



## Sual's Agri and Dried Fish Industries get major boost from DOST 1 iSTART Program

The Department of Science and Technology Region 1 (DOST-I) awarded Organic Fertilizer Granulator worth Php 275, 000.00 to the Matico Farmers Swisa Inc. and Multi-Commodity Solar Tunnel Dryer worth Php 313,600.00 to the Sual Dried Fish Vendors Association in Sual, Pangasinan on May 05, 2022 as part of the innovation, Science, and Technology for Accelerating Regional Technology-Based Development (iSTART) Program implementation to the municipality. [read more in page 6...](#)

## ALAM MO BA?

**A**ng Nutribun o "Nutrition in a Bun", ay isang fortified na tinapay na gawa sa wheat flour, nonfat dry milk, asukal, vegetable oil, asin at yeasts. Ang isang bun ay mayroong 500 calories at 70 grams ng protina at may bigat na 170-190 grams na mas mabigat kaysa sa regular na pandesal na may bigat lamang na 25-30 grams. Ang Nutribun ay nagbibigay ng calories, protina, calcium, iron at iba pang nutritional elements.

Ang DOST-FNRI ay nagdevelop ng Enhanced Nutribun o e-nutribun na mas malambot ang texture, mas malasa at mas masustansya para sa mga kabataan.

[read more in page 18-19...](#)



## DOST 1 bags 1st place in STARBOOKS Vlog Contest

DOST 1 bagged first place in the Vlog/Documentary Contest for Deployment Officers among the four (4) entries from the DOST Regional offices that competed for the most coveted prize on June 24, 2022, at the Philippine International Convention Center, Pasay City, in celebration of the 11th Anniversary of Science and Technology Academic and Research-Based Openly-Operated Kiosk Stations (STARBOOKS).

[read more in page 26...](#)

## DOST 1 confirms 251 new S&T qualifiers

The Department of Science and Technology - Science Education Institute (DOST-S EI) published the list of official qualifiers for the 2022 Science and Technology (S&T) Undergraduate Scholarship on June 12, 2022.

[read more in page 24...](#)

## WHAT'S INSIDE?

- DOST 1 installs Automatic Weather Station in Santol, La Union

- FIC Technologies won TOP 10 Best North Luzon Food Products

- Tekno Presyensya featuring Agriculture in the North through Tilapia Farming

- and more...

# EDITORIAL PAGE

Good day, S&T lads! I am pleased to share with you the success of DOST 1 in print for the second quarter issue of Ilocos S&T Trends.

It has been a grueling three months of back-to-back activities and projects for the DOST 1. As we slowly recover from the pandemic's challenges, we must work twice as hard to make up for lost time.

This issue demonstrates the hard work of the entire DOST 1 in making up for lost time during the COVID-19 crisis. Let me walk you through the highlights of the second quarter in Kabuhayan, Kaayusan, Kalusugan, and Kinabukasan.

## On Kabuhayan...

Through the Small Enterprise Technology Upgrading Program (SETUP) and the Community Empowerment through Science and Technology (CEST) programs, DOST 1 was able to assist MSMEs and community-based groups with funding and technology transfer. The innovation, science, and technology for accelerating regional technology-based development (iSTART) Program is also making its way in boosting the agriculture sector of the six (6) Local Government Units (LGUs) in Pangasinan.

## On Kaayusan...

The DOST 1's Disaster Risk Reduction and Management has installed Automatic Weather Station in Santol, La Union as a means to provide science and technology to the grassroots regardless of proximity, class or status. Also, DOST 1 has once again proven its capability of bringing science to the people and making it visible as it bags the 1st place on the STARBOOKS Documentary Video during the 11th Anniversary of STARBOOKS.

## On Kalusugan...

The Nutribun has been the talk-of -the-town this year, so a feature of when it began, what's new with its contents, why was it named e-nutribun, who can benefit from it and where is it marketed and manufactured was showcased to raise public awareness and provide more information.

## On Kinabukasan...

The DOST 1 has confirmed 251 new S&T qualifiers this quarter. The S&T community hopes these new scholars the best of success in their academic careers. Similarly, DOST 1 empowered science and math teachers to improve their skills and capabilities in providing quality service to students.

The DOST 1 staff and its stakeholders work together to bring science to the people while upholding the values of innovation, excellence, leadership, integrity, teamwork, and empowerment.

These are just a few highlights from this quarter; there's a lot more if you take the time to read what's inside.

Thank you for your continuous support to DOST 1, mga ka-agham! Mabuhay!



**ANGEL LYN O. LEANDADO**  
Editor-in-Chief, Ilocos S&T Trends

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## DOST 1 installs Automatic Weather Station in Santol, La Union

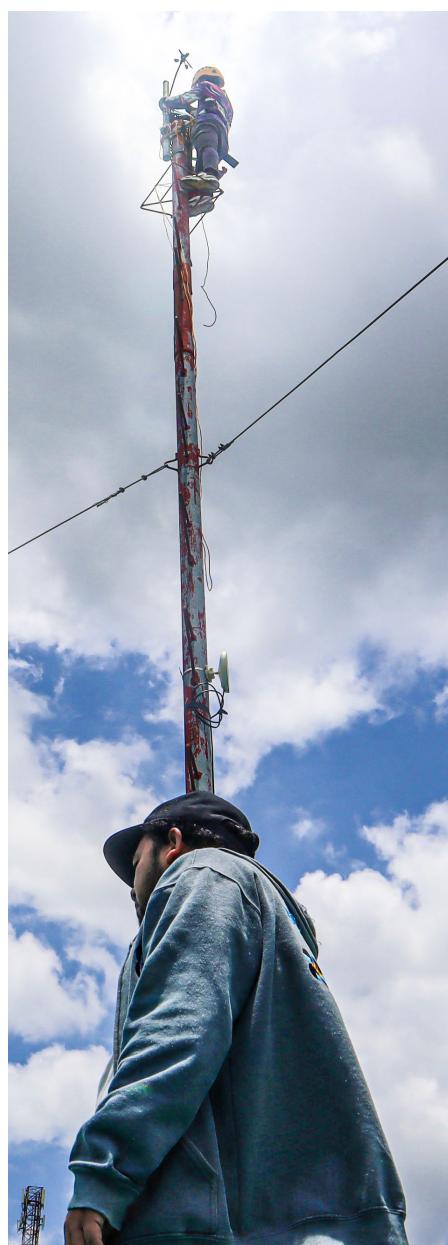
By: Christian Jastine V. Mendoza

The Department of Science and Technology (DOST-1) through the Provincial Science and Technology Center- La Union (PSTC-LU) awarded Automatic Weather Station (AWS) to LGU-Santol, La Union thru the Municipal Disaster Risk Reduction Management Office (MDRRMO) on April 19, 2022.

The Municipality of Santol, situated in mountainous areas, is very prone to the impacts of calamities. The communities rely mostly on radio, TV, and SMS for information regarding weather forecast. They have been trained for First Aid, Basic Life Support, and Rescue and operations for their DRRM preparedness. Under the DRRM and Climate Change Adaptation of the Community Empowerment thru Science and Technology (CEST) the Automatic Weather Station was identified as one of the technology-based interventions to acquire data on surface weather observations like temperature, wind speed, wind direction, precipitation, humidity, atmospheric pressure, and visibility that will help the MDRRMO of Santol be aware of the weather conditions. "This will help us be accurate on our responses when a natural calamity, particularly typhoons, hit our town",

Mr. Raymond Ardee Soriano, Computer Maintenance Technologist of DOST 1, is the resource person for the orientation on functions and how to operate the Automatic Weather Station. Mr. Soriano, also installed Weather Vision, the console/software for recording the gathered data of the AWS transmitted to the server of the MDRRMO.

"Agyamyaman kami manen ti DOST para atuy nga equipment nga makatulong ti preparedness for DRRM" (We are very thankful once again to DOST for the equipment that will help us in DRRM preparedness) Engr. Ronald Toyaoan, Head of Municipal Planning and Development Office (MPDO) said with gratitude. The CEST program, through technology and science-based intervention, will continue to transform disadvantaged and marginalized groups of society into a progressive, resilient, and empowered community.



# DOST 1 Awards Sugar Cane Crusher to Green Valley United Cooperatives

By: Christian Jastine V. Mendoza



The Department of Science and Technology (DOST-1) through the Provincial Science and Technology Center- La Union (PSTC-LU) awarded Sugar Cane Crusher/Juicer worth Php195,000.00 to Green Valley Cooperatives in Naguilian, La Union last April 25, 2022 under the Small Enterprise Technology Upgrading Program (SETUP).

Vinegar, is one of the must-have condiments in every Filipino Kitchen. The Municipality of Naguilian is known for its wine (basi) and vinegar derived from sugarcane and serves as its One Town One Product (OTOP). In 2014, the Local Government Unit of Naguilian provided production area for GVUC located at the Agricultural Complex in Brgy. Cabaritan Sur. The cooperative also received technical assistance, particularly from Department of Agriculture Region 1 (DAR-1) and was a beneficiary under Grants-in-Aid program of DOST in CY 2011.

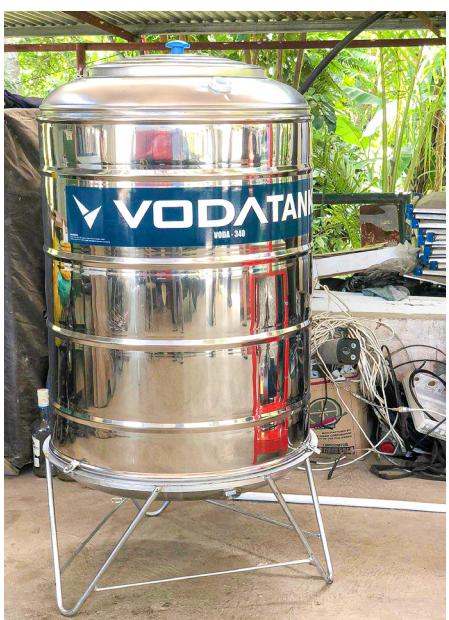
During the Technology Needs Assessment (TNA) to GVUC thru Mr. Elpidio B. Mendoza, manager/board member, it was found out that the

sugarcane crushing process is being outsourced to a third-party operator that is taking 10% of the cooperative's total generated income.

The intervention saw an increase to GVUC's vinegar and basi productivity by 31% and 22%, and an increase in sales by 20% and 39% respectively.

The equipment is a 10HP Sugarcane Crusher/Juicer with primary and secondary filter system, transfer pump, and storage tank (100Liters) to the members of GVUC. PSTC OIC Engr. Edison Acosta demonstrated how the equipment works and explained the efficiency to the production process of sugarcane wine and vinegar that also complies to food safety and current good manufacturing practices being promoted by DOST.

The Department of Science and Technology through SETUP will continue to maximize the potential of our MSMEs in Region 1 to help build the economy of the nation.



# Sual's Agri and Dried Fish Industries get major boost from DOST 1 iSTART Program

By: Monique C. Esguerra



from front page...

The iSTART Program aims to support the development of local government units (LGUs) by accelerating regional growth through science, technology and innovation and to attract new technology-based investments based on the validated development plans.

Ms. Florencia G. Guanzon, Municipal Agriculturist of Sual remarked, "DOST has given us a lot through the iSTART Program. It is a joy of Municipal Planning Development Council (MPDC) and Municipal Agriculture Office (MAO) to have been recipients of these equipment. Iyan na project pinagaaralan ng DOST bago ibigay sa atin, nawa'y mahalin at alagaan natin para tumagal na magamit (Before the project was given to us it was thoroughly studied by the DOST. May we love and take care of it so we can use it for a long period of time)." She expressed her support to the interventions that DOST will be giving to other associations in Sual.

Meanwhile, DOST 1 Regional Director, Dr. Armando Q. Ganal uttered about Sual as the pilot municipality

in the 1<sup>st</sup> district of Pangasinan to have been chosen for the iSTART Program, emphasizing its significance to the development of the municipality.

Also present in the awarding ceremony are Municipal Administrator Mr. Christopher B. Babera, Municipal Budget Officer Ms. Christina Gonzales, Officer-in-charge Public Employment Service Office (PESO) Manager Ms. Janette Andaya, Municipal Tourism Officer Ms. Ma. Regina Laya and Officer-in-charge Municipal Planning Development Coordinator and iSTART Focal Person Ms. Michelle Benito along with other LGU staff.

After the awarding ceremony, the representative of Bestmark Agro Industrial Manufacturing Corporation demonstrated the proper use of the granulator machine to the members of the Matico Farmers with its President, Mr. Manuel Mundo and Mr. Ruel Torres of Genlex Trading OPC oriented the members of Sual Dried Fish Vendors Association the proper use of the Multi-Commodity Solar Tunnel Dryer (MCSTD).



# DOST 1 awards 2.645M Innovation Enabling Fund to 3 Firms in Ilocos Sur

By: Laurine R. Sales



**V**IGAN CITY, ILOCOS SUR – The Department of Science and Technology Provincial Science and Technology Center – Ilocos Sur (DOST PSTC-IS) turned-over a total of Php2,645,000 financial assistance to three (3) cooperating firms under the Small Enterprises Technology Upgrading Program (SETUP).

Among the beneficiary MSMEs receiving the fund are Torres Rice Mill in Cabugao with Php2,400,000, E.P Medrano Furniture Shop in Bantay with Php160,000, and Php85,000 to Eunice Furniture in Sinait.

Before the awarding, Dr. Armando Q. Ganal, DOST 1 Regional Director presented the Memorandum of Agreement (MoA). He emphasized that the firms are expected to increase their income and productivity through the interventions. He added that if the firms have a good standing in their refund, they could avail of a second phase of the program.

Engr. Jordan L. Abad, Officer-in-Charge of the PSTC-IS also agreed that the firm who has a good performance and can attain the objectives of the project by improving productivity and

income among other qualifications, they could possibly be nominated as the Best SETUP adoptor in the province.

Dr. Ganal and Engr. Abad personally awarded the cheques to the firm owners.

Mr. Arden S. Torres, owner of Torres Rice Mill expressed his thanks to the agency that through SETUP, they are expected to improve the quality of their product thus, increase their productivity and income. The firm is set to acquire a color sorter machine for their operations. Meanwhile, E.P. Medrano Furniture Shop and Eunice Furniture are set to acquire a 1 unit 24" Flywheel Bandsaw, each.

The SETUP intends to support the Micro, Small and Medium Enterprises (MSMEs) through provision of technology-based interventions to existing firms to upgrade their business.

For this year, PSTC-Ilocos Sur aims to provide assistance to 11 firms in the province. For interested MSMEs who want to avail of the program, may reach PSTC-IS thru email at the [ilocossur@region1.dost.gov.ph](mailto:ilocossur@region1.dost.gov.ph) or thru mobile numbers 0998-962-0231 and 0998-962-0230, respectively.





## DOST 1 resumes on-site TNA Validation after 2-year pause

By: Bernaly P. Martinez

The Department of Science and Technology (DOST-1) resumed on-site TNA Validation for its 2022 Small Enterprises Technology Upgrading Program (SETUP) and Community-Based Project (CBP) proposals in Pangasinan on March 30-31 and April 6, 2022, after it was stopped in 2020 due to the province's existing Alert Level 1.

The 11 firms validated under SETUP were RDG Machine Shop (Rosales), Yambang Enterprise (Urdaneta City), CIJ Farm Products (Pozorrubio), DL Hatchery & Balut Industry (San Jacinto), Mimi's Cacao Processing (Mangaldan), Jarold's Food Products (Bonuan), Bauzon Rice Mill (Calasiao), Dorevi Industries, Bandulf Industries, Brod Head Trading and RFG General Merchandise (San Carlos City).

Moreover, the five (5) community-based cooperatives and associations were Cacao Growers & Marketing Cooperative of Pozorrubio, Dimantal Tribe Indigenous P4MP Inc. of Bugallon, Maaligwas Balite Sur Farmers Association, San Carlos Bolosan Farmers Irrigators Association and Paitan-Panoypoy Farmers Association from San Carlos City.

SETUP and CBP are the flagship programs of the DOST on technology transfer and commercialization.

These programs aim to provide technology interventions to firms and organizations to improve productivity and quality of products.



# Managing biodegradable wastes to enrich the soil!

By: Jennifer C. Fernandez

The Department of Science and Technology 1 (DOST 1) through its Provincial S&T Center (PSTC) in Pangasinan, in collaboration with the DOST- Industrial Technology Development Institute (DOST- ITDI), conducted a technology training on the operation of the 100kg- capacity Dual Drum Composter in Barangay Diaz, Bautista, Pangasinan on June 14,16 and 20, 2022 respectively.

11 participants including the facility personnel of Barangay Diaz underwent a three-day virtual training as part of the Community Empowerment thru Science and Technology (CEST) program's effort to improve the management of biodegradable wastes and later establish an organic fertilizer facility to generate additional income in the community.

DOST-ITDI specialists discussed the technology and the composting process including the equipment's parts and maintenance procedures. On their first session, the participants undertook a hands-on activity for the preparation and initial loading of the start-up mixture for the composter. Agricultural wastes like rice straws and dry corn leaves were shredded and added to make the start- up load.

Mr. Ricky Esmeña, one of the participants said during the open forum that this new learning is another venue for the farmers to start leveraging the management of agricultural and household wastes in the community. They are considering the possibility of using the end product- compost as a soil conditioner to their farmlands to minimize their expenses as the price of synthetic fertilizer continues to increase in the market.

Currently, the operators have loaded their second batch of mixture in the dual drum composter.





## DOST's National S&T Exhibit lands in Region 1

By: Monique C. Esguerra

The Department of Science and Technology- Technology Application and Promotion Institute (DOST-TAPI), in partnership with SM Supermalls and the DOST Regional Office 1, revealed that one of the best science, technology, and innovation exhibits is at SM City Rosales in Pangasinan during the recently concluded National Science and Technology Promotion and Exhibit (NSTPE) on April 23-27, 2022.

The event aimed to promote the assisted intervention given to the micro, small and medium enterprises (MSMEs) all over the region. The products showcased in the exhibit are manufactured by the supported firms of DOST 1 in the provinces of Ilocos Norte - Bakers PH; Ilocos Sur - Onacoli Food Products and Royal Maharlika Wellness and Livelihood Training Center; La Union - Tessie Mushroom House Food Products and Jobi's Mushroom Products; and Pangasinan - Elisha Bay Dagupan Bangus and Seafoods, 1Food Corporation, Nutridense Food Manufacturing Corporation, Dinalupig and Gabrielle Food Products Trading and Marsse Tropical Timber Plantation, Inc.

DOST-developed technologies were also promoted such as the DOST-Forest Research and Development Institute's (DOST-FRDI's) anti-microbial bamboo hand soap and hand mist, STII's STARBOOKS, MIRDC's Hybrid electric road train, PCIEERD's Charging in Minutes (CharM), mobile COVID-19 Specimen Collection Booth, Smart Surface, PNRI's Honey Authentication and Fingerprinting technology, and PTRI's Philippine tropical fabrics.

Science for the People Books series: Science for Social Change, Science for Success and Science for Scale and Onward: A compilation of DOST-developed technologies were also featured.

A total of 220 participants from different government agencies and organizations, students and teachers from educational institutions, fabricators, MSMEs and private individuals, visited the physical exhibit. Through the exhibit, the proponents reiterated the importance of working together in creating solutions to the most pressing ecological concerns of today.



Currently, DOST-TAPI offers programs and services that are unique to the Institute, such as Intellectual Property (IP) rights protection, technology valuation, marketing and promotion, and venture financing, among others.

