contribute to 47 out of the 169 targets. The aim is to contribute new insights into tracking and measuring progress against these goals through PLJ's data innovation work.

1. Taken from http://www.un.org/sustainabledevelopment/sustainable-development-goals/



DATA INNOVATION FOR DEVELOPMENT

In April 2015, Pulse Lab Jakarta received funding from the Government of Australia through its Knowledge Sector Initiative. These funds were aimed at embedding data innovation in the way the Government of Indonesia undertakes analysis, sets policy, and delivers programs. The longer term goal is to create agility and organisational capacity within the Government of Indonesia to continuously adopt new approaches to data collection and analysis.

The more immediate objectives of this funding are to:

- equip the government with tools to generate and analyse data in real time so that it can provide timely responses, engage effectively with citizens, evaluate policy effectiveness and better address the development challenges that Indonesia faces;
- demonstrate that adopting innovative IT-based methods leads to improved development outcomes, as measured by the government's own indicators; and
- build partnerships across the technology and private sectors, civil society, and government in ways that can raise productivity amongst the poor by using each partner's comparative advantage.

This initiative was preceded by the Data Innovation Mission of August 2014, which was led by Bappenas and included teams from DFAT and the World Bank. The mission identified trade and competitiveness, frontline service delivery, government information management, and social protection as priority areas in which innovations in information and communication technologies can support the Government of Indonesia's use of evidence in development planning and policymaking. It also recommended work to strengthen the enabling environment in which data innovation for policymaking takes place. Although these areas are subject to change in response to Government of Indonesia's priorities, these are the lenses through which we base our annual activities.

TRACK 01

Innovation Driver

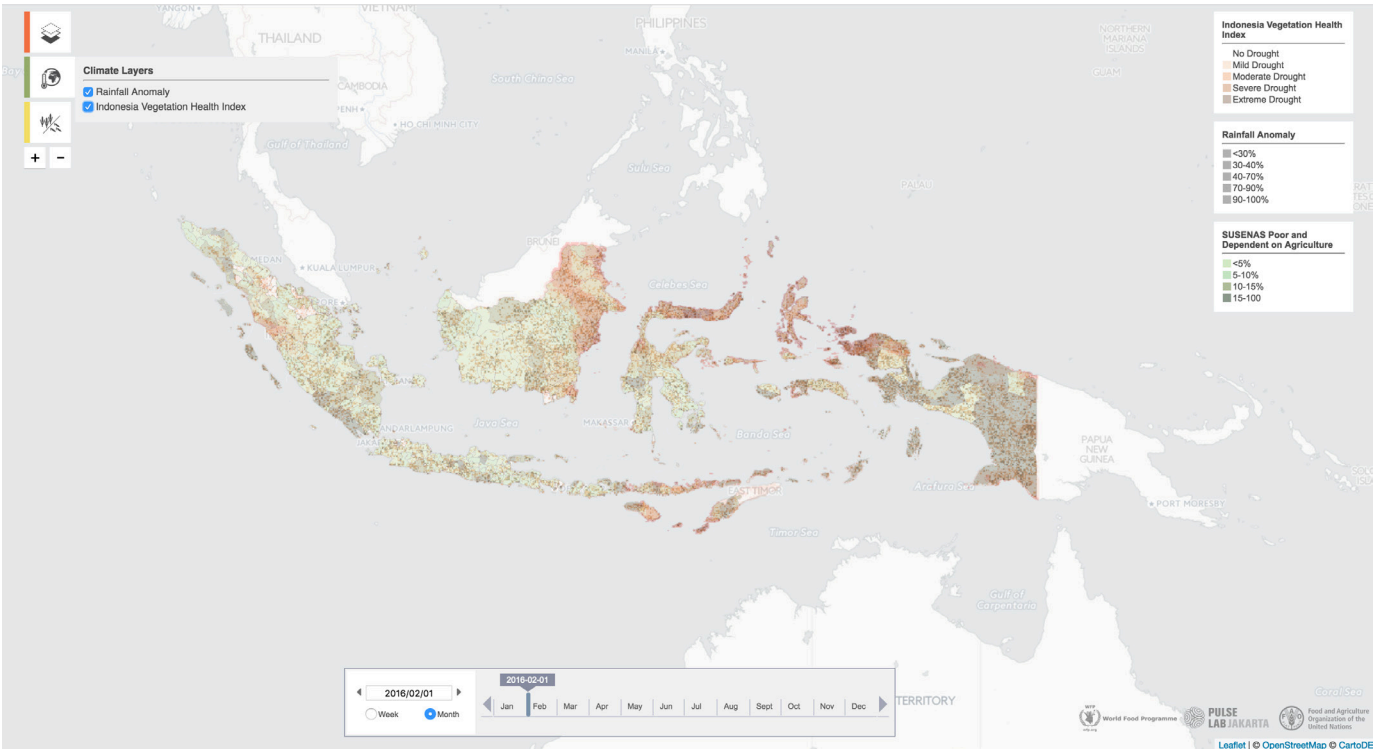
Faster and more informed decisions for solving complex problems

Gaining insights from citizen feedback

Toolkit and technologies for data innovation

Strategic exploration

Faster and more informed decisions for solving complex problems

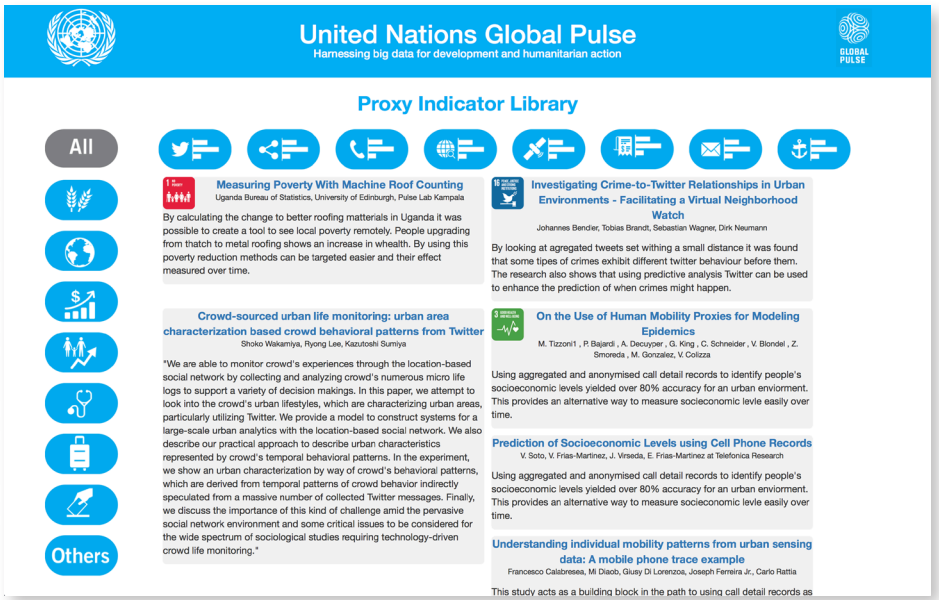


Combining multiple data sources to track the impact of El Niño

PLJ worked closely with the World Food Programme (WFP) and the Food and Agriculture Organisation (FAO) to utilise multiple data sources to track changes in environmental conditions and its subsequent impact on food security in Indonesia. The original prototype for the Vulnerability Analysis Monitoring Platform for Impact of Regional Events (VAMPIRE) had three main layers: baseline data, climate layer, and impact. The baseline layer visualises SUSENAS data from BPS and food insecurity indices based on WFP's household surveys. The climate layer shows rainfall anomaly and vegetation health index. The impact layer shows weekly price indices and priority areas to monitor for drought impact.

The platform was installed in the Situation Room of the Executive Office of the President (KSP) in June this year, and our team have subsequently worked together with KSP's technical team to develop additional features for the platform. This includes options for KSP's administrator to add new datasets and integrate the platform with other satellite-based imagery services; a fully-automated process for analysing rainfall anomaly; and a new function to accommodate multiple sources of food or commodity prices. This platform, along with Haze Gazer, has been included in the innovations library of the OECD Observatory for Public Sector Innovation (OPSI).

