

10 years of bringing
S&T good news

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Photo from DOST Region III

DOST brings Bulacan farmers closer to rice self sufficiency

By Leide Mel B. Sicat, DOST-III

The Duterte administration's goal of hitting 100 percent rice self-sufficiency level in two years, to push the Philippines to reclaim its status as rice exporter, is now a step closer to attainment.

A recent partnership among the Department of Science and Technology Regional Office No. 3 (DOST III), the Philippine Sino Center for Agricultural Technologies (PhilSCAT), the Local Government of Pulilan (Pulilan LGU) and the Department of Agriculture Regional Field Unit No. 3 (DA RFU III) just might have proven that such a target can be realized.

The team believes that achieving higher rice yields is possible given the correct seed variety and quality, proper plant spacing, correct fertilizer timing and rates, and appropriate irrigation application. That is the reason why the farmers who participated in a recent project were convinced to migrate from direct/broadcast seeding to mechanized transplanting; from using the usual inbred seeds to hybrid rice seeds;

from their old practice of applying 4-6 bags of fertilizer to the more intensive 8-10 bags of fertilizer per hectare.

Under the umbrella of the DOST- Community Empowerment through Science and Technology project "Effective Translation of Science and Technology Intervention for Agricultural Productivity: The Case of Rice and Mango in Pulilan, Bulacan", Director Julius Caesar Sicat, with PhilSCAT Director Dr. Emmanuel V. Sicat who provided technical services, requested for hybrid rice seeds from DA RFU III Dir. Andrew Villacorta last year. PhilSCAT immediately deployed its technical team led by Dr. Carlos Abon and conducted trainings on seedbed preparation using double mulching technique in December last year, and the use of mechanized transplanter in January this year.

The carageenan plant growth promoter developed by Philippine Nuclear Research Institute and funded by the Philippine Council for Agriculture, Aquatic and Natural Resources

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DOST chief urges for more research on fishery resources, Benham Rise

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



Photo by Gerardo G. Palad, DOST-STII

Department of Science and Technology (DOST) Secretary Fortunato T. de la Peña asked researchers to do more scientific studies on high potential fishery resources like seaweeds and Benham Rise, also known as the Benham Plateau.

Speaking before 300 delegates composed of scientists, academicians, researchers and various industry stakeholders, Sec. de la Peña said, "The Department of Science and Technology is focusing on strengthening research and development initiatives in various fields including the fisheries sector because this will provide more opportunities for our marginalized fishermen in the regions and will help them uplift their economic condition."

The Secretary emphasized, in particular, the importance of Benham Rise in the present administration's thrust of reducing economic inequality through the creation of more income opportunities coming from marine resources. In fact, according to the Food and Agriculture Organization, the country ranked 8th among the top fish producers in the world in 2016, with Central Visayas at the forefront.

Benham Rise is a seismically active undersea region estimated to cover an area of about 13 million hectares located east of Luzon and is 35 meters underwater with the shallowest point

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Research and Development, both of the DOST, was likewise sprayed at 14, 28 and 42 days after transplanting.

The 25 Pulilan farmers-participants in this endeavor were closely guided and monitored by the joint DOST-PhilSCAT team. On April 18, 2017, the farmers witnessed the combined harvester churn out 177 cavans of Mestiso 78 palay (also known as Long Ping 937) at 70 kg per cavan from the 1.25-hectare farm of Lito Calderon. The harvest totalled 12.39 tons or 9.9 tons per hectare. This year's harvest is almost double compared with last year's harvest of 6.597 tons of PSB Rc 218.

Meanwhile, Ponciano Mendoza harvested 140 cavans of SL8-H at 55 kg per cavan from his 7,500 square meter farm. This is equivalent to

10.27 tons (or 205 cavans) per hectare which, according to him, is almost double compared with his harvest last year of 80 cavans.

