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NATIONAL SCIENCE & TECHNOLOGY WEEK AGHAM AT TEKNOLOHIYA: TUGON SA HAMON NG PANAHON



LET'S GET IT ON! DOST 1 JUMPSTARTS THE REGIONAL CELEBRATION OF THE NSTW IN REGION 1

By: Carla Joyce B. Cajala

With the theme, "Agham at Teknolohiya: Tugon sa Hamon ng Panahon", the Department of Science and Technology Region 1 (DOST 1) formally opened the Regional Celebration of the 2021 DOST National Science and Technology in Region on November 8, 2021 via Zoom and Facebook Live.

The guests, exhibitors, and participants were warmly greeted by the DOST Regional standards and Testing Laboratory Head, Ms. Lena C. Rosario.

DOST 1 Regional Director Dr. Armando Q. Ganal said on his opening remarks that this year's theme focuses on the areas of Kalusugan, Kabuhayan, Kaayusan and Kinabukasan and it signifies the agency's responsibility in this time of pandemic.

"The whole DOST system is on its toes to provide and contribute to solving the morbid effects of the pandemic that has ravaged and affected our lives in all fronts", Director Ganal added.

Towards the end of his remarks, he encouraged, "May the knowledge you learn in this Science and Technology celebration inspire you in pushing for science, technology and innovation in your respective areas."

Meanwhile, the opening ceremony was also graced by the motivating message from the Mayor of Vigan City and the Chairperson of the Regional Development Council in Region 1, Hon. Juan Carlo S. Medina. He emphasized on the great role of the collaborative efforts of the inter-agencies along with the stakeholders and constituents towards the success of the agency's initiatives on the national and regional development.

The event will never be complete without the presence of DOST Secretary Fortunato T. De La Peña who was introduced painstakingly by the Undersecretary for Regional Operations, Engr. Sancho A. Mabborang.

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EDITORIAL

“

Hello to all our Ka-Agham from all over the archipelago! We have again reached the end of the year, which means, we have touched more lives by bringing Science, Technology, and Innovation up to the grassroots. Hence, I am giving you what DOST 1 has accomplished in the last quarter of CY 2021 through this issue of our very own Ilocos S&T Trends.

This issue highlights the celebrations of two big events, the **2021 Regional Invention Contest and Exhibits or RICE** and the **National Science and Technology Week (NSTW) in Region 1** themed, “Agham at Teknolohiya: Tugon sa Hamon ng Panahon.” The week-long celebration featured various activities such as webinars, technology trainings, calibration caravans, launching program of the Iron Fortified Rice in Ilocos Sur and enhanced nutribun production facilities in the provinces of La Union, Pangasinan and Ilocos Norte, and a lot more.

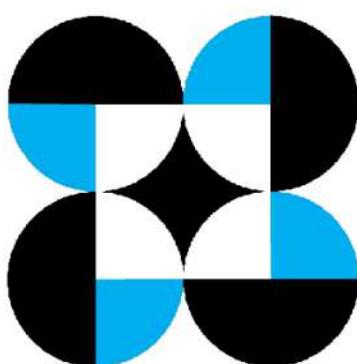
DOST 1 has also provided packaging and labeling assistance, livelihood programs, equipment upgrading, and among others to our stakeholders. And to give recognition to Small Enterprise Technology Upgrading Program (SETUP) beneficiaries, the Regional Project Management Office, initiated the conferment of awards to most outstanding SETUP adoptors. On boosting the S&T Human Resource Development Program, the agency welcomed 229 new S&T undergraduate qualifiers.

As Gender and Development (GAD) advocates, the DOST 1 GAD Focal Point System and all employees supported the 18-day campaign to End Violence Against Women and other GAD efforts.

The whole workforce of DOST 1, from the Regional Office down to the Provincial S&T Centers along with the Field Offices, are unceasingly working hand in hand to provide necessary S&T interventions to our stakeholders.

Thank you for your usual support and see you in the succeeding issues.

”



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DOST 1



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DOST 1 launches New variant of E-Nutribun in Ilocos Norte through BAKERS PH

By: Kent J. Ramil

ILOCOS NORTE, Nov. 26 - - Today, the Department of Science and Technology Region 1(DOST 1) virtually launches the enhanced nutribun (E-Nutribun) sweet potato variant in Ilocos Norte through its technology adaptor Bakers PH.

This is in support for the supplemental feeding of undernourished children, especially during the COVID-19 pandemic through technology adaptor Bakers PH, a beneficiary of the DOST-Small Enterprise Technology Upgrading Program (SETUP).

As part of the technology transfer from the DOST- Food and Nutrition Research Institute (FNRI), Bakers PH completed the required assessment and training as well as compliance with the standards and protocol to produce and market the E-Nutribun.. With the DOST-FNRI technology license already issued to the firm on April 26, 2021, the sweet potato E-Nutribun is expected to start its production this December 2021. It can be recalled that the firm is currently producing the squash and carrot variant and a SETUP-assisted firm in Region 1.

For its nutritional value, DOST Provincial S&T Director for Ilocos Norte Debbie Glynn Manangkil attested that the E-Nutribun has a new formulation and is made of natural, fresh sweet potato.

"We would like to extend our heartfelt gratitude to the people behind this technology, the DOST-FNRI and DOST 1, who have been a partner in strengthening and developing our baker's products. We are very fortunate to be chosen as one of the licensees of this technology and to be part of the feeding program of the government that benefits the masses." said Mr. Eldie Domingo, General Manager of BAKERS PH.

The enhanced nutribun is a healthy bread made from sweet potato/carrot or squash that is rich in fiber, energy, protein, calcium, potassium, iron, zinc and vitamin A—nutrients needed by growing Filipino children. It also has zero trans-fat, no cholesterol, no artificial flavor, and no food coloring.

Further, the E-Nutribun, partnered with milk products, are part of the national government's supplementary feeding program for children during community quarantine. In April last year, the DSWD's Memorandum Circular No. 12 Series of 2020 and the Nutrition Cluster Advisory No. 2 s. 2020 recommended the provision of healthy and nutritious family food packs and sustainable food source during community quarantine, set the guidelines for feeding program during the pandemic period and encouraged local government units (LGU) to use DOST-FNRI-developed products for their supplemental feeding program.

The E-Nutribun is the improved and reformulated version of the famous nutribun given to public school elementary pupils in the 1970s to 1980s to help address malnutrition. To date, there are more than 70 licensed adoptors of E-Nutribun across the country since it was launched in July last year.





Secretary De La Peña commended the efforts of the DOST 1 in meticulously planning for the activities set for the whole week despite the deviation from the usual way of celebrating the NSTW. Further, he urged the participants to let this be a challenge and a motivation that despite everything that is happening, the need for recognition for the accomplishments of each one in the science community should be marketed since each has its own unique identity and contribution to the country.

In addition, he stated that the DOST agency puts emphasis on the role of science and technology in examining the myriad opportunities that this period of globalization presents. "With innovation becoming strongly linked to a country's development, we have also resolved to direct our initiatives towards fostering a vibrant innovation culture", he complemented.

As he ends, Secretary De La Peña incited, "As a result, we must push ourselves out of our comfort zones in order to seize all the opportunities beyond our borders with regards to science and technology. If we want to become a progressive knowledge-based society, we must seek to create an environment in which science and technology are the primary drivers of a holistic development for all Filipinos."

The week-long celebration includes webinars, trainings and virtual exhibits that will feature the different innovative solutions and new science and technology knowledge related to agriculture, livelihood and enterprise development, safety, health and nutrition, education, disaster preparedness, and community development.

Participate in all the activities of the Regional Celebration of the 2021 DOST NSTW in Region 1 through this link: <https://nstw.dost1.ph/>.

NSTW in Region 1 presents Guide to Chemical Waste Management

By: Marinique A. Guerrero



City of San Fernando, La Union - The Department of Science and Technology Regional Office 1 (DOST-1) conducted a webinar on the Guide to Chemical Waste Management as part of the 2021 National Science and Technology Week (NSTW) celebration in Region 1 and Environmental Week Celebration.

The webinar is intended to provide guidance to personnel working with chemicals on proper management of chemicals and chemical wastes. It is a timely event to inform and discuss on the toxic wastes in the laboratory.

Dr. Armando Q. Ganal welcomed all the participants who are mostly from various State Universities and Colleges, Department of Education and DOST-Food and Nutrition Research Institute.

Engr. Maureen S. Malazo, Officer-In-Charge of Toxic Chemicals and Hazardous Waste Management Section and Senior Environmental Management Specialist of Environmental Monitoring and Enforcement Division DENR-EMB Region I served as the resource speaker during the webinar.

Her discussion focused on Republic Act 6969 (RA 6969), known as the Toxic Substances and Hazardous and Nuclear Waste Control Act of 1990, which outlined the Philippine Regulation for Toxic Substances and Hazardous Waste. Her objective was to discuss the salient features of RA 6969, compliance with the requirements and identification of management of toxic substances and hazardous wastes.

The law [RA 6969] and other environmental laws must be given emphasis because of the irreversible effect of climate change. All the generated wastes, not only in the Philippines but in all over the world have a huge impact and have covered the environmental issues that we encounter at present time. It serves also as a guide for laboratory personnel/staff/worker who are involved with chemicals. The toxicity of chemicals that we handle might have a chronic and acute effect which is dangerous and risky for human health.

In addition, Engr. Malazo highlighted the four basic steps or ways on identifying a hazardous waste with the acronyms TRIC which means Toxicity for T, Reactivity for R, Ignitability for I and Corrosivity for C. She even guided everyone, most specially the Pollution Control Officer the step-by-step way of applying and/or renewing permits of companies, agencies and schools that operate a laboratory facility.

DOST-1 Regional Standards and Testing Laboratory (RSTL) head Ms. Rosario extended her warmest greetings during the closing remarks. She reiterated the importance of chemical waste management to all students and enlightened the participants of the idea and notion that science and technology are not only limited to researches, experiments, inventions, innovations and development. The importance of waste management has been overlooked that while we were doing all the laboratory works such as experiments, innovations and inventions, we

fail to consider the waste generated during the process and as a result was not managed properly.

"Through this webinar and with the help of our excellent resource speaker, Engr. Maureen, I hope that this broadens our knowledge and understanding about this discussion [Environmental laws i.e RA 6969] and let us do our part even in the smallest ways to protect our own selves and also to the environment as well." She added.

DOST 1 showcases DRRM-related technologies

By: Carla Joyce B. Cajala



The Disaster Risk Reduction and Management (DRRM) unit of the Department of Science and Technology Region 1 (DOST 1) coined the different DRRM-related technologies into a half-day webinar on November 9, 2021 via Zoom and Facebook Live. This is conducted as part of the National Science and Technology Week celebration in Region 1.

The technologies presented are the DATOS Project, PhilSensors, GeoriskPH, Emergency Disinfection System, Emergency Food Reserve, and Ready-to-Eat Food packs. These were discussed by the different speakers from DOST- Advanced Science and Technology Institute (DOST-ASTI), DOST-Industrial Technology Development Institute (DOST-ITDI) and DOST- Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS).

During his Opening Remarks, DOST 1 Regional Director and Vice Chair of the Disaster Prevention and Mitigation Cluster of Regional Disaster Risk Reduction and Management Council (RDRRMC) Dr. Armando Q. Ganal cited, "With the mandate to promote central direction, leadership and coordination of scientific and technological efforts and to ensure that the results are geared and utilized for the economic and social benefits of the people, we remained steadfast to our commitment and we have taken the challenge to widen our reach including the geographically isolated and less privileged communities and bring to the doorsteps of the people the benefits of technology." He then encouraged the utilization of science and technology innovations towards strengthening the efforts on the provision of assistance to the society.

Mr. Roel M. de la Cruz, Senior Science Research Specialist from DOST-ASTI presented the DATOS Project which aims to produce and communicate relevant disaster information to agencies and key end-users to complement the current efforts of existing government agencies and initiatives. DATOS builds on and integrates past and ongoing DOST-supported projects; and different Geographic Information System (GIS), Remote Sensing (RS) and other Data Science

techniques. Through the Philippines Research and Government Network/Internet (PREGINET) they will get Earth Observation satellite images from the Philippine Earth Data Resource and Observation Center (PEDRO). It will then be directed to the Computing and Archiving Research Environment (COARE) and will be processed through the DATOS or remote sensing and data science to produce AI maps. This technology can be applied to assess flood damage, map land cover classes, assess earthquake damage, assess forest fire damage, detect damages, enable timely disaster response, monitor drought, assess urban sprawl, map fishponds and fish pens, detect trees, and monitor maritime through ship detection.



Next, the PhilSensors was staged by Mr. Arvin B. Laroza, Project Technical Specialist I of the DOST-ASTI. PhilSensors is under the Meteorological Data Acquisition Stations for Information Dissemination (MASID) which was created to continue the government's efforts in strengthening the country's disaster preparedness and mitigation plan. It has types which include Hydrometeorological Stations, Tsunami Detection Station, Agrometeorological Station, and ULAT Stations.

For the GeoriskPH, DOST-PHIVOLCS Science Research Specialist II Hanz Cesar M. Alejandria highlighted the various applications which provides geospatial information and analysis for hazards and risk assessments. These applications are GeoMapperPH which is used for

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Innovations for Resilience

DOST DOST-PHIVOLCS

the development of the National Exposure Database pre- and post-disaster; GeoAnalyticsPH for the visualization and analytics to develop various plans; and the HazardHunterPH which is a one-stop-shop for hazard assessment services for individuals and institutions. Local Government Units (LGUs) may use the information from the different applications which are guided by standards. Mr. Alejandria also showed how to navigate the platforms along with the detailed features.

As timely as it can be, DOST-ITDI Senior Science Research Specialist Engr. Dante Vergara discussed the Emergency Disinfection System which is known as mobile, compact, and energy self-sufficient way of disinfecting and treating up to 1 cubic meter per day of surface and flood water. Engr. Vergara also discussed the parameters met for the treated water to be considered as potable. In time of calamities, the public can turn to this cost effective system rather than buy bottled waters.

During catastrophes, the Emergency Food Reserve can be utilized. This was further explained by Ms. Lourdes S. Montevirgen, Supervising Science Research Specialist and Head of Food Safety Section of DOST-ITDI. Ms. Montevirgen featured the ITDI's Superflour which is a Ready Reserve Nutrifood made up of camote, cassava, saba, kalabasa, mungo, soybeans, malunggay and is intended for community livelihood, food security, nutrition feeding, and disaster preparedness.

Bringing Packaging Innovations to Reality

- Realization that there is a need for development of products that can be used during distribution and stockpiling of relief foods.

Survivors need food that can be eaten without water and drinkables, & without cooking.

Packaging Technology

This can be served in different ways like a soup and dessert or it can be incorporated with other ingredients to produce biscuits, cake, oatmeal bars or chocolate bars. She further added that using locally available food helps in the economic and agricultural development in the countryside, offers lower cost than food shipped from other donors, timelier assistance, fosters in the resilience of communities to food shortages and disasters to reduce costs shouldered by government and private businesses, and to protect assets and lives during disasters.

Lastly, the Ready-to-Eat food was showcased by Ms. Grace Noceja, Supervising Science Research Specialist of the Packing Technology Division of the DOST-ITDI. She mentioned that there are a number of suitable food which caters the different stages of providing relief goods like the congee, biscuits and crackers, noodles, and rice. And as part of their responsibility to provide nourishment and livelihood to the victims of calamities, they have attained several achievements which inspires them in their commitment to provide relief goods to every Filipinos.

To formally close the forum, DOST 1 DRRM Focal Person and ITSM Head Unit Science Research Specialist II Michael John C. Maquiling said that apart from providing awareness on the available DRRM-related technologies, the agency is also open to cooperators and adopters who are keen to utilize the presented initiatives and interventions.

DOST 1, Modulhaus Inc. launch the First Face Mask Production Facility in Northern Luzon

By: Carla Joyce B. Cajala



AGOOG, La Union- Safetech by Modulhaus Incorporated, in partnership with the Department of Science and Technology Region 1 (DOST 1), launch the first ever facemask production facility in Northern Luzon on November 25, 2021.

The Launching Ceremonies was attended by the different Regional Directors of the various government agencies in region 1. Among the significant people in attendance are DOST 1 Regional Director Armando

Q. Ganal, Department of Trade and Industry (DTI) Region 1 Director Grace F. Baluyan, Ilocos Training and Regional Medical Center (ITRMC) Medical Center Chief Dr. Eduardo M. Badua III, Food and Drug Administration North Luzon Cluster Director Dr. Gomel Gabuna, DTI La Union Provincial Director Merlie Membrere, Local Government Unit (LGU) of Agoo Municipal Health Officer Dr. Michael Dave Mesias, and other representatives from government line agencies.



The production facility is owned by Mr. Richard Chan who has been a DOST 1 Small Enterprise Technology Upgrading Program (SETUP) beneficiary since 2016 for his family-owned corporation named Modular Plus Home System Incorporated which produces modular products like kitchen, wardrobe, and pantry cabinets, restaurant, and console tables, bathroom, and vanity fixtures, and other architectural and interior office features.

Moreover, behind his astounding entrepreneurial capabilities is a genuine heart to help, as he has proven his timely and resilient response to the pandemic by donating fourteen (14) Specimen Collection Booths (SCBs) in region 1 last May 2020. The SCBs were deployed to the different public health facilities across the region to aid in the conduct of Reverse Transcription Polymerase Chain Reaction (RT-PCR) tests.

As a proud accomplice of the project, Engr. Edison M. Acosta, Officer-in- Charge (OIC) of the Provincial Science and Technology Center La Union (PSTC-LU) gladly acknowledged the guests.

In his Opening Remarks, Director Ganal commended the efforts of Mr. Chan and the Modulhaus Inc. towards the success of the production facility. He cited that this endeavor is a response to the challenges of times. "All of these are part of our mantra in leading the way through science technology and innovation in the region," he remarked.

Delighted with the overwhelming support, Mr. Chan briefly narrated how the idea of producing surgical face masks came to light. He commended the tremendous support of DOST 1 through the SETUP program in realizing the company's goals in the combat of the pandemic. As confident as he could be, Mr. Chan and his company look forward to tapping sizeable markets and exciting ventures as their production facility have undergone and passed intensive testing method reaching a 99.9% efficacy as a protective gear. He is elated that they are not only recognized by government offices but more so by the different pharmaceutical companies and private entities.

DOST Secretary Fortunato T. De La Peña recalled the scarcity of face masks supply when the COVID 19 started, and he acclaimed on how timely this initiative of the Modulhaus Inc. is, in producing face masks at this moment through the help of the SETUP program. Secretary De La Peña recognized other partner government agencies, institutions, academe, and groups towards the fulfillment of the DOST's vision towards community development. "You are our partners in attaining the DOST's mission to direct, lead and coordinate the country's scientific and technological efforts geared towards maximum social benefits for our people," he cited.

As the father of the Province of La Union, Hon. Francisco Emmanuel R. Ortega III, extended his excitement and congratulations as he recognized the significance of the opportunities brought by the advancement of technology and further commended the gain in innovation for the province especially in the field of health and economic development. Governor Ortega acknowledged, "Our continued partnership speaks of our aspirations and commitment to achieve our goals and wisdom as one united provide. Let us continue to forge stronger ties for innovative projects such as this."

Director Baluyan started, "I am as proud as you are Sir." She commended the innovation of the Modulhaus Inc. and expressed her support as she said, "In behalf of DTI, we are committing our support to



this project and to the enterprise." She hopes that the company continues to be viable and operative so that it can continuously sustain the jobs that were generated through the enterprise. "Do keep producing and do keep selling, we'll do our best to support you," she ended.

As this initiative is directed for the health of the people, the Department of Health-Center for Health Development Region 1 (DOH-CHD 1), through Local Health Support Division Chief Dr. Jimuel Cardenas expressed his deep gratitude to DOST 1 for their work and dedication amidst the pandemic. He remarked that the presence of the production facility will not only help in the shortage of surgical masks in the region but will also aid in sustaining its availability in the market.

He further urged, "The road ahead may be precipitous, but this pandemic only made us realize that no obstacle can stop us to achieve our common goal, that is to lead the country in the development of productive, resilient, equitable, and people-centered health system."

Dr. Badua, Dr. Gabuna, and Dr. Mesias also extended their congratulations to the DOST 1 and Modulhaus Inc. for the great endeavor. They recognized the great role of this remarkable innovation to the greater benefit of the people when it comes to health promotion

They look forward to the productive partnership in bringing quality health promotion through the availability of the face mask production facility in the province..

Dr. Ismael D. Gurtiza, Assistant Regional Director for Field Operations acknowledged the notable attendance of the guests and officials who have shown their support to the activity. "It is our hope that what we have witnessed today will be spread to the people in the Ilocos and nearby regions, to all government agencies and private sector the existence of this facility in the region where they can get their supply of facemask," he concluded.

The launching ceremonies were followed by a tour around the production facility and a press conference spearheaded by DZAG Radyo Pilipinas Agooo.

DOST I, PSTC-LU Inaugurate the New Provincial Science & Technology Center- La Union Multi-Purpose Building

by: Engr. Eiryz Clyde Angelique D. Orpilla



As part of the 2021 National Science and Technology Week (NSTW) celebration, the Department of Science and Technology Regional Office 1 (DOST-1), through its Provincial Science and Technology Center- La Union (PSTC-LU), successfully conducted the Blessing and Turnover of the new Provincial Science & Technology Center-La Union Multi-Purpose Building on November 26, 2021.

This ceremonial turnover was attended by Regional Director Armando Q. Ganal of DOST 1, Provincial Director Jonathan M. Viernes of PSTC-LU, Engr. Clide M. Estrella of the Department of Public Works and Highways (DPWH)- La Union 1st District Engineering Office, Engr. Alex Villanueva and Engr. Dominic G. Dela Cruz from the DPWH-Regional Office 1, Regional Director Ria V. Bansigan of the Department of Budget and Management (DBM) and OIC- Supervising Budget and Management Ms. Joceleene B. Bumatay Specialist of DBM.

The construction of this 3-storey building started in the Second Quarter of the year 2019 and was successfully completed last July 2021. This marks another milestone for the PSTC-La Union to cater more services in the field of science and technology. The new Multi-Purpose building is intended to be the Metrology Center for calibration services and Training Center for food processing in the province. The 3rd floor will serve as a conference hall which can be used for events like business conferences and meetings.

A ceremonial ribbon-cutting ceremony was led by Dr. Armando Q. Ganal, Engr. Clide M. Estrella of DPWH-LUED1 and PD Jonathan M. Viernes to officially open the new Provincial Science & Technology Center-La Union Multi-Purpose Building followed by the unveiling of its marker.

Rev. Fr. Allenby A. Failon of the Our Lady of Holy Rosary Church officiated the blessing of the new building.

Engr. Clide M. Estrella stated in his turnover speech that the DPWH 1 implemented and completed the construction of the 3-storey Multi-Purpose building with the aim to have a more comfortable working environment and eventually improve the well-being of the staffs. "Maraming salamat po at nabigyan kami ng pagkakataon upang makatulong po sa pamamagitan ng pagpapatayo ng building na ito. Nawa'y matugunan po iyong ating pangangailangan, regarding sa office po natin, at nawa po ay maenjoy niyo ang building na to.", he added.

Director Bansigan of DBM expressed her excitement about the new building and congratulated the DOST-PSTC staff for another milestone. "It only shows there is a growing recognition in the part of the government of what science and technology innovations can do to make resilient communities," she emphasized.



Dr. Armando Q. Ganal expressed his sincere thanks to the DPWH 1 as he delivered his acceptance speech. He said that the building will be the center in providing services for the people. "Isa rito, ay nabanggit din kanina ay ang calibration, isang mandato ng DOST na magbibigay ng kahalagahan sa mga produktong binibili natin sa pamilihan, ika nga "we get the goods for our money's worth", he said. "Sa gusaling ito rin ang magiging sentro ng pagsasanay sa larangan ng food processing upang lalong mapaunlad ang pag-negosyo ng ating mga Micro, Small and Medium Enterprises o magkaroon ng oportunidad ang grupo ng mga kababaihan, kabataan o ng mga senior citizens", he added.

Director Ganal confidently invited the Regional Development Budget Coordinating Committee to hold their next budget hearing meeting in PSTC-LU's new Multi-Purpose Building.

Governor Francisco Emmanuel "Pacoy" Ortega also sent his regards through a recorded message video on which he said, "this milestone will give us the upper-hand and advance our game in innovation and development."

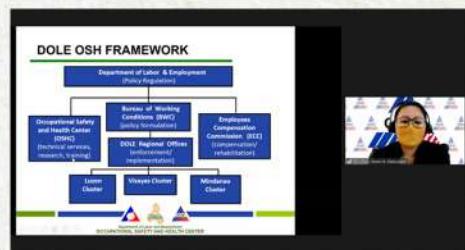
PD Jonathan Viernes also expressed his gratitude in his closing remarks by saying, "I'm very thankful for DPWH and I hope that in the future, when we request for another construction project, you (referring to DPWH) will once again grant our proposal."

The event successfully ended with photo-ops together with the special guests from the said agencies.



Be Healthy and Safe at Work! DOST 1 strengthens OSH in the Workplace

By: Carla Joyce B. Cajala



The Disaster Risk Reduction and Management (DRRM) Unit of the Department of Science and Technology Region 1 (DOST 1) conducted a webinar on Occupational Safety and Health in the Workplace via Zoom and Facebook Live.

As he welcomed the participants, DOST 1 Regional Director Dr. Armando Q. Ganal highlighted that the agency has remained committed with its mandate to provide central direction, leadership, and coordination of scientific and technological efforts to widen their reach to geographically isolated and less privileged communities. He continued, "May the knowledge you learn in this S&T [science and technology] week inspire you in pushing forward science and technology programs and projects in your respective areas."

Engr. Karen Balucay-Matusalem, Officer in Charge and Regional Focal Occupational Safety and Health Center- Regional Extension Unit II (OSHC - REU II) was the Resource Speaker for the day. She started with sharing the mandate of the OSHC to protect the workers through a preventive approach and reducing if not eliminating the occupational accidents and illnesses.

Being the lead agency of the government in charge of the administration and enforcement of laws, policies, and programs on Occupational Safety and Health (OSH), the Department of Labor and Employment (DOLE) works hand-in-hand with the OSCH, Bureau of Working Conditions (BWC), Employees Compensation Commission (ECC), and DOLE Regional offices to effectively formulate policies, and enforce the OSH programs, and compensate if necessary.

Engr. Matusalem presented the status of OSH data along with the different kinds of accidents in the workplace with their causes and possible resolutions. She reiterated that it is the people, environment, materials, and equipment that contribute to the occurrence of accidents.

Apart from the causes, Engr. Matusalem further dissected the differences between the unsafe and unhealthy acts from the unsafe and unhealthy conditions. The unsafe acts include operating equipment without authority and removing safety devices while unhealthy acts pertain to smoking cigarettes in the workplace and inhaling organic

solvents. On the other hand, unsafe condition depicts defective tools or equipment and congested or blocked exits, while an unhealthy condition is exemplified with excessive noise and inadequate illumination or ventilation.

To fully educate the participants, Engr. Matusalem explained that Workplace Good Housekeeping, Fire Safety, Machine Safety, Safety in material handling and storage, and Electrical Safety would be of great benefit to maintain a safe and healthy workplace.

In addition, she touched on Hazards Identification, Risk Assessment and Control (HIRAC), and Hierarchy of Controls which include Engineering, Administrative Controls, and Personal Protective Equipment.

Engr. Matusalem ended by sharing some of the bases for the OSH program implementation which includes the Labor Code of the Philippines (PD 442, 1974), OSH Standards (1978, amended in 1989), Republic Act No 11058, and its IRR (January 24, 2019), and DOLE Department Order No. 198 (IRR of RA 11058).

Finally, Mr. Michael John C. Maquiling, Head of the Information Technology Services (ITSM) Unit, Disaster Risk Reduction and Management (DRRM) Focal Person, and the Safety Officer of DOST 1, commended the organizers for the fruitful conduct of the webinar. He emphasized that a safe workplace will ensure the safety and health of the employees which will then lead to productivity at work.

KUDOS DOST 1! NSTW in Region 1 ends with a BANG!

By: Carla Joyce B. Cajala



The Department of Science and Technology Region 1 (DOST 1) successfully commences the week-long regional celebration of the National Science and Technology Week (NSTW) in Region 1 with the theme, "Agham at Teknolohiya: Tugon sa Hamon ng Panahon", on November 12, 2021, via Zoom and Facebook Live.

DOST 1 Regional Director expressed his gratitude to all the participants, organizers and speakers who have tirelessly shared their efforts for the success of the NSTW in region 1.

"With the mandate to promote central direction, leadership, and coordination of scientific and technological efforts and to ensure that the results are geared and utilized for the economic and social benefits of the people, we remained steadfast to our commitment, and we have taken the challenge to widen our reach including the geographically isolated and less privileged communities and bring to the doorsteps of the people the benefits of technology," Director Ganal remarked.

During the Closing Program, the agency presented the synthesis of activities, webinars, and virtual exhibits that happened during the celebration. A total of 7,448 attended the different webinars and 9,466 have viewed the virtual exhibits.

Dr. Dexter R. Buted, President of Pangasinan State University and Region 1 of the Philippine Association of State Universities and Colleges (PASUC), spoke as the guest speaker during the event and congratulated DOST 1 for their hard work and fruitful celebration.

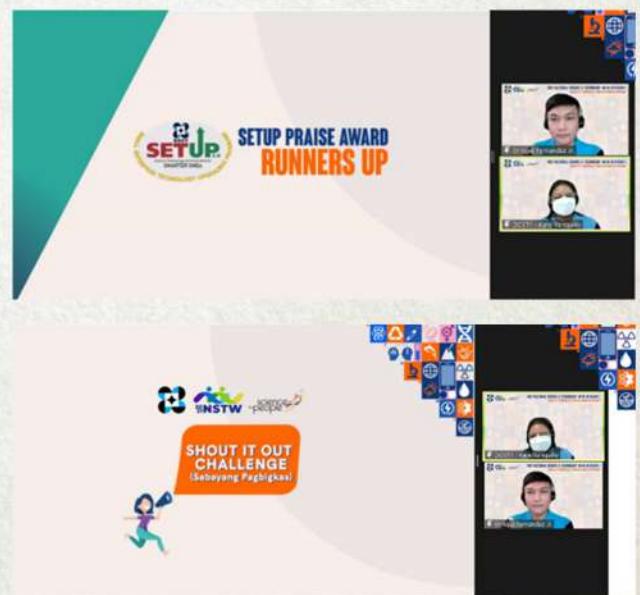
"I salute the DOST for standing that kind of principle, and that is to uplift the way of life of its people. Ako'y lubos na umaasa na patuloy tayong lilikha ng pangmatagalang solusyon [at] sa mga problemang kinakaharap ng ating komunidad at ng ating bansa. And with that help of science and technology, we can foster sustainable development that will lead to a better, brighter life for all Filipinos," Dr. Buted acclaimed.

The program included the awarding of Ownership for Graduating Small Enterprise Technology Upgrading Program (SETUP) Cooperators, Regional SETUP Productivity, Resilience, Agility, Innovativeness, and Excellence (PRAISE) Award for micro, small, and medium enterprises (MSMEs), Outstanding SETUP Adopter per Province, and Most Outstanding Community Empowerment through Science and Technology (CEST) Community.

The announcement of winners for the Regional Science and Technology Quiz, Tech-Tok, Shout it Out, "Sci-Talk is In", National Academy of Science and Technology (NAST) Regional Scientific Meeting Poster Contest, Science and Technology Academic and Research-Based Openly-Operated Kiosk Stations (STARBOOKS) Testimonial Video Contest, STARBOOKS Photo Contest, and STARBOOKS Poster and Slogan Making contests took place during the program.

DOST 1 Assistant Regional Director for Finance and Administrative Services Unit, Atty. Jasmin C. Bañez said on her Closing Remarks, "Anumang hamon ng panahon, ang agham at teknolohiya ay maaasahan, at walang hamon ng panahon, pandemya man yan o kalamidad, walang mkakapigil para maipaabot ang STI (Science and Technology Innovations) sa mga tao."

Moreover, she cited that the week-long activity will not end science and technology innovations will continue to soar high in region 1. "Guided by the principle, science for the people, DOST 1 will continue its commitment to help for the betterment of the life, the people of region 1. Let us all work hand in hand to overcome these challenges of times and to contribute to the national development," she concluded.



DOST 1 PSTC-LU helps boost LIVELIHOOD PROGRAM by conducting enhancement training on mango wine and vinegar processing

By: Michaella P. Cabading

LA UNION, November 19, 2021 -- In collaboration with Barangay Sagayad, City of San Fernando, La Union, the Department of Science and Technology Region 1 (DOST 1), thru the Provincial Science and Technology Center- La Union (PSTC-LU) was able to launch an enhancement training on mango wine and vinegar processing for Sagayad Farmer's Association held at Multi-Purpose Building of PSTC-LU last November 18, 2021.

The mango vinegar production in Sagayad, City of San Fernando started since 1990s. The barangay produces mango vinegar in their households and sell it to the public. However, it remained unstable due to lack of various factors like skills, formal training and facilities that affect their production. The Association and barangay Sagayad sought assistance from DOST 1 PSTC-LU to acquire appropriate equipment and provision of technical assistance and consultancy that will help improve their mango vinegar business and wine production.

The DOST 1 PSTC-LU partnered with Don Mariano Marcos Memorial State University- Mid La Union Campus (DMMMSU-MLUC). Prof. Rossana P. Abat of DMMMSU Food Technology Department was the resource speaker and trainer, assisted by Ms. Criselda V. Nisperos and trained 18 members of the association and 3 from Municipality of Aringay. The participants were trained in food safety and good manufacturing practices, proper handling and appropriate process flow of wine and vinegar production.

Certificate of appreciation was awarded to the resource speaker and certificate of participation to the participants.

This intervention allows them to produce quality and sustainable product for their livelihood program.



DOST assists Caoayan Ipon Bagoong Association through GIA Program

By: Laurine R. Sales



CAOAYAN, ILOCOS SUR – With the strategies to empower community through technology innovations, the Department of Science and Technology (DOST) Region 1 Provincial Science and Technology Center - Ilocos Sur, through its Grants-in-Aid Program granted financial support amounting to Php126,650 for the improvement of the product and production facility of Caoayan Ipon Bagoong Association, Inc.

Caoayan Ipon Bagoong Association, Inc. (CIBAI) is an association duly registered under the Securities and Exchange Commission (SEC) engaged in processing of gobies locally known as 'ipon' to make bagoong and are located at Brgy. Callaguip in Caoayan, Ilocos Sur.

The association was assisted through the acquisition of 10 fermentation drums, stainless steel preparation table, chest freezer, and the provision of packaging and labeling assistance.

Through these interventions, the association is expected to increase its volume of production and productivity and be compliant with the Food and Drug Administration (FDA).

Meanwhile, Caoayan is a coastal community and planning to consider ipon catching as one of its tourist attractions.

Ipon is an Ilocano exotic food available only in season. It is a lunar fish as they only appear 7-8 days after the full moon during the months of August to October and 10 days after the full moon during the months of November to February. With this, the ipon is valuable and has high demand among the people.

To date, the association is producing approximately 1,000 bottles of ipon bagoong at 200 grams and 400 grams per bottle.

The GIA funded project was awarded to the association on May 6, 2021 at the PSTC-Ilocos Sur.

The GIA or community-based program provides grants to all associations and cooperatives in the province providing that they are registered organizations.

For more information, email ilocossur@region1.dost.gov.ph or visit our Facebook page at www.facebook.com/DOSTIlocosSur.

Food innovation and development of local MSMEs with the help of science and technology

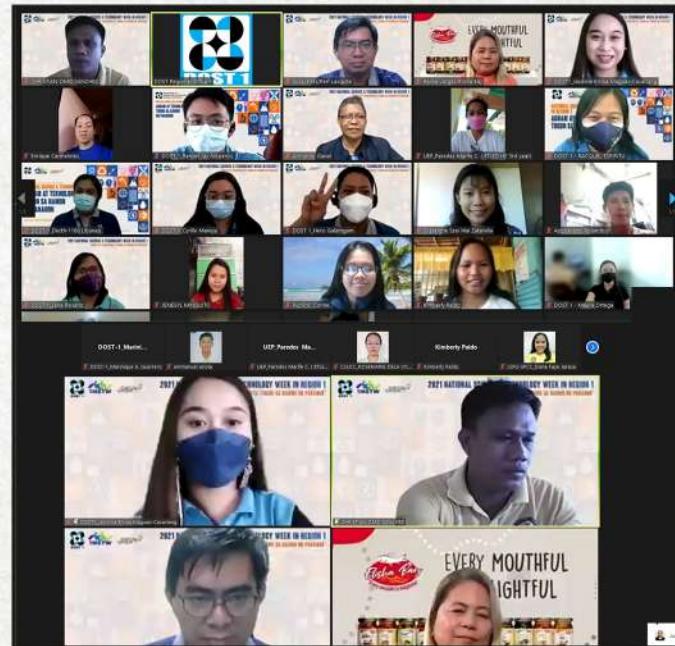
By: Marinique A. Guerrero

City of San Fernando, La Union – The discussion on the webinar entitled “Food Innovation and Development: Food Industry’s Experiences of local MSMEs” was spearheaded by Ms. Raiisa Vargas, Mr. Perfecto Lastique Jr., and Mr. Christian Omo Sanchez, who are entrepreneurs in region 1 and the owners of Elisha Bay, SossyBites and Father&Son Rabbit Farm, respectively.

Their business strived and became successful amidst the threat of pandemic. They have shared their coping up mechanisms and mindset through the adversities in the entrepreneurship world and how the Department of Science and Technology Region I (DOST-1) contributed to their growth.

DOST-1 through the Small Enterprise Technology Upgrading Program (SET-UP) and the Regional Standards and Testing Laboratory (RSTL) have helped micro, small and medium enterprises (MSMEs) within the region to develop and innovate their products and have provided equipment to make the process easy and yield high quality products. Through science and technology, the chances of food manufacturing businesses for success is higher.

Ms. Vargas discussed their humble beginnings and how their business started, in which, she stated that their business journey began through her and her husband's conceptualization as community-based social enterprise. They pursued their business with their intention and advocacy to provide jobs for Persons with disabilities (PWD). This intention emerged when they noticed that there were lots of PWD at their place. Kindness thus goes a long way. “Be Creative. Be Innovative. It is not enough to simply have an idea. You must make it into a reality,” Ms Vargas said.



“We bring joy to every Filipino Family” is the phrase that describes SossyBites – a registered food trading business founded and established in 2018 and owned by Mr. Lastique. He inspired and motivated the participants with his humility and stated that anyone can start with a dedicated care and love to your business, and with the thought to keep growing and keep pushing no matter the failures and disappointments.

"We bring joy to every Filipino Family" is the phrase that describes SossyBites - a registered food trading business founded and established in 2018 and owned by Mr. Lastique. He inspired and motivated the participants with his humility and stated that anyone can start with a dedicated care and love to your business, and with the thought to keep growing and keep pushing no matter the failures and disappointments.

SossyBites offer "kakanin" or mostly riced-derived desserts typically known in the province. He then thoroughly emphasized innovations and developments in his talk and how science and technology help improved their business.

The challenges on farms and/or poutries have greatly affected Filipinos as well, aside from the pandemic. The African-swine fever (ASF) and bird flu led to a limited supply on meat products and goods. Mr. Sanchez, through his idea of finding an alternative, shifted from pig and chicken poutries to rabbit industry. With his innovative mind, he tried to cooked one of the rabbit with lean meat. His business began to grow when he offered it to his friends until clients knew what his product was.

It would take patience and a lot of effort in starting a business, but it would be worthwhile when we see the result.

Elisha Bay Dagupan Bangus and Seafoods: A good 'catch' with DOST-SETUP

By: Katrina F. Ronquillo



Randy and Raiisa Vargas on the awarding of check for their first phase of SETUP assistance in 2018. (from left to right in the photo: Randy and Raiisa Vargas, DOST-1 Regional Director Dr. Armando Q. Ganal and the then Officer-in-Charge Engr. Arnold C. Santos of DOST-PSTC Pangasinan Satellite Office)



When foodies talk of the tastiest bangus available, one would surely suggest the famous and iconic Dagupan bangus. Known as the "Bangus Capital" of the Philippines, Dagupan City earned its reputation for being one of the major suppliers of milkfish or "bangus" in the country. A Pangasinan trip wouldn't be complete without having a food crawl in the streets of Dagupan where grilling of fresh Dagupan bangus is an ubiquitous sighting. Every year, the city also celebrates Bangus Festival in appreciation of the cultural significance of Dagupan bangus and the city's rich aquaculture production.

For those who are not a fan of grilled Dagupan bangus, processed Dagupan bangus products are also available in the area -- deboned Dagupan bangus, smoked bangus, and bottled bangus products, to name a few. And speaking of authentic and export-class quality processed Dagupan bangus products, Elisha Bay Dagupan Bangus and Seafoods would definitely make it to the list.

The humble beginnings of Elisha Bay Dagupan Bangus and Seafoods began when couple Randy and Raiisa Vargas established the firm in Mangin District of Dagupan City, Pangasinan in 2014. It was after almost 30 years when the couple decided to go back to their profession as Fish Processing Technology graduates. Having encountered several backyard bangus processing projects in their vicinity, they then realized the potential market acceptability of the product. Prior to the bangus processing enterprise, they first ventured into ice cream and donut business. Raiisa was also an area manager of a fast-food chain then.



Bottled bangus products of Elisha Bay Dagupan Bangus and Seafoods

With the couple's conceptualization of coming up with a community-based social enterprise, Elisha Bay Dagupan Bangus and Seafoods is rooted in the hopes of providing employment opportunities to the differently abled individuals and underprivileged women. To contribute to their community, the firm hired two (2) Persons with Disabilities (PWDs) and three (3) housewives and had them trained by the Department of Trade and Industry and Dagupan's City's Agriculture Office. To start the business, the couple rehabilitated an old house for their processing area.

In 2018, the firm sought the assistance of the Department of Science and Technology Region 1 (DOST-1) through the Provincial Science and Technology Center (PSTC) - Pangasinan Satellite Office located in Urdaneta City, Pangasinan for the upgrading of their production facility. With its eagerness to infuse technology in its production process, Elisha Bay Dagupan Bangus and Seafoods applied for the Small Enterprise Technology Upgrading Program (SETUP). On July 3, 2018, the enterprise received its first phase of SETUP assistance worth PhP269,530.00 of Innovation-enabling Fund (iFund). The iFund was used for the purchase of pressure cooker, dual function chest freezer, and stainless tables. Aside from the equipment, the fund was also used for the heat distribution test and nutritional analyses of their bottled bangus products.

For them, SETUP paved the way for the quality improvement and food safety of their processed bangus products. It has also helped them to obtain certifications from the Food and Drug Administration (FDA). "Napakalaki ng naitulong ng Food Safety [Assessment] at current Good Manufacturing Practices [training] na nag-motivate po sa amin na kumuha ng FDA License-to-Operate. Meron na rin po kaming anim na products na may FDA Certificate of Production Registration at on-process po ang iba pang mga produkto. Naging posible ito sa pamamagitan ng SETUP fund na aming ginamit sa iba't-ibang tests ng aming produkto," Raiisa added. Elisha Bay Dagupan Bangus and Seafoods was also able to secure its U.S. FDA Food Facility Registration in February 2021.

With these certifications, their products are now widely sold in some supermarkets in Metro Manila. They are also supplying some restaurants in the area and have resellers in some parts of the country. Since their bottled bangus products are also U.S. FDA-certified, the firm already exports their products to California, Texas, Washington, and Florida in the United States of America. Currently, Elisha Bay Dagupan Bangus and Seafoods has on-going negotiations with prospective resellers in the United Kingdom and Hong Kong. The firm has also tied up with International Food Exhibit Connect (IFEXConnect), a digital trade community platform for Philippine food brands and emerging trends in the food industry.

Among the products that the firm offers are gourmet Dagupan bangus with various flavors like pesto, garlic, Hainanese, Asian Steak, spicy masala, and chili garlic. In addition, Elisha Bay Bangus and Seafoods takes pride of their bottled bangus products which have different variants such as Portuguese-style in Olive Oil, Original and spicy adobo style in corn oil, pesto-flavored in olive oil, bangus with tomato sauce, bangus with turmeric olive oil, bangus Hawaiian-style, and bangus with sun-dried tomatoes in olive oil.

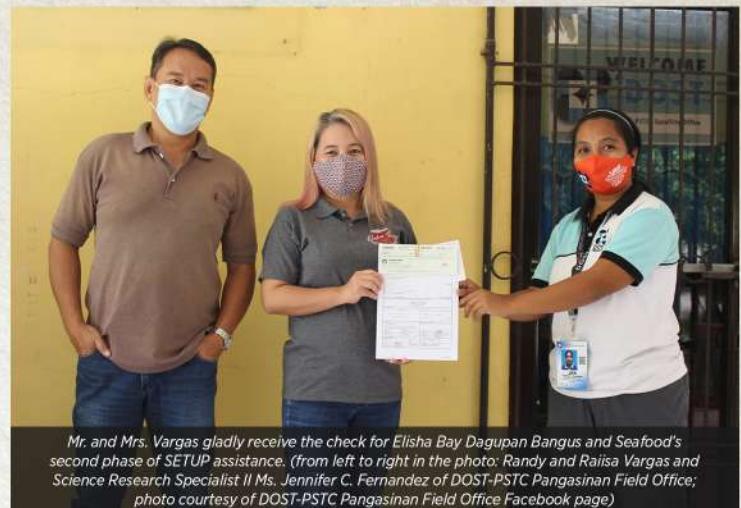


*Elisha Bay Dagupan Bangus and Seafood's Gourmet Bangus in Spicy Masala flavor
(photo courtesy of Elisha Bay Dagupan Bangus and Seafoods Facebook page)*

Recently, the firm has also started producing Ba-Yo in corn oil, which is a combination of bangus and tuyo bottled product. The innovation came into mind when Randy was craving for adobong bangus for breakfast but Raiisa wanted tuyo. Thinking it that would be a waste to open and consume bottled bangus and bottled tuyo at the same time, Raiisa then came up with the idea of combining the savory taste of bangus and the distinct saltiness of tuyo in a bottle. With Raiisa's "Eureka!" moment, Ba-Yo is now one of the bestseller products that are exported overseas.

With the economic downfall and multiple business closures due to the COVID-19 pandemic which started in 2020, Elisha Bay Dagupan Bangus and Seafoods was no exempt. The firm has to temporarily shut their operations for two (2) months due to the lockdowns. With such predicament, the firm focused on intensifying their marketing activities and came up with a multi-level distribution which was then an idea of their major distributor. Surprisingly, the products of Elisha Bay were able to reach and penetrate markets as far as the Provinces of Palawan, Agusan, Cebu, and the Davao Region.

It was indeed a rollercoaster ride for Elisha Bay Dagupan and Seafoods. With all the ups and downs a business may encounter, it is up to the entrepreneur to take the risk and face the threats and thrills. In the same year, the firm again reached out to the DOST-1 through its PSTC - Pangasinan Field Office to avail the second and last phase of assistance under SETUP. With the approval of their project proposal, Elisha Bay



Mr. and Mrs. Vargas gladly receive the check for Elisha Bay Dagupan Bangus and Seafood's second phase of SETUP assistance. (from left to right in the photo: Randy and Raiisa Vargas and Science Research Specialist II Ms. Jennifer C. Fernandez of DOST-PSTC Pangasinan Field Office; photo courtesy of DOST-PSTC Pangasinan Field Office Facebook page)

Dagupan Bangus and Seafoods was granted with a SETUP fund worth PhP1,370,580.00 for the acquisition of water retort and blast freezer. Aside from the equipment, the fund was also used for the microbial, nutritional, shelf-life, histamine, commercial sterility, and heat penetration testing.

Every year, the DOST-SETUP gives recognition and awards to its assisted micro, small and medium enterprises (MSMEs) in their efforts to search for technical assistance from the different DOST Research and Development Institutes (RDIs) and Councils, though technology acquisition, technology trainings, technical assistance and consultancy services, and other services which are embedded in the SETUP. Formerly known as the search for the Best SETUP Adoptor award, the SETUP PRAISE Award for MSMEs looks into the four (4) criteria where the MSMEs will be evaluated accordingly: Productivity, Resilience, Agility, Innovativeness, Sustainability, and Excellence (PRAISE).

Given the entrepreneurial performance and innovative outlook of Elisha Bay Dagupan Bangus and Seafoods, the firm was nominated for the said Search in Region 1. Along with the other contenders from the provinces of Ilocos Norte, Ilocos Sur and another from Pangasinan, Elisha Bay Dagupan Bangus and Seafoods clinched the title of this year's Regional Winner of the SETUP PRAISE Award for MSMEs.

For the Vargases, it is not enough to simply have an idea. One must come into the realization of his or her dreams. With perseverance and determination paired with science and innovation, Elisha Bay Dagupan Bangus and Seafoods has indeed come a long way from being an inspirational concept.



Resellers' favorite: Elisha Bay's Ba-yo (Bangus and Tuyo in Corn Oil). (photo courtesy of Elisha Bay Dagupan Bangus and Seafoods Facebook page)

Blue Ternate Milk wins S&T Product Development Contest of MMSU in Partnership with DOST

By: Kent J. Ramil



Blue Ternate Milk of Team FUTUREFUDTEKS bested over a dozen other developed food products during the S&T Product Development Contest held on November 11, 2021, via Zoom Online Platform.

As part of the celebration of National Science and Technology Week (NSTW), the Mariano Marcos State University (MMSU) in partnership with the Department of Science and Technology Region 1 (DOST 1) conducts S&T Product Development Contest on November 11, 2021.

The competition aimed to develop specific products using locally available and abundant raw materials to address the issues on wastage of excess farm produce as well as an extension of the shelf-life of a product by doing a value-adding activity and consequently making the product available even during the off-season. It was opened for all MMSU students who are capable of applying knowledge gained and applying unrealized potential skills in food product development.

The Blue Ternated Milk of Team FUTURETEKS stood out as they presented a very innovative way to use the Ternate blossoms in milk, the Runners up were Kamias Jam of Team M3 (Second Place) and Banana Pastillas of Team ACJ (Third Place).

The DOST will continue to support this kind of endeavor, and maybe in the long run we could assist these products through our Small Enterprise Upgrading Program (SETUP)" said Director Armando Q. Ganal, DOST Regional Director.

Members of the judging committee were MMSU President Dr. Shirley Agrupis, Vice President for Academic Affairs Dr. Prima Fe Franco, and Dr. Marlowe U. Aquino, Director of S&T Park. Also part of the judging panel were DOST 1 Regional Director, Dr. Armando Q. Ganal, DOST Ilocos Norte Director, Engr. Benjamin S. Mercado, Jr. and by Mr. Gerald Gabriel. The winner receives a certificate and a cash prize of Php. 4,500.00 while the second place receives Php. 2,500.00 and third place with Php.1,000.00. Consolation prizes were given to the non-winning entries.

DOST and MMSU have been partnering and giving opportunities to individuals who have the potential to be future partners in nation-building.

DOST provides free packaging and labeling enhancements to Associations and Cooperatives in Pangasinan

By: Edward E. Ugale

The Department of Science and Technology Regional Office 1, through its Provincial Science and Technology Center in Pangasinan, grants improvement on product packaging and provision of label designs to Binmaley Upward Christian Fish Processors Inc. of Binmaley, Golden West Agriculture Cooperative of Bani, Bugallon Farmers-Fisherfolks Producers Improvement Club of Bugallon, and Dangley Loving Mothers' Association of Agno, Pangasinan to boost the sales and market competency of their products.

The Packaging and Labeling assistance is part of the Regional Grant-in-Aid Community-Based Project (GIA-CBP) of the Department of Science and Technology Regional Office 1 (DOST-RO1) that offers technology upgrade to associations, non-government organizations and cooperatives who wanted to take their





businesses or livelihood programs a step higher towards progress. The program aims to help organizations and cooperatives acquire technology upgrades such as packaging and labeling enhancement to make their products more presentable and competitive in the market. The program also provide product testing, technical assistance and acquisition of appropriate technologies in order to improve product quality and their production processes.

The three associations also underwent Food Safety Assessment, one of the technical assistance and consultancy services offered by the DOST (a multi-agency Team of Food Assessors, led by DOST-1) to assess existing production processes and practices and provide recommendations to comply with the basic food safety regulations and practices. These interventions will help them sustain economic growth and development in their community through livelihood opportunity, job creation and social development.

DOST CEST introduces Charcoal briquetting technology to 2 insurgency-affected Barangays in Ilocos Sur

By: Jordan L. Abad



The Department of Science and Technology Provincial Science and Technology Center Ilocos Sur (DOST PSC-IS) through the Community Empowerment thru Science and Technology (CEST) program awarded charcoal briquetting equipment to insurgency-affected barangays of Ilocos Sur- Barangay Gusing, Sta Maria and Barangay Legaspi, Galimuyod, Ilocos Sur and trained 27 individuals on charcoal briquetting technology and bookkeeping last November 8-11.

18 participants from Gusing and Penned, Sta Maria and nine from Barangay Legaspi, Galimuyod attended the training on Charcoal Briquetting Technology on November 8 and 11, respectively. They were familiarized with the operations of the machines and the process of making charcoal briquettes out of abundant biomass resources such as bamboo, corn cobs, rice husk, among others. Officer-in-Charge PSC-IS Engr. Jordan L. Abad discussed the process based on the Forest Products Research and Development Institute (FPRDI) charcoal briquetting technology while Mr. Randy Andaya, a SET-UP cooperator and a charcoal drum kiln user, shared his experiences in using the technology and its operation.

DOST PSC IS granted charcoal briquetting equipment such as that were awarded includes a charcoal drum kiln, a carbonizer, a charcoal

fines-binder mixer, a crusher, and a manual charcoal briquetto. These FPRDI-developed machines were turned over to the barangay captains of Gusing and Legaspi including some weighing scale and other start-up supplies encouraging the production of charcoal briquettes in these communities. Charcoal briquettes are more efficient than ordinary charcoal as it burns longer, easier to ignite, produce more intense heat and with very little smoke.

"Pagyamanan launay ti DOST iti daytoy nga inpaay da nga makmakina tapno makapagproduce tayo iti charcoal briquettes nga mabalin tay nga ilako ken mangnayon iti income tayo. Haan tupayen nga masayang dagita rice hull ken daduma pay ta mabalin dan nga mauging (we are very grateful to DOST-1 for giving us these machines enabling us to produce charcoal briquettes that will increase our income. No more biomass material will be wasted because we could use it for briquetting)," said Johny Nanag, barangay captain of Legaspi.

Meanwhile, the Training on Basic Bookkeeping and Marketing Strategies was conducted on November 9 and 10 at Barangay Gusing and Legaspi, respectively. It is a support to the charcoal briquetting training to capacitate the participants who were encouraged to organize association for good record keeping and product pricing. The

DOST- 1 Awards 425k to Payas' Rice Mill for Technology Upgrading of a Grains Postharvest Facility

By: Christian Jastine V. Mendoza



The Department of Science and Technology (DOST-1) through its Provincial Science and Technology Center- La Union (PSTC-LU) office awarded a total of Php 425,000.00 to Payas Rice Mill as part of its initiative SETUP project entitled: TECHNOLOGY UPGRADING OF A GRAINS POSTHARVEST FACILITY. The awarded amount will be used to acquire Rice Huller Machine that intends to increase the volume production and sales of Payas Rice Mill by at least 25%. It also aims to increase the establishment's productivity by 17% and generate employment by one (1) worker in the 1st year of the project implementation.

Present in the awarding is Provincial S&T Director, Mr. Jonathan M. Viernes accompanied by Mr. Christian Jastine V. Mendoza (Project Assistant II), and the owner and operator of Payas Rice Mill, Mr. Rolito B. Boac. PD Viernes also discussed to Mr. Boac their responsibilities based on the Memorandum of Agreement (MOA) of the Project.

DOST's SETUP will continue its efforts to assist Small Enterprises to thrive in their respective niche through Science & Technology interventions.

MEIC Fabricates 9 Units of Welding Stand Positioners

By: Ruzzel Marvin A. Abuan

To continuously strengthen the Don Mariano Marcos Memorial State University - Mid La Union Campus (DMMMSU-MLUC) Metals and Engineering Innovation Center (MEIC), the Department of Science and Technology Regional Office No. 1 (DOST RO1) through its Provincial Science and Technology Center - La Union (PSTC- LA UNION) hired one (1) technical staff to assist the state university. One of the project objectives of the MEIC is to fabricate metal works needed as specified by DMMMSU or any partner institutions.

The MEIC staff repaired the existing 5 units of old welding stand positioners and fabricated 4 units of new welding stand positioners. These positioners are part of the learning interventions for students under the College of Technology particularly those students who were enrolled in the Bachelor of Science in Industrial Technology and Bachelor of Science in Electromechanical Technology.

The use and introduction of weld positioning equipment in education is one great way to display and enhance the skills of students. Positioners offer many benefits such as improving the quality of the weld, improving production speed while minimizing worker accidents, and lowers labor costs.

The MEIC is a facility to design and fabricate machineries and equipment that could boost the potential of metals and engineering sectors, not just in academe but also in micro, small, and medium enterprises. Also, it will support the requirements of agricultural and industrial companies in the region and partnerships in research and development.



NSTW in Region 1: Nutridense, Bakers PH address malnutrition by adopting e-Nutribun, FNRI technologies

By: Engr. Maura Andrea A. Ortega



2021 NATIONAL SCIENCE & TECHNOLOGY WEEK IN REGION 1
AGUSTO 2021 - AGUSTO 2021



The Department of Science and Technology Regional Office 1 (DOST-1), through its Research and Development and International Linkages Program Management Center, celebrates the 2021 National Science and Technology Week (NSTW) in Region 1 with the second episode of TechTalk via Zoom and Facebook Live.

TechTalk is a webinar series that promotes matured DOST generated and funded technologies. The special episode featured the enhanced Nutribun (e-Nutribun) and other DOST-Food and Nutrition Research Institute (FNRI) technologies together with some of their adopters in Region 1.

"I was in elementary school when the Nutribun was first introduced – that was in the 70s. It was a very big compact bun and served as snacks during our recess. It was just plain bread from flour, a little salt, and a little food color. Then, it was gone. Now, it is back in an enhanced form and made more nutritious," DOST-1 Regional Director Armando Q. Ganal shared in his opening remarks.

Meanwhile, DOST-FNRI Director and Scientist II Imelda Angeles-Agdeppa, said that the support of their partners in the regions and the entrepreneurs who have the appetite for a well-nourished country are required in addressing the immense situation of malnutrition.

"Let us continue our mutual passion to fight malnutrition and contribute to economic development. With various challenges ahead of us, there is really a need to continuously overcome barriers to sustain our endeavors for a healthy nation in spite of the current situation," she added.

Ms. Lea B. Landicho, Science Research Specialist II of DOST-FNRI Technology Diffusion and S&T Services Division, led the discussion on the e-Nutribun and other FNRI technologies ready for transfer and commercialization. The problem addressed, the solution offered, nutrient content, equipment and raw materials, investment cost, and market potential of each technology were presented. She said that these technologies had undergone rigorous R&D and were based on the results of the expanded national nutrition survey.

The FNRI technologies showcased were (1) fortified foods (Iron Rice Premix; Iron Fortified Rice; Iodine-Rich Drinking Water; Momsie; Micronutrient Growth Mix), (2) complementary foods (Rice-Mongo (Ri-Mo) Curls; Ri-Mo Instant Blend; Ri-Mo Crunchies; Ri-Mo-Sesame Blend), (3) Vegetable-Supplemented Products (e-Nutribun – Squash, Carrot, Sweet Potato variant; Pancit Canton with Squash), (4) Ready-to-Eat Foods and Ready-to-Drink Juices (Brown Rice Bar;

Canned Pochero; Canned Laing; Mango Juices), and (5) other technologies such as the Stabilized Brown Rice and Extruded Ready-to-Fry Sweet Potato Fries.

Ms. Jea F. Borja, Chief Operating Officer of Bakers PH in Ilocos Norte, stated that adopting the e-Nutribun increased the number of their clients. It also allowed them to be part of a project such as the school-based feeding program of the Department of Education in which they share the same advocacy in decreasing malnutrition in the country. Furthermore, the DOST-Small Enterprise Technology Upgrading Program (SETUP) helped them acquire the equipment needed in the production of the said technology. In addition to the squash and carrot variants of the e-Nutribun, they also plan to adopt the sweet potato variant and the Nutty Fruity bar.

On the other hand, Mr. Racky D. Doctor, President of Nutridense Food Manufacturing Corporation (NFMC) in Pangasinan, is a known adopter of various FNRI technologies. Among these are the Ri-Mo Blend, Ri-Mo Choco, Ri-Mo Curls, food fortificant (Go and Grow), Brown Rice Nutty Fruity Bar, Iron Fortified Rice, Rice for Women at reproductive age, and the e-Nutribun. His encounter with malnourished children inspired him to start a personal and corporate mission of uplifting their condition. Thus, he adopted the said technologies which he believes could save the children from malnutrition and make them healthy and productive citizens in the future.

"More than the profit derived from commercializing DOST technologies, these technologies enable us to transform our business as an instrument of change in improving health, productivity, economics, environment, and people's lives. Hence, an opportunity that we can look on [and] we can thrive on," he said.

Moreover, DOST-1 Field Operations officer-in-charge Decth-1180 P. Libunao, said that NFMC and Bakers PH have high food safety management. Apart from the nutritional value that they can offer, consumers are assured that these products are also safe.

Main Economic Activity: Food Manufacturing



Cattle ticks resistant to Ivermectin; NRCP Member recommends alternate use of 2 acaricides

By: Engr. Maura Andrea A. Ortega



The National Research Council of the Philippines (NRCP), in partnership with the Department of Science and Technology Regional Office No. 1 (DOST-1), spearheaded the 2nd year of the NRCP Regional Basic Research Caravan: "Cattle Ticks Talk" on 27 October 2021 via Zoom and Facebook Live.

"I believe that there is power in having access and an established grasp of science and technology knowledge and research as this can ignite more innovations in the long run. There is power in bridging basic research results to our countrymen as this encourages patriotism and a culture of care. By all means, this is when we understand that science is truly for the people," DOST Secretary Fortunato T. De la Peña said.

"Itatampok natin ang isang suliranin sa agrikultura na di gaanong napaguusapan. Ang mga cattle ticks o garapatang namemeste sa baka ay isang malaking problema para sa kabuhayan ng marami sa ating mga kababayan," Dr. Gregorio E.H. Del Pilar, NRCP President, said in his opening remarks.

Moreover, Dr. Rio John T. Ducusin, Chair of NRCP Division of Veterinary Medicine, emphasized the importance of the cattle industry especially in food security. It also has significant contribution to the country's socio-economic development and provides livelihood for many local cattle raisers. Tick infestation decreases cattle productivity and transmits diseases that can cause mortalities, leading to economic losses.

To address this problem, Dr. Remil L. Galay, Regular Member and Secretary of NRCP Division of Veterinary Medicine, investigated the resistance of cattle ticks to various chemical acaricides. Cattle ticks were collected from Northern Luzon Farms which is known to have high cattle population. For all the farms tested, amitraz have been found effective as the tick larvae have shown no resistance to it. Meanwhile, five farms had mortality below 80% after exposure to cypermethrin, suggesting the presence of resistance. In the case of ivermectin, larval mortality from six farms was lower than 80% suggesting possible resistance.

As a result, Dr. Galay recommended the following: (1) Use two types of acaricides alternately, (2) follow the recommended dose or dilution, (3) practice rotational grazing if possible, and (4) nutritional management of the cattle to be more resistant to ticks.

In La Union, no ticks were collected which reflects the good practice of the cattle farmers. Dr. Galay said that when cattle raisers observe even just one tick, they immediately remove it. In addition, the presence of egret in the farms contributes to the control of ticks as they are natural predators of external parasites.



Representatives from the provinces in Region 1 (Dr. Jimilee M. Garcia, Chairperson of Don Mariano Marcos Memorial State University – North La Union Campus (DMMMSU-NLUC) Animal Science Department; Dr. Cf Omar Bernardino D. Domingo, farm veterinarian of DMMMSU-NLUC; Dr. Jovito G. Tabarejos, acting Provincial Veterinarian of Pangasinan; Dr. Loida Valenzuela, Provincial Veterinarian of Ilocos Norte) raised important points to consider for evidence-based policy making. The availability of effective acaricides for rotational use, the need for expert advice on appropriate use of these chemicals, and implementation of rotational grazing were the highlights of the discourse.

Furthermore, other options in the control and prevention of ticks such as herbal acaricides and tick vaccines were brought up during the open forum which was moderated by Dr. Melbourne R. Talactac, regular member of NRCP Division of Veterinary Medicine.

Thereby, Ms. Michelle Grace V. Paraso, Vice Chair of NRCP Division XIII, presented these policy recommendations: (1) Formulate national policies and guidelines regarding the proper use of chemical acaricides, including monitoring the emergence of antimicrobial resistance, (2) Under a one health approach, strengthen national and local agricultural systems responsible for the manufacturing or importation, distribution, administration and monitoring of chemical acaricides for cattle raising, (3) Raise awareness among cattle industry stakeholders of effective strategies to reduce tick infestation through national and local forums, development of information, education and communication materials for end-users, and targeted communication campaigns, (4) Enhance the knowledge and skills of cattle raisers regarding the proper use of chemical acaricides for tick control through training programs and expert advice from veterinarians, and (5) Generate local research and evidence to inform future policy directions and priorities.

To close the event, "I hope that more than the learnings, there will be corresponding actions taken from different stakeholders to help the cattle industry in Northern Luzon," NRCP Executive Director Marieta Bañez-Sumagaysay said. This caravan which was hosted by Ms. Flor Marie Immanuel R. Pilapil-Amante, associate member of NRCP Division of Veterinary Medicine, is part of the pre-celebration of the National Science and Technology Week in Region 1.

DOST 1 gears up for the RxBox 1000 Project

By: Carla Joyce B. Cajala



The RxBox1000 Project Regional Management Team of the Department of Science and Technology Region 1 (DOST 1) prepares for the complete implementation of the RxBox project in the region by conducting a blended Capacity Building on October 29, 2021, and deploying the devices to the respective Local Government Units (LGUs) with the help of the Provincial Science and Technology Directors (PSTDs) and Alternate RxBox Focal Persons.

The project titled, "Roll-Out of 1,000 RxBox Telehealth Devices in Selected Rural Health Centers in the Philippines," introduces RxBox to better equip grassroots healthcare workers with technologies developed by our own Filipino scientists; technologies that would aid in providing better access to life-saving health services in geographically isolated and disadvantaged areas nationwide; and improve government health service delivery. There will be 1,000 RxBox units deployed around the Philippines, 44 of which will be in region 1.

The RxBox is an electronic diagnostic device in a box that includes a blood pressure monitor (sphygmomanometer), pulse oximeter, electrocardiogram, fetal heart monitor, maternal tocometer, and temperature sensor for diagnostic procedures and is capable of capturing and sending patient information over a distance whenever the patient needs to be referred to a specialist.

The hybrid Capacity Building which was held via Zoom was attended by Provincial Science and Technology (PSTC) Ilocos Norte staff Stephanie L. Otico, PSTC Ilocos Sur staff Roger C. Pido and Arthur A. Alviar, PSTC La Union Engr. Edison M. Acosta, PSTC Pangasinan staff Geamboy D. Morata, Edward E. Ugale and Jennifer C. Fernandez. It aims to provide training workshop to the assigned PSTC RxBox Alternate Focal Persons so that they can have easier access to the RxBox sites if any concerns emerge.



The members of the RxBox 1000 RMT who are Mr. Michael John C. Maquiling, Ms. Gael Myca A. Dacanay, and Ms. Carla Joyce B. Cajala demonstrated how to open, navigate, and explore the device's functions.

The RMT was able to monitor and supervise the Alternate Focal Persons' accurate handling and navigation of the equipment using the virtual platform.

In addition to capacity building, the Alternate RxBox Focal Persons for each province were able to deploy the first batch of devices to the beneficiaries.



DOST Pangasinan Awards RxBox Telehealth Device to LGU Beneficiaries

By: Edward E. Ugale



The Department of Science and Technology Regional Office 1 (DOST 1), through its Provincial Science and Technology Center in Pangasinan (PSTC - Pangasinan) awarded RxBox Telehealth Device to LGU Basista, Mapandan, Mangatarem, Bayambang, Alaminos City, Balungao, Binalonan, Pozorrubio, San Fabian, San Jacinto, and San Quintin. The said LGU beneficiaries will undergo RxBox Super Users' Training on November 16, 2021 to ensure proper and full utilization of the device.

The distribution of RxBox Telehealth Device is part of the implementation of the project "Rollout of 1000 RxBox Telehealth Devices to Selected Public Health Facilities" which aims to contribute to better access to life-saving health services in isolated and disadvantaged communities nationwide.

Launched formally in 2013, the RxBox is among the DOST's High Impact Technology Solutions. RxBox is a stand-alone monitoring device and integrates three eHealth Technologies: telehealth/telemedicine, RxBox Telehealth Device and CHITS electronic medical records system, designed by the UP-NTHC to strengthen health delivery systems.

The RxBox Telemedicine Device can transmit clinical data through the internet and links the primary care physicians working in remote municipalities, with clinical specialists who are based in urban medical centers, to support in their clinical decision-making.



DOST 1 successfully conducts RxBox Super Users' Training

By: Carla Joyce B. Cajala



The RxBox1000 Project Regional Management Team (RMT) of the Department of Science and Technology Region 1 (DOST 1), in cooperation with the Department of Health- Center for Health Development Region 1 (DOH-CHD 1) and University of the Philippines- National TeleHealth Center (UP-NTHC), conducted the 1st batch of Super Users Training (SUT) on November 16, 2021, virtually via Zoom.

The attendees were the Super Users of each beneficiary Local Government Unit (LGU) which comprise of a Medical Doctor, Registered Nurse, Registered Midwife and an Information Technology personnel. Also, the Provincial Science and Technology Directors along with the assigned Alternate RxBox Focal Persons from each province assisted in the conduct of the SUT.

During his Opening Remarks, DOST 1 Regional Director Dr. Armando Q. Ganal cited, "This is an inter-agency collaboration whose unified goal is to contribute to countryside development, aid in improving the Maternal and Child Health, controlling the Non- Communicable Disease rate in our country besides assisting in the growth of the Philippine eHealth and biomedical device industry." Further, he encouraged the health care workers to utilize the device accordingly as it will greatly help them in their quest towards providing quality health care to the community.

On the other hand, as a member of the RxBox RMT, DOH-CHD 1 Assistant Regional Director Dr. Mar Wynn Bello commended the collaboration of the inter-agencies in developing a device that may be used in geographically inaccessible and underprivileged communities. He encouraged medical personnel, saying that the present pandemic will soon be over, and that with the cooperation of all agencies, the Filipino people would be the healthiest in Southeast Asia.

Mr. Luis Macabasag of the UP-NTHC showed how the RxBox device works and how it can be used for telehealth. He emphasized the device's importance to the delivery of healthcare in the Philippines. A variety of video were displayed to reinforce this, demonstrating how the RxBox device can aid in locations where health care is not yet fully developed.

Ms. Gael Myca A. Dacanay, the RxBox Regional Training Coordinator of DOST 1, delivered a detailed overview of the essential characteristics of the technology to address the parts, functions, and instructions on how to utilize the RxBox device.

When problems and concerns arise, users must learn and practice troubleshooting techniques. Carla Joyce B. Cajala, a Project staff of the DOST 1, expounded on this.

Mr. Michael John C. Maquiling, the RxBox project's Regional Coordinator elaborated the details of the Memorandum of Agreement and the concerns around device ownership. He also shared a brief overview of how the project began and progressed.

In the afternoon, a return demonstration was held to assess the participants' ability to handle and navigate the device. In this session, the issues and concerns raised were also addressed. The 23 LGUs who attended the course were able to show proper device and application handling and navigation.

Mr. Deeth-1180 P. Libunao, Senior Science Research Specialist of DOST 1, concluded by commending the team for a successful SUT and encouraging the participants to use the equipment responsibly. He also outlined some of the agency's scientific and technological initiatives aimed at addressing those who live in far-flung areas.

DOST launches Iron Fortified Rice in Cervantes, Ilocos Sur

By: Laurine R. Sales



CERVANTES, ILOCOS SUR - The Department of Science and Technology Region 1 (DOST 1), thru its Community Empowerment thru Science and Technology (CEST) - "Engaging Local Communities with Science, Technology, and Innovation for Development Project" in collaboration with the Local Government of Cervantes has launched the Iron Fortified Rice at Brgy. Remedios of the municipality on November 24, 2021.

The launching is part of the celebration of the with the theme Agham at Teknolohiya: Tugon sa Hamon ng Panahon.

Dr. Armando Q. Ganal, DOST 1 Regional Director said that the launching is suitable to the National Science and Technology Week (NSTW) 2021 theme "Siyensiya ken teknolohiya, sungbat iti karit ti panawen." (Agham at Teknolohiya: Tugon sa Hamon ng Panahon). This technology is one of our ways to become healthy amidst the pandemic," he further stated.

Meanwhile, Engr. Jordan Abad, Officer-in Charge of PSTC-Ilocos Sur said the launching marks another milestone for the DOST-CEST program in the municipality as he provided a glimpse of the CEST program implementation in the municipality. He stated that with livelihood initiatives pertaining to mushroom production, coffee production and processing and in addressing malnutrition through the conduct of 120-day complementary feeding and water sampling activity, the IFR launching is another addition to these DOST interventions that would foster economic development.

"We are launching the first Iron Fortified Rice (IFR) facility in the province of Ilocos Sur," he also added.

Further, Secretary Fortunato De La Peña stated that this project aims to provide additional income to the rice millers and traders in the municipality that can also create employment and to have direct supplier of iron fortified rice in the province which will be used in the feeding program and for family consumption.

"Sa ating pagpapasinaya sa IFR facility na ito sa Cervantes, tunay ngang maipaparating natin ang serbisyo sa mga liblib na lugar kung tayo ay nagtutulungan. Sana ay maging huwaran ang proyektong ito na kayang kaya ng mga liblib na lugar tulad ng barangay Remedios, Cervantes, Ilocos Sur na makipagsabayan din sa pag-adopt at pag-commercialize ng dekalidad na teknolohiyang gawang pinoy upang makapagbigay ng hanapbhay, dagdag na kita, makatulong sa kalagayang pangnutrition," Secretary De La Peña added.

Moreover, DOST Food and Nutrition Research Council (DOST-FNRI) Director Dr. Imelda Agdeppa, Director IV and Scientist II, commended the launching of the IFR technology in Cervantes.

She said that the adoption of the technology in Cervantes is timely in the current circumstances especially since the pandemic exposes Filipinos to food insecurity and nutrient deficiencies.

Hon. Pablito Benjamin Maggay II, Mayor of Cervantes and Hon. Kristine Singson - Meehan, Ilocos Sur 2nd District Representative expressed their full support to the Cervantes Rice Traders Association (CRTA). "Leave your comfort zone, improve our product," Mayor Maggay said. "Iti goal tayo itatta ket diay pakadayawan ti Cervantes. We will support and help each other in promoting, encouraging, and commercializing our product," he further stated.

The launching was attended by the members of the Cervantes Rice Traders Association, Barangay officials of Remedios, various Local Government officials, personnel from the 69th Infantry Battalion headed by LTC Mercelo F. Valdez Jr., personnel of Cervantes Municipal Police Station lead by PCPT Maracio G. Dulawan, and many others. The activity was held at the newly renovated Iron Fortified Rice facility at Brgy. Remedios, Cervantes and viewed via facebook live thru the DOST 1 facebook page.

It's a wrap: 2021 RICE in Ilocos Region culminates with a clap!

By: Carla Joyce B. Cajala



The 3-day Regional Invention Contest and Exhibits (RICE) successfully ended with the announcement of winners on October 29, 2021 via Zoom and Facebook Live.

Department of Science and Technology (DOST) Undersecretary for Regional Operations Engr. Sancho A. Mabborang commended the collaboration of the DOST Regional Office with Department of Science and Technology-Technology Application and Promotion Institute (DOST-TAPI) for the success of the 2021 RICE in Ilocos Region. He encouraged young minds to continue pushing through their goals of listing Science and Technology Innovations (STI) for the betterment of the society.

"Most importantly, I admire the interest of the youngbloods in STIs. May you keep the passion burning and may you continue the legacy that your predecessors have established. Your chosen path gives us hope that all our hardwork and aspirations will never be put to waste. You are the best and the brightest minds from all over the region. Through you, we will continue to celebrate scientific and technological breakthroughs for the years to come," Usec. Mabborang uttered.

The list of winners are as follows:

Unlad Award for Outstanding Utility Model

1. Multi-fuel Dryer by Mr. Zaldy A. Fernandez
2. The Process of Making Rice Straw Geotextile Net by Dr. Rolando P. Javellonar

Likha Award for Outstanding Creative Research

1. Optimization of Mung Bean Milk-Based Mango Beverage by Ms. Charissa M. de Vera, Mr. Felcris Z. Dy, Ms. Meryl A. Bernardino and Mr. Cyril John A. Domingo
2. Baked Glutinous Rice Cake (Tupig) and Preparation Thereof by Dr. Veronica C. Austria, Dr. Raquel C. Pambid, Dr. Wilma M. de Vera and Mr. Cyril John A. Domingo

Sibol Award for Outstanding College Student Creative Research

Second Prize Winner

Process of Volvarella Mushroom Production in Multi-Bed Chamber by Ms. Heizelle Ann L. Corpuz, Mr. Christian G. Corpuz, and Engr. Raffy M. Espiritu (Adviser)



Sibol Award for Outstanding High School Student Creative Research

First Prize Winner

- The Hematopoietic Effects of Platito (Nothopanax scutellarium) Ethanolic Leaf Extract in Phenylhydrazine-induced Mice (Mus musculus) by Ms. Kathlyn O. Salanio, Ms. Mariel M. de los Santos (Adviser)

Second Prize Winner

- The Effect of Chitosan Derived from Mud Crab (Scylla olivicea) Shell in Controlling Rice Blast Fungus (Magnaporthe oryzae) in vitro by Ms. Rose-mel Xiamane S. Dayoan, Mr. Jacob Filippine G. Galzote, Mr. Charles Y. Salcedo (Adviser)

Third Prize Winner

- The Production, Characterization, and Potential of Ngalog (Portulaca oleracea) as Natural Sweetener by Mr. James Philip P. Ines, Mr. Charles Y. Salcedo (Adviser)

"Best Video Presentation"

First Prize Winner

- The Hematopoietic Effects of Platito (Nothopanax scutellarium) Ethanolic Leaf Extract in Phenylhydrazine-induced Mice (Mus musculus) by Ms. Kathlyn O. Salanio, Ms. Mariel M. de los Santos (Adviser)

Second Prize Winner

- The Effectiveness of Aloe Vera (Aloe barbadensis Mill.) Leaf Ethanolic Extract against Angiogenesis by Ms. Kristel Claire Y. Regpala, Ms. Kathlyn O. Salanio, Mr. Marc James B. Acosta, Ms. Jesica P. Reynon (Adviser)

Third Prize Winner

- The Effect of Chitosan Derived from Mud Crab (Scylla olivicea) Shell in Controlling Rice Blast Fungus (Magnaporthe oryzae) in vitro by Ms. Rose-mel Xiamane S. Dayoan, Mr. Jacob Filippine G. Galzote, Mr. Charles Y. Salcedo (Adviser)

The winners will be moving forward to the National Invention Contest and Exhibits (NICE) next year.

Congratulations!

DOST confers awards to Outstanding SETUP Adoptors in Region 1

By: Sunshine C. Gaerlan



CITY OF SAN FERNANDO, La Union- As one of the highlights of the National Science and Technology Week (NSTW) Celebration in Region 1, the Department of Science and Technology's (DOST) Small Enterprise Technology Upgrading Program (SETUP) conferred awards to the Outstanding SETUP Adoptors in the region through the Search for SETUP Productivity, Resilience, Agility, Innovativeness, and Excellence (PRAISE) Awards for micro, small, and medium enterprises (MSMEs) during the virtual awarding ceremonies conducted last November 12, 2021.

The DOST SETUP PRAISE Award is an annual activity to recognize MSMEs who have excelled in their business in terms of productivity, resilience, agility, innovativeness, sustainability, and excellence. Moreover, this is an avenue to honor deserving MSMEs who had outstandingly adopted and implemented the Program and had shown their innovation initiatives.

There were six (6) awards given namely: Regional Winner, Provincial Winner, Most Productive, Most Resilient, Most Agile, and Most Innovative. For CY 2021, among the hundreds of MSMEs assisted by DOST 1 and despite the crisis brought by the pandemic which affected majority of business under the manufacturing and service sector, the following SETUP adoptors from the different provinces of Region 1 were awarded:

The nominees were judged in terms of their accomplishments and outputs that meet the criteria as follows: Productivity which refers to the enterprise's significant improvement in production, sales or revenues, market penetration, size and share, asset size, customer size, export penetration, and cost efficiency; Resilience or enterprise's ability to manage difficult conditions specifically economic crisis like recession or inflation, industry crisis, onslaught of typhoon, earthquake, fire, insurgency or armed conflict, health emergencies and the like and actions taken after, to be able to continue the business; Agility or firm's ability to adapt to market changes, respond quickly to customer demands, ability to refocus or pivot to respond to customer needs using existing technology and resources, and changes in legal and statutory requirements to sustain competitive advantage;

Regional Winner:

Elisha Bay Dagupan Bangus and Seafoods (Pangasinan)

Provincial Winner:

Elisha Bay Dagupan Bangus and Seafoods (Pangasinan)
May Fair Bakeshop (Pangasinan)
Costales Ricemill (Ilocos Sur)
NGT Health and Wellness Center (Ilocos Norte)

Most Productive:

HN Chicken Dealer (Pangasinan)
J.D. Untalan Machine Works (Pangasinan)
Agoo Printing Press (La Union)
Melody's Food Products (Ilocos Sur)

JBT Prints and Graphics Designs Services (Ilocos Norte)

Most Resilient:

JDP Poultry Farm (Pangasinan)
Louis Roy Bakeshop (Pangasinan)
JC Laroco Ricemill (La Union)
Jeff and Liza's Pastries Shop (Ilocos Sur)
Laoag Graphics Engineering Designs (Ilocos Norte)

Most Agile:

Gandang Ani Enterprises (Pangasinan)
Vin Roofing Center (Pangasinan)
Tinapay Along the Riles (La Union)
Onacoli Food Products (Ilocos Sur)
Greenthumb Food Depot (Ilocos Norte)

Most Innovative:

Roshan Digital Prints & Supplies (Pangasinan)
Shelflex Candles (Pangasinan)
Jaypee's Bakeshop (La Union)
Wynn's Food Products (Ilocos Sur)
Bakers PH (Ilocos Norte)

Innovativeness which includes the extent of technology adaption and innovation in the products and process chain, and business processes of the enterprise resulting to increase in productivity; Sustainability which refers to the significant improvement in product quality, packaging, production efficiency, waste reduction, safety, and innovation; and Excellence which covers the enterprises leadership and management, financial discipline, ethical responsibility, social responsibility, and product excellence through awards and citations.

DOST PRAISE AWARDS recognizes Ilocos Norte MSMEs' Excellence amid pandemic By: Kent J. Ramil

ILOCOS NORTE, Nov. 17 - The Department of Science and Technology (DOST) in Region 1 recognized NGT Health and Wellness as the Most Outstanding SETUP Adaptor and other DOST assisted firms in the province, during the closing program of the 2021 Regional Science and Technology Week (RSTW) via the online platform on November 12, 2021.

This year, in line with the National Science and Technology Week (NSTW) celebration in full swing, the DOST through its Regional Office in La Union held its annual Regional Celebration virtually. For the past years, DOST has been recognizing the best technology adapters or beneficiaries of the Small Technology Upgrading Program (SETUP) program through this activity.

Moreover, despite the pandemic and grave economic shutdown of many businesses, most of the SETUP beneficiaries continued to thrive during the crisis. Hence, Nature's Greatest Treasure (NGT) Health and Wellness Center bagged the well-regarded award, MOST OUTSTANDING SETUP ADAPTOR 2021 Provincial Winner.

The NGT Health and Wellness is owned and managed by Dr. Marilou Honey B. Tamayo and the formulator of TIBICOS Drink. A traditional fermented drink made with water and a symbiotic culture of bacteria and yeasts held in a polysaccharide biofilm matrix created by the bacteria. Assisted by DOST in the year 2017, the project aimed to improve the overall operations and production of TIBICOS through equipment upgrading and application of S&T-related/generated packaging and labeling.

Dr. Tamayo thanked the DOST for helping her with the packaging, labeling, and improvement of TIBICOS that made her company reach its full potential.

SETUP PRAISE awards acknowledge MSMEs that show productivity, resilience, agility, innovation, sustainability, and excellence that led to expanding their market reach in the midst of the challenges brought about by COVID-19. Also, Green Thumb Food Depot was awarded as the Most Agile, JBT Prints and Graphics Design as the Most Productive, Bakers PH being the Most Innovative, and Laoag Graphics Engineering bagged Most Resilient, and all firms were under the SETUP project. The winners received a plaque of recognition during the closing ceremonies.

The firms are nominated through the Provincial Science and Technology Centers (PSTCs) from their respective provinces and were evaluated in the regional level through the DOST Regional Office. The regional winner was awarded with a plaque of recognition and a cash award of Php20,000.00 while all the other winners received a plaque of recognition.

ILOCOS NORTE MSME's	
PROVINCIAL WINNER	NGT HEALTH & WELLNESS
MOST INNOVATIVE	BAKERS PH
MOST AGILE	GREENTHUMB FOOD DEPOT
MOST RESILIENT	LAOAG GRAPHICS ENGINEERING

DOST Ilocos Norte aims Best CEST Community Award

By: Kent J. Rami



As part of the celebration for National Science and Technology Week, this coming November, the Department of Science and Technology Region 1 (DOST 1) aims to bag this year's National Best CEST Award.

This year, the Municipality of Dumarlag won the Best CEST Award in Regional Category and is set to represent the region in the national competition. The (DOST 1) CEST team lead by Engr. Jordan Abad, alongside with the initiative of Dr. Armando Q. Ganal, DOST 1 Regional Director, and the support from Provincial Science and Technology Center-Ilocos Norte (PSTC-IN) implemented the Community Empowerment Through Science and Technology (CEST) in the municipality. CEST is one of the banner programs of the Department of Science and Technology to build empowered, progressive, and resilient communities.

The CEST program is composed of five (5) major components i.e. Economic Development, Health and Nutrition, Environment Protection and Conservation, Human Resource Development, and Disaster Risk Reduction Management. Each major component is a package of various S&T interventions such as the provision of technologies and the conduct of technical training to deliver inclusive development to its community beneficiaries nationwide.

DOST 1 in support of PSTC-IN provided students greater opportunities through the educational tool called Science and Technology Academic and Research-Based Openly-Operated Kiosk Stations (SATRBOOKS). Also, the agency also addressed the issue of malnutrition among children in Dumarlag by providing a series of training for nutrition scholars and barangay health workers on meal planning, backyard gardening, basic food safety, basic nutrition, and complementary feeding barangay health workers and nutrition scholars.

The Project NaKaSaGaNa or Naglilinang ng Kahandaan sa Sakuna Gamit ang Napapanahong-teknolohiya were also implemented, a training on disaster-preparedness, distribution of disaster risk reduction and management-related materials. In addition, the installation and deployment of disaster-related instruments such as a communication system, an automated weather station, and rain gauges certainly boosted the efforts of the town's municipal DRRM.



Moreover, the Project Disinfecting Aqua's Noxious and Unwanted Microorganisms (DANUM) addresses safety and adequacy of water through water resource mapping, provision of appropriate water filters or disinfectant solutions, and installation of water distribution systems

"Poverty reduction involves first of all awareness of our weaknesses—deficits in the budget, in data, training and time, and skills. These are the difficulties that have been challenging us every day, and I am deeply thankful to DOST Region One for helping us along this hard way" Mayor stated.

Engr. Abad, also stated that in the middle of the pandemic, the Municipality of Dumarlag has sustained growth that is inclusive of the marginalized and underprivileged because of the their willingness to adapt new technologies based on their needs.

The 2021 Best CEST Community is a recognition given to a community beneficiary of the Community Empowerment through Science and Technology program of DOST who has excelled in various aspects in its implementation. The winner will be carefully selected out of all the entries submitted by the DOST Regional Offices Nationwide.

DOST- 1 Provides DRRM Training, Composting Methods Seminar, and Ube Processing Workshop to CEST Beneficiaries of Santol, La Union

By: Christian Jastine V. Mendoza



The Department of Science and Technology (DOST-1) through its Provincial Science and Technology Center- La Union (PSTC-LU) office, in cooperation and partnership with the Local Government Unit of Santol, La Union (LGU), and Don Mariano Memorial State University (DMMMSU) provided a series of activities to DRRM training, Composting Methods Seminar, and Ube Processing training to the CEST area in Santol, La Union.

The first activity conducted was a training and workshop on Community Based-DRRM for the BDRRMO and Brgy. Tanods in Lettac Sur, Sabsaba, and Sapdaan. The training aimed to update Community Based-DRRM system of the three barangays with the goal to train and equip officers to be disaster-risk ready.

The first seminar was conducted on November 17, 2021 where Mr. Molich S. Ferido, LDRRMO II of LGU-Bangar, discussed the overview of the Community-Based Disaster Risk Reduction Management. Mr. Ferido also gave an emphasis on the importance of Community Risk Assessment on which officers worked on determining high-risk areas in their respective barangays.

On the second day (11/18/21), the BDRRMO and Brgy. Tanods experienced to simulate how to apply first aid, Basic Life support, and conduct Basic Rescue Procedures. FO1 Peterson L. Bajo together with FO1 Ramil A. Importado demonstrated the safety standard on how to conduct the aforementioned procedures. DOST-1, through its Provincial S&T Center also awarded DRRM-IEC materials.

Another activity conducted, under Environmental Protection and Conservation, was a Training on Composting Methods Amongst Households that was held on November 19, 2021 at the Farmers Information Technology Service Center. During the training, Ms. Desiree A. Vilar, DMMMSU Faculty Staff, gave an introduction to composting where she discussed the benefits of composting to our environment. In addition, she also enumerated different composting methods. Ms. Judy Ann Padilla on the other hand focused her presentation on the processes of Vermicomposting. Ms. Padilla demonstrated how to properly maintain and store the worms. DOST-PSTC, La Union requested worms from the Department of Agriculture Region 1 that were then awarded to the center for future use.

Finally, under Economic Enterprise and Livelihood, DOST-PSTC La Union in partnership with DMMMSU-College of Technology Extension, conducted a two-day Technology Training on Ube Processing and Product Development for CEST Farmers in Lettac Sur on November 23-24 at the Center for Community Learning and Technology. Ms. Imma

Concepcion G. Estabillo, Bachelor of Science in Food Technology Department-Chairperson, taught the Kabulig Farmers Association on how to process Ube wine and how to cook and make Ube Halaya on the first day of the training. The participants were able to make Ube Halaya themselves at the end of the first day. On the second day (11/24/2021), Ms. Estabillo demonstrated the intricate procedures on how to fry thin Ube slices twice to make a delightful Ube Chips. All of this while the Ube wine is aging through fermentation. The participants will then get a first sip of their self-made Ube wine. DOST-1 through its Provincial S&T Center also awarded a stove, heavy-duty blenders, Auto-siphon, and refractometer to kickstart a potential enterprise out of the processed products.

Through these conducted activities it is hoped that the training will provide a positive impact in the near future. DOST 1 through its banner program Community Empowerment thru Science and Technology (CEST) will continue to provide sustainable assistance and interventions that would encourage the growth and development of the community. The DOST also give thanks and appreciation to Mayor Engr. Magno A. Wailan and Dr. Jaime I Manuel, for their unending support for the implementation of CEST in Santol, La Union.



DOST 1 – CEST Awards a Multi-Commodity Solar Tunnel Dryer in Suyo

By: Raymond Alip

The Community Empowerment thru Science and Technology (CEST) program with the project entitled “Engaging Local Communities with Science, Technology, and Innovation for Development” of the Department of Science and Technology - Regional Office 1 (DOST-RO1) turned-over the newly installed Multi-Commodity Solar Tunnel Dryer (MCSTD) to Sitio Kimpatubbog, Poblacion, Suyo, Ilocos Sur through the Kimpatubbog Camote Growers Association on December 03, 2021.

During the opening program, Mr. Orlando Aglibot, Brgy. Captain of Poblacion, expressed his gratitude to DOST-1 for supporting the Camote processors of Sitio Kimpatubbog and all the projects of the agency for the improvement of the community. Meanwhile, Engr. Jordan Abad, Officer-In-Charge of the Provincial Science and Technology Center – Ilocos Sur, provided a brief background of the project and the priority areas for implementation for the year. He discussed the project's component on the Health and Nutrition specifically the water resource mapping, the calibration caravan, and the 120-day complementary feeding of the DOST PINOY along others currently implemented in the province and in the municipality of Suyo. He also encourages the association to sustain and improve their production and maximize the use of the equipment provided.

Moreover, Sangguniang Bayan Thomas Almazan, Committee on Agriculture, represented the Local Government of Suyo during the ceremony. He encouraged the association to pursue their camote processing venture and market their products to the display centers of the LGU. He also encouraged them to seek the assistance of the agriculture office for the varieties of Camote crops to increase their cropping and more product outputs.



Meanwhile, Ms. Zenaida Reyes, President of Kimpatubbog Camote Growers Association, expressed her appreciation towards DOST-1 for the provision of the MCSTD. She committed that they would use the equipment properly and will increase their output.

Furthermore, during the awarding, Engr. Jordan Abad oriented the participants with the operation of the MCSTD and its maintenance.

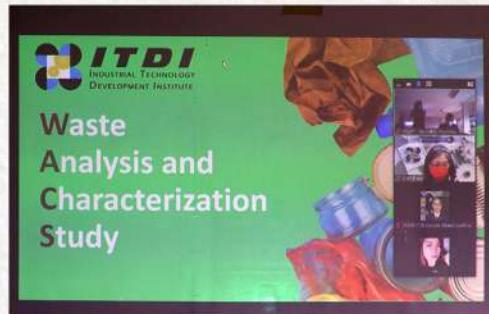
The provision of the MCSTD aims address the problems of the association in drying their camote crops essential in their processing operations. With their current operation, their Camote flour is not of the best quality and has the presence of molds and is easily spoiled, affecting their production of polvoron, pastillas, and ice cream. With this intervention, an increased production and enhanced quality of products is expected.

The awarding ceremony was witnessed by 20 camote processors of the association with assistance from the PNP Suyo and the 61st Infantry Battalion Philippine Army.



DOST 1 capacitates Malasiqui's Municipal and Barangay Officials on WACS Planning

By: Bernalyn P. Martinez



Dr. Armando Q. Ganal, DOST 1 Regional Director delivered his closing remarks and congratulated the participants for completing the training-workshop.



To capacitate the municipal and barangay officials of Malasiqui in conducting their Waste Analysis and Characterization Study (WACS), the Department of Science and Technology Regional Office 1 (DOST 1) in collaboration with the DOST- Industrial Technology Development Institute (DOST-ITDI) conducted a 2-day Virtual WACS Training-Workshop on November 9 and 11, 2021 via Zoom.

26 Barangay and Municipal Environment Office (MENRO) officials headed by Mr. Jovito B. Nevado attended the training at 4th Floor Municipal Hall Building in Malasiqui, Pangasinan. The activity also aims to revisit the existing Municipal 10-Year Solid Waste Management Plan.

DOST-ITDI's waste management experts Mr. Mario Josefino Capule, Dr. Myra Tansengco, Engr. Joven Barcelo and Ms. Maria Theresa Artuz served as the resource speakers of the training. The participants acquired knowledge and skills on Basic WACS procedures, determining sample sizes, health, and safety guidelines in conducting WACS, preparation of worksheets and WACS plan.

Hon. Mayor Noel Anthony M. Geslani expressed his gratitude to the DOST for the opportunity to train their municipal and barangay officials on WACS. He also stated that this work is important to them, particularly in terms of waste management, as they are currently building a hazardous COVID-related waste disposal plant in the municipality.

During the closing program, Dr. Armando Q. Ganal, DOST 1 Regional Director congratulated the participants for completing the training-workshop. He also thanked the DOST-ITDI experts and DOST regional and provincial staff behind the success of the training. Dr. Ganal also mentioned that the activity is part of the implementation of Innovation, Science and Technology for Accelerating Regional Development (iSTART) Program in the region.

Career Scientists encourage Region 1 Researchers to join the Scientific Career System

By: Engr. Maura Andrea A. Ortega



The Department of Science and Technology Regional Office No. 1 (DOST-1), in collaboration with the National Academy of Science and Technology (NAST), conducted a virtual orientation on Scientific Career System (SCS) on 6 October 2021 via Zoom and Facebook Live.

The SCS, co-implemented by DOST and the Civil Service Commission (CSC), is a system of recruitment, career progression, and recognition that awards scientist rank to qualified research personnel in the government service. The virtual orientation aimed to promote and encourage research personnel to continue a career path in science and apply in the SCS.

"In the early 1990s, we have at least 5 scientists in the Batac Science Community from the Mariano Marcos State University and the Cotton Research and Development Institute. Four (4) have already retired from public service. Only one (1) is with us and he can be our inspiration to also aspire for the title," DOST-1 Regional Director Armando Q. Ganal shared as he welcomed the participants.

Acd. Mudjekeewis Santos, Scientist IV of the Department of Agriculture (DA) - National Fisheries Research and Development Institute, emphasized that there is another option for advancement besides the administrative road. That is the scientific career path. He stated that the SCS is intended for people who are productive in research in a government institution. He also revealed that for entry level as Scientist I, the basic salary is SG 26. On top of that, career scientists are also awarded rewards and incentives. Towards the end of his presentation, he shared his own experiences and benefits received since he was conferred as Scientist I in 2011.

For scientists, it is important to make their research visible and to publish their findings. As a result, some opportunistic publishing venues take advantage of this and exploit the researchers for financial gains. Dr. Roel R. Suralta, Scientist III of the DA - Philippine Rice Research Institute, shared tips on how to spot possible predatory journals and conferences. He reminded the participants to always be careful and meticulous before submitting a paper to a journal and joining conferences.

"Publishing our scientific works is not a walk in a park. There is no free lunch. May stages na pagdadaanan yan na we need to put effort. We need to sacrifice and [put] more effort and hardwork. Anyway at the

Salary and benefits/month <i>Magna Carta (RA 8439)</i>	Scientist I (Salary grade 26)	Scientist II (Salary grade 27)
Basic salary	Php 109,593	Php 123,839
RATA	15,000	17,000
Subsistence Allowance*	3,300	3,300
Laundry Allowance**	500	500
Hazard Allowance***	32,878	37,152
Longevity pay ****	5,480	6,192
Total Amount/month	Php 166,751	Php 187,383

Computed based on Budget Circular No 549 v 2013 page 3 (2020 baseline)

* Php 150/day x 22 working days

** Php 500/month

*** at most 30% of basic salary

**** 5% of basic salary/year

How to Spot a Possible Predatory Journals

- High manuscript acceptance rates or acceptance guarantees
- SPAM email invitations to submit papers or invitations for membership in editorial boards
- Fake editorial boards
- Minimal (or non-existent) peer review process
- Open-access, publication fee not listed in website
- No retraction policy
- Lack of copyright clarity
- Low article processing charges
- Publisher/journal email is generic (e.g., Gmail)

end of the day, napakasarap ng feeling pag yung paper mo whether na-accept yan ng 6 months, 1 year or 2 years, basta legit na journals ang ating napublishan," Dr. Suralta said.

On the other hand, Dr. Maribel L. Dionisio-Sese, College of Arts and Sciences Dean of the University of the Philippines Los Baños, talked about ethics in research from its inception, completion to publication. She discussed ethical norms and some publication ethics such as authorship credit guidelines. She also stressed to avoid scientific misconduct which are fabrication, falsification, and plagiarism. Scientific research, whether done by high school students or professional researchers, is built on foundations of truth and trust.

"Try to always do your very best, and success will be inevitable. If there is always a question in your mind, which is ethical or not, try to listen to your mind and heart," Dr. Dionisio-Sese said.

Lastly, Ms. Marissa G. Ceneta, Chief Administrative Officer of DOST - Personnel Division, presented the Magna Carta Benefits for Science and Technology (S&T) workers in the government. She showed the privileges of S&T personnel under the magna carta: (1) Honorarium, (2) Share in Royalties, (3) Hazard Pay, (4) Subsistence Allowance, (5) Laundry Allowance, and (6) Longevity Pay, as well as their definitions, how to calculate them, and who is eligible for them. She reiterated that these benefits are typically provided by the applicant's mother institution, and that the institution's administration plays a significant role in their implementation.

"You dream big, but you start small and you do it step by step. If you're able to get a small funding internally or you get a small funding from DOST or maybe naisama ka sa isang project as a collaborator, cherish that and make it good. Make sure it will count. Make sure na makapagpublish kayo out of that small project. That is the small step. From there you move on to proposing another project kasi you are now starting to build your track record," Ac. Santos said as advice for aspiring career scientists during the open forum.

To close the event, SCS Executive Secretary and NAST Director Luningning E. Samarita-Domingo said "Let us continue to empower and promote our world class Filipino Scientists."

DOST 1 welcomes new S&T Undergraduate Qualifiers

By: Jayce M. Andres

The Department of Science and Technology – Region I thru its Scholarship Unit conducted a series of virtual orientations for the 2021 S&T Undergraduate Scholarship Qualifiers from Region 1 last September 23-24, 2021.

A total of 229 undergraduate qualifiers from the different provinces in the region attended the said activity together with their parents and legal guardians via zoom platform. DOST 1 provincial staff, scholarship coordinators from SUCs and private HEIs as well as officers of the different scholarship associations in the region are also present. This year's orientation featured discussions on the provisions of the Scholarship Agreement, S&T Scholarship policies, procedures and an open forum. This is done prior to the signing of their Scholarship Agreement.

The S&T Undergraduate Scholarship is one of the scholarship programs being offered by the DOST-SEI, specifically for senior high schools who will pursue S&T related courses in college. This 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. It has 2 component programs: a) Republic Act (RA) 7687 program, which meant for socioeconomically challenged students; and b) Merit program, which is awarded to students with high aptitude in science and mathematics.

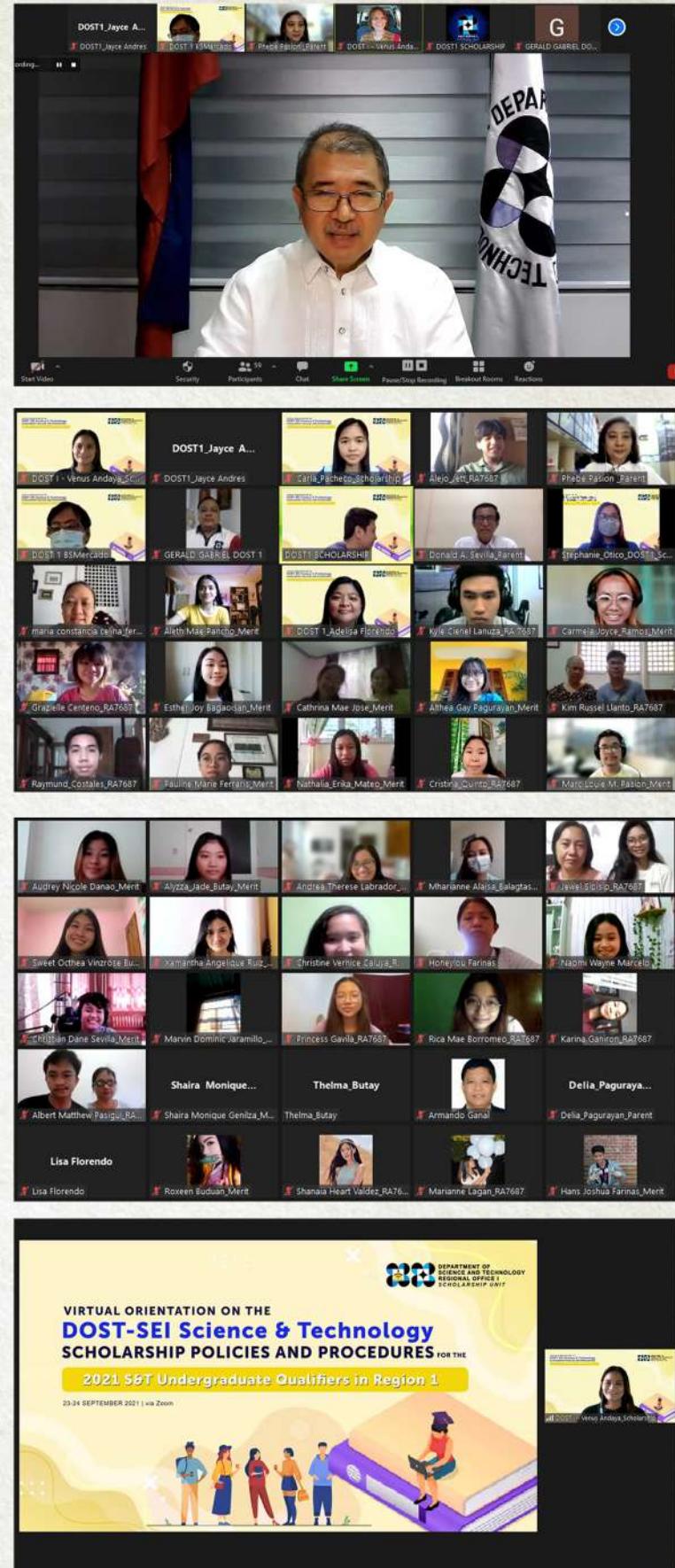
During the orientation, Ms. Adelisa C. Florendo, Technical Scholarship Coordinator of DOST I emphasize that in order to avail the scholarship award, qualifiers must enroll in a Priority S&T course in State Universities and Colleges (SUCs), or in private higher education institutions recognized by the Commission on Higher Education as Centers of Excellence or Centers of Development or with Level III accreditation from the Federation of Accrediting Agencies of the Philippines.

For those qualifiers who will avail and signed the scholarship agreement will enjoy full benefits of the scholarship for the whole duration of their S&T program. These include monthly stipend of ₱7,000; a tuition fee subsidy of up to ₱40,000 per academic year for those who will enroll in private institutions; annual book allowance of ₱10,000; one-time MS/PE clothing allowance amounting to ₱1,000; one economy-class roundtrip fare per year for those studying outside their home province; group health and accident insurance, and ₱10,000 for thesis allowance.

"The benefits that you will receive are designed to boost your studies, it is an investment made by our Filipino people to help you reach not just your dreams but the good that comes with you reaching your goals", said DOST Secretary Fortunato T. de la Peña on his message.

Aside from the financial benefits, DOST scholars will also have the opportunity to join different scholarship activities being conducted by the DOST-SEI and DOST I that will surely help them to become more responsible, competent, goal-oriented and patriotic Filipinos.

"Be serious with your academics but live a balanced life. Do socialize and start practicing how to serve people and the country. You will realize that you are gifted with talent and intelligence and there is purpose in that. You will lead and serve", de la Peña said.



DOST-SEI scholars are required to render service in the country, preferably along their fields of specialization, after graduation for a period equivalent to the number of years they enjoyed the scholarship.

NAST Members, Awardees inspire Region 1 Junior, Senior High Students to pursue a career in Science

By: Engr. Maura Andrea A. Ortega



The National Academy of Science and Technology (NAST), in partnership with the Department of Science and Technology Regional Office No. 1 (DOST-1), spearheaded a Virtual Symposium for the Youth in Region 1 or ScienTeach on 18 October 2021 via Zoom and Facebook Live.

Acad. Rhodora V. Azanza, NAST President, said that ScienTeach is a series of episodes that showcase varying topics, and feature National Scientists (NS), NAST Members and Awardees who are accomplished in their specific fields.

"I sincerely wish that this symposium would expose your minds to the scientific world, orient you towards undertaking scientific careers, and encourage you to liken the inner beauty of research as service to the society and nature," she added.

Meanwhile, Dr. Tolentino G. Aquino, Regional Director of the Department of Education Regional Office No. 1 (DepEd RO1), mentioned the creation of Education Futures Unit of DepEd. The primary function of this unit is to seek answers to numerous challenges facing education, and craft policies based on research, global trends, and best practices. Moreover, he hopes to see the DOST scholars and science teachers to partake in building solutions to possible problems of the future.

On the other hand, Dr. Armando Q. Ganal, DOST-1 Regional Director, presented the programs, projects, and activities of the DOST-1. He highlighted the DOST-Scholarship Education Institute scholarships which can be availed by the students when they enter college: (1) RA 7687, (2) Merit scholarship, and (3) RA 10612.

Acad. Glenn B. Gregorio, Director of Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), gave an inspirational talk by sharing his journey to becoming a multi-awarded scientist. He revealed that he failed his DOST Scholarship exam back then, but it did not stop him from achieving his dream to be a scientist. He also dared the students to dream, be curious, and act on it. Throughout the course, he emphasized that curiosity, passion, and patience are the key ingredients to be a good scientist.

"You don't have to be extraordinary to achieve. That's why you have to enjoy. You have to strategize. Dapat magaling ka magsalita to convince them. As I always say in UP, bat mo pahirapan sarili mo mag-uno, eh pwede enjoy ka naman nang tres. Just an exaggeration, but really you enjoy life. Dare to be curious and achieve. Kahit sa late mong life, you could still achieve in life. So [if] you will be a scientist, you don't have to be extraordinary, but you have to be patient, patient, and patient," said Acad. Gregorio as motivation for students struggling with their studies.

Subsequently, Dr. Pia Bagamasbad, Associate Professor of the National Institute of Molecular Biology and Biotechnology – University of the Philippines, shared the current trends in life science research. She began by telling her story on becoming a research scientist. Afterwards, she gave insights into today's enabling technologies which are revolutionary in the fields of genetics and medicine. She also stressed that basic research is equally important as applied research.

Lastly, Dr. Rico C. Ancog, Dean and Associate Professor of the School of Environmental Science and Management – University of the Philippines Los Baños, discussed the role of science in decision-making in environmental governance. He said that science is crucial to both the disciplinary and practical lens. Environmental problems are not just caused by the ecological dimension, but are mostly caused by the human dimension and the kind of institution that are set up. Thus, scientists today do not simply answer questions, but they also translate those answers into actionable policy recommendations.

During the open forum, Ms. Fritchzel Olivo, a student of Pagudpud Integrated School, asked the panelists on what they expect to find in science. Dr. Bagamasbad hopes to answer the how and why in science. For Acad. Gregorio, it is to act on curiosity and find a solution.

"Philosophically, we really love the quest for the truth. And I think science really guides us to really knowing what is the truth. From there, we build up whatever decisions that we have based on the truth. That is what we expect from science," Dr. Ancog answered.

In which, NS Raul V. Fabella replied "There is no truth philosophically in science, because everything in science is provisional." "The truth in a particular time, in a particular context, may hold water at a particular time and context. You can prove that. You can disprove that. And then you continue changing the truth," Dr. Ancog clarified.

To close the event, "Every great scientific discovery starts with a question; the answer is clinched with data and evidence. Not by authority; not by dictat. We hope you also get inspired to ask difficult scientific questions and pursue a career in science in search of your personal answer," NS Fabella said.

This virtual symposium for the youth which was moderated by Dr. Pierangeli G. Vital, Outstanding Young Scientist 2021, is part of DOST-1's pre-celebration of the National Science and Technology Week in Region 1.

Tekno Presyensya highlights DOST-TAPI Programs and Carrageenan PGP

By: Carla Joyce B. Cajala



The Department of Science and Technology Regional Office 1, in coordination with DZAG Radyo Pilipinas Agoo, launched the sixth episode of Tekno PreSyensa: Syensa ken Teknolohiya para kadagiti Umili featuring the Department of Science and Technology- Technology Application and Promotion Institute (DOST-TAPI) Technopreneurship Program and the Carageenan Plant Growth Promoter (PGP) on October 28, 2021.

The episode was attended by Department of Science and Technology Region 1 Regional Director Dr. Armando Q. Ganal, and representatives from DOST-TAPI, Senior Science Research Specialist Mr. Jund Rian A. Doringo, Philippine Nuclear Research Institute Career Scientist and Chief of the Atomic Research Division Dr. Lucille V. Abad, Department of Agriculture, Regional Field Office No. 1 Science Research Assistant Mr. Alvin P. Galiza, implementers from Pangasinan led by Provincial Science and Technology Director (PSTD) Engr. Arnold Santos along with the adoptor from the province Mr. Diomedes G. Fernandez and from Ilocos Sur Provincial Science and Technology Center (PSTC) Ilocos Sur staff Engr. Junalyn C. Dasugo along with Ms. Rosemarie H. Vilog and Mr. Dominador Hafalla as adoptors.

Mr. Doringo discussed the functions of DOST-TAPI which includes promotion of the commercialization of technologies, market of services of the other units of the department and administration of the Invention Development Assistance Fund.

Further, he talked about the programs for Technopreneurship which are the Venture Financing Program that accelerates the commercialization of innovative technologies and inventions through financial support to entrepreneurs, DOST-Academe Technology-Based Enterprise Development (DATBED) Program that supports entrepreneurial competencies among the youth, National/ Regional Invention Contest and Exhibits (NICE/ RICE) that recognizes inventors and researchers through financial rewards and other forms of assistance and Institutional Support for Technology Expositions (ISTE) Program that serves as an excellent platform for the dissemination, sharing, and exchange of information on Science and Technology development.

According to Dr. Ganal, there are already beneficiaries of the different programs in Region 1. For the Venture Financing Program, Nutridense Food Manufacturing Corporation in Sta. Barbara Pangasinan was benefitted by the program for their water purification and complimentary food industry. For DATBED, Mariano Marcos University (MMSU) had been a beneficiary and there had been other schools and universities in the region who have reached the 1st and 2nd stage of the program. As for RICE, Region 1 had been very active in its conduct every two (2) years.

Dr. Abad spoke on the Carrageenan PGP's milestones since 2009, the procedure, and the effects on recognized crops. After being extracted from Eucheuma Cottonii or guso/gulamang dagat, the Carrageenan PGP underwent a strict radiation treatment. Multi-location trials were conducted in partnership with other agencies, including DOST, to test its efficacy. As a result, it has been noted that there is a minimal damage against infestation and disease incidence. Also, there were 13.27-28% yield increase during the wet season and a 16.5-22% yield increase for dry season, resistance to Tungro virus, extensive root growth, sturdy stems and increase number of tillers. As to date, there are already two (2) companies who adopted the technology in Region 1. Apart from rice crops, the Carrageenan PGP has notable effects on mung bean, peanut, corn, banana, sugarcane, pineapple, papaya, tobacco, and ornamental plants.

On the other hand, Mr. Galiza highlighted the yield boosting effect of the technology for rice giving due emphasis on the contents of the Carrageenan PGP which are responsible for its impressive effects namely, auxin, cytokinin, and gibberellin. He also shared the biological efficacy, results, and the satisfied beneficiaries of the product in Region 1.

In Pangasinan, through the leadership of PSTD Santos, the Carrageenan PGP was promoted and awarded by DOST Pangasinan to intended users. Their office coordinated with the Local Government Units (LGUs) and farmers' associations to be able to reach out to the beneficiaries in the province.

Meanwhile, in the province of Ilocos Sur, Engr. Dasugo and her team noticed the beneficial consequence of the Carrageenan PGP's yield-boosting effect on rice production, which led to the identification of a broader scope of recipients in the province, most notably those who actually need it, taking into account various variables. Currently, each district in the province of Ilocos has one (1) beneficiary.

After DOST introduced the intervention, Ms. Vilog and Mr. Fernandez conducted field trials. They enthusiastically accepted the idea for their crops because it enhanced productivity by 20-60%. Furthermore, despite the calamities that struck their province, their production costs reduced and their crops remained resilient. Mr. Hafalla extended his gratitude to DOST and DA for this significant intervention, which will benefit their sector considerably.

Dr. Abad also mentioned that, in addition to the plant growth promoter, another technology will be revealed that might be used to help plants during droughts.

As program implementers in their respective provinces, Engr. Santos and Engr. Dasugo has pledged the agency's ongoing assistance in the implementation of DOST's various projects and community-based activities.

Director Ganal encouraged the adopters to value what had been imparted to them and to standardize their operations so that their demands could be met appropriately.

Tekno Presyensya presents RSTL services of DOST-1

By: Marinique A. Guerrero



City of San Fernando, La Union -The Department of Science and Technology Region 1 (DOST-1) program Tekno Presyensya "Syensya ken Teknolohiya Para Kadagiti Umili" in partnership with Radyo Pilipinas Agoo DZAG 97.1FM presents the Regional Standards and Testing Laboratory (RSTL) services on Thursday, December 9.

The program hosted by Ms. Carla Joyce Cajala, Ms. Gael Myca Dacanay and Ms. Antoniet Lingsit and attended by the RSTL head and technical managers from the different laboratory Ms. Lena Rosario, Ms. Annalie Rosales, Ms. Cyrille Ann Maneja, Engr. Bernadine Suniega and Engr. Marlon Orpilla, was streamed online thru Facebook live.

RSTL comprises of Chemistry laboratory, Microbiology laboratory, Shelf-life Testing, and sensory evaluation laboratory, and Regional Metrology Laboratory (RML). Ms. Rosario as laboratory head elaborated and introduced the services that each laboratory offers which are product testing: Chemical analysis, microbiological analysis, shelf-life, and sensory evaluation and calibration services.

Additionally, RSTL provides guidance and technical consultations especially for product registrations, training like food safety and halal. Staff of RSTL are considered experts in their respective professions as registered chemists, chemical technicians, microbiologists, medical technologists, and engineers.

Ms. Rosario, who is also the technical manager of the Chemistry Laboratory, outlined the services and testing performed in this section of the lab. Ms. Maneja and Ms. Rosales, on the other hand, talked about the Microbiology lab and the Shelf-life and sensory evaluation services, respectively.

As previously stated, the microbiology laboratory is responsible for ensuring the safety of food and water for consumption. Engr. Suniega, RML's technical manager, gave light to the laboratory's testing and services with due consideration on the calibration activities and significance to peoples' daily life. Furthermore, RSTL aims to instill the science and technology culture for young scientists in the region.

DOST 1 GFPS spearheads GAD Webinars in 2021 NSTW

By: Maureen Heidi L. Perez



The Department of Science and Technology Region 1 (DOST 1), through its Gender and Development (GAD) Program, conducted various GAD Webinars in celebration of the 2021 National Science and Technology Week via Zoom platform and streamed live through DOST 1 Official Facebook (FB) Page.

DOST 1 GAD Focal Point System (GFPS), as the lead in gender mainstreaming of projects, programs, and activities (PPAs) of the agency, has prepared activities to perk up the celebration in the region.

Pre-NSTW GAD Webinars

Understanding Basic GAD Concepts and SOGIESC

The first GAD Webinar entitled "Understanding Basic GAD Concepts and SOGIESC" was conducted last October 11, 2021 at 1:00 PM.

Dr. Diana L. Ignacio, DOST Assistant Secretary for Human Resource Management, Management Services, and Special Concerns, and Officer-in-Charge of GAD and Regional Support Service, stated during her opening message, "This is very essential in incorporating various perspectives into our everyday lives, learning other gender diversities and developing a more well-rounded comprehension of the human experience which ultimately benefits everyone."

The topic on Understanding Basic Gender and Development (GAD) Concepts was discussed by Ms. Maria Fe IB. Singson, DOST Supervising Science Research Specialist and National GAD Resource Pool Member. Ms. Singson shared, "As GAD Advocates, we shall start by respecting every individual, regardless of who they are. We shall also recognize and change the inequalities at home, in the community and institutions, by applying a gender lens in fulfilling our tasks which will enable us to examine and assess differential needs of both men and women."

Furthermore, Mr. Rocky B. Rinabor, Philippine Commission on Women (PCW) GAD Specialist II of the, discussed the topic of Sexual Orientation, Gender Identity and Expression, and Sex Characteristics or SOGIESC. His discussion was focused on the Understanding of SOGIESC, SOGIESC based rights and related issues, and what we can do moving forward.

The webinar was participated by 69 Zoom attendees and 47 FB live viewers.

Training on the Use of Gender-fair Language

The second GAD Webinar entitled, "Training on the Use of Gender-fair Language" was conducted last October 15, 2021, at 1:00 PM.

Ms. Kristel May G. Magdaraog, University Extension Specialist III of University of the Philippines - Diliman Gender Office, provided orientation in sexism and its manifestation in the language in the Philippine context. She discussed types of sexism: (1) Hostile Sexism which is defined as the beliefs and behaviors that are openly hostile towards a group of people based on their sex or gender; (2) Benevolent Sexism which is defined as less obvious and sees women as weak; and (3) Ambivalent Sexism which is the combination of the first two types.

Ms. Magdaraog added, "Sexism can be conveyed through behavior, speech, writing, images, gestures, laws and policies enacted, and practices and traditions. Sexism in language devalues members of one's sex or gender where it discriminates against women and LGBT. It misleadingly focuses on the sex

of the individual rather than what they are doing." She also added on her discussion the term "Misogyny" which is defined as deep hatred of women, and about controlling and punishing women who challenge male dominance.

"In non-sexist writing, always take note of the sex-role stereotyping and paraphrase the quote using non-sexist language. Let us promote and foster a gender-inclusive workplace," she concluded.

The webinar was participated by 72 Zoom attendees and 33 FB live viewers.

Psyche it Away: Psychological and Mental Health Issues and How Gender Affects the Way We Think

The third GAD Webinar entitled "Psyche it Away: Psychological and Mental Health Issues and How Gender Affects the Way We Think" was conducted last October 19, 2021 at 1:00 PM.

Dr. Dem Mina Mamaat, Free-lance Motivational Speaker, started the webinar with a warm-up game on the various things men and women use daily and a discussion of the realization was done after. She linked the games to the topic and said, "Our differences make us unique and that we should respect each man and women in our society. Mental

health includes our emotional, psychological, and social well-being. It affects how we think, feel and act."

Dr. Mamaat discussed gender impacts on health and mentioned the importance of medical research. She reiterated that health should not be gender blind because health issues might affect women and men differently. She also added, "When we psyche it away, in terms of mental health, women are more likely than men to experience anxiety and depression, while men are more likely to be diagnosed with substance use and even antisocial disorders. Hence, the division between men and women in power, responsibilities, and personal characteristics are relevant for mental health."

Dr. Mamaat discussed various mental health problems, like anxiety disorders, depression, and antisocial personality disorders. Thus, men and women shall be encouraged to seek help and accord respect and support to those who want to speak up, regardless of whatever issues they may have.

The webinar had 65 Zoom attendees and 23 FB live viewers.

Gender Issues and Students Vulnerability to Covid-19

The fourth GAD Webinar entitled "Gender Issues and Students Vulnerability to covid-19" was conducted last October 22, 2021, at 1:00 PM.

Dr. Eleanor R. Belizar, University of Northern Philippines Associate Professor V and National GAD Resource Pool Member of PCW served as the Resource Person of the webinar.

Dr. Belizar started her presentation with a brief discussion of the differences between sex and gender, manifestations of gender biases, gender stereotyping, gender division of labor, and gender-based violence.

"The pandemic crisis affects women and men in different ways, regardless of where one looks, it is women who bear most of the responsibility for holding societies together, be it at home, in health care, at school, or in caring for the elderly," she added.

Since the Covid-19 pandemic broke out in late December 2019, education has been hit hard because over 800 million learners from around the world have been affected, and based on the statistics, 1 out of 5 learners cannot attend school.

She cited that girls and young women are most concerned about their mental health, sexual and reproductive health, education, the disruption in economy everywhere, that they are being infected with covid-19. They need access to information about gender-based and domestic violence as well as access to safe reporting, grievance, and justice mechanisms for victims, mental and emotional support, including psychosocial and wellness programs.

She concluded her presentation by stating an excerpt from the Plan International Philippines, 2021, "We must recognize the needs, voice and potential of every girl in disaster risk management, resilience, and response efforts. It is only through her lens that we can ensure inclusive, equitable, and gender-transformative humanitarian response."

79 Zoom attendees and 38 FB live viewers participated in the webinar.



Effects of Cyberbullying, Misinformation, and Online Sexual Abuse to Students

Mr. John Michael E. Matibag, Advocacy and Training Officer of Stairway Foundation, served as the Resource Person. Mr. Matibag started his presentation by sharing the mission of their agency, "Kami ay isang non-government organization na tumutulong upang magkaroon ng karagdagang kaalaman ang iba't-ibang organisasyon, partikular yung mga bata ating komunidad at mga mamamayan upang maipagpatuloy ang pagprotektahan sa mga kabataan sa pang-aabusong seksual, sa online at offline environment sa pamamagitan ng aming Break the Silence Campaign o BTS Campaign.

According to Mr. Matibag, through their organization's BTS Campaign, they are working on advocacy, capacity building, and networking to increase awareness of the issues from ground level to government departments, with a strong focus on training and sensitizing the National Police, social workers, teachers, and multiple non-government organizations.

In order to lessen the online risks of youth in using the internet, he discussed the context of four (4) Cs: Content or "nakikita ng bata"; Contact or "nakakasalamuha at nakakausap"; Conduct or "ginagawa ng bata"; and Contract "pagpapadala ng mga hubad na larawan".

He also specified that harassment, exclusion, masquerading, cyberstalking, flaming, and outing were examples of cyberbullying. As well as the involvement of threat to life, or sexual violence, these violate the Republic Act 10627 or the Anti-bullying Act of 2013.

Furthermore, he shared, "It is important to build up children's protective behavior, but at the end of the day, offenders are accountable for their own behavior."

The webinar got a 4.87 evaluation rating assessed by 160 Zoom attendees and 409 FB live viewers.

Gender and Climate Change

The sixth GAD Webinar entitled "Gender and Climate Change" was conducted last November 9, 2021 at 1:00 PM.

Ms. Rosalina G. de Guzman, Chief of the Climate Data Section of DOST - Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) served as the Resource Person.

Ms. De Guzman started her presentation by defining climate change which according to her is the most complex challenge of all time. She added, "Climate change requires a concerted proactive and holistic response. Its effects to men and women varied differently particularly where natural disasters are concerned."

According to Ms. De Guzman, both men and women are vulnerable to climate change particularly if it reduces their capacity to adapt to the negative impact of climate change and adversely affects their ability to contribute to mitigation and adaptation.

More so, she added that women empowerment is often necessary as an explicit form of affirmative action since many women find themselves in a condition of inequality and require specific and targeted attention to enable them to participate fully in gender mainstreaming.

The webinar was participated by 149 Zoom attendees and 60 FB live viewers.

WEE Care, WE Share: An Innovative Initiative to Support Women Entreprs in Region 1

The third GAD Webinar entitled, "WEE Care, WE Share: An Innovative Initiative to Support Women Entreprs in Region 1" was conducted last November 11, 2021 at 1:00 PM.

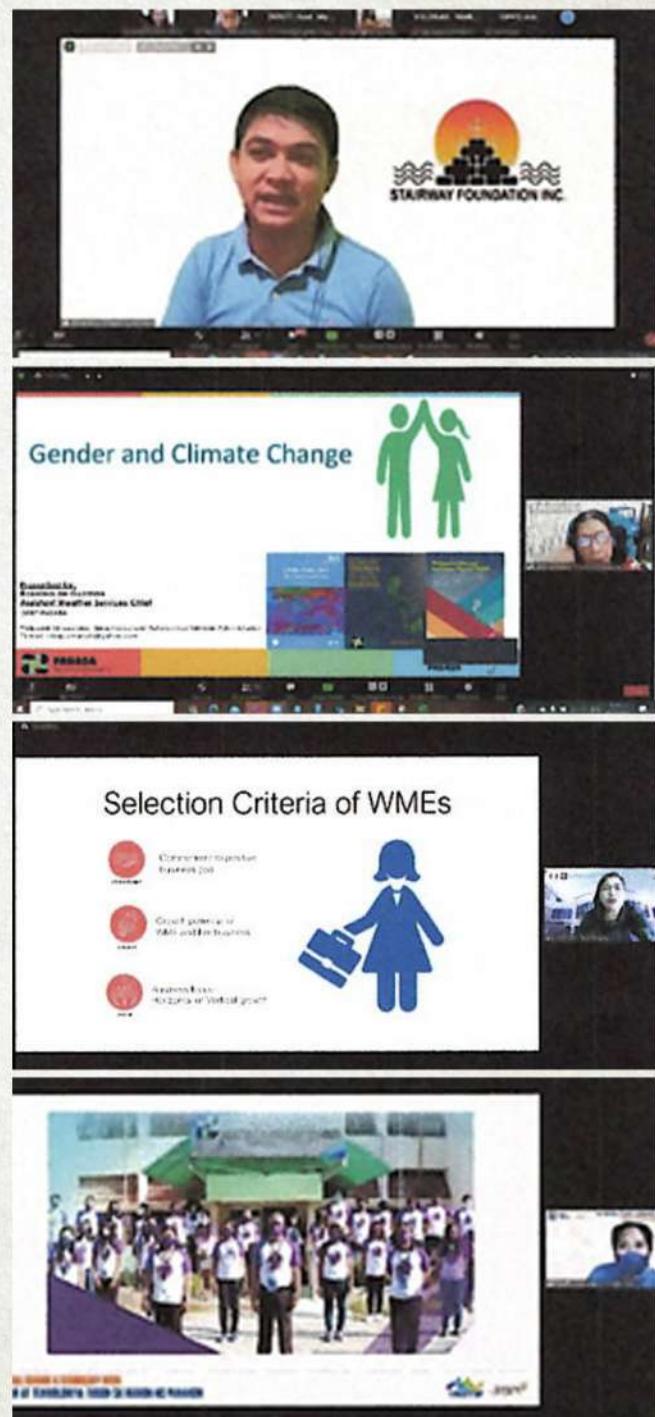
Dr. Teresita A. Tabaog, DOST Region 2 Assistant Regional Director for Technical Operations Services, discussed the gist of the Women Economic Empowerment (WEE) Program of the PCW, the Best Practices of DOST Region 2 in terms of Implementing the WEE Program, and their Chairmanship of the Regional Gender and Development Committee in Region 2.

ARD Tabaog said that the WEE Program will be ending this December 2021, however, with DOST 1's initiative, the WEE program can be localized thru a partnership with other national government agencies.

"WEE want that every woman to start from where they are to move up to the value chain, to be more empowered, to be able to do more, to be able to be more productive as they learn the importance of their existence, not just individually or part of the society," Dr. Tabaog shared.

On the other hand, Ms. Jennifer C. Fernandez, DOST 1Science Research Specialist II, articulately presented the various projects, programs and activities of DOST 1 which may be of great help to women micro entrepreneurs in the region.

The webinar had 149 Zoom attendees and 60 FB live viewers.



Highlights of the 18-day Campaign to End VAW

By: Maureen Heidi L. Perez



Isang maka-Agham na araw sa lahat!

As we observe the annual 18-day campaign to End Violence Against Women, we, at DOST 1, are staunch advocates of Anti-VAWC as well as in preventing any forms of gender-based sexual harassment in all areas, specifically in public spaces.

With this year's slogan campaign, "Filipino Marespeto: Safe Spaces, Kasali Tayo", we aspire that with this awareness raising, **Filipino values – paggalang at pagrespeto sa kababayan ano man ang kasarian**, will be stimulated and practiced so that we can live a life that is free from VAW.

Let us all foster an environment that ensures safety for all!

DR. ARMANDO Q. GANAL, CESO III
Regional Director, DOST 1

FILIPINO MARESPETO: SAFE SPACES, KASALI TAYO

VAW-FREE Community Starts with ME

Philippine Commission on Women

18 DAY CAMPAIGN TO END VAW

As mandated by Proclamation 1172 s. 2006, 18-Day Campaign to End VAW is an advocacy campaign that is observed annually from November 25 to December 12. VAW is one of the country's pervasive social problems and various measures and mechanisms have been employed and implemented to address it. Violence against women (VAW) is a grave violation of women's rights and fundamental freedoms. It manifests deep-seated discrimination and gender inequality and continues to be one of the country's perennial social problems. Violence and the threats of violence can be experienced by every woman of any age, skin color, gender identity, ethnicity, religion, disabilities, economic, and social status.

The 18-Day Campaign to End VAW supports the Philippine government's goal of protecting the human rights of women and girls by upholding its commitment to address all forms of gender-based violence as enshrined in the 1987 Constitution. By virtue of Republic Act 10398 or the Act declaring November 25 of every year as the National Consciousness Day for the Elimination of VAWC, government agencies are mandated to raise awareness on the problem of violence and the elimination of all forms of violence against women and girls.

DOST 1 GAD Focal Point System organized various activities and contests that aimed to promote awareness about the Safe Spaces Act (RA 11313 of SSA), both for the public and the institutions that are mandated to implement the law, and depicting the theme "Filipino Marespeto: Safe Spaces, Kasali Tayo".

Department of Science and Technology
Regional Office No. 1

2021 18-day Campaign to End VAW

Contest Winners

Sabayang Pagbigkas Challenge

Congratulations!



KASALI TAYO!

1

Technical Services Division

Department of Science and Technology
Regional Office No. 1

2021 18-day Campaign to End VAW

Contest Winners

Photo Contest

Congratulations!



Field Operations: A violence-free community is tantamount to everyone's empowerment and social prosperity. One HEART for all!!! #SafeSpacesForEveryone #VAWFREEPH

1

Department of Science and Technology
Regional Office No. 1

2021 18-day Campaign to End VAW

Contest Winners

Photo Contest

Congratulations!



PSTC - Pangasinan: Kaisa sa kampanya upang tulukan ang kabastusuran. Kahit soan, kahit kailan, ligtas at respetado ang kababaihan.

2

PSTC - Pangasinan

Department of Science and Technology
Regional Office No. 1

2021 18-day Campaign to End VAW

Contest Winners

Sabayang Pagbigkas Challenge

Congratulations!



PSTC - Pangasinan

3

Department of Science and Technology
Regional Office No. 1

2021 18-day Campaign to End VAW

Contest Winners

Photo Contest

Congratulations!



RSTL: Stop Sexual Harassment

3



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 PROJECTS

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

INNOVATION, SCIENCE AND TECHNOLOGY FOR ACCELERATING REGIONAL TECHNOLOGY-BASED DEVELOPMENT

STARBOOKS

SCIENCE AND TECHNOLOGY ACADEMIC AND RESEARCH-BASED OPENLY-OPERATED KIOSK STATIONS

TransDi

TRANSFORMING R&D OUTPUTS INTO INNOVATIONS THROUGH TECHNEPRENEURSHIP AND CUSTOMER VALIDATION

RxBox

RXBOX ADVANCING COMMUNITY HEALTHCARE

HALAL

HALAL PROJECT

ONESTORE

ONESTORE.PH



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