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2ND QUARTER 2013

A look at DOST's world-class technology and services

Walking the Talk

Exactly three years ago, the Department of Science and Technology (DOST) welcomed a new Secretary in the person of Mario G. Montejo, an engineer and technopreneur. He was bold to say that technologies developed by Filipinos could be world class.

Everybody waited.

True enough, in the country's biggest scientific and technological event – the 2013 National Science and Technology Week (NSTW), has become the "coming out party," so to speak, not only of the DOST but of the entire Philippine science community.

The 2013 NSTW, anchored on ExpoScience, is aptly themed "Science, Technology and Innovation: The Road to a Smarter Philippines" that truly describes what the Science Secretary wants to prove. Yes, local technologies work!

In the event, all technologies and services developed by and those with assistance from the DOST are showcased. These initiatives have been branded as world class by the administration. They are clustered into: Climate Change, Agricultural Productivity, Industry Competitiveness, Services, Poverty Reduction and Countryside Development. Some of the highlights include the Nationwide Operational Assessment of Hazard or Project NOAH, Automated Guideway Transit (AGT) System, the Ovicidal-Larvicidal (OL) Trap, among others. Now, Secretary Montejo is walking the talk.

It is easily noticeable that these technologies and services cut across human activities – implying that these are leading to a development paradigm called inclusive growth, and these are on a daily basis. Technologies that may be considered as very simple yet practical like the OL trap and the Ceramic Water Filter, those that belong to the "high-tech" categories such as the NOAH, and advanced sciences such as biotechnology and drugs development are meant to save lives. All of these are development-oriented and have been focused on alleviating people's lot. Testimonials abound that these Filipino products of science are truly for the Filipinos. Many are indeed starting to believe that such local efforts with world class quality are worth pursuing.

For this issue, The Post features wonderful stories of technologies and services for and by Filipinos. Perhaps, by bringing them closer to the general populace, by letting them understand not only their purpose but also of their benefits, then, maybe, more and more of our fellow Filipinos would better appreciate what our Filipino scientists are really capable of. And looking even much farther, then maybe, parents would help encourage their children to pursue science courses that lead to challenging science careers. Unfortunately, however, there remains a vacuum as far as the number of science professionals is concerned despite the opportunities given by the Department through its various scholarship programs.

Aristotle P. Carandang

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In celebration of the 2013 National Science and Technology Week

Science, Technology and Innovation; The Road to aSmarter Philippines

GENERAL PROGRAM OF ACTIVITIES

Date	Activity	Place/Venue
09 July	8th Outstanding Young Scientists (OYS)	
10-11 July	35th NAST Annual Scientific Meeting	The Manila Hotel, One Rizal Park, Manila
17 July	Bamboo Processing & UtilizationTechnology	FPRDI Museam, Los Baños, Laguna
23 JULY (TUESDAY)		
	Opening Ceremonies and NSTW Awards	Halls 1 & 2, SMX Convention Center, SM MOA
	OPENING OF EXHIBITS	Halls 1 & 2, SMX Convention Center, SM MOA
	Press Conference	
	4th Asia Pacific Telecommunity (APT) Workshop on Disaster Management and Communication	Meeting Room 8, SMX Convention Center, SM MOA
	MOU Signing with Smarter Philippines Technology Partners	Stage/Activity Area, Halls 1 & 2, SMX MOA
	Metro Manila: Handa Na, High Tech Pa! Climate Change and Disaster Mitigation Activities: ▪ Ceremonial Switching of NOAH's 500 Sensors ▪ NOAH Tablet Launch ▪ BLTB (Bagyo, Lindol, Tsunami at Baha) Launch ▪ LGU Disaster Summit/ICT for Disaster Mitigation	Stage/Activity Area, Halls 1 & 2, SMX MOA
	Film Showing and Day Event's Highlights	
24 JULY (WEDNESDAY)		
	Viewing of Exhibits	Halls 1 & 2, SMX, Mall of Asia
	4th Asia Pacific Telecommunity (APT) Workshop on Disaster Management and Communication	Meeting Rm 8, SMX Convention Center, SM MOA
	Smart Kids, Smart Scientists (Elementary Batch)	Manila Ocean Park, Concourse Area, Manila
	i-SETUP Na! Theme: Opportunities in S&T-led business; Countryside Development ▪ Techno-Forum: "Teknolohiyang may Dating, Teknolohiyang may Datung"	Stage/Activity Area, Halls 1 & 2, SMX MOA
	Film Showing and Day Event's Highlights	
	Blogger's Night w/ Smart Communications	
25 JULY (THURSDAY)		
	Viewing of Exhibits	
	4th Asia Pacific Telecommunity (APT) Workshop on Disaster Management and Communication	Meeting Room 8, SMX Convention Center, SM MOA
	Smart Kids, Smart Scientists (High School Batch)	Manila Ocean Park, Concourse Area, Manila
	In Touch with Excellence (Recognition of Outstanding Scholar Graduates)	Hyatt Regency hotel, Manila
	Cyber Security Forum	Meeting Rm. 7-9 SMX Convention Center
	Learning Applications for Pinoys (LEAP) Launch	Mezzanine, SMX Mall of Asia
	Build Your Startup or Get Hired! Theme: Industry Competitiveness ▪ Biz on the Web – eCommerce Forum ▪ STARBOOKS w/Encyclopedia Britanica Launch ▪ Startup Forum ▪ Information Technology – Business Process Management (IT-BPM) Career Talk	Stage/Activity Area, Halls 1&2, SMX Convention Center
26 JULY (FRIDAY)		
	DOST Smarter Living ▪ PST Synchronization with PAGASA ▪ Brown Rice Recipe Book Launch & Cooking Demo	Stage/Acitvity Area, Halls 1 & 2, SMX-Mall of Asia
	Viewing of Exhibits	Halls 1 & 2, SMX-Mall of Asia
	Smart Kids, Smart Scientists (Career Talk)	Concourse Area, Manila Ocean Park
	Scientific Forum on Industry and Energy	Mezzanine, SMX, Mall of Asia
	Scientific Forum on Emerging Technology	Mezzanine, SMX, Mall of Asia
	"Matalinong Juan, Aasenso sa Agrikultura at Pangisdaan" **JuantaSTic! Agri na, Aqua pa!** ▪ Mini Fair/Expo and Techno Clinic	Stage/Activity Area, Halls 1 & 2, SMX, Mall of Asia
	Film Showing and Day Event's Highlights	
	Gala Night (Partners' Night) MOU Signing w/ Smarter Philippines Technology Partners	
27 JULY (SATURDAY)		
	Viewing of Exhibits	Halls 1 & 2, SMX-Mall of Asia
	In KB? Let's Innov8 Na! Aghamazing Na, Scienterrific Pa! ▪ Learning Through Robotics and Interactive Exhibits ▪ **Gawad Scriba:** DOST Media Awards for Science Communicators	Stage/Acitvity Area, Halls 1 & 2, SMX-Mall of Asia
	Closing Ceremony	
	Egress	

23-27 July 2013
SMX Convention Center
SM Mall of Asia, Pasay City

DEPARMENT OF SCIENCE AND TECHNOLOGY VOL. XXXI NO. 2 SECOND QUARTER 2013

S&T POST

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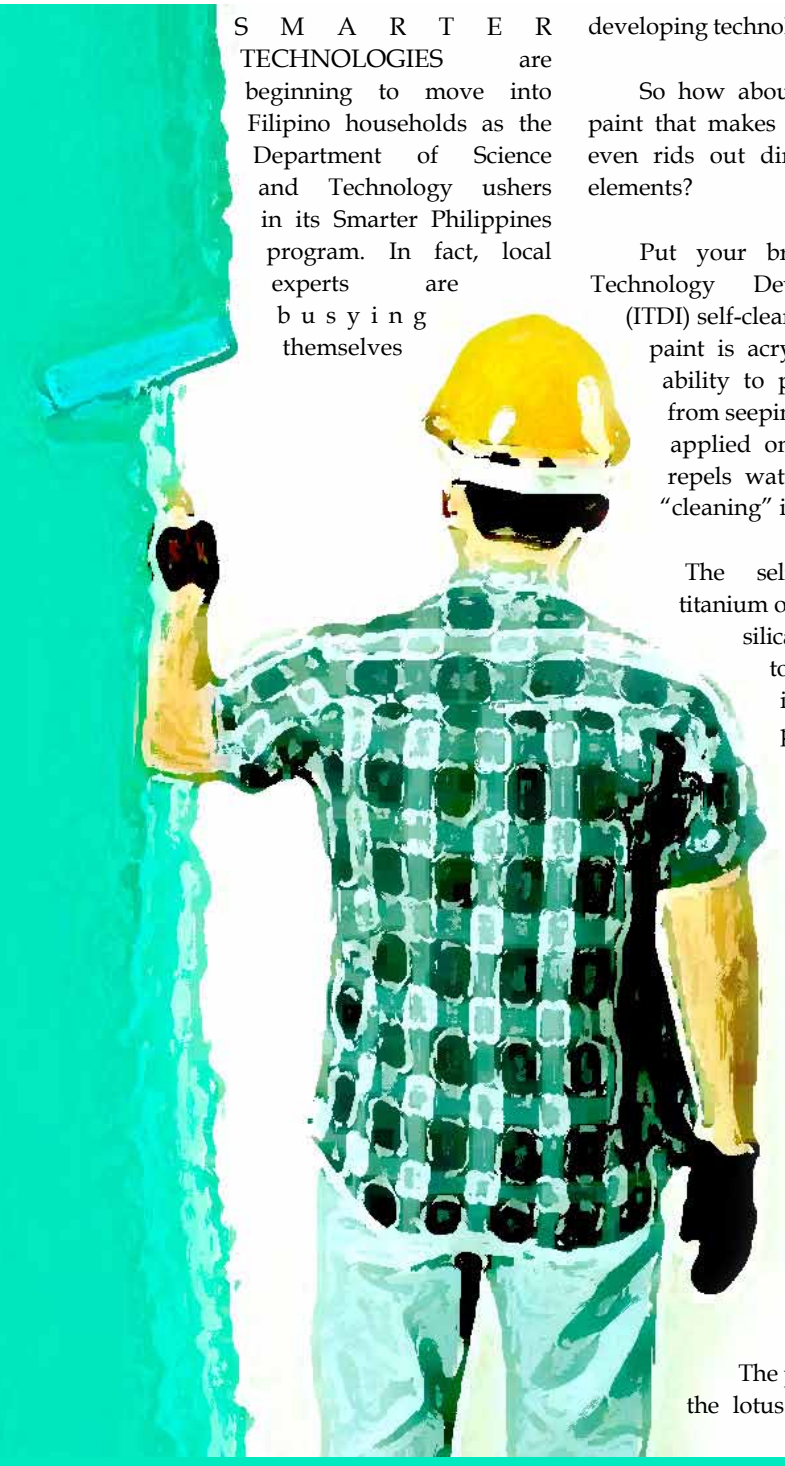
OUR COVER

A white canvass is plain, lifeless. Dab it with color, splash paint into it, and it comes alive. The canvass finally serves its purpose. Science and technology begin as bursts of bright ideas, like the colorful bubbles on this cover. Once these ideas take shape and put into action, life becomes colorful and not dull, meaningful instead of being a waste. S&T simply adds life to LIFE, like the splotches of paint that add color to an otherwise boring canvass.

Coat the town green
Smarter, dirt-proof paint technology

By JOY M. LAZCANO
S&T Media Service, *DOST-STII*



SMARTER TECHNOLOGIES are beginning to move into Filipino households as the Department of Science and Technology ushers in its Smarter Philippines program. In fact, local experts are busying themselves developing technologies for smarter living.

So how about a recently-developed paint that makes your house bright and even rids out dirt and other microbial elements?

Put your brush up to Industrial Technology Development Institute's (ITDI) self-cleaning paint. The polymer paint is acrylic based and has the ability to prevent water and dirt from seeping into its surface. When applied on a concrete surface, it repels water and dirt, effectively "cleaning" itself.

The self-cleaning paint has titanium oxide and locally sourced silica which when exposed to ultraviolet ray exhibits its photocatalytic property. This means it breaks molecules of emission gases on its surface. This protects the paint from any discoloration due to organic microbes from gas emissions and oils.

It also repels water and lets liquid just flow on its surface without seeping into the paint, consequently carrying dirt such as dust particles, lipophilic dirts, and others.

The paint technology mimics the lotus and gabi plant leaves that have complex structures such that water droplets that land on the surface pick up particles as they flow out, minimizing adhesion of dirt on the leaves. Such characteristic is called the lotus effect.

Through nanotechnology, ITDI enhances this functional capability as it develops said environment-friendly paint. This innovation also prolongs the luster of the paint. This emerging paint technology is already in the market for some time in some countries. However, the premium price makes it unaffordable to most people.

According to Dr. Araceli Monzada of ITDI's Materials Science Division, locally developed self-cleaning paint will be more affordable than the commercially available paints when it reaches its commercial stage as it uses locally available additives.

The paint technology is expected to cut down annual maintenance costs significantly in buildings which will no longer require annual washing and periodic repainting to retain its luster. In Singapore, the cost of washing a building once a year is at SGD10,000 to SGD50,000 (P343,000 to P1.715M) while in some malls, washing is normally done quarterly. Because of the long retention of the paint's luster, users save water to be used in washing. The less frequent washing will also minimize surface damages on the buildings caused mainly by strong detergents and high water pressure from water jets.

Currently, the paint is available only in white, but ITDI is set to develop other colors. Dr. Monzada also added that with the importance of this innovation, the institute plans to design the paint for use in the automotive

Solar-biomass hybrid systems for heating & water storage

By REGINALD DELA CRUZ
S&T Media Service, *DOST-ITDI*

BIOMASS AND sunlight. These are all you need to dry products without using fossil fuel which is now running dangerously low. This new heating method, called solar biomass hybrid multi-function heating system, is developed by the Industrial Technology Development Institute (ITDI).

This method entails heating the system's furnace using biomass sources such as charcoal briquettes made from agricultural wastes like coconut shells and rice hull. The briquettes provide the drying chamber with thermal energy supplemented by sun energy.

This hybrid system -- designed, built, and tested by ITDI -- is cheaper to fabricate than other thermal drying equipment and can heat up to 500 kg of food and non-food products a day. Drying usually takes 6-8 hours daily, depending on what item is being heated and the fuel being used, at a temperature of 45-50 OC.

As this hybrid system promotes the use of biomass, it is environment-friendly and cost effective. It is also designed to be more efficient and user-friendly, with individual farmers and cooperatives as target users, particularly those in rural areas. Likewise, the new system has big potential to create better income and livelihood opportunities for entrepreneurs in various ways.

Using the same system, ITDI designed another device that can store water. Called the hybrid portable solar-biomass still, the device has an inclined basin with a stainless steel bottom that reflects sunlight and absorbs heat from the furnace beneath. The basin is covered with transparent glass to protect the water from foreign contaminants. The glass cover also serves as condenser in collecting potable water.

