Republic of the Philippines
Department of Science and Technology
Advanced Science and Technology Institute

S&T Infrastructure & Spatial Technology

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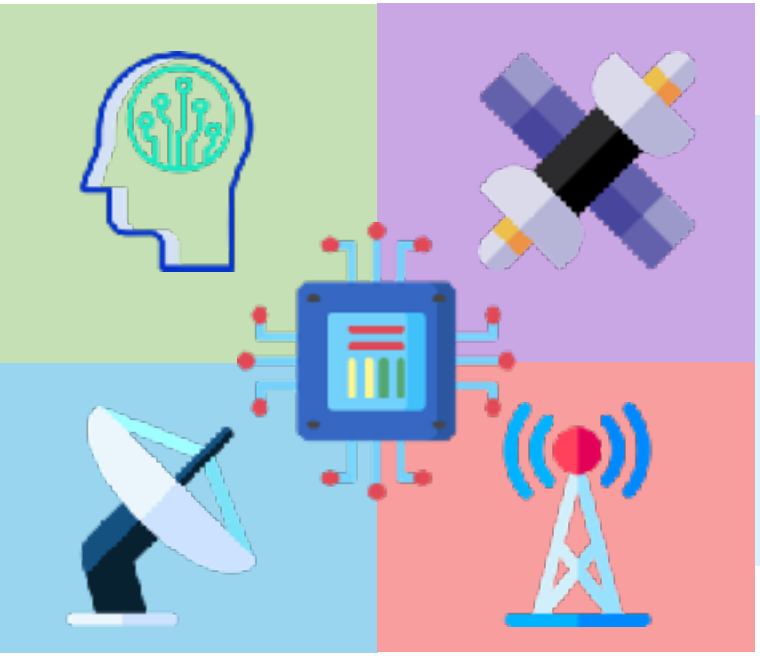


The **Advanced Science and Technology Institute (ASTI)** is a **Research and Development Institute (RDI)** of the Department of Science and Technology established in 1987 with a mandate to undertake **scientific research and development activities** in support of advancing **information and communication technology, computing, and microelectronics** in the country.

DATA

Data that enables **scientific discovery** and better understanding of our environment

Data that enables **evidence-based policies** for more relevant and responsive programs

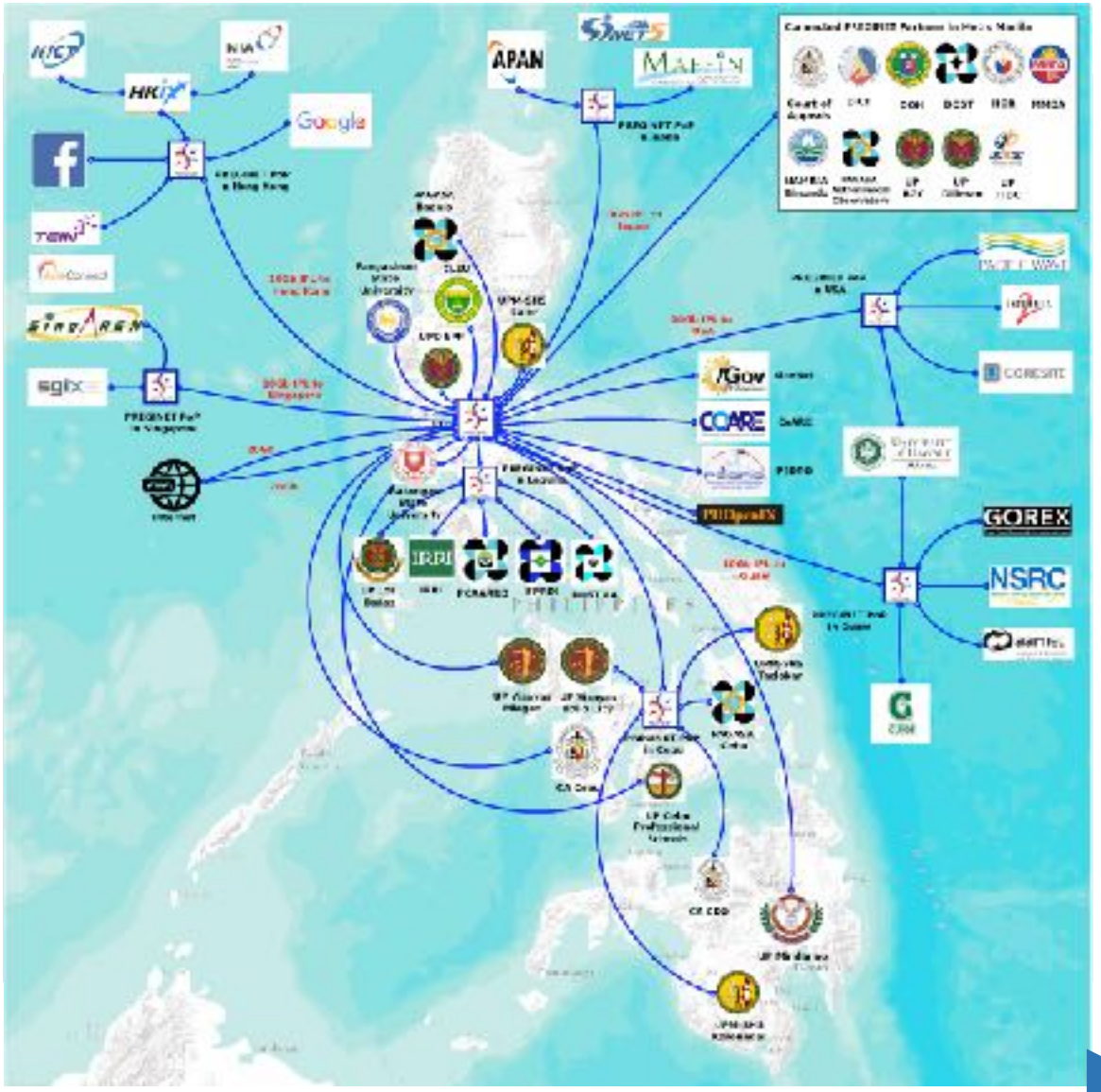
Data that enables a **knowledge-based economy** that fosters inclusive innovation

