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Montejo salutes Pinoy Entrepres in DOST'S "Science Festival"

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

The very important role of micro, small and medium enterprises (MSMEs) in fueling economic development in the country was recently recognized by no less than Secretary Mario G. Montejo of the Department of Science and Technology (DOST) during its Stakeholders Summit held on December 9, 2015 at the DOST Executive Lounge.

The Stakeholders Summit was part of several activities under DOST's ongoing Science Nation Tour National Capital Region leg, dubbed "Science Festival."

"Today I acknowledge the technopreneurs as they are our steadfast partners in development by using the power of science, technology and innovation," said Montejo,

himself a proponent of MSMEs having been an inventor and technopreneur before he joined government service.

DOST has for many years been a staunch advocate of MSMEs and has been supporting thousands of Filipino entrepreneurs through one of its flagship programs - the Small Enterprise Technology Upgrading Program or SETUP, which extends assistance via funding, technology upgrading, and training. SETUP's outstanding adoptors for 2015 were also given recognition at the Stakeholders Summit.

"What is important for us at DOST is to harness the creativeness and innovativeness of our entrepreneurs using S&T for the benefit of Mang Juan and Aling Maria," Montejo added,

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DOST-lead nuclear congress tackles safety measures for Radioiodine Therapy

By **Espie Angelica A. De Leon**
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The Health and Medicine Track of the Third Philippine Nuclear Congress from December 7-9, 2015 discussed the safety measures for administering radioactive iodine therapy, or radioiodine, to a patient with hyperthyroidism.

"Any use of radiation on patients must be justified. You need further tests to make sure that iodine therapy is the best option," said Eulinia M. Valdezco of the Philippine Association for Radiation Protection during the multi-sectoral forum organized by the Department of Science and Technology (DOST) and its attached agency, the Philippine Nuclear Research Institute (PNRI).

Radioactive iodine, which takes the form of an oral capsule, stops the overproduction of the hormone thyroxine by the thyroid gland, which characterizes hyperthyroidism. Thyroxine helps in the digestive process, brain development, heart and muscle function, and bone maintenance. Excessive amounts of the hormone leads to sudden weight loss, sweating, rapid or irregular heartbeat, and irritability.

Among the safety measures mentioned in the discussion were the medical team's preparedness for an emergency such as when the patient is not able to swallow the capsule and expels it instead, thus spawning the possibility of contamination.

The medical team for the radioiodine treatment is composed of an authorized physician, radiation protection officer, medical physicist, and nuclear medicine technologist. Such composition will ensure the protection of the patient, hospital workers, and the patient's own family.

Another safety measure mentioned was the practice of having the patient himself take the capsule and put it into his mouth, instead of the technologist opening the canister and giving it to the patient so he could take the capsule.

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Montejo salutes...

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"and that is why we call our motto 'Agham na Ramdam' because it is us Filipinos who chart our course and we must build our own capabilities."

The Science Secretary also cited the inroads of the DOST in disaster preparedness and mitigation through another flagship program, the Nationwide Operational Assessment of Hazards or Project NOAH.

"By using the latest computer software and cutting-edge technologies like the LiDAR or light detection and ranging, we were able to create a 6-hour early flood warning system by generating high-resolution topographic flood hazard maps in all the 18 major river basins in the country, thereby providing vulnerable communities accurate and timely information about weather and hazards," he said.

Project NOAH spawned success stories like those during typhoon Pablo when zero casualty was reported in Cagayan de Oro, the same city devastated by typhoon Sendong in 2012. The project was also instrumental in having zero casualty in Marikina during the habagat episodes of 2012 and 2013 and during typhoon Ruby in December 2014.

In addition, Montejo bannered the different technologies developed by DOST in only a span of five years like those in genomics for

agricultural and healthcare applications, mass transport solutions like the Automated Guideway Transit or AGT and the Hybrid Electric Road Train, Food Innovation Centers which serve as food processing hubs in the regions, and the Electronics Product Development Center, to name a few.

"We have a wealth of S&T information at the DOST at binubuksan namin ang pinto ng DOST para maramdaman ni Aling Maria at Mang Juan ang siyensya at teknolohiya (...and we're opening our doors so that Aling Maria and Mang Juan will feel the essence of science and technology).

"We have created a whole ecosystem that empowers your creativity as innovators and technopreneurs to be one community. By developing good products, the whole world becomes your market," he said.