DOST 1 will continue to empower MSMEs through SETUP Program which is a strategy to address their technical problems and improve productivity and efficiency thru technology acquisition, human resource training, functional packages and labels designing, product testing, and many others. (SDG 8)



# DOST 1 awards ICT equipment to DZAG Radyo Pilipinas Agoo

By: Carla Joyce B. Cajala



**A**GOO, LA UNION- The Department of Science and Technology Region 1(DOST1) awarded Information and Communications (ICT) equipment to DZAG Radyo Pilipinas Agoo on May 31, 2021.

DOST 1, through Assistant Regional Director for Technical Services Racquel M. Espiritu, Officer-in-Charge for Field Operations Jonathan M. Viernes, handed one (1) computer set to Station Manager Maricel Fronda as support to their advocacy in bringing relevant news and information to the people.

DOST 1 Regional Director Armando Q. Ganal conveyed his message through Mr. Viernes, thanking them for the collaborative

partnership and hoping that the ICT equipment would help them bring science, technology, and innovation (STI) closer to the people. DOST 1 envisions a stronger collaboration with DZAG Radyo Pilipinas Agoo in bringing science closer to the people of region 1 through Tekno Presyensya interview programs, S&T information dissemination, and promotion of STI programs, projects, and activities.

DZAG Radyo Pilipinas Station Manager Fronda, expressed her heartfelt gratitude to DOST 1 for the unwavering support and looks forward to assisting them in their advocacy and promotion efforts.

"Our program Tekno Presensya has been a great effort in not just informing important facts to the populace but bringing science and technology closer to the people. As always, thank you very much for your support and trust to DZAG Radyo Pilipinas Agoo. Hoping that this endeavor will last as we continue to be of service to the Filipino people," Station Manager Fronda remarked.

The activity coincides with the ICT month, through Proclamation No. 1521, series of 2008, declaring the month of June 2008 and every year thereafter as "National Information and Communications Technology Month".



# DOST Trains Ilocos Fisher Folks on Tilapia Processing as part of the Tilapia para sa Pamayanan sa Amianan Project

By: Mc Prince Canosa

The Department of Science and Technology Regional Office 1 (DOST) thru its Provincial Science and Technology Center - Ilocos Sur (PSTC-IS), conducted a Training on Tilapia Fish Processing in Sta. Catalina, Cabugao and Caoayan, Ilocos Sur last June 9 and 10, respectively.

Thirty-one (31) participants participated in the training from the two sites with 12 coming from Sta. Catalina, three (3) members of Northern Ilocos Sur Agriculture Cooperative from Cabugao, and 16 participants from Caoayan.

During the training, Engr. Jordan L. Abad, OIC of PSTC-IS, talked about the importance of value addition and encourages technology adoption to increase higher income. He also reiterated that this activity is part of the tilapia project initially providing inputs for tilapia production in several sites within the three municipalities.



"Makita nga adda potential na nga agsucce daytoy basta ti number one is commitment (We can see that it has a potential to succeed if there is commitment)," said Mrs. Benedicta Quiicho, Municipal Agriculture Officer of Caoayan.

On the other hand, Mayor Rapanut of Sta. Catalina encouraged the participants to venture into processing as they aim of establishing a fish processing center there.

Developed products during the training included tilapia ice cream, tilapia longganisa, tilapia kroepoek and tilapia bagoong. Bagoong is an added topic using the intestines of tilapia as by-product during the processing. Mrs. Carmencita A. Saladino, Chief, Marine - based Processing Center of Mariano Marcos

State University – College of Aquatic Science and Applied Technology Campus in Currimao, Ilocos Norte, introduced these technologies.

Meanwhile, Mrs. Gina A. Mendoza, Instructor II of Ilocos Sur Polytechnic State College – Narvacan Campus, shared her expertise in the processing of Smoked Tilapia and Tilanggit.

"We hope for your continuous support DOST, and we are very much thankful," Mrs. Melody Baclig, a participant from Cabugao, said as she expressed how grateful she is to be a part of the project.

The training was in collaboration with the Local Governments of Cabugao, Caoayan and Sta. Catalina, Mariano Marcos State University and Ilocos Sur Polytechnic State College



# DOST-PSTC-La Union awards Iron-fortified Rice (IFR) and Ready-To-Eat (RTE) Chicken Arroz Caldo to PHO La Union

By: Catherine M. David



The Department of Science and Technology Region 1 (DOST 1) through its Provincial Science and Technology Center – La Union (PSTC-LU) awarded ninety-nine (99) sacks of Iron-fortified Rice (IFR) and forty-seven (47) boxes Ready-to-eat (RTE) Arroz Caldo to the Provincial Health Office La Union (PHO-LU) on June 15, 2022.

Present during the awarding is the Officer-In-Charge of PSTC-LU Engr. Edison M. Acosta, Nutrition Officer II of PHO-LU Ms. Jenny B. Apilas representing the Provincial Government of La Union (PGLU) and Provincial Nutrition Committee, together with Ms. Jeovy Gayo, Ms. Dina Laciapag and Ms. Jennica Padilla, Municipal Nutrition Action Officers of Agoo, Aringay and Tubao, Ms. Isidra Alambra and Ms. Gloria Lavida, Barangay Nutrition Scholar (BNS) president of Sto. Tomas and Rosario, respectively.

Iron-fortified rice (IFR) is a technology developed by the Department of Science and Technology-Food and Nutrition



Research Institute (DOST-FNRI) to help address iron deficiency anemia (IDA). IFR is an enriched rice made by blending Iron Rice Premix with ordinary rice using an efficient blending machine.

Moreover, RTE Chicken Arroz Caldo is technology developed by the DOST- Industrial Technology Development Institute (DOST-ITDI) to address immediate hunger and to provide ready-to-eat with longer shelf-life and safe food during calamities.

In support to the advocacy of PGLU to fight iron deficiency syndrome, the PHO will promote the ordinance and disperse IFR to nutritionally at risk pregnant women for dietary supplementation for 90 days in the municipality of Rosario and Sto. Tomas and other municipalities. The RTE Chicken Arroz Caldo will also be dispersed for dietary supplementation for 60 days to the wasted pre-school children ages 1-59 months old in the municipalities of Tubao, Aringay and Sto. Tomas.

# DOST 1 plans ahead for oneSTore.ph Hub re-opening

By: Rio Dyan B. Adviento



The Department of Science and Technology Region 1 (DOST1) meets with the City Government of San Fernando, La Union on May 16, 2022 to discuss about the possible re-opening of the oneSTore.ph Hub in the city.

DOST 1 was represented by Assistant Regional Director (ARD) for Technical Services Racquel M. Espiritu, Provincial Science and Technology Center- La Union Officer-in-Charge, Edison M. Acosta, and Gender and Development (GAD) Staff Rio Dyan B. Adviento while Ms. Rizalyn Medrano, head of Local Economic and Business Development Office (LEBDO) represented the City Government.

In line with SDG 12- Ensure sustainable consumption and production patterns, oneSTore.ph is a nationwide e-commerce Web application that caters primarily to Filipino customers. It aids Micro, Small, and Medium Enterprises (MSMEs) supported by DOST in expanding their target market. It may eventually assist rural towns in achieving economic growth and expanding business options.

ARD Espiritu highlighted the prioritization of handicrafts and local products of the City of San Fernando to be included in the Hub.

In response, Ms. Medrano proposed the inclusion of the Income Generating Products (IGP) of different barangays in San Fernando to be worked out such as the ube wine of Barangay Langcuas, salabat brew of Barangay Cabaroan and lemon grass tea of Barangay Pagdalagan.

The GAD unit of DOST1 committed on the assistance and promotion of oneSTore.ph Hub and its products.

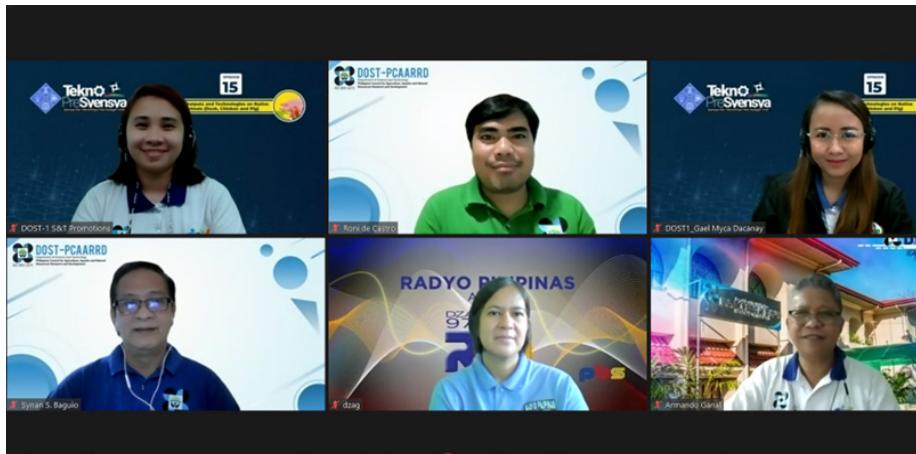
DOST1 will continue to coordinate with the City Government of San Fernando for the success of the oneSTore.ph Hub re-opening.



# Boosting Agriculture in the Philippines through Project SARAI:

## Why SARAI?

By: Carla Joyce B. Cajala



Currently...

According to the Philippine Statistics Authority (PSA), the value of production in agriculture and fisheries at constant 2018 prices contracted by -0.3 percent in the first quarter of 2022. Poultry registered expansion during the period while crops, livestock, and fisheries posted declines in the value of production. This decline can be attributed to some factors such as inadequate management programs on soil, expensive and inappropriate farm equipment for small farmers and climate change and natural disasters. Natural calamities such as typhoons and earthquakes are common in the Philippines. What is not visible is that most of the crops are unable to withstand such harsh weather. Droughts and other effects of climate change may have a significant impact in the production of crops.

Conquering the challenge...

In the quest to improve the quality of life and achieve sustainable development in the scientific and technological sector of the country, the Department of Science and Technology- Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) in collaboration with the University of the Philippines, Los Baños, came up with Project SARAI which stands for

with Project SARAI - Smarter Approaches to Reinvigorate Agriculture as an Industry in the Philippines. It is a DOST-PCAARRD-funded action research project aimed at decreasing climate risks by providing agricultural stakeholders with site-specific crop advisories. It is built on the foundation of sustainability, with multi-level cooperation ranging from local farming communities to national agencies. The goal is to have regional and community-level SARAI hubs in place, where farmers may go for up-to-date information and report initial agricultural problems.

Rice, corn, banana, coconut, coffee, chocolate, sugarcane, soybean, and tomato are among the crops targeted by Project SARAI. Crop warnings emphasize combining local meteorological data and drought forecasts with farm management actions, such as nutrient and water management, as well as proactive pest and disease monitoring.

How will Project SARAI deal with the factors affecting agricultural challenges?

Based on the principles and cited strategies of the Project SARAI, here are the different approaches of the project in dealing with the challenges of agriculture in the country:

a. Inadequate management programs on soil

Project SARAI conducts soil profiling and characterization to address this issue. Soil samples will be sent to a laboratory for physical, chemical, and mineralogical analysis. The lab's findings will serve as the starting point for researchers' fertilizer applications, as well as water and crop management. Crop modelers will use the same lab results as a baseline for their crop model development. Soil samples will be obtained and examined as needed or as required by the researchers during the crop's growing period. Soil moisture sensors will be embedded in various soil horizons, and changes in soil moisture will be monitored continually, the data will be shared to other researchers for irrigation management or crop modeling. This will allow for a better examination of soil profiles, enabling the use of appropriate approaches and techniques for proper soil management. (Project SARAI)

b. Expensive and inappropriate farm equipment for small farmers. SARAI-Enhanced Agricultural Monitoring System (SEAMS) is the program's proactive monitoring component for crop-environment monitoring and forecasting. It makes use of satellite images from the National Aeronautics and Space Administration (NASA), the European Union, and DIWATA 1. These remotely sensed data will be utilized as inputs for crop monitoring in near real-time, mapping actual area planted with specific crops, analyzing crop damage, and determining prospective breeding grounds for insect infestations and outbreaks. The SEAMS analysis can be distributed to municipalities and barangays. This provides more site-specific recommendations, which will benefit farmers. During Phase 1 of Project SARAI, SEAMS focused heavily on rice and corn; in Phase 2, the focus and bulk of operations will be on the other key crops.

The water management component of Project SARAI phase I provides chances for technology fabrication and development of a decision support system (DSS) for crop water management protocols. The water management component of the proposed Phase 2 will improve the design and manufacture of low-cost soil moisture meters and sensors, as well as deploy the units to more partner universities for more thorough validation and calibration processes. Furthermore, the water management component will cover all of the crops identified for SARAI Phase 2 as well. Cropping areas will be monitored, and models for an early warning system for drought and crop stress will be developed.

The crop protection component will cover all the primary pests and diseases for all of the selected crops. Its main results are a complete database of common pests and illnesses for crops in different locations, region-specific maps of likely pest and disease outbreak zones for certain crops, and pest management techniques. Crop protection seeks to make these outcomes available for all SARAI Phase 2 crops.

In coping with drought, the project will give policymakers, government agencies, farmers, and the public with the tools they need to build strategies to deal with the effects of forthcoming events by assessing and forecasting drought occurrences. These tools will take the shape of maps that will aid in determining the amount and scope of drought hazards. This initiative will also apply prior studies to participating agencies' operational actions, enhancing the country's drought mitigation capacities.

Drought and Crop Assessment and Forecasting (DCAF) is an applied science project that brings together the fields of agriculture, environmental science, hydrology, atmospheric science, and remote sensing with the goal of improving the ability to predict drought, assess crop yield, and mitigate the severe effects of drought. Its main goals are to

establish a technique for monitoring drought events and crop output using a combination of satellite and in-situ data, and forecast drought six months in advance using models that incorporate satellite and in-situ data.

c. Climate change and natural disasters. DOST-PCAARRD activities have created several automatic weather stations (AWS) across the country to solve this challenge. The public can get the processed weather data through a variety of channels and websites. These AWS are linked together via a network and database. The SARAI network currently consists of 18 AWS spread around the country. Seven additional AWS will be installed in regions 1, 2, 3, 4A, 8, 13, and CAR to supplement the existing AWS.

The expanded network of SARAI will increase the availability of weather and soil data in remote locations; the collected weather and soil data can be cross-checked against other AWS, improving and substantiating data reliability; and the initiative to build relationships among partner agencies for future research collaborations. Training on how to set up, use, and maintain the AWS will be provided to personnel from partner agencies. The project will also teach these folks how to use unmanned aerial vehicles (UAVs) and near-infrared reflectance (NIR) cameras for site-specific crop monitoring in their respective locations. These individuals will also be taught how to use software to handle weather data and aerial images for data analysis and interpretation.

In Region 1...

In the region, six (6) municipalities have undergone Project SARAI training. These municipalities are Sual, Bugallon, Malasiqui, Alcala, San Fabian and Balungao, all of which are from the province of Pangasinan. Of which, Alcala, Pangasinan, is set to adopt the AWS for weather forecasting.

During one of the episodes of Tekno Presyensya of DOST 1, where the Project SARAI has been featured, the LGU of Balungao has commended the project and looks forward to benefitting from it. Ms. Marilyn D. Lilagan, Municipal Agriculturist of Balungao, said that this will be a big help for the farmers in their municipality. Also present in the program are Ms. Rosemarie Laila D. Areglado, a researcher of Project SARAI from UPLB and Ms. Maria Regina V. Regalado, a former research associate for the project as well, from the same institution. They presented an outline of the project as well as how it will benefit the country's agriculture business.

Project SARAI Smarter Approaches to Reinigrate Agriculture as an Industry in the Philippines



# The 5 W's of Nutribun

By: Carla Joyce B. Cajala

from front page...

**N**utribun, or 'Nutrition in a Bun' is a fortified bread produced with wheat flour, nonfat dry milk, sugar, vegetable oil, salt, and yeast. Nutribun provides calories, protein, calcium, iron, and other nutritional elements that provide the children's need for micronutrients energy, and protein requirements.

## WHEN did it began?

Nutribun is a "ready-to-eat bread" that was given to children as part of supplementary feeding programs in the 1970s. It is a bread product used in primary school feeding programs in the Philippines to address child malnutrition, first as part of USAID's Food for Peace program from 1971 to 1997, and then as part of child health programs in several Philippine municipalities.

According to a United Press International report, the entire Luzon was declared a "state of public catastrophe" on July 12, 1972, after Typhoon Gloring triggered severe flooding from July 10 to July 25, killing at least 543 people (UPI). Nutribun gained popularity during this catastrophe, dubbed the "Great Luzon Flood of 1972," when millions of buns were handed, or as witnesses described it, "airdropped" to residents in areas severely devastated by the disaster.

## WHAT is new with Nutribun?

The Enhanced Nutribun (E-nutribun) was developed in compliance with the DSWD's Memo Circular No. 12 Series of 2020 - Guidelines in the Implementation of the Supplementary Feeding Program During Community Quarantine or Other Similar Circumstances. The circular made it clear that nutribun will be provided to the DSWD's supplementary nutrition program.

Similarly, the Department of Health released Nutrition Cluster Advisory

Similarly, the Department of Health released Nutrition Cluster Advisory No. 2 Series of 2020, through the National Nutrition Council, regarding Nutrition Cluster recommendations on healthy and nutritious family food packs and sustainable food sources. Local government units (LGUs) were urged to employ the Department of Science and Technology's Food and Nutrition Research Institute (DOST-FNRI)-developed goods for their supplemental feeding program, especially the Rice-Mongo blend formulation.

In response with these, the DOST-FNRI reformulated the ingredients to come up with an "enhanced nutribun" or e-nutribun with softer texture, likable taste, easier for children to hold and bite, and healthier which contains micronutrients, particularly iron and vitamin A. Each serving of E-Nutribun weighing 160-165 grams per piece, has 504 calories, 17.8 grams protein, 6.08 milligrams iron and 244 micrograms vitamin A. Later that year, on July 29, DOST-FNRI soft-launched the Enhanced Nutribun.

The first variant of Enhanced Nutribun released by DOST-FNRI was the squash variant, which the agency said is rich in fiber, energy, protein, calcium, potassium, iron, zinc, and vitamin A and has no trans-fat, cholesterol, artificial flavor, or food coloring. The following year, the DOST-FNRI launched the carrot variant in April and the sweet potato variant in October.

## WHY e-nutribun?

165 grams of e-nutribun provide 96 percent of the daily required calorie intake, 17 grams of protein, 6 milligrams of iron, and 384 micrograms of vitamin A.





Calories are energy sources that are required for respiration, blood circulation, cell repair, and other biological activities. Protein aids in tissue repair and growth, as well as allowing metabolic responses and coordinating biological activities. Iron is necessary for bodily growth and development, as is Vitamin A, which is required for normal vision, immunity, reproduction, and growth and development.

It has also additional nutrients like ascorbic acid, also known as Vitamin C, which is necessary for the formation of blood vessels, cartilage, muscle and collagen in bones and is vital for the body's healing process, thiamine, or Vitamin B1, which allows the body to help convert food into energy, Riboflavin, also known as Vitamin B2, which helps break down carbohydrates, proteins, and fats to produce energy and Niacin, Vitamin B3, a vitamin which helps keep a person's nervous system, digestive system, and skin healthy.

#### **WHO can benefit from the e-nutribun?**

The current formulation, however, is done by an all-Filipino team from DOST-FNRI. They started reformulating enhanced nutribun from the original formulation of squash bread, which the Institute developed way back in 2003. It was not copied from any foreign formulation. It was developed by Filipinos for Filipino consumers focusing on the needs of school age children, 6-9 years old.