The device, just like the one designed for solid materials, uses heat from solar energy and the biomass furnace beneath it to produce up to three liters of potable water in an eight-hour span, at a 7 percent water conversion efficiency rate .

The hybrid still, also portable and user-friendly, helps provide potable water to rural communities, especially those on the coasts, mountains, and other remote areas with limited access to drinking water. Just like the other hybrid device, it is also environmentally sound and cost effective.

DOST scholars will help achieve a smarter Philippines -Sec. Mario Montejo

By ALLAN ACE ACLAN
S & T Media Service, *DOST-STII*

A number of this year's science and technology scholars gathered at the Department of Science and Technology for a ceremonial presentation to Secretary Mario G. Montejo (middle)recently at the Executive Lounge in the DOST Compound.Some 3,597 high school students qualified for the DOST-Science Education Institute Undergraduate Scholarshipfor the incoming schoolyear 2013-2014, an increase of 7.1 percent from last year's qualifiers. Known as R.A. 7687, the Science and Technology Scholarship Act of 1994 aims to promote the development of the country's science and technology human resources in line with economic development and to provide the capability required in the areas of research, development, innovation. At Sec. Montejo's left side is DOST Usec. Carol M. Yorobe, SEI Dir. FilmaBrawner, and UP Professor Salvador Caoili. At Sec. Montejo's right isAsec. Oswaldo Santos.(S&T Media Service)

DOST Sec. Mario G. Montejo said that this year's huge number of qualifiers is proof of the government's growing commitment to science and technology.

"We are optimistic that these future big players will help us in creating S&T-based solutions for us to achieve a 'smarter' Philippines," he said.

Sec.Montejo advised the students to work for their motherland in the future. "People who are from the S&T sector are the ones who can prove that local technology really works," he said ."Sa pamamagitan ng S&T, magagawa natin putulin ang sarili mula sa foreign dependency," he added. (Through S&T, we can pull ourselves out of foreign dependency).

As the next generation of game changers, Montejo urged the scholars to use research development principles to produce more mass transit systems like the AGT in UP and other possible industries to create more value in the country.

"To look for a world class solution is to resolve our local problem," he emphasized.

According to DOST-SEI, the number of municipalities with qualifiers also increased to 1,107 this year compared with 975 in 2012. From the total number of 2013 passers, 3,089 belong to economically disadvantaged families who qualified under RA 7687 Scholarship grants, while 508 students qualified for the DOST-SEI Merit Scholarship Program.

The qualifiers from the National Capital Region, about 10 percent of the total, were at the ceremony.

Meanwhile, SEI Director Filma G. Brawner believes that the country will be able to produce more S&T professionals through the implementation of various innovative strategies in developing human resources along with the different scholarship programs of the Institute.

"I believe that through the different scholarship programs of DOST-SEI, we are slowly inching towards meeting the ideal number of scientists and engineers per million population as well as in reaching our vision of a scientifically-equipped society," Brawner said."We are really pushing more graduates from a non progressive province."

One of the highlights of the ceremony was when Dr.Salvador Caoili, a past scholar, took to the podium to talk to the students about the essence of being an"S&T servant." Dr. Caoili, a DOST-SEI scholar in 1989, is currently an associate professor of the University of the Philippines-Manila College of Medicine. He graduated summa cum laude from UP with a Bachelor of Science in Molecular Biology.

Dr. Caoili stressed that scientists are not an elite group. "We need to reach out to the people and tell them that S&T is not an alien thing," he said.

The younger generation has the responsibility to link up science and technology in many aspects of life, according to Caoili. "Science is not distinct from culture. Science is already stimulated from the time we were born."

The DOST-SEI Undergraduate Scholarship Program is DOST's response to its mandate of accelerating the pace of knowledge-driven development in accordance with the S&T human resource growth potential in the country.

Moreover, SEI is now announcing the 2014 S&T Undergraduate Scholarships. Application forms can be obtained at SEI or can be downloaded at its website, www.sei.dost.gov.ph and www.science-scholarships.ph. Deadline for filing of application and requirements is on August 23, 2013. The nationwide scholarship examination will be on September 22, 2013.

Soon for serving: World-class tapuy

By DEL-DELICAGOTIS
S&T Media Service, *DOST-CAR*

As part of DOST-ITDI's continuing quest to help improve the competitiveness of the local industries, ITDI-based experts finally standardized the process of making good quality bubod, the secret behind great-tastingtapuy.

Tapuy, a local rice wine very popular in the Cordillera Province may soon sit side-by-side withJapanesesake, Malaysian tapai, Chinese chaochingchu, and the likes in international wine cellars. This international market prospect is made clearer by researchers at the Department of Science and Technology's Industrial Technology Development Institute (DOST-ITDI) who found the key to better quality tapuy by improving the process of producing the starter.

The exquisite taste of tapuyoozes from bubod, a wine starterthat can consistently produce quality tapuy with improved yield and appealing taste.

Tapuy is prepared by fermenting glutinous rice using bubod. After fermentation, the glutinous rice becomes soft, with liquid forming on top of the mixture. This liquid istapuy, known for its acidic but sweet alcoholic flavor and a pleasant aroma.

The secret behind making goodtapuyis good quality bubod.As part of DOST-ITDI's continuing quest to help improve the competitiveness of the local industries, ITDI-based experts finally standardized the process of making good quality bubod.

Traditionally, bubod comes in the form of flattened and rounded balls of various sizes and are compact and dry.

According to Michelle Evaristo,Science Research Specialist II atITDI's Food Processing Division and also the project leader, the improved bubod is made from powdered NFA rice and cassava flour,both cheaper than the traditionally used glutinous rice.

The researchers mix pure cultures of the mold calledRhizopusoryzae and the yeast Saccharomyces cerevisiae to the rice-flour. Then they add water, form it into dough, granulate the mixture, and then incubate it to allow the growth of organisms.

The dough is oven-dried until the moisture content dips to 9-12 percent. The mold produces enzymes that will breakdown the starch into simple sugars, which will then be used by the yeast to produce alcohol.

"What makes this newly improved bubod different from the traditional one is that it is now granular in form, allowing more surface area for faster drying, as well as making organisms grow better," Evaristo emphasized. Hence, incubation takes only overnight instead of the traditional 48 hours. Growth of more beneficial organisms is also achieved using the granular form resulting to a pure culture that gives better quality wine. "All in all, this developed bubodhas good microbial quality andis quicker to prepare," she said. The bubodalso increased rice wine yieldwith higher alcohol content.

In terms of shelf life, she said that the bubod can last up to 12 months and still be capable of producing good quality rice wine.

"And with the improved bubod's good performance, starting this month, we are working on standardizing the whole process of rice wine production and we are now conducting upscale trial production and further evaluation,"she told.

This innovation has also solved a lot of problems encountered by tapuyproducers, such as short shelf life, low yield, higher production cost, adulteration, inconsistency in the quality of bubod, and packaging-related problems, she added.

DOST-CAR (Cordillera Autonomous Region) with ITCI are currently poised for a dry run in preparation for the eventual commercialization of the technology. (Del-DelicaGotis, April 18, 2013)

ANNOUNCING ADMATEL

Affordable quality testing services now "in our own backyard"

By ALLAN ACE ACLAN &
JOY M. LAZCANO
S& T Media Service, *DOST-STII*

"Without a doubt, this facility will pull our semiconductor industry up the value chain, and move them closer to their target of becoming a 50-billion dollar industry by 2016."

With these words, President Benigno Simeon Aquino III wrapped up the benefits of ADMATEL, or the Advanced Device and Materials Testing Laboratory, the Philippines' first testing facility expected to enable scientists to create more globally competitive products, attract more foreign investors, and fuel the industry to achieve world-class status.

The ADMATEL is expected to set to step up the country's semiconductor industry. Currently, the industry only engages in product assembly, capturing only 10 percent of the world market which earned $30 billion in 2011.

Pres. Aquino revealed his foresight for ADMATEL during the lab's recent grand launch at the Department of Science and Technology (DOST) in Taguig City. DOST developed the state-of-the-art laboratory with funding from its attached agency, the Philippine Council for Industry, Energy and Emerging Technology Research and Development.

"Now that this lab is fully operational, companies here will not have to send their products for failure analysis to the United States or Singapore. They can do it here in their own backyard, with the tests conducted by our very own scientists," Pres. Aquino said.

Among ADMATEL's various advanced equipment are the Focus Ion Beam-Field Emission Scanning Electron Microscope which exposes defects in the Integrated Circuit, the Scanning Electron Microscope with Energy Dispersive X-ray which is a high -resolution imaging tool that can perform chemical characterization of a sample, the Auger Electron Spectrometer which analyzes the surface composition of a material, and the Time of Flight Secondary Ion Mass Spectrometer which analyzes the composition of solid surfaces.

With ADMATEL's affordable quality testing services, semiconductor companies will now be able to save money otherwise spent on sending parts and samples abroad for testing. Based on the study of the Semiconductor Electronics Industry of the Philippines, Philippine semiconductor companies spend $9 million to $18 million annually for testing abroad.

At the same time, ADMATEL will reduce turnaround time, or process cycles, from one month to just four days which allows it to assist companies in the semiconductor and electronics manufacturing industries to enhance their productivity, improve their product quality and service, increase the number of offered products and technologies, and earn more profits.

The lab also houses conference rooms, lecture rooms, and dormitories. Because of its foreseen vital role in the industry, the laboratory is designed to be flood resistant to secure important materials.

President Aquino assured the industry of government's commitment to help the industry expand its value chain from mere assembly to include design and testing components in manufacturing. Further, Aquino noted DOST's current collaboration with the Philippine Product Development Center, a move seen to beef up the industry's testing and prototyping capabilities.

Meanwhile, DOST Sec. Mario Montejo looked forward to making the Philippines more competitive among international players. That the President himself inaugurated the facility "shows his acknowledgement of DOST's efforts to leverage science and technology for national economic development," he said.

Further, Aquino noted on the "inherent skills and talents of Filipino scientists" who were able to put up the world-class facility without cutting corners and in full compliance with all government regulations and procedures.

Earlier, Semiconductor and Electronics Industry in the Philippines Inc. (SEIPI) President Dan Lachica acknowledged DOST's efforts in upgrading the industry through ADMATEL's sophisticated testing equipment for failure analysis, making thesefacilities available in the country.

He said that ADMATEL will help the industry become more competitive by providing a world-class analytical testing laboratory accessible to local industry players, which will cut down testing costs and product turnaround time.

Lachica added that ADMATEL's state-of-the-art facilities surpass the quality of test equipment abroad.

Before the launch, ADMATEL already provided failure analysis services to STMicroelectronics, a world leader in semiconductor solutions for high- profile electronics companies. Particularly tested was a key electronic chip component designed by the firm for a high-end smartphone produced by one of the world's largest information technology companies.

According to Antonio Villaflor, head of STMicroelectronics, they brought the electronic chip for ADMATEL's analysis when a problem arose at the start of the chip's product life cycle. The problem was basically on the palladium- and nickel-coated copper wiresthat would not connect into its pod, he revealed. Through failure analysis, it was found that the electronic chip's palladium was not thick enough.

"You don't discover that by making guess work. You'll discover that by coming over here (ADMATEL) and utilizing the TOF SIMS in order to determine how much precisely [is] the palladium on top of the surface to the level of nanometers," remarked Dr. Villaflor.

Time-of-Flight Secondary Ion Mass Spectrometer, orTOF SIMS, is a surface analytical tool capable of detecting molecular and elemental components of a sample. It is one of ADMATEL's top-flight equipment.

After spotting this flaw and correcting the problem, Villaflor revealed that the company has since ramped up its production to 250 kilo pieces per day. "With ADMATEL, we already have a success story as early as the first quarter," Villaflor stated.

Ready, set, go!

Poising PH for game development industry

By ALLAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

The Department of Science and Technology-Information and Communications Technology Office, together with Information Technology Business Process Association of the Philippines (IBPAP) and local ICT councils are set to conduct a series of roadshows featuring career talks. One of the objectives is to introduce the other fields of the Information Technology Business Process Management (formerly known as Business Process Outsourcing) industry which, aside from the already popular call centers, has other services that offer career opportunities, including game development. (Photo courtesy of DOST-ICTO)

THE DEPARTMENT of Science and Technology - Information and Communications Technology Office (DOST-ICTO) and its industry partners are exploring all avenues to drive the Philippines into the league of top providers of game developers in the world in the following years.

To achieve this, DOST-ICTO has been pushing buttons to start and sustain several programs to attract the youth and enhance their skills to several levels, as well as to map out appropriate strategies to attract stakeholders to invest in establishing game development companies in rural areas. If done, the U$50-million outsourced projects in 2012 could be surpassed this year, according DOST-ICTO deputy executive director Monchito Ibrahim.

"With an estimated 4,000 workers that are currently in the industry, the Game Development Association of the Philippines (GDAP) is targeting to increase this number to 10,000 by 2015 and hopes to reach 15,000 workers in three years," Ibrahim said.

Together with various local ICT councils, DOST-ICTO will be scheduling series of road shows within the year to promote the IT-BPO industry. One of the objectives is to introduce the other fields of the Information Technology Business Process Management (formerly known as Business Process Outsourcing) industry which, aside from the already popular call centers, has other services that can offer career opportunities, including game development among others.

Through career talks, speakers from the industry share their knowledge and experience on the industry, including several career options for aspiring game developers. Also featured in the DOST-ICTO series of road shows are the exhibits of several games and mobile applications made by Filipinos.

Ibrahim said that the activities are designed to encourage the youth, especially high school students to take IT and other computer-related courses, and present to them the wealth of opportunities available in this industry. Some jobs offered at a game development company include programmer/developer, game producer, QA analyst/tester, game designer, artist (2D/3D0, animator/rigger, art producer, sound engineer and game manager/community support.

Moreover, to empower the talent pool of the country in this industry, DOST-ICTO and various partners will be offering free trainings for selected aspiring game developers. One of the upcoming efforts is a collaboration with the University of the Philippines-Information Technology Training Center to conduct a four-month training program for selected game developer wanna-bes. After finishing this training, participants will be required to render their services in DOST-ICTO and in different game development companies.

Aside from this initiattive, DOST-ICTO and its Region 9 office, in cooperation with Zamboanga ICT Council, will also be conducting training workshop on Object Oriented Programming (OOP) and Mobile Application Development for Android Phone Devices for 30 selected I.T graduates from Zamboanga City. This training aims to open career opportunities for aspiring Zamboanga City-based game and mobile application developers.

Ibrahim said that after the said trainings, they are planning to build start-up companies for game and mobile applications so that the companies located outside Zamboanga City can still tap the services of local talents.

"For example, companies based in Metro Manila could send specific projects to local start-up companies in Zamboanga City to develop mobile applications and then turn the project around to Metro Manila after completion for distribution to bigger markets," Ibrahim explained.

Skills required by Game Development Industry

According to Ibrahim, game development companies are looking for individuals who have great awareness of games and game dynamics, as well as knowledge of game platforms. He said that those who are excellent in physics and math, and have effective communication skills have big advantage in the field. He also emphasized that even individuals who are not into IT or "techies" are welcome in the industry.