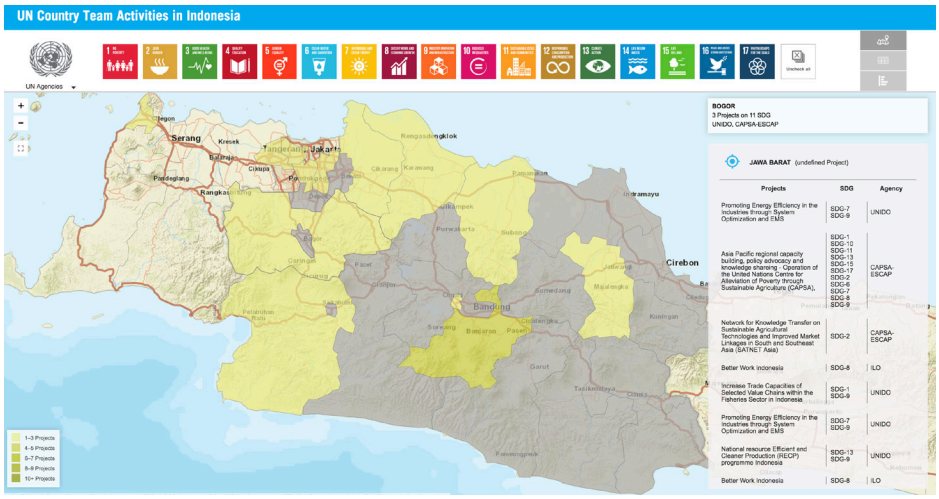
STAGE	OPERATIONAL PLATFORM
SDGs	2 ZERO HUNGER, 13 CLIMATE ACTION
AREA OF WORK	PROTECTING THE POOR & VULNERABLE



STAGE	PROTOTYPE
SDGs	THE GLOBAL GOALS For Sustainable Development
AREA OF WORK	STRENGTHENING GOVERNMENT INFORMATION SYSTEMS

Alternative indicators for the Sustainable Development Goals

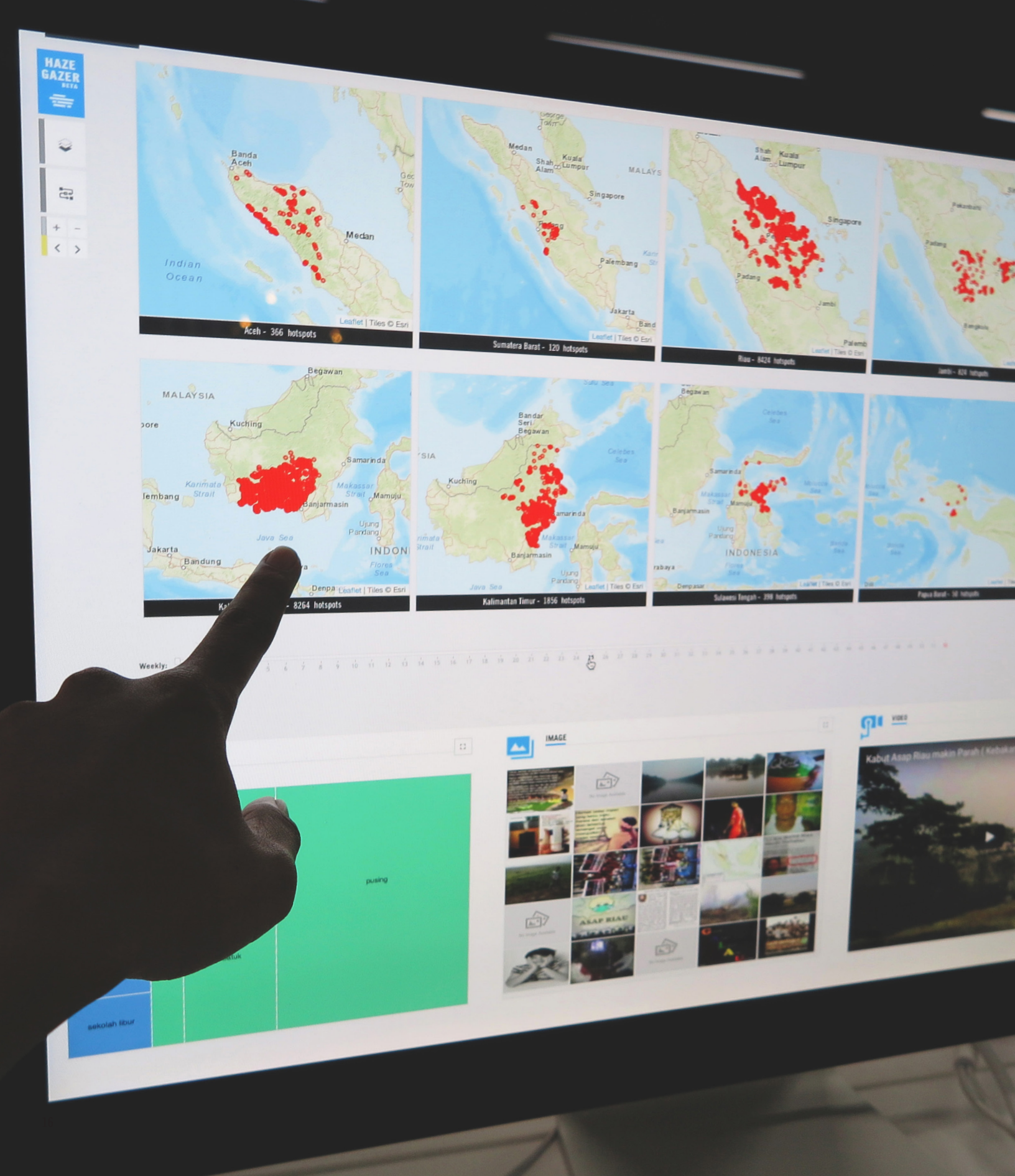
PLJ started the development of an online library documenting the various uses of digital footprints as proxies that could be used to measure progress against the Sustainable Development Goals. The library includes links to research articles on proxies for food security, environmental monitoring, tracking market prices, socio-economic status, public health, travel patterns, and voting behaviour.

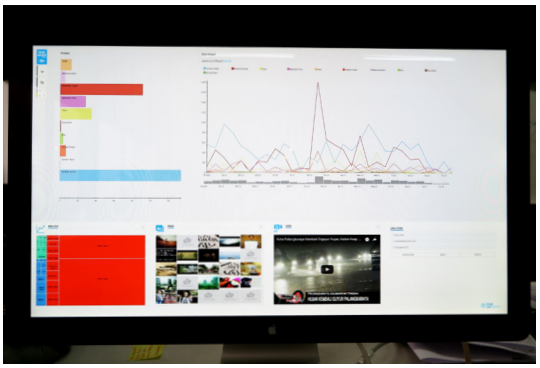


STAGE	PROTOTYPE
SDGs	THE GLOBAL GOALS For Sustainable Development

Mapping of UN Country Team activities in Indonesia

Working with the office of the UN Resident Coordinator and UNIDO, PLJ developed an internal online platform that maps out the geographical distribution of UN projects and activities in Indonesia, as well as their alignment with the Sustainable Development Goals. The platform assists the UN Country Team to take stock of their activities in Indonesia and classify these based on the Sustainable Development Goals.

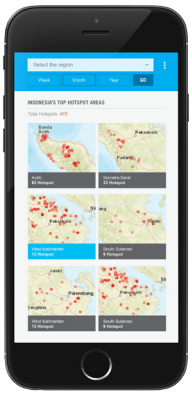

HAZE GAZER
BETA
Banda Aceh
Medan
Indian Ocean
Aceh - 366 hotspots
Medan
Singapore
Palembang
Jakarta
Sumatera Barat - 120 hotspots
Riau - 8424 hotspots
Begawan
MALAYSIA
Kuching
Samarinda
Karimata Strait
Makassar Strait
Banjarmamasin
Mamuju
Java Sea
Jakarta
Bandung
Denpa
Bandar Seri Begawan
Kalimantan Timur - 1856 hotspots
INDONESIA
Sulawesi Tengah - 398 hotspots
Weekly:
pusing
sekolah libur
IMAGE
VIDEO
ASAP RIAU
Kabut Asap Riau makin Parah

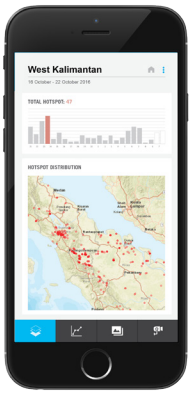


Source: ksp.go.id

Combining multiple data sources for haze

Building on the research conducted in 2015, PLJ developed Haze Gazer, a web-based decision support system that provides insights on haze crisis dynamics and local response strategies for disaster management authorities. The platform analyses multiple sources of data, visualises the insights generated, and provides a convenient user interface for disaster management practitioners. The platform combines hotspot information from satellite imagery with ground-level visual insights from social media and citizen journalism videos to provide real-time insights on what field conditions are like. It also includes analysis of citizen voices from a number of sources, including citizen feedback platforms, which can help with early identification of impact. Haze Gazer was shortlisted for the Harnessing Data for Resilience Recognition Award by USAID, as one of the five finalists of the “early innovation” category.