Data for tackling **information poverty**

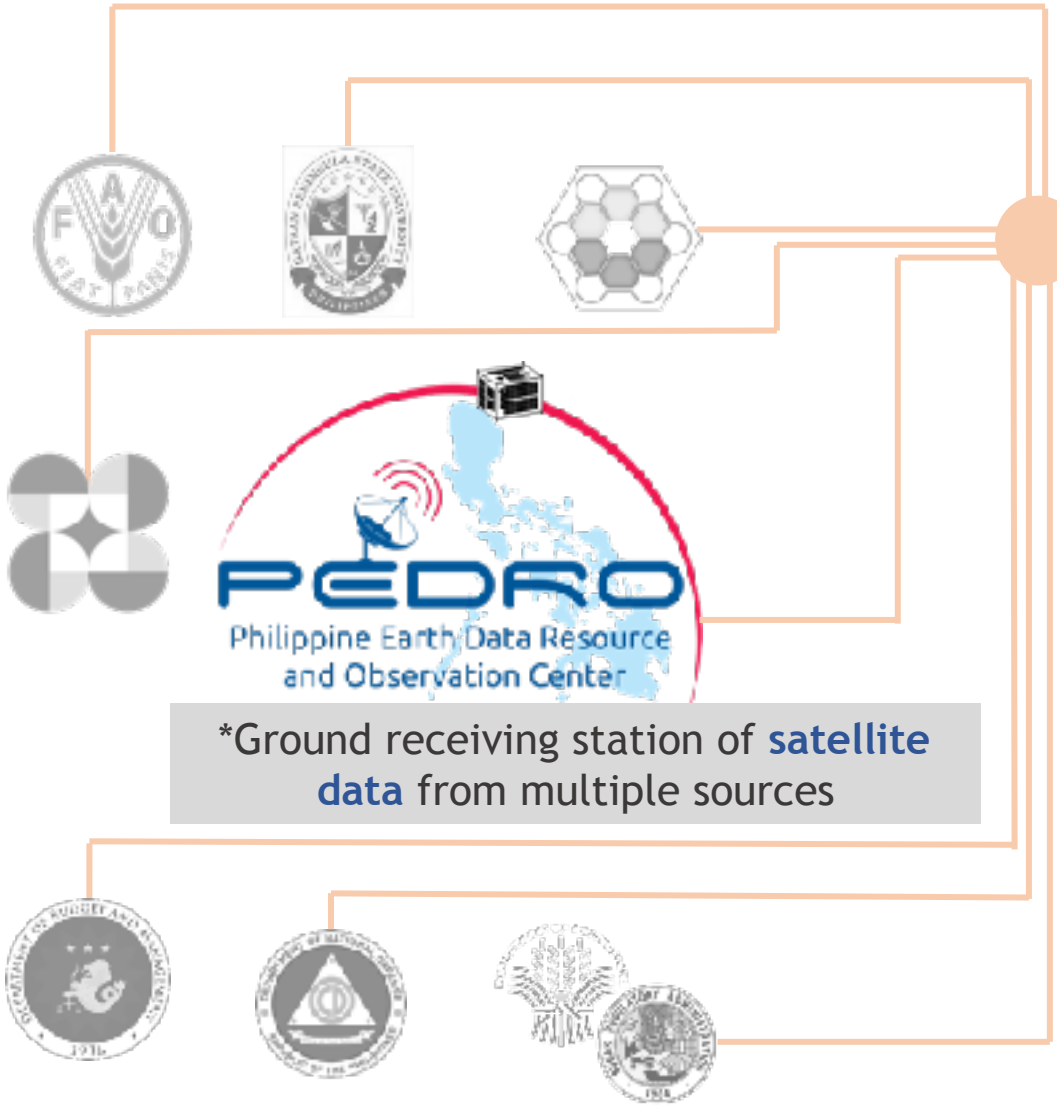
Why is a country like the Philippines going into space technology?

PREGINET

PREGINET is the only **National Research and Education Network** in the Philippines, which interconnects and catalyzes research among academic, government, and research institutions.



C O N N E C T



*Ground receiving station of **satellite data** from multiple sources

COARE

Data Archiving

High-Performance Computing (HPC)

Science Cloud

The **Data Archiving service** is composed of a durable storage and a web-based repository that contain scientific, environmental, and geospatial datasets gathered from various researches.

S T O R E

3, 456 logical cores or
216 gaming laptops
20, 352 cuda cores or
1,272 gaming laptops

1,488 gaming laptops

62.4 teraflops or

1.25 trillion scientific calculators

2.7 petabytes of storage

2,698 1TB hard drives

COARE

Data Archiving

High-Performance Computing (HPC)

Science Cloud

The **HPC** is for processing massive amounts of data that require **high-speed calculations** and **powerful computing.**

The **Science Cloud** provides cloud-based **virtual machines (VM)** for researchers.

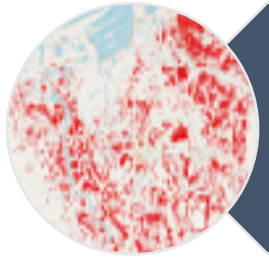
C O M P U T E

The **Remote Sensing and Data Science: DATOS Help Desk** of DOST-ASTI uses the agency's **High Performance Computing (HPC) facility in processing satellite images** for various disaster-related and agricultural mapping outputs.

