PHIL-LiDAR 2: Nationwide Detailed Resources Assessment using LIDAR Program

"Harnessing geospatial technologies through knowledge sharing and capability building"

For. Mary Joy C. Buitre

29 September 2015, GeoSmart Asia 2015
Putra World Trade Centre, KL, Malaysia

Department of Science and Technology
PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY AND
EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT

Outline

- About PCIEERD
- Strategies in Support to DOST Outcomes
- About Phil-LIDAR 2
- Tangible Achievements
- Socio-economic Benefits
- Other Information Including Prior Awards
- Conclusion

PCIEERD Profile and Mandate

The **Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)** is one of the three sectoral planning councils of the Department of Science and Technology (DOST).

It is mandated to serve as the central agency in the formulation of policies, plans and programs as well as in the implementation of strategies in the industry, energy and emerging technology sectors through the following S&T programs:

- Policy Development and Advocacy
- Support for Research and Development
- Human Resource and Institution Development
- S&T Information Dissemination and Promotion
- Support for Technology Transfer and Commercialization

Source: PCIEERD 2014 Annual Report (http://pcieerd.dost.gov.ph/images/downloads/publications/DOST_PCIERRD_2014_AR_LOW_RES.pdf

PCIEERD Priority Areas

INDUSTRY

- Electronics and Semiconductor Industries
- Food Processing
- Metals and Engineering
- Mining and Minerals

ENERGY

- Alternative Energy
- Energy Efficiency
- Transportation

EMERGING TECHNOLOGY

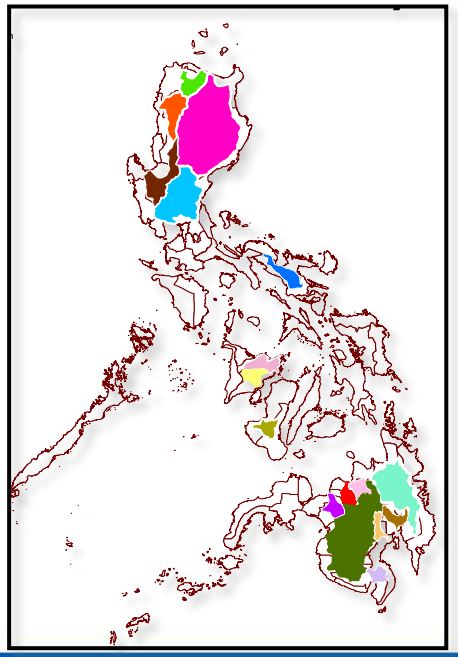
- Biotechnology/ Genomics
- Information and Communication Technology
- Materials Science/ Nanotechnology
- Photonics
- **Space Technology Applications**

