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DOST in awe of Scholars' volunteerism amid COVID-19

By **Marco D. Melgar**, *DOST-SEI*

When the country imposed the nationwide community quarantine amid the spread of the Coronavirus disease (COVID-19), worry and uncertainty clouded the minds of many, especially the poor, who are unprepared of the sudden restrictions in movement and economic activity. Despite this, scholars of the Department of Science and Technology - Science Education Institute (DOST-SEI) were among the first to respond and to organize themselves to do volunteer work in their localities.

DOST officials are amazed with the various initiatives done by its scholars - both ongoing and scholar-graduates.

"It is very inspiring to know that our DOST scholars are doing their own part to help the nation recover from the current crisis," said DOST Secretary Fortunato de la Peña who regularly reports of the agency's efforts in his official social media page.

As of 5 June, there are 1,081 ongoing and former science scholars who volunteered in relief operations; data encoding and validation; 3D printing of frames for face shields and production of other personal protective equipment (PPE) for frontliners; and production of alcohol as disinfectant. Some even helped in their community safety assistance program by monitoring persons entering and leaving their barangay.

DOST-SEI Director, Dr. Josette T. Biyo, said that while they are in awe of these initiatives, she credits the Institute's scholars' formation program called "The Filipino Patriot Scholars Project" in further awakening patriotism and servant leadership traits among scholars.

"Since 2017, we wanted to inculcate the core values such as professional excellence, social responsibility, servant leadership and volunteerism among our scholars aside from them pursuing academic excellence. We know that those values don't fully blossom in a matter of days or weeks, but the Patriot Project allowed them to find deeper meaning to the brand of being DOST scholars," Dir Biyo said.

The number of scholar-volunteers kept rising from an initial 500 in April to more than a thousand as of date. Dir. Biyo further said that there are still scholar-volunteers whose contributions were undocumented.

"The documented efforts may represent only some of the initiatives from DOST Scholars but the impact cannot be overstated," she said.

Among the documented efforts, Dir. Biyo said are some notable modes of assistance that include data validation for the distribution of Social Amelioration Program, development of online tracking mechanism for persons under investigation and monitoring (PUIs and PUMs),

and strategic campaign to provide baby-friendly relief via a movement called #FeedPHBabies. A number of scholars and alumni also pooled resources to buy food packs, groceries, and other essentials for the vulnerable individuals in their localities.

Scholars further assisted in information dissemination by creating infographics and publication of relevant information materials while others enlisted as volunteers for the Molecular Biolab to be established to augment in COVID-19 testing.

Another example of volunteerism among the

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A DOST scholar helps out in formulating alcohol and hand sanitizers for distribution to communities in Cagayan de Oro City. (Photo from DOST-SEI)

TO MEET LOCAL FOOD NEEDS IN THE NEW NORMAL

DOST partners with PCAFI and Air21 Global

Text and photos by DOST-PCIEERD

The Department of Science and Technology (DOST), Philippine Chamber of Agriculture and Food, Inc. (PCAFI), and Air21 Global forged a partnership to implement a smart food value chain program to guarantee food security in the new normal.

The collaboration will cover food production, food processing, logistics supply chain and resources management system, and smart retailing systems.

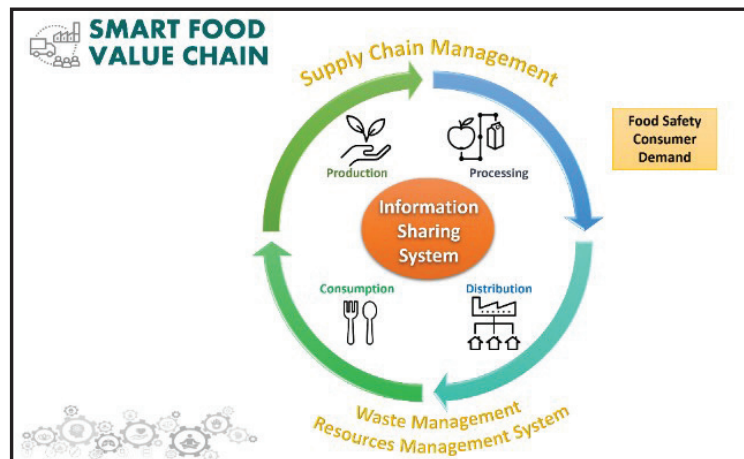
In a virtual meeting, DOST Secretary Fortunato de la Peña sealed the partnership by signing a Memorandum of Understanding (MoU) with PCAFI Chair Philip Ong and President Danilo Fausto, and with Air21 Global President Judy Ascalon.