The Enhanced Nutribun was developed to address the still-growing issue of malnutrition in the country, especially amid the ongoing global health pandemic caused by COVID-19.

Based on the 2018 Expanded National Nutrition Survey, children aged 6-9 years old have 63.1% vitamin A inadequacy, while those in the 10-12 years old bracket have 76.1% vitamin inadequacy.

According to the DOST-FNRI, the product is not only good for young children but also for the other population groups, particularly, pregnant and lactating women, and our senior citizens. Even the well and healthy population need products like the enhanced nutribun.

#### **WHERE is Nutribun manufactured and marketed in region 1?**

One of the first adoptors of the Enhanced Nutribun is the Nutridense Food Manufacturing Corporation (NFMC) which is a leading manufacturer of research-based food products in the Philippines. The company inspired by its mission to help reduce malnutrition is located at Brgy. Malanay in Sta. Barbara, Pangasinan.

NFMC offers food products for nutrition programs using technologies developed by DOST-FNRI and standards recommended by Global Partners and Organizations.

NFMC can produce 30,000-50,000 pieces of E-nutribun a day with their current facility. The company partnered with the Department of Agriculture to connect them with squash farmers in the province to supply them for their raw material requirement. The NFMC's e-nutribun has two variants, 80grams and 160grams which costs Php 8.00 and Php15.00, respectively.

Aside from NFMC, several business establishments in region 1 are already manufacturing the e-nutribun. To enumerate, Bakers PH from Ilocos Norte, C.T. Cosmos Bakery and Grocery in La Union, Louis Roy Bakeshop in Mangatarem, Pangasinan, Planas Bakeshop in Sual, Pangasinan, and Mayfair Bakeshop in San Carlos City, Pangasinan



# A day to remember: DOST Scholars from Ilocos Sur and Ilocos Norte attend Exit Conference

By: Mark Daniel D. Devis



The Department of Science and Technology scholars from the different universities of Ilocos Sur and Ilocos Norte gathered up at the Center of Teaching Excellence hall of Mariano Marcos State University (MMSU) College of Teacher Education in Laoag City, Ilocos Norte for the 2022 DOST exit conference last April 8, 2022.

The conference highlighted the importance of scholars in strengthening the workforce of the country as stipulated in their scholarship agreement with DOST. Aside from that, this conference also served as an avenue for the introduction of the vast network of DOST that is beyond the Scholarship unit. Different scholarship opportunities were also highlighted, giving the future graduate scholars different options to choose from, in case they pursue higher education.

The scholars and other participants from all over the region were welcomed by the hospitable words of Dr. Jan Rich A. Guira, the Director for Student Affairs and Services of MMSU. Dr. Guira also flexed the outstanding feat that MMSU has attained these past years.

DOST Secretary Fortunato De la Peña inspired the scholars as he commended them for their quick thinking and their willingness to help those in need during the height of the pandemic. Secretary Fortunato De la Peña gave emphasis on the importance of the conference, especially on how such activity can direct scholars to further their journey and to be a greater asset to a better Philippines.

MMSU President Shirley C. Agrupis, thru Dr. Nataniel Alibuyog the Vice President for Research and Development, extended her warmest welcome to the DOST scholars and mentioned how crucial the role of scholars are in building the backbone of a bright future for every Filipino. Meanwhile, DOST I Technical Scholarship Coordinator Adelisa C. Florendo, presented the different programs, project and activities of DOST 1, such as S&T Scholarship Programs, Small Enterprise Technology Upgrading program, among others.

Mr. Lysander N. Espejo of the Department of Education (DepEd) Ilocos Sur Division, on the other hand, discussed about the different opportunities that the scholars are to expect from the education sector such as the RA 10612 which helps employ scholars as Special Science Teacher 1. Meanwhile, the scholars under RA 7687 and Merit programs are assisted by the DOST 1 and the DepEd Region 1 on their employment to the different schools. Mr. Espejo highlighted the fact that scholars under the education sector are employed within the region to let them take part in the development of Region 1's educational sector.

Ms. Venus P. Andaya of DOST introduced the different scholarship programs that are available for scholar graduates to avail if ever they are planning to pursue higher education. Also, she reiterated the restrictions that are part of the agreement with DOST-SEI.

And to highlight the event is the sharing of DOST scholar graduates' journey towards success. Mr. Stephenleigh A. Guittap, a scholar graduate and currently a Special Science Teacher 1 (SST1) at Ferdinand E. Marcos Senior High School (FEM SHS), focused on the concept of being okay. His most notable words are, "Kaya yan" and "Ok lang yan." Words that he longed to hear from others when he was a graduating student and about to take the board exam. Since he was not able to have someone to say those words, he did not waiver to be that person for his siblings. He assured them that it is good to feel doubtful and scared at some point and that they can surpass such uncertainties and that they can all do it. On the other hand, Ms. Abigail Faith C. Gaoat, also a SST1 at FEM SHS, focused on the the concept of T-R-E-S. An acronym that is of great significance when it comes to talking about scholarship and maintaining it. TRES stands for treasure, remember, embrace and succeed. Four words that are very crucial for scholars to sail through the pressure and challenges that are part of being a scholar. Four words that can lead the scholars to calmer state of mind and eventually to success.

The last one to share her story was Ms. Cindy F. Utleg, a sholar graduate and a top 7 board passer of the 2022 March MTLE. Her story revolved around the concept that scholars have a heart and a purpose. It is evident from her journey as she coursed through the countless waves of challenges just to serve her purpose. She reiterated that finding our purpose can help us navigate better in our life and to device a better course to traverse.

After the heart-warming sharing from the scholar graduates, the participants sang the song "A Million Dreams" led by the scholars from MMSU. Before the conference officially ended, one last activity was initiated by Mr. Devis of Ilocos Sur. An activity in which the scholars got the chance to give their fellow scholars words of affirmation and wishes for the future. Words that each and every scholar will carry as they step out of their universities and to the real world.

# DOST-1 RSTL successfully concludes 3-day FDA audit

By: Lianne Kae Lazona



**S**an Fernando City, La Union – The Department of Science and Technology Regional Office 1 – Regional Standards and Testing Laboratory (DOST 1-RSTL) underwent a 3-day on-site audit administered by the Food and Drug Administration (FDA) on May 18-20, 2022.

DOST-1 RSTL is an FDA Accredited Laboratory for Chemical and Microbiological Testing. The purpose of the audit is to continuously recommend the accreditation of testing laboratory that can assist FDA to provide analytical services based on the existing standards and guidelines of International Organization for Standardization/International Electrotechnical Commission 17025:2017 (ISO/IEC 17025:2017).

Ms. Lena C. Rosario, a registered Chemist and the laboratory head of DOST1-RSTL led the said assessment with the technical staff from Chemical and Microbiological laboratories. Also present during the assessment were the Sensory Evaluation and Shelf-Life testing Laboratory.

The auditors from FDA Laboratory accreditation team were composed of four (4) assessors namely Mr. Phelan



G. Apostol, a registered Chemist and the team leader, together with his team members; Mr. John Mark Tan, Food Technologist, Mr. Jaymar L. Tuazon, Registered Chemist and Ms. Sasha L. Inso, Food Technologist.

The scope included the Quality System, Management and Technical Requirements in Chemical and Microbiological testing.

The auditors had a quick tour around the DOST 1-RSTL building to check the facilities and laboratories. The DOST-1 Regional Director, Dr. Armando Q. Ganal warmly welcomed the the team during their visit at the DOST 1.

Findings and observations have been deliberated on May 20, 2022 after the 3-day document review and in-between interview with the staff.

It was noted that the attitude and commitment of every personnel were highly commendable and as evident by their willingness to comply and improve their performance which was truly manifested by their unparalleled service to their clients who gave them a very satisfactory rating.

DOST 1-RSTL aimed to comply to all regulatory and statutory requirements resulting to the improvement of the services offered by the laboratory.

# Conquering the Covid-19 Pandemic: DOST 1 RxBox RMT attends Virtual Conference

By: Gael Myca A. Dacanay

The Department of Science and Technology Region 1 (DOST 1) RxBox Regional Management Team (RMT) attended the 5th RxBox Regional Coordinators' Virtual Conference on April 29, 2022, via Zoom Platform.

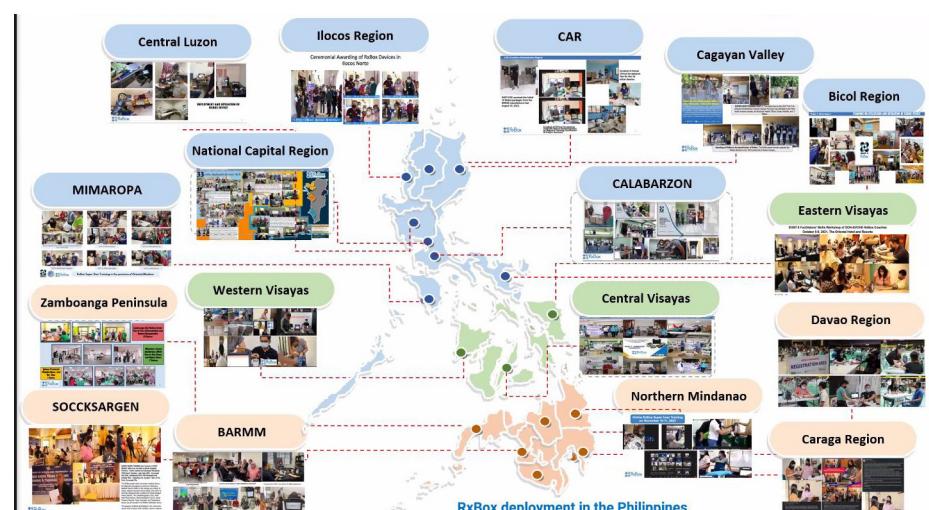
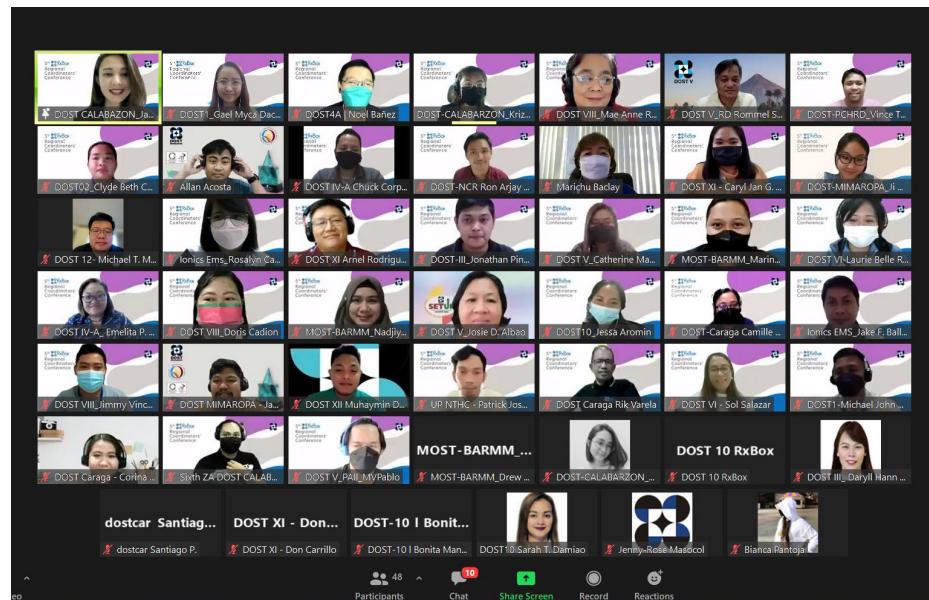
The conference was attended by DOST 1 RxBox RMT Regional Coordinator Michael John C. Maquiling and Regional Training Coordinator Gael Myca A. Dacanay. Updates and issues concerning the project implementation were discussed and sharing of current best practices in the roll-out of the RxBox devices in every region.

The RxBox device can limit interaction between patients diagnosed with COVID-19 and healthcare workers as it allows healthcare personnel to monitor multiple patients at once, including vital signs, oxygen saturation, and ECG data at the bedside, especially for those with severe or critical illnesses that require constant monitoring.

Currently, there are 411 devices deployed in 147 hospitals, 22 COVID-19 quarantine facilities and 242 Rural Health Units nationwide and 28 of which are deployed in the selected Rural Health Units (RHUs) in region 1. A total of 1,309 health care workers were trained to utilize the RxBox device and its sensors through blended training modalities.

The conference covered the presentation of the RxBox project overview, status and accomplishments, regional deployment, challenges encountered, and actions taken, and ways forward towards project completion.

DOST IV-A Regional Director Emelita P. Bagsit together with the



Ionics EMS, Inc. Senior Manager and Development Head Jake F. Ballares provided recommendations and actions on matters regarding deployment and utilization of devices. More so, creative videos from selected regional offices were presented to highlight their RxBox journey and best practices in the implementation of the project.

Despite the different challenges encountered under the project during the COVID-19 surge, the collaborative efforts of the different agencies and RxBox beneficiaries continue to take part to conquer the ongoing pandemic towards attaining good health and well-being (SDG 3).

# DOST 1 conducts training on teaching science and math language strategies

By Nikko S. Ofo-ob



The Department of Science and Technology Region 1 (DOST 1), in collaboration with DOST Science Education Institute (SEI), conducted the training entitled, "Language Strategies in Teaching Science and Mathematics," on April 20-22, 2022 at Hotelinda Suites, Vigan City, Ilocos Sur.

The training is in line with DOST-SEI's Science Teacher Academy for the Regions (STAR) with vision to develop professional learning communities that will sustain teacher capability building in the countryside and uplift the quality of Science, Technology, Engineering, and Mathematics (STEM) education in the Philippines. The goal of the training is to enhance the learning tools of math and science teachers from DOST 1 Community Empowerment thru Science and Technology (CEST) communities and teachers from municipalities of Ilocos Sur without DOST scholars.



Professors from STAR-partner universities served as resource speakers during the event, namely, Prof. Jo-an Cordovilla of Bicol University, Prof. Jonalyn Villarosa of Palawan State University, Prof. Dorothy Silva of Saint Louis University, Prof. Gerome Bautista of Saint Mary's University, Dr. Edwin Ibañez of Central Luzon University, Dr. Vida Antonio, Dr. Estrella Pacis, and Prof. Aleli Martin of Mariano Marcos State University.

Science and mathematics teachers were assigned to workshop sessions to come up with lesson plans implementing the learning tools.

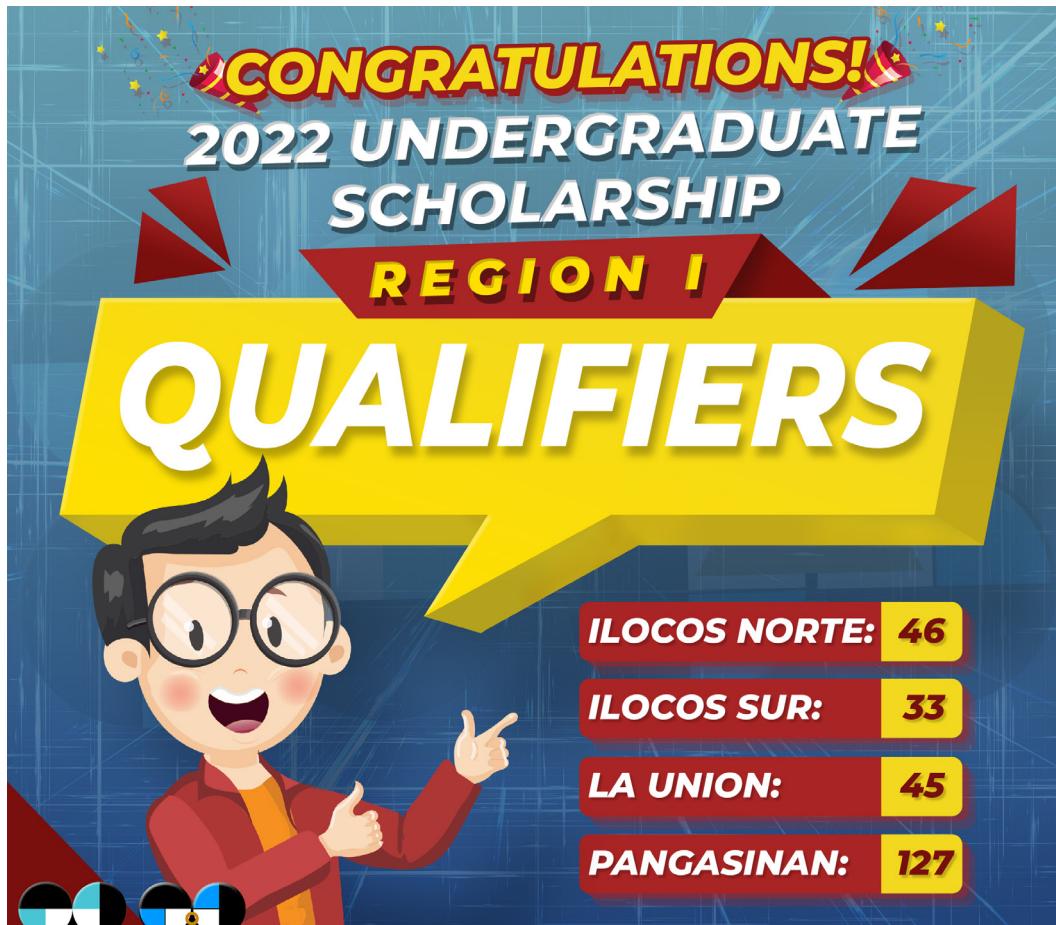
Mr. Renz Rouen R. Suyat of the Science group from Lussoc National High School, shared the group's

lesson plan entitled, "Distinguishes mixture from substances based on a set of properties" while Ms. Clarissa Mae M. Funtanilla, from Narvacan National High School, imparted the mathematics group's lesson plan entitled, "Illustrates a circle and the term related to it: radius, diameter, chord, center, arc, central angle, and inscribed angle".

As a Learning Action Cell (LAC) session, participants were grouped per municipality to come up with an action plan. Most of the groups planned to re-echo the three-day training to their co-teachers.

## DOST 1 confirms 251 new S&T qualifiers

By: Carla Grace R. Pacheco



The Department of Science and Technology - Science Education Institute (DOST-SEI) published the list of official qualifiers for the 2022 Science and Technology (S&T) Undergraduate Scholarship on June 12, 2022. (See enclosed list of qualifiers on pages 50-51)

The S&T Undergraduate Scholarship Program aims to stimulate and entice talented Filipino youths to pursue lifetime productive careers in science and technology and ensure a steady, adequate supply of qualified S&T human resources which can steer the country towards national progress.

This year marks the second year of adaptation of the selection scheme which includes data analytics and proxy indicators to determine the qualifiers in substitute with the national scholarship qualifying examination

"The Institute is pleased to award these scholarships to students who have indicated interest in careers in S&T. We believe that this year's batch of qualifiers will add to the pool of highly qualified scientists and engineers in the future and will take active participation and leadership roles especially in S&T research and development (R&D) activities," DOST-SEI Director, Dr. Josette T. Biyo, said.

Out of 10,487 new S&T qualifiers nationwide, a total of 251 hail from region 1. 100 of them qualify for the science and technology scholarship under Merit scholarship program and 151 for the RA 7687. There are those with lacking requirements (97) while 20 potential qualifiers are withheld to submit their lacking requirements for re-evaluation of the DOST-SEI.