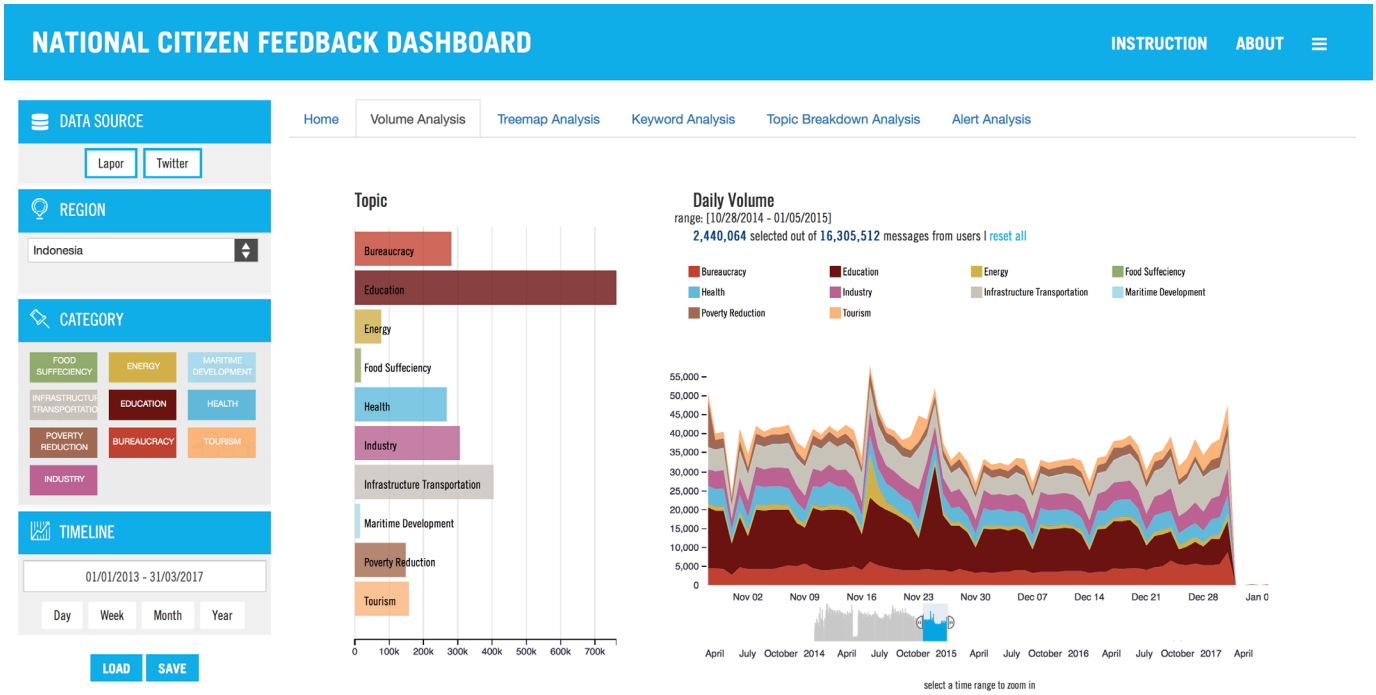
STAGE	OPERATIONAL PLATFORM
SDGs	3 GOOD HEALTH AND WELL-BEING; 15 LIFE ON LAND
AREA OF WORK	PROTECTING THE POOR & VULNERABLE

EARLY STAGE INNOVATION FINALIST

Harnessing Data for Resilience Recognition Award

USAID | FHI360

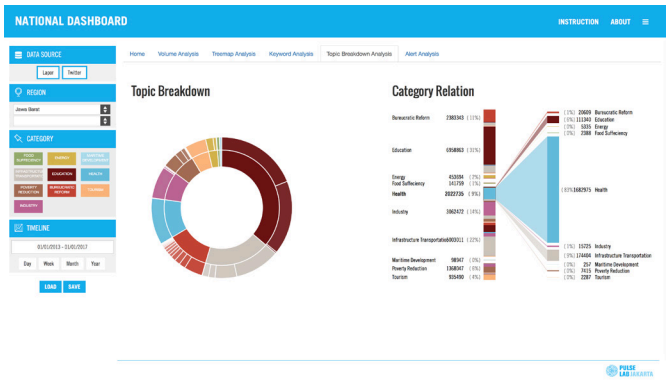
Gaining insights from citizen feedback



PULSE LAB JAKARTA

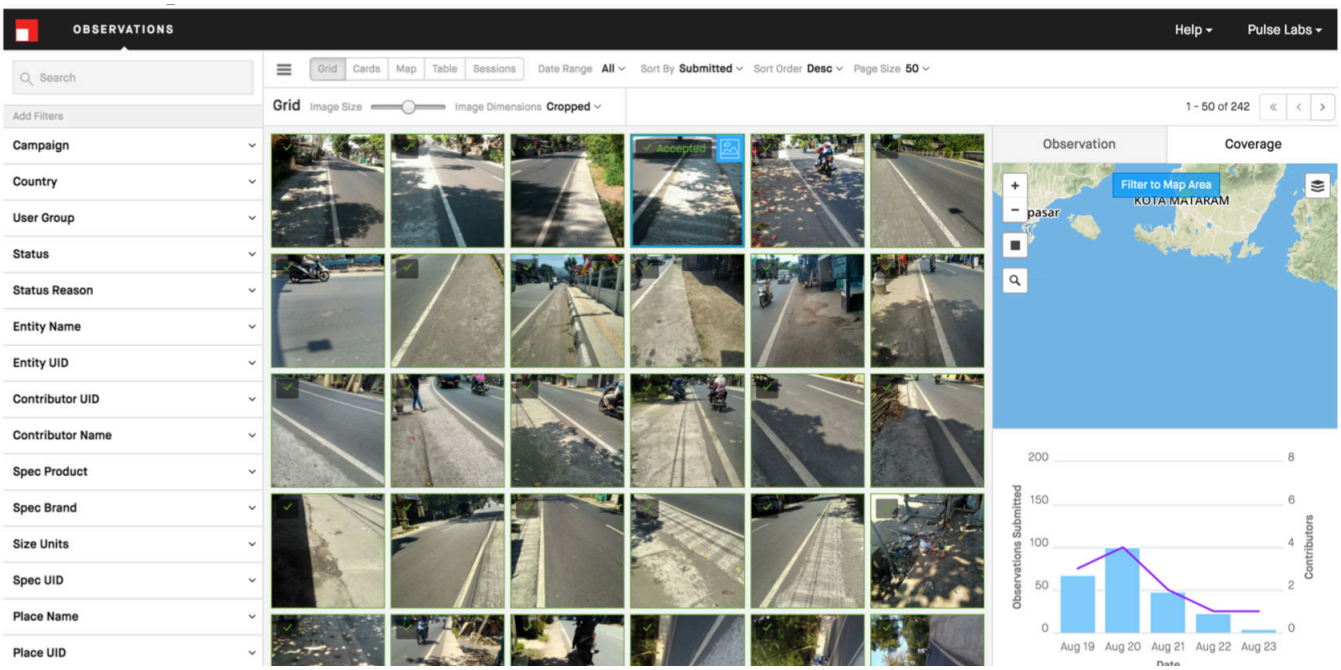
National Dashboard - Aggregated data from citizen feedback

A prototype of the National Dashboard has been completed and shared with two national government institutions: Bappenas and the Executive Office of the President (KSP). Our team developed tools to capture conversations in social media and combined these with Indonesia's own national complaint handling platform (LAPOR!) to provide insights based on user-defined taxonomy. In KSP, it is used to analyse and aggregate incoming LAPOR! data, and it has been included in LAPOR!'s public website.



STAGE	OPERATIONAL PLATFORM
AREA OF WORK	STRENGTHENING GOVERNMENT INFORMATION SYSTEMS

http://plj.bappenas.go.id/PLJ/national-dashboard/



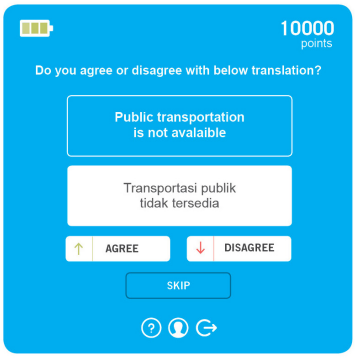
Crowdsourcing community verification of road infrastructure

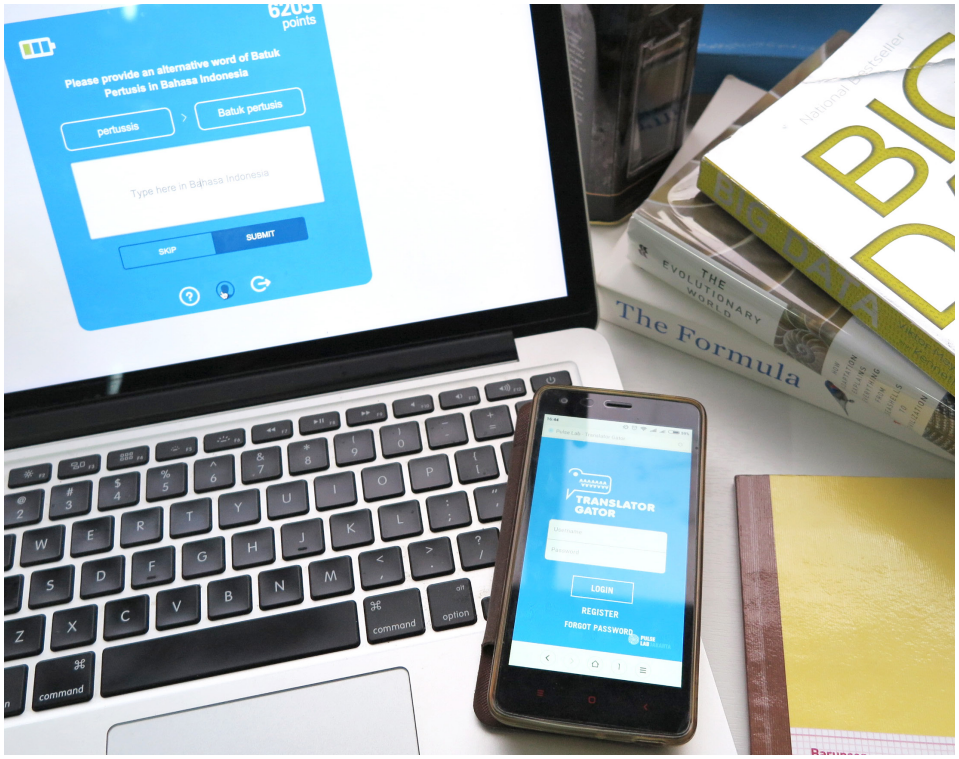
PLJ explored whether crowdsourcing information from citizens, which worked well in tracking real-time food price dynamics, would also work for verifying the completion of infrastructure projects. Working with the Australian-funded Indonesia Infrastructure Initiative (IndII) and the data crowdsourcing firm Premise, we piloted this approach in roads constructed with IndII support in Lombok, Nusa Tenggara Barat.