For example, a non-technical person may be involved in game design in which writing and creativity skills are needed, such as in the aspect of creating a story board for the whole game and in the design of characters' features, Ibrahim added.

IBM Blue Gene

Beefing up disaster preparedness, genomics research in PH

By GEORGE ROBERT E. VALENCIA III
S&T Media Service, *DOST-STII*

The Blue Gene, considered as one of the fastest and most powerful computers in the world and developed by the IT-giant IBM, is set to revolutionize the weather early warning systems as well as genomics research in the country. A milestone in Department of Science and Technology's long-term partnership with IBM in driving the country's efforts in research and development (R&D), the arrival of the Blue Gene by the last quarter of 2013 puts the country in the map being the first in South East Asia to acquire IBM's million-dollar supercomputer.

The DOST-IBM tie-up was formally brokered in May 2012 through the signing of a Memorandum of Agreement to set up a permanent R&D laboratory.

"The Blue Gene supercomputer opens many doors for the country and reduces our uncertainty (in R&D). Our vision for a Smarter Philippines needs breakthrough instruments as this (Blue Gene supercomputer) to propel us toward advancement," said DOST Secretary Mario G. Montejo.

Blue Gene would enable local scientists to perform very complex calculations that are otherwise impossible without the aid of said equipment. According to Sec. Montejo, high performance computing machines like the Blue Gene are indispensable in advanced S&T areas requiring high technical and scientific calculations. DOST's Blue Gene will thus be used for weather and climate modeling, and genomics which is the study of living organisms' whole set of genes.

"Aside from greatly enhancing our climate change scenarios or modeling, we can make more accurate area-specific weather forecasts and extend our prediction from three days to up to seven days with the help of the IBM Blue Gene," declared the DOST Chief.

In the area of genomics, the supercomputer will facilitate the analysis and management of data, and provide computational requirements for the recently established Philippine Genome Center, which seeks to explore areas for genomic applications – from varietal improvement of crops, livestock, and other raw materials, to drug discovery and development of advanced, personalized medicines and diagnostic tests, among others.

Meanwhile, IBM executives also reported that Blue Gene's configuration at 13.9 tera FLOPS (floating point operations per second) enables it to process massive data, aside from possessing amazing hardware capabilities, memory, and processing speed.

"Basically, for a week's forecast, one can render similar massive data in a multi-core computer and spend weeks and still not finish it. With a supercomputer, it will be much faster than that," explained Dr. Delfin Jay Sabido IX, IBM research and development executive.

Meanwhile, IBM Senior Vice President Tom Rosamila revealed that the equipment costs over a million dollars but DOST acquired it for just $10 thousand for shipment. "IBM is truly one with DOST to uplift the country's R&D status," the IBM executive said.

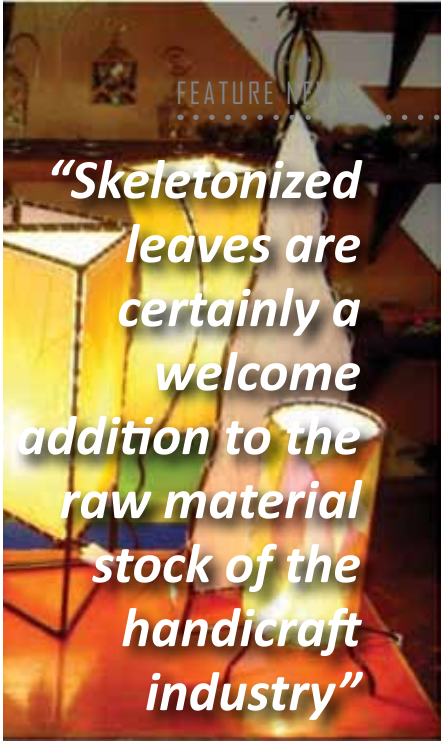
The supercomputer's applicability is not limited to just climate modeling and genomics. Other possibilities are being considered by the R&D teams of both DOST and IBM in order to produce more benefits for the country.

The supercomputer is also not exclusive to DOST, said DOST R&D Undersecretary Dr. Amelia P. Guevara. "Other government entities may use it [Blue Gene] for their R&D activities," she said.

Skeletonized leaves

New technique colors PH handicraft industry

By RIZALINA K. ARARAL AND APPLE JEAN C. MARTIN
S&T Media Service, *DOST-FPRDI*



Starting in the late 1990s, the arresting beauty of skeletonized leaves has captured the imagination of local handicraft artists and clients. The items have become a popular material for accenting stationery, packaging, lighting fixtures, furniture and all sorts of decorative and novelty products.

The efforts of the Department of Science and Technology's Forest Products Research and Development Institute (DOST-FPRDI) have been a big help in popularizing skeletonized leaves. Over the last decade, the Institute has trained around 1,500 people nationwide on a new method of leaf skeletonizing. Up close, the leaf skeleton is made up of a complex of very fine veins, the intricate patterns of which rival those of expensive laces.

FPRDI's modified technique

Says Mr. Cesar O. Austria, Senior Science Research Specialist of DOST-FPRDI's Technical Services Division, "Using the old technique, heavily-veined leaves are skeletonized by soaking them in cold water for three to five weeks or burying them in mud until their fleshy pulp has dissolved and only the veins remain."

"FPRDI modified this procedure and came up with a faster, easier version. One simply boils fresh leaves in caustic soda solution until the soft tissues are dissolved and only the skeletons remain. These are then bleached to remove their natural color and then prepared for dyeing."

Salay Handmade Paper Industries, Inc. (SHAPII), one of the country's top exporters of handmade paper products, uses leaf skeletons to decorate their greeting cards, fans, frames, notebooks and boxes. SHAPII is a multi-awarded company that ships its products to major markets in the US and Europe. It is known for its eco-friendly practices and for providing jobs to many men and women in the town of Salay in Misamis Oriental, according to Austria.

"Skeletonized leaves are certainly a welcome addition to the raw material stock of the handicraft industry and DOST-FPRDI is happy to have helped the many small and very small shops all over the country which now make them using the newer technique," observes Austria.

Smokey Mountain-based coop training

One group to benefit from this new technique is a cooperative located in what used to be the country's biggest, most notorious landfill. This place called Smokey Mountain, once reeking with garbage odor, is now bursting with the enthusiasm of its handicraft-making folks.

Called the Sambayanan ng Muling Pagkabuhay Cooperative, this group was recently trained by FPRDI's Cesar O. Austria and Teresita B. Cosico, Senior Science Research Specialist and Training Coordinator, respectively, at FPRDI's Technical Services Division. "The group makes and sells woven bags, boxes and fashion jewelry from recycled papers. Exploring ways to improve their products, they wanted to try skeletonized leaves as accents for their handicrafts," informed Cosico.

"With the FPRDI-modified process, skeletonizing has become faster and easier," quipped Austria. "One simply boils fresh leaves in caustic soda solution until the soft tissues are dissolved and only the skeletons remain. The skeletons are then bleached to remove their natural color and prepare them for dyeing."

Eighteen participants, who were mostly mothers and students, were trained using some plant species abundant in their area, namely guyabano, bo tree and alibangbang.

"Skeletonized leaves are definitely promising raw materials for the Cooperative's handicraft products. Abundant and renewable, these leaves possess distinct shapes, sizes, and textures that make them great accents to handicraft items," concluded Austria.

PH thrives in handicraft industry

Worldwide, the country continues to be a leader in handicraft production. According to Mr. Dennis Orlina of the Philippine Chamber of Handicraft Industries, Inc. (PCHI), our exporters plan to tap new markets in South America, Africa, Russia and Vietnam as they aim for a 10-percent growth in shipments this year. Last year, Philippine handicraft exports were estimated to have reached US$130 million.

For those interested in the new technique of producing skeletonized leaves may contact DOST-FPRDI at 63 495362360 (telephone) or 63 495363630 (telefax) or email fprdi@dost.gov.ph.

Skeletonized leaves and other handicrafts that have improved quality due to DOST's technology intervention will be on exhibit during the National Science and Technology Week, 23-27 July 2013 at the SMX Convention Center. Also called the "ExpoScience 2013", the NSTW will feature various fora, technology demonstrations, quiz shows and other exciting events for everyone. Entrance is free and most of the events are open to the general public.

Flash for Success

DOST scholar finds niche in RFID tech

By LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

When most graduates make seemingly endless rounds in business districts or endure long lines in job fairs in hopes of landing their dream jobs, Deogracias "Gary" P. Villame took the road less taken.

Fortunately, it led him to become Chief Executive Officer of a tech company.

A graduate of Electronics and Communications Engineering from University of the Philippines Diliman, Villame and his former classmates founded Itemhound, a tech start-up company that provides sports timing solutions to running and motor racing events through the use of Radio Frequency Identification (RFID) hardware and applications.

Challenging headstart

Interestingly, the successful start-up company began as just a college thesis of Villame and his thesis mates John Paulo Adaoag, Roy Flores, Mark Gil Manalansang and Joe Cris Molina in 2006.

Seeing the study's potential, their thesis adviser, Dr. Joel Joseph Marciano Jr. encouraged them to join Philippine Emerging Start-ups Open, a business plan competition organized by Ayala Foundation. They won the competition and saw the prospect of creating their very own company. However, even with the prize money of Php 100,000, they felt that they were not ready yet. "Parang di pa naming kayang pangatawanan (We were not ready to handle it yet)," Villame recalled.

Soon after graduation, Villame, Adaoag, Flores, and Manalansang pursued graduate studies in UP as scholars of Engineering Research and Development for Technology, a program of Department of Science and Technology. Molina, on the other hand, went abroad to work.

Meanwhile, the start-up plan took a backseat; but they never totally gave up on the idea.

Until the year 2009 when the four, who were still pursuing their graduate studies, were asked by UP to do a study for a big company on RFID applications. They took on the project and this made them realize that the time was ripe for their start-up company. Molina, then still working abroad, also welcomed the idea.

Soon, they pooled whatever they had saved from their stipends and other sources and made their first tough decision. In January 2010, Itemhound was formally incorporated.

"Hindi na drowing to, hindi na puro laway lang (This is reality, not just pure rhetoric)," Villame mused, referring to the competition they won a few years back.

Overcoming the hurdles

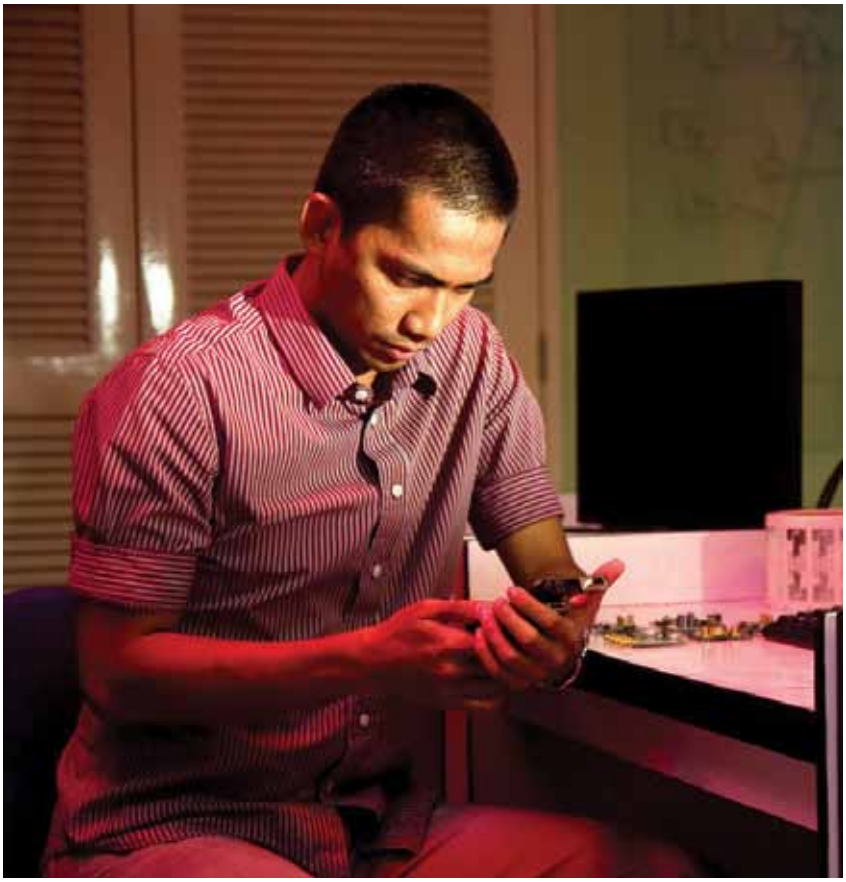
But like most ventures, starting up can be an uphill race.

Their biggest hurdle was penetrating the market. Villame revealed that even the company that commissioned them to do a study never became their client. Wooing a big company when they were just starting out did not come easy for them.

Deogracias "Gary" P. Villame, (3rd from right), with Itemhound co-founders. (From left) John Paulo J. Adaoag, Tyrone W. Tai, Joel Joseph S. Marciano Jr., Roy R. Flores, and Mark Gil F. Manalangsang.

They also had to contend with being cash-strapped. "For the first nine months we practically did not have any revenue," Villame recounted.

In the end, they figured that they needed to identify a market that is easier to penetrate. That period saw the growing popularity of fun runs, marathons, and other racing events. Villame and his team saw it as a big



Gary P. Villame (left) is with a participant in a sport-event handled by Itemhound.

opportunity. They also found it easier to relate to the sporting community because of its less formal atmosphere.

In the last quarter of 2010, they had their first big break. Itemhound finally had its first client.

Racing towards success

Since then, the company has been on a dash in handling the timing of various running and motor racing events as it continued to develop its own timing products.

One of these is the Strider® system which can be used in both high volume races such as marathons and small fun runs alike. The company was also the first to introduce paper-based timing tags in 2010 which have made it possible to provide more affordable timing to larger races without sacrificing accuracy. Strider® has figured in big running events in the country such as NatGeo Earth Day Run 2013, Alaska Iron Kids Philippines, Columbia Eco Trail Run, Merrel Adventure Run among others.

For motor sports, Itemhound has developed Racer®, a race timing system designed for closed-circuit motor racing that uses economical reusable timing tags. Racer® has been the official timing system of the Yamaha MotoGP series for three consecutive years and was the official timing partner of the Yamaha ASEAN Cup 2012.

Lessons learned as local technopreneurs

The first lesson they learned: "You need to be flexible. Your original plan might not work out so you need to be agile, to adapt," Villame said.

As the CEO, Villame also has to deal with a lot of stress to make sure the company is able to stand the pace. "Many people depend on you, not only in terms of money. I don't only look after my own career development but also that of my colleagues. When things get hard I have to help boost their morale."

In spite of the difficulty of establishing and keeping a start-up firm afloat, this self-made technopreneur is not giving up. "There's something fulfilling in creating your own products, in creating your own business."