The DOST-SEI Merit Scholarship Program, formerly known as the National Science Development Board (NSDB) or National Science and Technology Authority (NSTA) Scholarship under Republic Act No. 2067, is awarded to students with high aptitude in science and mathematics. Meanwhile, RA No. 7687, or the "Science and Technology Scholarship Act of 1994", provides scholarship to talented and deserving students whose families' socio-economic status does not exceed the set cut-off values of certain indicators.

Availing qualifiers will enjoy the monthly stipend, clothing allowance, tuition fee subsidies for those enrolled in private higher education institutions, transportation allowance, thesis allowance and group health and accident insurance.

# DOST 1 in full support to Second Quarter NSED

By: Gael Myca A. Dacanay

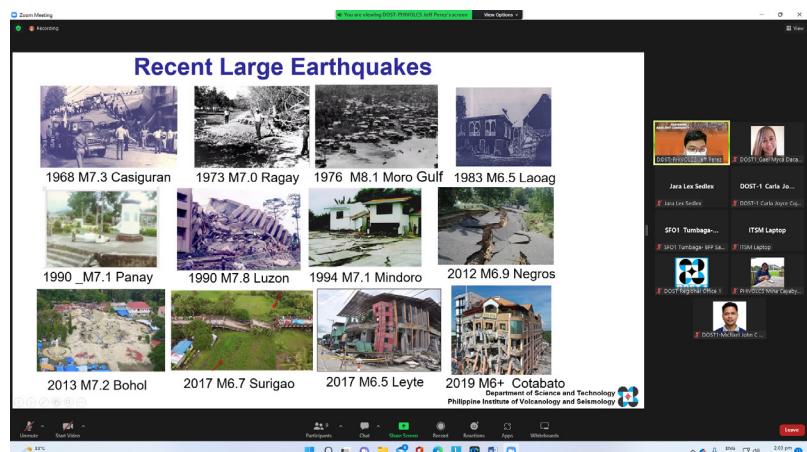
People's health, security, housing, and access to food, water, and other basic necessities are all impacted by disasters and significant catastrophes. As a result, improving disaster/emergency preparedness as well as reaction to various natural and man-made calamities is critical.

The Department of Science and Technology Regional Office No. 1, led by its Disaster Management and Health Services Unit (DMHSU) actively participated in the Second Quarter - Nationwide Simultaneous Earthquake Drill (NSED) on June 9, 2022, by conducting various activities which include the online ceremonial pressing of the button simultaneously done with the performance of the "Duck-Cover-Hold" while maintaining the minimum public health standards in the workplace. Photo Contest was also facilitated by the DMHSU participated by the different units of DOST. As part of the activity to promote awareness to disaster preparedness, the entries were posted through the DMHSU Facebook page to disseminate to the public the proper way of executing the "Duck-Cover-Hold".

Moreover, the Unit facilitated a webinar entitled "Fostering a Resilient Community: a Webinar on Earthquake and Fire Preparedness", which emphasized necessary information in preparing for disasters like earthquake and fire. The webinar was attended by DOST 1 staff and the public via Facebook LIVE.

Atty. Jasmin C. Bañez, Assistant Regional Director for Finance and Administrative Services, reiterated the importance of engaging in such activities to gain more knowledge and to take part in achieving resiliency in the community.

Mr. Jeffrey S. Perez, Supervising Science Research Specialist/Geologist from the Department



of Science and Technology - Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS) presented the earthquake hazards and preparedness for Ilocos Region. He stressed the actions to be undertaken before an earthquake happens which include familiarizing with one's workplace and residence, preparing emergency or survival kit and identifying safe and dangerous areas.

Senior Fire Officer 1 April Jhon A. Tumbaga from Bureau of Fire Protection - City of San Fernando Fire Station discussed the basic fire science concepts which comprise of the elements, stages and classes of fire. He also enlightened the participants on how to properly use a fire extinguisher. SFO1 Tumbaga stressed out several fire protection

participants on how to properly use a fire extinguisher. He discussed several fire protection strategies including fire safety at home and in the workplace.

DMHSU Head Mr. Michael John C. Maquiling expressed his appreciation to the speakers and attendees for their contribution and active participation to the different disaster preparedness activities conducted. He said that disaster preparedness is vital not only to the workplace but to the whole community, hence in connection to SDG 11 (Sustainable Cities and Communities), he encouraged everyone to continue to engage in different disaster awareness and preparedness activities to achieve a safe, resilient, and sustainable community.



starbooks11  
Sana A11  
Mga 1storya ng 1spirasyon

## DOST 1 bags 1st place in STARBOOKS Vlog Contest

By: Monique C. Esguerra

from front page...

The Department of Science and Technology Region 1 (DOST 1) bagged first place in the Vlog/ Documentary Contest for Deployment Officers among the four (4) entries from the different DOST Regional offices that competed for the most coveted prize on June 24, 2022, at the Philippine International Convention Center, Pasay City, in celebration of the 11th Anniversary of Science and Technology Academic and Research-Based Openly-Operated Kiosk Stations (STARBOOKS).

The DOST- Science and Technology Information Institute (DOST STII) initiated the vlog contest for the purpose of sharing the experiences of the Deployment Officers upon deploying the STARBOOKS especially to geographically isolated and disadvantaged areas (GIDA). Since 2011, STARBOOKS aims to reach far-flung communities to bring science & technology resources to students, researchers, and teachers.

The Chief and Information Resources and Analysis Division (IRAD) of STII, Mr. Allan Taule, praised how the DOST 1 team presented the experiences of the deployment officer in the Community Empowerment thru Science and Technology (CEST) area in Bagulin, La Union.

"In 2013, it is really hard to bring interventions to GIDA community, but I am delighted to be an instrument for bringing real science and intervention to the grassroots because it is used to provide quality education to the education system," Engr. Jordan L. Abad, former CEST focal person and deployment officer said in the winning entry of Sana A11: Mga 1storya ng 1spirasyon ng STARBOOKS Vlog Contest (Deployment Officers Edition).

Prof. Fortunato T. De la Peña, DOST Secretary, stated that he feels a sense of fulfillment when he saw the beneficiaries speak very highly

of DOST interventions, especially in STARBOOKS and how they really change the lives of the people.

Present during the awarding are Ms. Racquel Espiritu, Assistant Regional Director for Technical Services, Mr. Decth-1180 P. Libunao, Officer-in-charge for Field Operations, Engr. Jordan L. Abad, Officer-in-charge PSTC-Ilocos Sur, Mr. Michael John C. Maquiling, Head of ITSMU and STARBOOKS Regional Coordinator and Mr. Geamboy D. Morata, STARBOOKS Deployment Officer in Pangasinan.

The DOST 1 is happy to share the recognition with the provincial offices, especially the Deployment Officers of STARBOOKS, as well as to the members of the media core and to the rest of the workforce of DOST 1 who strived hard and continually leading the way through Science, Technology, and Innovation in the Region.



## FIC Technologies won TOP 10 Best North Luzon Food Products

Six (6) FIC developed technologies from Region 1 state universities Pangasinan State University and Mariano Marcos State University were among the Top 10 Best Product Finalists awarded during the North Luzon FIC Cluster Fair Marketing Academy held last May 11 - 13, 2022 at the Hotel Supreme, Baguio City. There were a total of 22 competing products during the event which were presented during the minimum viable product (MVP) presentation of various participants from Region 1, 2, 3, and CAR.

Two (2) PSU DOST 1-Food Innovation Center developed technologies, the Squash Pesto Sauce and Tomato Salsa in Pouch were awarded as Fourth Prize and Finalist Award, respectively. Both products were produced utilizing the water retort machine, one of the HITS (High Impact Technology Solutions) equipment rolled out by DOST to Regional FIC.

Mr. Felcris Z. Dy, PSU faculty researcher pitched the Squash Pesto Sauce while Ms. Meryl A. Bernardino, DOST1 FIC staff presented the Tomato Salsa technology. They were supported by Ms. Charissa De Vera, PSU faculty researcher and Ms. Jennifer Fernandez, DOST 1 -PSTC Pangasinan staff as part of the organizing committee and pioneer students of the Year 1 FIC Marketing Academy.

The FIC Marketing Academy is part of the project of the DOST-Industrial Technology Development Institute (DOST-ITDI) led by Dr. Zorayda Ang. The 3-day event was organized by Cluster A led by PD Nora Garcia as the Cluster Dean. On the first day, all the products were showcased and presented for pitching. A lecture on the Test Marketing Implementation was also delivered by Dr. Dave D. Centeno, Professor from UP Diliman. Awarding was done the next day followed by benchmarking to BSU ATBI/IC located in La Trinidad Benguet and to PSU DOST 1 Food Innovation Center in Bayambang, Pangasinan.



# DOST 1 participates in the RIACAT-CP-VAWC Regular Meeting

By: Rio Dyan B. Adviento

The Department of Science and Technology Region 1 (DOST 1) participated in the first regular meeting of the Regional Inter-Agency Committee Against Trafficking – Child Pornography – Violence Against Women and their Children (RIACAT-CP-VAWC) for CY 2022 on 27 April 2022 at Panlipunan Hall, Department of Social Welfare and Development Field Office I, City of San Fernando, La Union.

The activity was conducted to discuss the Regional Plan (CY 2022-2024) of the committee. With the aim to promote a Gender-Based Violence-free Region 1, the meeting focused on carrying out the committee's functions under the Laws of Trafficking In Person, Child Pornography, and Violence Against Women and Children.

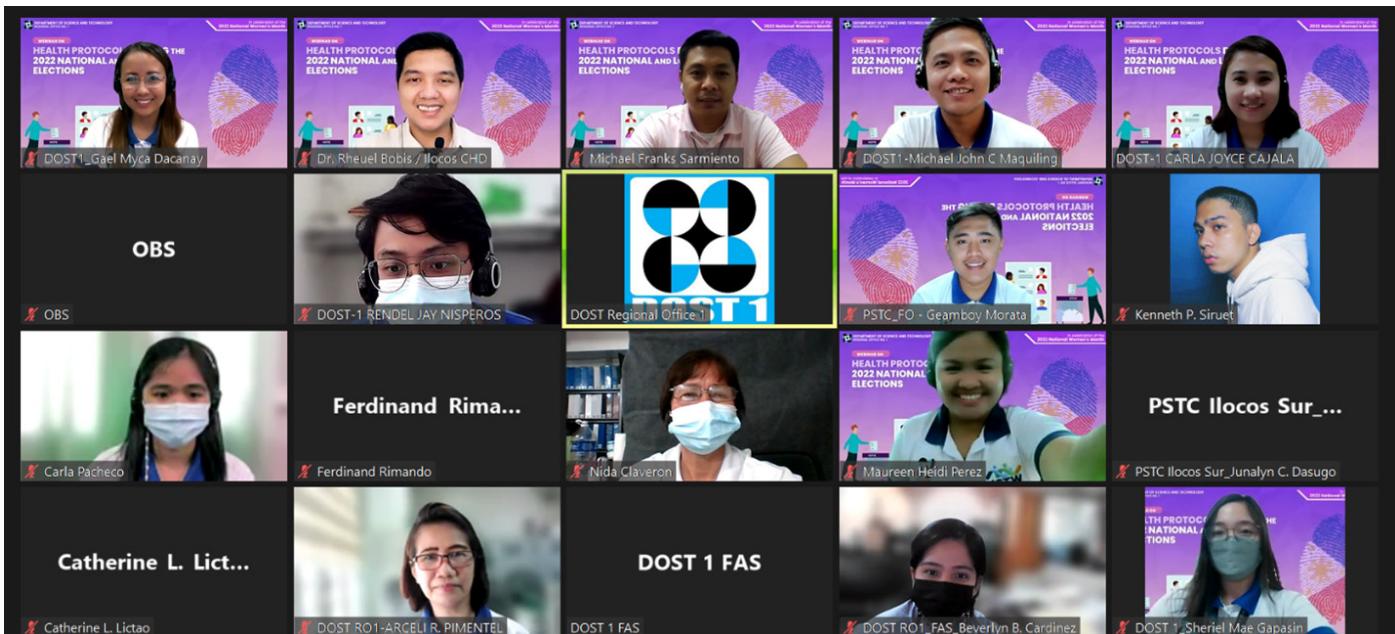
"We should not act as individual agencies, rather see the situation of children and women in Region 1 to come up with ideas on how we can assist them," RIACAT-CP-VAWC Chairperson and Regional Director Marie Angela S. Gopalan said. The highlights of the previous meeting and update therefrom, Draft Regional Plan, agreements relative to the preparation of agency report, and planned activities for the first Semester was presented by Miss Leilani F. Bolivar, Provincial Development Officer III and RIACAT-CP-VAWC Secretariat.

For the next three (3) years, the committee aims to implement the activities in accordance with the planned targets under each Key Result Area (KRA) namely KRA-I - Advocacy, Capability, Programs and Services,

KRA-II - Monitoring and Evaluation, Reporting (MER), KRA-III - Research and Policy Formulation (RPF) and KRA-IV - Linkages and Collaboration.

Furthermore, the body voted for the cluster heads in line with the formation of specific activities based on the KRAs' objectives. As an active member of the committee, DOST 1 will focus on KRA-I (Advocacy, Capability, Programs and Services) and KRA-IV (Linkages and Collaboration).





## DOST 1 supports Wise and Safe Voting

By: Gael Myca A. Dacanay

The Department of Science and Technology Regional Office 1 (DOST1) conducted a webinar entitled "Vote Wisely and Safely: A Webinar on Health Protocols during the 2022 National and Local Elections" via Zoom Meeting and DOST1 Facebook Page.

As DOST 1 Regional Director Armando Q. Ganal said, "Elections may be a moment of hope, bringing fresh beginnings, hope for a better future, and overall positive change," the webinar aims to equip the "Juans" and "Juanas" (men and women) with the updates to a free and fair, and safe election given the threat of the Covid19 pandemic.

Dr. Rheuel C. Bobis, Medical Officer IV of the Department of Health - Center for Health Development 1 (DOH - CHD 1) presented the changes that the pandemic has brought the community and to help stop the spread of the virus. He reiterated the basic steps tagged as "BIDA" which stands for Best-fitted mask all the time, Isolate/stay home when feeling sick, Double up protection with primary series and booster, and Airflow exchange is good.

To give emphasis, Dr. Bobis

to give emphasis, Dr. Bobis thoroughly discussed the COMELEC Resolution No. 10732 that includes the guidelines institutionalizing the new normal in the conduct of the in-person campaign, rallies, caucuses, meetings and conventions, motorcades and caravans and miting de avance and also the Minimum Public Health Standards (MPHS) prescribed by the DOH to ensure adequate air circulation and ventilation, maintain physical distancing of one (1) meter or more and proper usage of face masks and other personal protective equipment as may be necessary.

The DOH and its local counterparts shall closely monitor the compliance of all concerned with the MPHS and act in order to prosecute violators under the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act No. 11332 in order to have a safe and healthy 2022 elections.

Also present is an equally competent Resource Speaker Atty. Michael Franks Sarmiento, Election Officer IV of Commission on Elections, Dagupan City who discussed on Voter Education which includes the election period, campaign period, structural view of the voting center, and a review

of the official ballot and its parts. Atty. Sarmiento stressed on the DOs and DON'Ts to remember to ensure the fairness and smooth flow of the upcoming elections. He tackled about the 12 steps to be strictly followed when voting including temperature check before entering the voting center, knowing of precinct and sequence number through the Voters' Assistance Desk (VAD), verification of voter's name through the Electoral Board (EB), proper shading and registration of votes through the Vote Counting Machine (VCM), verification of receipts and having indelible ink prior to leaving the voting center.

In his closing remarks, Mr. Michael John C. Maquiling, ITSM Unit Head of DOST1 proudly shared the big accomplishment of DOST 1 during the recently conducted Electoral Board Certification as the agency continues to provide "Serbisyo para kay Juan at Juana" (services for men and women) towards safe and wise voting on the upcoming 2022 National and Local Elections. He thanked the resource speakers for sharing their knowledge and expertise relevant to the topic and reminded the participants to vote wisely while maintaining the minimum public health standards.



## DOST 1-PSU FIC, DOST-1 conduct lecture-demo on food research development, design

By: Engr. Maura Andrea A. Ortega

The Department of Science and Technology Region 1 - Pangasinan State University Food Innovation Center (DOST 1-PSU FIC), in collaboration with DOST-1 Research and Development and International Linkages Program Management Center (RDILPMC), conducted a lecture on food research development and design and demonstration of the vacuum frying processing technique on 10 June 2022 at the FIC in PSU, Bayambang, Pangasinan.

Ms. Meryl A. Bernardino, Senior Science Research Specialist deployed at the DOST 1-PSU FIC, presented the stage gate approach on food product development from conceptualization to market launch. The five (5) stages are (1) idea generation, (2) business case development, (3) prototype development, (4) test marketing implementation, and (5) product market launch. Ms. Bernardino stated that research is a collaborative effort. A combination of the various specializations, including a marketing or business specialist, is essential for the successful completion of a project.

After the morning lecture, the participants were able to witness how to prepare the food sample prior to vacuum frying. The vacuum fryer deep-fries food in a closed system



under reduced pressure, which lowers both the boiling point of oil and water in the food. It also allows food to be dehydrated at a lower temperature to preserve its natural color and flavor.

For the afternoon session, Mr. Christian Paul G. Soriano, PSU Faculty Researcher, discussed the basics of statistics that are commonly used in research design. Moreover, Ms. Annalie L. Rosales, head of DOST 1-RDILPMC, provided an overview of the design of experiments and demonstrated how to use the Design Expert software.

The lecture-demonstration was attended by PSU faculty researchers, and DOST-1 staff.



# DOST conducts calibration of IFR machines; preps 2 towns as IFR producer in Ilocos Sur

By: Raymond E. Alip

The Department of Science and Technology Regional Office 1 (DOST-1) through the Provincial Science and Technology Center-Ilocos Sur (PSTC-IS) in partnership with the DOST - Food and Nutrition Research Institute (FNRI) conducted on-site assessments and calibration of the deployed Iron Fortified Rice (IFR) blending machines to two towns of Ilocos Sur on April 5-6, 2022 under the Community Empowerment thru Science and Technology Program.

On-site calibration of the IFR machines was conducted at Barangay Bugnay in Candon City, Ilocos Sur through the Metro Bugnay Multi-Purpose Cooperative, and at Barangay Remedios in Cervantes, Ilocos Sur through the Cervantes Rice Millers Association. The calibration aims to ensure proper blending or mixing of the iron fortified premix and rice using the machine.

A courtesy call to the local chief executives were conducted to inform them on the progress of the project. Mayor Ericson Singson of Candon City emphasized his support to the program as the City government has allotted funds for the renovation of the IFR facility in Barangay Bugnay. Also, LGU-Cervantes through Mayor Benjamin Maggay represented by SBM Roy Dadpaas provided support during the calibration in the newly renovated IFR blending facility in barangay Boguiles.

Engr. Charlie Adona, Senior Science Research Specialist of DOST FNRI and Engr. Jordan Abad, Officer-In-Charge of PSTC - Ilocos Sur led the calibration as well as re-introduction of the IFR technology in the sites.