Leveraging Premise's network of volunteers, we deployed contributors to locations that corresponded to areas where specific road maintenance had been conducted. Results of the pilot indicated that beneficiary communities could generate reliable data and consistent observations as to the quality of road infrastructure works. The potential for applying this method to reduce the costs of project verification certainly exists, but realising these savings would depend on the model adopted for scale-up.

STAGE	PILOT
SDGs	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
AREA OF WORK	IMPROVING TRADE AND COMPETITIVENESS

Toolkits and technologies for data innovation





Translator Gator

Translator Gator is an online game that PLJ launched to crowdsource the translation of a series of development keywords from English into Indonesian, as well as other local languages such as Bahasa Jawa, Sunda, Minang, Bugis and Melayu. PLJ launched the game in January, and by the end of the first phase in May, we received over 109,000 user contributions from hundreds of Indonesian players across the country. We also conducted surveys and in-depth interviews, to better understand motivations and behaviors of users as well as improve the Translator Gator platform. As a result of this, we now have a rich dataset for a set of deeper linguistic studies, for instance, an investigation into Indonesian national and local languages or a study on linguistic behavioral patterns. We plan to work with computational linguistic experts to see what insights can further be gained from this dataset. We have also received requests from a number of agencies to replicate the Translator Gator platform for other areas of work. Since Translator Gator can be used to crowdsource translations for any language, in 2017 we will be exploring the application of this platform outside of Indonesia.

STAGE	PROTOTYPE
SDGs	THE GLOBAL GOALS

Strategic exploration

Big Mobile Data for Development

Pulse Lab Jakarta started a collaboration with Digicel Asia Pacific in 2016 to understand the impact of recent weather events on the social and economic fabric of Vanuatu, as well as the interconnectedness of communities and market structure. Research is ongoing but initial findings are encouraging on the use of mobile phone data as proxy indicators for education levels, household characteristics and expenditure in Vanuatu.

STAGE	EXPLORATION
SDGs	11 SUSTAINABLE CITIES AND COMMUNITIES
AREA OF WORK	PROTECTING THE POOR AND VULNERABLE

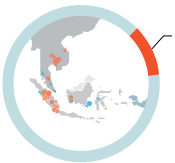
Financial Inclusion

PLJ was pleased to be part of the delegation presenting to H.E. Queen Maxima of the Netherlands, the United Nations Secretary General's Special Advocate for Inclusive Finance for Development during her visit to Indonesia in 2016. PLJ presented the opportunities that big data analytics can bring to financial inclusion by bringing more optimisation and evidence based decision making.

On financial inclusion, PLJ is collaborating with UNCDF to utilize the Shaping Inclusive Finance Transformation (SHIFT) program's existing datasets combined with big data analytics to undertake deeper analysis in terms of financial services usage, particularly among women in the ASEAN region. The project analysed customer savings and loan data from four Financial Service Providers (FSPs) in Cambodia to understand the factors that affect savings and loans mobilization and how usage of these products explains economic issues in Cambodia. Although women and men in Cambodia have an equal access to financial services, women have a lower level of financial service usage and the first phase of analysis showed that for all FSPs, women had lower average loans and savings mobilized. PLJ is currently conducting a second phase of analysis to gain further insights into women's financial service usage and broader socioeconomic issues.

STAGE	RESEARCH
SDGs	1 NO POVERTY
AREA OF WORK	PROTECTING THE POOR AND VULNERABLE

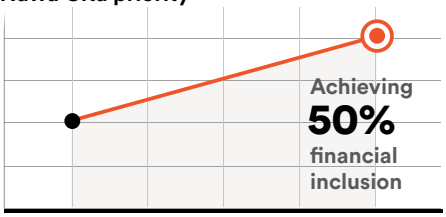
Financial inclusion to reduce poverty

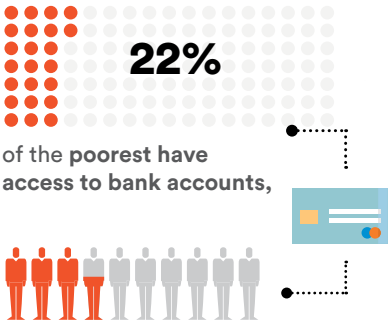


11% of the population are living below the national poverty line with higher poverty rates in remote areas

Financial inclusion seeks to **unlock development opportunities for the poor** by providing access to financial services.

Nawa Cita priority





22%

of the **poorest have access to bank accounts,**

Only 36% of adults

have bank accounts, but the number almost **doubled from 20% in 2011**

but Indonesia has **almost achieved gender balance in financial inclusion**

Access to finance for micro, small and medium enterprises drives the economy

2,000,000 /year

young Indonesians join the workforce.

20%

unemployed

Better access to financing for micro, small and medium enterprises is needed to **grow the economy and create jobs.**

Micro, small and medium enterprises

86% investments come from their own funds

and employ **60%** of the workforce and represent **98%** of all companies in Indonesia

The government Kredit Usaha Rakyat credit program has provided

Rp 150.2 trillion

(US$12.5 billion)

and helped finance 11 million companies.

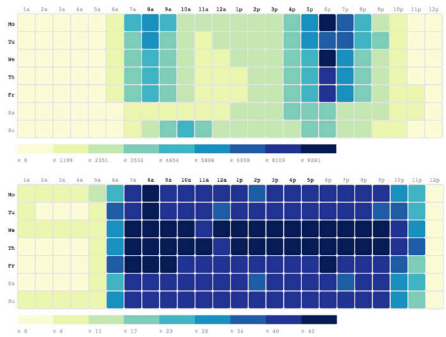
↑20%

increase in financial inclusion could create

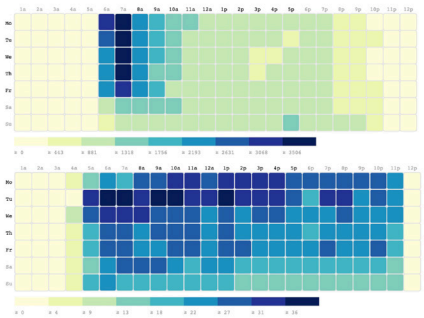
1.7 Million

new jobs

Passenger Tap-in Distribution vs Bus Dispatch (Line 1)



Passenger Tap-in Distribution vs Bus Dispatch (Line 7)



Analysis of transportation data

Pulse Lab Jakarta collaborated with Jakarta Smart City to enhance transport planning and operational decision-making within the Jakarta Government through real-time data analytics. Using new sources of information such as bus location data, passengers' boarding information and real-time traffic information, the project mapped traffic patterns and service usage for the TransJakarta bus system. Data analysis enabled PLJ and Jakarta Smart City to identify bottleneck locations, map origin-destination trends and determine waiting times to gauge the need for new routes and improved transit facilities. The collaboration contributed to improvements in TransJakarta's operations and enhanced capacity within Jakarta Smart City.

We included 48% of TransJakarta passengers in the origin-destination pair analysis. Of these, early findings indicate that only 20% use TransJakarta as a regular commuter (i.e. home-office-home) transportation. Around 24% only use TransJakarta to access the office from home, and conversely, around 15% use TransJakarta only as a means to get home. We have also tried to identify which stations are problematic, such as the stations that have long queues, long waiting times and are most crowded. Drawing from the project findings, TransJakarta has made a number of targeted changes and improvements to the bus service, such as deploying more officers and barriers to secure dedicated lines in typically congested areas and adding buses on certain routes. TransJakarta is also planning to conduct a more detailed passenger survey based on the insights uncovered from passenger commuting behaviour.

STAGE	RESEARCH
SDGs	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 11 SUSTAINABLE CITIES AND COMMUNITIES
AREA OF WORK	IMPROVING TRADE AND COMPETITIVENESS

TRACK 02

Ecosystem Catalyst

Supporting communities of practice

Capacity strengthening for data innovation

Exploring the social life of data

Supporting communities of practice

Innovation Challenges

Source: UNDP Indonesia

Big Ideas Competition

The 2016 Big Ideas Competition for Sustainable Cities and Urban Communities was organised by the National Information Society Agency (NIA), Korea Association for ICT promotion (KAIT), and UNDP Asia and the Pacific, and hosted by Pulse Lab Jakarta and the Republic of Korea Ministry of Science, ICT and Future Planning (MSIP). It was also supported by United Nations Volunteers and the Korea Big Data Alliance. The competition called for citizens of ASEAN member countries and the Republic of Korea to submit ideas on data-driven solutions to advance basic service delivery, sustainable transport & energy, resilience to natural disasters & climate change, and harmonious urban environments. Announced in May 2016, the call for ideas managed to attract 271 proposals from across ASEAN member states and the Republic of Korea. The Big Ideas evaluation team chose four main winners and nine country winners. Winning ideas included a platform that allows citizens to view queuing times on public transport and a mapping of accessible pedestrian routes for the visually impaired.

http://www.unglobalpulse.org/big-ideas-competition-2016-sustainable-cities
http://unglobalpulse.org/news/winners-big-ideas-competition-sustainable-cities-and-urban-communities-announced

SDGs 11 SUSTAINABLE CITIES AND COMMUNITIES

AREA OF WORK FRONTLINE SERVICES

East Java Ideas Challenge - Urun Ide Jatim

PLJ worked with GIZ's TRANSFORMASI program and the East Java Network for Public Service Improvement (JIPP-Jatim) to hold Urun Ide Jatim, an innovation challenge to improve public services in East Java. Open to government institutions, civil society organisations, and community groups, this innovation challenge called for solutions to address issues in East Java's education and health services, civil registry, and business registration processes. Winners of the challenge included: "Pemburu Bumil Risti", a program that partners with local vegetable vendors to identify the location and condition of expectant mothers with high risk pregnancy; "SuperAgro", an application that allows farmers to access a database of various factors related to crop farming and marketing; the replication and enhancement of "Kakekku Datang", a program which aims to achieve an integrated single identity database in Jawa Timur by proactively updating family card data.

http://www.urunidejatim.com/

SDGs 11 SUSTAINABLE CITIES AND COMMUNITIES

AREA OF WORK FRONTLINE SERVICES

What We've Learned from Innovation Challenges . . .