He added, "Kagaya ng laging sinasabi ng DOST, kailangan natin ng entrepreneurs. Ang laki ng natutulong. Ang laki ng multiplyer effect. Malaking fulfillment din sa amin na nakakapagbigay kami ng trabaho (As what the Department of Science and Technology or DOST always says, we need entrepreneurs. They are very useful. They create a huge multiplier effect. The fact that we provide employment also makes us fulfilled),"

In retrospect, he never really found it attractive to work abroad or even in the local industry after hefinished his graduate studies. "I was very exposed to entrepreneurship because my father is an entrepreneur. Entrepreneurship was my first choice for my career path; but, if I did not end up as an entrepreneur, I would probably teach or work in the government," he said.

For those who are considering the technopreneurship track, here is his advice: *"Expect that you will do a lot of mistakes; but you don't have to beat yourself over them. What is important is that you learn from them fast. For me, it is not a good sign if you're not making mistakes anymore; because it means that you're not trying hard enough."*

Dr. Maria Stephanie Fay Cagayan:
Doctor, guru, and sister to her patients

By ANGELICA A. DE LEON
S&T Media Service, *DOST-STII*

TROPANG TROPHO SISTERHOOD. Dr. Maria Stephanie Fay Cagayan (front row, middle) in a wacky pose with her patients, their families and relatives, and caregivers. Also with them is Dr. Divina Gracia Arellano (front row, second from left).

If Hollywood has a Sisterhood of the Traveling Pants, some female patients at the Philippine General Hospital (PGH) boast of their own brand of sisterhood.

They call themselves "TropangTropho." The term "tropho" refers to their common condition: Gestational Trophoblastic Disease (GTD) – a rare condition associated with abnormal pregnancy.

"The average stay of GTD patients here is three months. Some stay for as long as one year. That's alright, as long as they go home cured and well," stated their doctor, Dr. Maria Stephanie Fay Cagayan.

The slight, funny, yet no-nonsense lady is a 2009 Outstanding Young Scientist awardee of NAST. She earned the nod of the academicians for her "pioneering studies on gestational trophoblastic disease(GTD) among women in the reproductive age group [and] for her publications that have helped put the Philippines on the international map regarding GTD and its management."

According to her, the ones who lose their battle with the illness are those with acute condition or whose illness has resulted in complications.

Thus, TropangTropho is their support group for one another. Lending them a helping hand are a nun and a social worker for their spiritual well-being.

"They have activities to uplift their spirit since they practically live here already. They also have communion every Sunday," related Dr. Cagayan whose researcheswere published in the international journal Journal of Reproductive Medicine.

The ABCs of GTD

But first, what is GTD?

It is characterized by the growth of pregnancy-related tumors which cause bleeding. The cells forming these tumors originate from the tissue which form the placenta. It may be genetic or a poor reproductive outcome. But nutrition also plays a role with protein and calcium deficiency possibly leading to the disease.

There are two types of GTD: hydatidiform mole (H. Mole),which is benign, and gestational trophoblastic neoplasia (GTN), which is cancerous.

H. mole is a poor reproductive outcome. "For example, you had a miscarriage due to blighted ovum. Treatment consists of removal of the abnormal product of conception. If the woman is older and would not want to have children anymore, the uterus will also be removed," the doctor explained.

She added that while fetal development is absent in H. Mole, there is fetal development inside the uterus in the case of partial H. mole, making it an abnormal type of pregnancy. The tissue may develop and grow at the same rate as a fetus in a normal pregnancy. However, thisfetus will eventually die.

On the other hand, GTN could be either choriocarcinoma or invasive mole.

In choriocarcinoma, abnormal cell start growing inside the tissue which will eventually developsintothe placenta.Onthe other hand, Invasive Mole is characterized by Partial H. Mole or Complete H. Mole, invading the uterine wall and may spread and metastasize to other parts of the body.

From the uterus, GTN may spread into the pelvic area, the lungs, and other organs in the body. It is only after the removal of the uterus or tumor biopsy that patients will learn if they have choriocarcinoma or invasive mole.

Though H. Mole is in most casesbenigh, it may also develop into invasive mole or even choriocarcinoma which is very sensitive to chemotherapy and has a good prognosis. Half of Dr. Cagayan's GTN patients at PGH used to suffer from H. Mole.

However, if detected early, GTD in whatever stage can still be cured, according to Dr. Cagayan, owing to the availability of numerous medicines which, when combined together for chemotherapy, increase its effectiveness. With chemotherapy, there is almost100 percent possibility of getting cured. Plus,

a woman can get pregnant again two or more years after chemo treatment.

"We haven't encountered any complications in this case," Dr. Cagayan revealed.

Genetics and nutrition play a role

The onset of GTD is seen mostly in women from the marginalized sector since the condition is associated with lack of nutrition. At PGH, most GTD patients come from the most impoverished parts of the Philippines, like Quezon, Laguna, Bicol, and Mindanao.

This is where the problem sets in. Dr. Cagayan is only one among a handful of doctors specializing in this rare women's disease in the Philippines, and they are mostly in Manila. This is why hospitals in the provinces have to refer patients to Manila hospitals such as PGH because the specialists are right here.

Aside from the lack of specialists, financing is another problem. Apart from expenses connected with the operation and chemotherapy treatment, patients also need to spend for antibiotics, laboratory expenses, vitamins, and others.

"Otherwise, complications will increase. There will be bleeding from the lungs, from the uterus. There will be haemorrhage and the money will just go to the management of these complications," Dr. Cagayan stressed.

To make matters worse, healthcare services in the Philippines are an "out-of-pocket" expense, unlike in the United States or United Kingdom where healthcare is subsidized by the government. She added however that the Philippine Charity Sweepstakes Office (PCSO), and some private and public donors have been of great help.

Another problem is the issue of underreporting. "There is still lack of documentation – there are patients who bleed, and die, and the cause is not known," said Dr. Cagayan. "Our National Registry should be improved. All physicians should be required to report all cases to the National Registry including outcome, what you give to the patient, what happened to them, so that years from now, they can still keep track of the patients and be informed whether he's still in remission or what," she suggested.

"All physicians should be required to report all cases to the National Registry including outcome, what you give to the patient, what happened to them, so that years from now, they can still keep track of the patients and be informed whether he's still in remission or what."

- Dr. Maria Stephanie Fay Cagayan

Studies, research and childbirth program

Awareness about GTD is also another story. "In our country, it's hard to undertake molecular research (research into processes inside the cell) because of lack of funding," said the doctor. She explained that funds are hard to come by because there are a few cases of GTD in the country, hence, it is not a priority since it is not a public health concern.

"They would rather fund researches on HIV, infectious diseases, cervical and breast cancer, and the like," she revealed.

Dr. Cagayan shared that her earlier studies were epidemiologic in nature. She elaborated, "Basically they answer questions like 'how many cases are there in the country, what is the profile of these patients, what are the complications, how many are responsive to single agent chemo and to multiple agent chemo, what are the prognosis,?'"

She also didpsycho-social studies to determine GTD's psychological effects on the patient and to discuss the lack of interest in sex as an effect of chemotherapy – important topics which are not being given proper attention in the country.

Another thing that occupies her time is a study on complementary and alternative medicine in themanagement of trophoblastic disease.

Next on her drawing board are "psycho-genetic studies on a basic molecular level" and additional research about different combinations of agents or medications which may be given to patients who are not responsive to chemotherapy.

Sheis also a wellness guru, having established a childbirth program where she teaches medical health officers, barangay health officers, and midwives, about proper nutrition and proper body care for an easy and pleasant pregnancy. "Now we have collaborations with international societies and with my colleagues in other parts of the world," she said.

In connection with this advocacy, Dr. Cagayan developed "sayuntis" – or sayawngbuntis (dance of the pregnant) – which is basically belly dancing. "Belly dance is good exercise for pregnant women because it prepares them for labor," she elucidated.

Meanwhile, the Philippine Society for the Study of Trophoblastic Diseases, of which she is a member, travels all over the archipelago to make other doctors aware of the disease. In addition, the society conducts training programs for doctors sent to Manila by medical institutions in the province. "When they go home, they have acquired new skills to better serve the patients in their area. So therefore, their hospital does not have to refer patients to Manila," she reasoned.

Some kind of sisterhood

When we met Dr. Cagayan at PGH, she immediately led us to her patients. She introduced us and explained to them our group's purpose. And as she talked, she spiced our conversations with jokes and anecdotes about the patients, sending everyone inside the room into laughter.

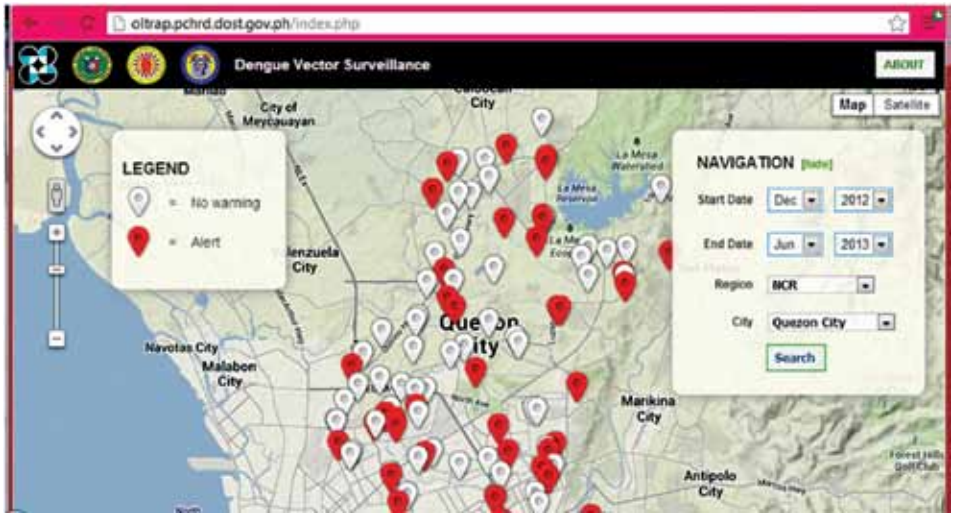
"Ate, gusto niyoyatanglumabasyansa Facebook eh o sa You Tube (Sister, I think you just want that to come out in Facebook or You Tube)," she teased as her patients were having their pictures taken.

They may be in a difficult stage in their lives right now. But they do have each other. Plus,their doctor's cheerfulness and positive vibes complete the essence of TropangTropho– truly a wonderful kind of sisterhood.

DENGUE ALERT ONLINE

Monitoring the Mosquito

By Luisa S. Lumioan and Framelia V. Anonas
S&T Media Service, DOST-STII



THE DEPARTMENT of Science and Technology (DOST) launched a website that provides information on mosquito population per community, a move that will help curb dengue cases in the country. Through the website, health workers can monitor possible dengue sites and recommend interventions to local government officials.

Called the Dengue Vector Surveillance website, the site carries information on mosquito population nationwide, as well as dengue incidence and other mosquito-related facts. Vector refers to an organism, in this case the Aedes aegypti mosquito, that carries disease-causing microorganisms such as the dengue virus from one host to another.

The launch, held June 20, 2013 at the La Breza Hotel in Quezon City, was on livestream at www.science.ph. Before the launch, Science Secretary Mario Montejo, Education Secretary Armin Luistro, and Health Secretary Enrique Ona will install Ovicidal-Larvicidal (OL) Traps at the Kamuning Elementary School to formally set off the interagency collaborative anti-dengue program which includes the said website, among others.

Dengue mosquito population map

Developed by DOST- Philippine Council for Health Research and Development (PCHRD), the dengue alert website features a ma p with red and white balloons. Red balloons indicate "alert" which means that the population density of dengue-carrying mosquitoes in a certain area is too much and interventions are needed promptly. Meanwhile, white balloons dotting certain areas mean that the population of the dengue-carrying mosquito is too sparse, or none at all, to cause any dengue incident.

Mosquito population is monitored by schools where OL Traps are installed. The OL trap, developed by DOST-Industrial Technology Development Institute, is a simple, affordable, and efficient tool for controlling mosquito population. An OL trap kit consists of a black container, a lawanit paddle where mosquitoes lay their eggs, and a pack of pellets used to make a solution that kills the eggs and larvae of mosquitoes.

The school-based monitors check on the traps weekly and report to DOST the number of traps that contain mosquito eggs and larvae. The monitors used to do their weekly reports manually by tediously filling up forms. But now the monitors just text their reports which are then automatically encoded to the website.

Navigating the dengue alert website

There are two ways to find out the mosquito density in an area through the website. One way is to hover the mouse over the map and locate the area manually. A balloon will pop out with the name and address of the school, along with dengue status and recommended interventions. Clicking on the school name would yield the line graph showing the indices –or population density—on certain dates. A quick glance on the line direction would show the rise and fall of mosquito population over a certain period. This highly visual indicator can be easily understood, especially by common folks and community leaders, and be used as basis for appropriate action.

Another way is to click on the navigation window with the exact location (region and city) and duration.

Through the weekly updates, public health workers can check out trends and recommend actions to be taken by policy makers and community leaders. This function puts the country one step ahead of the dengue menace, the peak season of which occurs during the rainy months.

Way forward

Aside from the text-based reporting, the dengue alert website is now being designed to integrate with the Program NOAH platform. This means that a visit to the NOAH website will not only give location-specific information on weather and flood but also on dengue alert and status. Further, the information on the website is already printable and can thus be mass-produced for various purposes.

DOST developed the monitoring map project in collaboration with the Department of Education, Department of Health, and Department of Interior and local government units. It can be accessed at http://oltrap.pchrd.dost.gov.ph.

Rock the Ridge, Reach the Reef

Science summer camp adventure

By ALLAN ACE ACLAN
S&T Media Service, *DOST-STII*

Over 40 high school students from different provinces had a fun S&T summer at the Department of Science and Technology's Geo –Marine science campheld on April 27 –May 5, 2013 at Puerto Galera, Mindoro Oriental .

With the theme"Rock the Ridge, Reach the Reef", the said summer science camp was organized by DOST's Science and Education Institute (SEI) in cooperation with University of the Philippines-Marine Science Instituteand University of the Philippines –National Institute of Geological Sciences.

Throughout the nine-day exposure, campers attended classes that included problem solving, research, critical thinking and communication skills incorporated with Biology, Meteorology, Geology and Marine Science facilitatedby some UP-MSI and UP-NIGS staff.

Also embedded in the camp were significant activities such as coral reef exposures at Muelle Bay San Antonio Island, trekking, andcommunity interaction in aMangyan village.

The science camp aimed to encourage high school students explore geo and marine sciencesand stress the value of pursuing degrees and careers in these fields while developing skills to achieve success in their chosen fields. At the same time, it aimed to promote the culture of research and its importance in addressing challenges in the environment and society.

Started in 2009, DOST-SEI's science camp had encouragedskilled and gifted students in science and mathematics to consider S&T careers. Science camps held annually focused on various fields of S&T such as biology, mathematics, engineering. Boosted by its successful outcome, the camp extensively trained students from the Philippine Science High School campuses nationwide and selected science high schools in Metro Manila.