Strategies in Support to DOST Outcomes

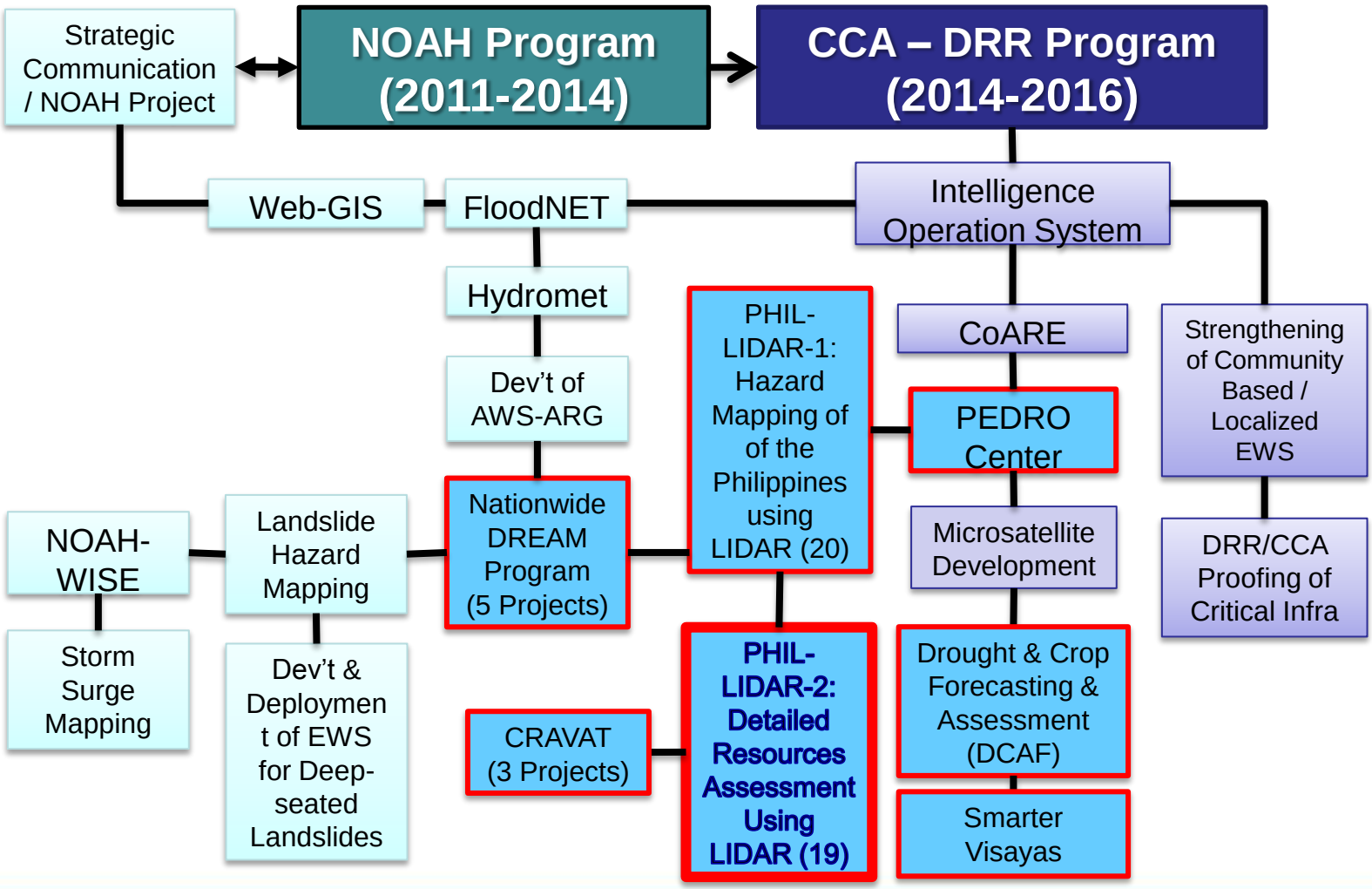
Outcome 8: SCIENCE–BASED WEATHER INFORMATION AND CLIMATE CHANGE SCENARIOS WITH ASSOCIATED IMPACT ASSESSMENTS THAT SHALL ENABLE CONCERNED AGENCIES TO DEVELOP APPROPRIATE MITIGATION STRATEGIES FOR A DISASTER AND CLIMATE CHANGE RESILIENT PHILIPPINES

Climate Change Adaptation & Disaster Risk Reduction

- Project NOAH
- Nationwide Disaster Risk Exposure Assessment for Mitigation (DREAM) Program
- Real-time gathering sensors, agromet and landslide sensors



Evolution of NOAH Program to CCA-DRR



The Philippines

Mangrove & coastal destruction in Coron, Palawan, 2012 © travelfoodguru.wordpress.com

Massive Coral damage in Apo Island after typhoon Sendong,2011 & typhoon Pablo,2012 © Steve De Neef

Coconut plantation in Samar, Leyte after typhoon Yolanda, 2013 © Erik de Castro

Guinsaugon , Leyte landslide, Feb. 26, 2006 ©CBS Interactive.Inc

Source: UPLB PHILLIDAR 2 Colloquium Presentation

Source: MSU-IIT PHILLIDAR 2 Monitoring Presentation

What resources exist where?

What are the characteristics and status of these resources?

Which resources are exposed & vulnerable?

How to protect and conserve resources?

Source: UPLB PHILLIDAR 2 Colloquium Presentation

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Nationwide Detailed Resource Assessment Using LiDAR

Objectives

- To **complement on-going programs** of government agencies (e.g. DA, DENR, DOE) **by utilizing LIDAR data**;
- To **develop methodologies for extracting resource features from LiDAR and other RS data** for various applications:
  - Production of high value crops
  - Irrigation assessment
  - Coastal resource conservation; aquaculture production
  - Forest protection
  - Discovery of renewable energy sources

Objectives

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- **Produce high-resolution** national resource maps;
- **Produce vulnerability assessment maps** for high-value crops and coastal resources;
- **Formulate recommendations** to help address future local supply and demand in agriculture, coastal, forest, and renewable resources.

