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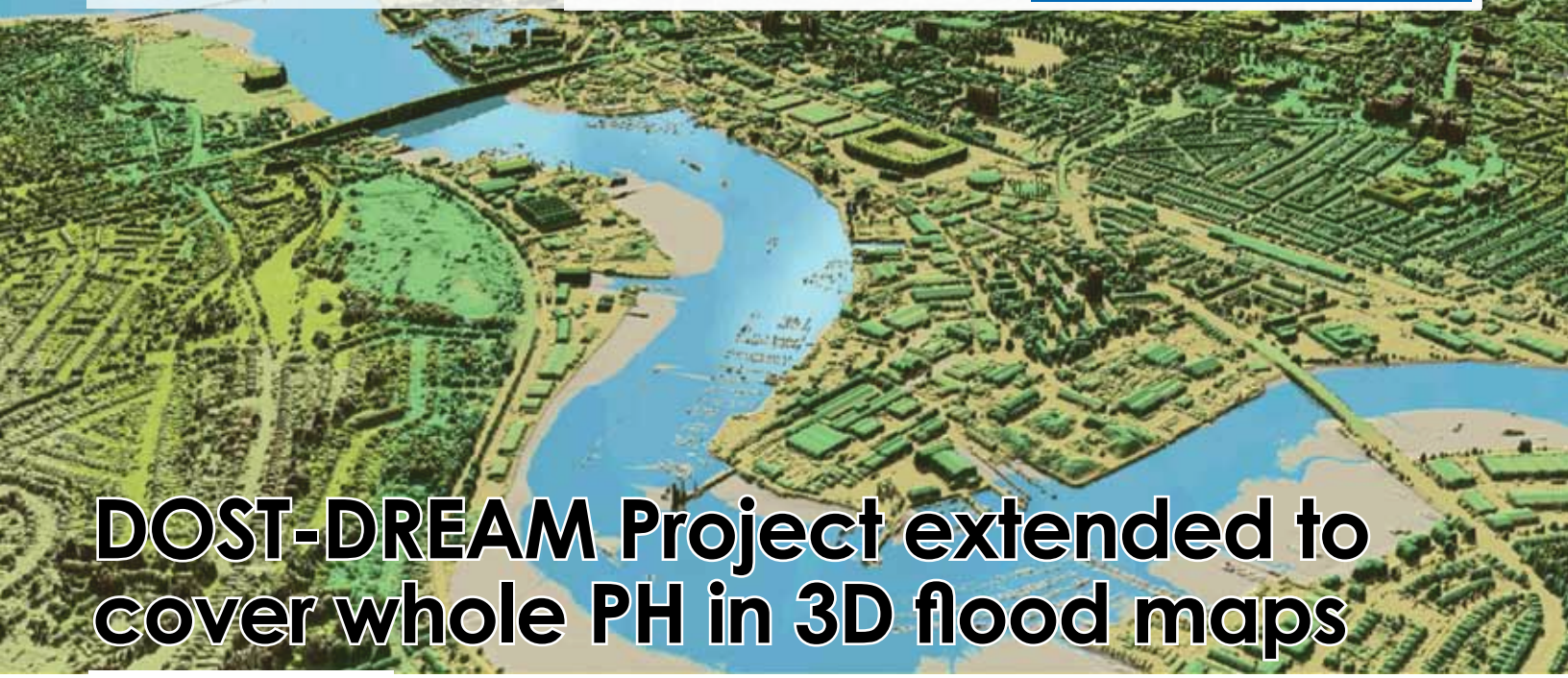

DOST-DREAM Project extended to cover whole PH in 3D flood maps

DOST-DREAM

By Suzette J. Dalumpines
S&T Media Service, *DOST-STII*

The Department of Science and Technology (DOST) - Project NOAH's component called Disaster Risk and Exposure Assessment for Mitigation or DREAM Program will be extended in order to scan the whole country and produce three-dimensional (3D) flood hazard maps. Dr. Rowena Guevarra, executive director of the project's funding agency, announced the extension during the recent DREAM Report to Stakeholders Meeting at the National Engineering Center-UP Diliman.

A pioneering and big-ticket program component of DOST's Project NOAH (Nationwide Operational Assessment of Hazards), DREAM is being implemented by engineers from the UP Diliman and funded by the DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD).

The DREAM Project, extended from 2014 to 2016, is expected come up with a comprehensive and integrated flood early warning system (IFEWS) covering the entire country by the end of the program's second leg in 2016.

"May part 2 po ang DREAM. Yun po yung sinasabi ni Asec. Raymund Liboro na sa 2014 hanggang 2016, tatapusin po natin yung two-thirds ng Philippines kasi one-third lang yung assignment nila Engr. Enrico Paringit sa DREAM 1," said Dr. Guevarra. (DREAM has a Part 2. That is what Asec. Raymund Liboro was referring to when he said that by 2014-2016, we will complete two-thirds of the Philippines because only one-third was covered by Engr. Paringit in DREAM 1.)

Barely two years after its inception in December 2011, DREAM has scanned 17 of the targeted 18 critical river basins in the country through LiDAR (Light Detection and Ranging), a state-of-the-art technology that can generate high-resolution and up-to-date, and 3D flood hazard maps.

The DREAM team has already produced LiDAR-based flood models for Mandulog in Iligan City, Pampanga, Davao Oriental, Marikina, Cagayan de Oro, and Compostela Valley. The rest of the flood models are to be completed by June 2014, the project's original end date.

According to its program leader Engr. Enrico Paringit, DREAM currently has around 70 staff members, a number that still has to be augmented for the expansion.

To aid in the shortage of manpower, Dr. Guevarra said 30 to 50 state universities and colleges in the country offering geodetic engineering and computer science courses will be tapped to help implement the second leg of the program.

"Akala ng tao, pag may eroplano, pwede na. Kailangan po ng tao na magpa-process ng data. Pinakaimportante ang human resources dahil kung walang magpa-process ng data, wala rin," she said. (People think that having airplanes alone solves the problem. We need people who will process the data. Human resources are the most important part of this project because without these people, this program won't work.)

DREAM currently has only two aircrafts carrying LiDAR instruments, the Pegasus and the Aquarius. In its second leg, DREAM aims to double the number of equipment being used to be more efficient in data gathering, said. Dr. Guevarra.

"Mado-doble na ang bilang ng mga eroplanong ginagamit natin. (The number of airplanes we're using will be doubled). Work [for the program's second phase] will start this last quarter of 2013."

PHIVOLCS warns metro to check structures' compliance to Building Code

By Angelica A. de Leon
S&T Media Service, *DOST-STII*

Houses and buildings in Metro Manila including churches, need inspection to ensure that they comply with the standard Building Code, told Dr. Renato U. Solidum, director of the Department of Science and Technology's Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS).

Solidum's warning came in the face of mounting concerns about Metro Manila's readiness should an earthquake with a magnitude similar to the 7.2 temblor which shook Central Visayas last October hit the crowded metropolis.

Since earthquakes cannot be predicted, Metro Manila should be prepared and take all possible measures for greater safety as early as now, said Solidum. One of these measures is a thorough inspection of houses, schools, office, residential and commercial buildings, churches and other edifices to check if these are structurally safe.

"The Philippines is prone to hazards including earthquakes due to its geological location. It is in the Pacific Ring of Fire, and it is prone to volcanic eruptions and earthquakes…," stated Solidum.

Historically, the tectonic plates of the West Valley Fault, which runs from San Mateo in Rizal all the way to the city of Taguig, were last activated in 1658 resulting in an earthquake. According to the PHIVOLCS director, these plates are expected to move again anytime within 400-600 years after this. If they do move against each other, the resulting tremor may be as strong as the killer quake that claimed almost 200 lives (as of press time) and toppled numerous structures including historic churches in Bohol and Cebu. Among these are the Basilica Minore del Santo Niño in Cebu City; Church of San Pedro Apostol in Loboc, Bohol;Church of Our Lady of the Immaculate Conception in Baclayon, Bohol; and the Church of Our Lady of the Assumption in Dauis, Bohol.

According to data by PHIVOLCS, a 7.2 earthquake in Manila and nearby provinces would result to a death toll of at least 37,000 with 604,000 injured and P2.4 trillion worth of damage to buildings. Said data is the result of a three-year risk analysis project by the Philippine and Australian governments. The study was presented during the Launch and Handover of Multi-hazard and Risk Maps for the Greater Metro Manila Area held last Oct. 17 at Crowne Plaza in Ortigas.

The PHIVOLCS director added that the churches in Visayas crumbled during the quake partially because they are made of limestone which easily softens. The 7.2 temblor occurred at 8:12 am on October 15, 2013 with its epicenter located 2 kilometers southeast of Carmen in Bohol.

CAMANAVA gets additional rain gauges

By Rodolfo P. de Guzman
S&T Media Service, *DOST-STII*

To address the perennial flooding in the CAMANAVA (Caloocan, Malabon, Navotas, Valenzuela) area, the Department of Science and Technology (DOST) installed additional automated rain gauges (ARGs) in the past months through its National Capital Region (NCR) office. The installation is part of the initiative for emergency distribution of hydrometeorological devices in hard hit areas in the country.

Rain gauge is a weather instrument used by meteorologists and hydrologists to measure the amount of rain in an area over a certain period. The rain gauges were installed in Mapulang Lupa, Pleasant View Subdivision in Barangay Bagbaguin and at the Smart cell site 2 at Gen. T. de Leon. Two more ARGs were put up in Dampalit Elementary School in Malabon and at the Smart cell site 3 in Caloocan City.

CAMANAVA, having a lower elevation compared with other cities and municipalities in Metro Manila, is prone to constant flooding. In fact, the occurrence of high tide also contributes to flooding even without weather disturbances.

Additional rain gauges were installed in CAMANAVA recently.

Abaca fiber can help speed up car industry

By Allan Mauro V. Marfal
S &T Media Service, *DOST-STII*

From paper, cordage, furniture and handicraft industries to other materials, the uses of abaca have scaled-up to the higher end. Now abaca can be used as material for natural fiber-reinforced plastic composite material to replace some parts of cars.

And, wait, there's more. The Department of Science and Technology (DOST)'s Industrial Technology Development Institute (ITDI) informed other potential use of abaca such as material for better roofing material for public utility jeepneys because of its lower heat conductivity. This means that abaca keeps inside temperature cooler, making it suitable for the country's tropical warmth and humidity.

Meanwhile, in a report posted in the website of the Fiber Industry Development Authority or FIDA, car manufacturer Chrysler-Damlier cited the very good ecological balance of abaca combined with its excellent technical properties similar to those of glass fiber, the material recently used in the underbody protection of the car.

Compared with glass fiber, the use of abaca fiber provided about primary energy savings of 60 percent, significantly reducing carbon dioxide emission.

In another study posted on the website of DOST's Philippine Textile Research Institute a few years ago, Dr. Leslie Joy Lanticse-Diaz, chairperson of the Department of Mining, Metallurgical and Materials Engineering of University of the Philippines, Diliman, shared that abaca fiber shows a high tensile strength, which means it can bear up 140,686 pounds per square inch. It can also reach a maximum length of three meters.

Lanticse-Diaz's research also discovered that optimizing weave construction and patterns in abaca as natural fiber reinforcement ensures better control and consistency of composite properties.

According to FIDA, abaca is considered the strongest natural fiber. The Philippines is currently the major producer of abaca, supplying 85 percent of world market needs.

National Biotechnology Week

To further strengthen the industries, including abaca and its socio economic impacts on many Filipinos, DOST, together with the Departments of Health, Agriculture, and Education, will hold the 2013 National Biotechnology Week celebration on November 25-29, 2013 at Aroceros Park, Manila. Biotechnology refers to the science of using living organisms or their parts to improve the characteristics of living things.

One of the highlights of the week-long event will be abaca functional genomics featuring projects that focus on the genomic resources of abaca, as there is no existing genomic information on the Philippine endemic abaca.

Genomes are the basic hereditary traits of a living things. Determining such traits in abaca and how these can be used to help improve the lives of people in terms of economy, health, industry, and other aspects are the main objectives of applying biotechnology in abaca.

About us

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DOST's wood ID service helps in applying logging ban in PH

By Apple Jean C. Martin
S&T Media Service, *DPST-FPRDI*

Wood identification, the scientific process of identifying a piece of wood based on its physical and structural features, is important in the implementation of the country's logging ban, according to an expert from the Department of Science and Technology-Forest Products Research and Development Institute (DOST-FPRDI).

Dr. Ramiro P. Escobin, Scientist 1 at the DOST-FPRDI's Anatomy and Forest Botany Section and wood identification expert for 32 years, said that the scientific way of identifying wood can serve as basis for charges against loggers and ship owners that transport illegally-cut timbers.

Cutting and harvesting of all trees in natural and second-growth forests, or those trees not planted by man, is expressly prohibited by virtue of Executive Order No. 23 (EO 23), reminded Escobin,.

He added, "So far, the Institute's wood identification service has helped the Department of Environment and Natural Resources's Anti-illegal Logging Task Force seize a large shipment of illegally-cut timber in North Harbor and conduct an on-site identification of confiscated lumbers in lumberyards."

Aside from being instrumental in the anti-illegal logging campaign, the DOST-FPRDI also helps identify wooden archaeological artifacts and conducts training courses on wood identification for pallet companies and government agencies.

DOST-FPRDI also has an internationally-recognized Wood and Herbarium Library that houses 16,078 specimens of local and foreign wood samples.

Wood identification procedures include macroscopic identification or the use of the naked eye and hand lens, and microscopic identification, Escobin said. He also informed that some physical features of wood are important in the identification of its species.

DOST "adopts" Yolanda victim families, raises funds for relief

By Allan Mauro V. Marfal
S&T Media Service, *DOST-STII*

The Department of Science and Technology (DOST) is currently conducting its own relief operations to support the families affected by typhoon Yolanda that ruined Tacloban City and Palo town in Leyte, as well as neighboring towns in central Philippines two weeks ago.

During the recent flag raising ceremony at DOST Compound in Bicutan, Taguig City, Secretary Mario G. Montejo appealed to all employees to extend assistance to the 400 families or about 2,000 people who have evacuated to the Philippine Science High School System (PSHS) Eastern Visayas Campus in Palo, Leyte. The evacuees are staying at the first and second floors of the PSHS buildings and depend solely on donations for their daily survival.

"We appeal to your kindness and generosity to adopt a family at the PSHS evacuation center," Sec. Montejo said.

He also said that DOST would need about P1,000.00 to support for a family of five for a week. Thus, DOST targets to rise P2 million to support the families for a month.

"With 20 agencies under the department, the goal is to receive cash donations of about P100,000.00, more or less, from each DOST agency," he said.

DOST will turn over cash donations to the DOST VII Regional Office in Cebu City where food, water, and other necessities will be bought and packed. The supplies will be immediately brought to Palo, Leyte. The relief operation is being managed by the DOST-Office of Undersecretary for Regional Operations.

"We are all witnesses to what typhoon Yolanda brought to our country, particularly its effect on our brothers and sisters in the central part of the country. We cannot leave the 2,000 evacuees behind," he stated.

DOST also hopes that assistance will also come from other sectors in the country and abroad to help "alleviate the difficult circumstances of our colleagues and the other 2,000 other evacuees."

Last week, DOST has donated food, water, clothes, and other supplies to DOST VIII and PSHS personnel, students and their families, including those staying in DOST VIII and PSHS campuses.

"Our regional offices coordinated efforts and the Mindanao regional offices, braving the risks on the road, brought the long awaited assistance to our colleagues and their families in Palo, Leyte," he informed.

InFocus

Mindanao Cluster S&T Fair. DOST officials lead the opening of the exhibit of the DOST Mindanao Cluster Fair held at Almont Inland Resort in Butuan City, Agusan del Norte. The exhibit, which ran from November 6-10, featured DOST projects as well as products from enterprises assisted by DOST through the Small Enterprise Upgrading Program. In photo are DOST-CARAGA Officer-In-Charge Dominga D. Mallonga (third from left), with (L-R:) Technology Application Promotion Institute Director Engr. Edgar I. Garcia, DOST X Director Alfonso P. Alamban, DOST XI Director Anthony Sales, Forest Products Research and Development Institute Director Romulo T. Aggangan, Industrial Technology Development Institute Director Nuna E. Almanzor, DOST IX Director Brenda N. Manzano, and DOST ARMM Secretary Myra M. Alih *(Photo by Henry A. De Leon, S&T Media Service).*