Educating the Alpha Generation
Process-induced strategies on board

By ANGELICA A. DE LEON
S&T Media Service, *DOST-STII*

Today's learners, called the Alpha Generation, areproducts of early schoolingprogramsand tutorials,and weaned on advanced information and communication technologies such as the Internet and social media.

These modern environmental factors have helped reshape the psyche of these learners, thus requiring necessary changes in teaching and learning methods.

Thus the National Academy of Science and Technology (NAST), an advisory body of the Department of Science and Technology (DOST), presented several policy recommendations to make education more attuned to the needs and personalities of today's generation of young learners.

"There is no denying that today's generation is very different from the one that we knew several years ago," stated NAST President, Academician William G. Padolina, in his welcome remarks during the "Round Table Discussion (RTD) on Educating the Alpha Generation" recently organized by NAST's Social Sciences Division at the Hyatt Hotel Manila. The RTD drew insights from respected members of the academe who presented the latest trends and research findings on educating Filipino youngsters aged 6-16.

Shiftingto process-induced learning

One of the proposals was to shift from the more traditional teacher-induced learning methodology to process-induced learning or PIL.

The Central Visayan Institute Foundation (CVIF), a secondary school in the remote municipality ofJagna, Boholhas been implementing PIL since 2002 under its Dynamic Learning Program (DLP).

In her talk on "Experiences and Insights on Educating Generation Y and Z: A Springboard for Educating Generation Alpha,"Dr.Ma. Victoria Carpio-Bernido, CVIF principal, said that the school's PIL program is anchored on improving learner disposition among its high school students.

This entails biological conditioning and habit formation activities, among others, according to Dr.Bernido.In CVIF, these are achieved by requiring students to record their activities and learning targets in their Activity Sheets every day.

"This is a daily protocol which serves as internal motivation for the learners. It is habit forming and their brain starts telling them that it's time to learn. This will make them more prepared for the more rigorous work ahead in college," explained Dr.Bernido, a renowned physicist and a 2010 Ramon Magsaysay awardee.

CVIF's parallel classes scheme with limited teacher intervention likewise helps improve learner disposition. This means all sections in each year level are having the same subject periods at the same time. For example, all First Year classes are having Science subjects at the same time in the morning to conform with the students' biological cycles.

In the case of Science being a difficult subject, scheduling the class in the morning would be ideal because at this time of the day, the students still have the physical and mental energy to deal with a complex subject.

During classes, expert teacher intervention is limited to only one-third or one-fourth of the whole subject period. The expert teacher refers to the subject teacher. For the rest of the period, only a facilitator is present. A facilitator could be a teacher of another subject.

"This strategy will give students more time to do independent work on standardized tasks and increase their attentiveness as well," Dr.Bernido remarked. She explained further by saying that by the time the expert teacher comes in and takes over the class, the students will be more eager to listen to her discussion and therefore be more attentive.

Classes in CVIF have no introductory lectures for 70 to 80 percentof the time as well. Instead, independent learning activities – exercises and problem solving tasks, among others – are held immediately. This is opposed to common classroom practice where lectures and class discussions are held for 70 to 80 percent of the time.

The school also implements strategic study-rest periods and prohibits students from bringing home their projects. Homework is also not given in all subjects for all year levels. The reason for this, Dr.Bernido explained, is for the parents to make sure their kids are in bed early, instead of having them in front of their computersand pretending they are doing their assignments and school projects.

"If they are in bed early, they don't have any reason to be sleepy in school. Instead, they will have enough energy for schoolwork the whole day," said Dr.Bernido.

Aside from CVIF, 156 other public schools in Bohol have adopted PIL in their curriculum as well as in various primary and secondary schools in Cagayan de Oro, Zamboanga, Davao, Leyte, and Manila, among others.

More attention on science, math

Aside from addressing the unique needs of Alpha Generation, the program also hopes to achieve a more specific and localized objective: produce more qualified teachers in science, technology, engineering, and mathematics related disciplines

or STEM, and increase the number of students enrolling in these courses.

"STEM have been observed to play a very dominant role in the economic development of countries," said Dr.Bernido. "Government is focusing on these disciplines, but the reality is that there is a decline of qualified teachers as well as a decline in the number of students in these disciplines. So we go back to the question 'Why is there a decline?,'" she elaborated.

One of the reasons, according to experts, is the general perception that these are difficult subjects. "Hence we try to address this through the curriculum that we implemented under the DLP which will improve the learner disposition, combined with a good STEM curriculum," explained Dr.Bernido.

The need for kids to be resilient

Dr.Queena N. Lee-Chua, associate professor of Ateneo de Manila University's Psychology Department,added that children need to build their resilience. "We need to develop them today. They also need at least one positive role. On the other hand, parents should challenge their kids to meet high expectations, find their individual strengths, encourage them, while avoiding hyper or under-parenting."

Equally important, she said, is for parents to set goals with their kids, instead of setting their own goals for their kids without asking the latter about their plans.

"The challenge now is to guide learners situated in diverse local and global conditions to superior levels of performance in disciplines of their choice," said Dr.Bernido.

"Being in the early years of the generation, many of the current trends are unprecedented. If we are expecting a better future, then something must be done in the education system of the Alpha Generation to properly guide the youth in their journey," Padolina declared.

IT'S IN THE GENES

Improving sugarcane yield through genomics research

By LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

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Sugar farmers may smile sweeter now while the sugar industry is about to hit sugar high as the Department of Science and Technology (DOST) and its partners, the Philippine Genome Center (PGC) and other institutions, tap the potentials of genomics to come up with better sugarcane varieties. This is through a research that would help boost the sugar industy and improve the livelihood of 62,000 sugarcane farmers all over the country.

Faster, more effective selection via genomics

Through genomics, scientists in the country aim to produce sugarcane varieties with high sucrose or sugar content, fungal resistance, high tillering and ratooning capabilities. Ratooning is a method of harvesting in which the roots and the lower parts of the plant are left uncut. Out of this stubble, a new crop is grown which matures earlier and gives the same yield.

Scientists also aim to bring down the breeding cycle of sugarcane from seven years, using traditional breeding techniques, to just two years.This is made possible via a method called marker-assisted selection which involves the identification of desirable traits in plants at the early stage of the breeding cycle.

Traditionally, plant breeders select plants based on their visible characteristics. They have to wait for the seedlings to mature to know if these carry the desired characteristics from the parent plants. With marker assisted selection, doing tissue analysis of the seedlings will show whether they contain the desired genes. If not, the breeder can move on to producing other seedlings, thus reducing time and costs in producing a new variety of sugarcane and other plants.

Marker assisted breeding is one application of genomics, or the study of all the genes in an organism and how these genes interact among themselves and the environment.Aside from sugarcane, PGC also aims to identify markers for bunchy top virus-resistant abaca, drought-resistant eggplant, bananas and others important crops in the country.

Set up in 2009 at theUniversity of the Philippines with initial funding from DOST, PGC is stepping up efforts to increase the country's capability in genomic research with its new facilities for researchers: the DNA Sequencing Core Facility and the Bioinformatics Core Facility, a dedicated computing facility for analyzing large data from the DNA sequencing facility.

SWEET SAP

Nipa yields healthy sugar

By VIOLY CONOZA
S&T Media Service, *DOST-ITDI*

POPULAR AS material for *bahaykubo* (Filipino thatched hut) and *tuba* (nipa wine), nipa (*Nypafruticans*) has another emerging important use: healthy sugar.

Food researchers at the Industrial Technology Development Institute (ITDI) of the Department of Science and Technology (DOST) started developing the technology for the production of nipa sap sugar in 2010. The product was already being produced locally, but the research team led by Engr. Norberto Ambagan and Elsa Falco of ITDI's Food Processing Division (FPD) saw the need to improve the current practice in processing nipa sap for sugar.

With funding from the DOST's Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD), the research team conducted a survey among local processors, which confirmed their premise. Field trials followed and preliminary results a 15 percent average yield.

"We introduced some innovations to standardize the process and be able to produce sugar of better quality at a competitive cost," said Falco, the product development lead.

The team adopted two major technology improvements . One improvement was the use of flexible pouches or sterile plastics to collect the sap.

"This is a simple collection system that can be easily adopted by the *mangangari*t or *mananguete* (tuba colletor)," says Engr. MelchorValdecañas, officer-in-charge of the office of the deputy director. "This method also minimizes exposure of the sap to air and contaminants, and allows hygienic collection of sap, " he added.

The use of the pouches does away with the tedious washing of collection vessels after every use to minimize inversion and fermentation of sap, he elaborated.

The second innovation was the use of the processing equipment in cooking the nipa sap to produce the sugar. The collected nipa sap was boiled or cooked using the modified fire-tube-steam-jacketed kettle, replacing the direct heating of open pans traditionally used by processors. With this innovation, scorching during cooking is avoided.

Nipa sugar is classified as an alternative sugar, thus a healthy organic substitute for synthetic sugar. It contains minerals and has low glycemic index. It does not cause sudden sugar spikes in the blood stream when consumed. This makes nipa sugar ideal for diabetics, overweight, and the health-conscious. Nipa sugar can be used as sweetener and ingredient in several foods and confectionery products like pastries and native delicacies.

Aside from its nutrition value, the development of nipa sugar provides additional job and income opportunities, especially among folks in the coastal regions where nipa thrives.

Apps for smarter gov't services

By ROY ESPIRITU
S&T Media Service, *DOST-ICTO*

IN CELEBRATION of the Information and Communication Technology or ICT Month last June, the Department of Science and Technology launched major Information and Communications Technology (ICT) applications and services that will make government services more efficient and effective.

The apps, components of the DOST flagship project titled Integrated Government Philippines (iGovPhil), were the Public Key Infrastructure (PKI), government-wide email system (GovMail), government cloud (GovCloud), Agency Records Inventory System (AgRIS), and Government Website Template.

According to DOST Secretary Mario Montejo, the ICT applications were designed "to enable more efficient government operations that will benefit the citizens through faster delivery of goods and services."

According to Engr. Denis F. Villorente, iGovPhil project director, the PKI will provide added security to government online transactions and communications with the use of dual keys for sealing and opening documents online. It also uses digital certificates for authentication and verification. The technology is useful not only in government services but also in other transactions with the public, such as the delivery of services and online payment.

He added that with GovMail, the government will have a uniform email and online identity. "The email, including data and other records, will be stored in a remote and secure facility," he said, refering to GovCloud.

The "cloud" is a server and storage facility usually offered by private third-party providers to free their clients of the worries of backing up and safeguarding their data. The GovCloud is owned and operated by the government and data is hosted at a government data center.

DOST Secretary Mario G. Montejo and Intergrated Government Philippines Project (iGov Phil) Director Denis Villorente cut the ceremonial ribbon opening of iGov Phil Events during National ICT Month 2013.

Part of the effort to give the government a unique corporate identity is the creation of the Government Website Template. Government agencies are urged to adopt the template to give their websites a common "look and feel."

"With one look, the user will be able to say that this is a Philippine government website," Villorente said. "The agencies, of course, still control content on their sites. They will have features that show their line of service, like content and presentation."

AgRIS is an inventory of files, documents and records kept by each government agency. Its role is to keep track and provide a list of all these records and store them in a government data center in preparation for the eventual implementaton of the National Archives and Records Management (NARM) program. NARM aims to optimize the use of government resources by integrating existing assets and improve public service by speeding up document research, access and processing.

The iGovPhil project aims to enhance government efficiency and effectiveness by using and putting relevant mechanisms to implement interactive, interconnected and interoperable government applications. Some of the components of the project include a Government Email system, Public Key Infrastructure to enhance the security of transactions and communications, the National Records Management Information System (NARMIS), a secure payment gateway, secure data centers and integrated fiber optic network to interconnect the various agencies of government.

As part of the Smarter Philippines umbrella program, iGovPhils is envisioned to advance the country's economy through better delivery of government services.

The June 10-14 celebration is being held at the Information and Communications Technology Office (ICTO) at C.P. Garcia Avenue, Diliman, Quezon City.

An executive briefing and consultations with government agencies were held on the first day. Other ongoing events include job fair, IT solutions fair, policy stakeholders consultations, cyber security meeting, series of training on government website, signing of memoranda of agreement and videos and demonstrations of iGovPhil products and services.

DOST Secretary Mario G. Montejo introduces another solution to Metro Manila's vehicular traffic problem: the DOST Road Train. The technology harnesses the effectiveness of trains in people transport and applies the same principle to roads. Secretary Montejo said that this new proposed transport system can service up to 650,000 commuters in EDSA to complement its existing traffic system. Because it uses locally available materials and developed technology, the Road Train exemplifies Filipino innovation, much like the DOST Automated Guideway Transit, said Secretary Montejo. *(Photo by Henry A. De Leon/ Text by George Robert Valencia III, S&T Media Service, DOST-STII)*

IBM Philippines Chief Technologist Lope Doromal, Jr. presents the concept of Smart Cities originally conceived and developed by the global company. The concepttackles harnessing the power of ICT in an increasingly interconnected, instrumented, and intelligent landscape or environment. Smart Cities also serve as the platform to DOST's Smarter PhilippinesProgram, which was launched in Davao City last February 20, 2013.

In her presentation on trends of social media entitled "See the World... Again", Rappler Chief Executive OfficerMaria Ressa,explainsabout seeing the world through "God's Eye View", an allegorical way of describing the human superorganismmade possible by geotagging and social media. This is a powerful new tool and key to understanding and analyzing people views, behavior and society at present, she explained.

High Drive

DOST, auto distributors partner to accelerate local innovation

Pushing the "launch button" for the opening of the Innovation Congress or ICon is Department of Science and Technology Secretary Mario G. Montejojoined by Ms. Ma. Fe Perez-Agundo(third from right), president of the Association of Vehicle Importers and Distributors (AVID), together with the rest of AVID officers. The high-profile event spotlights Filipino innovation, as key leaders from various sectors and businesses shared their ideas in harnessing innovation's power in drivingthe country's economic development. ICon showcased some of the latestDOST inventions, along with newest smart devices and technologies, and advancements in car design and manufacturing. The ICon was held from April 5 – 7 at the Icon Tent in BonifacioGlobal City, Taguig. A Mobility Expo was also opened to the public throughout the event. *(Photo by Henry A. De Leon/ Text by George Robert Valencia III, S&T Media Service, DOST-STII)*

By GEORGE ROBERT E. VALENCIA III &
ALLAN ACE ACLAN
S&T Media Service, *DOST-STII*

PUTTING INNOVATION on center stage, the Department of Science and Technology (DOST) partnered with the Association of Vehicle Importers and Distributors (AVID) through a high-profile event billed "Innovation Congress" or "ICon" held on April 5-7, 2013 at the FortBonifacio Global City, Taguig.

IConspotlights the country's brand for innovation called"Filipinnovation" andpromotesDOST's advocacy for a "Smarter Philippines". Key leaders from various sectors and businesses shared their ideas in harnessing innovation's power in driving the country's economic development.