Program Framework

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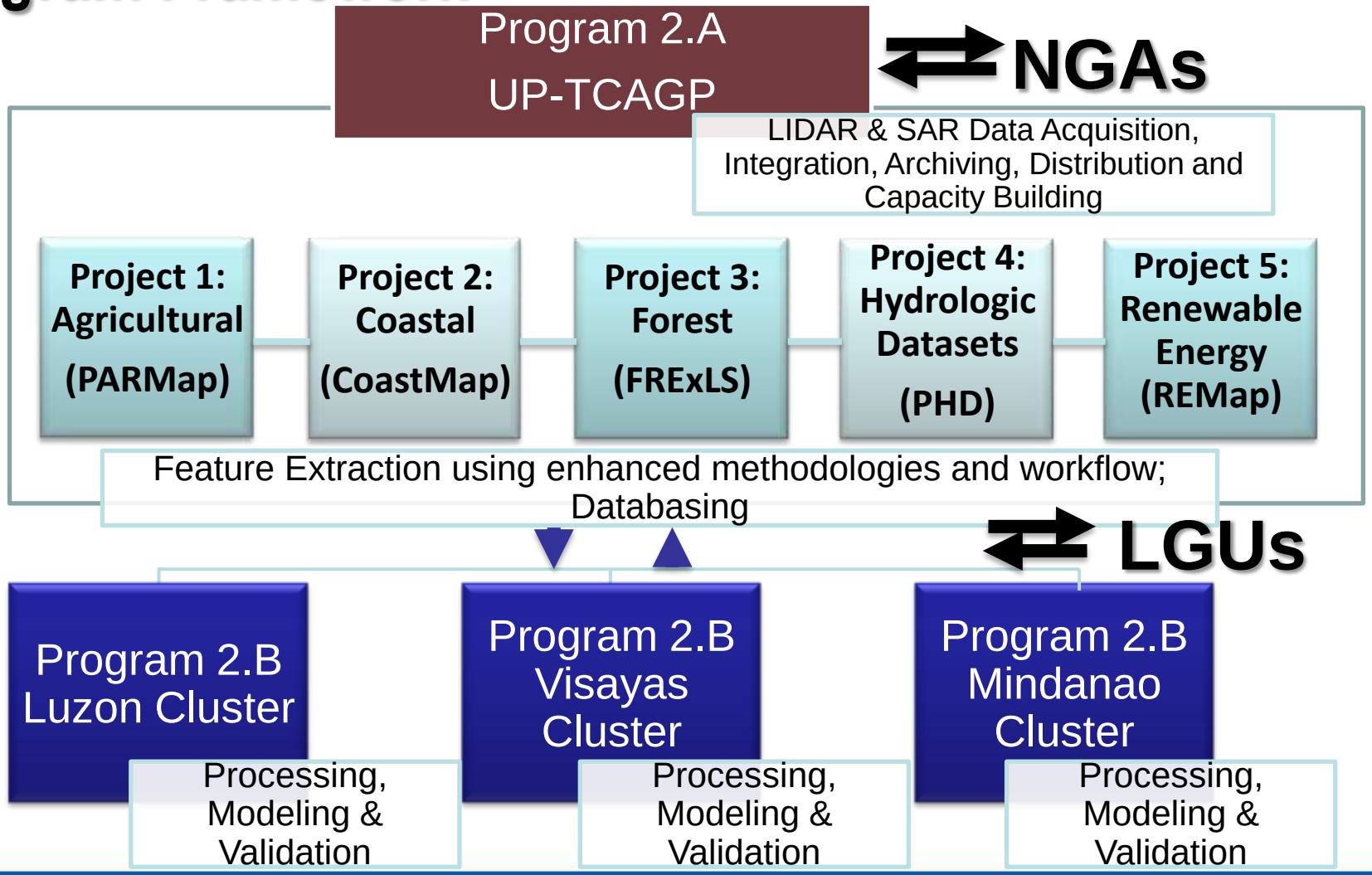

Coverage

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The Collaborating Agencies

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Department of Agriculture

Department of Public Works and Highways

National Water Resources Board

National Mapping and Resource Information Authority

Bureau of Fisheries and Aquatic Resources (BFAR)

Bureau of Soil and Water Management (BSWM)

Department of Energy

National Irrigation Authority (NIA)

Dept. of Environment And Natural Resources (DENR)

PARMap:

Agricultural Resources Assessment using LIDAR

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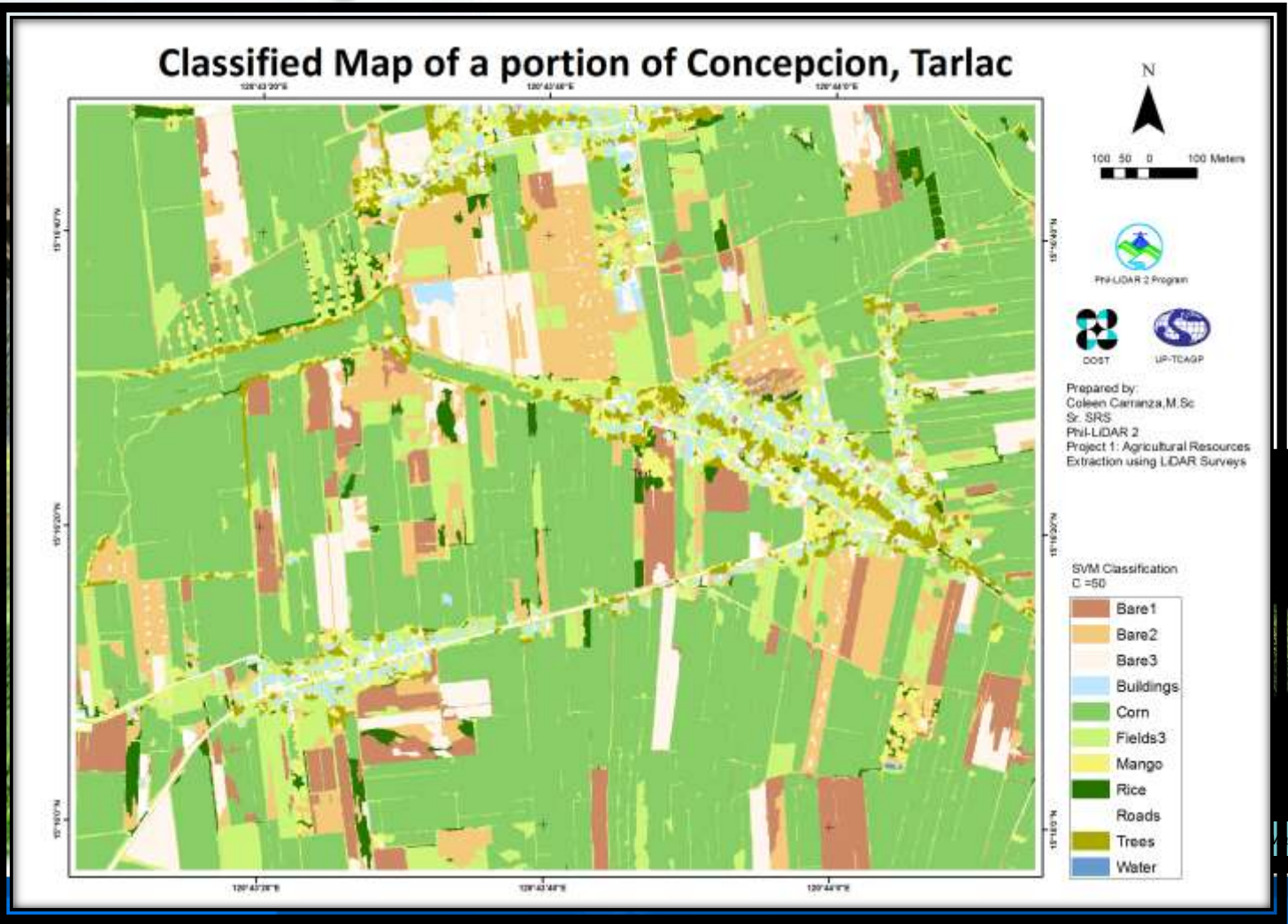

...p Presentation

CoastMap:

Coastal Resources Assessment using LIDAR

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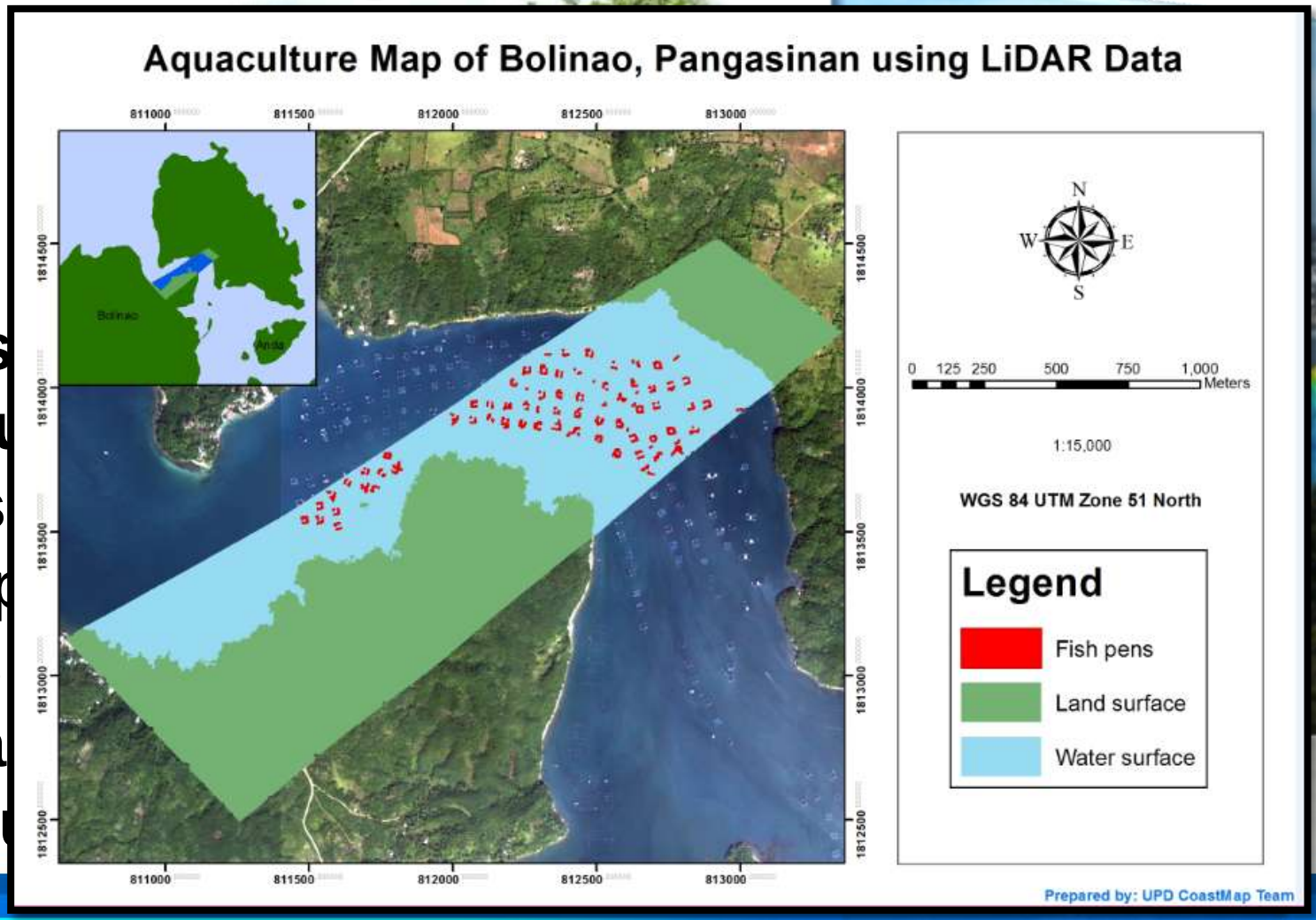

FREXLS:

Forest Resources Extraction from LIDAR Surveys

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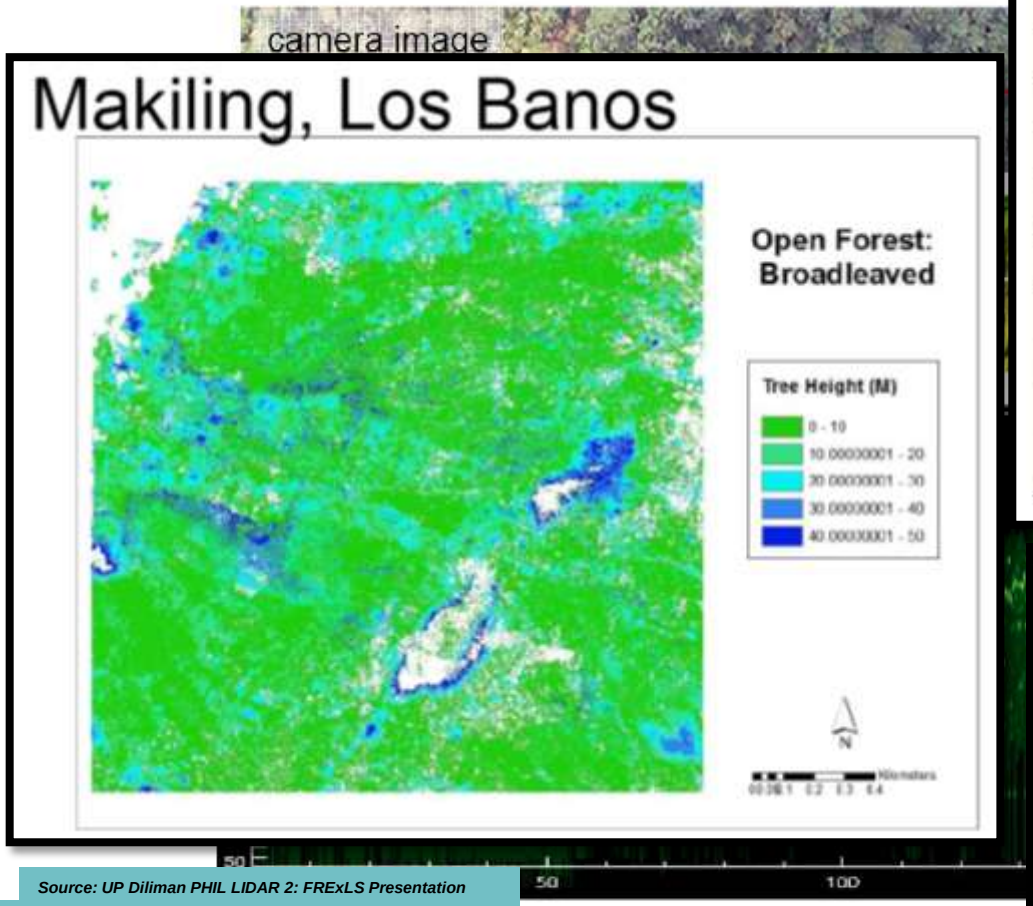