In 2015, Pulse Lab Jakarta, supported by the UNDP Innovation Facility, initiated a Data Innovation Mini Grant competition to promote a shift from theory to action in data innovation and support the Government of Indonesia to provide more effective services. While small in value, at no more than US$10,000 each, these projects represented variety in origin and focus. Award winners included local civil society organizations, a university faculty, and a local government department.

One year on, we wanted to take a closer look at what happened to these initiatives after the grant period. In collaboration with the Knowledge Sector Initiative, we went back to each of the awardees to try and capture lessons that we could use for future data innovation initiatives. Here's a snapshot of what we've found:

Innovation is really about people. Innovation begins with the generation and communication of ideas but depends on the collaboration imperative. Longer-term success requires employment of appropriate human resources and the engagement of partners and champions along the way who can help facilitate technical expertise, support networking, and promote advocacy with key stakeholders. It also requires political nous in understanding and navigating an arena of stakeholders that have the capacity and political incentive to facilitate or hinder successful implementation.

Initial hypotheses need to be ground-truthed. Ideally, innovation addresses challenges and problems that have been observed and validated on the ground. Some partners learned this hard way, when their plan to prototype a forecasting model could not be conducted due to lack of reliable and timely data needed to check the validity of their assumptions.

Keep it simple and real. The experience of these initiatives further confirms that development innovations are successful when they use environment-appropriate technology and demonstrate clear and immediate benefits.

Money matters. The journey from prototype to implementation and scalability requires financial

support—and so even small grants should help in preparing partners plan for this reality.

Don't overlook analytical capacity. With data comes data analytics. Project partners sometimes aim for promotion of a community of practice, local community engagement on spatial analysis or social media analytics, or engagement with policy makers around relevant data-driven evidence. But the success of this depends on sufficient analytical capacity among implementers as well as key stakeholders.

Set realistic targets and report accurately. We know this instinctively, but—from donors to community-based organizations and government institutions—we should avoid hubris in the initial definition of project goals and objectives as well as in project reports. We recognise, though, that the desire to report objectively can be complicated by the reality that while innovators embrace failure, this particular appetite may not be shared by their funders, implementing partners or government counterparts.

Communicate effectively. Project implementers can be self-centered or may not be effective at engaging beyond their immediate communities. Institutions such as Pulse Lab Jakarta can serve as important publication platforms and venues to amplify sharing.

Connecting the dots

One of the roles that we have been playing within Indonesia's data innovation ecosystem is building links and connecting different actors to help nudge forward more research and development in this field. These activities not only help us showcase PLJ's research results and our team's technical expertise - they also help us identify new potential partners for future collaboration. These include activities like our Research Dives, a three-day hackathon-style event where researchers collaboratively explore and analyse specific datasets; and PLJ Buka Warung, where we open up the lab, invite people to test out our platforms and prototypes, and provide them with a chance to discuss substantive issues and brainstorm ideas with our team members - usually over lots of coffee.

JANUARY

PLJ Buka Warung with Data Science Indonesia

FEBRUARY

Jakarta Service Jam

As part of the Global Service Jam, Pulse Lab Jakarta teamed up with Jakarta Smart City and volunteer service design facilitators to convene the Jakarta Service Jam. Based on data collected from their citizen feedback platform, Jakarta Smart City identified four themes for design challenges: public safety, street food vendors, public transportation, and citizen participation. Prototypes from the event are available here: http://bit.ly/JakartaServiceJam16

MARCH

UN Assistant Secretary General, Haoliang Xu, visits Pulse Lab Jakarta.

Provincial Government of Jakarta launched #Kaki5Jkt

Building on a social campaign designed by Pulse Lab Jakarta in 2015 to map street food vendors, the Provincial Government of Jakarta launched #Kaki5JKT to improve the digital presence of the city's certified street food vendors. Through the Jakarta Smart City platform, Jakartan foodies can now look up the locations of 1,000+ street food vendors - more than 800 of which were contributed by the #Kaki5JKT campaign.

MAY

Bandung Innovation Jam

PLJ collaborated with the Bandung Municipality and Hyve to run a design thinking workshop for the finalists of an innovation ideas contest under iuran.id (Inovasi Urang Bandung - Bandung Citizen Innovation).

JUNE

Australian Ambassador visits Pulse Lab Jakarta

SEPTEMBER

PLJ Buka Warung with Australia Awards

OCTOBER

PLJ Buka Warung with University of Twente

Research Workshop

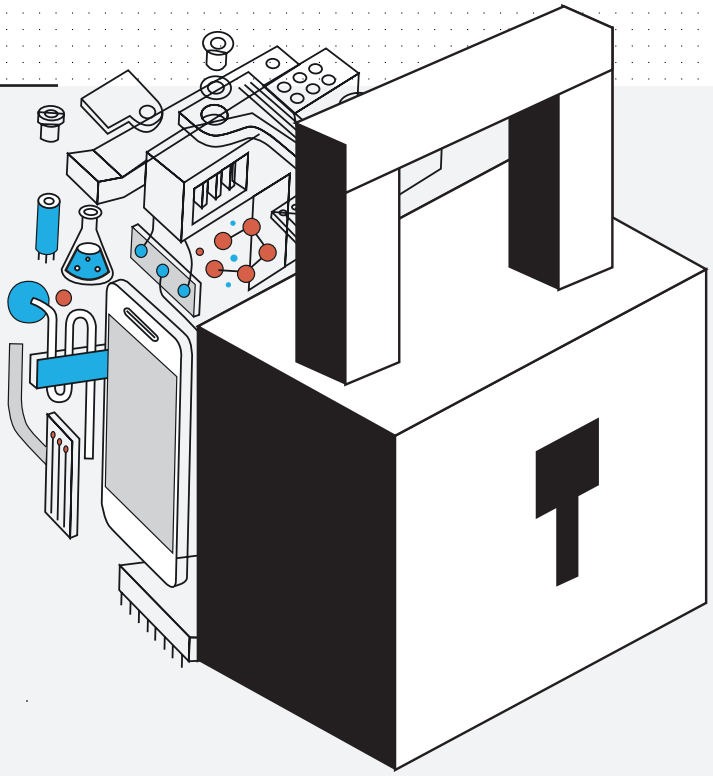
Pulse Lab Jakarta hosted a research workshop with an overall objective to create a big data research agenda for development and humanitarian issues in Indonesia for 2017. The workshop brought together 120 participants from various backgrounds, including policy-makers, academia, development practitioners and data scientists from Indonesia, Australia, Qatar, Singapore and South Korea.
http://pulselabjakarta.id/ResearchWorkshop01

NOVEMBER

PLJ Buka Warung - Public Service Innovation with winners of Urun Ide Jatim.

Data Privacy

UN Global Pulse and its lab network take data privacy very seriously. Big data represents a new resource with the potential to revolutionise development and humanitarian practice but we are mindful that legitimate concerns about privacy and data protection present challenges to harnessing big data for public benefit. Global Pulse has set up a Data Privacy Advisory Group which comprises experts from public and private sector, academic and civil society as a forum to engage in a continuous dialogue on critical topics relates to data protection and privacy. Dr Sinta Dewi, Professor of Law at University of Padjadjaran Indonesia joined the Data Privacy Advisory Group in 2016, which enriches the discussion on data privacy from an Indonesian perspective.