Moreover, a training on the



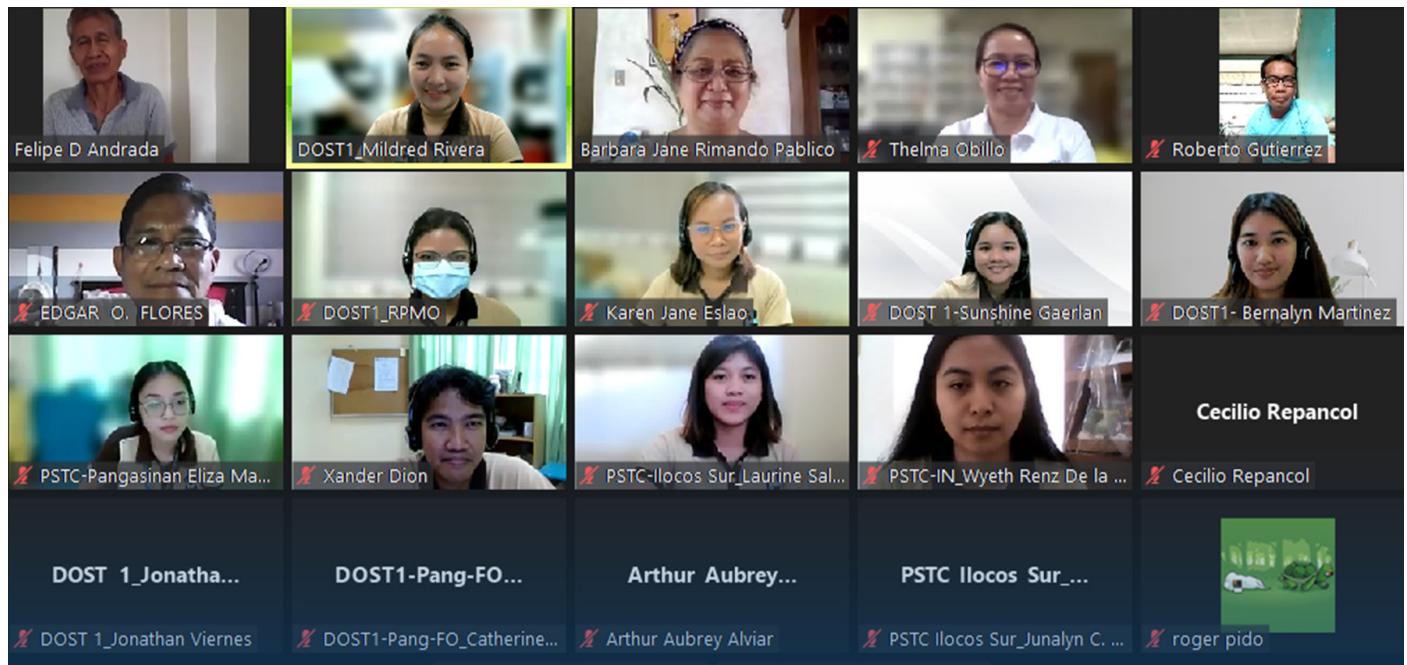
Moreover, a training on the operation of the IFR machine was conducted to familiarize machine operators in the proper operation, maintenance and troubleshooting of the equipment.

The initiative is part of the program in support to the whole-of-nation approach to end local communist armed conflict in these affected areas through the provision of appropriate technological interventions. The towns are the first technology adoptors of IFR in the province and are expected to launch their IFR product to the public within the year.



# DOST 1's SETUP conducts 2-day RTEC Meeting

By: Engr. Sunshine C. Gaerlan



CITY OF SAN FERNANDO, La Union- The Small Enterprise Technology Upgrading Program (SETUP) of the Department of Science and Technology Regional Office 1 (DOST-1) successfully conducted a two (2)-day virtual Review and Technical Evaluation Committee (RTEC) Meeting last April 20-21, 2022 via Zoom.

The Committee evaluated a total of 13 project proposals for potential funding under the DOST-SETUP. These comprise the micro, small and medium enterprises (MSMEs) from the provinces of Ilocos Norte, Ilocos Sur, and Pangasinan.

The following MSMEs were evaluated: R.V. Cariaga Enterprises, AutoNorte Autoparts and Accessories Trading, Niña Leather Manufacturing from Ilocos Norte; Torres Ricemill, E.P. Medrano Furniture, Eunice Furniture, and Beesual Domain Designs of Ilocos Sur; and Gerrilaide Farm, D&L Hatchery and Balut Industry, RDG Machine Shop, RFG General Merchandise, Bandulf Industries and Yamban Enterprise from the province of Pangasinan.

The Committee is composed of S&T consultants accredited by the DOST and experts from various fields namely: Prof. Anabella G. Valdez (Food Processing, Food Technology, and Food Safety), Dr. Arnelie G. Laquidan (Financial and Agribusiness Management), Dr. Joana N. Quinquito (Agribusiness and Cooperative Management), Dr. Jovita M. Datuin (Agriculture), Ms. Felicidad M. Gan (Project Monitoring & Evaluation, Packaging and Labelling, and Technology Needs Assessment (TNA) for MSMEs), Engr. Edgar O. Flores (Industrial Engineering & Project Evaluation), Engr. Felipe D. Andrada (Project Monitoring & Evaluation, Agriculture, TNA for MSMEs, Energy Audit, Cleaner Production, and Food Safety), Prof. Thelma T. Obillo (Mechanical Engineering, Energy Audit, and Project Evaluation), and Ms. Barbara Jane R. Publico (Economics and Project Evaluation). The proposals were submitted to these experts to assess and evaluate the technical merit of the project proposals which includes the financial and economic viability of the firm's operation and recommend if the proponents are eligible for the DOST's innovation fund assistance.

Aside from the proposal evaluation, the RTEC also rated the performance of the Provincial Science and Technology Center (PSTC) staff

who presented the project proposals. Their ratings will be consolidated by the Regional Program Management Office (RPMO) for the selection and conferment of the Best SETUP Project Proposal presenter during the Year-End activity of DOST-1

Prior to the RTEC evaluation of the proposal, the firms have undergone validation of the Technology Needs Assessment (TNA) by the TNA Validation Team of DOST-1. Aside from the proposal, proponents were required to submit the following documentary requirements: a) Letter of Intent addressed to the Regional Director to avail the SETUP Program; b) copy of Mayor's business permit and licenses and DTI registration; c) Financial statement for the last (three) 3 years with notarized sworn statement; d) three (3) quotation for each equipment from suppliers/fabricators to be purchased/fabricated; and e) complete technical design/drawing of all equipment to be purchased/fabricated.

For CY 2022, the RTEC evaluation is extended until June 2022 to meet its target of 50 MSMEs assisted under the program.

# DOST Ilocos Norte conducts Training on Bread and Pastry Production for PDLs in the City of Batac

By: Engr. Jamaicah A. Topnio

The Department of Science and Technology- Provincial Science and Technology Center Ilocos Norte held a "Skills Training on Bread and Pastry Production" on May 24 at BJMP Batac District Jail, City of Batac, Ilocos Norte in support of the Bureau of Jail Management and Penology (BJMP) Batac District Jail's skills enhancement programs for Persons Deprived of Liberty (PDL) in molding them to be better, more productive, and trustworthy citizens.

The said program is in partnership with BJMP Batac led by Jail Senior Inspector Cremencio Alones and aims to generate income for the PDLs during their confinement, and earn for personal upkeep and financial support to their families.

Chef Bench Ezekiel Adagao and Chef Donna Sacramento shared their expertise with the PDL, including the personnel, of Batac District Jail. As a result, the participants learned large-scale bread and pastry production skills and techniques, specifically on preparation and baking of ensaymada, spanish bread, milky cheesy donuts, and crinkles.

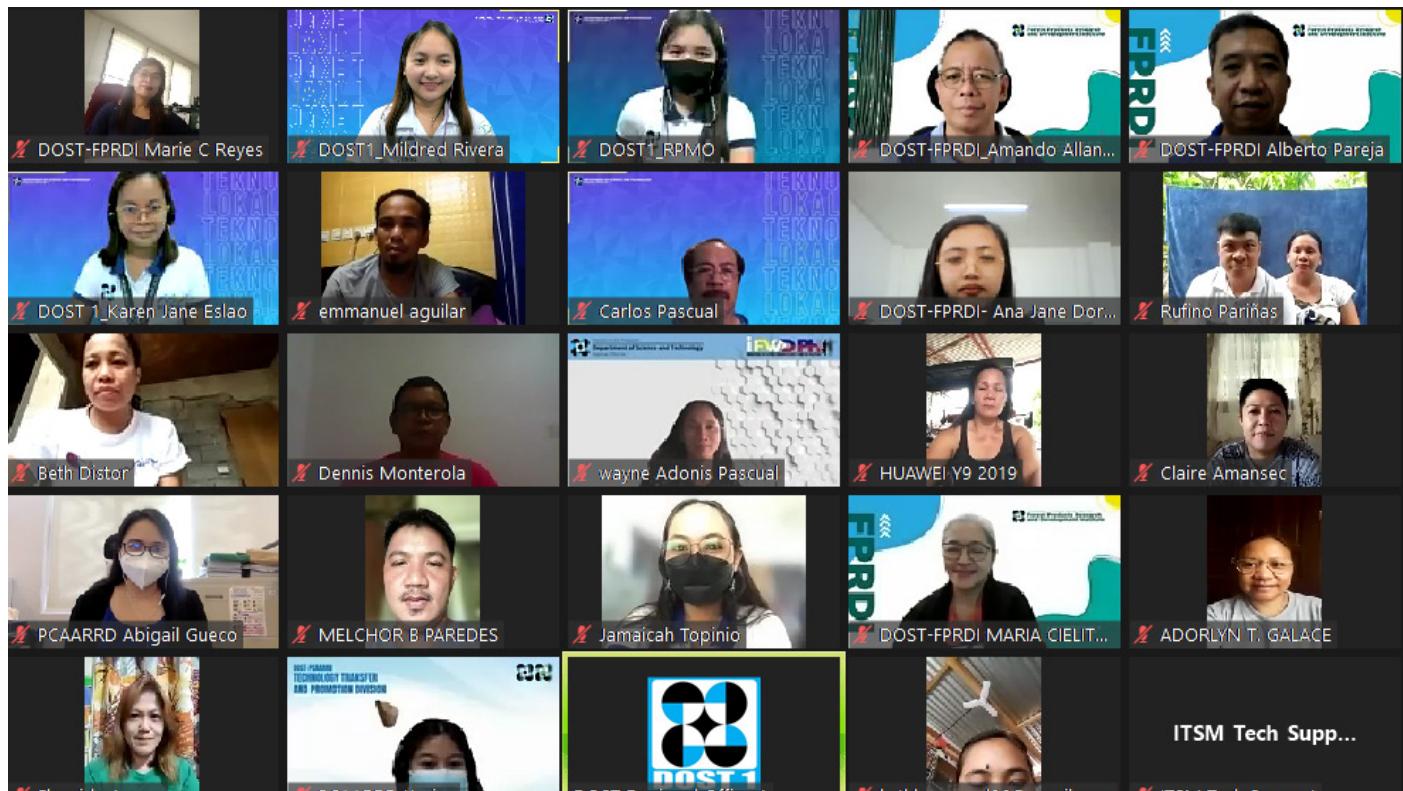
"Sapay kuma ta daytoy a training ket makatulong kenyayo a makaurnong para bagbagi yo ken dagiti pamilya yo uray pay adda limitasyon gapo kadetoy nga sitwasyon yo. Ken ton makarwar kayo, sapay kuma ta mai-apply yo digitoy naadal yo, lalo nu addan to balak yo agpatakder ti panaderya. Open ti opisina mi nga DOST Ilocos Norte para kenyayo para kadagiti Science & Technology assistance," (We hope that this training will help you to earn for yourselves and your families even with your current situation's limitations. When you get out of the facility, may you use all your learnings,



limitations. When you get out of the facility, may you use all your learnings, more so if you have a plan on having a bakery. DOST Ilocos Norte is always open for your S&T assistance,) Gerald Gabriel, Science Research Specialist II, during his closing remarks. DOST-PSTC Ilocos Norte annually conducts livelihood technology training for the people of Ilocos Norte

# DOST'S TeknoLokal series showcase innovative technologies and solutions

By: Mildred S. Rivera



CITY OF SAN FERNANDO, La Union - The Department of Science and Technology Regional Office 1 (DOST-1) spearheaded the TeknoLokal para sa Makabagong Bayani, a 4-episode virtual technology pitching sessions for locally-developed technologies from the DOST-Sectoral Councils, Research and Development Institutes (RDIs) and partner State Universities and Colleges (SUCs) last May 16-17 and 19-20, 2022.

The activity aims to spark the interest of applicant-Overseas Filipino Workers (OFWs) in the adoption of DOST-developed technologies for their proposed technology-based venture that will be funded under the Innovations for Filipinos Working Distantly from the Philippines (iFWD Ph) program.

The first session showcased food technologies of the DOST-Food and Nutrition Research Institute (FNRI) that are ready for transfer and commercialization such as the Iron

water, Enhanced Nutribun (squash & carrot variant), Brown Rice Bar, and many others. New technologies developed by FNRI particularly Coco Blend, Coco Bisc, Coco Puff, MeaLusog, Nutribunnet and Protein Food Bar were also introduced. Meanwhile for the DOST-Industrial Technology Development Institute (ITDI), technologies and innovations developed by the agency which are classified into for Commercialization/Pre-Commercialization, Extension and Public Good were discussed.

The second session covered innovations and technologies from the DOST-Philippines Textile Research Institute (PTRI) such as Mulberry Propagation and Cocoon Production, natural dyes in textile manufacturing and Handloom Weaving and Natural Fiber. Also, the DOST-Metals Industry Research and Development Center's (MIRDC) tent system that could be used for emergency situations and the Integrated Wrought Iron-Forming Equipment (iWIFE) for metal works, machineries essential to the food

and beverage processing industry namely Vacuum Fryer, Modular Water Retort, Spray Dryer and Freeze Dryer and innovations that could enhance process in ceramics production, were showcased.

The third episode staged technologies of the DOST-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) such as the Ride-On Rice Precision Seeder suitable for both hybrid and inbred rice production; the Coffee Greenhouse Solar Dryer that intends to provide alternative method for drying coffee beans instead of directly exposing them to sunlight; the Mechanical Cacao Sheller which is an innovative machine that can process cocoa beans into cocoa nibs; the Pelletizing Machine for Goat Feeds appropriate for on-farm pellet production; and the Sea Cucumber Dryer designed for small-scale fisherfolks involved in the harvesting of sea cucumbers, to name a few. Aside from the farm machineries, different types of

biofertilizers, biopesticides and food technologies developed that are also available for commercialization were presented.

In addition, DOST-Forest Products Research Development Institute (FPRDI) showcased the features, applications, benefits, and proper processing techniques of an Engineered Bamboo. The DIY Bamboo shelter that is a low-cost semi-permanent shelter, electric and water supply ready and can be used as emergency shelter, cottage, or quarters was showcased.

In the final session of the virtual series, the OFW-attendees learned

the innovative food technologies and trainings offered by the Pangasinan State University-Food Innovation Center (PSU-FIC) and the Don Mariano Marcos Memorial State University (DMMMSU). Among the PSU-FIC's technologies bared are the Tomato Salsa which is a savory tomato-based dip that can be added to snacks, crackers, and salads; the Squash Pesto Sauce which is suitable as spread, filling, dip, ingredients or pasta sauce; and the Vacuum Fried Oyster Mushroom and the Vacuum Fried Squash which are healthier than usual fried chips due to the process of vacuum frying that preserved the products' nutritional content, to name

a few. And lastly, the session also covered DMMMSU's innovations on Chevron known as the Chevron Dishes in Retort Pouch which have four distinct flavors: (1) Chevron Sisig, (2) Chevron Sinampalukan, (3) Chevron Bulgogi and (4) Chevron Pinapaitan.

OFW startups who want to venture into Agriculture and Aquaculture related business were encouraged by DMMMSU to apply as an Agri-Aqua Technology Business Incubation (ATBI) inwall incubatee and have access to different trainings and assistance they offer.

The iFWD PH Program is an initiative of the DOST to help repatriated OFWs and those with existing contract abroad to establish their own technology-based enterprises in hopes to encourage them to settle in the Philippines for good. The application for iFWD PH Program ended last April 30, 2022, having a total of 58 applicants and only 11 applicants with complete requirements passed the screening and will now advance to Phase 1 this coming June.

# What's Inside the STARBOOKS?



## DOST-1 introduces STARBOOKS to Saint Augustine's School of Tagudin, Ilocos Sur

By: Mary Ann C. Belen

The Department of Science and Technology Region 1 (DOST 1), through its Science and Technology Learning Resource Center (S&T LRC), partnered with Saint Augustine's School in Tagudin, Ilocos Sur to introduce the Science and Technology Academic and Research-Based Openly Operated KioskS (STARBOOKS) to its teachers and students thru a virtual orientation last June 20, 2022.

The students from the different year levels of Saint Augustine's School participated in the webinar along with the school principal, Mrs. Yolanda A. Bacdayan, the school librarian, Mrs. Margarita L. Bayan, the officer-in-charge of the Instructional Media Center, Mrs. Carina M. Laranang, the academic coordinator, Mrs. Christina A. Bayan, and the teaching and non-teaching staff.

Engr. Jordan L. Abad, the Office-in-Charge of the DOST 1's Provincial Science and Technology Center of Ilocos Sur (DOST 1-PSTC-IS), thanked

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**Objective**

- 1 Create interest in the field of Science and Technology which may increase the number of Filipinos enrolling in S&T courses
- 2 Encourage great and curious minds to develop new ideas— inventions and innovations; and
- 3 Inspire one's capacity for entrepreneurship and research.

Saint Augustine's School for availing the STARBOOKS orientation program. Engr Abad also acknowledged the school's understanding of the value of educational programs extended by DOST in providing additional resources for their learning experience. "This will be the beginning of our partnership with your school," he remarked.

Ms. Mary Ann C. Belen, Project Assistant II of the DOST 1 S&T LRC, presented and discussed the features of the STARBOOKS and proper use and navigation of the facility.

In closing, the Saint Augustine's School officials extended their sincerest appreciation to DOST 1 for granting their request for an orientation. The activity will surely

benefit their teachers by keeping them informed about up-to-date, relevant, and innovative library resources. This will also help them to prepare for S&T-related instructional teaching materials as they move to restricted face-to-face classes in the upcoming school year 2022-2023.

STARBOOKS is the first Philippine Library in a box that contains hundreds of thousands of digitized materials in different format (audio, video and text) which can enhance the skills of students in science, technology, engineering and mathematics. As the country's first S&T digital library, it is accessible online at [www.starbooks.ph](http://www.starbooks.ph) and available in mobile and Quiz apps through Google Play Store. For inquiries regarding STARBOOKS, please email DOST-1 at [mail@region1.dost.gov.ph](mailto:mail@region1.dost.gov.ph).

# DOST1 participates in Women-Helping-Women: Innovating Social Enterprises (WHWise) Program Regional Info Session

By: Rio Dyan B. Adviento

## Call for the WHWise Cohort 2 2022



**Looking for 11 women led entrepreneurs yearly**

### WHO CAN APPLY?

	An enterprise <b>led by a woman</b>		A <b>social enterprise</b> that directly helps a <b>community</b>
	Has a <b>need for a specific technology</b>		Has a <b>clear benefit to the community</b>



INNOVATION COUNCIL  
FOR INDUSTRY, ENERGY AND EMERGING TECHNOLOGIES (DOST-POEERD)

## QUALIFICATIONS

- Legally registered with the DTI or Securities and Exchange Commission (SEC) for a **minimum of one (1) year to a maximum of seven (7) years** provided that the business model has not been established ;
- Has legal personality to issue an Official Receipt for the receipt of grants-in-aid;
- Have an early-stage prototype or proof of concept for the product or service. **Ideas or mere concepts are not allowed;**
- Has demonstrated capability to conduct R&D and differentiate research from their regular business operations;
- Must not have pending administrative or criminal case involving financial transactions or must not have been previously found guilty or convicted with finality in case/s of similar nature.