Among thespeakers were National Academy of Science and Technology (NAST) President and former DOST Secretary Dr. William Padolina, who talked about the latest researches in hard sciences and government initiatives;Rappler CEO Maria Ressa, who discussed seeing the world through its "God's Eye View" through social media and the imperative of harnessing this power; IBM Philippines Chief Technologist Lope Doromal, Jr. who touched on the principle of Smarter Cities, the platform for DOST's Smarter Philippines Program;Integrated Micro-Electronics, Inc.(IMI) CEO Arthur Tan who briefly discussed global megatrends, convergence and pervasive connectivity; and

DOST Assistant Secretary and Director of Science and Technology Information Institute Raymund E. Liboro facilitates the Innovation Speak (I-Speak) portion of the Innovation Congress. He mainly tackled the roles of S&T Media, along with its challenges, which according to him are: increasing the risk perception of people to prevent loss of lives and properties;fresh, effective, and experiential delivery of S&T updates; and rebuilding the trust of Filipinos in science and technology.

Integrated Micro-Electronics, Inc.(IMI) CEO Arthur Tan talks aboutglobal megatrends, convergence, pervasive connectivity, and some smart devices the company is now developing.

Hyundai Chief Design Manager Casey Hyun shares his extensive knowledge in car design and some experiences about climbing the corporate ladder in one of the world's recognized car manufacturing companies.

Hyundai Chief Design Manager Casey Hyun on the rudiments of and some of the most recent developments in automobile design.

"ICon is quintessentially a public-private partnership that denotes a very important theme at the core of our work in DOST—innovation. It is now accepted as a key enabler of productivity, a driver of growth in successful economies,and in a very concrete sense, at the heart of economic development," said DOST Secretary Mario G. Montejo.

AVID President Ma. Fe Perez-Agundo, likewise, said thatIConnot only aims to foster a mindset of innovation but is also an effort to elevate the country's status in the Global Competitive Index.

"We want the Philippines to become a recognized player in the global arena," she said.

Other topics tackled during the conference werefacets of innovation that included megatrends,technopreneurship, technology business incubators,government policies and programs on innovation, and "smart cities",a concept conceived and introduced to the world by IT giantIBM.

DOST innovations

DOSTSecretary Montejointroduced the Road Train, one of the Department's proposed advanced transport systems that aims to reduce or help ease the traffic in Metro Manila. He said the Road Train harnesses the effectiveness of trains in people transport and appliesthis principle to roads.

"[The Road Train is] innovativein its strategic use of existingapplied technologies to introduce [a new] mass transit system which can help resolve [our traffic problem]," Secretary Montejo said.

Headdedthat the technology is an offshoot of system development of the Automated Guideway Transit (AGT) elevated train, which is widely considered as the first locally developed train now undergoing functional tests at the University of the Philippines Diliman.

The congress also showcased other DOST innovations like Project NOAH, newest smart devices, along with the latest in car manufacturing technology and design through a three-day Mobility Expo, gadgets developed by private sector, and other devices.

Tandem of innovation and communication

On the second day of the congress, former DOST Secretary and ASEAN Foundation Executive Director Dr. Filemon A. Uriarte expounded on the concept of ICon,stressing that innovation must be placed on top of the government structure through a high-level central coordinating body that formulates and oversees implementation of innovation policies and programs of the country.

Dr. Uriarte derived this pronouncement from the 2010 World Bank study titled"Innovation Policy: A Guide for Developing Countries." The study recommended the "whole-of-government approach" in formulating and implementing the innovation agenda. In other words, innovation coming from abroad or from other users in other countries as well as those coming from public and private R&D laboratories or firms may be adopted.

Further, Dr. Uriarte cited the example of Singapore that adopted the "whole-of-government-approach" by establishing the Research, Innovation and Enterprise Council (RIEC) that gave them the No. 2 rank in the 2012 Global Competitiveness for the ASEAN countries by the World Economic Forum Global Competitiveness Reports from 2006 to 2012.

"All these countries agreed that establishing partnerships between government, academe, and the private sector, including business, foundations, and civil society organizations will promote innovation and enhance competitiveness. They just call it in different terms," said Dr. Uriarte.

Lastly, the role of media in science and technology (S&T) and trends inS&T communication was emphasized as critical to attaining success. This was echoed by DOST Science and Technology Information Institute Director Raymund E. Liboro, Representative Angelo Palmones, Dr. FilemonUriarte, Jr., Business Mirror Science Editor Ms. Lynn Resurreccion, and National Research Council of the Philippines President and National Scientist Lourdes J. Cruz, among others.

All ICon participantsworeradio-frequency identifications (RFIDs)produced by Itemhound Corporation, which is one ofthe successful beneficiaries of DOST's technology business incubator program.

Up next: Smarter electronics product development hub

By MARIA JUDITH L. SABLAN
S&T Media Service, *DOST-STII*

The Department of Science and Technology is set to establish a modern, world-class product development center for electronics industry in Bicutan, Taguig City. This was revealed by Engr. Peter Antonio Banzon from DOST's Advanced Science and Technology Institute in a recent forum on electronics and semiconductor industry at the New World Hotel in Makati City. The forum was part of DOST's Philippine Council for Industry, Energy, and Emerging Technology Research and Development's third anniversary celebration.

The electronic industry is a key player in Philippine progress being the leading industry by contributing to as much as 67 percent of the country's export share. In 2010, revenue from this industry reached USD31 billion. But a market study conducted by ASTI showed that given a conducive business environment and the necessary facility support, revenue can reach up to USD50 billion in 2016.

This potential will be highly maximized with the establishment of the center. one of the critical equipment required, is now ongoing. Building renovation will be followed by product prototyping which is targeted to start within the year.

Laboratory experts composed of consultant, engineers, and technicians will man the facility. When fully operated, the facility is expected to generate around PhP3.8 million annual income only from member companies of the Electronics Industries Association of the Philippines, Inc. (EIAPI), discounting other possible users.

The proposed two-floor center will house state-of-the-art equipment and laboratory facilities specifically designed to cater to the electronics industry. The facilities will address the three major critical processes or steps in electronics product manufacturing, namely functional design, product prototyping, and product pilot releasing. These stages involve complex and highly important procedures to ensure products design quality and compliance to standard regulations.

"The center will basically support future R&D projects of electronics companies by providing access to tools and equipment as well as expert manpower in the product development center," Engr. Banzon said.

Normally, local electronic companies send samples abroad for product design and testing, which may cost as much as USD5,000 to USD30,000.

Through DOST's electronic product center, cost will be reduced to half and there will be a shorter turn around time unlike results from tests conducted abroad, which may take months. Further, companies can also easily mitigate risks to avoid certification test failure because of its accessibility. Thus, an increased foreign investment in electronics industry is expected.

The project has a total budget of PhP268 million, 90 percent of which will go to acquisition of the needed equipment. Currently, bidding for EMI Test System,

Aside from the electronics industry, other potential users of the center include independent designers such as start-up businesses or incubation ventures, academe, other government agencies like National Telecommunications Commission and household appliance manufacturers and importers.

Late last year, DOST also launched the ADMATEL or Advanced Device and Materials Testing Laboratory, to cater to the semiconductor industry. Operation of the electronics product development center will complete the need of the country's electronics exports, which is composed of 25 percent electronic manufacturing sector and 75 percent semiconductor manufacturing sector.

Trekking up the road toward a smarter PH

By ARISTOTLE P. CARANDANG, PHD
S&T Media Service, *DOST-STII*

"The road to the Philippines we all dream of starts in places like this," said President Benigno Simeon Aquino III during the launch of ADMATEL or Advanced Materials Testing Laboratory, located within the compound of the Department of Science and Technology (DOST) in Bicutan, Taguig City on May 31, 2013.

The affirmation from the President that the DOST is on the right track bolsters the efforts of the Department as it stages Expo Science 2013 in celebration of the National Science and Technology Week (NSTW). Themed "Science, Technology and Innovation: The Road to a Smarter Philippines", the annual event aims to bring hope to Filipinos via S&T innovations. The NSTW will be held at the SMX Convention Center, Mall of Asia in Pasay City from July 23 to 27, 2013.

According to DOST Secretary Mario G. Montejo, the 2013 NSTW theme was borne out of the Department's initiatives that showed DOST's capabilities in pursuing an innovative path. He said that the success of big-ticket projects such as the Automated Guideway Transit (AGT), DOSTv, and the Nationwide Operational Assessment of Hazards (NOAH), among others, is a genuine proof that local technologies work and can be depended upon by Filipinos.

"The exhibition showcases the DOST programs that are oriented towards the fulfillment of the key result areas of the current administration," he said.

Pursuing this path is crucial in achieving the promise of a forward-looking, knowledge-intensive Smarter Philippines and will bring rise to a new generation of Filipinos that can face the challenges and complexities of the new age with their growing competence and confidence in science and technology, according to DOST.

One example of world class facility is the ADMATEL, operated by the DOST-Industrial Development Institute (ITDI) that aims to make the Philippines the new buzzword in the manufacturing sector being a milestone in the local business scene as the first testing laboratory in the country for semiconductor components and materials. ADMATEL is a two-story facility that meets the ISO 14644-1 standard for Class 100k clean room and is gearing for ISO 17025 accreditation for quality management systems.

President Aquino during the ADMATEL launch also said, "Innovation is the engine of any modern economy; and one look around the Philippines tells us that we have the natural inventiveness to be one of the world leaders in this regard."

From July 23 to 27, in the biggest gathering of scientists, researchers, technologists, academicians, teachers, students, professionals, entrepreneurs, and even housewives, a wide array of development initiatives from the DOST are showcased to the public. Such innitiatives range from technologies and services that address concerns on climate change, industrial competitiveness, agricultural productivity to social services, poverty alleviation and countryside development.

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23-27 July 2013

SMX Convention Center, SM MOA, Pasay City

AGRICULTURE
Superior Planting Material: High Yielding Crop

Coconut

Description

A DOST program for the improvement of coconut farm productivity through identification of the desired coconut genomics.

Benefits

The program is geared towards improving the productivity of the coconut industry by identifying the right genetic characteristics of coconuts through genomics identification and growing a more competitive coconut crops in the world market.

High Yielding and Virus-Resistant Abaca Hybrid

Description

A technology which develops a high yielding and virus-resistant breed of abaca to support the growth of the abaca industry.

Benefits

With the wide-spread destructive effect of the abaca bunchy top virus (ABTV) in the abaca fiber industry, DOST has developed a hybrid abaca variety which is ABTV-resistant and yields 1.56mt/ha/year of abaca fibers. The hybrid abaca also has higher fiber recovery of 1.1 percent with comparable fiber quality. This means that the fiber industry which suffered great loss in previous years could possibly rebound through this hybrid abaca variety.

Sweet Potato and Banana

Description

The program aims to expand and maximize the benefits from the sweet potato crops through technological innovations. Meanwhile, disease free banana crops is the result of this clonal micro-propagation called banana shot-tip culture.

Benefits

Through this project, innovation in sweet potato and banana farming is on the development of virus-resistant varieties of sweet potatoes and bananas through the tissue-culture generated clean planting materials technology and the banana shot-tip culture technique. The techniques ensure optimized earnings through high yielding and disease-free varieties of crops.

Certified Seed Production for Rice

Description

A DOST initiative that looks into increasing the farmer's access to high-quality rice seeds through an efficient seed production system.

Benefits

The project aims to generate low cost but quality and high yielding rice crops to support the country's rice sufficiency.

LAMP-based Setection of Shrimp Pathogens

Description

The technology called loop-mediated isothermal amplification (LAMP) detection for shrimp pathogens is a diagnostic kit using locally fabricated heat block machine.

Benefits

The LAMP diagnostic kit aims to address the problem of massive mortality loss caused by pathogen infections of shrimps as well as to bring down the cost of currently applied detection protocol by local shrimp farmers. The apparatus will cost a minimum of P 15,000 or only 7.5% of the existing machine available in the market at P 200,000 each, thereby providing substantial savings for small-scale shrimp farmers and hatchery operators and increased profitability. The machine can also be used as a platform in targeting diagnostics for other diseases.

Superior Livestock through Artificial Insemination
Goat and Carabao

Description

These projects are comprised of two reproduction activities for goats and carabaos. The first is the semen extender for goat which aids in the implementation of Artificial Insemination, while the second is the improvement of the reproductive activity among carabaos through genetic and reproductive biotechnology.

Benefits

The project provides a relatively cost-efficient semen extender used to properly preserve the quality of the goat's spermatozoa which is needed to inseminate goats to facilitate its increase in numbers. On the other hand, genetic and reproductive technology enhancement for carabao breeding helps in the reproduction efficiencies of the carabao, resulting in increased number of carabaos that help in farming activities and source of milk and meat.

Seaweed Culture technology

Description

A research and development program that aims to increase seaweed production in farms and improve quality of carrageenan.

Benefits

The R&D program aims to increase the production and improve the quality of the carrageenan seedstocks. Also, the project aims to develop new and improved strains/varieties of Kappaphycus which results in high yielding carrageenan in the market and used in various ways including as material for medicine capsules and as burnt dressing.

Industry

National Packaging Development Center

Description

The National Packaging Develpment Center provides packaging R&D services for business establishments to adhere with the international requirements for product packaging.

Benefits

The center provides an extensive R&D on product packaging to help local manufacturers enter the world market through innovative, functional, and safe product packaging design services.

National Furniture Testing Center

Description

A one-stop-shop furniture testing laboratory offering complete testing services and facilities required by the furniture industry.

Benefits

The center will enhance the competitiveness of the local furniture industry in both the local and international market by ensuring the quality of products that goes out of its production line. Consequently, the public is assured of the quality of furniture available in the market.

Gamma Irradiation Facility

Description

The Philippine Nuclear Research Institute (PNRI) operates a multipurpose Gamma Irradiation Facility that is used in food safety and agricultural products. The facility was upgraded to semi-commercial scale to improve the performance of the irradiator, resulting in a higher throughput of the facility. The upgraded facility meets the demand of food and medical industries for irradiation of their respective products.

Benefits

Irradiation of food substantially reduces post-harvest losses, disinfects fresh fruits and agricultural products for storage, extends shelf life for food and agricultural commodities such as fruits, vegetables, meat, poultry, fish and seafood, and eliminates disease-causing microorganisms in food. Irradiated foods are safe to eat. Scientists said irradiation of food causes no toxicological hazards and introduces no nutritional or microbiological problems, citing the expert committee jointly organized by the World Health Organization, Food and Agriculture Organization, and the International Atomic Energy Agency. It is a cold process, no heat is applied. No harmful toxins may stay in food, it can be used to treat prepacked commodities, and it causes changes in the freshness and texture of the food and food products.

Regional Food Innovations Centers

Description

A food hub in different regions of the country geared towards food innovations, R&D, and support services.

international counterparts. A competitive food industry helps in the country's economic recovery by establishing more food related industries to support its value chain activities thus generating more jobs.