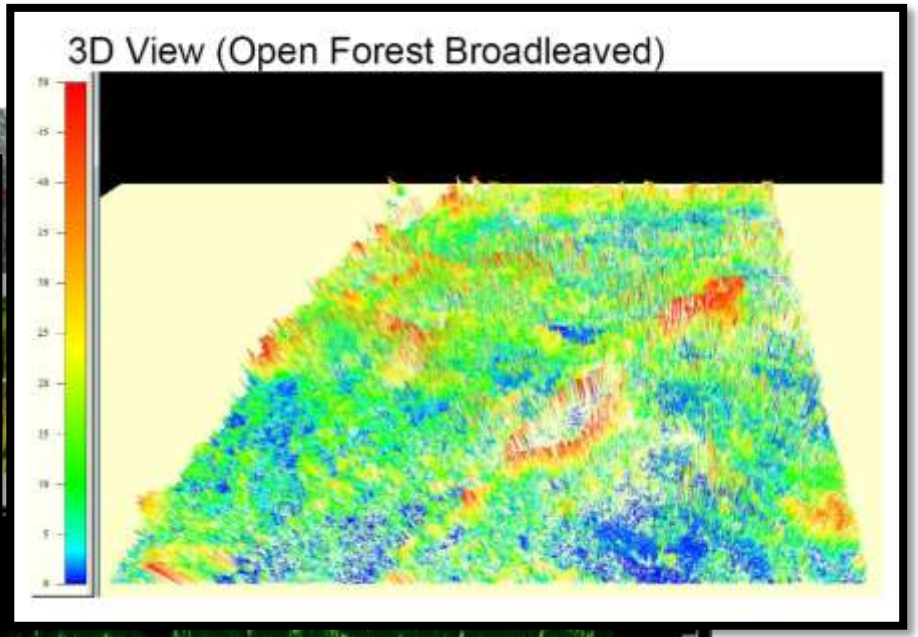

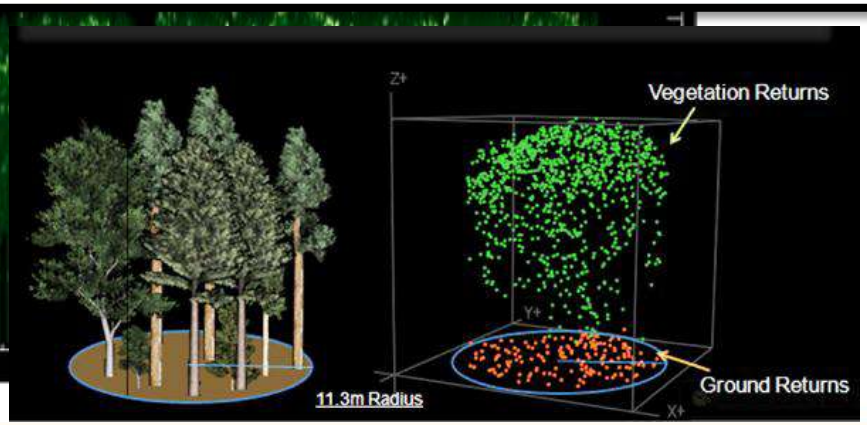

Source: UP Diliman PHIL LIDAR 2: FRExLS Presentation

Source: UP Diliman PHIL LIDAR 2: FRExLS Presentation

PHD:

Development of the Philippine Hydrologic Datasets for Watersheds using LIDAR

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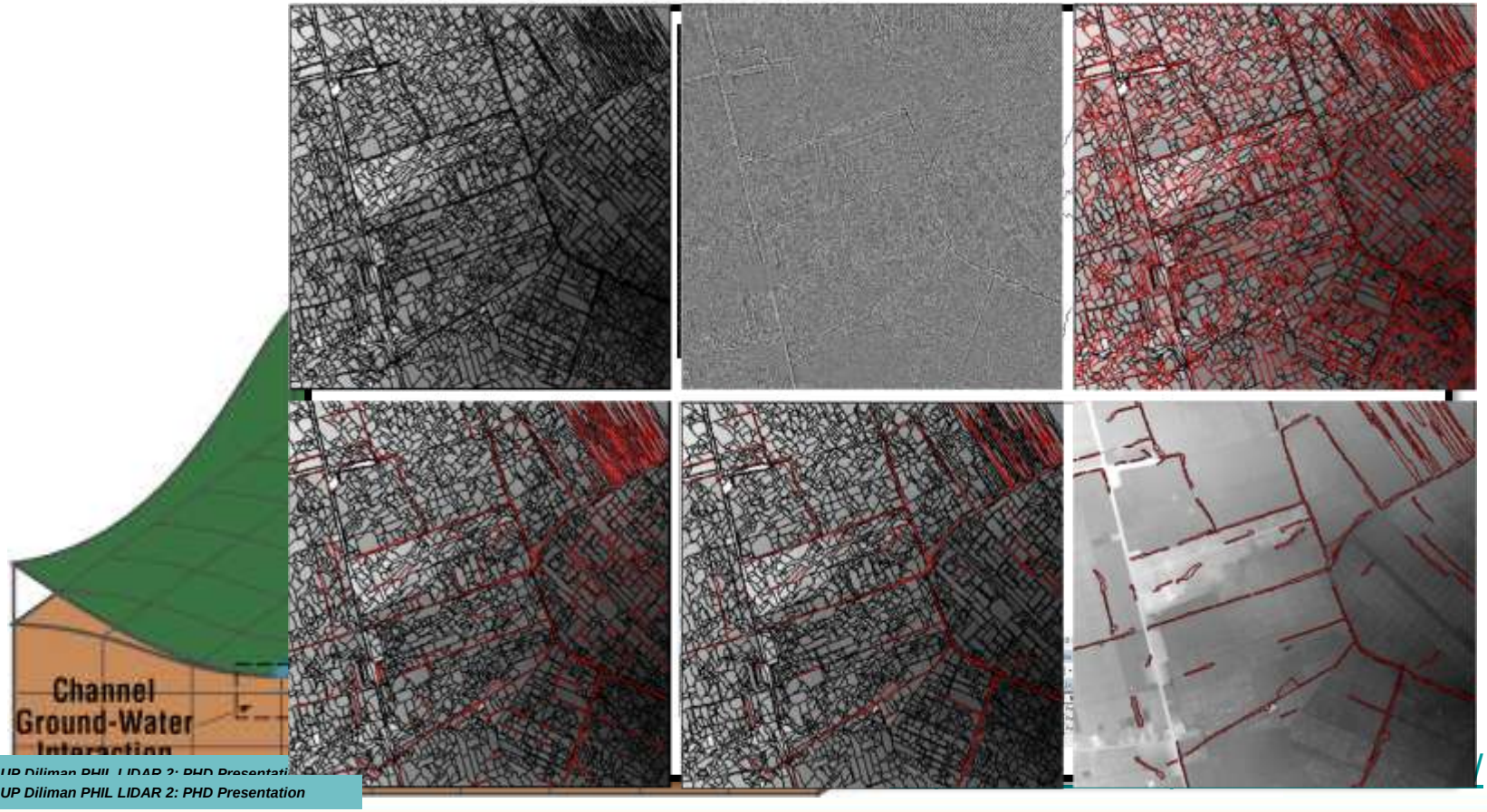

Source: UP Diliman PHIL LIDAR 2: PHD Presentation

REMap:

Renewable Energy Resources Mapping using LIDAR

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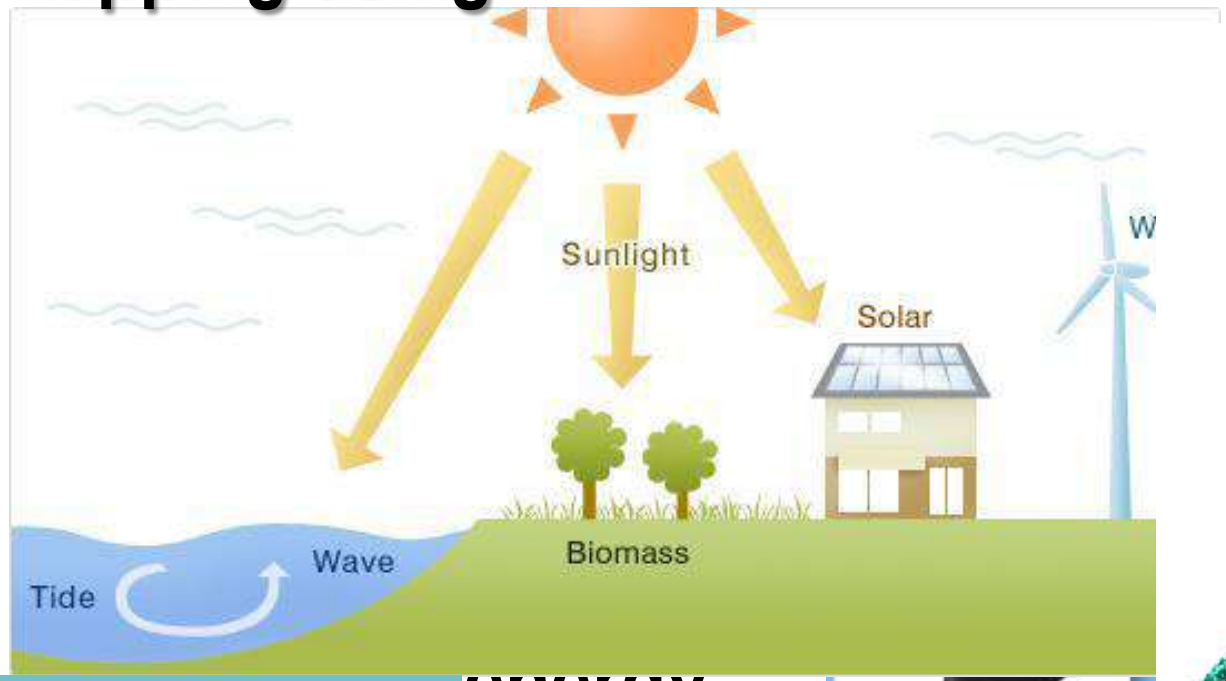
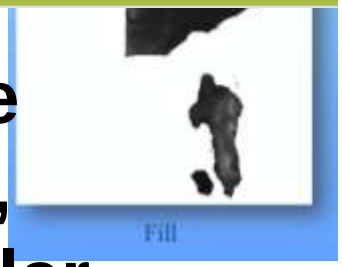


Source: UP Diliman PHIL LIDAR 2: REMap Presentation

Discovery of renewable energy sources – wind, hydro, biomass and solar



Wind Energy Potential Sites

Source: DOE Website

Tangible Achievements:

Agricultural Mapping Forum and Map Turnover Ceremony

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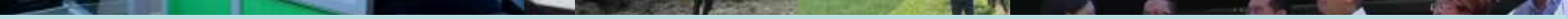
769 researchers and experts trained under PHIL LIDAR Programs

32 LIDAR-based agricultural resource maps distributed to the selected municipalities



In December 2015, other resource maps will also be distributed to the beneficiaries

Tangible Achievements:

Paper Presentations

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PHILGEOS 2014
Enhancing Public Service with Geomatics

32 Research papers accepted for oral and poster presentations for the upcoming ACRS 2015

ISRS 2015
遙感探測國際研討會
ISRS 2015

2015 ACRS
THE 36TH ASIAN CONFERENCE ON REMOTE SENSING
FOSTERING RESILIENT GROWTH IN ASIA
QUEZON CITY, METRO MANILA PHILIPPINES

Tangible Achievements:

Mobile App Development

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- ADNU's ***reGIS App*** and CarSU's ***Land-Use Mapper App***
- Android-based mobile application
- Utilize the use of smart phones to record and send field data collection
- For data capturing, mapping of land features and project monitoring

Socio-economic Benefits:

Capacity Building

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Local government officials can formulate science-based policies to address and sustain local supply and demand in agriculture, aquatic, forest and renewable energy resources.

Prior Awards

Source: https://dream.upd.edu.ph/news/dream-bags-geospatial-world-excellence-award-2014/

Source: http://www.dost.gov.ph/index.php/knowledge-resources/news/34-2014-news/626-dost-up-project-wins-asia-geospatial-excellence-award

Geospatial World Excellence in Policy Award and the **Asia Geospatial Excellence Award** received in 2014.

PHIL LIDAR 2 Program Team

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Conclusion

- After DREAM was recognized internationally for its two Geospatial Awards received in 2014, there was a **significant interest** from the various groups (academe, government, private sectors) to **explore** and **promote** the use of **geospatial technologies**
- DOST's directive on these big R&D programs proved that the Philippine government is **supportive** to the country's scientific community
- **Effective information dissemination** and **capability building** are essential in harnessing and expanding the knowledge to more stakeholders
- **Building partnerships** between and among the **Academe**, **Government** and **Private Institutions** results to a more holistic approach in addressing the country's pressing national concerns through S&T.

Acknowledgements

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Department of Science and Technology

PCIEERD

PHIL-LIDAR 2 Program's
15 Implementing Agencies

Thank you for Listening!

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http://www.pcieerd.dost.gov.ph

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