



The Official Newsletter of the Department of Science and Technology Regional Office I.

OCT - DEC 2020



DOST GOES VIRTUAL FOR NATIONAL S&T WEEK CELEBRATION 2020!

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- STARBOOKS Online and Offline Orientation
- Agyamanak DOST! Mga Kwentong Tagumpay ng **DOST-SEI Iskolars**
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VIRTUALEXHIBITS

- Kalusugan
- Kabuhayan
- Kaayusan
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The Department of Science and Technology Region 1 (DOST 1) conducted a virtual celebration of the 2020 National Science and Technology Week (NSTW) in October to November 2020 with the theme, "Agham at Teknolohiya: Sandigan ng Kalusugan, Kabuhayan, Kaayusan at Kinabukasan". The celebration showcased the significant scientific and technological breakthroughs that support inclusive socio-economic growth in the region through conduct of various webinars, livelihood training, calibration caravan and virtual exhibits.







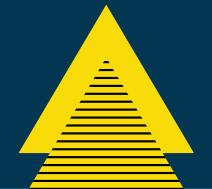




# KALUSUGAN

Kalusugan are activities, products, and facilities relating to health and nutrition.





#### 5s of Good Housekeeping

The first session of the Food Safety E-series entitled "5S of Good Housekeeping" was discussed by Ms. Annalie L. Rosales, Senior Science Research Specialist (SSRS) of DOST 1 - Regional Standards and Testing Laboratory (RSTL). She is a registered chemical technician and has achieved expertise in food sensory evaluation and food science.

During the webinar, Ms. Rosales discussed the importance and principles of 5s in the visual workplace, as follows: Sort, Set in Order, Shine, Standardize, and Systematize. She also cited examples of workplace areas where 5s can be implemented, 5s checklists & guidelines, and 5s implementation framework.

She said that when fully implemented, the 5S process increases morale, creates positive impressions on customers, and increases efficiency in the organization. Not only will employees feel better about where they work, but the effect on continuous improvement can also lead to less waste, better quality, and faster lead times.

Dr. Armando Q. Ganal, DOST 1 Regional Director, thanked the RSTL during his opening remarks for their initiative in focusing on food safety and good manufacturing practices that could increase the knowledge of Micro, Small, and Medium Enterprises.



#### 5S Implementation Framework



### Food Safety and Good Manufacturing Processes



The second session entitled "Food Safety Awareness" was discussed by Ms. Cyrille Ann B. Manalon, Science Research Specialist I of DOST 1 RSTL. Ms. Manalon has expertise in food safety and food microbiology.

During her talk, she discussed the importance of food safety, the kinds of food hazards, major causes of food incidents, and effective control measures to prevent cross-contamination. She also discussed the food

production chain, farm to fork approach, wherein food safety can be compromised at any point of this chain. Furthermore, she also discussed that food safety is a shared responsibility of the government through food legislation and enforcement; of the industry through appropriate process and food technology; and of the consumers to be knowledgeable and practice food safety at home.

Also, Ms. Manalon stressed that being knowledgeable about food safety protects all consumers from health risks like food poisoning and allergic reactions that could occur from contaminated foods. Ms. Manalon ended her talk with a bible verse for encouragement, "also that everyone should eat and drink and find enjoyment for all his hard work. It is the gift of God" (Ecclesiastes 3:13).

# Workplace and Food Manufacturing Disinfection and Sanitary Standard Operating Procedure (SSOP)



Mr. Racky D. Doctor, the proprietor, and general manager of Long Live Pharma and president of Nutridense Food Manufacturing Corporation discussed the "Workplace and Food Manufacturing Disinfection" of the Food Safety E-series.

He talked about the importance of current Good Manufacturing Practices (cGMP) and Standard Sanitation Operating Procedures (SSOP). He said that SSOP is critical and challenging to MSMEs as many of them in the region have to establish their facility, and the number one priority is to come up with safe and high-quality products for customers.

He also shared that the focus of sanitation is the workplace which includes the premises, the office, and the production area including the road entering the workplace.

Mr. Doctor showed their 5,000-sq.m. workplace. Their office is separated from the production area but is being controlled by a set of protocols. Their production area

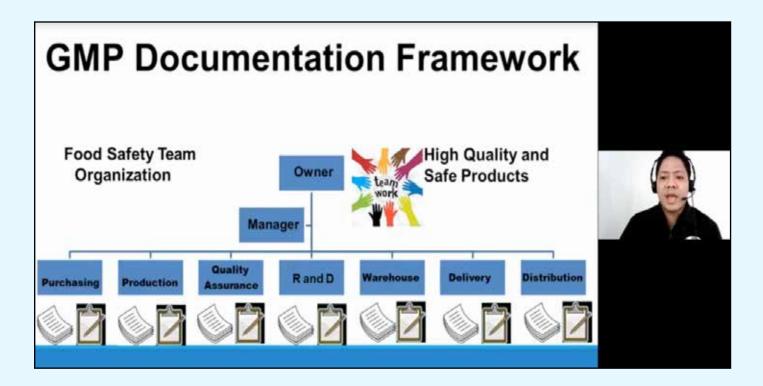
has tight protocols because this is where they process their products. They consider the whole compound as their workplace that must be under sanitation.

He emphasized the four (4) major routes of contamination, such as man, machine, materials, and the method or employee practices and SSOPs. These affect the safety and quality of the final products.

The company's sanitation practices in the premises include the provision of waste disposals, a clean comfort room, and a handwashing area. Staff are assigned to oversee that everything is clean all the time. Their green surrounding is conducive to the eyes. They do disinfection in their office thrice per day to avoid the spread of the virus. In the production area, they practice 5S and follow the cGMP process flow from entrance to exit. They are very strict in the implementation of health protocols. The company knows well that good food starts with a sanitized workplace.







#### **GMP Documentation and SSOP**

Mr. Hero D. Galamgam discussed the Good Manufacturing Practices (GMP) Documentation. He said that proper documentation and records are the basic rules in GMP regulations. There should be a team in the organization to be in-charge in establishing the documentation.

There is a process mapping wherein under a certain process, there are a documentary requirement and a person responsible to record. All information should be recorded in designated forms.

One of the records to be maintained is the organizational structure in which the responsible person is the supervisor or the human resource manager. The tasks and job descriptions of personnel can be easily identified. Another example of the record is under the production process, the documentary requirement is the material input and output report and the person responsible is the production supervisor.

Mr. Galamgam discussed the forms and documentary requirements to be recorded in every process of a business such as purchasing of raw materials, production, storage of products, transport, and delivery.

One advantage in keeping records is when a problem occurs such as food poisoning, the company can trace back the records about the products that were manufactured. They can easily identify which batches they were from and they can minimize loss.

Another topic is the SSOP which was discussed by Ms. Annalie L. Rosales. The objective of the training

is to explain the concept and importance of SSOP. The participants should be able to develop their own SSOP checklist and conduct monitoring and maintain sanitary conditions and practices in their respective processing areas.

She discussed the key sanitation conditions such as the employee health conditions, prevention of cross-contamination, condition and cleanliness of food-contact surfaces, the safety of water, maintenance of hand-washing, hand-sanitizing and toilet facilities, protection from adulterants, exclusion of pets and labeling, storage and use of toxic compounds.

She also emphasized the elements of SSOP, the work instructions on each of the sanitation conditions, the development of forms for each work instruction, tips for writing SSOP, record-keeping, and establishing a Hazard Analysis and Critical Control Point (HACCP) Documentation.



## Food Fraud and Food Defense

The third session entitled "Food Fraud and Food Defense" was discussed by Mr. Decth-1180 P. Libunao, Senior Science Research Specialist and Head of the DOST 1-RSTL, and was attended by 377 participants.

During his talk, he discussed the difference between food fraud and food defense wherein food fraud is done to make money, while food defense relates to acts that are done to create harm. He also discussed the types of threats like food sabotage, terrorism, and counterfeiting that is carried out by a disgruntled employee, sophisticated insider, or intelligent adversary with a specific goal in mind. And he discussed the many factors that could increase the supply chain or company's risk of food fraud.

Furthermore, Mr. Libunao shared developed software by the Food and Drug Administration (FDA) in the United States, the Food Defense Plan Builder to assist owners and operators of food facilities with developing personalized food defense plans.

Meanwhile, Mr. Libunao said during the question and answer portion that the company can prevent food fraud by applying GMP to ensure that products are consistently produced and controlled according to quality standards.





#### **Packaging and Labeling**

The topic entitled "Packaging and labeling (P&L)" was presented by Mr. Michael John C. Maquiling. Mr. Maquiling started his lecture with a flow chart on what the owner will consider before establishing a business. He emphasized that the owner should know his/her market, product, and how to promote it.

His lecture on the packaging highlighted the following:

- 1. Issues of packaging
- 2. Quality of packaged food
- 3. Packaging materials
- 4. Packaging technologies and innovations

Mr. Maquiling defined packaging to protect and facilitate the handling of products. He emphasized that the purpose of packaging primarily to transport food products from the production area to the market. His discussion on the product labeling highlighted the following:



- 1. Parts of the label (Principal Display Panel and Information Panel)
- 2. Mandatory Labeling Requirements

Further, Mr. Maquiling emphasized during his lecture on the mandatory labeling requirement that the food allergen information is very vital information that is needed to put in the label such as egg, nuts, etc. He added to indicate the nutrition facts and the instruction on how to use or consume the product. He reminded that the other declaration on the label such as Halal, HACCP, and others should be supported by documents. He also emphasized the importance of packaging and pointed-out that every food should have different packaging because they do not have the same composition, characteristics, and environmental conditions. He added that the packaging of every product should be appropriated because the packaging itself can promote and increase the sales of the products.

On the other hand, Mr. Maquiling discussed on the label of the products. He defined a label as a provision of adequate information and accurate identification of pre-packaged food in the package. He also stated that the label must be correct, not misleading, accurate, and legible. He stressed that the main objective of the label is to inform.

Mr. Maquiling concluded the webinar by answering the query of one of the participants on how to avail of the packaging and labeling services of the DOST. The DOST Region 1 services or assistance to MSMEs on P&L is free, he responded. He mentioned that clients should go directly to the nearest DOST/ Provincial Science and Technology Center (PSTC) in Region1 and fill-out the request form indicating the mandatory labeling requirement required by the FDA.



The 7th topic on the food safety e-series titled "Mandatory Labeling Requirements" was discussed by Ms. Priscilla Faye Cuadra, Food Drug Regulation Officer 1 of FDA Region 1 and was attended by 173 participants.

On the webinar proper, Ms. Cuadra discussed the overview of Administrative Order (AO) 2014-0030 or the Labeling Guidelines. She emphasized the scope of the administrative order which covers labeling of all pre-packaged food products, including food supplements, whether locally manufactured or imported in the Philippines.

Moreover, she discussed the different mandatory labeling information that should be included in the label of products as required by the FDA. To wit:

- 1. Product name/name of the food
- 2. Use of brand name and/or trademark
- 3. Complete list of ingredients
- 4. Net content and drained weight
- 5. Name and address of manufacturer, repacker, packer, importer, trader, and distributor
- 6. Lot identification code
- 7. Storage condition
- 8. Expiry or expiration date/Use-by-date/consume before date
- 9. Food allergen information
- 10. Direction/Instruction for Use
- 11. Nutrition Facts

Further, she stated that the client should check or search the FDA website to verify the brand name if there are already existing. For the complete list of ingredients, she said that all ingredients must be declared in descending order. She recommended downloading the forms on the FDA website for the food additives and/or functions. She emphasized that in the nutritional facts, the analysis should be based on the Recommended Energy and Nutrient Intake (RENI) values depending on the target age group.

On the other hand, Ms. Cuadra enumerated the different exemptions on the nutrition labeling such as alcoholic beverages, bulk materials for further manufacturing or repacking, food for infants and young children with their own labeling standards, and many more. She also mentioned the additional labeling requirements for food supplements based on Bureau Circular No. 2, series of 1999. Also, she emphasized that if the product contains bee pollen, ginkgo biloba, taheebo/Pau d'Arko, and energy drink should indicate precautions on the label.

Moreover, she discussed the different misleading declarations, representations, and prohibited claims. She also reminded that any violation or misbranded food products and the responsible person shall be subjected to action and penalties available to the FDA as provided under Republic Act (RA) No. 3720 as amended by Executive Order No. 175 and further amended by RA 9711 and its implementing rules and regulations.

#### Food and Drugs Admnistration (FDA) Product Registration and Licensing

Another topic on the food safety e-series titled "FDA Licensing and Certificate of Product Registration" was conducted with 304 participants from different partner agencies, MSMEs, Local Government Units (LGUs), and other interested individuals.

Mr. Andrew De los Angeles, Food and Drug Regulation Officer II of FDA Central Office served as the Resource Person on FDA Licensing. Mr. Delos Angeles discussed the overview of the Republic Act 711 or the FDA Act of 2009 and RA 10611 (Food Safety Act of 2013). He emphasized the principal responsibility of Food Business Operators in ensuring that their products satisfy the requirements of the food law relevant to their activities in the food supply chain and emphasized that control systems are in place to prevent, eliminate or reduce risks to consumers.

Moreover, he discussed those who need to secure the FDA Authorization which includes the manufacturer, tool manufacturer, trader, distributorimporter, distributor-wholesaler. Mr. Delos Angeles discussed the overview of AO No. 2020-0017 or the revised Guidelines on the Unified Licensing Requirements and Procedures of Food and Drug Administration Repealing Administration Order No. 2016-003. He emphasized the licensing requirements are harmonized, unified, and streamlined to speed up the approval process. He also reiterated that the AO No. 2014-0029 is still in effect and the licensing requirements have been changed however, there are no changes on the product risk-based qualifications. He further discussed the licensing application through the E-Portal through digitizing the requirements and make sure that the proper formats are followed.

Mr. Delos Angeles also discussed the draft policy guidelines on GMP for Food Establishments during this COVID-19 pandemic. To wit:

a. The principles and guidelines of cGMP shall continually be followed designed to address the health concerns of the COVID-19 pandemic; b. Hygiene and sanitation and additional procedures (proper handwashing with appropriate disinfectant grade alcohol pr chlorine solution); c. Physical Distancing among personnel for a minimum distance of 6 ft. apart d. Health monitoring of all personnel to include thermal scanning and proper documentation of periodical reporting; and e. Information and education modalities relevant to the prevention of COVID-19 transmission.

The second topic is the application for Certificate of Product Registration (CPR) and was discussed by Ms. Maria Luisa C. Aquilizan, Food, and Regulatory Officer II, Center for Food Regulation and Research, FDA. She discussed the overview of AO No. 2014-0029 and emphasize the CPR requirements as per

the said AO. She also added the additional CPR requirements as per FDA Circular 2016-007 which includes the pictures of the label, certificate of analysis for different products, MOA (if the application is done by a trader), and other attachments.

She further discussed the step by step CPR Application thru the E-Registration System found on the FDA Website, as follows:

- a. Obtain the user account
- b. Determine the type of food product and categories
- c. Fill out the application form and pay the assessed fee

In the CPR, she also reiterated that the one obtaining the CPR registration must comply with all the labeling requirements as stipulated in the AO-2014-0030 and other pertinent laws and regulations with labeling. She also emphasized that you cannot apply for CPR if the firm has not yet obtained a License-to-Operate from FDA.

In conclusion, the speakers emphasized that FDA is responsible for protecting public health by guaranteeing the safety, quality, purity, and efficacy of health products to protect and promote the right to health of the general public.





#### What is HACCP?

- With HACCP, hazards are identified, associated risks are assessed, methods of control are identified, critical control points are specified, and compliance are clearly defined.
- HACCP is not a stand-alone program but is a part of a larger control program.
- Implementation of HACCP relies on adherence to prerequisite programs.



# Objectives By the end of this webinar, you will be able to; To understand the basic knowledge of Hazard Analysis and Critical Control Point. To become aware on the importance of HACCP. To know the importance of food safety.



# Hazard Analysis and Critical Control Point (HACCP) Awareness

The 9th topic on the food safety e-series entitled "Hazard Analysis & Critical Control Point (HACCP)" was presented by Mr. Decth-1180 P. Libunao, Senior Science Research Specialist of DOST Regional Office 1. It was attended by 368 participants.

At the start of the lecture, Mr. Libunao discussed what is HACCP. HACCP is a system that identifies, evaluates, and controls hazards that are significant for food safety. He emphasized that the HACCP system focuses on prevention rather than relying mainly on end-product testing.

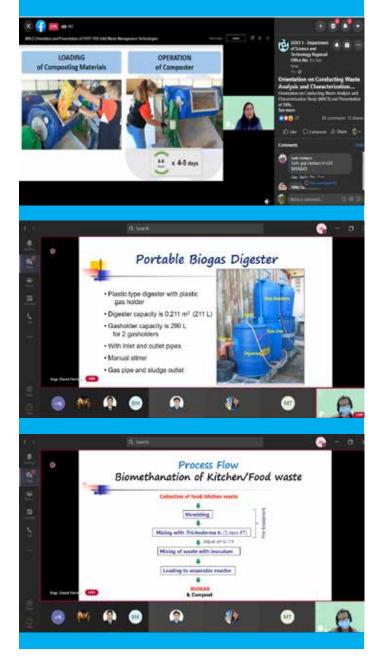
Moreover, he discussed the benefits of HACCP and pointed out that it is one of the Obligation to Quality & Safety Assurance and Management Systems. Food business operators should establish a strong foundation of Pre-requisite Programs (PRPs) such as GMP and SSOP before proceeding to HACCP.

Mr. Libunao discussed the 12 Steps in HACCP Implementation and the Seven (7) HACCP Principles. To wit:

- 1. Identify the Scope and Purpose of the HACCP Plan and create a HACCP Team;
- 2. Describe the Product;
- 3. Identify the intended use of the product;
- 4. Construct a process flow diagram;
- 5. On-Site verification of Flow Diagram;
- 6. List all potential hazards, conduct hazard analysis;
- 7. Identify Critical Control Point (CCP);
- 8. Establish Critical Limit for each CCP
- 9. Establish a monitoring system for each CCP;
- 10. Establish corrective action for deviation that may occur:
- 11. Establish verification procedures; and
- 12. Establish documentation and record-keeping.

Further, he stated that one of the important parts in implementing the HACCP plan is to have Food Safety training of all the personnel including the management and food handlers. Mr. Libunao summarized the processes of HACCP which are identifying the hazard, analyzing its importance, setting a critical limit, setting control measures, checking the hazard if it is being controlled. With these, food handlers can ensure that the food they serve is safe.

Lastly, he advised all the participants to start ensuring food safety now because the best time to implement a food safety program is 20 years ago and the next best time is now.



#### Tech Talk on Waste Management System featuring Ecosep / Vigormin

Engr. Arnold Santos, Provincial S&T Director of PSTC-Pangasinan started the tech talk with his welcome remarks. Ms. Bernalyn Martinez, PSTC-Pangasinan Staff, introduced the Resource Person, Dr. Merlinda A. Palencia. Dr. Merlinda A. Palencia (ASEAN chemical engineer and technology developer) from Adamson University, introduces the Modular Eco-Friendly Domestic Waste Water Treatment (MEDoWW) formerly known as Ecological Septic (Eco-Sep) System to the participants from Teams Live and FB Live.

The technology talk was centered on the technology features and the benefits of MEDoWW technology. Dr. Palencia explained the wonders of MEDoWW which contains Vigormin, an organomineral that hastens the decomposition of harmful bacteria that lodge in septic tanks. Vigormin prevents bacteria from escaping from the tank, thus avoiding contamination of wastewater in sewage systems. She also added that cleaning the water being used in the business operation is important knowing that the government is very assertive in pushing for environmental

# Orientation on Conducting Waste Analysis and Characterization Study (WACS) and Presentation of Different DOST-ITDI Solid Waste Management Technologies

As part of the celebration of the National Science and Technology Week celebration in Region 1, the Department of Science and Technology Regional Office 1 spearheaded the webinar entitled Orientation on Conducting Waste Analysis and Characterization Study (WACS) and Presentation of Different DOST-ITDI Solid Waste Management aims to introduce technologies to address pressing needs in waste management of stakeholders in the region last October 21.

DOST-1 Regional Director Dr. Armando Q. Ganal opened the program reiterating the importance of WACS and the application of technology in managing pollutants that are detrimental to the environment if left unmanaged. He emphasized that technologies developed by DOST-ITDI have gone through R&D and that these technologies are applicable and adaptable to every stakeholder's weather they are as big as LGUs to as small as a household unit.

Around 334 participants from different LGUs of Region 1 and other region attended the webinar via Microsoft teams and the FB live who familiarized themselves to WACS and various ITDI-developed waste management technologies such as Composting Technologies (Bioreactor, dual-drum composter, household tumbling composter), Biogas technology, and the Electric Plastic Densifier. These technologies were discussed by ITDI experts themselves including Engr. Joven Barcelo, Dr. Myra Tansengco, Engr. David Herrera, and Engr. Dante Vergara.

Most of the queries raised are on how these technologies could be availed and other technicalities regarding the technologies as to prices and sources of inoculants for the bioreactor.



compliance, especially to food establishments that produce wastewater. She added that her goal is not just the commercial success of her invention, but also the ambition is for business establishments to prioritize wastewater treatment. She highlighted that the problem of water pollution is not a problem of the government alone but is everyone's concern.

"We can protect our limited water resources through collaboration and active participation in the treatment of domestic and industrial wastewater", she said.

#### **Halal Requirement and Certification**

The last session for the Food Safety e-series entitled "Halal Requirement and Certification" was discussed by Dr. Norodin A. Kuit, Halal auditor of Muslim Mindanao Halal Certification Board Inc. (MMHCBI).

During his talk, he presented the profile MMHCBI. MMHCBI is a non-government organization, member of the International Halal Integrity Alliance (IHI) that will assume full responsibility in ensuring that food and non-food products being produced, catered, served, or distributed in the region or elsewhere (Local or Abroad) are Halal-compliant or acceptable for the Muslims to consume.

He also discussed the Halal Certification Scheme that will serve as guiding principles in accrediting halal certifiers and enable Philippine products to be accepted as halal players in the global halal ecosystem. It has six (6) phases which include application, submission, processing (includes audit 1, audit 2, and evaluation), certification issuance, post surveillance, and renewal.

Meanwhile, Dr. Kuit said that firms should go on to Halal certification because it is the trend in the economy in market places.

Dr. Armando Q. Ganal, DOST 1 Regional Director, said that there is one firm in Pangasinan that is willing and interested in the halal process and hope that the owner will start complying with the halal requirements.





#### **NAST Food Security Amidst Pandemic**

The Department of Science and Technology – Regional Office No. 1, in partnership with the National Academy of Science and Technology (NAST), spearheaded the first virtual Speakers Bureau on November 5, 2020, thru Zoom online platform.

Ms. Annalie L. Rosales, Senior Science Research Specialist of DOST1 served as the moderator for the webinar.

The program formally started with an Opening Remarks from DOST 1 Regional Director Dr. Armando Q. Ganal. The first topic was presented by Mr. Romeo M. Javate of DOST-TAPI, entitled, "Kabuhayan: Technology Transfer and Commercialization Services". Mr. Javate presented the various Technology Transfer and Commercialization Services of DOST-TAPI such as Venture Financing Program, I-Tech, and Invention-based Enterprise Development Communication (IBED II) Program. Mr. Javate also included in his lecture the documentary requirements and who may avail of these programs.

Acd. Edward H.M Wang then proceeded with his topic entitled, "Kalusugan: SIBOL-COVID Biomedical Innovations: Opportunity in Crisis". His lecture includes his sharing of his team of medical experts establishing the Biomedical Program at the University of the

Philippines (UP) – Manila. His team came up with CLIC, also known as the Conversations Leading to Innovations and Collaborations where it bridged the gap between UP-Manila (UPM) and UP-Diliman in terms of collaborations. The CLIC can be compared to a teleconferencing system between the two campuses where the clinicians are matched with engineers who are equipped with solutions to their predicament on medical matters. As a result of these collaborations, the SIBOL (Surgical Innovation & Biotechnology Laboratory) was formed through the grant of DOST-PCHRD. The SIBOL was composed of UPM SIBOL-COVID Task Force. Acd. Wang also pointed out the strengths, weaknesses, opportunities, and threats as far as the SIBOL is concerned.

The last speaker for the event was Acd. Rodel C. Lasco and presented his lecture on "Kaayusan: Science and Technology for Climate Change and Disaster Risk Reduction". His lecture includes the science and technology interventions that correspond to the various disaster experienced by the country.

An open forum was facilitated by Ms. Rosales to give answers to questions raised by the participants. The program concluded through the Closing Remarks of Ms. Luningning E. Samarita-Domingo, Director IV of NAST PHL. It was attended by 394 participants.

## **National Research Council of the Philippines Webinar Series**

The Department of Science and Technology – Regional Office No. 1, in partnership with the National Research Council of the Philippines (NRCP), spearheaded webinar series on the topic of Kalusugan, Kabuhayan, Kaayusan, and Kinabukasan.

Mr. John Oliver De Vera, Project Staff, and Ms. Annalie Rosales, Senior Science Research Specialist of DOST1 served as the moderators for the webinar.

#### Day 1

The program formally started with an Opening Remarks from DOST-1 Regional Director Dr. Armando Q. Ganal. The first topic was presented by Dr. Ruel Suralta. His presentation was entitled Serenity in Diversity: Sustaining Livelihood & Well-Being in Time of Crises. Dr. Suralta presented the effects of climate change in relation to food products such as drought, increase in temperatures, flooding, rise in sea levels, rise in salinity, pest and disease occurrences and severity, and increase in frequency and intensity of typhoons.

The next Resource Speaker was Dr. Krista Danielle S. Yu whose presentation was titled, Economic Impact Assessment using Disaster – REALM. She talked about natural disasters and the economy, the COVID-19 pandemic and the economy, input-output analysis, disaster-REALM portal and conclusions, and future work.

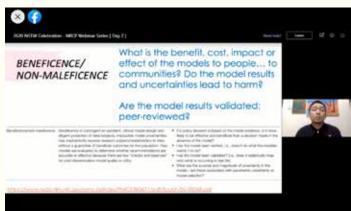
#### Day 2

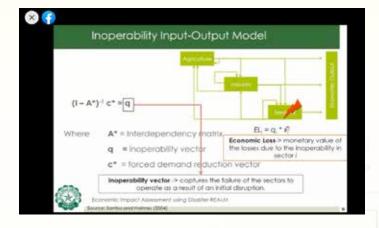
The program formally started with an Opening Remarks from DOST 1 Regional Director Dr. Armando Q. Ganal. The first topic was presented by Dr. Jomar F. Rabajante, Member-at-Large and Professor & UP Scientist from the Institute of Mathematical Science & Physics at University of the Philippines Los Baños. The topic is entitled, "Initiating Discussion on Ethics in Mathematical Modeling and Date Analytics".

The second topic was presented by Dr. Imelda A. Agdeppa, the Officer-In-Charge of the DOST-Food









Nutrition and Research Institute, and a Scientist II. The topic entitled, "Role of Science & Technology Innovations in Promoting Health".

An open forum was facilitated by Ms. Rosales to give answers to questions raised by the participants. The program concluded through a Closing Remarks by Dr. Marieta Bañez-Sumagaysay, Executive Director of the NRCP. The two-day activity was attended by 376 participants.

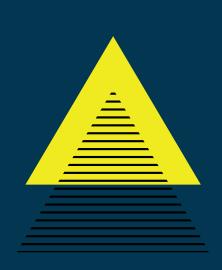




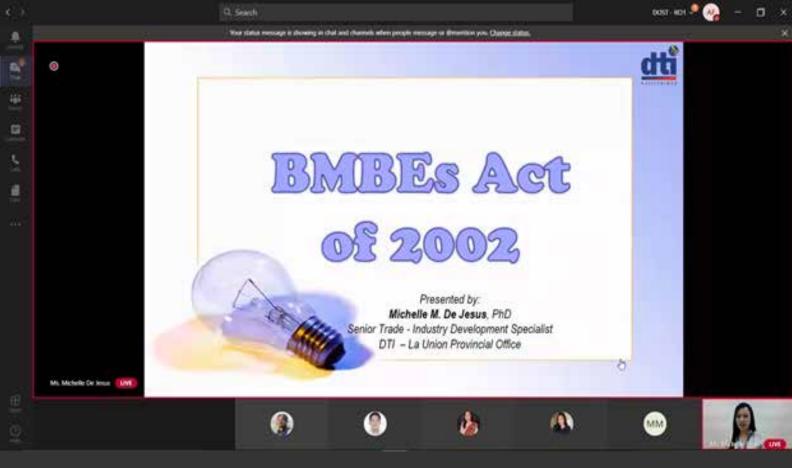
# KABUHAYAN

Kabuhayan are projects and activities which focus on the technologies that would provide livelihood or development of an enterprise.









### **Guide to Starting a Microbusiness in the Philippines: Barangay Microbusiness Enterprise (BMBE)**

The 11th topic on the food safety e-series titled "Guide to Microbusiness in the Philippines: Barangay Microbusiness Enterprise". Ms. Cyrille Manalon served as the moderator of the webinar and introduced Ms. Michelle Moreno-Villanueva and Dr. Michelle M. De Jesus of the DTI Region 1 as the resource persons.

Ms. Villanueva discussed the overview of MSMEs in the country. MSMEs comprises 99.52% of the total number of business enterprises in the country. She discussed the important role of MSMEs in our country. MSMEs are the top job generators in our country. Afterward, she introduced the overview of Barangay Microbusiness Enterprise (BMBE). BMBE aims to integrate micro-enterprises in the informal sector into the mainstream of the economy.

Ms. De Jesus on the other hand discussed the details and procedures of BMBE law. The following are the criteria to meet to be able to qualify for BMBE: It is engaged in production, processing, or manufacturing of products, including agro-processing, as well as trading and services; It has total assets of not more than P 3 million, including those arising from loans but not the land on which the plant and equipment are located; The business or service provider, in connection with the exercise of his or her profession, is not a professional duly licensed by the government after having passed a government licensure examination, such as accountants, lawyers, doctors, and the like; It is not a branch, subsidiary, division, or office of a large-scale enterprise and its policies and business modus operandi are not determined by

such enterprise or by persons who are not owners or employees of the said enterprise.

She also stressed the incentives that will be enjoyed once registered with BMBE: Income tax exemption from income arising from the operations of the enterprise; Exemption from the coverage of the Minimum Wage Law (BMBE employees will still receive the same social security and health care benefits as other employees); Priority to a special credit window set up specifically for the financing of BMBEs; and Technology transfer, production and management training, and marketing assistance programs for BMBE beneficiaries.

Aside from these, the LGUs may also reduce the amount of local taxes, fees, and charges imposed or exempt the BMBEs from local taxes, fees, and charges.

Ms. De Jesus concluded her talk by urging the participants to share what they have learned from the webinar.



#### **Food Innovation and Development**

The Food Innovation Development webinar was conducted through Facebook (FB) live on October 19, 2020. Ms. Cyrille Ann Manalon of DOST1-RSTL served as the moderator and introduced the speakers. It was attended by 395 participants.

#### **FIC Applied Research and Development**

Ms. Meryl Bernardino from the Pangasinan State University (PSU)-DOST1 Food Innovation Center (FIC) shared the services that they offer to entrepreneurs, faculty researchers, students, and technology adaptors. They offer expertise or academic support, technology transfer or training, and lease of equipment.

The FIC conducts trainings on fruit processing such as mango value-adding processes. Clients can also lease their food processing equipment such as the vacuum fryer, water retort, freeze dryer, and spray dryer to carry out trials before they invest in the equipment.

The motto of FIC is "transforming concepts to products". Through the applied research and development, the FIC generate concept, do a proto-type, conduct consumer testing and analyses of products, file for intellectual property protection, technology costing, licensing and transfer of the technology to adaptors.

#### **Product Development of Bakers PH**

The idea of conceptualization is one of the activities of Bakers PH to create and develop food products. During this pandemic, they continue to research what are the latest trends. They apply the ideas from trade fairs.

It takes a minimum of 60 days for the formulation, trials, laboratory analyses, and packaging of a new food product. For them, it is more than just creating the recipe, they work extensively. An example of their innovation is the hopia bagnet, crispy, fried pork, and a signature product of llocanos. Bagnet is a classic llocano favorite that they incorporated as filling to the hopia. They develop products based on consumer needs. They check on products in the grocery stores that are on-demand and easily consumed by customers. Another example is the llocos Tasty. They use high-quality ingredients producing large volumes hence they sell it at an affordable price. They also consider the consumer requirements which is healthy food. The created product like the potato ensaymada, carrot bread, wheat bread, and Nutribun for the nutritional benefits of kids.

In order to compete, their food products should stand out. That's why they innovate. They apply the art of marketing and promotion. They always update their FB page when launching products, use regional advertisements and jingle to be remembered by customers, and subscribe to radio stations in the locality. They also partner with the provincial government of llocos Norte through this pandemic.

With DOST-Food and Nutrition Research Institute's (FNRI) assistance, they created the enhanced Nutribun for 90-day feeding program during the pandemic. They innovated for different varieties like ube, monggo, raisin, and chocolate flavor.

Bakers PH is mindful of the food safety procedures. They provide GMP parameters, abide by FDA rules, have measures to prevent disease outbreaks, and conduct tests of potability of water twice a year. They prioritize consumers' health.

Under the Small Enterprise Technology Upgrading Program (SETUP) of DOST, their processes are automated. The suppliers of their ingredients come from local producers and have passed the FDA requirements. The packaging of their products is now appealing and prolongs the shelf-life. They ensure the quality of their products.

For Bakers PH, it requires time, effort, and technological intervention to come up with a good product. From one (1) bakery outlet in Laoag, Ilocos Norte, they now have nine (9) store outlets in just a span of five (5) years since 2013. They are planning to put up one store per year and soon they will venture into franchising.

#### Sta. Barbara Gourmet

Ms. Rahab Serrano's Sta. Barbara Gourmet started in 2015. Their products promote the rich agriculture and aqua produce of Pangasinan. Their first product is the Chanos Filipina, a bottled Bangus in olive oil which complements to sandwich, pasta, pizza, and rice. Their products have no MSG. Other variations of the bottled Bangus are the A La Pobre which uses corn oil, and milkfish in teriyaki sauce. They have chili sauce and bottled tuyo in different flavors such as adobo and afritada.

Sta. Barbara Gourmet wants to let the world knows that the milkfish of the Philippines is delicious. The husband of Ms. Serrano is a graphic artist who is behind the artistic packaging design of their products. They attend trainings and trade fairs conducted by the different government agencies.

Ms. Serrano shared the three (3) elements to success from the book the Secrets of the Millionaire Mind. First is the right knowledge. There is a generalized business knowledge to consider which is the marketing, sales, finance, personnel, management, technology, negotiation, and product development. Second is the right vehicle that fits into our passion and is it high demand? Lastly is the "Right you", the attitude, habits, and character toward the business.

During the pandemic, they protected their employees by providing their 1-month salary. They acquired the Inter-Agency Task Force (IATF) pass to travel outside the province and a food pass. They promote through FB marketing. They collect orders and meet up with customers or deliver to different parts of the Philippines.

They diversified baked goods like banana bread. Consolidators from trade fairs also helped to promote so their process is continuous. DOST and the Department of Trade and Industry (DTI) also assist even during this pandemic. They follow up with their customers and improve through their suggestions.

Ms. Serrano advised the startups and entrepreneurs to be positive, grab the opportunity to innovate, register the business to DTI and be protected, ask for assistance from the government, and survive until the normal situation comes back.

## Virtual Forum on Carrageenan Plant Growth Promoter

The DOST 1, through the PSTC-La Union, conducted a Virtual Forum on Carrageenan Plant Growth Promoter (PGP) Technology.

Ms. Cristy D. Calcaligong, a Licensed Agriculturist & the Former Project Staff on the Field Verification & Testing of Carrageenan PGP in Region 1 was tapped as the resource person to share her expertise on the technology. The learning activity centered on the topics on what is carrageenan; the effects of Carrageenan PGP; the benefits of Carrageenan PGP, and the application methods of the technology.

On the other hand, Mr. Shubert Leandado of St. Ruiz Agro Supply was also present to support the activity on the marketing aspect of the product.

The learning activity was facilitated to further facilitate the transfer of the technology closer to the people, particularly to farmers. It was attended by 100 participants.

#### Seminar on Textured Vegetable Protein (TVP) enriched Meat Processing

The PSTC-Ilocos Sur (PSTC-IS) spearheaded the conduct of a Seminar on Textured Vegetable Protein (TVP) Enriched Meat Processing on November 10, 2020. The webinar aimed to provide basic knowledge on TVP enriched meat processing and its proper utilization.

Ms. Laurine Sales, Project Assistant II of PSTC-IS served as the moderator of the webinar. She acknowledged the participants from different partner agencies, MSMEs, LGUs, and other interested individuals. After which, Mr. Decth-1180 P. Libunao, Senior Science Research Specialist of DOST1 welcomed the participants and hoped that they will learn a lot after the lecture.

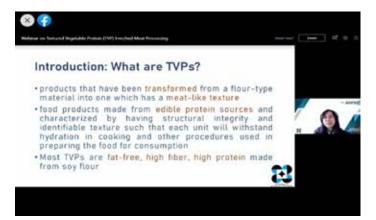
Ms. Annalie L. Rosales, SSRS of DOST 1 served as the resource speaker. At the start of the lecture, Ms. Rosales discussed that TVPs are products that have been transformed from a flour-type material into one which has a meat-like texture. These are products made from edible protein sources that are fat-free, high-fiber, high protein made from soy flour.

TVPs have almost no flavor and are often used as meat replacement or extender which can be purchased in seasoned or unseasoned. Ms. Rosales also told the participants that they should be careful in buying TVPs especially in online shops, they must ensure that the suppliers had secured proper certifications from the authority.









Afterward, she discussed the process of application of TVP to processed meats such as patties, sliced meats, sausages, longganisa, hotdogs, etc. She reminded the participants that they should hydrate the TVP before incorporation by soaking it into tap water and drain afterward without squeezing the TVP. TVP can be used as meat replacement or filler for processed meat.

# Training on Peanut Processing in the ELCAC Communities

The PSTC-IS conducted a peanut processing training to the End Local Communist Armed Conflict (ELCAC) communities in Sta. Lucia, Ilocos Sur.

The said endeavor was held at the Brgy. Hall in Conconig East, Sta. Lucia and aims to impart the basic knowledge and skills to the participants to establish a livelihood in their community.

A total of 33 participants composed of 17 Conconig East Farmers Association members and 16 members from the Suagayan Mighty Voyagers Association (SMVA) have actively participated in the training. Both associations are engaged in peanut processing.

Engr. Junalyn Dasugo, as the moderator of the training officially started the program with a prayer followed by the National Anthem. After which, Engr. Dasugo asked Mr. Romeo Rabang Sr., Brgy. Captain of Conconig East, to give his welcome remarks.

According to Brgy. Capt. Rabang, he wants to see an output product of his members not just to attend the basic training but to have an output that will be served as their livelihood in their community. He expressed his warmest welcome and gratitude to the DOST for choosing their community and hoping for other assistance soon.

Further, Engr. Dasugo requested Provincial Director Ramon Sumabat to give a rationale for the activity. According to PD Sumabat, the training will be the start point of the agency to assist the groups through the Community-based project. He said that there should have an active association, product, and a market for them to get assistance which is a grant. He discussed the different programs and services of the DOST such as undergraduate scholarship, SETUP, livelihood trainings, calibration services, technical assistance, and consultancy services, and others.

After his talk, Engr. Dasugo introduced the speaker, Prof. Leonida Fides. Before the training proper, Prof. Fides discussed the different utensils to be used, ingredients in food processing, and she instructed the participants on the do's and don'ts during processing. Also, she discussed good manufacturing practices and personal hygiene.

During the training, participants were eager to learn the basics of peanut processing and showed their interest to get assistance from DOST.

Peanut brittle, polvoron with peanut flavor, peanut butter, and adobong peanut with anchovies were the products developed. The training was concluded by giving certificates to the trainer and participants.

PD Ramon Sumabat challenged the 2 groups (Conconig East Farmers Association & Suagayan RIC) to establish a business venture for them to get assistance from the DOST through the Community-based Project.

The grinder used during the training was lent to the Conconig East Farmers Association member to start their peanut processing. If they will sustain their production, the grinder will be their own.















#### **SETUP Stakeholders' Summit**



The DOST 1 conducted the SETUP Stakeholders' Summit as part of the National Science and Technology Week activities and was attended by 141 participants

Ms. Katrina F. Ronquillo and Ms. Gael Myca A. Abella of DOST 1 served as the moderator for the webinar.

The program formally started with an Opening Remarks from DOST-1 Regional Director Dr. Armando Q. Ganal. Secretary Fortunato T. Dela Peña and Usec. Brenda L. Nazareth-Manzano delivered an inspirational message. It was noted that the agency will ensure public service continuity even with the pandemic affecting all of us. It was also stressed that we are built to be resilient and agile individuals and there is no doubt that we will be able to prosper amid this adversity.

Dr. Carl E. Balita started his talk by defining pivot wherein pivot is sticking to the same vision but changing strategies. He said that this pandemic situation has given us a lot of opportunities. Dr. Balita presented our journey during this pandemic subdivided into four phases: we React (retreat to safety, rest, resist), we Reflect (retool, relearn, roll), we Respond (recalibrate, re-channel, reboot), and we Recover (rebound, renew, run the race). He also presented his article entitled VUCA world 4.0 further he defined VUCA as a situation wherein we cannot predict, we cannot control, and is unknown. VUCA starts with the word volatility (rate of change), uncertainty (unclear about the present), complexity (multiple key decision factors), and ambiguity (lack of clarity about meanings). Afterward, Dr. Balita redefined the VUCA with the words vision (purpose is greater than a perfect plan), understanding (stop, look and listen so you can respond), clarity (make sense of chaos),

agility (collaborative approach to rapid change).

This is SETUP, the magic pivot: Strategize the vision – create the vision and strategize for it, find on how to improve things and innovate but don't just think about it execute it; transform to digitalization so that we can move to the new normal and science and technology is the answer; unleash leadership because it is not about you it is about your team coming together.

"The illiterate of the 21st century will not be those who cannot read and write but those who cannot learn, unlearn and relearn". The best part of human nature is creativity, empathy, stewardship; we are not in the same boat but we are on the same storm that's why we need each other.

In closing, Dr. Balita shared his perspective during this pandemic:

- Quarantine we were not locked home, we are safe home; we had our introspective moments and we pursued our passion
- Unemployment widens the pool of available talent
- Economic Recession survival entrepreneurship, back to basics

These three lasts forever – faith (hold on to it), hope (always expect the best), and love (find that love and give it). If you want your life to be a masterpiece, you have to color outside the lines.

After his lecture, an open forum was facilitated by Ms. Abella to give answers to questions raised by the participants.

#### Day 2



The Department of Science and Technology

- Regional Office No. 1 conducted the SETUP
Stakeholders' Summit as part of the National Science
and Technology Week activities.

Ms. Katrina F. Ronquillo and Ms. Gael Myca A. Abella of DOST-1 served as the moderators for the webinar.

The program formally started with an Opening Remarks from DOST-1 Regional Director Dr. Armando Q. Ganal. It was then followed by a short recap of the previous episode of the Summit and an introduction of the resource speaker.

Sgt. Lloyd A. Luna started his talk by giving an introduction about himself, his profession as a registered professional speaker, and his engagements. He also shared his recent involvement in the Philippine Military when he joined the training for the Philippine Air Force Reserve Command early this year.

With the theme, "The Art of Restart", he began his discussion by emphasizing the importance of productivity amidst the COVID-19 crisis where every one of us has mostly stayed home due to lockdowns. Since most businesses have closed as a result of the crisis, Luna also shared his experience that his business was not exempted from the crisis. Since mass gatherings were discouraged, he thought of a way to impart his motivational speeches and lectures using online live-streaming platforms such as Facebook Live and Youtube channel. As a result, he and his team of motivational speakers were able to form the The New Channel Corporation.

In his keynote speech, Luna mentioned that the first step is always the hardest, but it is the key to a bountiful harvest. He encouraged the viewers to take little steps, no matter how challenging times can be, as these steps can greatly contribute to one's realization of their goals.

Sgt. Luna also presented the Personal Transformation Framework where he emphasized that one's transformation stems from one's transition from being a loser to a player, and to taking appropriate actions to become a winner. Personal transformation entails recognizing the frustrations, actions, and realizations, as these are the key factors for one to be transformed.

He also shared some insights on Stepback Leadership where it encourages collaboration instead of competition.





As part of his discussion, he mentioned that the greatest test of leadership is not what happens when you're around; Rather, it is what happens when you're in the background.

In Stepback Leadership, he enumerated three (3) values crucial for its attainment:

- 1. Malasakit as a culture;
- 2. Collaboration as a strategy; and
- 3. Trust as a currency

The motivational talk of Sgt. Lloyd A. Luna was followed by the virtual awarding ceremonies for the graduating SETUP beneficiaries and the Regional Winner for the SETUP PRAISE Award for MSMEs. The awarding ceremonies were facilitated by Ms. Adelisa C. Florendo, SETUP Regional Coordinator. 25 DOST-assisted MSMEs received their Certificate of Ownership as proof that they have satisfactorily completed their obligations with DOST-SETUP and they have now all the rights and privileges to the interventions that were provided to them. This was then followed by the conferring of the plaque to Bakers PH of Laoag City, Ilocos Norte as this year's Regional Winner of the SETUP PRAISE Award.

The SETUP Stakeholders' Summit was successfully concluded through the Closing Remarks of DOST-1 Regional Director Dr. Armando Q. Ganal.



The Department of Science and Technology's (DOST) Small Enterprise Technology Upgrading Program (SETUP)-assisted Bakers PH from Laoag City, Ilocos Norte has been conferred as the regional winner for the 2020 SETUP Productivity, Resilience, Agility, Innovativeness, Sustainability, and Excellence (PRAISE) Award during the virtual awarding ceremonies of the SETUP Stakeholders' Summit last November 18, 2020, through Microsoft Teams.

Bakers PH, formerly known as Pauline's Baker's Percent Bakery, has been a beneficiary of SETUP since 2016. The bakeshop, which is renowned for its Hopia Bagnet, hot pizza bread, and other baked goods, is a family-owned business established in Cagayan by Mrs. Paulina Bote-Borja. In 2014, the family separated the Laoag City branch which is now owned and managed by Mrs. Borja's son, Mr. Daniel B. Borja. Its first phase of assistance from SETUP amounting to PhP1,800,000.00 was focused on the improvement of their product packaging through the acquisition of a packaging machine and stainless table along with the assistance for its packaging and labeling needs.

With the help of the interventions of DOST, Bakers PH increased its production and sustained its distribution of baked products not only in the city of Laoag but also to neighboring towns and provinces. As the business marks the spot in terms of growth, the firm expanded its venture through the establishment of store outlets located in Robinsons Place – San Nicolas and in public markets of the City of Batac and San Nicolas, Ilocos Norte to cater to more customers. Bakers PH is also the supplier of burger buns for Jollibee Foods Corporation's branches in the Ilocos Region.

In 2018, the enterprise reached out to the DOST through the Provincial Science and Technology Center-Ilocos Norte to seek assistance on the upgrading of its bakery operations. SETUP backed the funding for the firm's equipment and production process upgrading. With a total project cost of PhP5,334,000.00, the firm was able to purchase a water chiller, 40-liter planetary mixer, reversible dough sheeter machine, rack oven, multi-function bread/paratha-forming machine, 3-deck gas oven, and metal detector. With these technologies in place, not only was the production time

lessened but it also minimized human contact to ensure food safety for its consumers.

The Search for the Best SETUP Adoptor which was renamed this year as the SETUP PRAISE Award for micro, small and medium enterprises, is conducted every year to give recognition to the efforts of SETUP beneficiaries that best exemplified the qualities of an innovative entrepreneur through the realization of its project objectives with the Program, and its impacts to the community where the business is located. The nominees were gauged in terms of their accomplishments and outputs that meet the criteria of PRAISE as follows: Productivity which pertains to the enterprise's significant improvements in production, sales and revenues, market penetration, size and share, asset size, customer size, export penetration and cost efficiency; Resilience or the firm's ability to manage challenging conditions like economic crisis and onslaught of disasters and the actions taken after difficult situation to be able to continue business; Agility which covers the firm's ability to adapt market changes and refocus or pivot to respond to customer needs and changes in legal and statutory requirements using its existing technology and resources to sustain competitive advantage; Innovativeness which includes the degree and extent of technology innovation in the products and process chain of the enterprise resulting to increase in productivity; Sustainability which tackles the notable improvements in product quality; and Excellence which focuses on the enterprise's leadership and management practices, financial discipline, ethical and social responsibility, and the awards and citations received.

Aside from these rubrics, a SETUP-enrolled enterprise can be nominated provided that the firm has completely refunded the assistance or paid at least 85% without default. The firms are nominated through the Provincial Science and Technology Centers of their respective provinces and are evaluated at the regional level through the DOST Regional Offices.

In Region 1, two (2) SETUP recipients were nominated for the said Search, namely Mira Hills Farm of Bantay, Ilocos Sur and Bakers PH of Laoag City, Ilocos Norte. As the regional winner, Bakers PH received a plaque of recognition and a cash prize amounting to PhP20,000.00.





# KAAYUSAN

Kaayusan are technologies that prevent or mitigate events on climate change and disaster risk reduction.



## **Understanding Gender Sensitivity Concepts**

The webinar started with a prayer and singing of the National Anthem. Dr. Armando Q. Ganal, DOST 1 Regional Director and Gender and Development (GAD) Focal Point System (GFPS) Chairperson delivered his Opening and Welcome Remarks.

Ms. Racquel M. Espiritu, DOST 1 Assistant Regional Director (ARD) for Technical Services and Gender and Development (GAD) Focal Point System (GFPS) Technical Working Group Head, introduced the Resource Speaker, Ms. Maria Fe B. Singson, Supervising Science Research Specialist and GAD Focal Person of DOST Central Office.

Before her presentation, Ms. Singson thanked DOST 1 through Director Ganal for pursuing GAD mainstreaming in the agency. She also said that "making the bureaucracy work for women's empowerment and gender equality is a continuing and challenging task that the government is committed to pursue."

At the start of the lecture, Ms. Singson defined GAD in terms of development perspective and process, the achievement of gender equality in the development of choices, and contention that women are active agents of development.

The presentation focused on the following: 1) foundational concepts of sex and gender, socialization of power, a manifestation of gender bias; 2) essential instrumentalities as to compliance to requirements, commitment to principles and obligations to developments of GAD; and 3) directional requirements of gender mainstreaming. She also differentiated sex from gender and sex roles from gender roles.

# Resource Speaker: Understanding Gender Sensitivity Concepts MARIA FE B. SINGSON Superviving Science Structural Program Denstand Density Program Denstand Incomplete Incomplete Entire Control of Con



Ms. Singson reminded the participants, government agencies, to implement GAD to abide by the law, incorporate development in their programs, projects, and activities. She also encouraged the participation of men and women in gender mainstreaming and the use of non-sexist or non-inclusive language in their offices.

She concluded by urging the participants to understand how their own attitude values perpetuate gender-based discrimination and stereotypes, to promote complementary gender roles, and to be a personal GAD advocate.

### The Covid-19 Pandemic, MSMEs and Gender

The webinar started with a prayer and singing of the National Anthem. Ms. Maureen Heidi L. Perez, GAD staff of DOST 1, introduced the Resource Person, Ms. Reina P. Olivar. Ms. Olivar is the Chief Executive Officer of RP Olivar Development Consultancy Services and a Member of the National Gender and Development (GAD) Resource Pool of the Philippine Commission on Women (PCW).





The presentation of Ms. Olivar is entitled, "The COVID-19 Pandemic, MSMEs and Gender." Ms. Olivar discussed the effects of the COVID-19 pandemic to all individuals, both public and private, including the micro, small and medium enterprises (MSMEs), and informed the participants on the legal mandates to ensure the protection of men and women in all circumstances.

She also offered recommendations for duty bearers, including the DOST, to prevent and address gender issues because of the pandemic.

# Gender Issues and Impact of Covid-19 to MSMEs

The webinar started with a prayer and singing of the National Anthem. Dr. Armando Q. Ganal, DOST 1 Regional Director and GAD GFPS Chairperson delivered his Opening and Welcome Remarks. He also extended his gratitude to the Resource Speakers, Ms. M.E. Myrel Siason, Project Assistant III of DOST 7, and Ms. Maria Rowena Madarang, Chief Administrative Officer, DOST-CAR. Both are members of the DOST GAD Speakers' Bureau – Batch 1.

Ms. Siason shared the journey of DOST 7 in its GAD program that started in 2012 through the installation of strategic mechanisms such as the designation and capacity building of key people or the GAD Focal Point System (GFPS). She mentioned the challenges faced by the agency, such as 1) lack of people, system to focus; 2) lack of capacity to implement GAD; 3) lack of employees' appreciation; 4.) lack of policies to serve as bases for its implementation, and 5.) lack of knowledge on how to integrate GAD. These challenges made them seek the assistance of the DOST GAD Regional Support Services (GRSS) led by Director Elizabeth Fontanilla for them to be guided and capacitated in gender mainstreaming. The issues also served as their bases in crafting the agency's GAD Agenda and Annual GAD Plan and Budget.

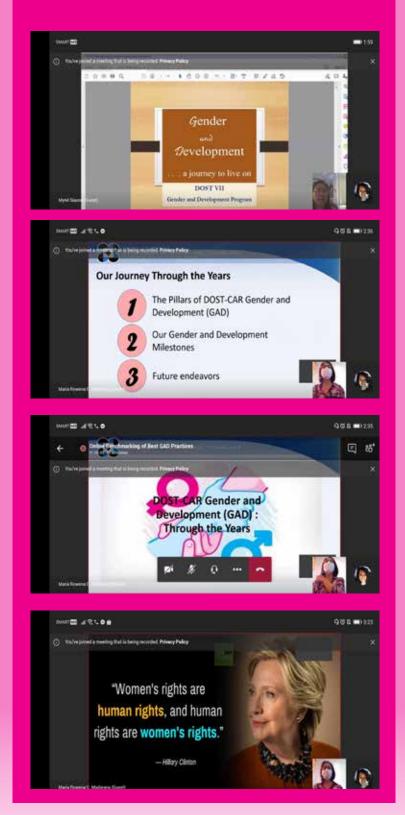
Some GAD activities shared by Ms. Siason, among others, are the following: 1.) issuance of GAD policies; 2.) formulation of GAD Agenda; 3.) establishment of GFPS; 4.) Capacity Building of GFPS and Project Implementers; 5.) creation and strengthening of local GAD experts in 4 provinces; 6.) support to the capacity development of internal GAD experts; 7.) recognition of external clients for gender mainstreaming efforts; and 8.) implementation of internal award/incentive reward system (Best Gender Responsive, Sensitive awards); 9.) judicious utilization of GAD budget; 10.) sex-disaggregated data in reports; 11.) collection, consolidation, and analysis of sex-disaggregated database; 12.) establishment and maintenance of GAD corner.

Also, part of the presentation is the integration of GAD in the agency's regular programs, projects, and activities (PPAs).

Ms. Siason also extended her congratulations to the DOST 1 GFPS for being "functional in thriving gender mainstreaming."

On the other hand, Ms. Madarang presented the "simple and uphill climb" efforts of DOST-CAR in terms of GAD. The presentation focused on the pillars of DOST-CAR GAD, gender and development milestones, and future endeavors.

Like DOST 7, DOST CAR also has remarkable GAD efforts such as the following: 1.) institutionalization of GFPS; 2.) policy development and issuances; 3.) inclusion of Gender perspectives in PPAs; 4.)



partnerships with the Regional Gender and Development Committee as Chairperson, various regional line agencies as a technical working group and PCW, DTI, and DA for the GREAT Women Project 2; and 5.) implementation and monitoring of GAD initiatives.

The presentation ended with a quote from Hillary Clinton, "Women's rights are human rights, and human rights are women's rights." The activity was attended by 42 participants.

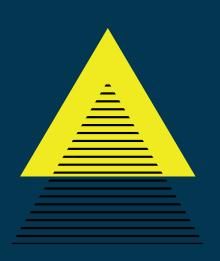




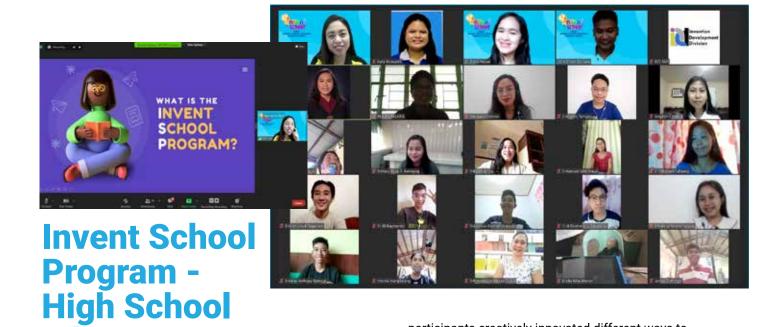
# KINABUKASAN

Kinabukasan are activities, projects, and technologies that present future state.









The Invent School Program (ISP) of the Technology Promotion and Application Institute (TAPI) in partnership with the Department of Science and Technology Regional Office No. 1 was conducted on October 20-21, 2020 for the high school edition via Zoom.

**Edition** 

Mr. John Oliver E. De Vera and Engr. Angelyn B. Cimatu served as the moderators where the former introduced the resource speakers while the latter acknowledged the participants to the program.

The program formally started with an Opening Remarks from DOST-1 Regional Director Dr. Armando Q. Ganal. Engr. Richelle C. Malaay of TAPI delivered her presentation on the overview of the Invent School Program to provide the student-participants a background on what will transpire on the 2-day workshop.

The ISP, which is comprised of lectures and workshops, aims to stimulate students' creative thinking skills while challenging their imagination and ingenuity at the same time.



For the first day, Engr. Janeth C. Vidal gave her discussion on the concepts and principles of creativity and thinking. To make the discussion interactive, she presented some brain teasers and sample problems that were answered by the participants.

Relative to her discussion, Engr. Vidal provided a workshop on how to improve a simple paper clip. The

participants creatively innovated different ways to improve a simple paper clip and presented them to their respective facilitators to garner points.

After the workshop, the program proceeded to the lecture of Engr. Elizabeth I. Garcia where she presented the Ideation Tools and Techniques, Lateral Thinking, and Creative Problem Solving.

The lecture was followed by the second workshop for Day 1 where the participants were asked to draw as many combinations they could think of on the presented objects to gauge their understanding of the lecture on Forced Relationships.

On the second day of the ISP, the program began with the recapitulation on the topics discussed from the previous lectures through a recitation from the participants selected through a randomizer.

After the recap, Mr. Roberto R. Versoza of TAPI provided his lecture on Invention Development.

To support his discussion, Mr. Versoza cited some examples of inventions and patents. The lecture was then followed by a workshop entitled, "Nature-Inspired Invention" where the participants must pair the presented inventions to the appropriate nature-related objects from which the inventions were derived from.

Meanwhile, Ms. Anna Lisa B. Saet delivered her presentation on Intellectual Property Rights.

To better understand the lectures, she gave examples and cited instances as far as Intellectual Property is concerned. The program was concluded with the awarding of the winner — the group that has scored the most number of points in the workshops and activities conducted. For this ISP-High School Edition, Group 1 topped among the 5 groups. Prior to the closing remarks of Dr. Armando Q. Ganal, DOST-TAPI awarded the Certificate of Appreciation to DOST-Region 1.

The winner will get a brand new power bank c/o DOST-TAPI and PhP300 worth of mobile load cards for each member of the winning group c/o DOST-1.



Ilocos Region (College) 27-28 October 2020



#### Invent School Program - College Edition

The Invent School Program (ISP) of the Technology Promotion and Application Institute (TAPI) in partnership with the Department of Science and Technology Regional Office No. 1 was conducted on October 27-28, 2020 for the college edition via Zoom Online Platform.

Mr. John Oliver E. De Vera and Engr. Angelyn B. Cimatu served as the moderators where the former introduced the resource speakers while latter acknowledged the participants to the program.

The program formally started with an Opening Remarks from DOST-1 Regional Director Dr. Armando Q. Ganal. Engr. Richelle C. Malaay of TAPI delivered her presentation on the overview of the Invent School Program to provide the student-participants a background on what will transpire on the 2-day workshop.

The ISP, which is comprised of lectures and workshops, aims to stimulate students' creative thinking skills while challenging their imagination and ingenuity at the same time.

The participants were divided into four (4) groups for the activities and workshops that come after each lecture.

For the first day, Engr. Elizabeth I. Garcia gave her discussion on "Developing Creative Thinking Skill". To make the discussion interactive, she presented some brain teasers and sample problems which were answered by the participants.

The lecture was followed by a workshop entitled, "Forced Relationships where the participants were asked to draw as many combinations they could think of on the presented objects to gauge their understanding on the lecture on Forced Relationships.

After the workshop, the program proceeded to the lecture of Mr. Roberto R. Versoza where he presented Invention Development to the students.

Mr. Versoza's lecture on the concepts of Invention was then

followed by a workshop entitled, "Nature-Inspired Invention" where the participants must pair the presented inventions to the appropriate nature-related objects to which the inventions were derived from.

On the second day of the ISP, the program began with the recapitulation on the topics discussed from the previous lectures through a recitation from the participants selected through a randomizer.

After the recap, Ms. Glenda C. Rima gave her lecture on Intellectual Property RightsTrade Secrets/ Undisclosed Information

To support her discussion, Ms. Rima cited some examples and instances relevant to the concepts and principles on Intellectual Property.

Prior to the next discussion, Ms. Malaay facilitated the game entitled, "Zoomed In" where the participants have to identify the brand of a zoomed in photo of a certain object.

For the last topic, Ms. Anna Lisa B. Saet delivered her presentation on Prior Arts Search particularly on Patent Search where she gave tips and search tools for facilitating keyword searches.

To better understand the lecture, she let the participants search and explore some features of the patent databases she cited on her discussion.

The program was concluded with the awarding of the winner -- the group that has scored the most number of points in the workshops and activities conducted. For this ISP-College Edition, Group 1 topped among the 5 groups. Prior to the closing remarks of Dr. Ismael D. Gurtiza, ARD for Field Operations of DOST-1, DOST-TAPI awarded the Certificate of Appreciation to DOST-Region 1.

The lucky winner who was selected through a randomizer will get a brand new powerbank c/o DOST-TAPI and PhP300 worth of mobile load cards for each member of the winning group c/o DOST-1.

#### First S&T Digital Library



- OFFLINE
- MULTIPLE USERS
- FREE

# STARBOOKS Online and Offline Orientation

Truly, this pandemic is reshaping our education system. A lot of schools shifted to online learning while some shifted to a modular approach. We cannot deny the challenges brought by this pandemic to students' technology struggle to participate in online/digital learning. But one thing is for sure, DOST is always here to help because "Science for the people".

Last November 12, 2020, the Department of Science and Technology – Regional Office I (DOST1) conducted a virtual orientation on the use of Science and Technology Academic and Research-Based Openly Operated Kiosks (STARBOOKS) Offline and Online for the schools in Batac City, Ilocos Norte.

Ms. Gael Myca Abella and Ms. Vanessa Tawali served as moderators during the orientation. DOST1 Regional Director Armando Q. Ganal gave his Opening Remarks to formally start the program and was followed by Dr. Marilou B. Sales, Chief Education Supervisor, City Schools Division for her Inspirational Message.

Ms. Abella introduced the resource speaker dubbed as James Bond "007" of DOST1, Mr. James D. Prepose.

STARBOOKS is the first digital Science and Technology Library in a box developed by DOST – Science, and Technology Information Institute (STII). Mr. Prepose discussed the overview and the challenges addressed by this digital library. The enhancement also includes the K to 12 materials patterned with DepEd's learning competencies. Awards and recognitions were also mentioned like the Silver Anvil Award (2017), and Outstanding Library Program of the Year (2015) to name a few.

In the latter part, Mr. Prepose demonstrated how to use and navigate STARBOOKS's different information resources like Theses/Dissertations, S&T videos, and more. Mr. Prepose also introduced the online version which can be accessed at https://starbooks.ph.

The 43 desktop computers donated by the City Government of Batac to Schools Division were installed with STARBOOKS and it will be distributed to







the 43 barangays to be used by the learners.

"This collaboration between DOST1 and DepEd compliments and reinforces values, culture, and opportunities that schools can provide for their students. This partnership makes schools stronger. Information access is possible even without an internet connection. Para sa bata, para sa bayan! #WeLearnAsOne #WillWinAsOne #WeSoarAsOne in the Schools Division of Batac".



The Covid-19 pandemic has left almost all of us in deep fear and despair. As much as we want to act and feel normal, we are forced to face it every day, even if it was uncertain. It is difficult to adjust and adapt to the massive changes in our routines and lives, but Filipinos are known to be resilient and strong in facing whatever challenges that come our way. With confidence, Filipinos will surely be able to hurdle this pandemic.

While we all wait and take day by day, the Department of Science and Technology Region 1 (DOST 1) wishes to divert the alarming situation and ease the fear among us by reaching out to each one of its stakeholders and clients, providing them with a platform where we can all go together and lift each other.

Thus, the DOST 1 launched, "Agyamanak DOST! Mga Kuwentong Tagumpay ng mga DOST-SEI Iskolars ng Region 1", an online talk show by the DOST 1 Scholarship Unit where graduate-scholars can share their journeys, challenges, and successes of their DOST Iskolar life. In this program, we celebrate our triumphs, memorable experiences, and inspiring lessons, and motivate and encourage our audiences to hold on and be with us until we all heal as one.

More than lessening the fear and uplifting the spirits of our viewers, this program is also meant for our ongoing and aspiring DOST scholars. A lot of students are hesitant to submit their applications because of the current stigma that the examination is difficult, and being a scholar is even more challenging. This program aims to provide inspiration and motivation for our students to take on the challenge of being a DOST scholar through the success stories of our graduate scholars.

Each episode aims to share inspirational stories of





the success of DOST's graduate-scholars. DOST 1 is blessed to have graduate-scholars who are one with us in promoting and encouraging our students to become future partners in science and technology innovations.

The program shall go on every Tuesday from 10 AM to 12 NN until December of this year. It will be streamed live on the DOST 1 Scholarship Unit Facebook page.

**S&T Learning Assistance Program (STLAP) for On-going** 

**Undergraduate Scholars** 

This year's activity uses the advancement of science to deliver the best service to ongoing scholars. The scholarship unit executed the activity with the help of our speakers from the academe.

All the activities were supervised and attended by our Regional Director, Dr. Armando G. Ganal, and delivered his words of welcome to our scholars in Region I.

The webinars dealt with the preparation of our ongoing scholars as they enter another journey of their life. The following topics were discussed:

- College Readiness: Preparing New Scholars For The Transition from Highschool To College
- Flexing the New Learning Norm
- Financial Literacy For DOST-SEI Ongoing Scholars In Region I: Basic Personal (Stipend) Money Management
- Being Calm Through the Storm: Building Mental Resilience in Times of Crisis

A certificate of appreciation was awarded virtually to the resource of speakers as a token of gratitude in sharing their skills, personal and professional experiences, and information that will enhance the knowledge and will properly educate our ongoing scholars in their career and personal development.

## DOST Courseware in Science and Mathematics for E-Learning

The Department of Science and Technology Region 1 in celebration with the 2020 National Science and Technology Week following the theme "Agham at Teknolohiya: Sandigan ng Kalusugan, Kabuhayan, Kaayusan at Kinabukasan" which is clustered into four (4) thematic classification. Activities in Kinabukasan cluster aims to motivate young people to take science and engineering career at the same time to inspire and capacitate STEM educators.

In this regard, the webinar orientation series on the DOST Courseware and 21st Century Learning Environment Model entitled "New Practices in Science and Mathematics Teaching and Learning" was launched and 4 sessions of the said activity was successfully conducted last November 23-24, 2020. Science and Math teachers including their supervisors, head teachers and superintendents actively joined in the webinar. We believe that this will help to optimize, streamline, and standardize educational lesson presentation in Science and Mathematics using cost-effective and high-quality solutions.

The DOST Courseware is locally produced, all-original Filipino highly interactive multimedia educational resource packages available both in Windows and Android versions, conceptualized, digitized, and produced as spearheaded by the Science Education Institute (DOST-SEI). It is provided for free to schools and are also made available online as supplemental resources for teachers and student as an interactive approach to e-learning and blended learning.

Due to our current situation nowadays, the teachers were very eager to join and be part of the activity. Most of them appreciated the timely conduct of the webinar series, the curiosity of teachers was ignited as the 21st Century





The seminar ended up with the closing remarks given by Ms. Racquel M. Espiritu, Assistant Regional Director of Technical Services Unit of DOST-I.







Classroom was also introduced during the webinar orientation series wherein it maintains a strong focus on core curriculum.





# VIRTUAL EXHIBITS

Kabuhayan, Kaayusan, Kalusugan, at Kinabukasan Check out our Virtual Exhibits live at: dost1.com



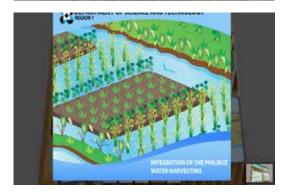


## **KABUHAYAN**









## KAAYUSAN

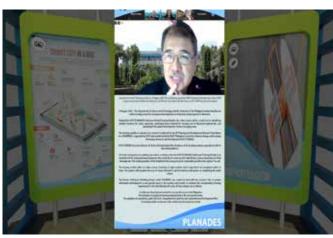
















## KALUSUGAN



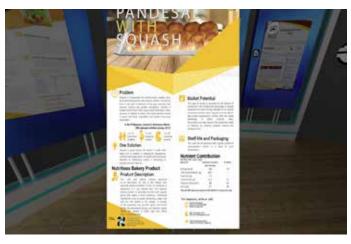














## KINABUKASAN

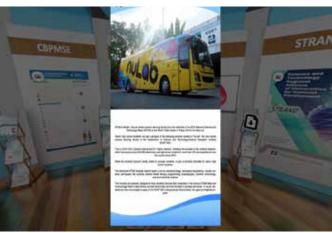


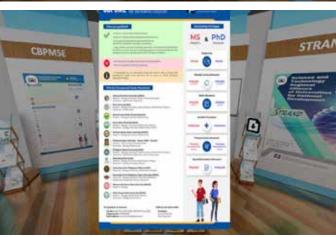


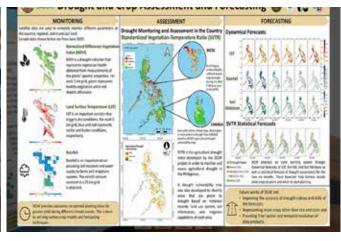












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