Benefits

To enhance the competitive advantage of the food industry over its more established

Industry Competitiveness

Advanced Device and Materials Testing Laboratory (ADMATEL)

Description

ADMATEL is the first and the most advanced failure analysis and materials characterization testing facility in the Philippines.

Benefits

The testing facility is set to enhance the global competitiveness of the semiconductor and electronics industries in the world market by offering a low cost and faster turn-around time for electronic and semiconductor component testing and analyses.

National Metrology Laboratory of the Philippines

Description

The National Metrology Laboratory of the Philippines is tasked to establish and maintain national physical standards for basic and derived quantities such as mass, length, temperature, time interval, voltage and resistance.

Benefits

The laboratory implements a national standardized unit of measurement to help the manufacturing and other business industries adhere to world class standards and be able to penetrate the world market.

Automated Guideway Transit (AGT)

Description

The AGT is a Filipino designed urban mass transport system which is similar to the commercially-run EDSA Metro Rail Transport System. AGT uses local technologies and runs on rubber tires. It carries 60 people on each coaches and runs at a speed of 60 kilometers-per-hour.

Benefits

AGT provides an alternative mass transport system that features low-cost, environment safe, fast, and relieves the traffic congested thoroughfares of the metropolis.

Availability

The AGT is a collaborative research and development project of DOST under the Metals Industry Research and Development Center (MIRDC) and UP Diliman. For details and information, please call Engr. Jonathan Puerto at 837-0431 to 38.

Road Train

Description

Road train is a locally developed mass transport system that runs on the road which is basically a spinoff technology from the Automated Guideway Transit system.

Benefits

Since the road train system does not need to run on an elevated track, the system offers a low cost mass transport system that can service up to 650,000 commuters on EDSA everyday and complements the existing traffic system in the metropolis.

IT-BPO

Domestic ICT Industry Development

Description

This program aims to accelerate four other segments of the ICT industry which includes computer hardware industry, software and application development, semiconductors and electronics industry, and the telecommunications industry. It also pushes the development of entrepreneurs for the ICT industry.

Benefits

The program supports the sustainable growth of the ICT industry through development of new entrepreneurs in the IT industry, comprehensive marketing strategies to promote the industry to its prospective clients, and pursue R&D activities focusing on emerging trends and technologies. Further, a strong and sustainable ICT industry in turn provides a high value influx of investments, exports and jobs creation activities.

Enabled Creative Industries

Description

This program aims to promote the country's creative process outsourcing sector, and the development of the country's own portfolio (IP and Content) and the Philippine brand for animation, games, comics, etc.

Benefits

The program will strengthen the growth of emerging BPO segments which consequently generate employment to many local creative artists and possibly boost the country's stock of intellectual properties in the creative and gaming industries.

Stepping up the Value Chain

Description

This program will develop a long-term strategy to strengthen the country's global positioning in targeted high growth segments of the IT-BPO industry, including healthcare information management outsourcing; finance, accounting and insurance outsourcing; HR Outsourcing; Multilingual BPO; IT Outsourcing; Creative Process Outsourcing; Engineering Outsourcing; and, Voice BPO/Contact Center.

Benefits

Aside from strengthening the industry towards sustainability, this program will also create new complementary industries to support the growth of ICT in the country.

Talent Development

Description

This program aims to increase the size and improve the employability of the IT industry talent pool through the implementation of various strategic projects, in coordination with the industry and academe.

Benefits

Through this initiative, the current talent pool of Filipinos in the ICT industry will greatly increase enabling them to perform high value works in R&D, creative, and software designs among others.

Services

eGov Master Plan

Description

E-Government Master Plan is a three-year plan that provides a blueprint for the creation of a digitally empowered, innovative and integrated government, which aims to guide government agencies in aligning their information system strategic plans, with the national e-government priorities of efficiency and transparency. It features projects like: iGovPhilippines, TV White Spaces Initiatives, Medium- Term Information and Communication Technology Harmonization Initiative (MITHI) and the National ICT Advisory Council. It was recently launched last June 25, 2013 during National ICT Summit at Edsa Shangri-La.

Benefits

The goal of E-Government Master Plan is to guide government agencies in aligning their information system strategic plans, with the national e-government priorities of efficiency and transparency through several projects and initiatives like iGovPhilippines, TV White Spaces, Medium- Term Information and Communication Technology Harmonization Initiative (MITHI) and

Next Wave Cities Program

Descriptiion

Next Wave Cities is a Philippine-specific term that identifies ICT hubs beyond Manila, based on criteria such as worker supply, telecom infrastructure, and other factors necessary to sustain a local BPO industry.

Benefits

The Next Wave Cities Program is poised to generate new employment to millions of workers outside Manila. Through this program, locals from the newly identified IT hub cities can find equal opportunities in the BPO industry as with their counterparts in Manila without having to leave their own localities. The Next Wave Cities will enhance the distribution of the burgeoning BPO industry into other cities outside Manila.

Connectivity

TV White Spaces Initiative

Descriptiion

TVWS technology uses un-allocated television frequency spectrum to provide data connectivity. Applications of the technology include: telemedicine, educational content delivery, rural last mile connectivity and environmental sensor networks.The ICTO's TVWS initiative came from a need to provide connectivity for those beyond the reach of commercial wired or wireless broadband service.

Government Fiber Core Network

Descriptiion

An essential component of ICTO's eGovernment initiatives is efficient

and secure data connectivity between government agencies, data centers and the public Internet. A government-owned fiber core network is under development that will make use of existing government assets.

Internet TV Testbed

Descriptiion

With the proliferation of broadband connectivity and future adoption of IPV6, IPTV or Internet TV is expected be a popular means of digital content delivery. This is currently ongoing testing in cooperation with partners in industry and academe, especially for key public applications.

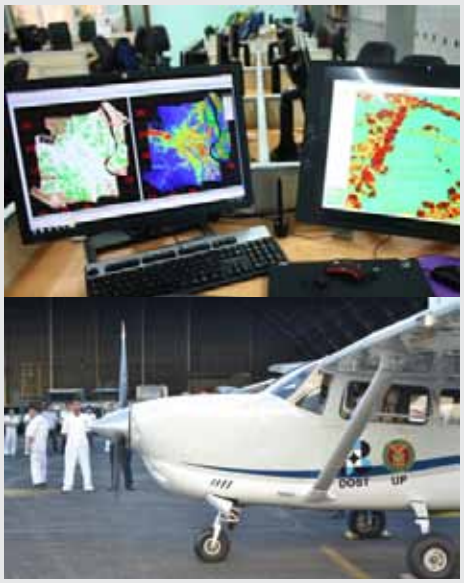
Nationwide Operational Assessment of Hazards (NOAH)

Description

NOAH is a disaster management decision tool designed to integrate all weather related instruments and state-of-the-art technologies accessible to the public.

Benefits

NOAH provides the public with an interactive hazard map that features real-time information on the latest weather development from a macro perspective down to area specific flood and rainfall data. The website provides the public with an accessible and easy to understand hazards interface which makes each and every person capable of making the right decision when disaster strikes.



Disaster Risks and Exposure Assessment for Mitigation (DREAM)

Description

DREAM provides a high resolution, reliable, detailed, and up-to-date 3D images that is used as a flood modeling instrument of the country's 18 major river basins plus watersheds, and other flood-prone areas.

Benefits

With its cutting edge technology, DOST can provide an accurate flood and hazard scenario assessment and an early warning system during inclement weather thus averting the loss of lives and properties.

Light Detection and Ranging (LiDAR)

Description

LiDAR is a cutting-edge remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light. It provides a digital representation of a specific topography. Benefits The images obtained through LiDAR are used as the backdrop for the Program NOAH's digital topographic map. These high resolution maps are used as a flood modeling tool to simulate weather scenarios, thus, averting possible loss of lives and properties.

KAMANAVA

Description

The project aims to determine theextent and rates of ground subsidence in Kalookan, Malabon, Navotas and Valenzuela (KAMANAVA), where lowering of the ground surface levels are at alarming rates. To assess the contribution of various factors to the subsidence problem, the project will make use of Permanent Scatterer

Interferferometric Synthethic Aperture Radar (PSInSAR), an advanced space technology technique, complemented by detailed analysis of the geology of Metro Manila.

Benefits The outputs of this project will be used in the development of a master plan for flood management in Metro Manila and surrounding areas.

AvailabilityPhilippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) office located at Science Heritage Bldg., Gen. Santos Avenue, Bicutan, Taguig City.

DOST Scholarship

Philippine Science High School System

Descriptiion

Philippine Science High School SystemDescription The Philippine Science High School System offers scholarship for secondary course with special emphasis on subjects pertaining to the sciences to prepare students for a science career. The main purpose of the PSHS education is to develop the full potential and unique giftedness of its scholars. The PSHS special science curriculum instills a passion for learning in the scholars and inspires them to choose careers in science and technology in order to contribute to national development. The PSHS is most effective in a globally-competitive environment characterized by all-around performance excellence, a dynamic and collaborative leadership, outstanding facilities, resources and support alliances, and an unswerving commitment of service to the nation and to one another.

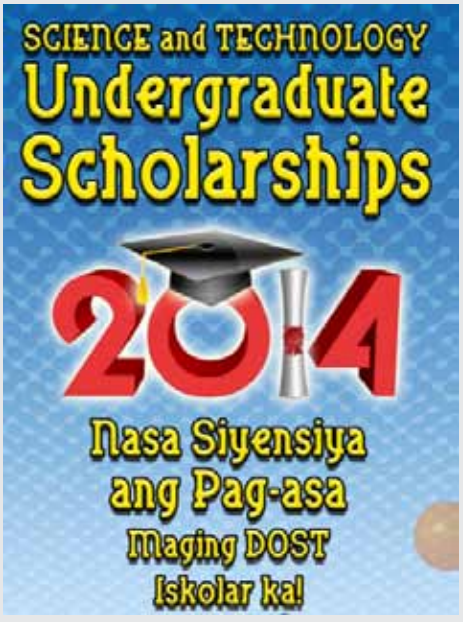
Benefits

PSHS Scholars receive an education that is humanistic in spirit, global in perspective and patriotic in orientation. When they graduate, the scholars are expected to pursue degrees in Science and Technology at various colleges and universities both here and abroad. Benefits for scholars include free tuition, monthly allowance and textbooks loans. Transportation, uniform and living allowances will also be extended to scholars from low-income families.

Science Education Institute S&T Scholarships

Description

UNDERGRADUATE SCHOLARSHIPS• DOST-SEI Merit Scholarship ProgramBegun in 1958 as the NSDB or NSTA Scholarship, begun in 1958, merit scholars pursue priority courses in the basic sciences, engineering, other applied sciences and science and mathematics teaching at identified universities.• RA 7687 Science and Technology Scholarship ProgramAlso known as the Science and Technology Scholarship Act of 1994, this is a scholarship offered to talented and deserving students whose families' socio-economic status do not exceed the



set cut-off values of certain indicators. Qualifiers must pursue priority fields of study in the basic sciences, engineering, other applied sciences and science and mathematics teaching.• Junior Level Science Scholarship (JLSS) Program These are scholarship grants to qualified third year students enrolled in priority fields of study in engineering, basic and applied sciences, science and mathematics teaching at identified universities and colleges. There are two component scholarships namely, Project GIFTS for the Disadvantaged - RA 7687 and Junior Level Science Scholarships-Merit.

Benefits

RA 7687 scholars will receive tuition subsidy, monthly stipend, book allowance and many more. Merit scholars will likewise receive the same benefits except for the pro-rated monthly stipend based on the family's socio-economic status. The scholarship qualifiers can enroll in state universities and colleges and other higher education institutions recognized by the Commission on Higher Education as Centers of Excellence or Centers of Development where they can take up priority science and technology courses.

Learning English Application for Pinoys (LEAP)

Description

Description Learning English Application for Pinoys also known as LEAP is under Project 7 of the ICT for Education Inter-disciplinary Signal Processing for DOST's Engineering Research and Development for Technology initiative. The LEAP software has a 10-module Language Training Program. The Linux and Windows-based program tackles the groundwork for English fluency—from tenses, pronouns and prepositions, to idioms and other basic topics related to grammar and vocabulary. The Speech Recognition Engine (SRE) software also includes voice recording, playback and English language exercises.

Benefits

A computer-based stand-alone training system, LEAP is a supplementary tool to prepare high school and college students for the call center industry in a bid to help the country regain its footing as a stronghold of English language competency and push it further into the forefront of the global BPO industry.
AvailabilityThe Learning English Application for Pinoys is available at the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) office located at Science Heritage Bldg., Gen. Santos Avenue, Bicutan, Taguig City.

Versatile Instrument System for Science Education and Research (VISSER)

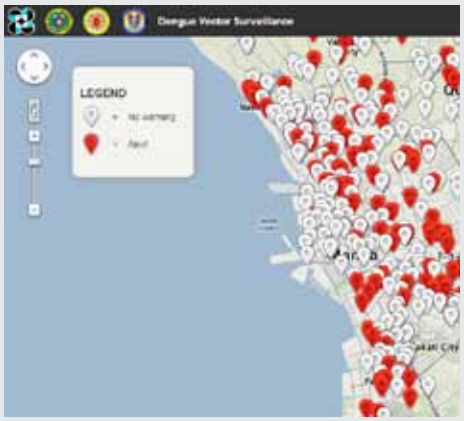
Description

VISSER stands for "Versatile Instrument System for Science Education and Research", an important tool in homegrown scientific teaching experiments that are affordable enough to be deployed in all schools and colleges in the country. VISSER is a program that creates low-cost multipurpose instrumentation and laboratory modules that are sophisticated yet inexpensive and can be used in many different subjects for Philippine secondary schools. It is a hardware which is handheld, microcontroller controlled unit, working with a wide assortment of plug & play sensors and probes

Benefits

Just like smartphones, the system is intuitive and easy to use, with apps loaded via the Web. If the users get stuck, they can visit a support site, send out text or shoot an e-mail to an expert over the Web.

But most importantly, the units will be 1/10th to 1/100th the cost of currently available commercial products. The economic advantage is so huge that these modules can be accessible to all schools, even to those that have extremely modest funding.



Health Programs

Dengue Vector Surveillance Website

Description

Is a website that facilitates mapping of the current mosquito index in different public elementary and high schools nationwide. The website is a decision making tool for the government. It provides a real time data on the distribution of the mosquito eggs/ larvae particularly the Aedes mosquitoes in specific geographic locations.

Benefits

The data provided by the website will assist the government in analyzing any rise in the mosquito population in particular area and come up with a sound decision in addressing these occurrences by implementing the necessary steps in averting further rise in dengue incidence.

OL Trap

Description

Ovicidal/Larvicidal (OL) trap is a simple but effective vector control method to lower the population of dengue carrying Aedes aegypti mosquitoes, thus reducing dengue cases and control dengue transmissions.

Benefits

The OL Trap aims to reduce the incidence of dengue transmissions by killing the vector mosquitoe's eggs and larvae leading to the reduction of dengue cases in the country. Moreover, with its organic make up, OL Trap is non-toxic and environment-friendly.