UN Global Pulse Data Privacy and Data Protection Principles:

Purpose of use
We access, analyse or otherwise use data for the purposes consistent with the United Nations mandate and in furtherance of the Sustainable Development Goals

Right to use
We access, analyze or otherwise use data that has been obtained by lawful and fair means, including, where appropriate, with the knowledge or consent of the individual whose data is used

Purpose compatibility
We ensure to the extent possible, that all of the data we use for project purposes is adequate, relevant, and not excessive in relation to the legitimate and fair purposes for which the data was obtained

Individual privacy
We do not access, analyse or otherwise use the content of private communications without the knowledge or proper consent of the individual

We do not knowingly or purposefully access, analyse, or otherwise use personal data, which was shared by an individual with a reasonable expectation of privacy without the knowledge or consent of the individual

We do not attempt to knowingly and purposefully re-identify de-identified data, and we make all reasonable efforts to prevent any unlawful and unjustified re-identification

Data security
We ensure reasonable and appropriate technical and organisational safeguards are in place to prevent unauthorised disclosure or breach of data

Risk and harm assessment and risk mitigation
We perform a risk assessment and implement appropriate mitigation processes before any new or substantially changed project is undertaken We take into consideration the impact that data use can have not only on individuals but also on groups of individuals

We ensure that the risks and harms are not excessive in relation to the positive impact of the project

Data sensitivity
We employ stricter standards of care while conducting research among vulnerable populations and persons at risk, children and young people, and any other sensitive data

Data minimisation
We ensure the data use is limited to the minimum necessary

Data retention
We ensure that the data used for a project is being stored only for the necessary duration and that any retention of it is justified

Data quality and accountability
We design, carry out, report and document our activities with adequate accuracy and openness

Our collaborators
We require that our collaborators are acting in compliance with relevant law, data privacy and data protection standards and the United Nations' global mandate.

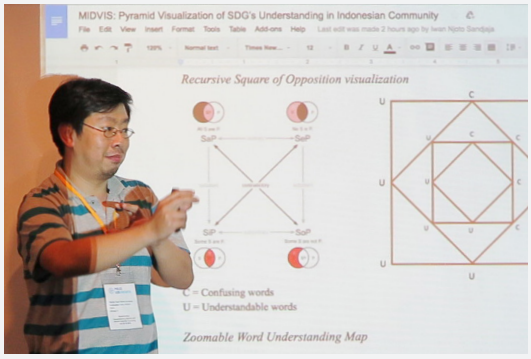
Building links with researchers and academia

Throughout 2016, we experimented with different ways of building productive collaborations with a broader network of researchers and academia. To obtain inputs on our future research agenda and identify potential collaborators, we hosted a research workshop that brought together data scientists and domain experts across a number of specific themes. The workshop resulted in a number of concrete data innovation project ideas in disease outbreak and surveillance, transportation planning, and agricultural production that we plan on pursuing further in 2017.

Another approach which we've found effective in broadening our research engagement is our series of Research Dives: three-day, hackathon-style sprints where researchers explore, analyze, and mashup datasets related to development and humanitarian issues in Indonesia.

Making use of the data gathered through Translator Gator - where we crowdsourced the translation of around 1,600 English keywords and phrases related to the Sustainable Development Goals into six Indonesian languages - our first Research Dive in July focussed on natural language processing. We gathered 19 computational linguistic experts and advisors from 18 different universities and government research institutions to collaboratively explore and analyze this dataset. The researchers were then assigned into groups, where they were tasked with assessing the quality of the translations, visualizing the data to make better sense of it, and filling in important translation gaps.

This first research dive resulted in several interesting exploratory approaches. One group tested a technique to fill in translation gaps by looking at the pattern of the absorption of English words into Bahasa Indonesia and using this as a pivot to predict translations of those words into Sundanese and Javanese. Another group looked at ways of visualising this dataset to show people's level of understanding of different Sustainable Development Goals.



The new methods developed from this dive have the potential to enhance computational linguistics research that can help make sense of how citizens digitally converse on development issues in Indonesia.

Building on our experience with the first dive, we organised a second Research Dive in November, in collaboration with the UN Office for the Coordination of Humanitarian Affairs (UN OCHA). This time focussing on image mining for disaster management, we brought together researchers and GIS experts from 14 different universities and four institutions across Indonesia. The researchers had access to around 5400 images related to haze collected from social media; gigabytes of time-series satellite imagery capturing an active volcano pre- and post-eruption from the National Institute of Aeronautics and Space Indonesia (LAPAN) and Google Earth; as well as UAV images of recent landslides in Garut.

Again divided into teams, researchers across different disciplines worked together to develop new methods for mining and analysing the image-based datasets. One group successfully developed a method for automatically generating a narrative from photos taken during a haze event, while another group developed a prototype model to infer the visibility levels from the same dataset. These methods are important for retrieving relevant information in real-time and for measuring the impacts of a disaster.

Other teams found that combining images from social media and analysis from GIS offers potential for better analysis of damage from a disaster. Moreover, they found that a vulnerability model could be developed to predict disaster impacts. These findings could be useful for policy-makers for spatial planning and risk reduction, as well as for civil servants during emergency response, recovery and rehabilitation.

In addition to being a means of discovering new insights from different datasets, the Research Dives served as a platform for researchers from different institutions and a variety of disciplines to network and share each other's expertise, laying the foundation for new collaborations. More broadly, we also see this as a means for building a higher level of demand for advanced data analytics across a wider range of actors in Indonesia's data ecosystem.

The results of the Research Dive can be accessed through http://rd.pulselabjakarta.id/

Capacity strengthening for data innovation

PLJ provided technical expertise to support adoption of prototypes or other data innovation approaches, in collaboration with government, private sector, academia or civil society.

JANUARY - FEBRUARY

Rapid mentoring session for GIZ Innovation Bootcamp participants in Kabupaten Pacitan, Kabupaten Probolinggo and Kota Probolinggo

MARCH

Coaching - analysis of consumer protection perceptions on social media with Directorate of Trade, BAPPENAS

MAY

Training on Visual Presentation of Information for Indonesia's Ministry of Trade.

JUNE

Training on Infographics and Data Storytelling to Data Science Indonesia, Ventura Lab and UN REDD+.

AUGUST

Incubation Day for Urun Ide Jatim Winners.

Training on Data Analytics for BAPPENAS.

SEPTEMBER

Training on Structuring Visual Information to BAPPENAS.

El-Nino Dashboard Technical Training to Executive Office of the President (KSP) with UNOCHA.

NOVEMBER

The Ministry of Trade's Got Talent

Pulse Lab Jakarta teamed up with AIPEG to host the Ministry of Trade's Centre for Data and Information (Pusdatin) for a pitching session. The Pusdatin team presented projects they have been working on in order to develop their internal systems and data products.

http://pulselabjakarta.id/Databicara

BAPPENAS Workshop Series - Data Innovation for Policy Makers

Pulse Lab Jakarta worked with the Data and Information Centre of the Indonesian Ministry for National Development Planning (Pusdatin BAPPENAS) to run a series of data innovation clinics for policy analysts within the Ministry. Representatives from each of the teams presented the research ideas resulting from these clinics to PLJ's Technical Committee Meeting on December 6.

http://pulselabjakarta.id/Klinikdata

Exploring the social life of data

After testing out a number of service design approaches in 2015, we applied our user research and co-design methods to capture the stories behind the trends in the big data at our disposal. The insights from our own analytics platforms raised interesting behavioural questions to explore. Insights from Haze Gazer, for instance, triggered explorative questions around things like how people share information during a crisis, the causes of haze events, and what kind of haze impacts people actually worry about. We fielded our researchers to explore these issues in order to augment the insights that we have from data analytics.

Using similar principles, we also teamed up with several other development initiatives to explore local data ecosystems, provision of education services, citizen ideas for transportation solutions, and how entrepreneurs navigate business registration processes. The insights gleaned from these activities provided us with more context and local knowledge to complement our big data tools.

Co-Design for Change

Pulse Lab Jakarta organised Co-design for Change, a workshop that invites stakeholders from various industries and sectors to gather and understand the impact and possible opportunities in solving the haze crisis. This initiative is a collaboration between Pulse Lab Jakarta and UNICEF, with research materials gathered from our own research initiatives, combined with findings from UNICEF and RCA (Reality Check Approach). The workshop was conducted over a 2-day period and utilised human-centred design approach to translate findings into actionable opportunities.

http://pulselabjakarta.id/Codesign02

SDGs

AREA OF WORK

PROTECTING THE POOR AND VULNERABLE

Sense-making of data at village and subdistrict level

PLJ conducted a joint field mission in April with KOMPAK's LANDASAN team to look at the data and information systems behind frontline services in Papua. The mission looked at civil registry services, village information systems, as well as schools and health clinics. As a result of the mission, we have identified two areas of potential collaboration with the future LANDASAN project, i.e. developing a supportive data ecosystem around an information dashboard for subdistricts (kecamatan), and improving user experience with civil registry services. A follow-up mission in October where we tested low-fidelity prototypes of the kecamatan dashboard allowed us further insights on what kinds of information would be most useful at the kecamatan level. We look forward to working with the KOMPAK team on this initiative once LANDASAN is up and running.

