

LASER PULSE

Long-term Assistance and Services for Research (LASER)
Partners for University-Led Solutions Engine (PULSE)

SHORT INTRODUCTION ON THE POPGIS

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ABOUT LASER PULSE

LASER (Long-term Assistance and SErvices for Research) PULSE (Partners for University-Led Solutions Engine) is a five-year, \$70M program funded through USAID's Innovation, Technology, and Research Hub, that delivers research-driven solutions to field-sourced development challenges in USAID partner countries.

A consortium led by Purdue University, with core partners Catholic Relief Services, Indiana University, Makerere University, and the University of Notre Dame, implements the LASER PULSE program through a growing network of 3,400+ researchers and development practitioners in 74 countries.

LASER PULSE collaborates with USAID missions, bureaus, and independent offices, and other local stakeholders to identify research needs for critical development challenges, and funds and strengthens the capacity of researcher-practitioner teams to co-design solutions that translate into policy and practice.

SHORT INTRODUCTION TO THE POPGIS

The Pollution Observation Platform (POP) is a Geographic Information System (GIS) that provides information on $PM_{2.5}$ distribution across Vietnam. The POPGIS is a product of the “Improving air pollution monitoring and management of Vietnam with satellite $PM_{2.5}$ observation” project. This system will support users with observing $PM_{2.5}$ concentration in near real time from multiple data sources over the Vietnam region, especially in areas without $PM_{2.5}$ monitoring stations at national scale and can supplement current government websites. Data and information from the system can be used to assist in research and studies on the status and impact of $PM_{2.5}$, as well as the policy making and education on air quality,

The POPGIS utilizes the open data sources and products from satellites, including standardized ground monitoring station’s data; satellite Aerosol Optical Depth (AOD); meteorological data; and land-use data, along with the Mixed Effect Model to estimate the $PM_{2.5}$ concentration over the region of Vietnam. The map data is updated daily. Moreover, the system also collects data from multiple standardized monitoring station systems across Vietnam, which is updated hourly, to display alongside the map data for better comparison and understanding of air quality in certain areas.

The POPGIS will target users such as the general public, who want to keep track of the information on air quality; government agencies to support the decision-making process; and researchers and experts, who want to use this data for research purposes. The system contains the following functions:

- Visualization: This system will display the $PM_{2.5}$ map data over the Vietnam region. Users can observe changes in air quality over time on a nationwide scale. Data is available in map form (based on satellite data) and in point form (data from various on-ground monitoring station systems).
- Daily AQI ranking: The system will provide users with daily ranking of provincial air quality based on $PM_{2.5}$ concentration.
- Statistical reporting: The system will allow users to perform basic analysis on the $PM_{2.5}$ data of an area based on spatial and temporal criteria.
- Data request: Users will be able to request dataset belong to places and intervals of interest
- Annual report: This function gives users access to the annual report on the state of $PM_{2.5}$ pollution in Vietnam as well as other news and information on air pollution.
- Supplemental information: This function will provide information about data sources; the methodologies and the system in general.

The link to the system’s information page is at <https://popgis.vnu.edu.vn/about>