Catalyzing (Big) Data Innovation in Agriculture

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PULSE LAB JAKARTA

Pulse Lab Jakarta employs a **mixed-method approach**, through which it harnesses alternative data sources and **advanced data analytics** methods to obtain actionable insights and applies **human-centered design** to ground-truth insights from its data analysis and research, providing evidence to inform policy makers.

The Lab functions to:

Drive **exploratory research** on new insights that can be gleaned from unconventional data sources

Facilitate **partnerships** between governments, development agencies and private sector to optimise use of data

Identify **new data sources** and their potential for development while ensuring ethical use of data

OUR DATA JOURNEY

PULSE LAB JAKARTA

2013
Social Media

2014
Social Media

2015
Social Media
Qualitative Data
Crowdsourced Data
Drone Imagery

2016
Social Media
Qualitative Data
Crowdsourced Data
Satellite Imagery
Mobile Network Data
Susenas*

2017
Social Media
Qualitative Data
Crowdsourced Data
Satellite Imagery
ATM Transaction Data*
Microfinance Data
Mobile Network Data
Susenas*
E-Commerce Data
AIS Data*
BRT Data*

2018
Social Media
Qualitative Data
Crowdsourced Data
Satellite Imagery
Satu Data
Susenas*
Mobile Network Data
E-Commerce Data
CCTV Data*
Air Quality Index
AIS Data*
Fintech Data*
Ride-Hailing Data
ATM Transaction Data*
Microfinance Data

2019
Social Media
Qualitative Data
Crowdsourced Data
Geospatial Data
Diplomatic Cables
Mobile Network Data
Displacement Tracking Matrix
ATM Transaction Data*
Satellite Imagery
Ride-Hailing Data
Google Trends
Air Quality Index
Fintech Data*
Jitupasna Data*
Food Security Data
Population Density Maps
Agriculture Census
Consumer Price Index
Microfinance Data
E-Commerce Data
Susenas*
AIS Data*
Podes*
IoT Data*

*
AIS: Automatic Identification Systems
ATM: Automated Teller Machine
BRT: Bus Rapid Transit
CCTV: Closed Circuit Television
Fintech: Financial Technology
IoT: Internet of Things
Jitupasna: Pengkajian Kebutuhan Pascabencana
Podes: Potensi Desa
Susenas: Survei Sosial Ekonomi Nasional

Vulnerability Analysis Monitoring Platform for Impact of Regional Events (VAMPIRE) an early warning system for climate impact
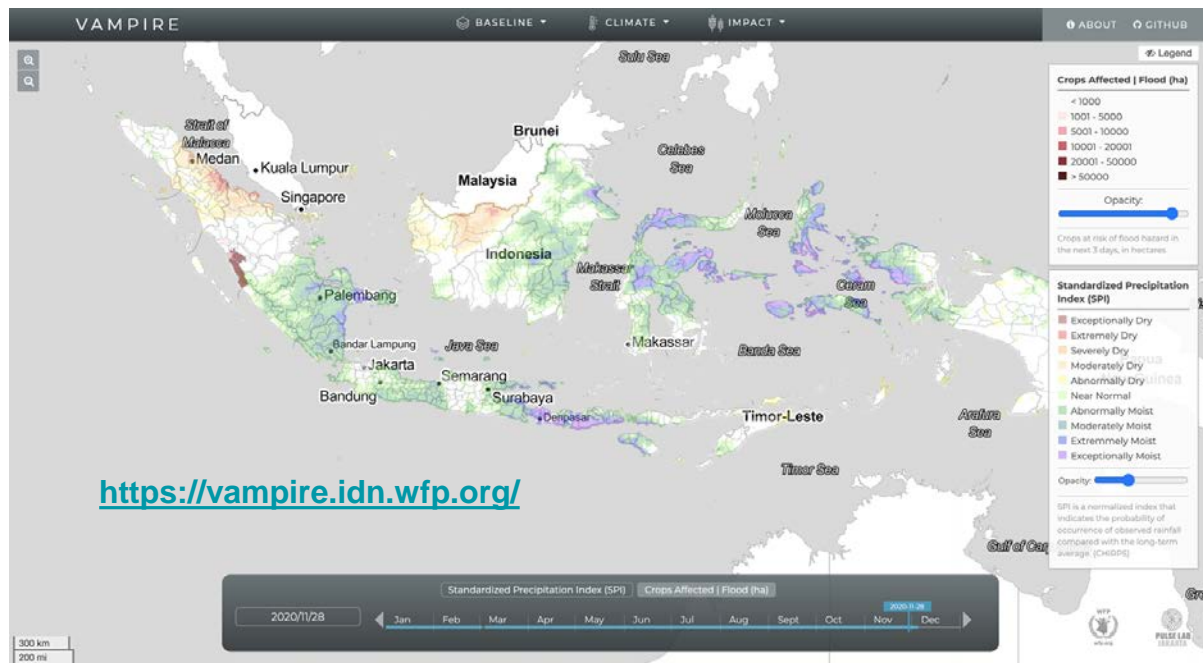
Done in collaboration with WFP
- WFP continues to maintain and improve the platform

Leverages a variety of data sources (remote sensing, administrative data, etc.)

https://medium.com/pulse-lab-jakarta/fusing-datasets-to-track-the-impact-of-disasters-in-indonesia-and-beyond-vampire-is-on-it-ed13fe8e6ff6

https://vampire.idn.wfp.org/

Positive deviance in agriculture

- Preliminary work to identify potential Positive Deviants (PDs) across rice producing areas in Indonesia
- Uses satellite imagery + administrative data
- Done in collaboration with GIZ & University of Manchester
- More info at https://medium.com/@PLJ/identifying-potential-positive-deviants-pds-across-rice-producing-areas-in-indonesia-an-4746a114eaaf

Accelerating digital transformation in global agriculture: The why and the how

The Why:
- Unleashing the digital data revolution to enhance the agriculture requires cross-sectoral and multi-stakeholder partnerships
- Relevant data lies across different actors

The How:
- Analytical and data partnerships are key; moving from one-off to sustainable long-term collaborations is needed

What are the policy implications in relation to catalyzing analytical and data partnerships in global agriculture?

- Focus on shared value creation amongst government and private sector and other stakeholders
- An enabling policy and regulatory environment is needed to accelerate data innovation in agriculture
- Several areas where more work is needed; will require both legal and technical solutions
  - Data provenance
  - Privacy & data ownership
  - Protecting commercial interests
  - Inter-jurisdictional issues

Thank you!

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