Awed by the result, he exclaimed, "Sa kaunaunahang pagkakataon ay umani ako ng ganito kaganda! Lubos po akong natutuwa na ang ating mahal na Mayora Maritz Ochoa-Montejo, ang PhilSCAT at ang DOST ay nagtutulong-tulong para sa ikabubuti naming mga magsasaka." (For the first time, I had a productive harvest! I am so happy that our mayor Maritz Ochoa-Montejo, the PhilSCAT, and the DOST worked together to benefit us farmers)

Rosalina de Guzman, also a farmer-participant, was quick to add, "Dahil din sa carageenan plant growth promoter, talagang

umani ako ng mataas, nakatipid din at nakabawas sa pataba. Kaya naman pala ang 200 kaban sa isang ektarya!" (Because of the carageenan plant growth promoter, I actually had a very abundant harvest and I was able to save from fertilizer costs. Producing 200 cavans per hectare is very possible!)

The initiative was spurred by the personal experience of Dir. Sicat, himself an agricultural engineer and a weekend rice farmer, who was inspired by his harvest of at least 200 cavans per hectare in his rice fields at the Science City of Munoz, Nueva Ecija in the 2015 and 2016 dry seasons. After his abundant harvest, he was challenged by Mayor Montejo to help the Pulilan rice farmers achieve the same successful harvest.

DOST chief urges...

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located off the provinces of Aurora and Isabela.

In April 2012, the United Nations Convention of the Law of the Sea already recognized and officially approved the Philippines' claim on Benham Rise as part of its continental shelf and territory.

Based on initial studies Benham Rise is rich in mineral, oil and gas deposits like solidified methane that could help the country achieve self sufficiency in energy.

Sharing DOST's thrust on R&D is Bohol 2nd District Representative Erico Aristotle C. Aumentado, chair of the Science and Technology Committee in the Lower House.

"I fully recognize the importance of science and technology in developing our economy and I am supporting R&D activities particularly of the DOST in the fisheries sector as these will open doors to more opportunities

without compromising the future," said Rep. Aumentado.

The congressman also called for stronger cooperation of different sectors of society, the government, the private sector, and the academe.

Sec. de la Peña and Rep. Aumentado were speakers at the Visayas Regional Scientific Meeting (RSM) held this April in Cebu City.

Rep. Aumentado expressed his support for the regional scientific meetings as a means to share ideas in creating income opportunities in the provinces. Said meetings also address R&D initiatives in protecting the environment by through science and technology, he said.

"We can only do this with the free exchange of ideas and to follow one path for sustainable development," he added.

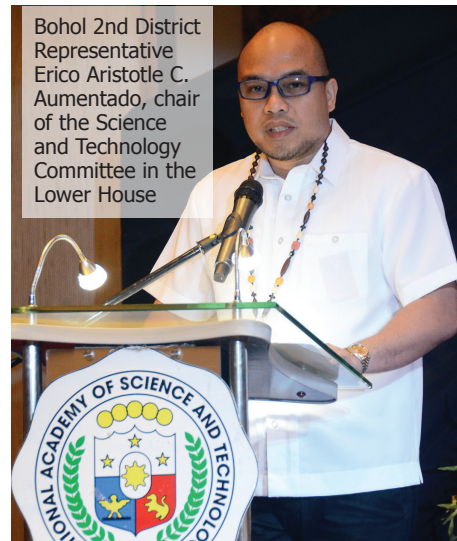


Photo by Gerardo G. Palad, DOST-STII



STARBOOKS LIGHTS UP BOHOL SCHOOLS | Marjorie Lamoste, Grade 11 student of the Pagnitaoan National High School in Maribojoc, Bohol tries her hand at research using the Science and Technology Academic and Research-Based Openly Operated Kiosks or STARBOOKS, a stand-alone digital S&T library-in-a-box. Developed by the Department of Science and Technology - Science and Technology Information Institute (DOST-STII), STARBOOKS is fully loaded with S&T information materials such as books, journals, theses, videos, news articles, and others, that are available offline. DOST-STII designed STARBOOKS to run without Internet to make S&T materials accessible to students, researchers, and teachers in the countryside that have limited access to libraries and the Internet. Maribojoc, a fourth-class town in Bohol with a hilly terrain, is 14 kilometers away from the bustling Tagbilaran City and has limited transportation service. Pagnitaoan National High School was one of the six Bohol schools that received STARBOOKS units through DOST-STII's partners, the Children's Hour and Sun Life Foundation, and facilitated by the DOST-Bohol. Lamoste led the students in thanking DOST "for the gift" and pledged that students will use STARBOOKS in research activities. **(Photo and text by Framelia V. Anonas, DOST-STII)**

DOST-supported cake maker bags award as outstanding woman entrepreneur

By **Cindy Belivestre, Provincial S&T Director, PSTC Surigao del Sur**

A lady cake maker who was able to prosper her business through the help of the Department of Science and Technology (DOST) was recently named as one of the Successful Women Entrepreneurs in Caraga.

Sarah Guarte, a beneficiary of DOST's Small Enterprise Technology Upgrading Program (SETUP), received the award during the celebration of the International Women's Day on March 8, 2017 at the Balanghai Hotel in Butuan City. The awards were given to outstanding women who thrived in the business sector in Caraga.

Sarah, owner of the Sarah's Cakes and Pastries, was one of the seven women entrepreneurs recognized by the Regional Development Council – Gender and Development Coordinating Committee as part of the campaign on empowering women through entrepreneurship.

A long-time client of SETUP, Sarah has proven to successfully apply the different technologies, trainings, and other capacity development opportunities provided by DOST in operating her business firm.

Road to Entrepreneurial Success

Like any other accomplished entrepreneur, Sarah's business journey began in small and



Mrs. Sarah Guarte of Sarah Guarte Cakes and Party Needs poses with Caressa Leanne V. Lim, DOST Surigao del Sur.

humble beginnings. Before she discovered baking, Sarah started her entrepreneurial journey in cooking and selling native delicacies. Her mother's interest in baking led her to explore the world of cake-making. She revealed that she had many attempts of baking cakes perfectly in her own kitchen.

Receiving favorable reactions and comments, it encouraged her to put an edge on her skills. After years of carefully crafting her skills in baking, Sarah was able to establish a cake production facility in 2004. Sarah's enduring dedication and commitment to her business made her one of the 20 Outstanding Caraga Women Entrepreneurs in 2010 by the Department of Trade and Industry – Caraga.

Her application in the SETUP Program of DOST has also aided Sarah's business in establishing four branch stores of her firm in Surigao del Sur. She was able to increase her sales from P400,000 to P1,000,000. Just recently, Sarah was able to build a new cake production facility based on the recommendation of DOST's Manufacturing Productivity Extension Program consultants.

SETUP empowers women

Women's participation in the workforce greatly enhances productivity and fosters economic growth. Women represent a substantial force for sustainable development. The crucial part is getting resources for the working women, allowing them to thrive in their economic environments so that they may, in turn, foster the success of local communities.

DOST, through SETUP, encourages and assists MSMEs to adopt technology innovations

to improve their operations, productivity, and competitiveness. The program enables firms to address their technical problems through technology transfer and technology interventions.



The new cake production facility of Sarah Guarte Cakes and Party Needs in Tandag City. (Photos from DOST-CARAGA)

ABOUT US

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Photo by Gerardo G. Palad, DOST-STII

11 Filipino researchers recognized for their contributions to PH dev't

By **Geraldine Bulaon-Ducusin & Joselito A. Carteciano**
DOST-STII & DOST-NRCP

Eleven Filipino researchers received recognition for their contributions to the country's development at the recent Annual Scientific Conference and 84th General Membership Assembly of the Department of Science and Technology-National Research Council of the Philippines (DOST-NRCP).

The conference was held on 22 March 2017 at the Philippine International Convention Center, Roxas Boulevard, Pasay City.

The researchers were cited for their various contributions in the areas of science education, environmental studies, pharmaeidemiology, maternal health care, research on natural products and toxicology, cost-effective biofungicides for important tropical crops, biotechnology, eco-industrial energy systems, languages, statistical mechanics, industrial and health application of carrageenan, rainfall forecasting and veterinary immunology and public health and others.

This year's conference theme is "Philippine Development: Foregrounding Ethical and Moral Values." Rev. Fr. Albert E. Alejo, SJ, PhD, inspired and enlightened the participants to the conference on the issues of researches. He posed questions, such as, "Am I a better person by becoming a researcher?" Sharing his research engagements in Mindanao, especially in the conflict areas of Basilan, he enlightened and inspired the hundreds of guests, most of whom were researchers from various areas in the country.

Recognized for their exemplar contributions were the following:

Dr. Socorro E. Aguja for her contributions to science education, environmental studies, human capital development and citiculture, as well as for her active involvement in science education and teacher mentorship.

Dr. Godofreda R. Vergeire-Dalmacion for her effectual influences on the areas of pharmacoepidemiology, pharmacovigilance, and maternal health care.

Dr. Jovencio G. Apostol for his pioneering research on natural products and beneficial contributions to vascular pharmacology, toxicology, pharmacogenomics, pharmacy

education, clinical pharmacy and pharmacy practice.

Dr. Dionisio G. Alvindia for his groundbreaking work in the development of natural and cost-effective bio fungicides for banana, mango, and other important tropical crops, which led to the reduction of worker and environment exposure, as well as industry dependence on harmful pesticides.

Dr. Danilda Hufana-Duran for her pioneering research and accomplishments on the development and use of advanced reproductive biotechnologies, and establishing laboratory standards and protocols that resulted in the production and propagation of genetically superior water buffaloes.

Dr. Kathleen B. Aviso for her work in the development of modeling techniques for the design and planning of eco-industrial and energy systems.

Dr. Alfredo C. Robles, Jr. for his widely published scholarly work on ASEAN-EU relations and on the ASEM (Asia-Europe Meeting) process, characterized by its retrospective and prospective focus, its rigorous and synthetic theoretical approaches, and its broad empirical scope in terms of sources and languages.

Dr. Jose Perico H. Esguerra for his numerous contributions to the statistical mechanics of self-gravitating systems, random walks, Brownian motion, and first passage processes, applications of fractional calculus in physics, and mathematical methods for nonlinear and quantum systems along with his two decades of educating students and professionals in Physics, his mentorship of Philippine teams in international Olympiads.

Dr. Annabelle V. Briones for her studies on various innovative techniques on the use of carrageenan for an array of industrial and health applications; indigenous sources for new products; and her initiatives on the development of DOST Mosquito Ovi-Larvicidal Trap System.

Dr. Carlos Primo C. David for his innovative contributions in short-term rainfall forecasting in the Philippines as well as scholarly works on hydrology, climate change, and environmental

geology; and active participation in climate change-related research focusing on water resources, along with his service to youth education and scientific community.

Dr. Claro N. Mingala for his contributions in the fields of veterinary immunology, microbiology, molecular biology, and public health; as well as the development of DNA-based and rapid diagnostic tools for economically important animal diseases, for which he has gained national recognition.

NRCP is a collegial and S&T advisory body of the Department of Science and Technology with more than 4,000 member-researchers, scientists, and technologists across the country and around the world.

inFOCUS



CHLOROLIGHT. Watch out for this interesting household invention of Inv. Stevenson Rejus which uses a solution of sodium hypochlorite and water as its "fuel" and can last until six months. The bulb used can be up to 10 watts. (Photo by Henry A. De Leon, DOST-STII)