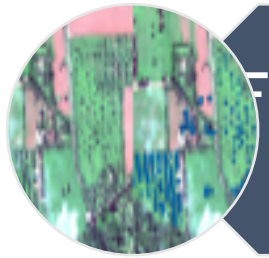
The DATOS Project capitalizes on the current advancements of computing technology and applies it in the fields of

- ***Geographic Information Systems (GIS)***
- ***Remote Sensing (RS)***
- ***Artificial Intelligence (AI)***
- ***Data Science***

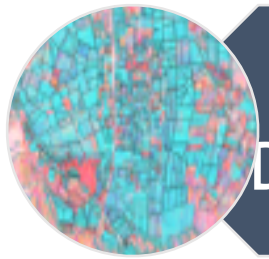
A N A L Y Z E



Flood Mapping

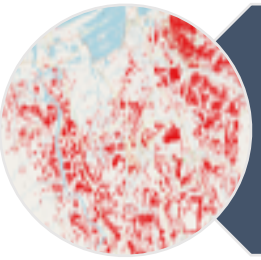


Feature Detection Using AI



Multitemporal Object Detection Using RADAR

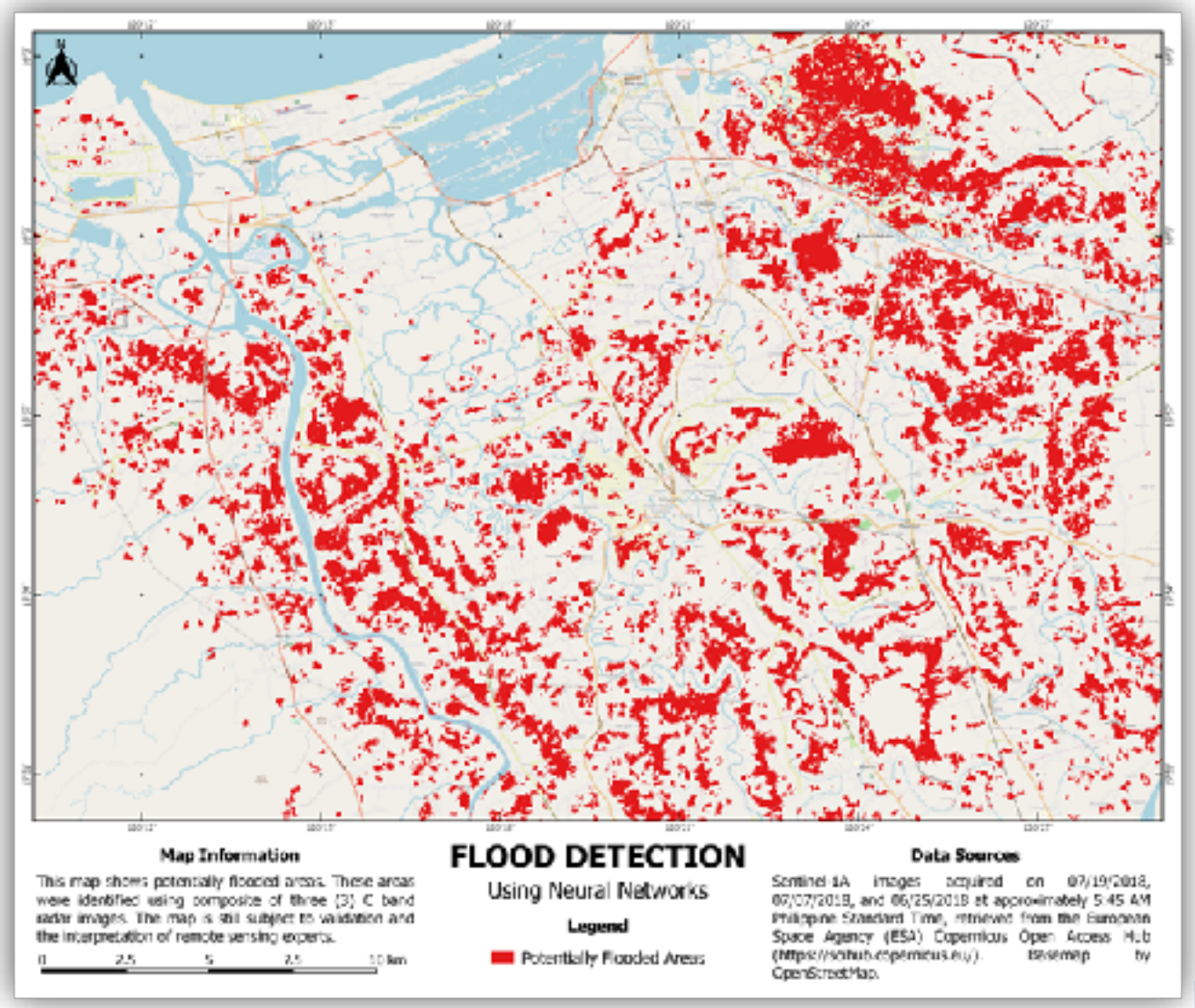
APPLICATIONS



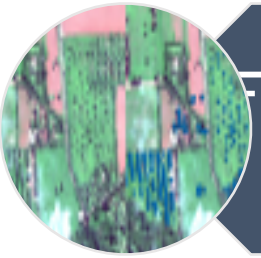
Flood Mapping

Flood Situation Mapping

- *Multi-temporal SAR Imagery*
- *Sentinel-1A, 1B*



A P P L I C A T I O N S

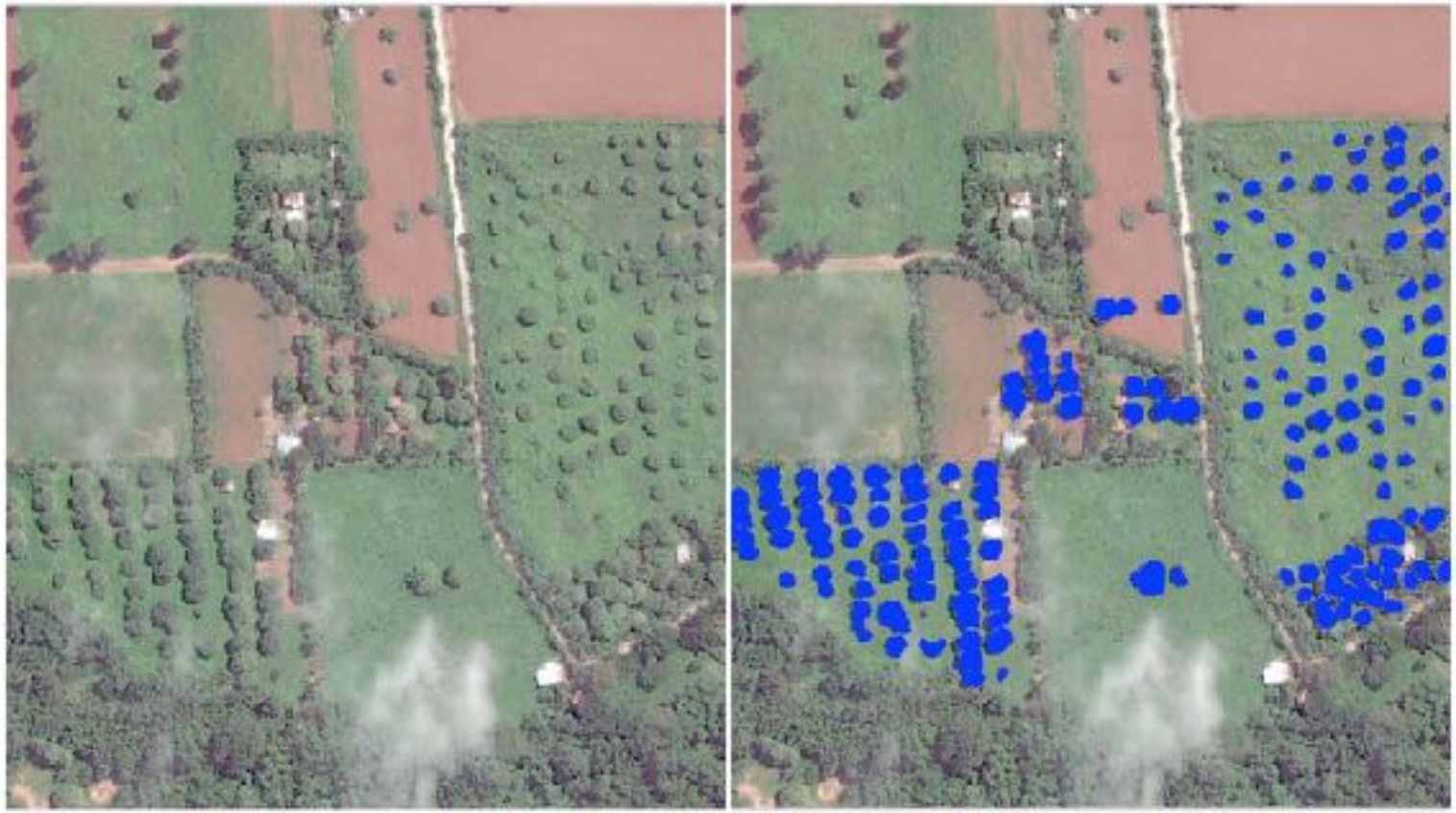


Feature Detection Using AI

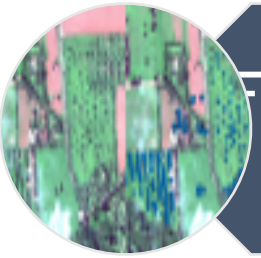
Tree Detection

Mango Trees

- *VHR Imagery*
- *0.5-meter resolution*



APPLICATIONS



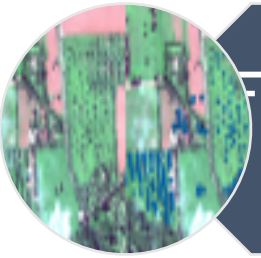
Feature Detection Using AI

Tree Detection

Coconut Trees

- *VHR Imagery*
- *0.5-meter resolution*

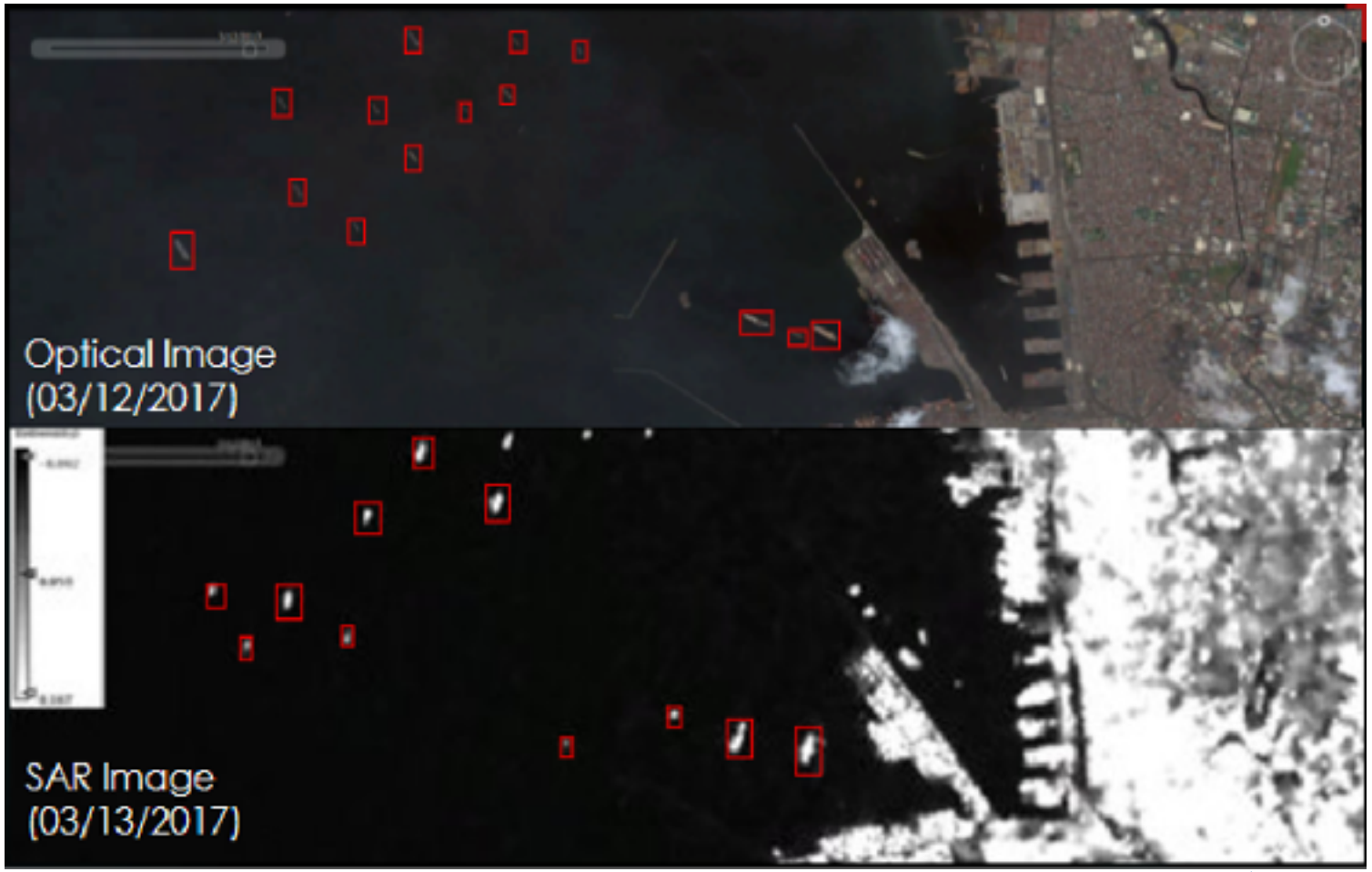
APPLICATIONS



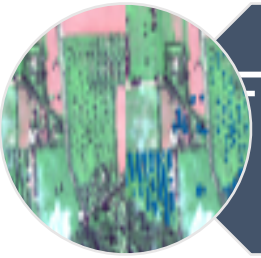
Feature Detection Using AI

Ship Detection

- *VHR Optical Imagery*
- *Radar Imagery*



A P P L I C A T I O N S

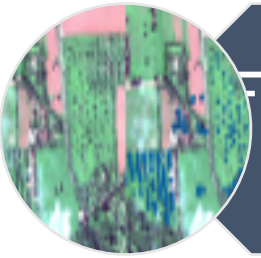


Feature Detection Using AI

Road Network Prediction

- *Planet Dove Imagery*
- *3-meter resolution*

APPLICATIONS

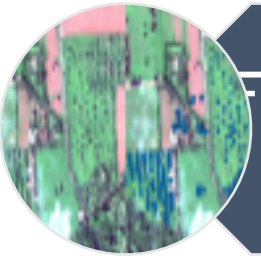


Feature Detection Using AI

Damage Detection

- *VHR Optical Imagery*

APPLICATIONS

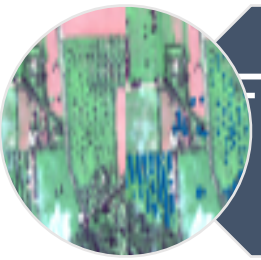


Feature Detection Using AI

Built-Up Areas Mapping

- *Planet Dove Imagery*
- *3-meter resolution*

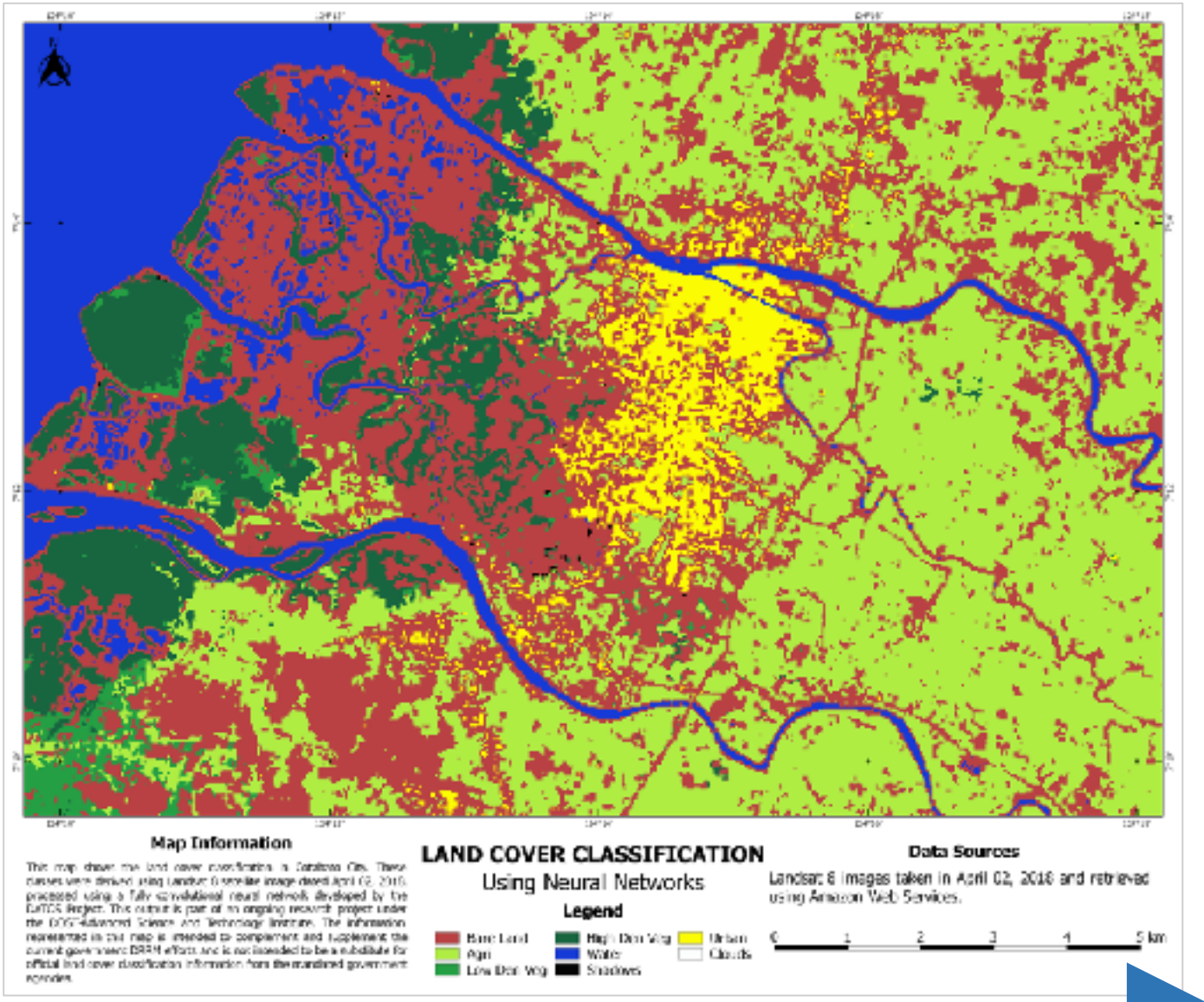
APPLICATIONS



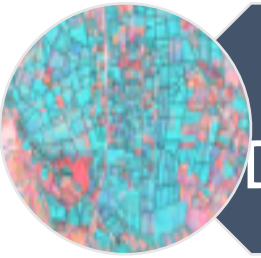
Feature Detection Using AI