Early insights captured here: *http://pulselabjakarta.id/Sensemaking01*

STAGE | **EXPLORATION**

AREA OF WORK | IMPROVING FRONTLINE SERVICE DELIVERY | STRENGTHENING GOVERNMENT INFORMATION SYSTEMS

Harnessing citizens' ideas for transportation solutions

Pulse Lab Jakarta collaborated with UNDP, the Transportation Office of Makassar City (DisHub Makassar) and BaKTI to organise a co-design workshop aimed at finding new solutions to tackle public transportation issues in Makassar city. We extended the partnership between UNDP, BaKTI and DisHub Makassar beyond the workshop to actually test and iterate the development of the best prototypes. This incubation process was overseen by the Mayor of Makassar himself.

http://pulselabjakarta.id/Codesign01

SDGs | 11 SUSTAINABLE CITIES AND COMMUNITIES

AREA OF WORK | TRADE & COMPETITIVENESS

Innovation Bootcamp - Education Services in Jeneponto

Working with GIZ's TRANSFORMASI program, PLJ team members facilitated a workshop to introduce design thinking for the provision of education services in the district of Jeneponto. The structure of the workshop was informed by previous user research conducted by PLJ. Insights from the user research and the workshop are captured in Pulse Stories 3: Too Cool for School.

http://pulselabjakarta.id/Ps03

AREA OF WORK — IMPROVING FRONTLINE SERVICE DELIVERY

http://pulselabjakarta.id/Ps04

AREA OF WORK — TRADE AND COMPETITIVENESS

A closer look at business registration in Indonesia

Pulse Lab Jakarta teamed up with the Australia Indonesia Partnership for Economic Governance (AIPEG) to conduct a study on how business registration works in Indonesia. While previous studies on business registration mostly focused on the administrative parts of the system, we focused on the experience of entrepreneurs as they navigate the business registration process. Although the process of registering a business is relatively complex - requiring entrepreneurs to liaise with at least four different government units - we found that what frustrated people was not the complexity, but the opacity of the process and the amount of time it takes to complete this. Our insights are captured in Pulse Stories 4: Let's Get Down to Business.

Governance

Pulse Lab Jakarta continues to maintain technical coordination with Bappenas as its main counterpart. Our Joint Steering Committee Meeting was held on December 7 and was attended by high-level representatives of Bappenas, the United Nations, and the Australian Embassy. Members of the Steering Committee commended the PLJ team on the good work carried out in 2015 and 2016. The Steering Committee advised PLJ to continue building upon successful research and proof-of-concepts that have already been done, in addition to exploring new areas of work. The Steering Committee also endorsed PLJ's annual framework for 2017, and encouraged the lab to explore the feasibility of possible options to sustain the work of the lab beyond donor grant funding.

Tracking Impact

Pulse Lab Jakarta teamed up with monitoring and evaluation experts from Clear Horizon and Solidaritas to develop a comprehensive results management framework that allows the lab to track both its performance and the potential impact of its activities. Through a series of collaborative workshops, we've developed a modified organisational logic for Pulse Lab Jakarta.

The plan is to have a lean system that is integrated as much as possible with the Lab's existing systems, processes, and organisational culture. We are working closely with Clear Horizon and SOLIDARITAS to develop appropriate methods and tools to track performance and measure impact. We will be piloting these tools in early 2017.

Outreach

As part of our broader efforts to contribute to the discourse on data innovation, Pulse Lab Jakarta team members have participated as speakers and resource persons in national, regional and international events during this reporting period. Some of these events are highlighted here.

[MARCH]

Jakarta Open Data Day 2016 - Open Data Lab

Imaduddin Amin, PLJ's Data Engineer, shared our work on Data for Development. At the event, Dudin presented on the Global Pulse Project Series, the data crowdsourcing methods we have trialled, and examples of big data technologies implemented at Pulse Lab Jakarta.

[APRIL]

Workshop - Quantitative data analysis for public policy - Australia Awards Indonesia

PLJ's Data Engineer shared some of PLJ's methodologies on data collection, analysis, and visualisation during a workshop for Australian Awards short term course participants. This workshop, facilitated by the University of South Australia, is part of the Graduate Certificate for Quantitative Data Analysis for Public Policy Evaluation and Formulation, funded under Australia Awards Short Courses.

RTI Policy Forum: Data Revolution for Development, Jakarta, Indonesia

Derval Usher, Head of Pulse Lab Jakarta was privileged to be a speaker at RTI's Data Revolution for Development forum that took place in Jakarta. Derval presented the Lab's work to highlight the opportunities and challenges of harnessing new data sources for development initiatives.

[MAY]

World Humanitarian Summit, Istanbul, Turkey

Pulse Lab Jakarta took part in the World Humanitarian Summit, where we presented at a side event with the Government of the Netherlands and UN Office for the Coordination of Humanitarian Affairs on the "Future of Humanitarian Data: Opportunities and Challenges".

[JUNE]

Archive Unleashed 2.0, Washington DC, USA

Data Engineer Imaduddin Amin joined the research collaboration with 25 other researchers to explore the web collection from Internet archives and develop new open-source tools and approaches to web archives.

[JULY]

Generating Anticipatory Measures for Better Utilization of Tropical Peat Lands, Pekanbaru, Indonesia

PLJ's Data Engineer, Imaduddin Amin, attended the Socialization of Project Gambut in Pekanbaru. Imaduddin presented our work on Haze Gazer to several local stakeholders, including Bappeda, BPBD and UN project officers in Riau Province.

Third Session of Preparatory Committee for Habitat III (PrepCom3), Surabaya, Indonesia

Head of PLJ, Derval Usher, and Programme Specialist, Mellyana Frederika, were invited by CityNet, an association of urban stakeholders committed to sustainable development in the Asia-Pacific region, to attend the Preparatory Committee for UN Habitat III as well as to speak at a side event called "Civic and Youth Participation in the Wired Age" in Surabaya, East Java.

Source: Second Asia Pacific Regional Forum on Smart Cities 2016

[AUGUST]

Third International Conference on Big Data for Official Statistics, Dublin, Ireland

The conference looks at the next steps in the utilization of non-traditional data sources: moving beyond the isolated use of mobile phone data, social media data or satellite imagery data to the applications of these in the daily production of official statistics. The discussion also centred around enabling factors for this to happen, including public-private partnerships. PLJ's Data Scientist, Jonggun Lee, participated in a Global Working Group meeting and represented UN Global Pulse in this conference.

Second Asia Pacific Regional Forum on Smart Cities, Phuket, Thailand

PLJ's Programme Specialist, Mellyana Frederika, showcased PLJ's work among urban planning practitioners as part of the broader discourse on smart cities and e-governance.

[SEPTEMBER]

Asian Evaluation Week 2016, Xi'an, China

PLJ was invited to deliver a joint presentation with monitoring and evaluation expert Michael Bamberger on "Integrating big data and smart data analytics into the evaluation of development programmes" in the 2016 Asian Evaluation Week. The report on integrating big data into monitoring and evaluation of development programs has been published by UN Global Pulse: http://www.unglobalpulse.org/big-data-monitoring-and-evaluation-report

Preparatory Workshop on Surfacing and Supporting Local Innovation Solution to Flood Resilience in Indonesia

PLJ was invited by IFRC International and PMI Indonesia to share our expertise and experience on innovation challenges as well as to facilitate a co-design workshop on harnessing local initiatives for flood resilience.

APPROX 2016 & RANDOM 2016, Paris, France

Data Scientist and Research Lead, Jonggun Lee, represented PLJ at the 19th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX'2016) and the 20th International Workshop on Randomization and Computation (RANDOM'2016) in Paris, France.

Global Preparatory Seminar for the World Data Forum, Guilin, China
Head of PLJ, Derval Usher, presented a sample of Global Pulse's projects at the Global Preparatory Seminar for the World Data Forum. The Global Preparatory Seminar served as a platform for participants representing a wide range of stakeholders to discuss opportunities and challenges faced in the production and utilization of data for the follow up and review of the Sustainable Development Goals and targets.

Second Data for Policy Conference 2016, Cambridge, UK
Data Scientist Jonggun Lee showcased PLJ's work on Haze Gazer to illustrate the use of digital data for better disaster management efforts.

Big Data for Human Development, Oxford, UK
This symposium, organised by the Oxford Internet Institute at the Said Business School in Oxford aimed to move forward the debate about the ways in which big data is used, can be used and should be used in development. Derval Usher presented PLJ's recent work and participated in the bridging discussions on critical academic research in this area, data privacy and ethics as well as contributed to the discussions on practical uses of big data for development.

Indonesia Update Conference: Digital Indonesia
PLJ's Chief Technical Advisor, Diastika Rahwidiati, presented case studies from PLJ (the National Dashboard, Haze Gazer and the climate composite anomaly tracker) to illustrate opportunities and challenges of harnessing new data sources for policy development. The annual event was convened by the Australian National University (ANU) as part of the Australian Government-funded Indonesia Project.

[O C T O B E R]

Shaping a research and policy agenda on big data for development for the Global South, Madrid, Spain
UN Global Pulse was invited to be part of a workshop on shaping a research and policy agenda on big data for development in the Global South. The workshop was convened by LIRNEAsia, the Centre for Internet and Society and IDRC. John Quinn (Data Scientist, Pulse Lab Kampala) and Diastika Rahwidiati (Chief Technical Advisor, Pulse Lab

Source: Service Design Conference 2016

Jakarta) presented prototypes from their respective labs during the opening session of the workshop. PLJ also facilitated a small group discussion session on challenges in big data for development. Moreover, the meeting initiated discussions on the possibility to establish a South-South network of big data research institutions.

Service Design Conference Amsterdam

The Service Design Global Conference was organized by Service Design Network, one of the most prominent global community of service designers. The theme of the conference was "Business as Unusual". PLJ Design Research Lead, Kautsar Anggakara, was invited as one of the speakers in the conference and was the only speaker from a developing country. Anggakara showcased PLJ's experience in running service design projects in rural Indonesia to an audience of around 200 social media-savvy service design practitioners.

The conference was a great way for Pulse Lab Jakarta to establish thought leadership in doing service design work in developing countries.