The Department of Science and Technology Region 1 (DOST1) attended the Women-Helping-Women: Innovating Social Enterprises (WHWise) Program Regional Info Session on June 6, 2022 via Zoom platform.

Present during the virtual activity are Provincial Science and Technology Center (PSTC) – Pangasinan Director Arnold C. Santos, PSTC – Ilocos Norte Director Benjamin S. Mercado Jr., PSTC - Ilocos Sur Officer-in-Charge, Jordan L. Abad, PSTC - La Union Staff, Eiryz Clyde Angelique Orpilla, GAD Focal Point System Members, Dectch-1180 Libunao, Adelisa Florendo, Katrina Ronquillo and Gender and Development staff Rio Dyan Adviento.

In line with SDG 5- Gender Equality, the DOST-Philippine Council for Industry, Energy, and Emerging Technology Research and Development through Ms. Russell Pili, emphasized that the program aims to assist women-led social enterprises or startups in acquiring technology and Research and Development (R&D) assistance. The program also offers a suite of services including early-stage funding, training, skills development, mentorship, and business incubation to engage, enable, and empower women from rural communities to qualify for the program which are determined by the following: (a) enterprise led by a woman; (b) social enterprise that directly helps a community; (c) has a

need for a specific technology; and (d) the ones who have clear benefit to the community. To add, Miss Pili specified the qualifications and procedure in applying for the program.

The WHWise Program will continue to assist women entrepreneurs specifically ten (10) women-led entrepreneurs yearly, focusing on social enterprises as its primary target is to help communities through technologies that will provide livelihood opportunities to women.

DOST 1, through its PSTCs, will extend its efforts in the identification and invitation of qualified enterprises to successfully implement the program.

# DOST-1 presents R&D study during OneLab Forum

By: Marinique A. Guerrero

San Fernando City, La Union – The Regional Standards and Testing Laboratory (RSTL) of the Department of Science and Technology Region I (DOST-I) presents its research and development (R&D) study entitled "Environmental Monitoring of Listeria spp. and Salmonella sp. in Meat Processing Industries in Ilocos region with GHP Monitoring to Plant" during the OneLab R&D Forum facilitated by the DOST-Industrial Technology Development Institute (DOST-ITDI) on March 28-29, 2022.

The study discussed by DOST-I Science Research Specialist I Hero D. Galamgam provides an increase of awareness of selected Meat Processing Industries in the region with Good Manufacturing Practices and Good Housekeeping (GHP) Practices. It aims to (1) assess the environmental microbiological quality, both for Listeria monocytogenes and Salmonella sp., of food contact surfaces in meat processing plants in Region 1; (2) assess personal hygiene of plant personnel; (3) monitor microbial density of the plant production area; and (4) increase awareness of Micro, Small and Medium Enterprises (MSMEs) with regards to Listeria and Salmonella.

As the study is still on-going, results from the initial assessment, partial conclusion and some recommendations were solely discussed.

DOST's OneLab program is an Information Technology IT-based one stop laboratory platform that allows access to integrated government and private laboratories across the country. It is a network of government and private laboratories throughout the country thru an IT-based referral



2022 OneLab R&D Forum

28-29 March

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2022 OneLab R&D Forum

28-29 March 2022

R&D Study No. 2

Environmental Monitoring of *Listeria* spp. and *Salmonella* sp. in Meat Processing Industries in Ilocos Region with GHP Monitoring to Plant Personnel and Air density monitoring

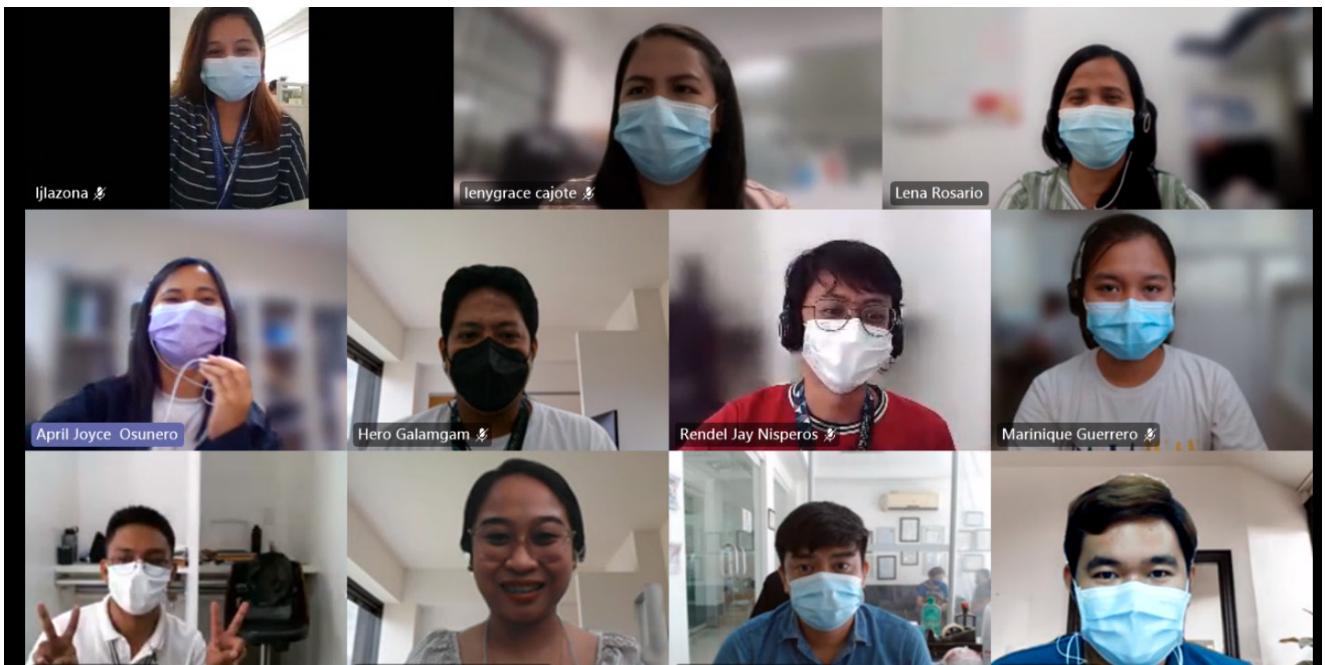
Hero D. Galamgam  
Science Research Specialist I  
DOST-I RSTL

zoom

convenient access to the public and allowing product samples to be referred to laboratories in other region.

DOST-1 RSTL is a member of the OneLab network among other Regional Standards and Testing Laboratories of different DOST Regional Offices. Also members of the network are the Research and Development Institutes (RDIs) of DOST, non-DOST laboratories or private laboratories and International laboratories.

The OneLab ventures a new direction through the R&D for smaller projects.



## DOST-1 RSTL undergoes virtual Level 2 Inspection and Assessment for Environmental Laboratory Recognition (ELR)

By: Lianne Kae Lazona

The Department of Science and Technology Region 1 (DOST 1) Regional Standards and Testing Laboratory (RSTL) underwent a virtual Remote Level 2 Inspection and Assessment for Environmental Laboratory Recognition (ELR) on May 4 – 6, 2022.

The Laboratory Inspection and Assessment Team (LIAT) of the Department of Environment and Natural Resources was composed of four (4) technical assessors from the Integrated Chemists of the Philippines - Region 4A (ICP-4A), Mr. Alvin Basco; Integrated Chemists of the Philippines (ICP), Dr. Glenn V. Alea, from Environmental Management Bureau - Central Office (EMB-CO), Ms. April Joyce Osunero, and Environmental Management Bureau - Region 1 (EMB-R1), Ms. LenyGrace Cajote conducted the said inspection and assessment.

The inspection and assessment involved the evaluation of the laboratory, specifically its work, management and organization, scope and nature of work, policies,

physical layout and safety features, track record, analytical procedures for parameters that concern the DENR, materials and equipment, and quality assurance program to determine compliance with the requirements set by DENR Administrative order NO. 98-63: Guidelines for Designation of DENR Recognized Environmental Laboratories.

The scope of desired recognition for Water/Wastewater such as, BOD, Cadmium, Copper, Lead, Dissolved oxygen, Oil and grease, pH, Total suspended solids, Total and fecal coliform was also inspected and assessed by the team.

The DOST-RSTL team included the top management headed by Laboratory Head Lena C. Rosario, Chemistry Laboratory Personnel, Ms. Marinique Guerrero, Mr. Rendel Jay Nisperos and Mr. Kenneth Siruet. Microbiology Laboratory Personnel, Mr. Decth-1180 Libunao, Mr. Hero Galamgam, Ms. Jasmine Ericka Casaclang and Ms. Lianne Kae Lazona and Customer Receiving Officer (CRO) Paul Stanley Ramos.

After the successful assessment, initial findings and recommendations were discussed. As a result, Ms. Lena Rosario, Mr. Decth-1180 Libunao and Mr. Hero Galamgam are the still the recommended signatories of the covered scope.

**SCOPE OF THE ASSESSMENT**

Name of Laboratory	:	DOST-1 Regional Standards and Testing Laboratory
Address	:	DMMMSU Mid La Union Campus, Brgy. Catbangen, San Fernando City, La Union 2500

Participants in the video conference:

- April Joyce Osunero (bottom right)
- Lena Rosario (bottom center)
- Hero Galamgam (top right)
- Rendel Jay Nisperos (top center)
- Marinique Guerrero (top right)
- Jasmine Ericka Casaclang (center)
- Alvin Basco (left)
- Glenn V. Alea (right)
- Lianne Kae Lazona (top left)
- Paul Stanley Ramos (far right)

# DOST-1 spotlights Women in Science Leadership

By: Engr. Maura Andrea A. Ortega

In celebration of the National Women's Month, the Department of Science and Technology Regional Office 1 (DOST-1) through its Research and Development and International Linkages Program Management Center (RDILPMC) conducted a webinar on Women in Science Leadership on 31 March 2022 via Zoom and Facebook Live.

The webinar focused on the holistic view of the contribution of women in science who are known to be game changers, trailblazers, and innovators. National Academy of Science and Technology (NAST) Outstanding Young Scientists, Dr. Marla Maniquiz-Redillas and Dr. Ericka Fille T. Legara, shared their experiences and pieces of advice in pursuing a career in science.

"We are encouraging women especially the younger generation to take careers in science, technology, engineering, and mathematics (STEM)," DOST-1 Regional Director Armando Q. Ganal said in his opening remarks.

Dr. Redillas, an Associate Professor of the Department of Civil Engineering at De La Salle University, emphasized the importance of water resources engineering and solving the problems therein. Urbanization disrupts water balance which affects the community through natural disasters like strong typhoons and climate change. Thus, environmental and water resources engineering challenges such as control of excess water and conservation of water need research attention. Moreover, she also gave tips and suggestions on how to approach graduate school.

"Alam ko may mga problems tayo, but we have to keep on going. Huwag tayong magstopstop. Siguro pause pwede kaunti. Huwag kayong magstopstop nang matagal. So at least every day, do something. Kahit maliit lang, do something instead of nothing (I know we all have problems,



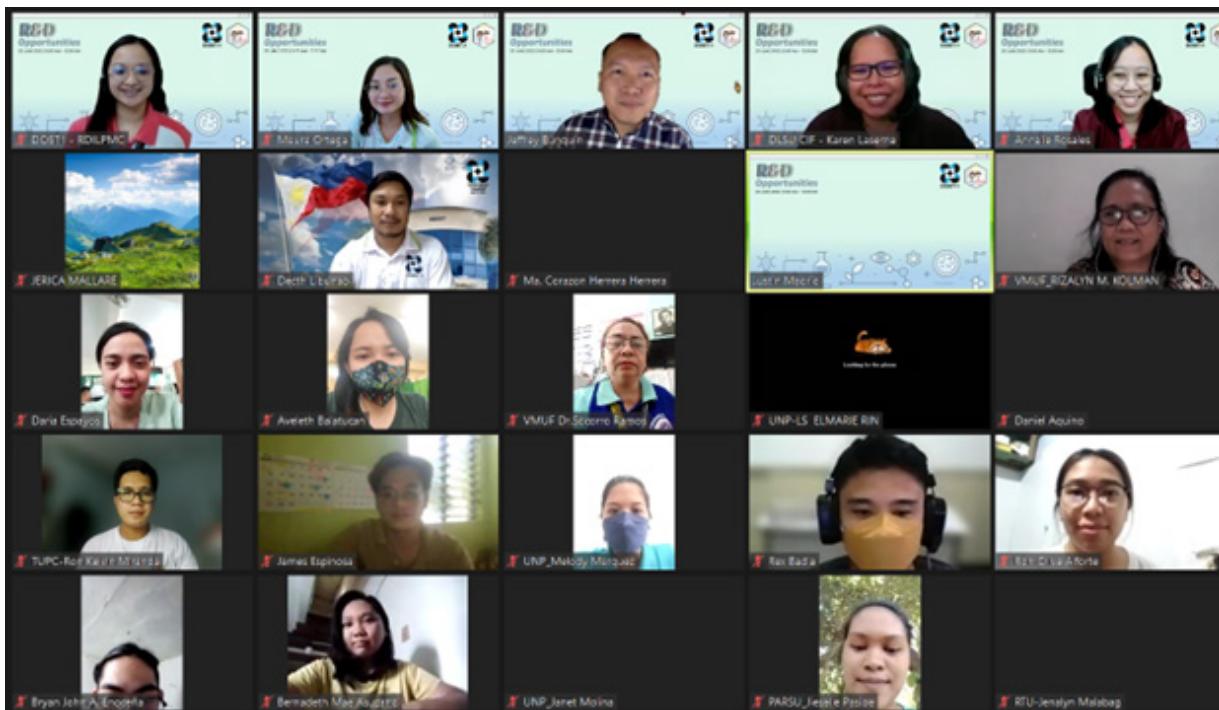
but we have to keep on going. We should not stop, but maybe we can pause for a bit. Just don't stop for too long. So at least every day, do something. Even if it's small, do something instead of nothing)" Dr. Redillas advised to those who are at crossroads or facing hurdles in their careers.

On the other hand, Dr. Legara, an Associate Professor of Data Science at the Asian Institute of Management, shared what motivated her career shift from physicist to data scientist. After spending 5 years in Singapore as a full-time complex systems scientist, she returned home to the Philippines to design the first data science program in 2017. This is in response to the shortage of data scientists in the country. According to her, data science is using data and knowing how to work on the data to build models and simulations to help reconstruct reality and make some predictions. Furthermore, she pointed out that parents or mentors should expose children on the fun side of the

different fields and let them appreciate what is truly out there. Hence, letting them pursue their dreams without any barriers especially when it comes to gender.

"Very pivotal ang role ng mentors talaga in your research journey. That's why what we should push for I think is for the DOST to encourage people to become mentors. It's one thing to do research lang, but not everyone is trained to become mentors. So kailangan natin ng mas maraming mentors because people would need role models," Dr. Legara shared as to what made her stay in science.

To close the event, DOST-1 Officer-in-Charge for Field Operations Jonathan M. Viernes said "Leadership provides meaning; meaning reveals purpose; and meaning and purpose combine to inform your identity. Identity enables a vision of the future and the direction in which leadership is oriented."



## FilSciHub scientists share R&D opportunities

By: Engr. Maura Andrea A. Ortega

The Department of Science and Technology Region 1 - Research and Development and International Linkages Program Management Center (DOST 1 - RDILPMC), in partnership with Filipino Science Hub (FilSciHub), spearheaded a webinar on Research and Development (R&D) Opportunities on 20 June 2022 via Zoom and Facebook live.

Dr. Jeffrey C. Bunquin, Founder and President of FilSciHub, emphasized the importance of the growth mindset and creativity in achieving a successful R&D career. A person has a growth mindset if he or she believes that his or her talents can be developed through hard work, good strategies, and input from others. He shared how he applied this mindset in navigating his R&D journey from Shell to ExxonMobil. He also revealed that their electricity supply was cut-off for six (6) months when he was still in college due to poverty. This motivated him to pursue and understand the energy sector. Thus, a person's economic status should not hinder his or her success.

"Once you strike that fine balance of technical skills and soft skills, doon na talaga magte-take off ang career mo as a research and development professional. Iyon ang aking

tinatarget - hindi iyong magaling ka lang sa technical, dapat mayroon kang leadership and management potential," Dr. Bunquin added to the essential ingredients of success.

To give back, Dr. Bunquin established the FilSciHub. It is a virtual community where high quality educators and subject-matter experts can influence students to pursue careers in Science, Technology, Engineering, and Mathematics (STEM). They have a pipeline of programs that focuses on the development of STEM students from preschool to college. He said that the foundation of students is dependent on the skills and expertise of the teachers. Thus, they also created programs for teachers to become master educators that shall elevate the quality of STEM education in the country.

On the other hand, Dr. Anna Karen C. Laserna, Academic Service Faculty of De La Salle University Central Instrumentation Facility (DLSU CIF), also shared her R&D journey and her engagement as a Balik Scientist. Furthermore, she presented the metabolomics approach and its applications. Metabolomics is a comprehensive analysis wherein all metabolites in a given biological

system are identified and qualified. She also showed a glimpse of the equipment available in DLSU CIF which caters the research needs of the country.

"Pursue research with humility - to recognize na hindi lang ikaw yung makakagawa ng lahat. You have to collaborate and persevere. It's not always successes and wins, but there will always be losses and you have to persevere through them," Dr. Laserna reminded as she ended her talk.

R&D opportunities are not limited to people with higher degrees. According to Dr. Bunquin, anyone can be a scientist as long as creativity and discipline is present. When asked about the privileges and benefits of being a scientist, he said that it is easier to transition into something else mainly because of the experience. In addition, financial freedom is achieved when working for a big corporation.

"There will come a point na hindi na about pera. You're not really so much after the financial rewards but it's more about the fulfillment of your heart's desires. And we're talking about your advocacies. It's about getting to enable other people do their research and work. For me, that is the privilege. That is the pleasure. I get to interact with a lot of researchers in different countries. Kasama na siguro doon iyong privilege of traveling," Dr. Laserna added.

# How safe is safe? Food safety 101

By: Carla Joyce B. Cajala



## Food and Food Safety

"Safe food now, for a healthy tomorrow." Food is referred to as any material taken to give nutritional support for an organism which aims to provide energy, preserve life, or encourage growth. It is therefore important to ensure its cleanliness and maintain its nutritional value through proper handling and production. This is a critical component for every company working in the food industry. Because even a single food-related event can be devastating to entrepreneurs, food safety should always be a high focus. Consumers needed assurance that the food they are about to consume would not harm them, and that it had been prepared in a sanitary manner, handled properly, and stored safely to avoid foodborne sickness and injury. Similarly, if customers are satisfied with the quality of food given, the company will be able to maintain its standing in the market, resulting in increased sales, productivity, and employment.

Republic Act 10611 also known as Food Safety Act of 2013, tightens the country's regulatory framework to protect consumer health and facilitate market access for local foods and food products, among other things. But how can eating be dangerous?