Land Cover Mapping

- *Landsat Imagery*



A P P L I C A T I O N S

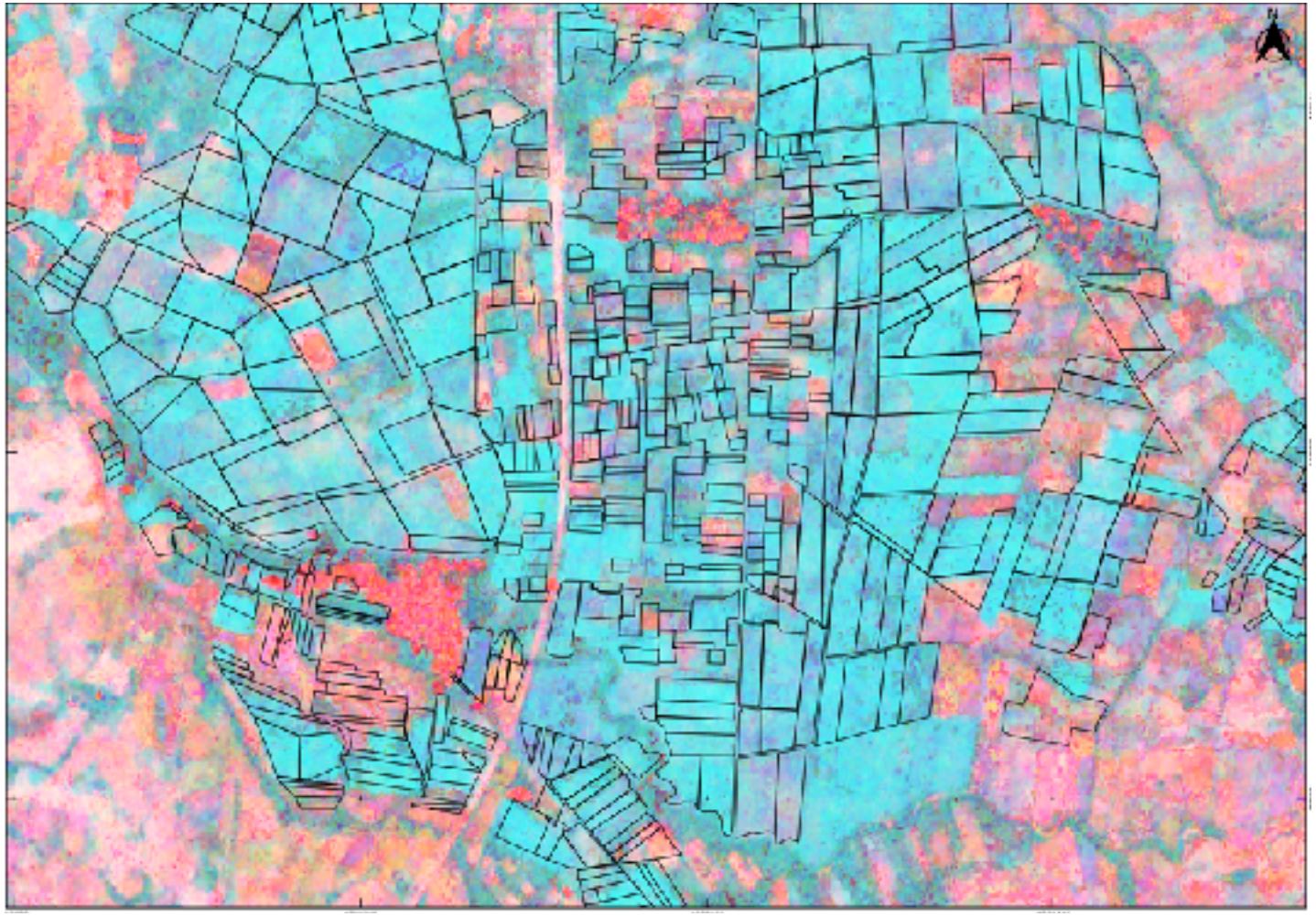


Multitemporal Object Detection Using RADAR

Crop Mapping

Sugar Cane Mapping

- *Multi-temporal SAR Imagery*
- *Sentinel-1A, 1B*

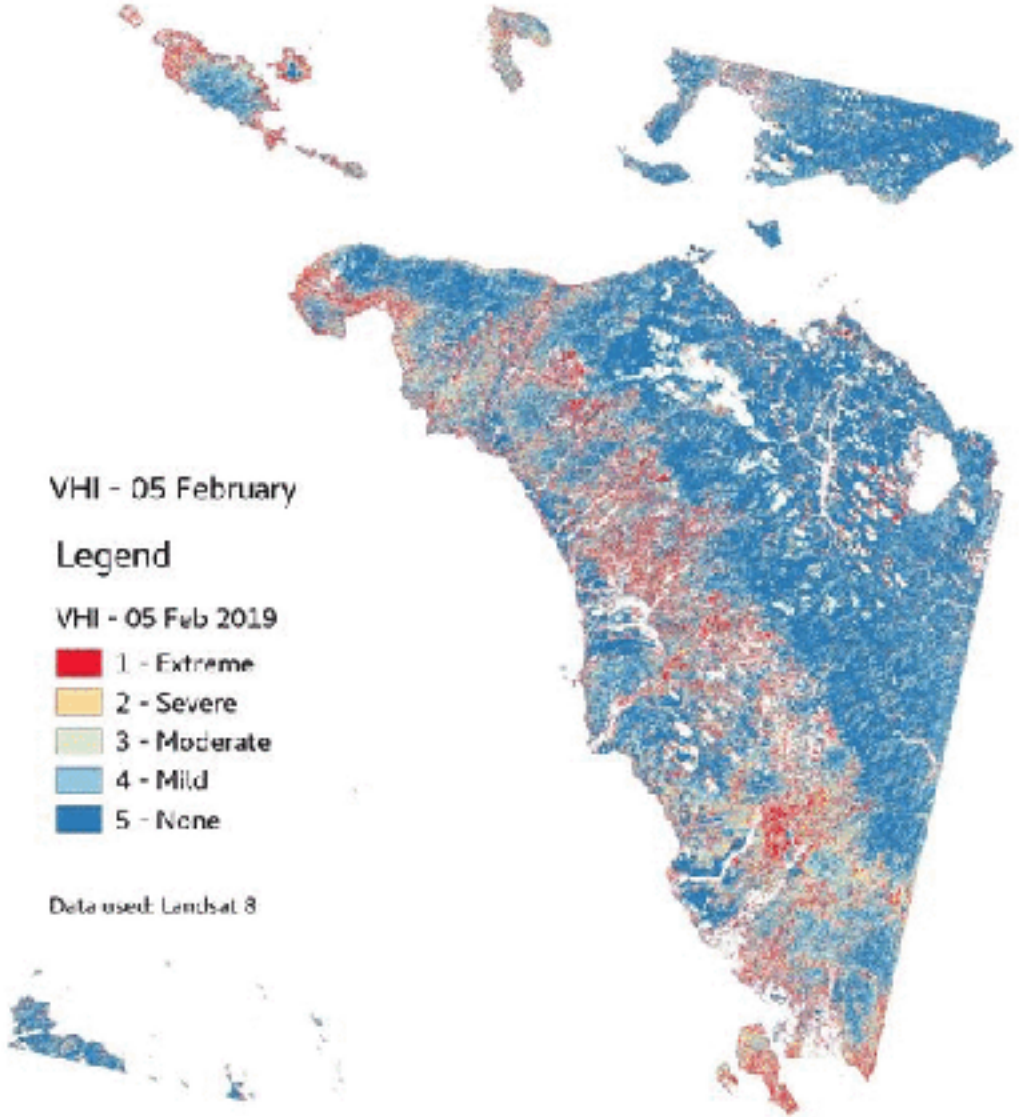


A P P L I C A T I O N S

Other Applications

Drought Monitoring

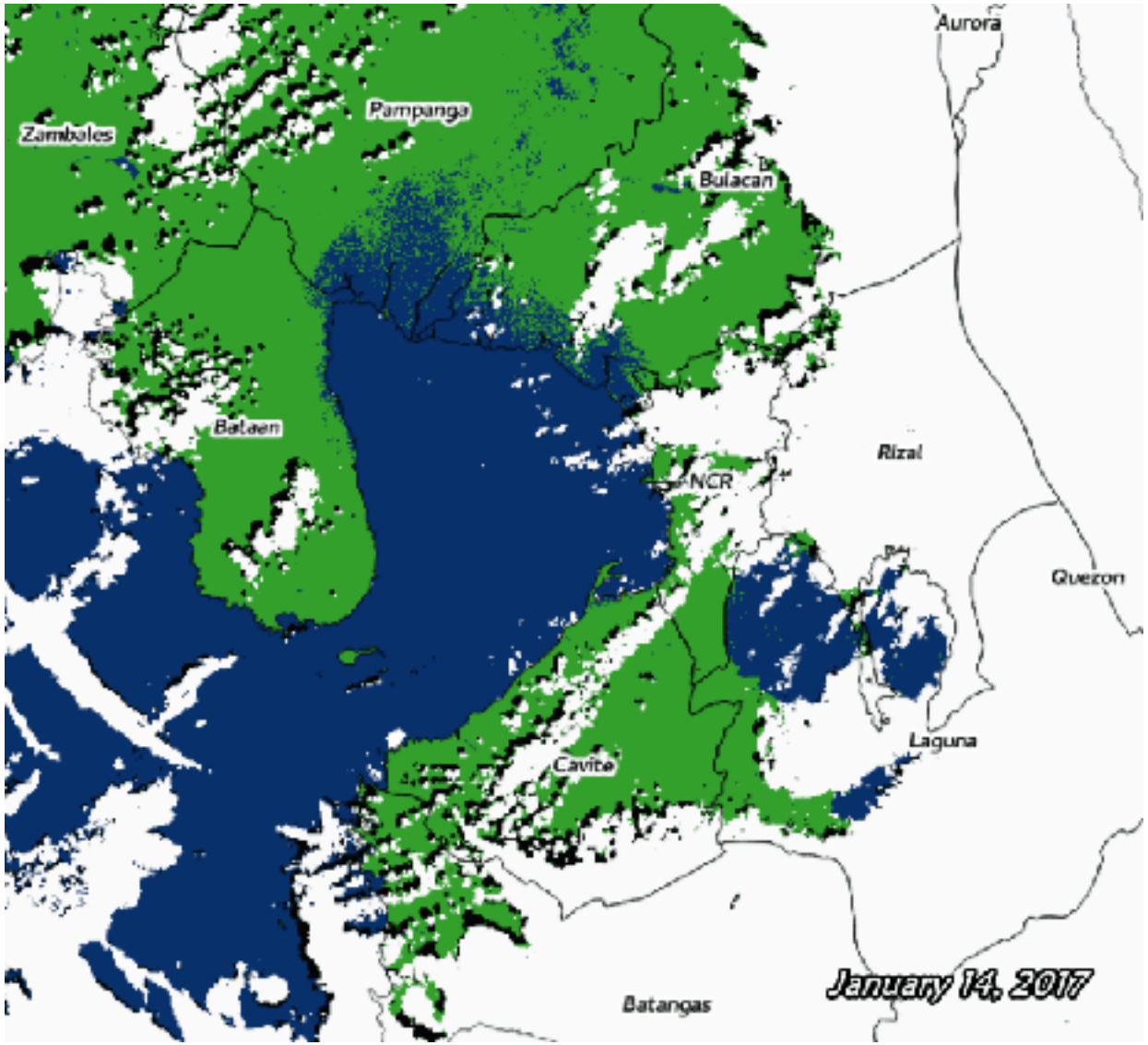
- *Multi-temporal Optical Imagery*
- *Landsat 8*