Science Nation Tour is a shared initiative of the DOST-NCR Office under the leadership of Director Teresita C. Fortuna and the whole DOST system including PHIVOLCS, PAGASA, Science Education Institute, Technology Application and Promotions Institute, and others joining the weeklong celebration with entrepreneurs sharing the limelight as partners in achieving the country's economic development agenda.

DOST-lead...

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The necessity of wearing a lead gown or apron was also raised. Said lead gown should not have been used in x-ray radiology, said Valdezco, formerly the head of the nuclear regulations, licensing and safeguards division of DOST-PNRI. An x-rayed gown is not optimized protection as it provides less protection, she explained.

"In nuclear medicine, one should minister a radiopharmaceutical to the patient. The source of exposure to radiation is now the patient. Our concern is the safety of the people around the patient – whether it is the workers in the hospital, the doctors who are doing the procedure, the family members once the patient is released from the hospital, and the general public that he encounters in the course of his work," Valdezco said.

The cells of the thyroid gland are the main cells that can take in iodine. Thus, the other cells in the body are not heavily affected by radiation exposure. Upon absorption of radiation, the thyroid cells shrink and then get destroyed.

There are other treatments available for hyperthyroidism, namely anti-thyroid medication and surgery. Radioactive iodine is the most common treatment in the US.

DOST's Project NOAH launches New Disaster mgmnt platform

By Alan C. Taule

S&T Media Service, DOST-CO

The Department of Science and Technology's Project NOAH or Nationwide Operational Assessment of Hazards announced the launch of its new and improved version of the disaster risk reduction and decision-making platform.

This was held last 11 December 2015 at the National Institute of Physics - Intel Center for Science Innovation in UP Diliman.

Project NOAH is the government's flagship program for disaster prevention and mitigation which aims to create a disaster-free Philippines by providing tools and information to mitigate or avert disasters caused by natural hazards.

Since its inclusion in the NDRRMC's Pre-Disaster Risk Assessment system, Project NOAH has been instrumental in identifying areas that would be hit by hazards brought about by extreme weather events.

In line with the NDRRMC's principle that warnings should be "hazard-specific, area-focused, and time bound," Project NOAH has

had great success in determining which hazards would hit specific areas at particular times. We can count on more successes with the introduction of the newest platform designed to provide more scientific information and a better user experience.

Along with the release of the new user interface of the website is the completion of the hydrometeorological hazard maps. This includes barangay-level flood hazard maps for major river basins, storm surge hazard maps for all coastal municipalities, landslide hazard maps for the entire Philippines, and hazard maps for debris flows, a lesser known but extremely dangerous phenomenon.

Project NOAH has also completed the multi-hazard maps for the 171 municipalities in the Yolanda-affected corridor, as per the Joint Memorandum Circular (DENR-DILG-DND-DPWH-DOST JMC 2014-01) issued solely for the purpose of identifying areas suitable for future reconstruction and rehabilitation.

Another new feature on the website is the improved WebSAFE application, an impact assessment tool developed through the collaboration of Project NOAH, World Bank, and UNICEF. Using this tool, you can estimate the number of people or buildings that may be hit by a particular hazard event. Based on this, local government units can better approximate and plan for the minimum needs of affected individuals. It is also capable of providing snapshots of a community's vulnerability to disasters.

Project NOAH will also introduce the newest version of the Arko app. Arko was developed jointly by DOST - Project NOAH and Pointwest Technologies, Inc. This mobile application, which was one of the winners of the World Summit Awards for Mobile Inclusion and Empowerment, provides users with location-specific flood hazard maps. It now features the added function of showing storm surge and landslide hazard maps.

DOST'S Starbooks in Bacoor, Cavite

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

St. Dominic College of Asia in Bacoor, Cavite is the newest addition to the growing list of academic institutions now equipped with the first digital science library in the Philippines, the Science and Technology Academic and Research-Based Openly Operated Kiosks or STARBOOKS of the Department of Science and Technology (DOST).

Developed by experts from DOST-Science and Technology Information Institute (DOST-STII), STARBOOKS is a stand-alone information source that operates even without the use of the Internet. It contains thousands of local and foreign science and technology (S&T) resources in various formats such as books, journals, scientific and research papers covering topics on different branches of science. Also included are livelihood videos, Britannica Ultimate Encyclopedia, and the new interactive courseware of DOST- Science Education Institute and DOST- Advanced Science and Technology Institute, among others.

"Basically, I am very positive with this collaboration with DOST, about this STARBOOKS program of yours, because this will widen the information resource material that our students will need in all their studies, researches, and their regular academic concerns," said Dr. Gregorio Andaman, Jr., president of St. Dominic College of Asia. "I really appreciate this gesture of the government in reaching out even to us private sectors. I highly recommend that the DOST would reach out to more academic

institutions... so that everybody can have access to these information."

The rollout of STARBOOKS and orientation session last November 27, attended by the school's officials, librarians, faculty members, and students, was in partnership with DOST Region 4A for the enhancement of the state universities and colleges, as well as the community, within the region.

On the other hand, the turnover of STARBOOKS was part of the school's Book Week celebration and launching of its digital campus academy.

Dr. Andaman also noted that the school will continue to strengthen its collaboration with DOST by promoting STARBOOKS to other institutions. "We will invite nearby academic institutions, not only private but also public school students, to have access in our STARBOOKS inventory of learning material," he said.

STARBOOKS was among the four recipients of the American Library Association Presidential Citation for Innovative International Library Projects last June 29, 2015 in San Francisco, California. It was also one of the many product technologies featured during the Kuala Lumpur Engineering Science Fair last October 30-November 1, 2015 in Malaysia.

For inquiries on STARBOOKS which is now available online via www.starbooks.ph, emaildost.starbooks@gmail.com, starbooks@stii.dost.gov.ph, or stiiilibrary@gmail.com.



Director Alvin Jason Virata of St. Dominic College of Asia's administrative support services, tries out STARBOOKS.



*Merry Christmas and
A Blessed New Year*

About us

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By Fatima Moncada
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The farther a community is from an earthquake's epicenter or point of origin, the less hazards it will experience. Right?

Wrong!

Joan Salcedo of the Department of Science and Technology-Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS) debunked this notion during a forum on disaster risk reduction and management (DRRM) at the DOST Executive Lounge last December 11, 2015.

The forum was organized by the DOST-NCR office as part of the Department's recently concluded "Science Festival."

According to Salcedo, there are other factors that determine whether hazards from earthquakes are set to occur aside from distance from the epicenter. These factors are the local soil conditions, intensity of ground shaking, and the structural integrity of houses, buildings, and other infrastructures.

To illustrate her point, Salcedo, with the help of some forum participants, recounted earthquake incidents in the country that brought considerable damage to communities kilometers away from the epicenter.

Reducing disaster risk, she said, is a function of reducing vulnerability and exposure to hazards. One way of reducing vulnerability is through education.

On the other hand, reducing exposure to hazards requires informed actions such as seismic retrofitting and relocation. Seismic retrofitting is the modification of buildings and houses to make them resistant to ground shaking and collapse during tremors. Hence, a good approach to improving the implementation of DRRM measures is to start with public awareness, Salcedo said.

Salcedo later guided the participants in answering an earthquake vulnerability checklist developed by DOST-PHIVOLCS dubbed 'How Safe

is My House?'

Aside from discussions on earthquake preparedness, a lecture on the technology behind DOST's Project NOAH (National Operational Assessment of Hazards) was delivered by Neil Eneri Tingin, one of the project researchers.

In a separate interview, Tingin stated that familiarization with and appreciation of DRRM technologies is crucial in utilizing them, thus leading to reduced occurrence of hazards.

Tingin also demonstrated the beta version of the new NOAH website launched earlier that day. The new website features a simpler user interface for easier map navigation and new DRRM tools that are all publicly accessible.

The DRRM forum convened members of local government units, students, and teachers from Las Piñas, Manila, Marikina, Quezon City, and Taguig.

inFOCUS



SALT LAMP PRESENTED TO DOST

Filipino engineer, entrepreneur, and Greenpeace volunteer Aisa Mijeno presents her invention "Sustainable Alternative Lighting (SALt) Lamp" during the Technical Evaluation Committee meeting with representatives of the Department of Science and Technology-Technology Application and Promotion Institute (DOST-TAPI) last December 7, 2015 at the TAPI Conference Room, DOST Complex in Taguig. SALt Lamp is an alternative light source which runs on saline solution consisting of only a glass of water and two tablespoons of salt or ocean water that can be used for eight hours a day for six months. The lamp can produce 90 lumens or 2 watts of luminosity through the LED light. It can also be used to charge cell phones in case of emergency. Mijeno's invention, which attracted attention during the recent Asia-Pacific Economic Cooperation Summit in Manila, is currently being proposed for TAPI's Invention-Based Enterprise Development funding assistance program for prototyping and further production. Also shown in photo is Engr. Aisa's brother and business partner Raphael Mijeno (lower photo). **(Text by Romelie Janelle Maranan; Photo by Ceajay N. Valerio, S&T Media Service, DOST-STII)**