## Food Hazards

A food can be unsafe in so many ways. Let's categorize them into three: biological, chemical and physical. Physical hazards include insects, hair, metal fragments, pieces of plastic, wood chips, and glass, all of which are foreign to a particular cuisine and are typically non-toxic. Chemical hazards occur when chemicals are present in food at amounts that are potentially harmful to people, such as when pesticides are used in crops to control, eliminate, or repel the effects of a pest. Biological hazard, on the other hand, comes when harmful or pathogenic organisms are introduced to food. Salmonella can be found in eggs, poultry, meat, unpasteurized milk or cheese, and vegetables, for example. So, what are then are the principles of food safety?

## Principles of Food Safety

### a. Keep clean

Wash your hands and surfaces often. Germs that cause food poisoning can survive in many places and spread around your kitchen. It will be helpful to wash hands for 20 seconds with soap and water before, during, and after preparing food and before eating, wash your utensils, cutting boards, and countertops with hot, soapy water after preparing each food item, and rinse fresh fruits and vegetables under running water.

### b. Separate raw and cooked

Don't cross-contaminate. Raw meat, poultry, seafood, and eggs can spread germs to ready-to-eat foods—unless you keep them separate. Use separate cutting boards and plates for raw meat, poultry, and seafood.

### c. Cook thoroughly

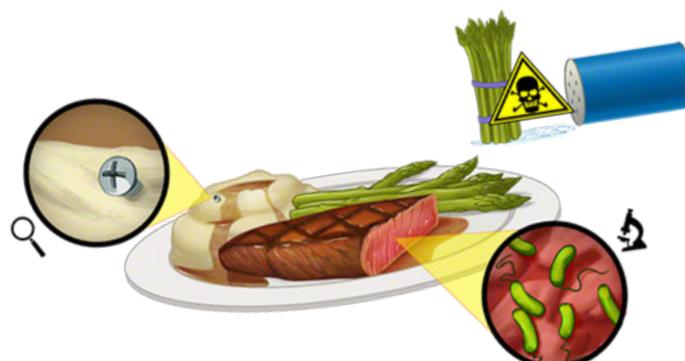
When the interior temperature of food reaches a temperature high enough to kill microorganisms that can make you sick, it is considered safe to eat. A food thermometer is the only way to know if food is safe to eat. Color and texture alone aren't enough.

### d. Keep food at safe temperature

Bacteria can multiply rapidly if left at room temperature or in the "Danger Zone" between 40°F and 140°F. Thus, it is significant to preserve the right temperature for the food.

### e. Use safe water and raw materials

The raw ingredients and water that will be used for preparation and storage have a significant impact on the food's safety. In fact, anything that is contaminated at first hand is deemed to contribute to the contamination of the food itself.



## How can DOST help in ensuring Food Safety?

The Department of Science and Technology Region 1 (DOST 1) is one of the group of agencies in the region tasked with ensuring food safety, including the Department of Trade and Industry (DTI), Department of Agriculture (DA), DA-National Meat Inspection Service (NMIS), Department of Interior and Local Government (DILG), Pangasinan State University (PSU), and University of Northern Philippines (UNP).

During a virtual news conference with the theme, "PAGKAINgat: DOST Food Safety Innovations, Ligtas na pagkain, okay sa kalusuga't kabuhayan natin!", DOST announced the 2.5 billion peso food safety projects.

According to Undersecretary for Research and Development Rowena T. Guevara, the 2.5 billion pesos will be spent on four (4) areas of food safety, to include research and development, scientific and technological services, human resource development, knowledge and technology transfer, and policy advocacy, all of which will be led by DOST-affiliated agencies and offices.

Food-borne and water-borne illnesses, food product detentions, inadequate technical support for Micro, Small, and Medium-sized Enterprises (MSMEs), a knowledge gap on food safety in the Philippines, and a lack of science-based evidence for food safety policies and guidelines are among the issues and concerns identified by DOST. To address these issues, DOST developed and will implement the DOST Food Safety Roadmap 2022-2028.



### Thus...

In order to ensure food safety in the region, DOST 1 collaborates with MSMEs and consumers by providing lectures and assessment to businesses as part of their application in obtaining a license to operate requirement and to raise awareness for the general public's benefit. Furthermore, DOST 1 delivers lectures on Good House Keeping, Good Manufacturing Practices (cGMP), Pest Control, Sanitation Standard Operating Procedure (SSOP), Training on Hazard Analysis and Critical Control Point (HACCP), Training on ISO 22000 Food Safety Management

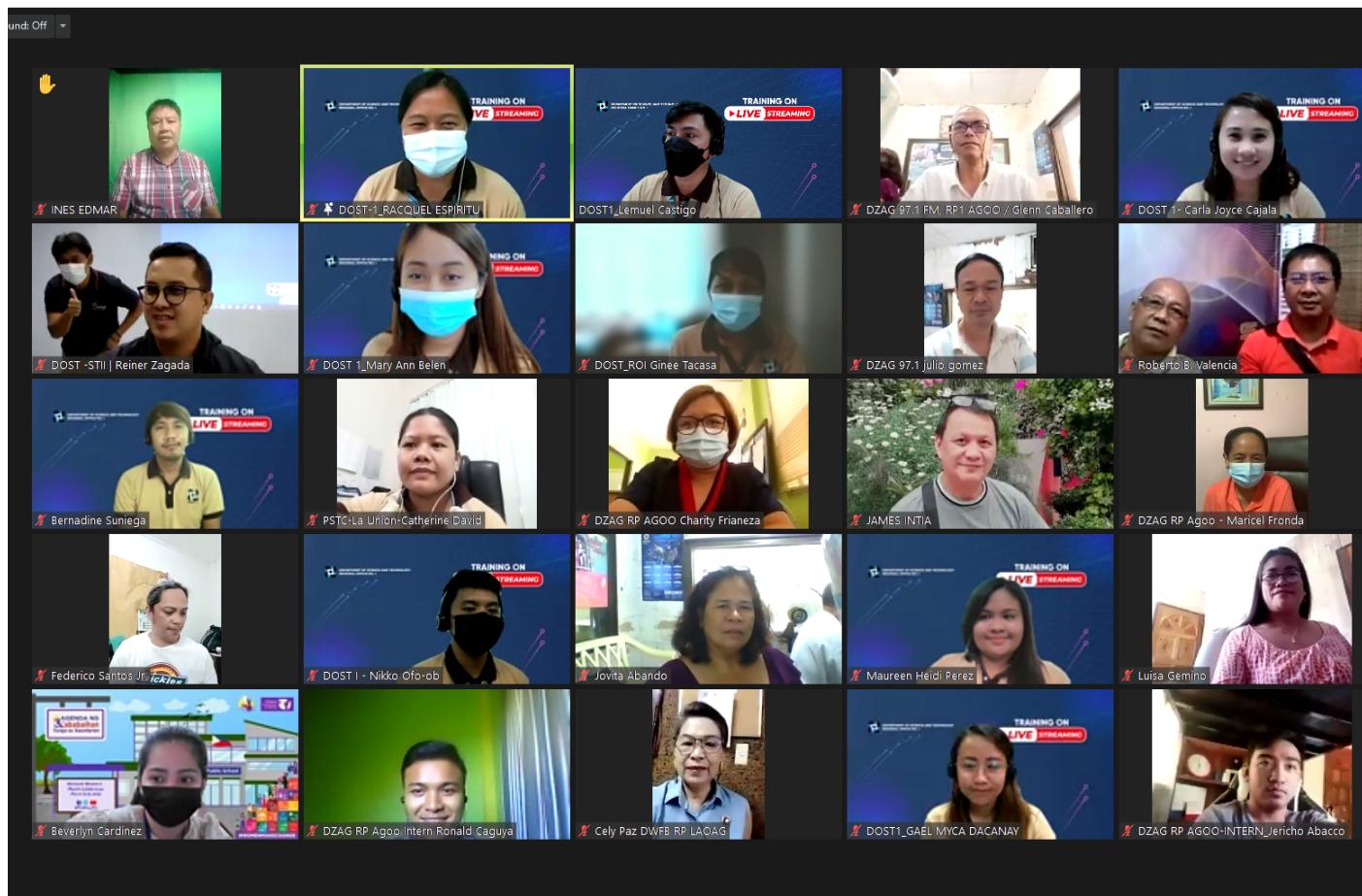
System, Food Firm/Plant Assessment, Consultancy Services and Testing, Analysis and Calibration Service.

DOST 1 adheres to its obligation, passion, and commitment for a better and healthier tomorrow through providing consumers with non-contaminated consumables.

"The goal of the food safety professional should be to create a food safety culture, not a food safety program." - Frank Ylannas.

# Keeping up with trend: DOST 1 spearheads Training on Live streaming

By: Carla Joyce B. Cajala



The Department of Science and Technology Region 1 (DOST 1) organized a Training on Live streaming in collaboration with DOST- Science and Technology Information Institute (STII).

DOST 1 Regional Director Armando Ganal encouraged the participants to apply the learnings that they will be gaining in the activity. "This morning, as part of our continued efforts to deliver relevant knowledge to our clients, we're delighted to share the foundations of live streaming with you as a means of reaching out to a bigger audience. I hope that as a result of this training, you will be able to adjust to this new normal, understanding that we will not be able to return to our pre-pandemic state," he added.

Live streaming was the biggest trend in 2020 due to the engaging nature of this format and the emergence of the global pandemics. Through this platform, there is an opportunity for other viewers to interact with that person and for the

opportunity for other viewers to interact with that person and for the presenter to interact as well. This instant gratification creates a deep connection between the viewers and the presenter. It also drives more viewers to engage with your content, in the hopes of reaching you.

DOST-STII Computer Operator III Reiner Zagada led the training which was exclusively participated by DOST 1 and DZAG Radyo Pilipinas staff. He taught the basics of live streaming in the Open Broadcaster Software (OBS) and Zoom set-ups.

Together with DOST-STII Senior Science Research Specialist Alfon Narquita, Mr. Zagada was able to delicately explain the intricate features and deliver a sample output , whereby, the participants were able to grasp the idea on how an effective live streaming is done.

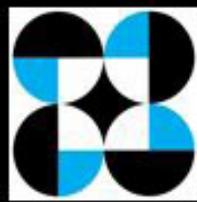
DZAG Radyo Pilipinas Station Manager Maricel Fronda expressed her sincerest gratitude to the DOST team for the productive training

session that was conducted and looks forward to more activities as such, in order to mold the skills and abilities of the communications staff towards bringing relevant news and information to the public.

In response to the insights shared, DOST1 Assistant Regional Director for Technical Services Racquel M. Espiritu thanked the active participation of the DZAG Radyo Pilipinas team, and DOST 1 staff, and for the eagerness of the DOST-STII Resource Speakers to impart their expertise to better hasten the delivery of science and technology to the people through live streaming.

This modern-day innovation can considerably assist not only DOST 1 but also the media, particularly DZAG Radyo Pilipinas, in reaching out to the people of region 1.





**Innovation, Science and Technology  
for Accelerating Regional  
Technology-Based Development**

**iSTART  
REGION I**

## Pilot LGU program implementers sustain iSTART

By: Ginee R. Tacasa

The Local Government Units (LGUs) of Sual, Bugallon, Alcala, San Fabian and Balungao in Pangasinan committed a strong adherence to the, "innovation, Science Technology for Accelerating Regional Technology-Based" (iSTART) Program of the Department of Science and Technology Region I (DOST I), through formulation of a Science Technology and Innovation (STI)-based policy.

The five (5) LGU strongly support the iSTART program thru the initiative of the Local Chief Executives by providing funds on the various priority areas as a result of the multi-sectoral consultative meetings conducted. A total of 15M was generated from the 5 LGUs as counterpart for the program which will be utilized for the infusion and adoption of science, technology and innovation leading to the development and progress of these LGUs.

LGU Sual, identified the Early Warning System for Agriculture and Disaster as their priority and allotted Php300,000.00 for the funding. Meanwhile, LGU Bugallon allotted a total of 8.5M; 1M for their Livelihood & Enterprise (processing and packaging of food products); 3.8M for the Alternative Energy- solar powered system ; 1M for Bamboo Utilization (furniture, other products); and 2.7M for Integrated Solid Waste Management and other mechanism for renewable energy and vermiculture production.

On the other hand, LGU Alcala focused on their Environmental Management Enhancement Program (adoption of mechanism like Biogas digester) with a 2.1M fund and Php100,000.00 for the Livelihood and Enterprise for the Organic Farming Trainings and Veggie Noodles Production Enhancement, while, LGU San Fabian have 3.25M fund prioritizing on the Solid Waste

Management Program with a 2.75M fund and Php 500,000.00 for Solar Powered Irrigation.

Lastly, LGU Balungao allotted 1.4M fund for the preparation of the Municipal Goat Academy, Product Development of the Chevron product and assistance for the Tupig and Patupat Vendors Association including the products' shelf life and packaging.

DOST I Regional Director Dr. Armando Q. Ganal extended his heartfelt gratitude and appreciation to the Local Chief Executives on their willingness to engage in the program and further stated that the overwhelming support of the pilot LGUs to the program serves as a challenge for the DOST I iSTART team to commit and provide good quality service. Also, he assured that all will have their own opportunity and chance to avail the different services of the iSTART program and the other programs, projects and activities of the DOST.

# Youth Group in Agno receives Souvenirs Printing Equipment through DOST-1's CEST Program

By: Monique C. Esguerra

DOST-1 fulfilled its commitment to equip the youth with devices that can assist them on their livelihood. The assistance given to the municipality is a response of DOST under CEST program that asserts to the Executive Order 70 of the administration under Poverty Reduction, Livelihood and Employment Cluster.

A training and seminar focused on the Information and Communication Technology (ICT) skills of the youth beneficiaries was held last year that gauged and improved their utilization of computer software and application.

Engr. Santos expressed his wishes for hand in hand collaboration to strongly promote science, technology, and innovation (STI) in the coming years to the municipality. He shared that he also hopes to see a more aggressive promotion of tourism in the municipality through the printing equipment in creating souvenirs such as t-shirts, undershirts, mugs, and scarves for the tourists that will, by some means, be well-known in the market.

Hon. Percival C. Quinan, Barangay Chairman of Boboy uttered his appreciation to DOST-1 in providing livelihood interventions to the youth beneficiaries. "I am delighted that my constituents have learned a lot from the trainings that the DOST conducted," he added.

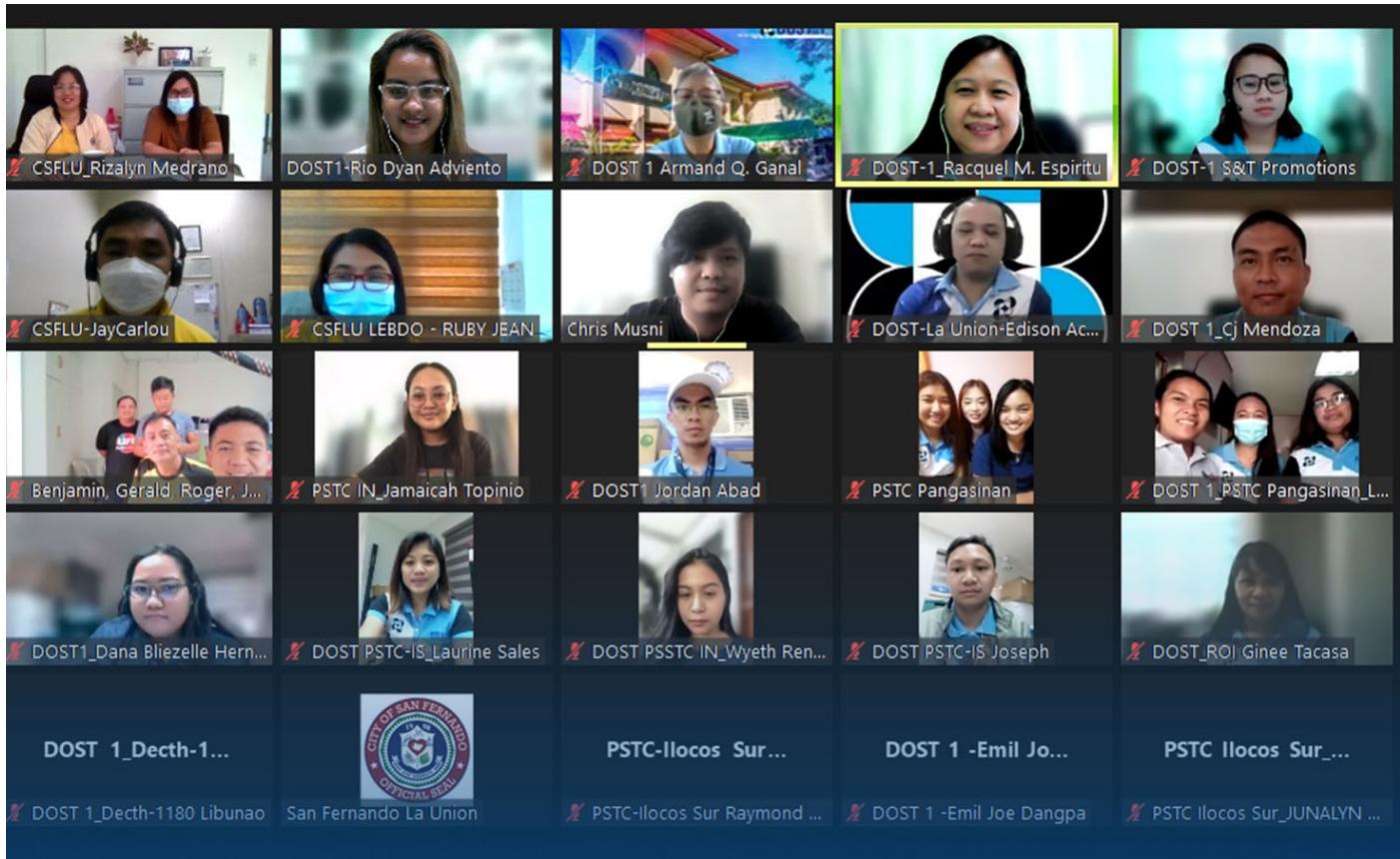
Furthermore, the Sangguniang Kabataan (SK) Chairman of Brgy. Boboy Mr. John Nikko Siobal, expressed his desire for a more extensive promotion of the importance of local technologies and innovations to come up with products and services that will help Agno achieve a better tourism destination.

DOST 1 through its CEST banner program will continue to provide sustainable assistance and interventions that would encourage the growth and development of the community.



# DOST's oneSTore Hub soon to re-open in La Union

By: Carla Joyce B. Cajala



**CITY OF SAN FERNANDO, LA UNION-** The Department of Science and Technology Region 1 (DOST 1) and the City Government of San Fernando La Union undertook a virtual meeting on the re-establishment of oneSTore Hub in the City of San Fernando, La Union and a reorientation on the concepts of oneSTore on May 31, 2022.

In attendance during the virtual meeting are the DOST 1 staff led by Regional Director Armando Q. Ganal and Assistant Regional Director for Technical Services Racquel M. Espiritu, and the City Government of San Fernando La Union representatives headed by Ms. Rizalyn Medrano.

Director Ganal acknowledged the city government's eagerness to reopen the oneSTore Hub in the city. There was once an established hub in the city, but it was closed due to unforeseen circumstances. Director Ganal expressed complete confidence in the project's success and pledged to forge a stronger partnership with the Local Government Unit (LGU) in



e of bringing science, technology and innovation to the people.

Meanwhile, Mr. Christopher Musni, oneSTore.PH Project Manager, provided an overview of the project and detailed explanations of how it might help not just the micro small and medium enterprises (MSMEs), but also the consumers and the LGU by facilitating the purchase of locally made products. He also mentioned some of the country's successful hubs and talked about how its online platform operates.