Other Applications

Cloud Cover Mapping

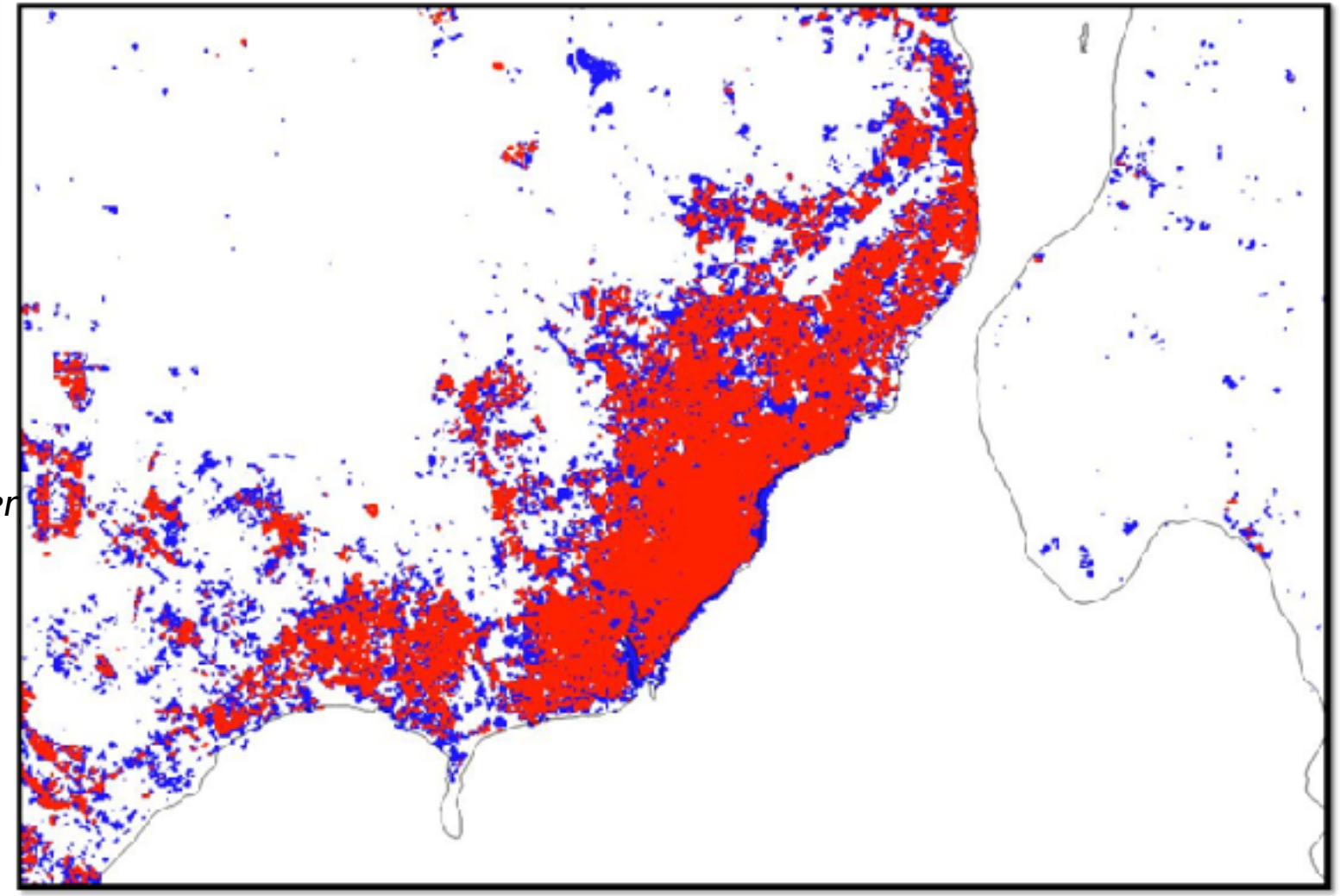
- *Multi-temporal Optical Imagery*
- *Landsat 8*



Other Applications

Urban Sprawl

- *Multi-temporal Optical Imager*
- *Landsat 8*



APPLICATIONS

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#ASTIg

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