[N O V E M B E R]

International Seminar on SDGs: Data Disaggregation, Seoul, South Korea

Data Scientist and Research Lead, Jonggun Lee drew on PLJ's data analytics work to present on Data Revolution for Sustainable Development Goals and Humanitarian Action.

Guest Lecture at Diponegoro University - Big Data for Development, Semarang, Indonesia

Chief Technical Advisor Diastika Rahwidiati conducted a guest lecture at Diponegoro University on Big Data Analytics: New Methods to Understand the Social World.

Geo-Awareness Week, Jakarta, Indonesia

In the commemoration of Geography Awareness Week, PLJ's Data Engineer, Imaddudin Amin spoke as a panelists at OSM Geo-Awareness Week. He shared a presentation on advancing the use of spatial data and the application of mapping techniques for humanitarian causes.

Road Traffic Transport Forum (RTTF) Workshop
PLJ was invited by the Indonesia Infrastructure Initiative (INDII), to attend a Road Traffic Transport Forum (RTTF) workshop in Lombok, Indonesia to present the results of its community verification pilot, to train the RTTF participants in the Premise app, to facilitate an app testing session, and to discuss potential paths for scaling-up the community monitoring tool that INDII has piloted with the support of Pulse Lab Jakarta.

Southeast Asia Open Data Innovation Week, Jakarta, Indonesia
PLJ participated in the Open Data Innovation Week, presenting insights from the development of its data innovation toolkits and advising teams on the development of toolkits for public officials, activists and journalists concerning open data.

Australia-Indonesia Science Symposium, Canberra, Australia
PLJ's Chief Technical Advisor, Diastika Rahwidiati; Data Scientist and Research Lead, Jonggun Lee; and Junior Data Scientist, Ni Luh Putu Satyaning participated in the 2016 Australia-Indonesia Science Symposium. PLJ shared its work on making sense of citizen feedback during the plenary session on big data and disruptive technologies. Diastika, Jonggun and Satya also facilitated a brainstorming session with other data scientists on the potential for new sources of data and advanced data analytics to inform research topics on health, agriculture, marine sciences and climate change that were presented during the rest of the symposium.

National Cartography Conference, Yogyakarta, Indonesia
PLJ's Data Engineer, Imaduddin Amin, and Web Developer, Muhammad Rheza, attended the National Cartography Conference 2016 hosted by Indonesia Association of Cartographers. At the event, Imaduddin Amin spoke about the transition of current cartography method to the modern cartography and its challenges.

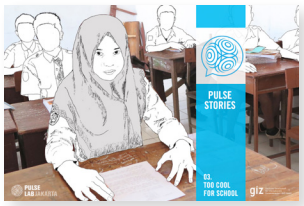
[D E C]

UN ESCAP Agenda 2030 Dialogue, Bangkok, Thailand
Our programme specialist, Mellyana Frederika, attended the Expert Dialogue on Effective Follow-up and Review for the 2030 Agenda for Sustainable Development in Asia and the Pacific in Bangkok, Thailand. She also shared a presentation on Using Big Data for Monitoring at the event.

Publications

Data Asset Mapping Tools (May)

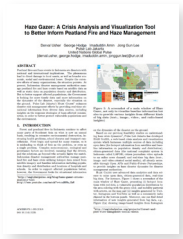
"Haze Gazer: A Crisis Analysis Tool," Global Pulse Tool Series 2 (May)



Pulse Stories 3: Too Cool for School (June)

Progress Report (June)

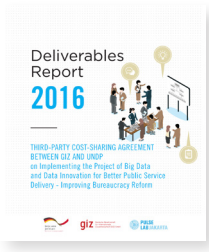
Pulse Stories 4: Let's Get Down to Business (September)



"Haze Gazer: A Crisis Analysis and Visualization Tool to Better Inform Peatland Fire and Haze Management," in the Proceedings of 2nd Data for Policy Conference Frontiers of Data Science for Government: Ideas, Practices, and Projections (September)

Technical Report - The First Research Dive on Natural Language Processing for Sustainable Development (October)

Urun Ide Jatim (October)



Data Innovation for Better Public Service Delivery – a Collaboration between Pulse Lab Jakarta and GIZ's TRANSFORMASI. (November)

Media Highlights

HOW DIGITAL HUMANITARIANS ARE CLOSING THE GAPS IN WORLDWIDE DISASTER RESPONSE

Huffington Post, January 2016

Across the world there are branded hubs, labs, fellowships, meetings, conferences and research. Governments, international non-governmental organizations (INGOs) and non-governmental organizations (NGOs) are all working on various projects. How can these new voices and communities become part of the humanitarian apparatus? From Unicef Innovation to Ihub Nairobi, Kathmandu Living Labs to UN Global Pulse Jakarta, there are many new spaces where solutions have been observed and created.

EXCLUSIVE: EDUCATION RECEIVES MOST CITIZEN COMPLAINTS IN INDONESIA

GovInsider Asia, March 2016

The National Dashboard developed by Pulse Lab Jakarta will let citizens create maps and charts from complaints on Twitter and the government's complaints handling channel. These can help them monitor the current quality of government services, and understand where it needs to improve. The project is run directly by Office of Presidential Staff, and will this year be handed over to a ministry for faster implementation.

TRANSLATOR GATOR: GAMIFICATION AS A TOOL TO CROWDSOURCE SCARCE LANGUAGE DATA

Data Driven Journalism, September 2016

Translator Gator is inspired by the need to socialise the 17 Sustainable Development Goals (SDGs), currently being integrated into the Government of Indonesia's programme, and the need to better monitor progress against the varied indicators. Thus, Translator Gator will raise awareness of the SDGs and develop a taxonomy of keywords to inform research.

NEW TOOL TRACKS CITIZENS' BEHAVIOUR DURING HAZE

GovInsider Asia, May 2016

The Haze Gazer enables Indonesia's local (BPBD) and national (BNPB) disaster management authorities to target their interventions and to align their efforts with those of affected populations.

"DEMOCRATIZATION AND DECENTRALIZATION ARE PIVOTAL TO INDONESIA'S DEVELOPMENT — IT'S NEVER BEEN MORE IMPORTANT FOR LOCAL GOVERNMENT TO LISTEN TO LOCAL CITIZEN ABOUT ISSUES CONCERNING THEM. THROUGH A "CITIZEN FEEDBACK" PROJECT, PULSE LAB JAKARTA WITH THE GOVERNMENT OF NTB COMBINED PUBLIC OPINIONS EXPRESSED ON TWITTER WITH A LOCAL SMS BASED FEEDBACK SYSTEM TO COMMUNICATE PERCEPTIONS AT THE COMMUNITY LEVEL TO DECISION-MAKERS."

DATA MATTERS FOR DEVELOPMENT, DEMOCRATIZATION

An op-ed written by Douglas Broderick, UN Resident Coordinator in Indonesia at The Jakarta Post, October 2016

"GIVEN THE COMPLEXITIES OF CHALLENGES THAT CITIES IN ASIA ARE FACED WITH, WE NEED TO ENCOURAGE AS WELL AS GIVE RECOGNITION TO CITIZENS' IDEAS AND INSIGHTS IN DEVELOPING THE NEXT GENERATION OF INNOVATIONS."

- Nicholas Rosellini, UNDP's Deputy Regional Director for Asia and the Pacific.

BIG IDEAS COMPETITION FOR SUSTAINABLE CITIES KICKS OFF IN SE ASIA, *The Jakarta Post, May 2016*

How Makassar will use design thinking to improve transport

Mayor Ramdhan Pomanto has partnered with the United Nations to bring fresh ideas to his government.

By Medha Basu

6 DEC 2016

INNOVATION

The City of Makassar in Indonesia has partnered with the United Nations Development Programme to pilot design thinking techniques. These will help address its public transport challenges.

Traffic congestion in the city is steadily growing. In October, on average 195 new motorbikes and 43 new

HOW MAKASSAR PLANS TO USE DESIGN THINKING TO IMPROVE TRANSPORT

GovInsider Asia, December 2016

The UNDP and Pulse Lab conducted a sample study of transport patterns in Makassar. They identified three key areas that must be addressed: designing routes to meet users' needs and avoiding overlapping; nudging changes in the behaviour of users and transport operators to follow traffic laws; and making information on transport schedules available to commuters.

Collaborators

Much of our work would not have been possible without the collaboration of a wide range of local and international partners:

THINK TANKS AND ACADEMIC INSTITUTIONS

GOVERNMENT AGENCIES

PRIVATE SECTOR

Clear Horizon

CLIFFORD CHANCE

Digicel
The Bigger, Better Network

SOLIDARITAS

transjakarta

DEVELOPMENT PARTNERS

ASEAN

Australia Awards
Scholarships

Australia Indonesia Partnership for Economic Governance

BaKTI

FAO
FIAT PANIS

International Federation

Indonesia Infrastructure Initiative

KNOWLEDGE SECTOR INITIATIVE

KOMPAK
Kolaborasi Masyarakat dan Pelayanan untuk Kesejahteraan

RCA
Reality Check Approach

The Asia Foundation

OCHA

UNCDF
Microfinance + Capital Development

UNDP
Empowered lives.
Resilient nations.

UNDP
Sri Lanka

unicef

UNOPS

U.N. Statistics

UN VOLUNTEERS

WFP
World Food Programme

Donors

Australian Government

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH