

# S&T POST

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## Hand-in-hand FOR SCIENCE

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## Hand-in-Hand for Science

In an era where scientific advancements transcend borders, collaboration has become the cornerstone of progress. The Department of Science and Technology (DOST) has been making significant strides in fostering

international partnerships, solidifying its commitment to advancing science for the benefit of humanity. The theme of this issue, “Hand-in-Hand in Science,” encapsulates the spirit of unity that defines the landscape of DOST’s accomplishments and underscores its role in building bridges with the global scientific community.

Featured in this issue are stories about DOST’s collaboration with agencies and partners here and abroad such as partnership between DOST and NCR LGUs for the adoption of R&D projects or the the DOST’s vibrant partnership with US private companies through the US-ASEAN Business Council, and more.

As we explore stories about DOST’s collaboration and linkages with its partners, we witness that DOST is only as strong as the bonds it forges with like-minded

institutions, both nationally and internationally. These partnerships serve as the catalysts for innovation, propelling DOST beyond the confines of individual expertise to embrace a collective strength that fuels scientific advancements.

In this issue, we feature stories showcasing how DOST’s strategic alliances amplify its impact on research, development, and societal betterment. Whether partnering with private enterprises, engaging in global dialogues, or participating in international summits, DOST’s strength lies not only in its individual capabilities but also in the synergy created through collaborative endeavors.

As we read on to these stories, it becomes abundantly clear that DOST’s dedication to partnership is more than a mere strategy; it is the guiding force, the very essence of a hand-in-hand approach in building a more robust and impactful scientific landscape. The stories weave together a tapestry of collaboration where individual strengths merge into a harmonious symphony of progress, emphasizing that true scientific advancement thrives when hands come together in unity.

**RODOLFO P. DE GUZMAN**  
Editor-in- Chief

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## ABOUT THE COVER

In this cover, we highlight the theme “hand-in-hand for science,” with the two hands reaching out and holding each other. In the intricate dance between curiosity and knowledge, the hands symbolize intertwining and forging a path towards innovation and collaboration. In this issue, we navigate the complex landscape of scientific exploration, hand-in-hand, shaping the future through the power of collective intellect and shared passion of various institutions and agencies working for science, technology, and innovation.

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1st Regional Yarn Production and Innovation Center in Isabela.

## 1<sup>st</sup> regional yarn production center in Isabela poised to revitalize textile industry in Northern Luzon

By Reina Rose B. Realino, *DOST-PTRI*

Technology Transfer Information and Promotion Staff

**T**he local textile industry in northern Luzon is poised to take a big leap toward development as the DOST-PTRI (Department of Science and Technology–Philippine Textile Research Institute), ISU (Isabela State University) Ilagan Campus, DOST-PCIEERD (Philippine Council for Industry, Energy, and Emerging Technology Research and Development), DOST Region 2 Office, the City of Ilagan, and the Province of Isabela, joined hands and launched the first Regional Yarn Production and Innovation Center or RYPIC in Luzon at the ISU Ilagan Campus in Ilagan, Isabela. The inauguration was

done on 23 June 2023, signaling a new hope to revitalize its local textile industry.

The RYPIC Isabela is a micro-scale yarn-spinning facility that will aid in developing the textile industry in northern Luzon. The facility can produce 50 kg of yarns per day (8 h), translating to 270 m of handloom woven (with 1-m width). One RYPIC can manufacture 13,200 kg of yarns annually, making 36,000 m of 60-inch-width fabrics for 24,000 pieces of a female blouse or 18,000 office *barong*.

The RYPIC was established through the “DOST Inclusive Innovation Textiles

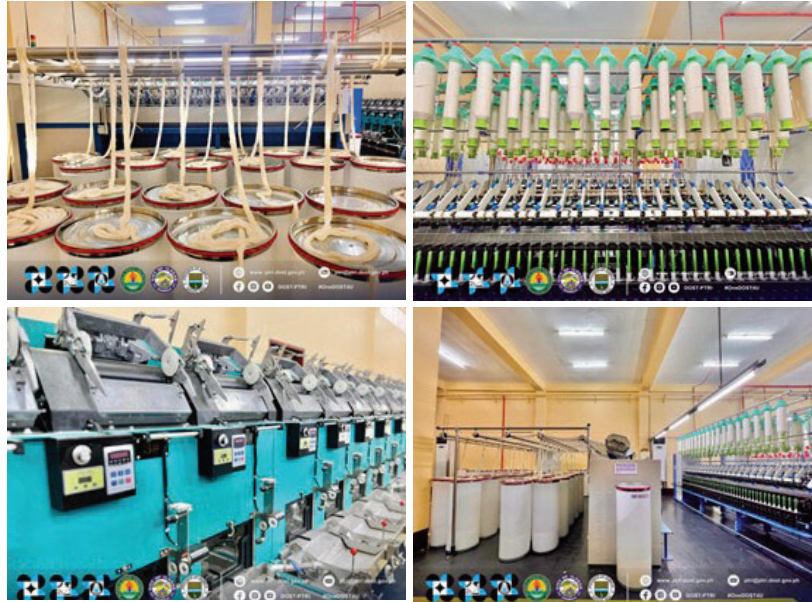
Empowering Lives Anew” or i2TELA Program under the DOST-GIA (Grants-in-Aid). The establishment of the first RYPIC in ISAT-U Campus in Miagao, Iloilo in Western Visayas in 2019 paved the way for the regional perspective to textile production true to the concept of the i2TELA Program, with the enabling technology in the conversion of natural textile fibers available in Region 6 into spinnable fibers and spun yarns aimed to provide material requirements of handloom weaving communities.

The Philippines boasts of its abundance of *abaca*, pineapple, banana, and bamboo, which are textile fiber as



sources of raw materials. *Abaca* and pineapple leaf fibers in the country are the most readily available for succeeding conversion into textiles. In Cagayan Valley or Region II, bamboo, banana, and pineapple are available for textile production. Similarly, nearby regions such as CAR (Cordillera Administrative Region) and Region I are viable sources of natural textile fibers.

The RYPIC Isabela will focus on the spun yarn production of cotton-bamboo and other NTF (natural textile fiber) Innovation Hub blended yarns. Unlike the RYPIC Iloilo, which has integrated fiber treatment and yarn spinning facilities, the treatment of bamboo textile fiber and other NTFs will be handled by the NTFIH (Natural Textile Fiber Innovation Hub) Apayao and Bamboo Textile Fiber Innovation Hub (BTFIH) Isabela, which for this purpose will supply the fiber requirements of RYPIC Isabela. These textile fiber innovation



Complete line of spinning machines inside RYPIC Isabela.

hubs are strategically located, as they are closer to the raw material source for ease of transport and cost-efficiency. The model aims to expand the circle of stakeholders to the textile supply chain, promote geographic specialization, and decentralize production.

The DOST-PTRI purchased a complete

line of spinning machines producing 50 kg of spun yarns per day. The project also allowed for the development and enhancement of the capability of project staff and partner institutions.

During the RYPIC Isabela launch, DOST Secretary Renato U. Solidum Jr. said “I encourage everyone here to support RYPIC and its products. Let us continue to work together to push for a more sustainable economy. We hope our work will inspire us to build more yarn innovation centers in other locations across our country, and this will only be possible if we have the strong support of our fellow Filipinos. It will begin with everyone joining us today.”

On the other hand, Senate President *Pro Tempore* Hon. Sen Loren B. Legarda, the author of Republic Act No. 9242 or the Philippine Tropical Fabrics Law, expressed her full support during the RYPIC Isabela launch. She mentioned, “This Yarn Production and Innovation Center’s commitment to sustainability and eco-friendliness makes it a significant step forward for the textile industry and a testament to the power of collaboration and innovation. It can help to reduce waste

**continued on page 7**



(L to R) DOST-PTRI Director Dr. Julius L. Leaño Jr., DOST Region 2 Director Virginia G. Bilgera, DOST Region 2 Director Troy Alexander G. Miano, DOST-PTRI Former Director Celia B. Elumba, DOST Undersecretary for Regional Operations Engr. Sancho A. Mabborang, DOST Assistant Secretary for Administrative and Legal Affairs Dr. Diana L. Ignacio, and ISU Ilagan Campus President Dr. Ricmar Aquino, ISU Ilagan Campus Executive Officer Alfonso Simon pose for posterity in front of the Center.



**TECHNOLOGY & INNOVATION**



Bamboo Textile Fiber Innovation Hub (BTFIH) Isabela in ISU Cauayan, Isabela Campus.



Natural Textile Fiber Innovation Hub (NTFIH) Apayao in ASC Luna, Apayao Campus



DOST officials and partners take a tour of the Center during the launch of RYPIC Isabela.





**1ST REGIONAL YARN...(from page 4)**

and encourage the development of circular economies, which I faithfully advocate. It promises to be a game changer in the industry, providing a platform for local and global partners to collaborate and innovate.”

DOST-PTRI OIC (Officer-in-Charge) and now Director Dr. Julius L. Leaño Jr. expressed gratitude to all the partners who made the RYPIC Isabela possible. Dr. Leaño, in his closing remarks, mentioned, “What we have in Ilagan, Isabela is maybe one of the best, if not the best, permutation of the yarn production system yet so far, but you know what they say, as also with our natural resources, it’s not a matter of what you have, it’s what you do with what you have.”

The RYPIC Isabela is the second of the RYPICs established in the country. The RYPIC Mindanao, in partnership with the University of Southern Mindanao and Sultan Kudarat State University, will soon be launched.

True to the strategies of the current DOST administration to promote wealth

creation and sustainability, particularly in the regions, RYPIC is an empowering program that serves as a catalyst for regional textile development that allow the MSMEs to be engaged in manufacturing fabrics, garments, and other textile products with locally spun

natural blended yarns. Watch out for more RYPICs.

For more information about DOST-PTRI’s programs and services, visit and follow DOST-PTRI’s social media accounts or check out [www.ptri.dost.gov.ph](http://www.ptri.dost.gov.ph).



DOST-PTRI OIC and now Director Dr. Julius L. Leaño Jr. delivering his closing remarks during the RYPIC Isabela launch.



DOST-PTRI team and partners during the RYPIC Isabela launch.



# DOST, UIC open PHP 11.3-M MARIAN TBI to drive health tech startups in Davao City

By Allane M. Orendez, DOST-PCIEERD

**D**avao City – The DOST-PCIEERD (Department of Science and Technology–Philippine Council for Industry, Energy, and Emerging Technology Research and Development) and the UIC (University of Immaculate Concepcion) officially unveiled the MARIAN (Mobilizing Advanced Research and Innovations to Advocate Nation-building) TBI (technology business incubator) to help the startup landscape in Davao City and the region by focusing on healthcare technologies and bridging the gap between academic research and industry.

“Through our partnership with UIC, we are providing a platform for students, faculty, and researchers to transform their R&D outputs into impactful startups, especially in the healthcare sector, that benefit the community. This collaboration aligns with our vision of advancing technology and entrepreneurship to



During the launch of the MARIAN TBI on 11 August 2023, representatives from the UIC were present alongside DOST-PCIEERD authorities, led by Dr. Enrico C. Paringit, Executive Director (third from left).

contribute to the nation’s growth and development,” said Dr. Enrico C. Paringit, executive Director of DOST-PCIEERD.

Meanwhile, Ceasar Ian Benablo, the MARIAN TBI Manager, expressed his excitement for the inauguration of the TBI.

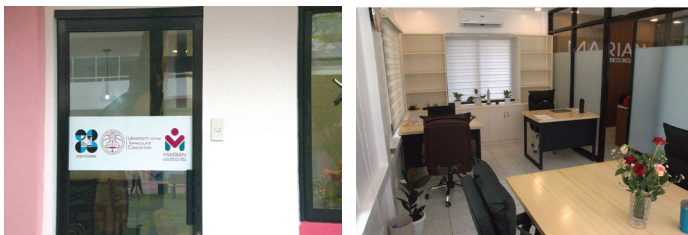
“We are thrilled about the possibilities this incubator offers to the health technology startup ecosystem in Davao City. We envision an environment where brilliant business ideas and research outputs converge to address pressing societal issues through the development of cutting-edge ICT tools, including mobile and web applications.”

As part of the TBI’s plan, they will be conducting training and workshops with their targeted regional partners and mentors, to increase awareness about the local startup ecosystem of Davao and develop the best startups from their region through the TBI’s incubation program, which will be validated with the leading TBIs abroad and in the country.

The MARIAN TBI was funded by DOST-PCIEERD through its HEIRIT (Higher Education Institution Readiness for Innovation and Technopreneurship Program).

The HEIRIT Program was developed to help universities meet the Council’s TBI funding requirements and train managers to effectively run DOST-affiliated TBIs. HEIRIT seeks to address the growing demand for early-stage entrepreneurial support, particularly in various regions across the Philippines.

MARIAN TBI is among the 44 TBIs supported by the DOST-PCIEERD.





# Laguna bamboo industry eyes a boost through DOST-FPRDI project

By Apple Jean C. Martin- de Leon, *DOST-FPRDI*

**B**amboo growers, manufacturers, artisans, and traders in Laguna can expect better days up ahead as the Forest Products Research and Development Institute of the Department of Science and Technology (DOST-FPRDI) is working on a project that aims to strengthen the province’s bamboo industry.

With a budget of PHP 2.1 million, the project has so far mapped out the industry and analyzed the constraints facing different bamboo stakeholders — from farmers and suppliers, to the market, and to end-users. It has also studied the current status and prospects of each bamboo enterprise and, consequently identified firm-level and industry-wide interventions based on their needs.

“Currently, there are 95 bamboo-based businesses in the province. This number alone suggests how much potential the province has in terms of developing its bamboo industry through the support of the LGU (local government unit) and other private and government organizations,” explained DOST-FPRDI Director Romulo T. Aggangan.

Recently, DOST-FPRDI initiated a forum



Laguna Governor Ramil L. Hernandez lauds the holding of the forum.



Staff of the project titled “Enhancing the Growth of Bamboo-based Enterprises in Laguna” conducts in-depth interviews of firms engaged in the bamboo business.



attended by 28 bamboo enterprises and 70 LGU representatives from Laguna.

Institute Deputy Director Rico J. Cabangon presented the different bamboo technologies and technical assistance that the DOST-FPRDI offers to the bamboo-based industry, whereas Community Environment & Natural Resources Officer For. Venerando Garcia presented relevant rules and policies affecting the bamboo industry.

On the other hand, DTI (Department of Trade and Industry) Laguna’s Emmanuel Lee Lapitan discussed various bamboo products that are in-demand locally and abroad, as well as the services that can be availed from DTI.

Meanwhile, Dr. Florentino O. Tesoro, former DOST-FPRDI Director and current Chairperson of the Bamboo Professionals, Inc., presented a proposal for the

establishment of a Laguna Bamboo Industry Development Council that will be reviewed by the Provincial Government.

Aside from DOST-FPRDI Director Dr. Aggangan and Dr. Cabangon, other officials were present during the said occasion like Technical Services Division Chief Dr. Maria Cielito G. Siladan and Technology Innovation Division Chief Dr. Loreto A. Novicio. Also present during the forum were Laguna Provincial Governor Ramil L. Hernandez, DOST-Laguna’s Provincial Director Samuel L. Caperiña, and DOST-PCAARRD’s (Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development) Rebeka A. Paller and Geoffrey Gacayan, among others.

The project is being led by Drs. Ma. Cecile B. Zamora and Carl Anthony O. Lantican and is funded by the DOST-PCAARRD.

# BARMM's *langkit* weaving loom hailed grand winner of grassroots innovation expo

By DOST-XI S&T Information and Promotion Staff



BARMM's *langkit* weaving loom and other Maranao cultural items exhibited at the 2023 GICE Expo.

**T**he '*Langkit* weaving hybrid loom' grassroots innovation of the BARMM (Bangsamoro Autonomous Region in Muslim Mindanao) was hailed as the national winner of the GICE (Grassroots Innovation for Circular Economy) Expo hosted by the DOST-XI (Department of Science and Technology–Region 11 Office) and the UNDP (United Nations Development Programme).

*Langkit* is a traditional Maranao weave, meticulously handwoven using a backstrap loom. This art form holds deep cultural significance among the Maranao people and is primarily employed for sewing decorative strips onto *malongs* (tube skirts) and ceremonial attire.

Salika Maguindanao is the founder of Maranao Collectibles, a social enterprise that produces heirloom *langkit* textiles, as well as other Maranao cultural items.

She said that they started the *Langkit* weaving after the Marawi Siege in order to provide a livelihood for herself and her fellow Maranao women.

Traditionally, *langkit* weavers are seated on the floor, and their body is part of the loom structure, which often causes body aches after long hours of weaving. Weaving on the floor also makes the fabric more prone to being soiled.

To address this, they developed the Jardin hybrid loom, a loom with elevated seating while weaving *langkit* and still using the backstrap loom but is more sleek and sophisticated. The hybrid loom reduces the strain on the weaver's legs and can be easily transported to any location.

"My husband, Jardin Samad, invented the loom in hopes to ease the pain of the weavers. Since then, we have been

promoting the loom for the weavers to use," she added.

In her award acceptance speech, Salika Maguindanao thanked DOST for their endless support through the Bangon Marawi Support Fund which allowed them to improve their operations in producing *langkit*.

"Thank you very much for recognizing our effort. *Maraming salamat*, DOST," she added.

CARAGA's Improvised Underwater Fishing Lamp placed second in the competition. Meanwhile, Region 8's modifying coconut water for efficient cassava grafting ranked third.

BARMM bested 14 other contenders from across the Philippines under the GI (Grassroots Innovation) category.





DOST officials, US-ABC executives, and member companies posed for a photo op at the close of the 2023 Philippine Business Mission

## DOST establishes vibrant partnership with US private companies through the US-ASEAN Business Council

**D**evelopment of smart cities, quantum technology, digital transformation, and advanced weather forecasting plus the facilitation of HTA (health technology assessment) initiatives are among the points of interest of the companies during the annual US-ABC (United States–Association of Southeast Asian Nations Business Council) 2023 Philippine Business Mission meeting held at the Manila Marriott Hotel.

The US-ASEAN Business Council represents over 175 US companies, including many of the world’s largest global firms, with operations in Southeast Asia. In this business mission, senior representatives from member companies went to the Philippines to engage with priority stakeholders, reinforcing the importance of US-Philippines business relations.

Led by the DOST (Department of Science and Technology) Secretary Renato U. Solidum Jr., the DOST welcomed the opportunity to collaborate with the private sector in (STI) Science, Technology, and Innovation. This strategic alignment is expected to bring many benefits such as knowledge exchanges, technological



breakthroughs, and finding innovative solutions that can improve the STI efforts of the country.

For DOST, research and development projects on OneLab Network, SETUP (Small Enterprise Technology Upgrading Program) and CEST (Community Empowerment through Science and Technology), alongside the areas of cooperation outlined in the MOU (memorandum of understanding) are envisioned to be continued. These are R&D programs focused on upgrading and supporting countryside development and empowering the marginalized

communities in the country, through S&T interventions in five entry points: health and nutrition, water and sanitation, basic education and literacy, livelihood/ economic enterprise development, and disaster risk reduction and climate change adaptation.

Notably, it is important to highlight that the DOST and the US-ASEAN Business Council formalized an MOU (Memorandum of Understanding) in 2019. This MOU stands as a testament to the joint efforts in promoting the development and implementation of government-driven STI initiatives within the private sector.

# Loss of lives and properties due to fire can be reduced through science

By Rizalina K. Araral, *DOST-FPRDI*



**E**very year, hundreds of Filipinos die, and billions of pesos worth of properties are lost because of fires. To help reduce the amount of agony and loss caused by fire incidents, the DOST-FPRDI (Department of Science and Technology–Forest Products Research and Development Institute) recently re-opened its fire testing lab, the only one of its kind in the country.

“Our newly re-opened lab is still in its infancy – right now, it only has basic equipment for verifying the ignitability and combustibility of small wood samples, but I think it’s a good start,” says DOST-FPRDI Director Romulo T. Aggangan. “The lab brings more

affordable services to players in the construction industry who otherwise will have to send their samples for testing in accredited labs in Singapore and Malaysia.”

More accessible services will mean local building contractors and construction materials developers are more able to follow the National Fire and Building Codes, leading to better enforcement of fire safety laws.

The DOST-FPRDI pioneered fire testing research in the Philippines in 1961,

and for many years, it provided testing services to the construction industry. It had to stop in recent years, however, as its outdated machines could no longer keep up with industry requirements.

According to DOST-FPRDI’s Shirley A. Pelayo: “with our newly acquired and designed equipment, we can now give more effective fire testing services to our clients. We also look forward to an upgraded lab in the near future as we have just recently submitted to a funding partner a proposal to purchase more modern equipment. We are excited just thinking that as we improve our facility, we can help our clients follow basic fire safety rules, leading to more protected lives and property.”



The DOST-PNRI (Department of Science and Technology–Philippine Nuclear Research Institute), in cooperation with the JAEA (Japan Atomic Energy Agency), held the 2023 NTC-ERM (National Training Course on Environmental Radioactivity Monitoring) from 04–08 September 2023 at the PNRI compound in Diliman, Quezon City. The course was conducted face-to-face for the first time after the worldwide pandemic.

The DOST-PNRI-organized training course is an annual workshop that aims to provide working knowledge and practical experience to participants from various backgrounds regarding radioactivity monitoring in the environment. Participants in this year’s workshop include professors and instructors, nuclear and radiation workers, researchers, engineers, students, and representatives from public and private industries.

Experts from JAEA, QST (National Institute for Quantum and Radiological Science and Technology), and DOST-PNRI discussed various topics on environmental radioactivity measurement and monitoring.



## DOST-PNRI holds national training on environmental radioactivity monitoring

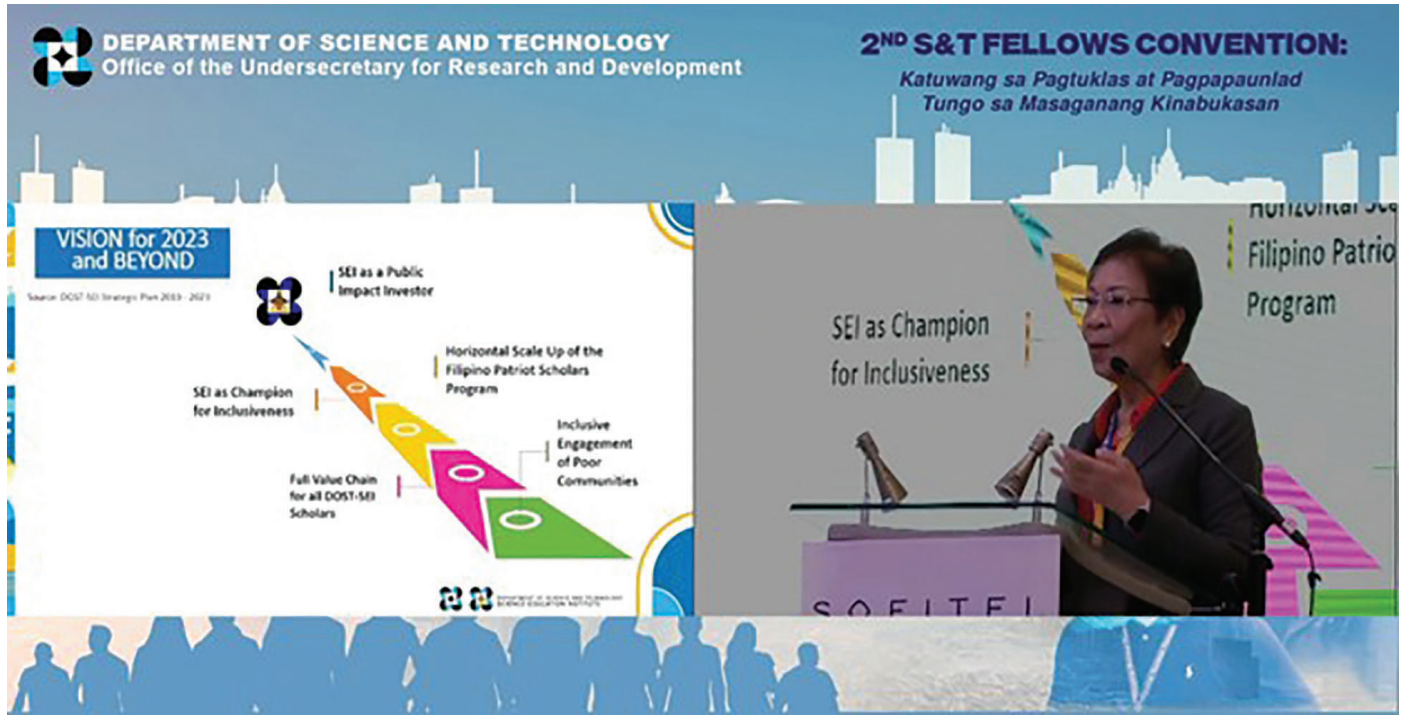
By Health Physics Research Section, DOST-PNRI





# 55,460 DOST scholars get financial aid, indigenous people given equal opportunity

By Allan Mauro V. Marfal, *DOST-STII*



Dr. Josette T. Biyo, Director of the DOST-SEI, shares the plans of the institute moving forward to further enhance its scholarship programs for many young and truly deserving Filipinos.

**T**he DOST-SEI (Department of Science and Technology–Science Education Institute), is fulfilling its mandate to increase the number of STEM (science, technology, engineering, and mathematics) human resources in the country with a total of 55,460 scholars, both at the undergraduate and graduate levels, in its roster now.

This allows the country to have a pool of highly competent scientists and researchers who would work on providing innovative solutions to address the pressing concerns of various areas and sectors.

At the 2nd S&T Fellow Convention held on 21 July 2023 at Sofitel Plaza,

Dr. Josette T. Biyo, Director of DOST-SEI, shared her prediction that these scholarship programs will pave the way for the creation of public impact investors, wherein these scholars will go back to the Philippines and lead several industries or become entrepreneurs and contribute to national development.

Dr. Biyo shared that out of the 55,460 scholars, there are 50,518 in the undergraduate level, 3,895 are from the masteral level, and 1,047 are at the doctorate level. In addition to this, the DOST-SEI has supported almost 300 scholars studying in 29 universities abroad, pursuing courses in priority areas that are not yet that strong in the Philippines such as agriculture, aquaculture, and natural resources,

health, industry, energy, and emerging technologies.

Just last month, the DOST-SEI announced another 11,000 undergraduate qualifiers who will pursue courses in STEM.

DOST-SEI reported that 95% of its budget goes to scholarship programs, whereas the rest is allocated to science promotion activities and research. Meanwhile, at the undergraduate level, Dr. Biyo mentioned that only 20% of the 47,000 scholars belong to families with higher annual income, whereas majority of the scholars (80%) come from financially challenged families.



"I am very proud to say that our scholars come from 99% of the municipalities. Unfortunately, there are 16 remaining municipalities (out of 169) that we were not able to reach because they are located on distant islands, making them very hard to access. Additionally, I am happy to share that 80% of our scholars come from financially challenged families," shared Dr. Biyo.

Meanwhile, Dr. Biyo bared their program called BEST for IP or Bring Education in Science and Mathematics to Indigenous People.

"*May mga examinees tayo from various indigenous group na nahihirapan makapasa to our scholarship examination. So kahit hindi sila makapasa, we will give them opportunities na maka-avail ng scholarships. It is one of the things that we will prioritize during our upcoming planning workshops regarding the assessment process, interventions, and implementation on this,*" said Dr. Biyo.

(We have examinees from various indigenous groups who are having difficulty passing our scholarship examination. So even if they do not pass, we will give them opportunities to avail themselves of scholarships. This is one of the things that we will prioritize during our upcoming planning workshops regarding the assessment process, interventions, and implementation for this matter.)

Dr. Biyo said that it is one of the main goals of the DOST-SEI is to help our brothers and sisters from the indigenous group to obtain a degree and get plenty

of employment opportunities someday and help in addressing the problem of poverty at their respective communities.

Dr. Biyo also shared that they have specialized programs, one of them is *Bangon* Marawi. The program was created after the Marawi Siege, because of which many children couldn't return to their homes or schools because their parents lost their livelihood or passed away, or their houses and schools were burned down.

"We visited Marawi and identified these children; around 400 of them were sent back to school, and we provided them with financial grants just like regular scholars. I am delighted that out of the 400, only 8 did not graduate, and many of them have secured jobs. From the Muslim community, we have produced around 20 Cum laude and 3 *Magna Cum laude*," said Dr. Biyo.

Dr. Biyo also shared some of the privileges and perks of being a DOST scholar, including the stipend that is provided to them monthly. For BS (Bachelor of Science) course, it is 7,000 pesos a month; for MS (Master of Science), it is 25,000; and for PhD (Doctor of Philosophy), it is 33,000. She also shared that starting January next year, the stipend will be increased to 8,000 for BS course, 30,000 for MS, and 38,000 for PhD."

Thereafter, Dr. Biyo also discussed other programs of the DOST-SEI in enhancing and promoting science education in the country.

One is Project LODI, a league of developers' initiative, that provides

on-the-job training in coding and programming to undergraduate scholars to support various digital transformation efforts. Another initiative is Project SET—collaborating with Japan, Singapore, and Philippine industries—that offers a 10-month training for undergraduate scholars to foster an entrepreneurial mindset and develop concepts and prototypes.

Furthermore, they also have a CIP (Career Incentive Program) for DOST scholars, deploying nearly 300 CIP fellows to research institutes and universities in need of capacity building. The CIP fellows receive an annual salary of 61,000 pesos for MS scholars and 84,000 pesos for PhD scholars. The program is renewable for a maximum of 3 years and involves matching scholars with requesting agencies, sometimes based on specific preferences, through a screening process.

"It is very crucial to do and to be addressed not only by the DOST-SEI and the DOST, but I believe that there should be a shared framework among government agencies, the full value chain of DOST scholars. It is my vision and the vision of DOST as well that all our scholars, after they graduate, would find decent jobs that are fitted to their skills and interests," said Dr. Biyo.

The 2nd S&T Fellows Convention, which was organized by the DOST's Office of the Undersecretary for Research and Development, aims to showcase the substantial S&T contributions of our dedicated and passionate S&T Fellows, who, in effect, can be considered as DOST scholars.

# Pioneers of TRC: Girls & Gears champion advocacy over rivalry, experience over the crown

By DOST-SEI

**“N**o matter what happens, girls support girls, and girls are always for girls.”

This is the short yet meaningful response of Gecille T. Abeleda, Grade 9 student of Quezon City High School, when asked about the most significant lesson she learned from joining the Tagisang Robotics Competition (TRC): Girls & Gears; and she is proof of its triumph to become an intense yet friendly competition that piques young girls’ long-standing aspiration for equality and unites them to fight for one specific advocacy – to celebrate women and champion their absolute potential to take part in robotics and engineering.

When joining competitions, contenders surely have one ultimate goal—to win. But for the pioneers of the TRC: Girls & Gears, the main dream was never to just win the battle but to break the norms that try to render girls weak and voiceless.

More than aiming to win the highly coveted TRC championship title, the TagRobo girls hope to prove that girls are more than just girls and that they have what it takes to take part in highly male-dominated STEM (science, technology, engineering, and mathematics) competitions.

Most particularly, in robotics, they aim to evince that even in the supposed game of men, girls can earn their place and represent Filipinas well.

All of these they have achieved as they turned tables in a trailblazing all-female robotics battle and successfully finished the championship round of the competition – courtesy of the Department of Science and Technology–Science Education Institute (DOST-SEI).

## Slaying the competition, one task at a time

Embodying the best of ingenuity and the broadest of skills, the TagRobo girls battled it out for the final game of the competition, acing every challenge and exhibiting their power to move, sense, and deliver.

Conducted on 16 August 2023, at the Philippine International Convention Center in Pasay City, the Championship Round focused on the holistic capability of the school-teams to perform the robotics tasks, showcasing their mastery of interfacing and programming their robots.

Dr. Randolph S. Sasota, Supervising Science Research Specialist of the DOST-SEI, formally opened the TRC: Girls and Gears Championship Round.

In his message, Dr. Sasota reiterated the vital role that women and girls play in STEM (science, technology, engineering, and mathematics) and how crucial their presence in these fields is to the country’s economic and social prosperity. He encouraged the TagRobo girls to continue using their voices to take bold, concerted actions towards equality in STEM.

Meanwhile, to guide the TagRobo girls in doing their task-based challenges, Engr. Edison A. Roxas, Professor at the University of Santo Tomas Department of Electronics Engineering, presented the mechanics and criteria for judging. He wished the girls good luck and

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Engr. Carlos Matti Oppus joins Mark Jason De Jesus of ThinkLab in assessing and rating the performance of the TagRobo teams’ robots during the first preliminary round of the competition.



The TagRobo team from Pasig City Science High School is in a heart-stopping moment as they watch their robot execute the codes to autonomously move around the playing field and perform tasks for the TRC: Girls & Gears Championship Round.



## DOST, PEZA, and PASUC sealed agreement on KIST

By Mary Crystalline T. Araracap, *DOST-STI*



(From left, seated) DOST Undersecretary for Regional Operations Engr. Sancho A. Maborang, DOST Secretary Renato Solidum Jr., President of PASUC Dr. Tirso A. Ronquillo, and PEZA Director General Tereso Panga during the signing ceremony with representatives from DOST, PASUC, and PEZA as witnesses.

**T**he DOST (Department of Science and Technology), together with the PEZA (Philippine Economic Zone Authority) and the PASUC (Philippine Association of State Universities and Colleges) signed an MOU (memorandum of understanding) for the establishment of KIST (Knowledge, Innovation, Science and Technology) parks and ecozones in SUCs (state universities and colleges), during the 2023 PASUC Annual convention on 10 August 2023 at SMX Convention Center, Pasay City.

The KIST parks and ecozones intend to promote skills development and knowledge sharing between the government, academe, and industry, for the commercialization of R&D (research and development), leading to the advancement of techno-entrepreneurship.

DOST Secretary Solidum emphasized the increasingly important role of STI (science, technology, and innovation

as part of the cornerstones for modern society, which forms the economic programs that can lead to a brighter and more sustainable future for our country. As such, he outlined the priority of DOST Directions for 2023–2028 strategic pillars that adhere to the promotion of: [1] Human Well-being (Sa Siyensya at Teknolohiya, Kalusugan Nyo ay Sisigla), [2] Wealth Creation or Generation (Sa Siyensya at Teknolohiya, Negosyo ay Tiyak na Kikita, ang mga Industriya ay Aarangkada), [3] Wealth Protection (Sa Siyensya at Teknolohiya, mga Sakuna Hindi Alintana, kasi Mas Handa Tayo at Mas Magiging Panatag), and [4] Sustainability in which technologies will support the circular economy programs and foster environmental protection through further R&D.

“Through [the] partnership with other government agencies, private organizations, and the academe, the DOST will continue to create solutions that are relevant and innovative and will

fill in the gaps [in] all sectors and sectors and communities to achieve inclusive development,” he said.

The speech of the DOST undersecretary for Regional Operations Sancho A. Maborang underscores the presence of KIST parks and ecozones that will build a stronger partnership between the DOST, PEZA, and academe by increasing the growth of S&T-based firms, and the MOU will make it possible to further implement the program’s nationwide rollout.

As stated in the MOU, the DOST will provide technical assistance towards improving the STI solutions that will lead to higher productivity and better quality of life, promotion of human well-being, wealth creation, wealth protection, and sustainability.

On the other hand, PEZA will promote the flow of investors, both foreign and local, into these economic zones by putting up

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## TECHNOLOGY & INNOVATION

### PIONEERS OF... (from page 16)

congratulated them for their hard work and drive in honing their skills in coding, programming, and electronics.

Joining Engr. Roxas in assessing the performance of the girls were University of the Philippines Diliman Electrical and Electronics Engineering Institute Professor Engr. Percival Magpantay and Ateneo de Manila University School of Science and Engineering Professor Engr. Carlos M. Oppus, his fellow veteran TRC judges and members of the competition's technical working group.

With the final tasks being score-and-timer based, the TagRobo teams truly showed that they have fully capacitated themselves with knowledge on how to control and program Arduino-based microcontrollers interfaced with different peripherals such as servo and DC (direct current) motors, line and color sensors, and outputs such as RGB LED (red, green, and blue light-emitting diode) and OLED (organic light-emitting diode).

The championship round commenced after a series of preliminary rounds, which were specifically designed to enrich and test the teams' mastery of basic, intermediate, and advanced robot build and programming. For the second and third preliminary rounds, time-based tasks were also included, determining the fastest robots with correct color detection, pallet lifting sequences, and output display.

With all the phases they have undergone – from the technical training and workshop to the preliminary rounds and championship game – the girls have repeatedly expressed their deep appreciation and fascination for the competition's strong and vital advocacy.

They shared that the TRC: Girls & Gears was an undeniably remarkable experience and a true testament to the DOST-SEI's commitment and dedication to foster an open and diverse scientific community for women and girls.

“So, knowing that most STEM-related competitions na *‘pwedeng salihan ay* meant for boys, this competition *parang* solidifies that girls have the right to be here, [and that] girls deserve the same quality of skills and training that the boys have,” said Dalila Isabel De Los Santos of Manila Science High School.

The TagRobo girls admitted that most of them were new to robotics. Hence, joining the TRC: Girls & Gears has helped increase their awareness that there is such discipline that they can pursue, which—in a way—has also boosted their eagerness to discover other careers in STEM.

### Creating history, not by awards but their bravery

On the same day of the final game, the first-ever TRC: Girls & Gears champions were named.

Besting the 20-participating school-teams, Rizal National Science High School was crowned as the first champion of the first and only all-female robotics competition in the country. They were followed by Rizal High School as the 2nd placer and Caloocan National Science and Technology High School as the 3rd placer.

Below are the names of students, with their coaches, who were conferred with place awards for the TRC: Girls & Gears Championship Round:

#### Champion

##### Rizal National Science High School

Airish N. Alonso  
Kristine I. Butaran  
Janielle M. Loyola  
Maica Miyabi A. Santos  
Marlon P. Sta. Catalina (coach)

#### 2nd Place

##### Rizal High School

Princess N. Ada  
Hazel Faye L. Bangcaya  
Kurtney Adelline A. Bihag  
Xia Gloridan M. de Nieva  
Marlo A. Alvarez (coach)

#### 3rd Place

##### Caloocan National Science and Technology High School

Sophia Abigail T. Bando  
Anjae Maria S. Bejerano  
Janella Mairabelle L. Campo  
Anika Louise N. Sujratos  
Rex Mendel Capili (coach)

The teams took home certificates, trophies, and cash grants worth PHP 100,000.00, PHP 75,000.00, and PHP 50,000.00, respectively. Coaches of the top three (3) teams also received cash grants.

Through a short yet sweet message, Engr. Oppus described how it was like to witness the extraordinary performance of the TagRobo girls in running their robots and expressed hopes that more girls would join robotics competitions that promote equality, inclusivity, and diversity. He congratulated the girls for finishing the cycle and wished them luck in their future endeavors.

The DOST-SEI also awarded the best-performing school teams during the three successive preliminary rounds of the competition. QCHS (Quezon City High School) and TSHS (Taguig Science High School) tied for first place during the first round. TSHS once again got the highest score during the second round, whereas VCSMS (Valenzuela City School of Mathematics and Science) topped the third round. All of them received certificates and special tokens from the Institute.

The TagRobo teams proved that girls have what it takes to rise above the challenge, whenever and wherever. And with their robotics experience, they hope to inspire more young girls to take the quest and also venture into various STEM-related competitions.

*“Kami as participants, since we’re all women, we can serve as an inspiration to other girls na interested din to learn robotics to take the challenge kahit wala silang background sa programming. So maiinspire sila na parang ‘kung kaya*





TagRobo girls from Rizal Science High School are all smiles, as they finish first and bag the championship title in the first and only all-female robotics competition in the country. Awarding their trophy and certificates were DOST-SEI Director Dr. Josette Biyo and members of the Board of Judges Engr. Carlos Oppus, Engr. Percival Magpantay, and Engr. Edison Roxas.



Students of Rizal High School pose for a photo, as they secure second place in the Championship Round of TRC: Girls & Gears.



Participants from Caloocan National Science and Technology High School proudly wave their school's banner and raise their trophy after finishing third place in TRC: Girls & Gears.



DOST-SEI Director Dr. Josette Biyo delivers her closing message and congratulates the student-participants for successfully finishing the competition's preliminary rounds and championship game.

*nila, kaya rin namin,”* said Kristine I. Butaran of Rizal National Science High School, the first TRC: Girls & Gears school champion.

The TagRobo girls were glad to have participated in the competition as they picked some lessons which would prove beneficial in their future journeys. They echoed how the training, practice rounds, and champion game have uplifted their confidence as girls and enlightened them about the true essence of joining such competitions.

“This competition can really help me in the future because even if we’re having a hard time, even if we’re not succeeding or ranking that high, we’re still gaining

experience. And I believe that losing doesn’t mean that you’re a loser. It just means that you’re always gonna end up finding something that you’re gonna improve on,” said Rijana Lake S. Catacutan of Manila Science High School when asked about how she thinks this robotics competition experience can help her in her future studies.

After joining the competition, Rijana plans to pursue computer science, and she is sure that the experience she has gained in the competition can help her to get approved for scholarships in the future.

DOST-SEI Director Dr. Josette T. Biyo officially concluded the first cycle of TRC: Girls & Gears and commended

the young TagRobo girls for their hard work, perseverance, and enthusiasm in successfully finishing the competition. She expressed hope that their TRC: Girls & Gears experience can help all of them jumpstart a career in S&T (science and technology), and eventually contribute to the growing pool of S&T professionals in the country.

The first cycle of TRC: Girls & Gears proved that winning the title makes one stand out in the competition. But nothing beats the learnings, newfound camaraderie, and empowerment that all the girls have gained throughout the competition, which could make them the future’s brightest young Filipinas in the field of robotics.





## DOST SciNET-PHIL members gather to plan ways forward

By Rosemarie C. Señora, *DOST-STII*

Photos by Henry A. de Leon, *DOST-STII*

**M**ember-representatives of the DOST (Department of Science and Technology) SciNET-PHIL (Science and Technology Information Network of the Philippines) gather last month at City Garden Suites Manila for the two-day DOST SciNET-PHIL General Assembly and Strategic Planning Workshop.

The DOST SciNET-PHIL is a network of all the libraries and information centers under the DOST including the regional offices and the PSTCs (Provincial Science and Technology Centers).

Created through the DOST Administrative Order No. 29, Series of 1995, it aims to organize and coordinate the information sourcing and sharing in the DOST system. Its general objective is to promote and improve the flow and use of S&T (science and technology) information through resource sharing and networking.

In her opening remarks, DOST Undersecretary for Scientific and Technical



DOST Undersecretary for Scientific and Technical Services Ms. Maridon O. Sahagun in a video message addressing the participants of the two-day DOST SciNET-PHIL General Assembly and Strategic Planning Workshop headed by DOST-STII conducted on 30–31 August 2023 at the City Garden Suites Manila.

Services Ms. Maridon O. Sahagun highlights the need for libraries to adapt in the rapidly changing and dynamic digital landscape.

“Libraries have long been the cornerstone of knowledge, learning, and community engagement. They serve as beacons



DOST-STII Information Resources and Analysis Division Chief Alan C. Taule discussing the history, objectives, and organizational chart of the DOST SciNET-PHIL.

of inspiration, providing access to information, fostering lifelong learning, and connecting people from all walks of life. However, in this rapidly evolving digital age, libraries must adapt and innovate to remain relevant and continue to serve as indispensable resources for our patrons,” she said.



She also encouraged the participants to keep in mind the patrons served by the network—the students, scholars, researchers, and community members who rely on the network for resources, guidance, and inspiration.

“By harnessing our collective energy and expertise, we can ensure that our library remains a vibrant hub of knowledge and a catalyst for positive change,” she further said.

Moreover, Mr. Alan C. Taule—Chief of the Information Resources and Analysis Division of the DOST-STII, which is the organizer of the event—explained the history and objectives of the ScINET-PHIL as well as the outputs expected from the workshop.



Dr. Mary Margaret Que and Mr. Denver Bingski D. Daradar of ExeQ Consulting Services serves as facilitators of the two-day day DOST ScINET-PHIL General Assembly and Strategic Planning Workshop.

For the workshop, Dr. Mary Margaret Que and Mr. Denver Bingski D. Daradar from ExeQ Consulting Services will be serving

as facilitators for the lecture-workshops, with the outputs to be presented on the last day of the workshop.

**DOST, PEZA...(from page 17)**

these economic zones strategically in as many provinces as possible.

The PASUC, through its PISI (platform for innovating state universities and colleges for industry 4.0), aims to make the academe an innovation driver under the KIST framework of PEZA.

During the press conference, Tereso O. Panga, PEZA Director-General said “The KIST in academe can attract investors that are in R&D and innovation, with that engagement, [the PEZA] can now mobilize with MSMEs (micro, small, and medium enterprises) to be part of the value chain and commercialization of products that can create more jobs and livelihood.”

When asked what is the difference between a Techno Hub and KIST Park “The Techno Hub is an IT Park variant, while the KIST [Park] is a result of the initial model of IT Park. The difference is that, in an IT Park, the activities are mostly IT enabled, these are your voice and non-voice, but in KIST we want it to

be specifically hosted by universities, precisely because we want the investors to take advantage of the huge talent pool with the students, with the scientists, and the laboratories,” he stated.

When asked if there’s a priority specialization or field in KIST Park, the science chief said: “It will depend or vary on SUCs expertise, as we all know there were also technology and incubation business hubs in the same university sometimes that would cater to MSMEs.”

In the academe vein, President of PASUC Dr. Tirso A. Ronquillo said: “Academe has a bigger role in the value chain as it will do R&D. We see even that our KIST is only a high value and low volume development or manufacturing, it is not our mandate to mass produce. It is really on R&D and maybe we can have some prototyping on technology or product with higher value but we can produce in a low volume as a result of our research and after that, we can pass that on the side where they can do mass manufacturing.”

Accordingly, the SUCs will be benefitted from the KIST through access to fiscal and non-fiscal incentives offered by PEZA as a Special Economic Zone, promotion of industry as academe collaboration through technology transfer of university intellectual property, and acceleration of products and services of startups and spinoffs to the foreign market.

To date, there are already 44 SUCs that have signified their interest to have KIST Park. Batangas State University officially launched its KIST Park last 20 July 2020. On 03 August 2023, the DOST—together with PEZA—signed a JMC (joint memorandum circular) forging the partnership for the establishment of KIST Ecozones in the country.

DOST Secretary Solidum hopes to involve the LGU (local government units) as well to have a KIST Park such as Cauayan City, Isabela that was established last March 2023 through the help of the Isabela State University.

# Science department strengthens S&T scholarship grants under DOST *Bangon Marawi* Program

By DOST-SEI

The DOST-SEI (Department of Science and Technology–Science Education Institute) 29 new qualifiers to the DOST-SEI *Bangon Marawi* Program in Science and Technology Human Resource Development (STHRD), a scholarship program granted to qualified second year students enrolled in STEM (science, technology, engineering, and mathematics) courses who were affected by the armed conflict or were displaced from their communities during the Marawi Siege in 2017.

In addition, four more potential qualifiers – whose names do not appear on the published list – are also under consideration, pending resubmission of requirements for further evaluation.

A total of 65 students enrolled in priority S&T (science and technology) programs at MSU (Mindanao State University) Main Campus, MSU-IIT (Iligan Institute

of Technology), and MSU-LNCAT (Lanao National College of Arts and Trades) took the pen-and-paper qualifying examination on 7 March 2023 at the MSU-Main Campus, Marawi City, Lanao del Sur.

With the aim to uplift the hopes of the youth after the Marawi Siege, qualifiers who will avail of the grants will enjoy benefits including a monthly stipend of PHP 7,000.00, learning materials or connectivity allowance of PHP 10,000.00 per academic year, among others, starting in the First Semester of Academic Year 2022–2023. Scholars will be able to benefit from the scholarship for a maximum of four years as a retroactive grant.

As DOST-SEI Director Dr. Josette Biyo said, “I believe that STEM could create solutions to various societal problems we have today, thus, while *Bangon Marawi* Program is here, I encourage

all students to grab the opportunity to pursue significant STEM careers and contribute to reviving Marawi.”

Upon completion of their degree programs, scholars shall be working in their fields of specialization in the country, ideally in their home regions, for a period equivalent to the length of years in which they enjoyed the scholarship.

The *Bangon Marawi* Program is one of the Department’s responses to rebuild the human and social infrastructures of Marawi City after the 2017 siege. Since 2018, the program has provided scholarships for Marawi students enrolled in STEM (science, technology, engineering, and mathematics) courses in the undergraduate and graduate levels and has already produced 369 graduates with bachelor’s degree, 14 in the master’s program, and four doctorate scholar-graduates.







## DOST upgrades IP school bamboo crafts through GRIND program

By Rashia Mae Deva Paano, DOST-X

DOST-XI—as the program lead, represented by Engr. Howell (right-most)—personally delivered the crafting tools to the students of Luyungan IP High School on 16 June 2023 at Bancud, Malaybalay City.

**W**ith the goal of empowering indigenous culture, the DOST-X (Department of Science and Technology–Region 10 Office) upgrades Luyungan IP (Indigenous People) High School’s bamboo crafts through the GRIND (Grassroots Innovation for Inclusive Development) Program.

The GRIND program is a pioneering initiative of DOST Region XI in partnership with the United Nations Development Program in the Philippines and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Through this program, DOST-X aims to empower marginalized communities and build their resilience by developing and deploying GI (grassroots innovations) in Davao Region and, ultimately, countrywide.

Its main objective is to identify and assess GIs that address significant problems in the communities among all regions. It also aims to provide a package of S&T interventions among grassroots innovators and communities responsive to the location-specific needs of the regions.

DOST-X has turned over an array of tools and equipment during the

turnover on 16 June 2023 at the school’s premises in *Brgy.* Bangcud, Malaybalay City. It was attended by DOST representatives, school administrators, teachers, and IP students. The event marked a significant milestone in the development of the school’s bamboo crafts program and opened doors to new opportunities for the local community.

Among the tools and equipment provided were mini portable electric drill grinders, stainless steel wood carving knives, wood chisels, hammers, gravity-type spray guns, sanders, circular saws, industrial plastic toolboxes, handsaws, wood carving sets, and Mapp gas torches. These resources will enable students and teachers alike to delve deeper into the world of bamboo craftsmanship and produce intricate and high-quality products.

“We are delighted to support Luyungan IP High School in their pursuit of excellence in bamboo crafts,” DOST Bukidnon Provincial Director Ritchie Mae L. Guno said.

Luyungan IP High School is renowned for its commitment to preserving indigenous culture and promoting eco-friendly practices. Recognizing the school’s dedication to nurturing talent and promoting local traditions, DOST upgrades

them with a collection of tools specifically tailored to their bamboo crafts.

Engr. Howell Adrian A. Ong, unit head from the GRIND lead region, DOST-XI, said that the tools will not only enhance the quality of craftsmanship but also foster innovation and encourage the students to explore new avenues in bamboo utilization.

Dr. Romil T. Jabonero, Public Schools District Supervisor, expressed his gratitude to DOST Bukidnon and DOST-XI for their unwavering support, seeing it as a game-changer for them in continuously empowering students to develop their talents, create livelihood opportunities, and preserve their indigenous traditions.

Students have also shown eagerness to explore their artistic potential.

The bamboo crafts program at Luyungan IP High School is expected to flourish with the newly acquired resources, enabling students to create a wide range of bamboo-based products such as furniture, decorative items, and handicrafts. The aim is not only to hone their skills but also to instill a sense of pride in their cultural heritage and contribute to the sustainable development of their community.



# DOST CALABARZON, LSPU-IDD conduct elimination round of its first robotics tournament in the region

By Harley G. Margallo, DOST-CALABARZON



As part of the celebration of “KaSYENSaYahan sa CALABARZON 2023”, DOST-CALABARZON (Department of Science and Technology–Region 4A Office) organized its first-ever Preliminary Elimination Round of the Regional Robotics Tournament: RoboClash 2023 with the theme “Conquering Ideation: Imagine, Ignite, Inspire,” in collaboration with the Laguna State Polytechnic University (LSPU) and the Ideation, Design, and Development (IDD) Laboratory on 12 September 2023, at SM City San Pablo.

The tournament successfully achieved its goals by effectively highlighting the students’ skills and expertise in robot designing, control systems, and programming. Student representatives came from various schools across the provinces of Cavite, Laguna, Batangas, Rizal, and Quezon. They participated in the Line Tracing category, which uses autonomous robots to accurately trace or navigate a path or track by following a line at a specified time. On the other hand the Sumobot category, inspired by sumo



wrestling, uses autonomous robots to push opponents out of the ring or disable them within the time limit.

Two representatives from each province in CALABARZON have progressed to the Grand Finals in both the Line Tracing and Sumobot battle categories.

The students who have advanced to the Grand Finals in the Line Tracing category

are:

Batangas

- Phebe de Galicia, Gilson Leif Titular, and Samantha G. Balitaan from Lipa City Science Integrated National High School.
- Arreis Miro R. Garbo, Ridge Marcus V. Reodique, and Glen Hendrick V. de Asis from Philippine Science High School CALABARZON Region Campus





Cavite

- Noah Eleazar Solsona, Beatrice Rosalinda M. Dolis, and Jahnrei Kennard A. Falalimpa from Bacoor National High School Main
- Miguel Gabriel B. Cabra and Justin Bustamante from Bacoor National High School Main.

Laguna

- John Matthew R. Asilo, Adrian S. Cagitla, and Brenan R. Matuto from Crecencia Drucila Lopez Senior High School
- Keisha Marie Moreno Pales, Steff Yunica Simondac Borgoños, and Jaychelle Marie Collaga Coligado from Liliw National High School

Quezon

- Caislyn Therese D. Umali, Pimmy Jirah L. Maramot, and Gillian B. Iranzo from Recto Memorial National High School
- Kyell Rolf Jorel B. Daelo, Windell C. Solo, and John Lloyd R. Maaño from Luis Palad Integrated High School

Rizal

- Sean Sebastian L. Dacillo, Ernesto III R. Heriales, and Ma. Zarene Marchrys O. Buluran from Francisco P. Felix Memorial National High School/ SDO-RIZAL

- Janvin D. Salvador, Aizel Mae O. Baybay, and Mharvin Tapales from Antipolo National High School

The students who have advanced to the Grand Finals in the Sumobot battle category are:

Rizal

- Juan Florentino A. Maramag, John Marck B. Palpal-latoc, and Chynna Nicole S. Trinidad from Rizal National Science High School
- Skyelle M. Ogalesco, Jhuanne C. Gallaron, and Carl Danielle Ignacio from Antipolo National High School

Quezon

- Myreace B. Mendoza, Frances Ann M. Abarle, and Pitt Markus M. Perez from Recto Memorial National High School
- Lhander Magalona, Nikki F. Pedragoza, and Glen Dhale L. Capparos from Gumaca National High School

Batangas

- Alex Dutcher Forcado and Noah Perez from Batangas City Integrated High School
- Maxine Louise B. Vergara, John Emmanuel D. Lundag, and Bjorn

P. Lanto from Lipa City Science Integrated National High School.

Laguna

- Zeythir Gomez, Jose Urbano G. Jr. Domingo, and Ashley Nicole Macajelos from Looc Integrated School
- Martin Gian D. Cornelio and Lord Arnel D. Grajo from Camp Vicente Lim Integrated School

Cavite

- Javier Alejandro Cuyno, Chito Jr. Roxas, and Ethan Francis Arceo from De La Salle Santiago Zobel School - Vermosa Campus
- Ian Joshua P. de la Cruz, Irielle Christeena Q. Lopez, and Mack Allen M. Andrada from Cavite Science Integrated School

In recognition of the students' dedication and creative efforts in showcasing their robot-building skills, awards were presented to the Top 3 robots with the most exceptional designs.

The top-three robots that won the Best Design are:

**continued next page**

**DOST-CALABARZON (from page 24)**

• 1st place

John Matthew R. Asilo, Adrian S. Cagitla and Brenan R. Matuto from Crecencia Drucila Lopez Senior High School in Laguna.

• 2nd place

Sean Sebastian L. Dacillo, Ernesto III R. Heriales, and Ma. Zarene Marchrys O. Buluran from Francisco P. Felix Memorial National High School/SDO-RIZAL in Rizal.

• 3rd place

Iroquois Zachary Q. Reyes, Charleiz Gracielle B. Malana, and Ericka R. Mendiola from Col. Lauro D. Dizon Memorial Integrated High School in Laguna

This tournament played a crucial role in fostering stronger connections and relationships among faculty, students, and enthusiasts across the entire region who share a passion for these fields.

The event was graced by the presence of Engr. Samuel L. Caperiña, Provincial Science and Technology Center Director of Laguna; Professor Joel M. Bawica, Campus Director of LSPU-SPCC (San Pablo City Campus); and Dr. Darwin Ofrin, Associate Dean of the College of Industrial Technology at LSPU-SPCC.

Participants in the RoboClash tournament who have successfully advanced to the Grand Finals will face off on 19 September 2023, with the awards ceremony scheduled for 22 September 2023, at the Baker Hall of the University of the Philippines Los Baños.

DOST-CALABARZON is one of the regional offices of the DOST and is located at Jamboree Road, Brgy. Timugan, Los Baños, Laguna. For more information, you may visit us on Facebook at [facebook.com/dostcalabarzon](https://facebook.com/dostcalabarzon) or website [www.region4a.dost.gov.ph](http://www.region4a.dost.gov.ph). You may also reach us at [parcu@ro4a.dost.gov.ph](mailto:parcu@ro4a.dost.gov.ph)

#ScienceJournoAko features stories written by our participants during the science journalism workshops. Witness the brilliance of young minds as they showcase their exceptional written outputs. From captivating articles that demystify complex scientific concepts into creative feature stories, each piece is a testament to the dedication and creativity of our budding science journalists.

## Mindoro oil spill threatens marine biodiversity

By SJA @ General Trias Cavite participants from Governor Ferrer Memorial National High School

**M**arine scientists tallied almost 24,000 hectares of endangered coral reef due to oil spillage caused by the sinking of the MT Princess Empress last February 28, 2023.

After the MT Princess Empress sank off the coast of Naujan, Occidental Mindoro, at least 800,000 liters of oil were discovered spilled in the open sea areas.

The spillage is said to have spread to potential areas—including Bulalacao, Oriental Mindoro, all the way to San Jose, Occidental Mindoro. It is unclear whether there was an oil spill, according to Sinocruz, but the event has been reported to the Philippine Coast Guard.

The Panama-flagged ship rescued the 20 crew members on board the MT Princess Empress, which was en route to the central island of Iloilo, according to the coast guard and a port official in adjacent Batangas City.

“The oil has apparently reached the coastlines of the coastal towns of Naujan, Pola, and Pinamalayan. The oil might reach

Mindoro’s southern tip in a matter of days. The impact of the prevailing wind expedited the process,” according to MSI’s bulletin.

The agencies are already investigating potential solutions to the oil’s spread, which becomes more severe by strong winds and waves. The PCG is also working to determine what type of oil was on the ship, as this will affect the scale of the spill and the possible steps that can be taken. Following an initial investigation, the coast guard determined that what looked to be a leak was really a diesel fuel spill rather than oil from the tanker’s cargo hold.

To summarize everything said on the article, the Philippines is in a dangerous situation due to the fact that oil spillage that happened in the country. Luckily, some authorities and agencies are already finding a solution for this situation.

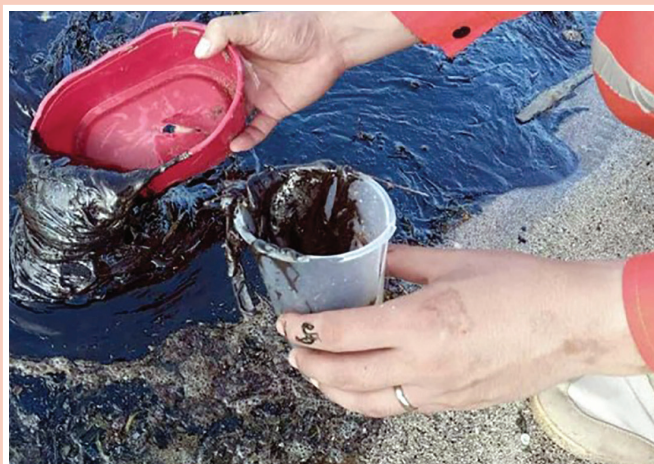


Image source: pna.gov.ph



# Glimpse of the future through the eyes of children

By Cristine Blessie Tumpag and Vincent Daniel Rellosa, *St. Vincent's College Incorporated*

Oh, to be young again. To only worry about the next time you'll see your friend, to worry about not having the same toy everyone has, to worry about missing your favorite cartoon episode. Oh, to see the world in those rose-colored lenses once more, to see the wonder in little dancing toys, and get, excited with discovering new fruit candies. The Regional Science Technology Innovation Week (RSTW) 2023 is a whole new world.

This year's RSTW transported kids and adults to a world that is yet to be. An atmosphere that is straight out of a Star Wars Movie punches awe-struck recognition of the exhibits and technologies from all ages. Robots, 3D printers, preserved fruit candies, alternative bio initiatives were few of the sights to witness in the exhibit. *"Siyensya, Teknolohiya at Inobasyon: Kabalik at Matatag, Maginhawa at Panatag na Kinabukasyon"*, as this year's theme lifts innovation for a convenient future. Children from various schools expressed their sentiments.

Franz Antonette A. Zorilla, rank one of her class, and Angelrich B. Somorostro—Grade 6 pupils at Dipolog Pilot Demonstration—showed Demonstration showed a spitting resemblance to Willy Wonka grinning, as they screech their excitement on the PSHS-ZRC (Philippine Science High School—Zamboanga Region Campus) flight simulator. Children were having a friendly fight over who would fly the simulator next. When asked about their favorite subject, none of them answered science, but as they indulge in the technology, their excitement is undeniable. *"Excited mi sa planetarium (a) te!"* as they were unable to have a look at the planetarium



RSTW 2023. Jaiden T. Espercia, Grade 6 Student from SSES, testing PSHS-ZRC robotics display (photo by Cristine Blessie L. Tumpag).

before the morning program ended; nonetheless, the exhibit excited the kids with the innovation despite initial interest of the subject.

Jaiden T. Espercia, a student from the same class as Franz and Angelrich, is especially noticeable, with laughs that echo with genuine merit and fascination, as he drives his fingers across the screen of the controller. *"Gusto ko mag electrical engineering pag dako! Makalingaw kaayo ang robots, ibangga ibangga namo."* He was a beam of pure joy buzzing between the 3D printing AMCenter (Advance Manufacturing Center) and the robotics display booth. His interests were clearly displayed, and as he talked about his short experience inside the exhibit, it seemed to span a core memory he could carry for a lifetime.

The exhibit served its purpose of engaging the youth in science, technology, and discovery, it sparked interest and most definitely converted children to grow a passion for the arts of innovation. To those who already have a nick for science and technology the exhibit was an open-for-the-taking candy store.

The world, with its complexities, can dampen the spark that allows us to see our surroundings in the wonder of dancing robots and ten-meter-tall planetariums. As Santa Claus from *The Rise of the Guardians* eloquently puts it, "Eyes that have always seen the wonder in everything! Eyes that see lights in the trees and magic in the air!" Let's be kids at heart, mind, and spirit, see wonder and create innovation.

# Local tea brand hopes to begin Caraga's "first" tea kiosk

By SJA @ Butuan participants



SPILL THE TEA. Danica Louise Fabre, proprietor of Nature's Apothecary, shares her company's history and benefits of her tea products.

**A** local tea brand aims to achieve a first-of-a-kind goal in Caraga's tea industry by planning to build the region's first-ever tea kiosk in an effort to promote tea to common Filipinos.

Nature's Apothecary voiced their aspirations of setting up a stall that would serve different kinds of tea—including their signature butterfly pea tea—in Caraga, as it doesn't have a local tea-serving store that "might" help raise appreciation of the beverage to Filipinos, who are known as huge coffee drinkers.

"We plan to set up this kiosk because we want to change the norm of Filipinos being coffee drinkers with our brand as the starting point," Danica Fabre, the brand's owner, stressed in an interview.

The Buenavista, Agusan del Norte-situated tea manufacturer intended to erect the kiosk in a local mall within the said region to begin their steps in the grassroots, and even wished to start soon.

"Hopefully by next year, we can start carrying out our plan since we're excited to serve tea, instead of coffee, to them," Fabre stated.

## BEGINNINGS

Danica, together with her partner JJ, started the tea brand in 2018 after becoming health-conscious, getting introduced to the blue loose leaf butterfly pea, scientifically known as *Clitoria ternatea*, and realizing its benefits to wellness and economy.

"I saw its (butterfly pea) potential and we want our success to be inclusive to others, especially those underprivileged people in our community," JJ said in an interview with Philippine Star Life.

And as their four-hectare farms in Buenavista and Nasipit grew, they started to manufacture more butterfly pea and *Hibiscus* teas, which became their staple bestsellers over time, and its other variants to bolster healthy living to their locality.

## HEALTH BENEFITS

Danica raised that tea, including their brand's best-sellers, offered many health benefits, which included having antioxidants that can lower diabetes and cholesterol—and can even aid in stimulating the brain at great lengths.

Drinking the beverage could also support skin and hair health, promote weight loss, and prevent cancer cell growth.



A filling crew member of Nature's Apothecary controls the consistent net weight of each pack of signature tea blends.



Nature's Apothecary staff member ensures to keep their lavender tea's aromatic quality as she prepares it for export.



## Spilling the tea: the secret behind Caraga's rising local tea brand

By SJA @ Butuan participants

**T**he Philippines is a coffee drinking nation. It has been a habit for them to find comfort in drinking coffee to start the day.

But a Caraganon tea brand hopes to change the way Filipinos start their mornings by offering tea as a healthier solution.

Nature's Apothecary—one of Caraga Region's rising tea brand that is located at Buenavista, Agusan del Norte—offers naturally manufactured products that are healthy to our bodies such as honey, tablea, *salabat*, coco sugar, and others.

### Bountiful Benefits

Danica Louise Fabre—the owner of the tea brand—spills the tea on how drinking teas, particularly butterfly pea, can have lasting impact on our lifestyles.

"[Ang] butterfly pea, *daghan siya'g* health benefits. Aside from brain boosting power, *daghan siya'g* antioxidant, it can lower diabetes, it can lower your cholesterol levels," Fabre stated.

Some antioxidants found in butterfly pea are said to protect the body against cell damage and complications connected to diabetes. With these benefits, a sip of the said tea is equal to a healthier community.

### Amazing Aesthetic

Apart from offering healthy solutions, Fabre shared the idea of making their teas "aesthetically pleasing". In today's world where aesthetics can be referred to as trendy, their colorful tea features have become a wow factor to their customers.

The crucial part of starting the day is to choose a drink to kick off your day. With a sip of this tea a brighter disposition and a revitalized well-being is guaranteed. Waste no time to experience the extraordinary benefits of Nature's Apothecary teas, and avoid spilling it.

# From Injects to INKjets: A DOST success story of passion and profession

By Kent J. Ramil, DOST-I

In the bustling City of Batac, the rhythm of creativity overshadows the sound of hospital monitors as one nurse actively saves lives and embraces his entrepreneurial spirit. Meet Nurse Franklin Barroga, or as his friends would call him—*Nars Frank*—a compassionate healthcare provider who has managed to find success outside the hospital walls, a proud owner of a thriving T-shirt printing business in the province, FAB Printline.

With his passion for both art and patient care, he has managed to combine two seemingly unrelated worlds, leaving a lasting impact on the community. While caring for patients, he discovered another passion that ignited his creativity – art.

In his spare time, he would immerse himself in various artistic endeavors—including painting, layout, and graphic design. For him, creating a masterpiece is therapeutic and relaxing, a hobby while he is off duty. He had no idea that this creative outlet would lead him down an unforeseen path.

Armed with his savings, unwavering determination, and a single garage, he opened his own t-shirt printing business in the year 2014. Like many entrepreneurs, Nars Frank started his T-shirt printing business with limited resources and equipment. Initially, he operated on a small scale, relying on basic printing techniques and outdated machinery. However, he soon realized that to compete in the increasingly competitive market, he needed to adopt advanced technology.

Enter the DOST's (Department of Science and Technology's) SETUP



Mr. Barroga and his secretary during the openhouse 2022, an event they attended to benchmark new technologies.

(Small Enterprise Technology Upgrading Program), a flagship program aimed at assisting local SMEs (small and medium enterprises) in upgrading their technological capabilities. Through SETUP, the government provides financial and technical support to eligible enterprises, helping them harness innovative solutions to improve productivity and competitiveness. Through SETUP's support, Nars Frank has transformed his humble T-shirt printing business into a thriving enterprise, leveraging technology and innovation to fuel his success. The program provided him with a range of benefits—including access to advanced printing machinery, expert training on modern printing techniques, and guidance on marketing strategies.

With support from SETUP, the business underwent a significant transformation.

The outdated printing machines were replaced with state-of-the-art digital printers capable of producing high-quality, vibrant prints on a wide range of fabrics. The new technology enabled faster production times and reduced errors, leading to enhanced customer satisfaction.

Additionally, together with his production workers, they received specialized training from industry experts on design software and color management, allowing the firm to offer customized designs and cater to the diverse preferences of their customers. The use of eco-friendly and water-based inks, which were also part of the technological upgrade, not only improved the quality of prints but also contributed to a greener environment.

continued on page 32



# Harnessing innovation: Delmendo Rice Mill adopts mechanical rice dryer in partnership with DOST

By John Ghali Benaïd & Joanna Paula Sabado



**T**here's a new dryer—not just for clothes but for something necessary in our daily lives.

In the picturesque town of Tallaoen, nestled in the heart of Ilocos Sur, lies an enterprise who is making a quiet revolution in the world of rice production. The Delmendo Rice mill, in partnership with the DOST (Department of Science and Technology), is spearheading a transformation that promises to not only elevate their business but also to improve the lives of local farmers.

Under the ownership of Mr. Elmer and Mrs. Matilde Delmendo, this establishment serves as a foundation in the community that is a crucial hub for rice processing. However, as with any venture, challenges arose, notably in the drying process of freshly harvested paddy.

Delmendo Rice Mill's journey of innovation began with a simple yet formidable challenge—the drying of newly harvested paddy. Traditionally, the mill employs the method of sun-drying on a concrete pavement, which

further manifest limitations, especially during the early harvesting season and frequent rains. To overcome these hurdles and maximize efficiency, the rice mill seek to revolutionize its operations by integrating innovative mechanical dryer technology.

According to Mr. Delmendo, a friend of him introduced the programs being offered by the DOST. Upon knowing, he then reach out and was granted a financial help after they've come to an agreement.

*“Atoy nga mechanical dryer, ket under ti SETUP. Ajay SETUP program, so isu ajay jay ibagbaga mi nga, ‘Small Enterprises Technology Upgrading Program,’ wherein i-assist mi agijay firms tapos ket kasla DOST ti manggatang. Ti mangyaryari ket kasla rent to own,”* John Carlo Lopez, DOST Project Technical Assistant I, said.

As the rice mill recognizes the need for change, they invested in cutting-edge technology – a Hopper type mechanical dryer paired with a husk furnace, complete with a chimney and exchanger. This upgrade has been nothing short of



transformative. The mechanical dryer can handle larger volumes of wet paddy efficiently, dramatically reducing drying time and ensuring that rice leaves the mill with the ideal moisture content. Post-harvest losses due to high moisture content have become a thing of the past, saving both time and resources.

Not only has this technological advancement upgraded production, but it also stimulated employment in the area. In an era where job opportunities are rare, Delmendo Rice Mill's expansion has brought about positive social

**continued on page 32**

**FROM INKjets...(from page 30)**

Equipped with newfound technological prowess, FAB Printline flourished. The incorporation of innovative designs and customization options attracted a wider customer base, including corporate clients, schools, and local sports teams. The superior quality of the prints,

combined with efficient production times, allowed him to fulfill large orders within tight deadlines, strengthening his reputation as a reliable and professional service provider. With the increase in demand, he was able to open three (3) more branches—two in Ilocos Norte, and one in Quezon City, Manila.

With increased production capacity and an expanding clientele, his business achieved remarkable growth, recording a significant surge in revenue and profitability by 400%, making him the BEST SETUP Adaptor in 2023 in the province.



Delivering orders to its clients in Region 2 during the pandemic.

With each passing day, the urge to explore his creative side grew stronger, and managing his time between hospitals and his business became a challenge. This prompted him to contemplate a bold decision that would reshape his future, leaving behind the comforting familiarity of his nursing profession. From injecting patience to refilling emptied inkjet printers, he found a new sense of fulfillment.

His journey, like other successful stories of DOST-SETUP beneficiaries, is an inspiring example of how government support and access to advanced technology can transform an ordinary business into a thriving enterprise. His success story has not only motivated aspiring entrepreneurs but also showcased the effectiveness of initiatives like DOST's SETUP program in fostering innovation, productivity, and sustainable economic development.

Sustained by his success, he expanded his operations and helped out-of-school youth, single parents, and persons deprived of liberty by adding them to his workforce, providing employment opportunities to the local community.

“I am forever grateful to DOST, for giving me a huge opportunity not only to better myself but to help make our province a more liveable, sustainable, and resilient community to live in. We, the FAB Printline will continue to transform lives, one T-shirt at a time.” – Nars Frank

**Harnessing innovation... (from page 31)**

change. The firm's growth has led to the creation of 12 new employment opportunities in the first semester of 2023, offering hope and livelihoods to local residents and providing meaningful contribution to the local economy.

*“Ang consider lang naman ng rice mill, iconsider nila yung paglalagyan, kase mahal din yung paglalagyan. Kahit makakaacquire ka ng DOST kung wala ka namang paglalagyan. Halimbawa ang rice mill mo maliit lang, ang problema kung saan mo ilagay. Yun lang ang (advice) ko, mag isip-isip muna sila. Kung may paglalagyan na sila, saka sila (makipagpartner) sa DOST”* Mr. Elmer Delmendo said.

In harnessing innovation and embracing modern technology, Delmendo Rice Mill stands as a beacon of progress, showcasing the transformative power of adopting mechanical dryer technology in the realm of rice

processing. Delmendo Rice Mill's adoption of mechanical dryer technology is a testament to what innovation, dedication, and the spirit of progress can achieve in the sector of agriculture.

Mr. and Mrs. Delmendo and company have not only transformed their business but have also sown the seeds for a brighter future for their community. The vision and the success of this project serve as an inspiration for agricultural enterprises across the nation, encouraging them to boldly embrace change and secure a prosperous future.

As the rains fall and the rice paddies glisten with promise, Delmendo Rice Mill's success story stands as a beacon of inspiration, reminding us that, with the right tools and vision, we can overcome the toughest challenges in the world of agriculture.



# Rags-to-riches: How an employee became her own boss

By SJA @ Bicol participants (DOST-V)

**W**hile many nine-to-five professionals are busy worrying how to make ends meet, Chef Concepcion “Connie” B. Condено found a way and turned her once-routine job into a world where her words carry great weight.

Chef Connie worked her way up the ladder of the pastry business; prior to being her own boss, she first fulfilled multiple duties as an employee. Besides serving as a part-time professor in De La Salle Lipa in Batangas, and De La Salle University College of St. Benilde in 2006, she also worked as a pastry chef at Dusit Hotel Nikko in Manila and Starworld Casino Hotel Galaxy in Macau, for almost 30 years from 1978–2007.

Awards and recognitions were also part of Chef Connie’s humble beginnings. In 2006, she was awarded the first prize for Dessert Individual Category, as well as the second prize for the Group Category at the International Food Exhibition Philippines of Cook Culinary Lifestyle Magazine.

## A long time coming feat

With many accolades and solid experiences behind her, Chef Connie and her husband, Chef Diosdado “Dick” Arevalo Condено, arrived in Legazpi City in 2009, where they both became the Executive Pastry Chefs at *Balay Cena Una*, a restaurant in Daraga, Albay. And after eight years—almost four decades in the making—in 2017, Chef Connie’s

Cafe & Resto & Catering Services was established.

Not static but complex in nature, business ventures do not follow a straight line or pattern; they have their own ups and downs, but despite this, Chef Connie and Chef Dick still pushed through. They experienced a fair share of low points in their business’ operations—potential expansion was halted due to production’s equipment inefficiency and ineffectiveness.

## DOST SETUP to the rescue

Chef Connie’s Cafe & Resto & Catering Services hit a snag. Their existing machinery, which they utilized the moment they started, proved inadequate to meet the increasing demand, as they expanded their business to new locations.

The DOST (Department of Science and Technology) jumped in; through the SETUP (Small Enterprise Technology Upgrading Program), an innovation system support was given and provided them with the necessary equipment (amounting to PHP 941,000.00) to make their plan of another expansion a reality. The firm increased its sales by 50% and established new market outlets—SM City Legazpi, Naga, and Sorsogon—in addition to its original location in Cabangan, Legazpi City.

To be her own boss, Chef Connie did three things—one she let herself immersed in the art of pastry and tried her luck in multiple environments; second, she realized her potential and decided to do more; and third, she asked for help when she needed it.



Chef Concepcion “Connie” B. Condено and Chef Diosdado “Dick” Arevalo Condено (from left to right) pose for DOST’s ONEDOST4U advocacy at Chef Connie’s Resto & Cafe & Catering Services, Cabangan, Legazpi City, Albay, on Thursday, Aug. 7, 2023. (Mc Guffy H. Marcos, DOST-V)

# Ready for adoption: *Pinoy*-made tech on disaster risk reduction at *Handa Pilipinas Expo 2023*

By Allan Mauro V. Marfal, *DOST-STII*

**O**n a rainy Thursday morning, a momentous event took place at the World Trade Center in Pasay City. Officials from various government agencies, LGU (local government units), legislative offices, private sectors, and Filipino researchers and scientists gathered for the opening of the 1st leg of the *Handa Pilipinas Expo 2023* that featured disaster risk reduction technologies.

The three-day festivity, organized by the DOST (Department of Science and Technology), aimed to serve as a platform to empower communities and *barangays* through the utilization of available data and research on disaster response, rehabilitation, and recovery. Moreover, it sought to foster collaboration among local government units, private firms, and other groups in embracing innovative Filipino-made technologies.

In his keynote message, DOST Secretary Renato U. Solidum Jr. emphasized the risks faced by our cities. Unfortunately, decades of rapid urbanization and growth have left our municipalities vulnerable to climate-related disasters. He called for acknowledgment of our cities’ exposure and lack of coping and adaptive capacities, recognizing that healthier cities are essential for their full potential to be realized.

“With our innovations, we become victors, not just victims,” proclaimed Sec. Solidum, addressing the common perception of Filipinos as disaster victims. He highlighted the transformative power of technological advancements in shaping a resilient future.

## ***Pinoy*-made techs in *Handa Pilipinas Expo 2023***

At the *Handa Pilipinas Expo 2023*, the public had the privilege of witnessing 86 groundbreaking technologies conceived



DOST Secretary Renato U. Solidum Jr. gives Senator Alan Peter S. Cayetano and DILG Secretary Benhur Abalos Jr. an overview on the technologies exhibited in the three-day exposition of *Handa Pilipinas 2023* at the World Trade Center in Pasay City (photo from the DOST-NCR).

and developed by Filipino researchers, engineers, and scientists.

One of these is Project SAFER, developed by the Polytechnic University of the Philippines—Parañaque Campus, it aims to support emergency broadcast and two-way communication in disaster-prone areas. Another one is the GeoRisk Initiative Platform, a digital platform developed by DOST-PHIVOLCS and several government agencies, presented an official platform for sharing and analyzing hazards and climate information, collecting exposure data, and conducting risk assessments.

The exhibit also featured HazardHunterPH, an advanced system providing comprehensive site-specific reports on seismic, volcanic, and hydro-meteorological hazards. Additionally, the Automatic Trash Rake—developed by the DOST-MIRDC (Metals Industry Research and Development Center)—offered an innovative solution to combat

flooding caused by excessive garbage in waterways. This fully automated system enhanced flood control operations by efficiently collecting large-sized trash along creeks and unclogging drainage systems.

On the other hand, water security concerns were addressed by the DOST-FNRI (Food and Nutrition Research Institute)—which introduced Iodine Rich Drinking Water (*Tubig Talino*) to combat IDD (iodine deficiency disorders) among Filipinos. This purified or ordinary potable water, mixed with Water Plus 2, aims to improve iodine intake and promote better health.

*Handa Pilipinas Expo 2023* also showcased emergency rescue technologies such as UPB (Unsinkable Porta Boat) and the UWA (Unsinkable Water Ambulance), designed to facilitate quick responses in urban rescue operations. Innovations for fire incidents in informal settlements were presented,





including the fire blanket and the Fire Trike, designed by Valenzuela Inventors Producers Society that can prevent fires from spreading in narrow roads.

For families affected by disasters and emergencies, the DOST-FPRDI (Forest Products Research and Development Institute) exhibited a DIY (do-it-yourself) bamboo shelter. This 24 sq. m. semi-permanent shelter, equipped with electricity and water supply, utilized 90% renewable materials, making it environment friendly.



Notably, Filipino-made technologies were also employed to communicate scientific knowledge effectively. The DRRM Mobile Learning Hub of Muntinlupa City, DOST-ASTI's (Advanced Science and Technology Institute) Kooha Application, DOST-PAGASA's Augmented-Reality Terrain-Flood Simulator with Kinetic Sand, and DOST-PHIVOLCS (Philippine Institute of Volcanology and Seismology) Earthquake Simulator play the pivotal role in increasing public safety awareness and disaster preparedness.

Sec. Solidum reiterated the importance of reimagining city organization, design, planning, and construction to create smart, sustainable, and livable cities. He emphasized the Philippines' vulnerability to hydrometeorological and geological hazards, which resulted in tragic losses of life, property, and livelihood. However, he firmly believed that disasters can be prevented and that technology plays a crucial role in saving lives and securing livelihoods.

**Support from the LGUs and Legislative Body**

At the opening ceremony, the support from the legislative body and LGUs was evident, with Senator Alan Peter S. Cayetano, who chairs the Science and Technology Committee in the Senate, and DILG (Department of the Interior and Local

Government) Secretary Benhur Abalos Jr. commending the DOST's efforts.

“One thing that I promise on this day is to Dr. Solidum and to DOST: I will make sure that the LGUs, from the Governors to the Mayors, prioritize three aspects. Number 1, increasing awareness of what you are doing. Number 2, actively participating in your initiatives. And number 3, becoming partners with DOST in establishing innovation hubs all over the country;” said Secretary Abalos.

Meanwhile, in his message, Senator Cayetano urged the officials and guests involved in disaster preparedness on principles, priorities, and prevention.

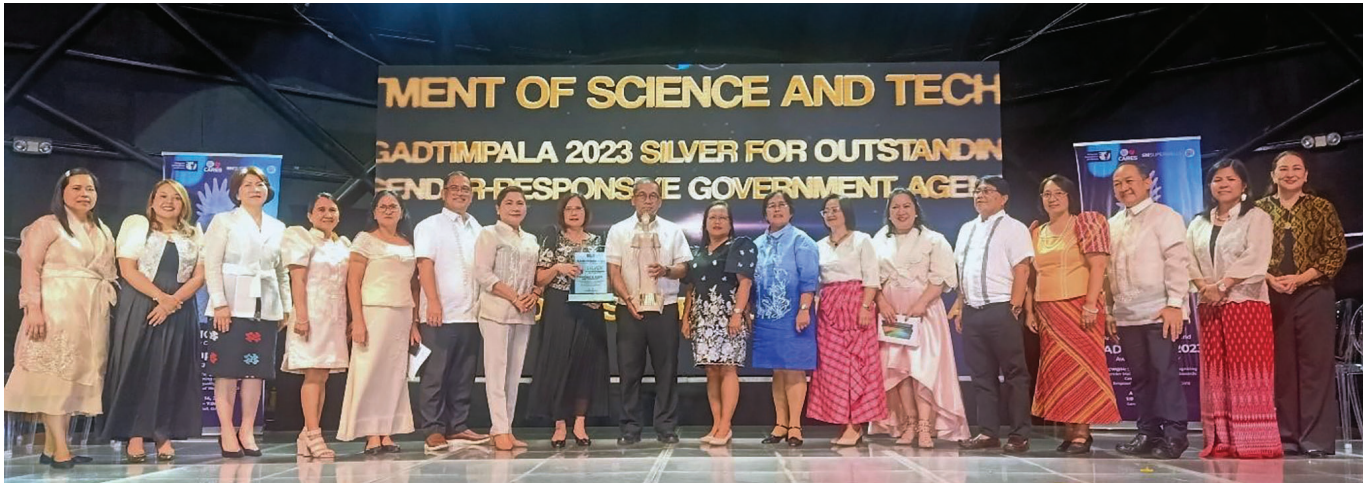
“Sec. Solidum, it is in your hands to remind the entire Philippines that science, technology, and innovation are things we cannot neglect and, hopefully, you will have a good ally in the cabinet and, hopefully, myself and Senator Pia will be a good ally in Senate,” said Senator Cayetano.

Lastly, Mayor Rubiano of Pasay said that trusting in the DOST's plans and initiatives would make our home the safest and most prepared it can be, not only in the city but also in all megacities and the entire country. She assured that Pasay City will be always in the forefront of supporting all the programs of the science department, particularly to disaster response, rehabilitation, and recovery.

As the Luzon Leg with a theme “Risk Reduction in Megacities” kicked off, the *Handa Pilipinas Expo 2023* provided a vital platform to showcase the latest innovations and research outputs in disaster preparedness, response, rehabilitation, and recovery. To learn more about the event, follow its official Facebook page: <https://www.facebook.com/dost.handapinas>



Various R&D projects and technologies were featured in the three-day exposition of *Handa Pilipinas 2023* held at the World Trade Center in Pasay City. (photo from the DOST-NCR)



DOST executives receiving awards for Outstanding Gender-Responsive Agency and GADtimpala AlaGAD 2023.

## DOST hailed as Silver Awardee of Outstanding Gender-Responsive Agency and GADtimpala AlaGAD 2023

By Caryl Maria Minette I. Ulay, *DOST-STII*

**T**he DOST (Department of Science and Technology) and DOST-PAGASA (Philippine Atmospheric, Geophysical, and Astronomical Services Administration) were recognized with GADtimpala AlaGAD (Outstanding Gender-responsive Agency and Exemplary GAD Focal Point System) during the 14th Anniversary Celebration of Magna Carta of Women and GADtimpala 2023 Awarding Ceremony at Samsung Hall, SM Aura Premier, Taguig City.

The commemoration of the enactment of the Magna Carta of Women (Republic Act (RA) No. 9710) and GADtimpala (Gender and Development Transformation and Institutionalization through Mainstreaming of Programs, Agenda, Linkages, and Advocacies) was established to give honor and incentives to deserving government agencies and other entities upholding gender mainstreaming efforts through their operations, programs, and services.

It is also a venue to amplify the ripple of support on providing protection, comfort, and equal socioeconomic, cultural, and political rights for Filipino women and girls, especially the marginalized sector.

In her remarks, Atty. Kristine Rosary E. Yuzon-Chaves, Executive Director and Officer-in-Charge of the PCW (Philippine Commission on Women) was vocal about being vigilant in the hurdles of bridging gender gaps.

“As we recognize our wins today, I hope our vision remains steadfast. Let us continue to do this to all the *Juanas* and *Juanitas* who are counting on us for a more just, inclusive, and equitable society,” said the PCW director.

SM Supermalls—through Grace Fornier Magno, SM Vice President for Corporate Marketing—delivered a message of appreciation.

“SM is the largest homegrown company to sign and promote the United Nations’ 2030 agenda on gender equality dimensions and sustainable development. In our internal and external activities, we provide women the right platforms, so that they can grow, thrive, and flourish at SM,” stated Ms. Magno.

One notable gender-responsive initiative of SM is establishing the Women’s International Network on Disaster Risk

Reduction, which recognizes women leading disaster risk reduction efforts in the Asia-Pacific region.

Moreover, SM Supermalls is advancing its commitment to advocate the implementation of the Magna Carta of Women and other gender-related laws by signing the MOU (memorandum of understanding) with PCW.

Based on the PCW’s assessment of the implementation of the Magna Carta of Women from 2019–2021, mainstreaming gender in different sectors is heading north. According to the 2023 gender global gap report, there was a growth in the Filipino female population enrolled and completed their education, as well in basic and functional literacy rates.

In the same report, the Philippines ranked 32nd in terms of educational attainment with a gender parity score of 0.999 (with 1 denoting high gender parity rate) covering all the key indicators. Gender parity pertains to the equal contribution of men and women in every aspect of private and public life. Furthermore, an escalation is noticeable in women occupying higher positions and women assuming



leadership roles in office administration, peace and order, and politics.

On the other hand, the percentage of teenage pregnancy for women aged 15–19 has declined from 9% in 2017 down to 5% in 2022, based on the national demographic and health survey.

Gaining legislative support is another landmark to protect girls from sexual abuse and exploitation. Some of the newly passed laws under GAD include RA 1156 (which prohibits child marriage), RA 11648 (which raises the sex consent from 12 to 16 years old), and RA 11930 (which is the Anti-Online and Sexual Abuse of Exploitation of Children and Anti-Sexual Abuse and Exploitation Materials Act).

As an “AlaGAD” silver awardee, the DOST has attained Level Four commitment enhancement and institutionalization in all entry points of the GMEF (Gender Mainstreaming Evaluation Framework) Organizational Assessment Tool.

“As we institutionalized gender mainstreaming in DOST, we continually build the organizational capacity to attain gender-sensitive policies, programs, projects, structures, and procedures,” says DOST Secretary Renato U. Solidum Jr. in his message.

The Department demonstrates its commitment to gender and development principles through partnership with other agencies in developing and using renewable sources of energy in food production, including the development of women-friendly technologies and providing useful information and gender-sensitive technologies for production, processing, and marketing food products.

Through its attach agencies, DOST continuously provides scholarships and career opportunities for women in science and supports start-ups through assistance in product development, packaging, marketing, intellectual property, and business guides. Women micro-entrepreneurs are also assisted

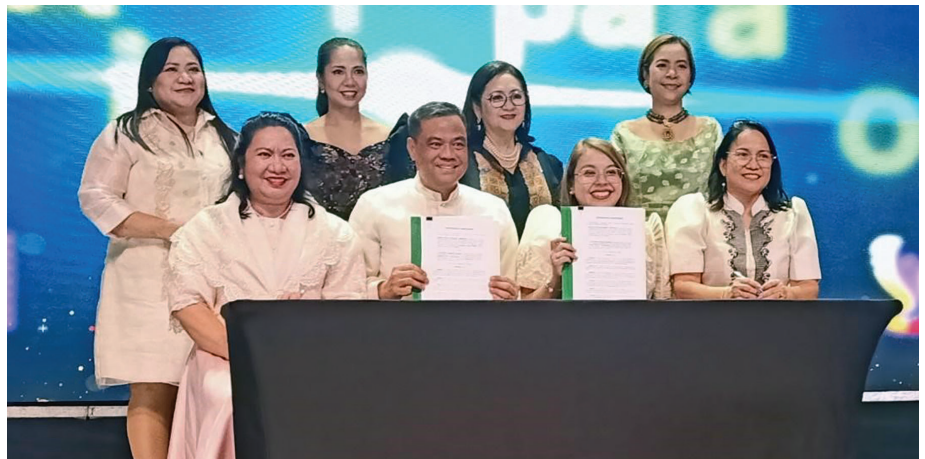
through a resolution that engages LGUs (local government units) to support their products.

Furthermore, DOST also established and actively operates its Gender Help Desk and produced and launched the use of DOST GAD Kit and modules in gender mainstreaming. As unified GADvocates, the capacity-building activities on GAD, as well as the GAD focal point assemblies, were continuously conducted.

“Our department intends to develop science, technology, and innovation policies that empower and support women and men in sustainable

development. As ONE DOST, we will fight gender inequality to achieve the change we desire to our gender equality.” This was affirmed by Sec. Solidum Jr., rallying the Department to continuously improve their GAD endeavors.

There were 18 government agencies awarded the Outstanding Gender-Responsive Agency and Exemplary GADtimpala AlaGAD 2023, having the Commission on Audit (COA) as the sole gold awardee for both categories. These double celebration on empowering Filipino women and girls were spearheaded by the PCW and sponsored by SM Cares and SM Supermalls.



Ceremonial signing of MOU between PCW and SM Supermalls.



DOST Sec. Solidum Jr. and other DOST executives receive the plaque and trophy of recognition.

# PNHRS unveils updated six-year national health research agenda

By DOST-PCHRD

The updated NUHRA (National Unified Health Research Agenda) for 2023–2028 was launched during the opening ceremonies of the PNHRS (Philippine National Health Research System) week celebration at the Summit Hotel, Tacloban City last 10 August 2023.

Covering a six-year period, the NUHRA provides focus and direction to health research and development initiatives in the country. In his speech, PNHRS lead coordinator Dr. Jaime C. Montoya emphasized how the agenda “is crucial in advancing health as it provides a clear direction for research and development and guides better decision-making of health research generators, funders, and end-users.” Spearheaded by the PNHRS RAMC Research Agenda Management Committee, the development of the updated document is born from 17 regional consultations and involves inputs from a variety of research stakeholders.

According to Dr. Montoya, the consultations serve as opportunities for research stakeholders to participate in government policy and decision-making. “This also meant developing the newagenda through the inputs of regional research stakeholders to ensure its relevance to their local context,” he said. From these consultations, a total of 170 health research priorities were identified and consolidated into themes and sub-themes. The main themes under the updated NUHRA areas follows:

- Disease management
- *Halal* in health
- Health security, emergency, and disaster risk management
- Health technology and innovation
- Health of vulnerable populations
- Health promotion
- Health systems strengthening toward UHC
- Maternal, newborn, and child health
- Mental health
- Nutrition and food security
- Sexual and reproductive health.

These themes will guide health research efforts in the country from 2023–2028.

For details on the NUHRA 2023–2028, visit [pchrd.dost.gov.ph](http://pchrd.dost.gov.ph) or [healthresearch.ph](http://healthresearch.ph).





# Eastern Visayas undertakes first biomedical research and a study on dengue health seeking behaviors

By DOST-PCHRD



**R**esearchers from Eastern Visayas lead health research initiatives dedicated to addressing health issues such as premature birth, low birth weight, and dengue.

Emphasizing the importance of cultivating a vibrant health research community in the region, EVHRDC (Eastern Visayas Health Research and Development Consortium) Chairperson Dr. Exuperia Sabalberino showcased two research projects during the latest *Talakayang HeaRT Beat* press conference held last 09 August 2023 at the Summit Hotel in Tacloban City.

Highlighted in the activity is the first biomedical device research conducted in the region, the “Project BUHAT (Babies Under Heat Assisted Technology) Kangaroo Mother Assistive Device,” led by Dr. Virginia Ariza of the HIC (Holy Infant College). The project aims to support the implementation of KMC (Kangaroo Mother Care) in more healthcare facilities in Region 8 by developing a KMC assistive device that

can monitor a premature and low birth weight newborn’s temperature, provide increased mobility for the newborn, and offer support to both the newborn and its mother. Currently, the team has developed a device prototype and is now gearing for clinical testing, which will be funded by the EVHRDC.

In her presentation, Dr. Sabalberino also shared the project “Health-seeking Behavior of Dengue Patients and Carers during the COVID-19 Pandemic in Naval and Kawayan, Biliran,” by Dr. Arlene Supremo of the BPSU (Biliran Provincial State University). Noting the decline in dengue reporting during the COVID-19 pandemic, the study examined the health-seeking behavior of dengue patients and their carers in Biliran. The study revealed that both patients and carers have differing health-seeking behaviors during the three phases of dengue, which is indicative of low healthcare utilization and poor management of the disease. These results can be used by concerned health institutions for policy development on dengue control and management.

During the open forum, EVHRDC representatives further discussed the status of the two featured research projects. Questions on the details of the project, utilization, and commercialization, as well as the impact of these initiatives in the region arose from the media. Participants also probed the other projects in Eastern Visayas supported by the Consortium focusing on mental health, teenage pregnancy, dengue, and more were also discussed.

Around 50 members of the media in Eastern Visayas participated in the *Talakayang HeaRTBeat*, a press conference that provides the latest updates on health research in the country. Anchored under this year’s celebration of the PNHRD Week, the press conference featured the PNHRD, its impact to health, and the research activities of the EVHRDC.

Replay of the press conference may be accessed through the DOST-PCHRD (Department of Science and Technology–Philippine Council for Health Research and Development) Facebook page.



# DOST OneLab’s poster presentation in Vietnam highlights the role in ensuring food safety

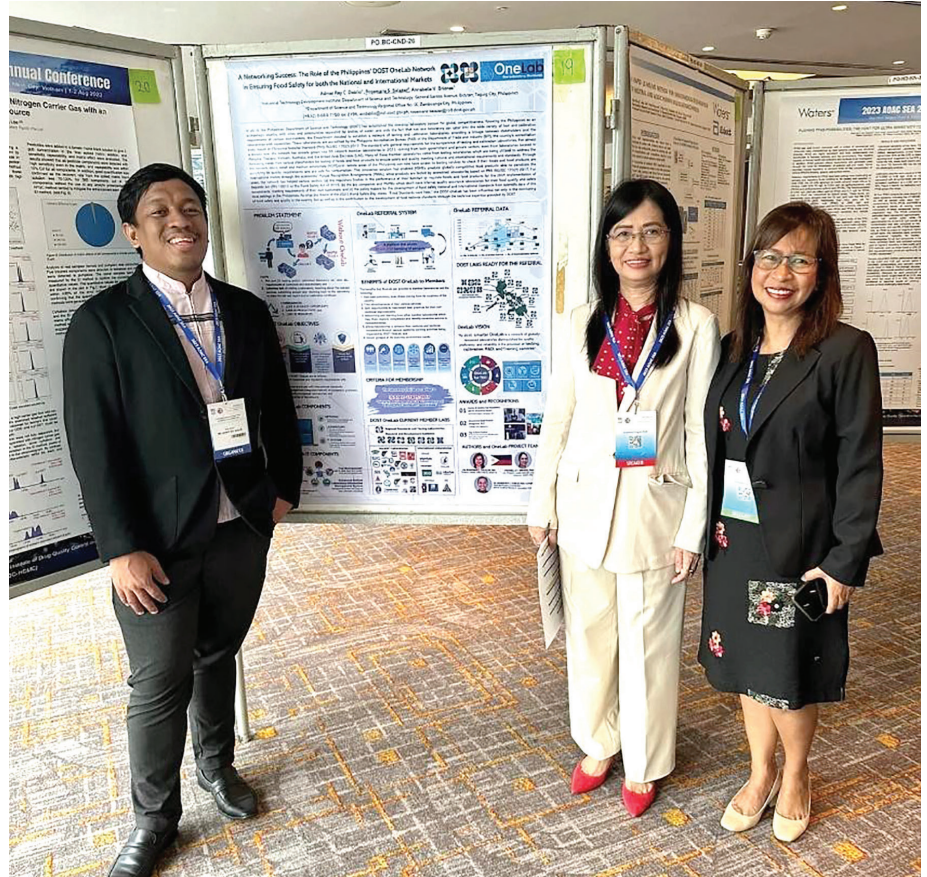
By Rosemarie C. Señora, *DOST-STII*

Photos from the DOST OneLab Network and AOAC SEA Section

To further promote the importance of the network in ensuring food safety, the DOST (Department of Science and Technology) OneLab project management team joined the AOAC (Association of Analytical Communities) SEA (Southeast Asia) Section 2nd Annual Conference held on 01-02 August 2023, in Ho Chi Minh City, Vietnam.

The team composed of Rosemarie S. Salazar [project leader and DOST-IX (Region 9 Office) Assistant Regional Director for Finance, Administrative Support, and Technical Services], Dr. Annabelle V. Briones [co-project leader and Director of the DOST-ITDI (Industrial Technology Development Institute), and Admer C. Dablio (Project Coordinator and Quality and CPD Manager of ITDI) led the poster presentation detailing the initiatives of the OneLab Network.

Titled “A Networking Success: the Role of the Philippines’ DOST OneLab Network in Ensuring Food Safety for Both the National and International Markets,” the poster presentation posited that many



Dr. Annabelle V. Briones (middle), together with Rosemarie Salazar (leftmost) and Admer C. Dablio (rightmost) during the poster presentation of the OneLab Network.





of the member laboratories, under the OneLab Network come from testing laboratories which are being utilized to address the increasing needs from various stakeholders for testing of foods and food products to ensure safety and quality, meeting national and international requirements and standards.

Through the network, MSMEs (micro, small, and medium enterprises) in remote areas of the Philippines, they said, can now have access to testing services to check if their food and food products are complying to quality requirements and are safe for consumption.

This innovative solution has, in turn, enabled MSMEs produce globally competitive food and food products that are able to penetrate the international market through the economies' MRAs (mutual recognition arrangements) since the products are tested by accredited laboratories based on PNS (Philippine National Standard) ISO/IEC 17025:2017.

For years, the network has helped various sectors: [a] the regulatory bodies in the performance of their function to regulate foods and food products for the strict implementation of RA (Republic Act) 10611 or the Food Safety Act of 2013; [b] the big companies and MSMEs, which don't have internal quality assurance laboratories for



their food quality and safety assessments, meeting requirements of their own customers; and [c] the policy makers for the development of food safety national and international standards from scientific data of the local settings in the Philippines.

They said that the DOST OneLab has been influential not only in the monitoring of food safety and quality in the country but as well as in the contribution to the development of food national standards through the technical expertise provided by DOST.

### **Pesticide residue as food safety issue in SEA countries**

Aside from the poster presentation, Dr. Briones served as one of the panelists in a panel discussion on the Needs of Pesticide Analysis in the Southeast Asia Region.

The discussion focused on pesticide residue being one of the major food safety issues in the Southeast Asian countries and on the discussion on the needs of pesticide analysis in the Southeast Asian region with the intention to support international trade.

Edna Callejas-Mijares, CEO of Jefcor Laboratories, Inc., for the Philippines, presented "Pesticides Residues in Food and Food Products: Analysis and CODEX Standards for Maximum Residue Limits," which called for the harmonization of standards by adoption of CODEX Standards as provided for in the Food Safety Act of 2013, and she also served as one of the panelists.



### **Winner**

Meanwhile, Abigail Grace H. Bion, Science Research Specialist I from the National Metrology Division of DOST-ITDI, is one of the three graduate and undergraduate students who won the Best Student Poster Awards conducted in the annual conference.

Ms. Bion won together with contestants from Indonesia and Vietnam, besting 12 students from seven countries in Southeast Asia, which were granted student travel awards by the AOAC SEA.

In June 2021, the formation of a new Southeast Asia section of AOAC International was approved by the AOAC Board of Directors. The new section, AOAC Southeast Asia Section, encompasses 10 countries—Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Timor-Leste, and Vietnam.

Want to be a DOST OneLab Network member? Contact us at our email address, [itdi.onelab@gmail.com](mailto:itdi.onelab@gmail.com).



# DOST OneLab continually expands network abroad, visits testing laboratory in Vietnam

By Rosemarie C. Señora, DOST-STII



Eurofins Scientific Sac Ky Hai Dang executives welcomes DOST OneLab Project Management Team on 3 August 2023 (photo courtesy of DOST OneLab Network).

Originally conceived in 2014 as a response to the challenge of initiating the harmonization of testing laboratories in the country, DOST (Department of Science and Technology) OneLab Network has gone a long way from being a network of laboratories in the country to expanding its network abroad.

Short for One-stop Laboratory Services for Global Competitiveness, DOST OneLab is a network of testing and calibration laboratories aimed at ensuring availability and broadening public access to testing and calibration services at a single touchpoint through an IT-based platform.

OneLab uniquely facilitates the seamless laboratory transaction from sample receipt to release of test and calibration results as facilitated by the OneLab Referral System.

With this efficient system, customers and stakeholders get the fastest turn-around time and expanded test and calibration offerings in the market.

Upon signing a MOU (memorandum of understanding), it will be adding the

Eurofins Scientific Sac Ky Hai Dang located in Vietnam to its list of international member laboratories, which currently has eight member laboratories located in Thailand, Malaysia, Australia, and United Arab Emirates.

This is in addition to the local network of members composed of 16 DOST RSTLs (Regional Standard and Testing Laboratories), seven DOST RDI (Research and Development Institute) laboratories, and 28 non-DOST testing laboratories.

Admer Rey C. Dablio, registered chemist and the customer relations officer for the OneLab, said that Philippine stakeholders such as big companies and MSMEs (micro, small, and medium enterprises) will benefit much from membership of testing and calibration laboratories abroad since not all test parameters are within the capability of local laboratories in the country.

“With the growing demand for testing and calibration services from the industry, we need to expand our reach of network so that we can immediately identify laboratories which can cater to identified test and calibration requests

needed to ensure raw material and product safety and quality for purpose of regulations, product developments, and improvements,” he said.

Eurofins Scientific Sac Ky Hai Dang, an accredited laboratory of Vietnam’s VILAS (Laboratory Accreditation Scheme), BoA (Bureau of Accreditation) based on ISO/IEC 17025:2017, is the first testing laboratory visited by the DOST OneLab Project team since the lifting of restrictions due to COVID-19 pandemic.

Located at the Saigon Hightech Park, Tan Phu Ward, Thu Duc City, Ho Chio Minh City, Vietnam, it has testing services for additives, allergens, amino acids, antibiotics/veterinary drugs, dioxins, fatty acid profile, GMOs (genetically modified organisms), heavy metals, mycotoxins, nutrition, pesticides, and vitamins.

It also has invested in modern laboratory facilities in Ho Chi Minh City and Can Tho City, as well as a new laboratory newly opened in Ha Noi City, staffed with qualified technical personnel and offers services on analyses for residues and contaminants.

03 August 2023, DOST OneLab Project Management Team composed of Project Leader and DOST Regional Office No. IX Assistant Regional Director Rosemarie S. Salazar and DOST-ITDI OneLab Project Coordinator and Quality Manager Admer Rey C. Dablio, was welcomed by the Vietnam laboratory headed by the HCMC Laboratory Manager, Nguyen Anh Vu and Business Development Manager Ms. Pham Thi Nhan.

Want to be a DOST OneLab Network member? Contact them at email address [itdi.onelab@gmail.com](mailto:itdi.onelab@gmail.com).

#OneLabforTED  
#DOSTOneLab  
#OneDOST4U



# Tinimbang, ngunit kulang: the bane of underweight and stunting among indigenous Filipino children

By Allyster A. Endozo, DOST-STII

“Cradle of Philippine civilization”—thus declared by archeologists were the Tabon Caves. It was amidst the darkness of these caverns on the island of Palawan that the luster of our early story as a nation, going as far back as 47,000 years, illuminated our consciousness. Unearthed there, along with jade jewelry and stone tools, were the bones of our ancestors—as well as those of animals like tortoises, boars, and elephants that they hunted, cooked, and ate for sustenance.

Another intriguing recovery from this treasure trove was the Manunggul Burial Jar, a fine piece of clay-based earthenware dating around the 8th century BC that stored human bones dyed with reddish paint. This “masterpiece” gave us a glimpse of our forebearers’ pervasive belief in the *anito* or spirits, as exemplified by a couple

of miniature figures aboard a boat—suggestive of a wandering soul being ushered by an ominous psychopomp on a nautical journey to the next life.

Braving the deep seas to explore over 7,000 of our islands—the “Pearl of the Orient” coveted for its opulent riches: from crops and wildlife to freshwater and minerals—has been the lore of the Filipino people throughout millennia. Waves of migrating Aeta, Lumad, Sama, Cordilleran, and other Austronesian groups went on to populate our archipelago, thus procreating our diverse heritage of indigenous tribes that ruled numerous villages, kingdoms, and sultanates from north to south.

Such abundance did not remain overlooked by outsiders, as Chinese, Indian, Arab, plus other Asian merchants sought to foster mutual trade for their ceramics, ornaments, textiles, and other goods. The Spanish, American,

and Japanese imperialists then came to exploit our resources under colonial subjugation—a fate suffered mostly by our predecessors from the lowlands but resisted by others from the mountains, thereby preserving their own ways of life for centuries.

Descending from this latter branch are our indigenous peoples (IPs), who altogether comprised over 10% of our total population of nearly 103 M nationwide in 2010. That was more than 11 M documented individuals belonging to 110 ethnolinguistic groups scattered across 65 provinces—mostly in northern Luzon at 33% and Mindanao at 61%, with some in the Visayas. While such numbers seem gratifying at first glance, the reality turns far from palatable beneath the surface.

As per the International Labour Organization, IPs are “ranked among the poorest and the most disadvantaged” citizens of the Philippines. They accounted for 15.4% of the beneficiaries under the Government’s *Pantawid Pamilyang Pilipino Program*—having occupied the lowest income quintile—as many engage in farming, fishing, hunting, and trading for their livelihood. Living in remote areas makes transport a key concern, notably hampering their access to basic needs.

One critical example is healthcare, the availing of which is hindered by the lack of proper birth registration among IPs, 46% of whom were not even members of the national health insurance program. The arduous distance to the nearest health units contributes to the persistent problem of preventable deaths among

continued on page 28



The *Manunggul Burial Jar*, circa 890–710 BC. Looking back at our indigenous history could be the key to our pursuit of inclusive national development. “*Ang hindi lumingon sa pinanggalingan, hindi makakarating sa paroroonan.*” – Filipino proverb

## HEALTH & NUTRITION



Participants in the 2018 Expanded National Nutrition Survey conducted by the DOST-FNRI included members of IP families (left), among whom were children aged 6–59 months old (right) [photos from Rowena Velasco-Viajar].

### *TINIMBANG, NGUNIT...*(from page 43)

IP mothers and children, whose battles against nutrient deficiency plus cholera, polio, and worm infections continue to threaten both their life quality and longevity.

Nourishment is another example, as both the supply of and demand for healthy foods are stifled by high prices brought about by the logistical cost of delivering them to faraway retailers. With limited options on the table, IP households tend to maximize low-cost foods that they can readily obtain. This leads to greater consumption of carbohydrate-rich root crops and grains or some fruits and vegetables—but lesser of protein-rich animal products like eggs, fish, meat, and milk.

Support for IPs in addressing these human rights issues—namely, poverty, illness, and hunger—is ostensibly blueprinted in the Philippine Government’s *Ambisyon Natin* Vision 2040 and the United Nations (UN) Sustainable Development Goals. On

the policy front, the same institutions also recognize their rights to land ownership, self-determination, and political participation under the Republic Act No. 8371 of 1997 and the UN General Assembly Resolution 61/295 of 2007.

In practice, however, these issuances appear to serve as mere sheets of paper. Extrajudicial violence, undue arrests, and forced evacuations perennially haunt IPs who actively oppose the encroachment to and destruction of their ancestral lands by logging, mining, hydropower, and other intrusive industries. With little power to fight back, IP families are compelled to leave their domains and move into cities, where they are exposed to societal and economic discrimination.

Having endured larcenous injustices committed by those from beyond and even within our own frontiers, will there still be anything left for our IPs to preserve? Will the perturbed spirits of their ancestors reclaim the harmony that was lost from their homeland—their

own cradle and grave? And what of their children? For how long must they remain stunted, if not wasted, both in growth and development? To whose welfare are our government policies and programs truly directed?

### **Not Healthy, Not Wealthy**

Experts at the Department of Science and Technology’s Food and Nutrition Research Institute (DOST-FNRI) investigated the factors that influence underweight and stunting among Filipino IP children using data from the 2018 Expanded National Nutrition Survey. Representing them was Rowena Velasco-Viajar of the Nutrition Intervention, Evaluation, and Policy Section. Their peer-reviewed article was fully published in the June 2023 Issue of the *Philippine Journal of Science*.

- By what sets of criteria specific to our country do nutritionists and dieticians define the terms “underweight” and “stunting” among children?



**TINUMBANG, NGUNIT...(from page 45)**

In the operational definition of the 2013 Philippine Nutrition Facts and Figures of the DOST-FNRI, underweight is defined as a nutritional condition wherein children have weights below the standard for their age and based on the weight-for-age index. It captures both the past and present nutrition status.

Stunting, on the other hand, is a condition wherein children have heights below the standard for their age and based on the height-for-age index. It is a result of chronic undernutrition caused by prolonged inadequate intake, recurrence of illness, or improper feeding practices.

The standard or index used is based on the World Health Organization's (WHO) Child Growth Standards.

- Compared to non-indigenous areas, how noticeably different was the situation on the ground in indigenous communities at the time of the survey?

Generally, IPs have their own communities. The majority of them can be found in geographically isolated and disadvantaged areas—thus lacking access to basic social services, education, and government programs. Non-IPs are relatively more fortunate compared to IPs in terms of access to basic services and government programs.

- How vast was the scope of the survey across the country? Briefly explain the procedures for conducting the survey from planning to execution.

Of the 40 provinces and highly urbanized cities covered by the Expanded National Nutrition Survey in 2018, 29 covered study areas.

Rigid training among nutritionist-dietitians, registered medical technologists and nurses, and allied health professionals were conducted as part of the survey procedures.

Weight and height, food consumption, biochemical indicators, food insecurity, and sociodemographic information were collected from the survey participants. Respondents signed informed consent forms to affirm their voluntary participation in the study. For this in-depth study, approval from the DOST-FNRI Institutional Ethics Review Committee was sought, as well as approval from the National Commission on Indigenous Peoples.

- To what degrees were underweight and stunting prevalent in indigenous households? What were the risk factors associated with both conditions?

A total of 1,173 IP households and their 6–59-month-old children participated in this study. It revealed a high prevalence of underweight (26.2%), wasted or thinness (6.0%), and stunted (45.9%) among 6–59-month-old IP children—which indicated high, poor, and very high magnitude and severity, respectively, based on the WHO cut-off for public health significance.

The risk factors associated with underweight IP children were those living in food-insecure households and using unimproved sources of drinking water like unprotected wells, unprotected springs, and surface water, and children with low intake of vitamin B2 or riboflavin-rich foods such as pork, fish, milk, and eggs.

Stunting was most likely to happen to those IP children who belonged to food-insecure households and children who have not undergone newborn screening, who are vitamin A deficient, and with inadequate energy intake wherein rice is the main source of energy.

- Moving forward, through what initiatives in the form of policies or programs can agencies under the Philippine government respond to these issues?

With the findings of this study, specific programs and services are needed to help address the plight of the IPs, who may be considered one of the marginalized sectors of society.

Initiate programs that will specifically cater to the IP's own cultural norms and traditions. Understanding and considering their behavioral nuances will contribute to the success of programs for IPs.

Another is a policy to increase accessibility and use of vitamin A-rich food like green leafy vegetables to contribute to improving the vitamin A status of children. Backyard gardening may also help improve IP households' food security.

Formulate strategies that will motivate the IP parents to participate in their child's health and nutrition programs such as the vitamin A supplementation program. Also, ensure that they will be reached by the government programs, specifically in the promotion of breastfeeding and proper complementary feeding to help improve the energy and nutrient intake needed by infants and young children.

Another program is to ensure that IPs will have a source of safe drinking water. Further is the inclusion of community leaders and engaging them in dealing with crafting IP programs.

Policy interventions [must be able] to improve access, affordability, and acceptable food sources to have better food and nutritional security in the IP community.

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**continued next page 47**

# Palace confers the Order of National Scientist to Dr. Carmencita D. Padilla

By DOST-NAST



NAST PHL is an attached agency of the DOST mandated to give recognition to outstanding achievements in science and technology made by Filipino scientists in all fields of science. NAST PHL is also the highest advisory body to the government and the science community on matters related to science and technology.

**P**resident Ferdinand R. Marcos Jr. confers the Order of National Scientist to Dr. Carmencita D. Padilla, cited for her pioneering work as a world-renowned clinical geneticist, on newborn screening in the Philippines, and for the establishment of the (PCG) Philippine Genome Center. The ceremony will be held on 31 August 2023, at the Malacañan Palace.

The Order of National Scientist Award (*Orden ng Gawad ng Pambansang Alagad ng Agham*) is the highest national recognition given to a man or woman of science in the Philippines administered by the NAST PHL (National

Academy of Science and conferred by the President of the Philippines upon recommendation of the Academy. Executive Order No. 236 dated 19 September 2003, otherwise known as the Honors Code of the Philippines, emphasizes the exceptional prestige of the Order by placing it fourth in the order of precedence and equal in rank with the Order of National Artist. At present, there are only 10 living NSs (National Scientists).

Dr. Carmencita D. Padilla is recognized for her significant contribution to the field of clinical genetics in the Philippines. Her notable studies were

conducted on the prevalence and cost-benefits analysis of a national program for newborn screening to prevent mental retardation and death from certain congenital disorders detectable at birth. This research provided the basis for the enactment of Republic Act (RA) No. 9288 or the Newborn Screening Act of 2004. To date, newborn screening is being implemented in 7,400+ health facilities in the Philippines and has saved babies from mental retardation and death.

To complement the Newborn Screening Act of 2004 (RA 9288), Dr. Padilla has lobbied for another law, the RA No. 10747 or the Rare Disease Act of 2016.



She has assisted the DOH (Department of Health) in preparing the Integrated Road Map for Rare Diseases for 2022–2026.

In the field of genomics, her most recent contribution is the setting up of the PGC (Philippine Genome Center). It was established as a multidisciplinary institution that will combine basic and applied research for the development of health diagnostics, therapeutics, DNA forensics, preventive products, and the improvement of crop varieties in the country. As the Executive Director of PGC from 2011–2016, Dr. Padilla led the critical growth phases of the institution, where it has played a major role during the COVID-19 pandemic.

Dr. Padilla led the establishment of various medical and laboratory facilities such as Genetic Laboratories at the NIH (National Institute of Health);

Cytogenetics Laboratory originally at the Philippine General Hospital (PGH) in 1991 and was moved to NIH in 1997; Newborn Screening Center (1997); Molecular Genetics Laboratory (2001); Biochemistry Laboratory (2001); MicroArray Laboratory (2010); and the Hemoglobinopathy Laboratory (2014). These laboratories cater to patients of the PGH and from other hospitals in the country.

Dr. Padilla obtained her BS (Bachelor of Science) Pre-medicine, *Cum Laude*, at the University of the Philippines (UP) Diliman (1976); her degree for Doctor of Medicine, outstanding graduate, at the UP Manila (1981); her Fellowship in Clinical Genetics at the Royal Alexandra Hospital for Children, Sydney, Australia (1990); and her MA (MAster of Arts) in Health Policy Studies at the College of Public Health, UP Manila (2005).

Dr. Carmencita D. Padilla is the current Chancellor of the University of the Philippines Manila and a member of the NAST PHL since 2008 as an Academician under the Health Sciences Division.

The recommendation of Dr. Padilla to be conferred the Order of National Scientist was voted by the Academy during its meeting in May 2022. As an internationally recognized leader in the field of genetics, her achievements have brought honor and recognition not only to the Philippine scientific community but to the whole nation as well.

For more details, you may visit the NAST PHL official Facebook page, @nastphl.

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### TINIMBANG... (from page 43)

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# Urban agriculture technology may answer the problem of lack of space and food security

By Allan Mauro V. Marfal, DOST-STII

For those without the so-called “green thumb” may find urban agriculture technology to be the answer to their woes and perhaps help in addressing concerns on food security in the country.

Some Filipinos also hesitate to try gardening due to the lack of space. However, a project by the DOST-PCAARRD (Department of Science and Technology–Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development) will make urban agriculture easier and less challenging.

In a broadcast statement, Adoracion Armada, the OIC (Officer-in-Charge) of the DOST-PCAARRD’s Agricultural Resources Management Division, said that there are indeed many technologies available for urban agriculture or urban farming.

She shared that under the *Galing-PCAARRD* project, two major technologies can be effectively used by Filipinos—the EPP (Enriched Potting Preparation) and the SNAP (Simple Nutrients Addition Program) hydroponics.

EPP is a technology that promotes the production of pesticide-free crops using recyclable plastic bottles, a potting medium, water, organic-based liquid fertilizer, and seeds or cuttings.

Meanwhile, SNAP hydroponics is an alternative system for growing plants without soil. It uses an inert medium and a nutrient solution containing essential elements needed by the plant to grow.

As for the question of whether a rural farmer can be an urban farmer and *vice versa*, Armada said: “Definitely yes, because an urban farmer grows in urban areas or cities where there are limited spaces. And when you go into rural



Adoracion Armada, the OIC of the DOST-PCAARRD’s Agricultural Resources Management Division, explains the project on urban agriculture and how it can help various local communities in the country become self-sufficient in food production.

areas, you are still an urban gardener because you also use the technology being used in urban areas. So, you can grow vegetables in both areas.”

She added that you can also use EPP and SNAP hydroponics in small areas with limited space in rural areas. But EPP is usually used for small spaces because you can grow many vegetables in a small space in your backyard or terrace. So, it’s easy in small areas, and you can produce even more, thus enabling households to be self-sufficient, at least in growing common vegetables for daily use.

Armada believes that urban agriculture could be a huge help in addressing current challenges, especially in food security in the country.

“It is a great response to food security because it’s very important to be able to grow our own food in our own backyard at this time. It’s very useful because we don’t need to go to farther areas and transport the vegetables that we grow,” she said.

Under this project, the DOST-PCAARRD conducted a series of field monitoring visits, wherein majority of participants and beneficiaries are residents who lost their livelihood during the pandemic. Aside from learning urban gardening skills, they were also oriented with the concepts of financial management and were trained in basic entrepreneurship and marketing.

To know more about the DOST-PCAARRD’s urban agriculture project, you may visit their official website at [www.pcaarrd.dost.gov.ph](http://www.pcaarrd.dost.gov.ph) or their official Facebook page: <https://facebook.com/PCAARRD>.

This project of DOST-PCAARRD is aligned with the thrust of the current administration of the DOST Secretary Renato U. Solidum Jr. under the four strategies—namely: human well-being, wealth creation, wealth protection, and sustainability—where enhancement of agricultural productivity through research and development falls under the first two strategies.



# DOST, NCR LGUs partner for adoption of R&D projects and innovative services in the 2023 science fair

By Allan Mauro V. Marfal, DOST-STII



To guarantee that the outcomes of R&D conducted or supported by the DOST effectively reach their intended recipients and sectors, the Science Department of the nation organized a sequence of MOUs with various local government units (LGUs) in the NCR.

**T**o ensure that all the R&D (research and development) outputs made or supported by the DOST (Department of Science and Technology) reach their intended beneficiaries and sectors, several MOUs (memoranda of understanding) have been signed by the country's Science Department with several ILGUs (local government units) in Metro Manila.

On 30 August 2023, the Regional Science, Technology, and Innovation Week (RSTW) in the National Capital Region (NCR) kicked off at the SM Aura Premier Mall in Taguig City. The event was spearheaded by the DOST-NCR, the

LGU of Taguig, and SM Prime Holdings Inc. The highlight was the commitment of cities in Metro Manila to adopt various technologies and R&D outputs from the DOST-attached agencies and partner institutions and use them for their intended purposes.

“Our battle cry in the DOST, especially in regional operations, is to mainstream science, technology, and innovation (STI) in local development to help address environmental problems, augment economic needs, and improve social status, thereby improving lives,” said DOST Undersecretary for Regional Operations, Engr. Sancho A. Mabborang.

Meanwhile, DOST-NCR Regional Director Engr. Romelen T. Tresvalles stated that with the launch of several partnerships with various LGUs, the DOST-NCR looks forward to enhancing its STI plans and implementations in their respective areas.

“We look forward to deploying various technologies through our Community Empowerment through Science and Technology (CEST) program, as we seek STI for social development anchored in our collective agenda of enhancing our social fabric. Our work includes developing and transferring technologies not only to the industry sector but

continued next page



Different technological exhibits featured practical innovations to address urban problems during the 2023 RSTW in the NCR held at the Samsung Hall, Level 6 of the SM Aura Premier Mall in Taguig City.

also to our micro-small and medium enterprises and communities, ensuring an even playing field among all sectors in society,” shared Reg. Dir. Tresvalles.

### DOST technologies in Metro Manila cities

Several DOST-developed technologies under different projects were showcased during the science fair that addresses various problems in the urban areas in the National Capital region. The first DOST project is the MOCCOV (Mobile Command and Control Vehicle) Technology in Taguig City. The MOCCOV will help intensify and strengthen LGUs’ readiness to take action on and respond quickly to the possible effects of calamities or tragedies. It is equipped with various capabilities for emergency situations, exercising contingency and response plans. It also has its own weather station system, drone, satellite phone, and other communication and surveillance equipment.

The next project is the ISEC-SAS Lab (Interactive Science Education Complex and State-of-the-Art Science Laboratory)

to be established at the Taguig National High School. The ISEC-SAS Lab aims to support the teaching of a science-based curriculum for students and teachers in the STEM (science, technology, engineering, and mathematics). This interactive science laboratory will serve as a hub for collaborative learning in innovation, offering access to advanced technologies, hands-on experimental learning, and research opportunities. Additionally, it fosters curiosity and awareness about space technology among students and teachers.

*“Ang kahalagahan ng Agham at Teknolohiya sa ikaunlad ng lipunan ay nasa sentro ng pagiging transformative, lively, and caring city ng Taguig. Walang duda na makikinabang talaga ang ating mga estudyante sa partnership ng DOST, Department of Education, at Local Government ng Taguig dito sa pagpapalawak ng scientific learning sa ating lungsod,”* said Taguig City Mayor Lani Cayetano.

Also featured in the event was the ceremonial launching of the Improvement of the Pasay City Transport

Group Operations Through the Integration of Fast Charging System.

In 2023, the DOST-NCR presented the CharM (Charging in Minutes) Technology of CHRGE Electric Vehicle Technologies, Incorporated into the LGU of Pasay through its TPFRO (Tricycle and Pedicab Franchising and Regulatory Office) and Cooperative Development Office.

CharM is a DOST-funded technology developed by the University of the Philippines Diliman, which significantly reduces charging time, generates more income, and supports greener mass transit, thereby maximizing the usage of EV technologies. The researchers formed CHRGE EV Inc. as a spin-off company to produce and market CharM.

*“Kadalasan, tumatagal lamang ng apat hanggang limang biyaha sa isang full charge. Tapos, kailangan pa nilang mag-charge ng tatlo hanggang apat na oras bago muling ma-fully charge. Iyan ang pangkaraniwang problema sa mga electric na sasakyan. Ngunit siyempre, dumating ang Department of Science and Technology, nakipag-ugnayan sa*



*aming lungsod, at plano nilang bigyan kami ng tinatawag na fast charging system,”* said Ismael O. Sevilla, the head of the TPFRO of Pasay LGU

(Usually, it only lasts for about four to five round trips on a single full charge. Then, they need to charge for three to four hours before being fully charged again. That’s the issue often encountered with electric vehicles. Of course, the DOST came in, coordinated with our city, and they are planning to provide us with what they call a fast-charging system)

Meanwhile, to further equip our STEM (science, technology, engineering, and mathematics) teachers not only in Earth Sciences but also in Disaster Risk Reduction and Management (DRRM), the DOST-NCR partnered with the Philippine Normal University for the project titled “Capability Enhancement of STEM Teachers in NCR through the Development of Learning Activities on Earth Science.”

This project aims to capacitate teachers, specifically those teaching in senior high school, who handle Earth and Life Science and DRRM subjects. Its goal is to enhance their competencies in teaching topics related to geological hazards, hydrometeorological hazards, and others.

Another featured project was the implementation of the iSTART project with the local governments of Quezon City and Muntinlupa City.

The iSTART program is a platform for the strategic alignment of the Department’s programs and projects with local development plans. It aims to support balanced geographical development by accelerating regional growth through STI. Among its specific objectives is to assist LGUs in developing

technology-based development plans for agriculture, manufacturing, and service sectors by engaging researchers, scientists, and engineers in the planning process.

Another program of DOST-NCR is CEST (Community Empowerment through Science and Technology), and among its pillars is the upgrading of technology-based enterprises.

According to Engr. Oscar B. Sevilla, Jr., head of DOST-NCR PAMAMARISAN (Pasig, Mandaluyong, Marikina, and San Juan) CASTO (Clustered Area Science and Technology Office), through their community assessment, they discovered an opportunity for enterprise development through the utilization of technologies developed by the DOST-PTRI (Philippine Textile Research Institute), such as handloom weaving and natural dyeing.

Included in this inclusive program are partner-beneficiaries from KAMAO theme “*Siyensya, Teknolohiya, at Inobasyon: Kabalikat sa Matatag, Maginhawa, at Panatag na Kinabukasan,*” of *Barangay Fortune* in Marikina City, the CIW (Correctional Institution for Women) in Mandaluyong City, and the BJMP (Bureau of Jail Management and Penology) San Juan City Female Dormitory. Also involved are “*Bags in the City Manila,*” “*Weavers of Tomorrow Incorporated,*” and “*Binigyan ng Laya ni Hesus Jail Ministry.*”

Engr. Sevilla further stated that the goal of this project is to utilize DOST technologies and create valuable products that can be sold by the community beneficiaries. Through this approach, it is possible to develop enterprises and assist people in the community in having an alternative source of income or livelihood.

On the other hand, DOST-PTRI Director Julius Leaño Jr. mentioned that with the use of these technologies, various designs and colors can be created on fabrics. In fact, the textile industry provides employment and opportunities across different sectors of society. However, many communities lack access to technology and need to be more actively involved in this industry.

Also held during the opening program of the 2023 RSTW NCR was the ceremonial MOA (memorandum of agreement) signing of DOST-NCR with Valenzuela City for the project called “Enhancing the Productivity and Profitability of Catfish through Scientific Farming in an Urban Setting in *Barangay Balangkas.*”

The 2023 RSTW celebration in the NCR, held at SM Aura Premier in BGC, Taguig City, ran from 30 August to 01 September 2023.

With the theme “*Siyensya, Teknolohiya, at Inobasyon: Kabalikat sa Matatag, Maginhawa, at Panatag na Kinabukasan,*” the DOST, together with its attached agencies and partner organizations, showcased the latest innovative products, services, and research studies that address the pressing concerns of different industries in Metro Manila through interactive exhibits and fora. Thereafter, separate RSTWs will be conducted in different regions across the country that boasts of various innovations in agriculture, health, education, enterprise development, DRRM, and many more.

# DOST secretary represents PH at G77 and China Summit in Havana, Cuba

By DOST-ITCU

Representing the Philippine President, DOST (Department of Science and Technology) Secretary Renato U. Solidum Jr. participated in the G77 and China Summit of Heads of State and Government on current development challenges focusing on the vital role of STI (science, technology, and innovation).

The two-day Summit was held in Havana, Cuba and was attended by more than 100 G77 member countries, including various international organization partners.

The G77 is the largest intergovernmental organization of developing countries in the United Nations, which provides the means for the countries of the South to articulate and promote their collective economic interests, enhance joint negotiating capacity on major international issues; and continue pursuing South-South cooperation for development. In this connection, 30 Heads of States and Government from Africa, Asia, and Latin America also joined the in-person general debate.





As Secretary Solidum Jr. delivered the national statement on 16 September 2023, he shared some of the major challenges that we must overcome such as poverty, hunger, food insecurity, health, energy, gender inequality, the digital divide, disasters and climate change, among others. He then emphasized the critical value that STI upholds towards providing solutions and contributing towards sustainable development.

The Secretary mentioned some of the Department's key programs on

capacitating people through scholarship programs; supporting MSMEs (micro, small, and medium enterprises) through technology upgrading; community empowerment; promotion of science communication; GeoRiskPH and PlanSmartReady to Rebuild, which focuses on risk assessment, resilience against natural hazards, and disaster rehabilitation and recovery initiatives, especially in the vulnerable areas.

Secretary Solidum concluded his remarks by stressing the need to work together in the hopes for a better and more prosperous, fair, just, and balanced world order. The Honorable President of the Republic of Cuba, Miguel Díaz-Canel Bermúdez, expressed his gratitude for everyone's support during the inaugural session of the Summit. He emphasized that the deliberations and positions on the current global challenges will lead to tangible results in the interest of friendship, solidarity, humanity, and cooperation.

President Díaz-Canel also mentioned that STI plays a key role in fostering productivity, efficiency, wealth creation, and promotion of well-being and human development. The United Nations Secretary General Mr. António Guterres highlighted that the G77 and China Summit is a good platform to raise the voices of the member countries calling for a more effective and stronger collaboration between and among multilateral institutions. Believing in the principle that no one should be left behind, the Secretary-General called for global and collective action in strengthening STI in the international arena, as it is essential towards solving common problems and inequalities that will lead to inclusive and sustainable development.

Secretary Solidum Jr. led the Philippine Delegation composed of Ambassador and Permanent Representative His Excellency Antonio Lagdameo (Co-Head of Delegation), Deputy Permanent Representative Leila Lora-Santos, Attache and Protocol Officer Jose Jacinto Morales, and Michaela Louise Candelario (technical staff from DOST). The next expected meetings of G77 are the Thirty-fifth Annual Meeting of Senior Officials of G77 and Forty-seventh Annual Meeting of Ministers for Foreign Affairs of the G77 scheduled on 20 and 22 September 2023, respectively, in New York, whereas the Third South Summit is expected to be held on 20–23 January 2024 in Kampala.







DOST Secretary Renato U. Solidum Jr. gives the Welcome Remarks during the 9th DOST Balik Scientist Convention at Clark, Pampanga.

## Balik Scientists honored for their contributions in the Philippine S&T sector

By DOST-OUSECRD

**A** total of 45 Balik Scientists were recognized together with their respective host institutions during the 9th Annual BSP (Balik Scientist Program) Convention on 27 September 2023 at the Quest Plus Conference Center, Clark, Pampanga.

The BSP Convention is an annual gathering of Balik Scientists, host institutions, and stakeholders that showcases the accomplishments and contributions of currently engaged Balik Scientists in the advancement of STI (science, technology, and innovation). In addition to the plenary presentations, this year's Convention also featured poster exhibits by select Balik Scientists and generated discussions on timely topics related to climate smart agriculture, health security and health system resilience, and policy and practical applications of artificial intelligence.

In his keynote address, DOST (Department of Science and Technology) Secretary Renato U. Solidum Jr. reflected on this year's Convention theme, "Balik Scientist Harnessing Global Science for Sustainable Development and Transformation," and stressed that "We must continue to support and invest in our Filipino scientists. Their role in fostering national development has become increasingly vital and solutions to complex challenges often require a global perspective and collaboration."





(From left-right) DOST Undersecretary for R&D Leah J. Buendia and DOST Secretary Renato Solidum Jr. lead the ribbon cutting ceremony of the poster and product exhibit during the 9th Balik Scientist Convention, held on 27 September 2023 at Clark, Pampanga.

DOST Undersecretary Leah J. Buendia cited several notable Balik Scientist accomplishments in the likes of Dr. Syrus Gomari, a mobility planning expert who developed the Mobility Vision+, an application that is now being used by the LGUs (local government units) of Taguig and Pasig in addressing their traffic problems. Another was Dr. Miguel Mervin Pajate, a veterinarian and embryologist whose expertise was instrumental in effectively producing the second kid born through embryo transfer at Isabela State University. Undersecretary Buendia mentioned that, “not only do Balik Scientists who are currently engaged create further impact in harnessing STI in the country.” Former Balik Scientists help

in addressing pressing challenges the country faces such as the recent oil spill in Mindoro—as led by Dr. Hernando Bacosa, Dr. Arnold Alguno, and Dr. Arnold Lubguban.

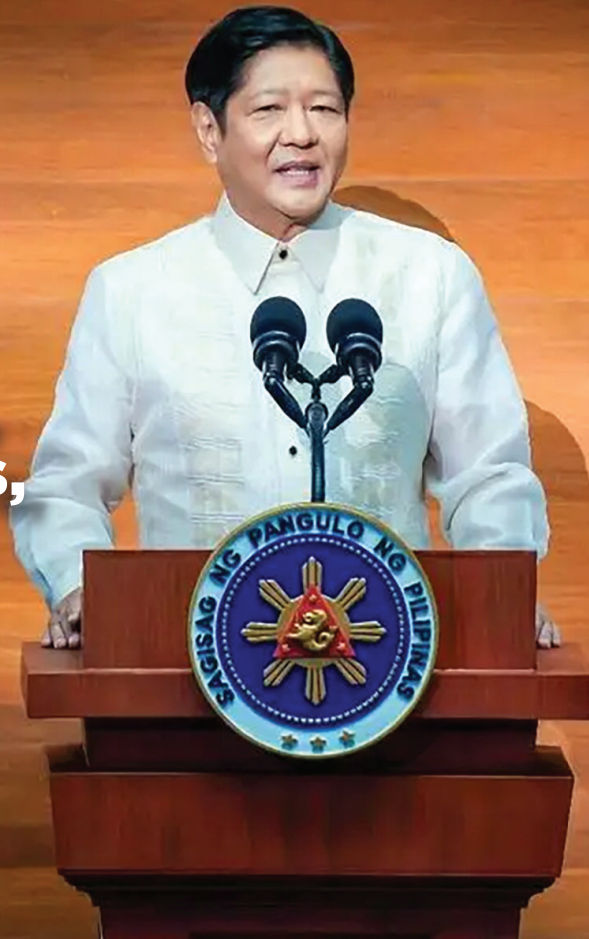
In closing, DOST Region III Regional Director Dr. Julius Caesar V. Sicat underlined the unyielding spirit of *bayanihan* and said that “it is through this spirit of unity and collaboration that we can truly harness the power of global science for the sustainable development and transformation of the Philippines.”

The Balik Scientist Program is a pioneering initiative of the Philippine government in response to the

nationwide concern on “brain drain.” Through the program, foreign-based Filipino experts are encouraged to return and impart their knowledge and expertise for the advancement of research and development in the country. Since its establishment in 1975, the program has engaged a total of 631 Balik Scientists who served under 150 host institutions across 16 regions in the Philippines.

For more information about the convention and the BSP, please visit the official BSP website or Facebook page at /balikscientist. DOST—Office of the Undersecretary for Research and Development, Phone Number: 88372930.

# PBBM cites key roles of R&D investment, scholarships, and space tech in 2nd SONA



By Allan Mauro V. Marfal, *DOST-STII*

**P**resident Ferdinand R. Marcos Jr. said that in establishing a culture of innovation, it should work hand in glove with a culture of entrepreneurship. With this, science and technology, especially R&D (research and development), will be at its foundation.

In his second SONA (State of the Nation Address), President Marcos assures full support for programs that would not only capacitate the skills and knowledge of our scientists, researchers, and engineers but also provide them better compensation that they truly deserve.

He also acknowledged the efforts of the DOST (Department of Science and Technology), particularly on some of its programs and initiatives on scholarships, the Balik Scientists, and space technology programs.

“To address the challenge of staying at the cutting edge of technology, 44 renowned Filipino scientists in diverse

areas of expertise have returned home under the Balik-Scientist program,” said President Marcos.

The President explained that these so-called “balik scientists” will undertake research in various priority fields and will be supported by upgraded facilities and R&D funding.

In his speech, Pres. Marcos also shared that the country has launched two additional satellites into space. He said that together with the first satellite, they will track weather, predict storms, evaluate soil and water supplies, analyze shifts in population, and be used for traffic management, geological hazard mapping, risk assessment, and even security and defense. Additionally, science and technology-related scholarships are made available for talented and technically gifted students, from high school all the way to graduate school.

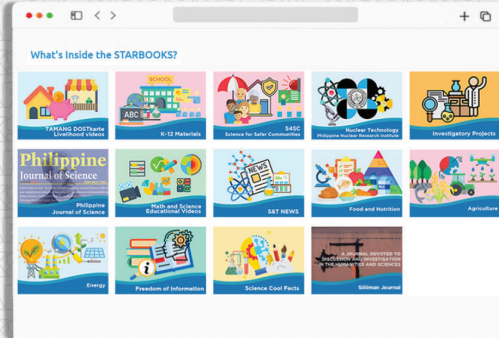
“Science, technology, and innovation will drive the quality and competitiveness of our workforce, as well as our manufacturing, export, creative, and service industries in existing markets and new ones waiting to be explored,” said Pres. Marcos.

Meanwhile, during the flag-raising ceremony held the following day at the DOST compound in Bicutan, Taguig City, Secretary Renato U. Solidum Jr. acknowledged the support received by the Science Department from the current administration. He mentioned that in response to the marching orders from President Marcos, the DOST will continue to enhance its programs and services. And it all starts by refocusing it to be more suitable to provide innovative solutions in the areas of human well-being, wealth protection, wealth creation, and sustainability.



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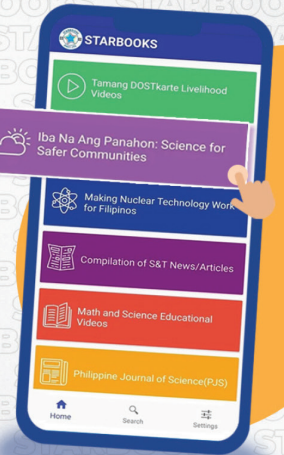
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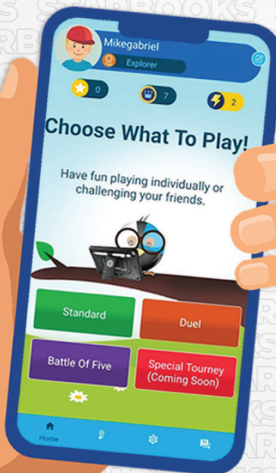
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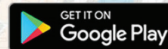
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