

Making science
work for you

Montejo banners DOST'S build back better programs in top leaders Forum 2015



Secretary Mario G. Montejo (middle) of the Department of Science and Technology (DOST) listens to Hans T. Sy, (right) president of SM Prime Holdings Inc., as they discuss government initiatives in disaster risk reduction like DOST's Project NOAH and how the private sector plays a vital role in mitigating disasters by ensuring business continuity plans are properly implemented. The dialogue was held during the Top Leaders Forum 2015 at the SMX Convention Center, SM Mall of Asia, Pasay City. Also in photo is DOST Assistant Secretary Raymund E. Liboro, co-founder of Project NOAH. (Text by Rodolfo P. de Guzman/Photo by Henry de Leon, S&T Media Service, DOST-STII)

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

The Department of Science and Technology (DOST) joined SM Prime Holdings Inc. and the United Nations Office for Disaster Risk Reduction (UNISDR) in the conduct of the Top Leaders Forum 2015 recently at the SMX Convention Center at the Mall of Asia in Pasay City.

The forum is a yearly event that gathers top level leaders from both the public and private sectors to tackle issues on disaster

risk reduction in order to implement tangible projects and initiatives that will result in reducing industry losses brought about by natural hazards.

During the forum proper, the UNISDR Private Sector Alliance for Disaster Resilient Societies (ARISE) in the Philippines was launched as a vehicle to provide opportunity for private organizations and the business sector

continued on page 2

PNoy signs PAGASA modernization bill

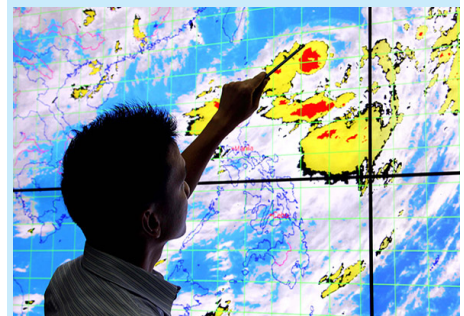
By Joy M. Lazcano
S&T Media Service, DOST-STII

The country's weather bureau gets revitalized as President Benigno S. Aquino III signed into law Republic Act 10692 or An Act Providing for the Modernization of the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA), Providing Funds Therefore and for Other Purposes, last November 3, 2015.

The law compels the weather bureau, an agency under the Department of Science and Technology (DOST), to modernize its technological operational capacity and strengthen its role as the premier national weather agency to attain its vision as a center of excellence for weather-related information services.

The modernization will cover PAGASA's modernization of its physical resources and operational techniques, which shall entail the acquisition and/or upgrading of state-of-the-art instruments, equipment, facilities and systems, with emphasis on weather and flood monitoring and warning system and agro-meteorological observation system to strengthen services for agriculture and food security.

continued on page 2



The country's weather bureau gets timely technological and capacity up via law recently enacted, a move that is poised to bring in enhanced weather forecasts in the country.

to become members in a concerted effort in addressing the problems brought about by the changing weather patterns.

DOST Secretary Mario G. Montejo presented the different programs of the DOST in generating risk information and risk assessment in line with the agreements reached during the formulation of the Sendai Framework for Disaster Risk Reduction in March 2015.

"As our country is committed to the Sendai Framework for Disaster Risk Reduction, the DOST has implemented a number of disaster risk reduction programs like the Nationwide Operational Assessment of Hazards or Project NOAH and we integrated our LiDAR maps with our improved weather information to generate simulation models and come up with early warning systems for flood, storm surge and landslides," Montejo said.

It is projected that by 2030, there will be trillions of dollars in business investments across all sectors including those in hazard prone areas and so the need to assess and reduce risk becomes imperative for the private sector and disaster preparedness is no longer a choice but a must.

Montejo further said, "Science should be put to work to save lives as this is what President Aquino stressed in the aftermath of Typhoon Sendong and Project NOAH has since then provided us with an flood early warning system

with a 6-hour lead time using advance software technology, flood modeling and simulation and real-time data gathering from more than 1,500 sensors all over the country, all these developed by our own Filipino scientists and engineers."

Project NOAH is the flagship program of the DOST that provides a digital platform as repository of weather and hazard information that includes rainfall amount, typhoon track, water level monitoring system, flood, landslide and storm surge hazard maps. These hazard maps were produced using the light detection and ranging technology or LiDAR under the Disaster Risk and Exposure Assessment for Mitigation component under Project NOAH.

Montejo further stressed that aside from disaster preparedness, the DOST strategy also proved effective in coming up with more reliable, site-specific risk information for better land-use planning.

Also, by harnessing science and technology, Montejo said the DOST was able to identify safe and hazard areas using LiDAR technology and it was proven effective as the settlement areas identified were safe two years later, when typhoon Agaton hit the same areas and caused massive flooding.

"The science-based approach served as basis in establishing the bedrock of the government's 'building back better' program," added Montejo.

During the recent Typhoon Lando which flooded low-lying areas in Bulacan, Nueva Ecija and Pampanga, Project NOAH hazard maps identified 15 municipalities, flooding 357 square kilometers that will possibly affect 600,000 people. With this information, local government units and other stakeholders can prepare early and provision supplies and evacuation centers to lessen the impact of flooding.

According to Margareta Wahlstrom, Special Representative of the Secretary-General for Disaster Risk Reduction, the DOST was able to utilize science and technology even before the Sendai Framework was drafted to stress the importance of S&T to disaster risk reduction.

Those present during the forum were big names in Philippine business like Hans T. Sy, president of SM Prime Holdings Inc.; Suzie Mitchell, country manager of DHL Supply Chain Phils. Inc.; Sandra Wu, chairperson and CEO of Kokusai Kogyo Co.; Kate Landry, director of Build Change; Dr. Antonia Yulo-Loyzaga, director of the Manila Observatory; and Alex Cabrera, chairman and senior partner of PricewaterhouseCoopers (PwC) Philippines. On the public sector side, aside from Montejo, there were Undersecretary Alexander Pama of the National Disaster Risk Reduction and Management Council and Undersecretary Corazon Jimenez, general manager of MMDA who spoke of government initiatives and programs.

It will also enhance its research and development capabilities and establish regional weather service centers as well as the DOST-PAGASA data center, which shall include the centralization of the different technical outputs including data and statistics derived from the PAGASA operations and systems.

A regional and international cooperation program will also boost the agency's collaboration with relevant international bodies and government institutions to complement its modernization efforts.

Aside from these, it will enhance weather data collection and information dissemination, which aims to develop and use effective weather information method using local dialects, non-technical terms and familiar graphical presentations to ensure a laymanized delivery of hydrometeorological information for greater public awareness and to draw appropriate response for disaster risk reduction.

Also included is the creation of a human resource development program and

development of a new salary scale and additional incentives for its personnel. Likewise, it will enable scholarship programs for undergraduate and graduate studies to sustain the needed number of experts in meteorology and other related fields.

Modernization funds

Initially, the amount of P3 billion, which shall be taken from the National Government's share in the gross income of the Philippine Amusement and Gaming Corporation, will jumpstart the modernization plan. Two years after the effectivity of RA 10692, at least P1.5 billion will be released to PAGASA every year. The entire P3 billion shall be used exclusively for capital outlay.

The law will allow PAGASA to avail loans, grants, bequests, and donations from local or foreign financial institutions for further enhancement of its operations. PAGASA shall also be given the right to monetize its specialized products and services and cost recovery program to earn revenues from its

issuance of specialized weather products and services, especially those related to aviation and maritime industry, weather certifications, and scientific and technical publications.

According to DOST Secretary Mario G. Montejo, the enactment of the modernization law is a necessary development as weather conditions are becoming more severe as the years advance.

"We at DOST commend our legislators and the President for setting this vital legislation into motion," Montejo said. "This only proves that the government is looking after the welfare of its people. And with the modernization of PAGASA and Project NOAH's platform for disaster risk early warning, and the full cooperation of the public, we guarantee that in the coming years, our nation will no longer grieve for the loss of lives during calamities."

The Modernization Act shall take effect 15 days after its publication in at least two newspapers of general circulation.



New Biotech research may give bacon lovers a healthy reason to enjoy this breakfast favorite.

Probiotics research for processed meats supported by DOST in National Biotech Week

By **Joy M. Lazcano**
S&T Media Service, *DOST-STII*

A starter culture for processed meats, which increase the chances of developing cancer in humans according to the World Health Organization (WHO), may be in the offing. This development will help pave the way for a better alternative in processing meats.

Dr. Francis B. Elegado of the National Institute of Molecular Biology and Biotech or simply BIOTECH of UP Los Baños and his team developed a probiotic starter culture for meats in a research project supported by the Department of Science and Technology-Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) under the program "Enhancement of Biotechnology Products and Services for Agro-Industrial Applications."

Probiotics are good bacteria, or those that help keep you healthy. Meanwhile, a starter culture is a biotechnology application that starts the fermentation process for food. According to Elegado, they have a wide collection of starter cultures at Biotech.

Aside from diminishing the probability of the meat to cause cancer, the starter culture can also be used as a tenderizer, preservative, and taste enhancer for the meat products. It is a good alternative to sodium nitrate or salitre, used to cure ham and tocino.

Elegado said that so far, the team has very encouraging lab results, but they still need to scale it up to be ready for industry.

Recently, WHO said that processed foods such as bacon, sausages, hotdogs, salami, corned beef, ham, canned meat and meat-based sauces cause people to develop cancer due to the modification process they undergo through smoking, curing, and addition of salt and preservatives to either extend its shelf life or alter its taste.

Originally, his team was developing local starter culture that can help small to medium dairy manufacturers of various dairy products.

However, based on a survey of industry needs, they found that local manufacturers of dairy products account for only 15-20% of the overall dairy manufacturers in the Philippines. Also, multinational companies have their own starter cultures or are already developing their own starters. Pricing and cost are other factors, plus the fact that the Philippines is not a dairy producing country due to its tropical climate.

Hence, they tried using the starter cultures in meat processing. Although the starter culture used for yogurt is totally different from meat however, with the technology and knowledge that they now possess, it can be used for other potential products.

About us

The DOST Digest is published by the Science and Technology Information Institute- Department of Science and Technology For comments, suggestions or queries, contact: (02) 837-2071 loc. 2148/839-2193 local 107 or email: dost.digest@gmail.com

Framelia V. Anonas
Editor-In-Chief

Joy M. Lazcano
Copy Editor

James B. Intia
Layout

Ferdinand D. Cartas
Circulation

Science and Technology Information Institute-
Department of Science and Technology
Bicutan, Taguig City
Metro Mla.1631
Philippines

www.stii.dost.gov.ph

Like us on Facebook/Science and
Technology Information Institute (DOST)



DOST Official, Scientist among 2015 Outstanding Public Officials and Employees

By Romelie Janelle Maranan
S&T Media Service, DOST-STII

Aforester from the Department of Science and Technology (DOST) and the director of DOST-Region X's Provincial Science and Technology Center (PSTC) in Bukidnon are among the awardees of this year's Outstanding Public Officials and Employees Awards of the Civil Service Commission (CSC).

Forester Arsenio B. Ella from DOST's Forest Products Research and Development Institute (FPRDI) received the Presidential Lingkod Bayan Award for "sharing his knowledge on science and technology to the community to assist them with their livelihood."

On the other hand, Senior Science Research Specialist Virgilio M. Fuertes, director of DOST Region X's PSTC, was conferred the CSC Pagasa Award for "his scientific and extensive research to improve the products of the small businesses in Bukidnon."

Ella is known for his study and promotion of proper tapping of trees, which involves making a cut in the tree in order to collect a particular substance for various purposes. Among these trees are almaciga, pili, apitong, palosapis, and Benguet pine, among others, from which resin is captured without harming the tree.

His love for the indigenous people (IP) served as his motivation in introducing and promoting his method of tapping resin, providing sustainable livelihoods to IPs in different parts of the country, with the harvesting of resins being a good source of income.

Almaciga resin, or Manila Copal, is used in the manufacture of paints, varnishes, printing ink, shoe polish, floor wax, and others.



Proud moments for DOST as Forester Arsenio B. Ella (left) of DOST-FPRDI and DOST X Provincial Director Virgilio M. Fuentes were recognized as Outstanding Public Officials and Employees for the year 2015.

"Most of our awardees are unknown to the public," said Pres. Benigno S. Aquino in his speech during awarding rites last November 9, 2015 at Rizal Hall of Malacañang Palace. "They are just working quietly. Although no one can see what they are working on, they are still doing their job passionately and correctly. So let us take this opportunity to recognize them and make their noble deeds known."

The Presidential Lingkod Bayan Award is given to an individual or group for extraordinary contributions resulting from an idea or performance that had nationwide impact on public interest, security, and patrimony.

On the other hand, the CSC Pagasa Award is handed out to an individual or group for an outstanding contribution resulting from an

idea or performance which directly benefited more than one department of the government.

Ella and Fuertes received a gold-gilded medallion crafted by the Bangko Sentral ng Pilipinas and a presidential plaque. In addition, Ella and other Lingkod Bayan awardees received a cash prize of P200, 000 while Fuertes and his fellow CSC Pagasa awardees received a cash prize of P100,000.

The Outstanding Public Officials and Employees Awards is an annual nationwide search for the country's outstanding public servants conducted by CSC, as part of their Honor Awards Program. It aims to motivate and inspire civil servants to improve the quality of their performance and encourage profound involvement in public service.

in focus



Ph made digital science library goes to Malaysia

Visitors to the recent Kuala Lumpur Engineering Science Fair (KLESF) in Selangor, Malaysia try the Philippines' very own Science and Technology Academic and Research-Based Openly Operated Kiosks or STARBOOKS, developed by the Department of Science and Technology-Science and Technology Information Institute (DOST-STII). The first of its kind in the Philippines, STARBOOKS is a standalone information system placed in specially designed pods, and requires no Internet connection. It contains thousands of local and foreign S&T materials in various formats covering different topics like medicine, nutrition, energy, environment, and others. DOST's "library in a box" will also be featured at the celebration of National Biotechnology Week, happening on November 23- 28, 2015 at SM City Dasmariñas, Cavite. (S&T Media Service)