The City Government of San Fernando, through Ms. Medrano, looks forward to re-establishing the oneSTore Hub, as soon as possible to assist the city in reinvigorating its economy by assisting local MSMEs in reclaiming market share. They are set to prepare all the needed paperworks and move forward to the fulfillment of the project in the city.

In the region, a oneSTore Hub is already operational in Paoay, Ilocos Norte, which was inaugurated last June 2021.

# TEKNO PRESYENSYA: Syensya ken Teknolohiya para kadagiti Umili

The Department of Science and Technology Region 1 (DOST 1), in collaboration with DZAG Radyo Pilipinas Agoo hosted a series of episodes in its radio program entitled, "Tekno Presyensya: Syensya ken Teknolohiya para kadagiti Umili", which focused on various topics related to science, technology and innovation.

In its 11th episode, the program took into spotlight the non-wheat alternatives in response to increasing price of commodities brought about by the conflict between Ukraine and Russia. DOST-FNRI Supervising Senior Research Specialist Trinidad II T. Arcangel imparted the utilization of rootcrops to reduce the percentage of wheat in breads, noodles, and other wheat-based items. The decrease in the percentage of wheat in a product will lessen the cost without impacting the food's nutritional content. The Enhanced Nutri-bun, which is made of squash, carrot, and sweet potato, was highlighted as an example. Another alternative is saluyot and squash in noodles, as well as rice munggo (mungbean) in mixes, curls, and crunchies. A handful of micro, small and medium enterprises (MSMEs) in Region 1 have even adopted these innovations.

On the other hand, DOST-ITDI Charles Feb Quilantang Palla discussed the Sagip Nutri Flour which is a powdered blend of healthy and native crops like cassava, sweet potato, moringa (malunggay), squash, and mungbean (munggo). To bring balance and variety to emergency food rations and nutrition feeding, this nutritious flour can be turned into a variety of food products such as noodles, cake, pastries, bread, drink powder, soup, and native specialties to which individual food processors and community livelihood generators can greatly benefit from this technology.

For the 13th episode, the DOST-Industrial Technology Development Institute's (DOST-ITDI's) slimming cream and analgesic balm were

showcased. Dr. Rosalinda Torres, Former Scientist I and Chief of the Standards and Testing Division of DOST-ITDI imparted how the slimming cream and analgesic balm technologies came to light, what are the ingredients that they are made of and how are they different from the other products in the market. She emphasized that these technologies are ready for commercialization and further stressed that the products are safe because they went through clinical trials before being released for adoption and they are way cheaper than the others because they are made up of natural ingredients.

Meanwhile, the 17th episode of the program featured the DOST- Science and Technology Information Institute's (DOST-STII's) Science and Technology Academic and Research-Based Openly-Operated Kiosk Stations (STARBOOKS). Mr. Alan C. Taule, Chief of the Information Resources and Analysis Division of DOST-STII gave an overview on the humble beginnings of STARBOOKS and how was it conceptualized. Mr. Taule also discussed the challenges in deploying the technology to geographically isolated and disadvantaged areas, as well as how they surmounted the pandemic during the project's implementation.

Mr. Taule imparted the impact of the project to the teachers and students and how it transformed low-performing schools into active players in the world of science and technology. Mr. Taule also gave a rundown of the many ways to access the project's application.

On the other hand, Mr. RJ S. Talagsad, Teacher Librarian of the Movers Academy Inc. in Natividad, Pangasinan, and one of the project's beneficiaries, spoke about the project's impact at his school. He stated that it has been extremely beneficial to both teachers and students. During the pandemic, the STARBOOKS program aided in supplementing

learning aids for students who were unable to attend school physically. Mr. Talagsad commended and expressed his gratitude for DOST-STII's prompt response to their request for STARBOOKS, which they just learned of during the S&T caravan held in the fourth quarter of 2019.

The 18th episode has been remarkable as it tackled the DOST's oneSTore.PH project. Mr. Christopher Musni, oneSTore.PH Project Manager gave an overview of the project and demonstrated how it aided micro, small, and medium companies (MSMEs) during the pandemic, as well as how it reached out to customers by making it easier to buy locally made and DOST-assisted products. He also discussed how the country's online platform works and cited some of the country's successful hubs. He also mentioned the project's future ambitions and endeavors. The oneSTore.PH project continues to grow its reach with the goal of promoting local items in the global marketplace, as its mobile application and website stores can compete with other online shopping platforms in the market.

In the meantime, the Provincial Government of Ilocos Norte, through Ms. Gabriel, one of the project's adoptors, expressed their gratitude to DOST for the oneSTore.PH initiative during the episode.

The DOST 1's "Tilapia para sa Pamayanan" Project was highlighted on the 19th episode of the Tekno Presyensya program. Dr. Cynthia Almazan, Senior Science Research Specialist and Section Head for Planning and Development Section of the Inland Aquatic Resource Research Division of DOST- Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) discussed about the project's objectives, activities and goals. Dr. Almazan also detailed the project's future goals, which include enhancing agriculture by sustaining the province's tilapia production.

Meanwhile, Engr. Jordan L. Abad, Officer-in-Charge of DOST-PSTC Ilocos Sur described how his team carried out the project, from identifying the recipients to providing assistance to the tilapia farmers. He also described the difficulties they had during the pandemic and how they were able to overcome them. According to Engr. Abad, the initiative significantly benefits the residents of Ilocos Sur.

To further support Engr. Abad's testimony, Mr. Solomon Regua, a beneficiary of the project, remarked that the project contributed greatly in their livelihood as it provided them with free materials, supply and equipment in establishing their production of tilapia. He expressed his gratitude for the substantial assistance that has been given to them.

To cap off the second quarter episodes, the 20th episode hosted the DOST Junior Level Science Scholarship (JLSS) Program Campaign. Ms. Adelisa C. Florendo, Regional Scholarship Coordinator, spoke about the JLSS Program, on who are qualified to apply, what are the requirements needed, how to go through the application down to the benefits and other considerations to be made before, during, and after the scholarship grant.

The DOST-Science Education Institute (DOST-SEI) JLSS program aims to provide scholarships that will finance the education of talented and deserving students who are pursuing degree programs in the fields of science and technology in their third year of college. It also aims to ensure a steady, adequate supply of qualified S&T human resources who can lead the nation toward national progress.

The series of episodes of the Tekno Presvensya comes with the DOST 1 Regional Director Armando Q. Ganal's time where he extolls the successes and accomplishments of the DOST 1 regional and provincial offices across the areas of Kabuhayan, Kalusugan, Kaayusan and Kinabukasan.



**LIST OF OFFICIAL QUALIFIERS FOR THE 2022 SCIENCE AND TECHNOLOGY (S&T)  
UNDERGRADUATE SCHOLARSHIP**

**ILOCOS NORTE**

<b>RA 7687</b>	<b>MERIT</b>	
ARTACHO, JULIANNE ROSE PACIS* CASTILLO, RACHEL MAE GIRON* CLEMENTE, CHRISTIAN LLOYD ULIT DELA COSTA, MADELINE ANGELIE PASCUAL DIAZ, ELAIZA NICOLE TAPAC LIBERATO, GRACELYN JOY PATOC* LOMAHAN, LEINAH BARANGAN* MALENAB, ALTHEA CLAIRE TAMBIO NATIVIDAD, SHEKAINA BALCITA RAMOS, MARIFE PRECIOUS ANGEL VIERNES REMIGIO, ALIAH CRIZZEL CASTRO SENENSE, FRANCINE GAILE TAGALICUD SUGUITAN, MARIANNE KATE RASAY VALERA, RACHEL ANNE MELCHOR*	ACACIO, DAVID BAUTISTA* AGANUS, JANN KELLY BADANGUIO ALCARION, EDMAR BERWIN SALVOSA ARRIETA, JEMYMA THEA ALDOS BUDUAN, RHEANEL GWEN BUMANGLAG CALDERON, LYRA JOIS BALANAY* CANJA, NORPRI MAE ABITONG CARREON, JZYRYL RYCHNYL FERNANDEZ* CASTILLO, ALEXANDRA LAFORGA CLEMENTE, MARC DANIELLE NEFALAR* EDRA, TRACY JOY RESPICIO ESTRELLA, JASMINE ANNE LANSI* HERNAEZ, ATHENA CASSANDRA GREGORIO HERNANDEZ, ALEXANDER ROSS TORRES* JACINTO, IRAH ANISSA RAQUINIO* KAU, CARL ADRIAN DE LA CRUZ LAGAMIA, JOHN NICOLAI ALIMARIO LEAÑO, CHRYSEL YSA PEDRONAN*	LAGAMIA, JOHN NICOLAI ALIMARIO LEAÑO, CHRYSEL YSA PEDRONAN* MANGABAT, ASTER BENEDICT ARCA PERLAS MANGLAL-LAN, ALEEZA KATJA ABUNDO MANUEL, AMY JOSIPHIA ABUNDO PORTELA, ELYSHA FAITH SEBASTIAN* RAVAL, CHALZEA JOHANNA CALAOAGAN REYES, THRISHA MONIQUE BRIONES ROCIMO, JANA MERIL REMIGIO SACAYANAN, JADON DE LA CRUZ* SANGUAL, JAIIKA ANN MARGARETTE NATIVIDAD* SANTOS, EUEL NAZARENE PASCUAL SULICIPAN, KATELEEN MAE CASTRO* TAMAYO, EIRENE ROSGEN YALONG TURQUEZA, VINCE THERESE ALEJANDRO* VILLENA, IVY MITZ GANIRON*

**ILOCOS SUR**

<b>RA 7687</b>	<b>MERIT</b>	
ABELLA, DANICKA MAE AGBAYANI ABERGAS, JEWEL ANN ARTATES CACHE, YHURIE VALENCIA CHU, JAPHETH JAYDEN DELA CRUZ DATO, FRANCIS CARL RAGSAG* IBAÑEZ, JOEBERT INES* INES, JAMES PHILIP PINAPIN RABANG, JONATHAN PAUL PALAPALA REMUCAL, KYLE CHESTER REBULA RIVERA, NIKKI VALERIE GOMINTONG SALANIO, KATHLYN ORTILLO SEGURA, ERICKSEN JORJA RIGUNAY* TAGASA, KARL BUNAGAN* VALENTIN, JEAN IANCH LUMIERE TOLENTINO	AGDEPPA, ALYSSA GABRIELLA CAMILLE ISAIS ALCANTARA, SAMANTHA CLAIRE AZCUETA* ALCONIS, CHRISTINE JULIA DE PERALTA* ALEGRE, KATRINA ALEXANDRA PONCE* ANTONIO, ARIANE SHANE PASCUA BANIQUED, EIRENE DOMINICA PLETE* BELLO, GABRIELLE MARIE CORTES CHAN, RAYA COLLEEN LAO EUGENIO, HANNAH LEANDZEY DOMINGO	FORTUNA, JESCIA LORIN RAYMUNDO GREGORIOS, LJ MIGS PACIS LAYA, KURT ADRIAN PICHAY NAVARRO, CHICCO GABRIELE MONTEMAYOR ONTIVEROS, MARY THERESE PUNIO* RUBINO, LEO SHANE FERNANDEZ SESUCA, ELLA KATRINA ROSARIO VALENCIANO, NADEEN DOMINIQUE MANGUE YAGO, JAN MARGAUX GILLEGO

**LA UNION**

<b>RA 7687</b>	<b>MERIT</b>	
COLOMA, STEPHEN MOSUELA* DALIBA, LAURENCE NISPEROS FLORAGUE, ROCHELLE RAMOS* FLORES, CRISTEN ANDREA CAGUOIA GARCIA, LIA REBECCA CALUB* LICAY, WILMAR JANSEN MAYRINA LOPEZ, RHESSA MAE WAILAN MANIO, JORAM CHRISTIAN PEREZ MARAYAG, JOSHUA ABIEZER YLARDE MENDOZA, ANGEL MARIE REYES* NONOG, AVELYN LOPEZ ORANZA, KENNETH IMMANUEL CASTILLO ORTIZ, LEBRON MARK NELMIDA PADILLA, DANIELA JOY SOTTO PANELO, MISHA JAZRELL ROQUE* RAMOS, HAILARY VALDEZ* TANYAO, OLIVE BENI TASIC* TORIO, RHYNE CHESTER ALMIROL	ABAYA, JOSH WILFRED ALCAUSIN ALCAPARRAS, KRISHIANNE MAE TURALBA ARELLANO, ROGELENE FAITH GAÑALON* CABURIAN, CARL LEMUEL CORPUZ* COLOMA, AXL ROUZ LUCINA* COSTALES, DANNA NICOLE BIAG DELIZO, RICKALIEN CALUZA* DOCTOLERO, CARLOS JAIME BERNABE DY, MAXINE ANGELA SY* FERNANDEZ, JYAN ARLEA MINASALVAS GALLARDO, ENGLAND ROSE SAN PEDRO GATUZ, KQUEVHIN JOHN CARREON*	LAGUATAN, CHRISTIAN ERVHEN SORIANO* LOPEZ, DAREN JILLIAN ARCE LOPEZ, ROCHESTER JOSHUA FAGEL* MANANGAN, RYNETTE VOIE GARCIA PALADA, BRYLLE JULIUS ORFIANO POSADAS, SOPHIA NICOLE MAMARIL* RAMOS, KRISTA MAE FERRER RAQUEPO, ANTHONY RICHARD NACE RIMANDO, ALONZO ANDREI GO TABADERO, MARC ANDREI CARREON TORRELIZA, EUNICE ANGELA ROSARIO VIDUYA, HANS ELIJAH CARBALLO VILLAR, JOHN ARIS BAUTISTA

**PANGASINAN****RA 7687****MERIT**

AQUINO, ANGELICA JOVERO*	AGBUYA, TATIANA KAYELA MARI BAUTISTA*	PIDLAOAN, CHRISTIANEL CARLO ESPINOSA
AQUINO, EULA MAE DOMINO	AGGABAO, ARVY TAYOAN*	PRADO, ALLEN ESPEDIDO*
ARCANGEL, KARYLLE MAMALIGSA	ALBITOS, VICTORIA BAGASAN	PRUDENCIO, JOSE ROMEO MOYA
ARGUELLES, ZHANDARA BASTO	ALVAREZ, DENISSE GELLE SALES	QUINTO, DAPHNE BLOSSOM SARZABA
ARTUS, JUSTINE MAE MANZANO	ANGELES, JELHENE ANGELA MARIE CASTRO	RABAGO, AISIZ DE VERA
ASUNCION, APRIL JOY AGLANAO*	AQUIJO, RUDIMINDA DULAY	RACHO, MARIA JULIANNA DAGAN*
BALANAG, KATHERINE GRACE LATONIO	AZURIN, MIKYLLA SORIANO*	RAGUDOS, HANNAH TABAQUERO
BARLAAN, REINE MARCIANO*	BATRINA, BRYAN CENDAÑA	RAMOS, KHALIL LIVINGSTONE GAPUZ*
BEGONIA, ABEGAIL FERNANDEZ	BIGAY, AMARNA ELAINE ROSARIO*	RESULTAY, MA. AEZIL EMMANUELLE DORIA*
BUSCAINO, SHERRY HEART ROLDAN	BUAYABAN, CHRISTIAN JOSEPH GARCIA	RIOFERIO, KRISTEL JOY BOBADILLA
CANDELEJA, JEREMY RIÑON*	BUMANLAG, MARY GRACE FRIAS	SALMAN, LOGENE TUAZON*
CATABAY, SOFIA CZARINA CAMBA	CABANTUGAN, SHAN HARVIN BERNAS*	SERAFIGA, KATRINA ISABELLE BARONGAN
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CORTEZ, NICOLETTE ABES	CALAMIONG, JAN ESRAC TIMOTHY LASIC	SOLIS, REIN ALDWIN ERFE
COSON, REILA ALIYA REGACHO	CALAUNAN, VIANY RHESE NAVATO	SORIANO, CHARLENE MARGOT ELECCION
DE NIEVA, NICOLE VICENTE	CALIMLIM, PRINCES ERIKA REYES*	TARLIT, MARIELLE ANGELA MACARANAS*
DE VENECIA, JADE CLARENCE ABALOS	CALIVO, DONESA MAE SONGCUAN*	TIO, JAMES BENNEDICT GAJETO
EDEN, ZEDRICK MOLINA*	CASABAR, JANELA YSABELLE RIVERA	TORIO, RAMAICA MANECLANG*
FADERA, TRISHA LEAN JIMENEZ*	CASAÑA, CHRISTIAN KLYDE BALOCATING*	TUAZON, ROLDANN RAMOS
FERNANDEZ, MARY ANNE BOONGALING	CHUA, LUC ADRIAN LIM*	UBALDO, RAZEN PAUL BARTOLOME
GALANG, JANNA ELIZA RIPARIP*	COLUMBRES, RUSTANA KYM LOPEZ*	UMINGA, IRISH JEILL NAZARRO
GALERA, CHRISTIAN BARATANG*	DE GUZMAN, JOHN OWEN NICCOLOU BALTAZAR*	VALDEZ, ALLIYAH ASHLEE GATDULA
GARCIA, AISLINN MAE HERNANDEZ*	DE GUZMAN, RACHEL ANNE LOUISE BANIAGO	VALDEZ, JANA VERONICA RADOC
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WARMAHAYA, RANA MOHAMMAD TUGADE	PIANO, PEE JAY SABADO*	

Names with (\*) are qualifiers with lacking requirements



# DOST 1 PROGRAMS & SERVICES

## TECHNOLOGY TRANSFER AND COMMERCIALIZATION PROGRAM

### SETUP

SMALL ENTERPRISE TECHNOLOGY UPGRADING PROGRAM

### iFWD PH

INNOVATION FOR FILIPINOS WORKING DISTANTLY FROM THE PHILIPPINES

### CEST

COMMUNITY EMPOWERMENT THROUGH SCIENCE AND TECHNOLOGY

### COMMUNITY-BASED

COMMUNITY-BASED PRODUCTS

## SCIENCE AND TECHNOLOGY SERVICES

### RSTL

REGIONAL STANDARD AND TESTING LABORATORIES

### TACS

TECHNICAL ASSISTANCE AND CONSULTANCY SERVICES

### P&L

PACKAGING AND LABELING ASSISTANCE

### TECH TRAININGS

TECHNOLOGY TRAININGS

## SCHOLARSHIP PROGRAMS

### JLSS

JUNIOR LEVEL SCIENCE SCHOLARSHIPS

### UNDERGRADUATE

UNDERGRADUATE S&T SCHOLARSHIPS

### GRADUATE

GRADUATE S&T SCHOLARSHIPS

## SPECIAL PROJECTS

### ISTART

INSTITUTE FOR SCIENTIFIC AND TECHNOLOGICAL INNOVATION AND INDEPENDENT INVENTORSHIP DEVELOPMENT

### STARBOOKS

SCIENCE AND TECHNOLOGY ACQUISITION AND DISTRIBUTION OF SCIENTIFIC INFORMATION FOR ALL SECTORS

### TransDi

TRANSFORMING R&D OUTPUT INTO INNOVATIONS THROUGH TECHNOLOGY-INTENSIVE INITIATIVES

### RxBox

RxBox ADVANCING COMMUNITY HEALTHCARE

### HALAL

HALAL PROJECT

### ONESTORE

ONESTORE.PH



The Ilocos S&T Trends is published quarterly by the Department of Science and Technology Region 1 (DOST 1) with editorial office at Don Mariano Marcos Memorial State University— Mid La Union Campus, Catbagan, City of San Fernando, La Union

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