"This is a milestone that will surely strengthen the cooperation between DOST and its partner industries, PCAFI and Air21, to heighten food production, processing, and extending the shelf-life of local food for national consumption," DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD) Executive Director Dr. Enrico Paringit said.

Accelerating local food production and generating market opportunities for farmers, the DOST through PCIEERD, Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development, Industrial



PCAFI President Danilo Fausto and Chairman Philip Ong, Air21 Global President Judy Ascalon, and DOST Secretary Fortunato de la Peña present the signed Memorandum of Understanding for the collaboration on Smart Food Value Chain Program



DOST Smart Food Value Chain Program

Technology Development Institute, Food and Nutrition Research Institute, and partner state university and college as well as Higher Education Institutions have developed several technologies that will be integrated to complete the value chain.

Smart technologies such as Smarter Approaches to Reinvigorate Agriculture as an Industry in the Philippines (SARAI) of DOST-PCAARRD and artificial intelligence to process data across the value chain will be used in the undertaking.

The Food Value Chain (FVC) is a series of activities that aims to build and create values

from each stage, from agricultural production, processing and manufacturing, distribution up to consumption.

Its goal is to develop a sustainable food value chain in the country—from farms to firms and their successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular food products that are sold to final consumers and disposed of after use, in a manner that is profitable throughout, has broad-based benefits for society, and does not permanently deplete natural resources.

ABOUT US

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DOST in awe...
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DOST scholars is their involvement in research. The Feasibility Analysis of Syndromic Surveillance using Spatio-Temporal Epidemiological Modeler (FASSTER) was developed by a team led by researchers from the Ateneo de Manila University (ADMU) that allows forecasting of possible cases in a given area at a specified period of time. The project is used for creating predictive models and visualizing possible scenarios of outbreaks of dengue, typhoid fever and measles at specified time periods.

Under the FASSTER project, 45 DOST scholar-volunteers are deployed at the Department of Health (DOH) regional offices nationwide and work as data encoders and analysts. Data gathered from this model support the decision-making of DOH, local government units and healthcare facilities in terms of resource planning and other measures to mitigate the spread of the virus

The project was funded by the Philippine Council for Health Research and Development (PCHRD) of the DOST.

On the other hand, Biyo mentioned that Shana Genavia, a DOST scholar, was also part of the DNA Sequencing Core Facility that helped validate the COVID-19 Detection Kit developed by the University of the Philippines - National Institutes of Health (UP NIH). A number of MD-PhD scholar-graduates of UP Philippine General Hospital also underwent training at the UP National Institute of Molecular Biology and Biotechnology (UP-NIMBB) for deployment to the different Department of Health (DOH) Testing Centers.

She also cited that some DOST Balik Scientists and graduate scholars from University of San Agustin in Iloilo are doing epidemiological modelling of COVID-19 for the Province of Iloilo, Guimaras, and Panay. The results of which are given to the City Mayor and Governors in aid of policy making.

Dir. Biyo also said that the volunteerism efforts of DOST scholars were also seen during the Marawi Siege in May 2017. "Even in Marawi, we saw great volunteer efforts from those who benefitted from our Bangon Marawi Scholarship Program. These scholar-graduates who named themselves Team Batis distributed food packs in Marawi City and Balo-i in Lanao del Norte, and Saguiaran, Marantao, Maguing, and Tugaya in Lanao del Sur," she said.

As the community quarantine continues to be implemented in various parts of the country, DOST-SEI is very positive that the initiatives from its scholars will remain.

"Indeed, there's no amount of volunteer work that is too small nor big enough. The fact that reaching out to others while being under the same threat of exposure to the deadly virus is noble for our young scholars. We're so proud of them," Dir. Biyo disclosed.

DOST laboratories and venture financing make a tandem for SMEs

By **Emilie S. Capellan**, DOST-TAPI

While the nation and the rest of the world stand still in the fight against the novel coronavirus disease (COVID-19), the small and medium entrepreneurs (SMEs) have been in the front line of business who are greatly affected by the ongoing pandemic.

To help SMEs rise above the challenge, the Technology Application and Promotion Institute of the Department of Science and Technology (DOST-TAPI) offers assistance to local entrepreneurs that addresses their need to access laboratory and testing facilities, and acquire additional equipment to improve their operations and production.

One of which is the Strategic Promotion through Integrating Collaboration and Engagement of SMEs to Support the Technology Transfer and Commercialization of DOST-Developed Technologies including Testing Laboratories and Services or #SPICESToDOSTLabS.

DOST-TAPI Director Edgar I. Garcia said that in order for the stakeholders to commercialize their technologies, they would need assistance to fulfill initial research and development (R&D).

"We can help them improve their products and innovations through our world-class and state-of-the-art laboratory services of our Research and Development Institutes (RDI)," Garcia added.

DOST RDI laboratory services include failure analysis, materials characterization, proficiency testing, nutragenomics, wood and wood products test, calibration and metrology, and metallurgical analysis, among others.

Particularly, the Advanced Device and Materials Laboratory (ADMATEL) of the Industrial Technology Development Institute (DOST-ITDI) is equipped with advanced analytical equipment

for failure analysis and materials characterization including surface and thermal analysis, sample preparation, and external visual inspection.

The Food and Nutrition Research Institute (DOST-FNRI) offers chemical, microbiological, proficiency testing, biochemical, nutragenomics, and sensory laboratories equipped with equipment and instruments in determining nutrition labeling, toxicants or contaminants, and food and water safety, among others.

Meanwhile, the Forest Products Research and Development Institute (DOST-FPRDI) testing facility includes furniture, plywood, adhesive, housing and construction, and wood and wood products tests.

The Metals Industry Research and Development Center (DOST-MIRDC) testing facility includes chemical testing, calibration and metrology, corrosion testing, nondestructive testing, mechanical testing, and metallurgical analysis.

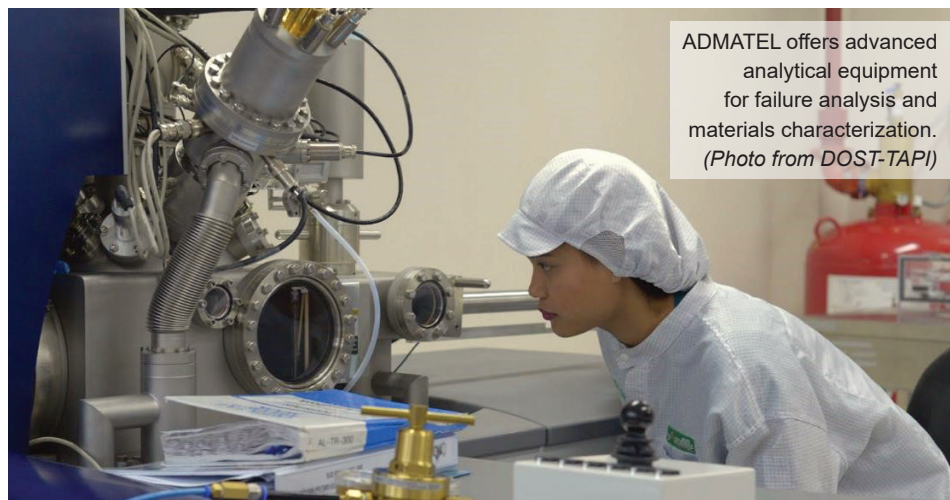
The Philippine Nuclear Research Institute (DOST-PNRI) testing facility subsequently offers irradiation facility, radiation protection services, health physics, and isotope techniques.

Finally, the Philippine Textile Research Institute (DOST-PTRI) offers physical and chemical testing and evaluation of fiber, yarn, fabric, and allied products, and textile processing.

Aside from the laboratory services, DOST-TAPI provides financial assistance for the fabrication or purchase of major equipment through the Venture Financing Program.

Many entrepreneurs have benefitted from the program and became successful in their own businesses.

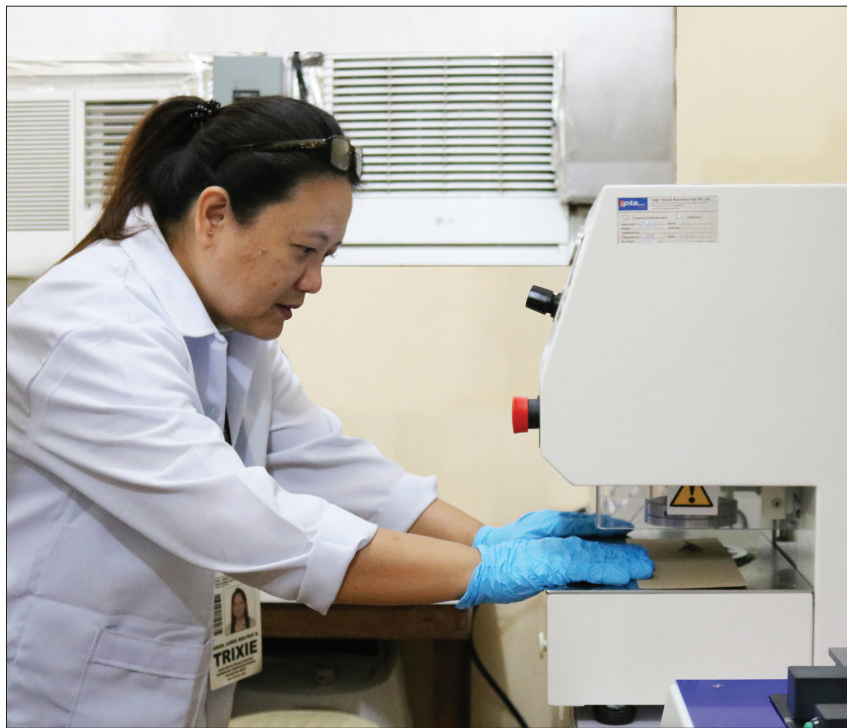
For more information, please visit www.tapi.dost.gov.ph or email tapi.dost@yahoo.com.



ADMATEL offers advanced analytical equipment for failure analysis and materials characterization. (Photo from DOST-TAPI)

DOST-FPRDI: Abaca hybrid yields quality fiber

By Rizalina K. Araral, DOST-FPRDI



The physical properties of abaca hybrid paper samples were comparable to those of commercial abaca. (Photos from DOST-FPRDI)

Brighter days may be up ahead for the country's abaca industry. Researchers at the Department of Science and Technology-Forest Products Research and Development Institute (DOST-FPRDI) have recently found that the "Bandala" abaca hybrid yields high quality fiber that makes it a promising material for pulp and paper.

DOST-FPRDI lends support to the abaca industry through its research and development program that aims to improve and expand the use of abaca and other natural fibers in making specialty paper and other high-end products.

This is indeed great news, considering that the Bandala is the result of more than 60 years of work by scientists, mostly from the University of the Philippines Los Baños - Institute of Plant Breeding (UPLB-IPB). Our local scientists have spent hundreds of hours in laboratories trying to come up with the kind of plant that would meet the needs of local abaca farmers and adapt to changing environmental conditions.

As a result of breeding the right types of abaca and banana (the two plant species

are close relatives), the *Bandala* has acquired the traits of the ideal hybrid. It is high-yielding, drought-tolerant and able to withstand the attack of the notorious abaca bunchy-top virus or ABTV.

"Our finding was that the physical properties (basis weight, thickness, folding endurance, and burst, tensile and tear indices) of the *Bandala* paper sheets we studied were comparable to those of commercial abaca," says DOST-FPRDI researcher Aimee Trixie R. Habon. "This is important because it shows that the hybrid has high economic potential."

Abaca, which is known as the world's strongest natural fiber, is native to the Philippines. We are the world's number one abaca supplier and it is the source of livelihood for about 200,000 farming families in 56 provinces.

Long considered as the world's strongest natural fiber, abaca is currently a preferred raw material for various modern technologies



employed in making ship and power transmission ropes, car interiors, well-drilling cables, furnishing, textile, as well as specialty and security paper.

Now, with the strong support of different science-based agencies, the future looks much better for our abaca farmers. These agencies include the UPLB-IPB and the DOST-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development that has put in place a Strategic Abaca Industry Science & Technology Roadmap.