Tuklas Lunas Centers

Description

Tuklas Lunas Development Centers are screening centers for researches on natural and indigenous plant species. Located in the major island groups in the country, the Centers aim to scientifically analyze various claims of pharmacologic activities in plants species especially those traditionally used as medicines by indigenous folks.

Benefits

The program helps in facilitating drug discovery in the Philippines by subjecting various indigenous plant varieties known for their pharmacological properties. The Centers generate new, alternative and locally developed medicines.

Leptospirosis Environmental Risk in Metro Manila

Description

The study used Geographical Information Systems (GIS) technology to identify the environmental determinants that put people at an increased risk of developing leptospirosis in Metro Manila.

Benefits

The statistical model generated can be used to predict the number of leptospirosis cases in a barangay given the environmental factors (rainfall, relative humidity, temperature, elevation) and population size of the barangay.Such information can be used by authorities in taking steps to prevent the outbreak of leptospirosis.

Biotek-M

Description

The Biotek-M is a simplified nucleic acid-based dengue diagnostic detection technology that spots dengue virus from 0-5 days of illness.

Benefits

Biotek-M provides an instant and reliable dengue virus detection kit with 85.1% sensitivity and 76% specificity through a procedure called Loop-Mediated Isothermal Amplification (LAMP). Through Biotek-M, health workers can immediately give proper medications to patients and allay any anxiety to the patient and the family.The diagnostic test could help in decongesting government-run hospitals during dengue outbreaks by discharging patients initially suspected of contracting the vector virus.

Telehealth

Description

The RxBox-Telehealth technology is a customized communication device capable of measuring patient's vital signs (heart rate, blood pressure, pulse – oxygenation, ECG) and transmits data through wired and wireless connection system.

Benefits

The RxBox–Telehealth technology is developed to reduce the unnecessary and costly travels and hospitalization of patients from the remote areas of the country to the regional health centers through accurate tele-consultation system. The technology also has integrated maternal health modules including blood pressure, oxygen saturation meter, Doppler fetal heart, tocometer, and thermometer.

eHealthTABLET

Description

e-Health Technology Assisted Boards for LGU Efficiency and Transparency (TABLET) is a local mobile (tablet-based) electronic medical record system and dashboard for decision-making (coupled with a Doctor-Mayor communication feature).

Benefits

The eHealth TABLET provides the national and local governments and various health institutions with a tool to determine the emergence and prevalence of various health conditions that are affecting a substantial number of the population. Through this innovation, the government can now have a reliable decision-making tool in addressing and controlling the prevalence of these menaces.

Health Programs

Ceramic Pot-Type Water filter (CPF)

Description

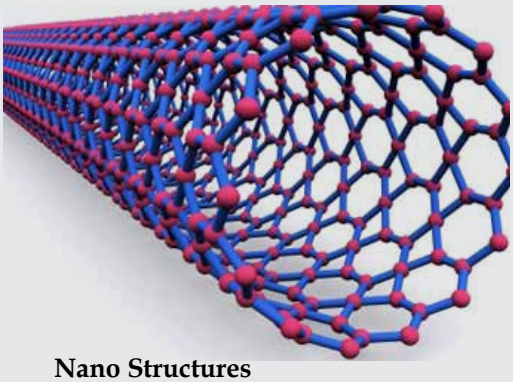
Description

A locally developed water filter system made of red clay and coated with nano anti-microbial agent.

Benefits

It provides a low-cost but efficient safe and easily installed water filtration system for both rural and urban residents. CPF gives an alternative water filtration system with the same efficiency as with other

commercially available water filtration system in the country.



Nano Structures

Description

This program aims to develop innovations in solar cell energy research based on nanotechnology and develop working solar cell devices. Nanosized materials in solar energy devices improve the efficiency of solar cells. Fabrication and incorporation of nano materials undertaken for: Nanostructures being done for: Solar Cell Applications; Transparent Electrodes for Solar Cell Applications; GaAs-based Solar Cell Devices; Modification of Graphene for Nanostructured PV Cell, and Solar Cell Characterization Facility

Benefits

The nano structures result in the production of low-cost, environment-friendly and efficient alternative energy sources.

Fortified Food Products

Description

Fortified foods are enriched with vitamins and minerals to infuse important nutrients in people's regular meals. Among the DOST-developed fortified foods are the following: Vitamin A Fortified Oil, Vitamin A Fortified Sugar, Vitamin A Fortified Peanut Butter, Iron Fortified Rice, Rice-Mongo Iron Fortified Weaning Food, Water with Iodine (TubigTalino), and the Iron Fortified Bihon.

Benefits

Aside from supplementing important nutrients for people's health, DOST's fortified foods aim to minimize malnutrition to reach the country's Medium Term Development Goal. For entrepreneurs, fortified foods production is a sound business opportunity, and it also gives more job and economic opportunities to people.

Complementary/baby Foods

Description

Complementary foods, also called "baby foods", are alternative source of nutrition for babies that provide vital nutrients that may be lacking in their diet as they wean from milk and adapt to solid food. The complementary foods come in two forms, instant and ready-to-cook: 1) Instant Weaning/Baby Foods that includes the food blend of Rice-mongo, Rice-soy, Corn-mongo and Corn-soy and 2) Ready-to-Cook Weaning/Baby Foods that include the fruit/vegetable and rice blend Banana-Soybean, Banana-Peanut, Rice-Mongo-Sesame, Rice-Paayap-Sesame, Rice-Soy-Mongo, Gabi-Paayap, Kamote-Paayap, Paayap-Banana, Mongo-Kamote-Sesame, Germinated Rice-Cowpea, Germinated Corn-Mongo, Germinated Corn-Cowpea, and Germinated Rice-mongo.

Benefits

Aside from infusing important nutrients to make babies healthier, DOST's baby foods aim to minimize malnutrition among young children to reach the country's Medium Term Development Goal. For entrepreneurs, baby/complementary foods production is a sound business opportunity, and it also gives more job and economic opportunities to people. AvailabilityThese matured technologies have gone through series of tests and quality control standards and are available for adoption by private enterprise or investors intending to go into the food manufacturing business. The baby food mix is adopted by Seamaxx of Marikina City and the Rimo snacks by

Long Live Pharma in Pangasinan. For more information, please contact FNRI Director Mario V. Capanzana at the DOST Complex, Gen. Santos Ave., Bicutan, Taguig City and at telephone numbers 837-2071 to 82 locals 2280 to 2296, 837-2934 and 839-1839.

Enterprise Technology Upgrading Program (SETUP)

Description

SETUP is a DOST program geared towards empowering the micro, small and medium enterprises by providing technology upgrading assistance and other support initiatives to improve the manufacturing capabilities, as well as the products and services enabling this segment of the business sector to be locally and globally competitive.

Benefits

Enabling the local SMEs to be locally competitive and contribute in the government's program in generating employment which eventually uplifts the economic standing of the Filipinos. SETUP also creates a window of opportunities for SMEs to break into the global manufacturing scene and contribute in the country's economic recovery.

Farmers in developing countries yield more biotech crops in 2012

By ANGELICA A. DE LEON
S & T Media Service, *DOST-STII*

Developing countries in 2012 marked a biotechnology milestone in global agricultural history when farmers in said countries, including the Philippines, produced more biotech crops than their counterparts from highly developed and more technologically advanced nations.

Dr. Randy A. Hautea, global coordinator and Southeast Asia Centerdirector of the International Service for the Acquisition of Agri-biotech Applications (ISAAA), announced this amazingnews during the international conference on the "Adoption of Biotech Crops in the Developing World"held recently at the Hyatt Hotel Manila. The conference wasco-organized by the National Academy of Science and Technology, an advisory body of the Department of Science and Technology (DOST-NAST).

Dr.Hautea termed the milestone development as a "crossover" from economically developed nations to the developing world, allowing farmers in Asia and other less developed nations to reap the benefits of biotech crop cultivation: less use of pesticides, safer farming practices, reduced costs, better crop yield, and higher income, with more extra time spent for other activities.

Biotechnology is the process of creating or modifying a product or process through the use of living systems, organisms, or their derivatives, to render the product or process more useful for medical, agricultural, and nutritional applications, among others.

"The potential of biotechnology to increase agricultural productivity is one of the reasons why we at the DOST believe it is a cause worth pursuing," said DOST Secretary Mario G. Montejo, corroborating the gains offered by biotechnology. Moreover, the DOST supports a science-based method of evaluating both the benefits and risks of GM crops, he clarified.

The conference mainly presented key findings of the research project by the Southeast AsianRegional Center for Graduate Study and Research in Agriculture (SEARCA) titled "Adoption and Uptake Pathways of GM/Biotech Crops by Small-scale Resource Poor Asian Farmers in China, India, and the Philippines."

China and India have been identified as frontrunners in the biotechcrop arena in Asia. In fact, 98percent of biotech crop adopters, or those who have embraced biotechnology in farming, in the developing regions, are from China, India, and the Philippines. Globally, there are 17.8 million farmers from 28 countries who are into biotech crop cultivation. Of this number, 85 percent are from the three countries, with China and India having 7.2 million biotech crop farmers each and the Philippines accounting for.375 million.

Biotechnology: Philippine scenario

According to the study, biotechnology in agriculture reached farming communities in the Philippinesby way of seed suppliers and seed company technicians who introduced local farmers to the mechanics and benefits of biotech crop farming.

Now, the Philippines has a total of 370,000 small farmers growing more than 750,000 hectares of genetically modified corn called the *Bacillus thuringiensis* orBt corn. The first Asian country to approve a Bt crop for commercial cultivation as both food and feed, the Philipines is also the first ASEAN nation to initiate a regulatory system for biotechnology via the National Committee on Biosafety of the Philippines established in 1990.

As the Philippines' central hub for science and technology (S&T), DOST fully supports biotechnology-driven projects, systems, and infrastructure in the country. Last January 2013, Dr. Amelia P. Guevara, DOST undersecretary for research and development, led the inauguration of a biotech pilot plant at the University of the Philippines Los Baños Complex in Laguna—the only biotech facility to cater to researchers, members of the academe, as well as start-up entrepreneurs. The project is funded by the Philippine Council for Industry, Energy, and Emerging Technology Research and Development, a DOST sectoral council.

Bt cotton in India, China

Seed companies likewise played a key role in introducing Bt cotton technology in China during the late 1990s. The Institute of Cotton Research under the Chinese Academy of Agricultural Sciences boosted their efforts by educating local workers and agricultural traders to introduce Bt cotton to the farmers. In 2012, 7.2 million farmers in the country planted 4 million hectares of Bt cotton.

In India, large-scale farm demonstrations helped propagate the technology and popularity of Bt cotton. Last year, farmers in India planted 10.8 million hectares of Bt cotton.

The said conference aimed to help formulate policy recommendations on biotechnology including biosafety regulatory systems. Among the attendees were scientists, researchers, farmers and other workers from the agricultural sector, policymakers, and members of the media. DOST-NAST co-organized the international conference with the John Templeton Foundation, ISAAA, SEARCA, and the Agricultural Biotechnology Support Project II.

STARBOOKS by DOST lands in CAR, Romblon, Negros Oriental, Masbate

By ANGELICA DE LEON
S&T Media Service, *DOST-ITDI*

STARBOOKS, a digital science library developed by the Department of Science and Technology's Science and Technology Information Institute (DOST-STII) made its touchdown in Cordillera Administrative Region (CAR),Masbate, Negros Oriental, and Romblon last March andApril 2013 when the cutting-edge units – the first of its kind digital library in the Philippines -- were installed for free in the four provinces.

STARBOOKS, or the Science and Technology Academic and Research-Based Openly Operated Kiosk Station, is a stand-alone research kiosk which may be accessed even in the absence of internet connection. DOST officials consider it as a "library in a box."

With fresh and relevant S&T information in thousands of digitized materials in text, video, and audio formats, STARBOOKS is an excellent research medium for students, teachers, journalists, and other interested individuals. The collection includes such diverse topics and resources as food and nutrition, health and medicine, emerging technologies, energy, environment, livelihood technologies, investigatory projects and theses in different fields.

In DOST-CAR, Assistant Regional Dir. Maria Rowena Madarangturned over three STARBOOKS to the provinces of Kalinga, Apayao and Abra represented by their respective science and technology officers at the DOST –CAR Regional Office.

In Masbate, DOST Regional Director Tomas Briñas led the turn-over ceremonies for the groundbreaking research platform. The beneficiaries were the MasbateNationalComprehensiveHigh School, Dr. Emilio B. Espinosa Sr. Memorial State College of Agriculture, and the local government of Aroroy.

In Negros Oriental, the Dumaguete City Public Library as well as the local government units (LGUs) of Bayawan and Mabinaywere added to the list of beneficiaries after DOST-Negros Oriental officials and LGU representatives signed a Memorandum of Understanding.

Meanwhile, around 70 representatives from different educational institutions, government offices and the media attended the STARBOOKS launching at the Provincial Science and TechnologyCenter in Romblon.

Each beneficiary received a server, uninterrupted power supply, and a pod.

With just a few clicks on the keyboard, STARBOOKS can aid students in their studies and research and thus increase their chances of availing scholarships in S&T schools. At the same time, the stand-alone kiosk is also seen to promote greater S&T interest and awareness in the country and encourage more students to take up S&T related courses. The digital library also contains materials useful for entrepreneurs, farmers and other players in the agricultural industry, as well as other S&T related sectors.

According to Annie Lyn Bacani, administrative coordinator of the project, STII chooses recipients from the top 20 poorest provinces in the country based on the survey of the National Statistical Coordination Board (NCSB).

However, the DOST agency may also provide STARBOOKS kiosks to provinces with limited internet connections and those requesting for their installation. Local government units, non-government organizations, and educational institutions are qualified to avail of the technology.

PH hosts 65th ASEAN-COST meeting

By ANGELICA A. DE LEON AND FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

THE 65TH ASEAN Committee on Science and Technology Meeting (ASEAN COST-65), organized by the Department of Science and Technology (DOST), ran from 23 to 24 May 2013 and served as the venue for the ASEAN Member States to review their efforts related to realizing the 2015 ASEAN Community. It also served as a forum for discussions and exchange of views on regional and international issues in the field of science and technology.

The main focus of the 65th ASEAN COST was on the development of the new ASEAN Plan of Action on Science, Technology and Innovation for the period 2015-2020 (APASTI 2015-2020), previously tackled by ASEAN S&T Ministers during the 7th Informal ASEAN Ministerial Meeting on Science and Technology (IAMMST) at Brunei Darussalam last year.

The study on the development of the APASTI 2015-2020is being conducted by Indonesia and the result will be presented at the 15th ASEAN Ministerial Meeting on Science and Technology to be held later this year.Prof. Dr.Satryo Soemantri Brodjonegoro of Indonesia was appointed as the consultant to develop the new APASTI.

Elected as Vice-Chair of the Meeting was Prof. Fortunato De La Pena, DOST Undersecretary for S&T Services, who delivered the opening remarks during the Plenary Session in behalf of DOST Secretary Mario G. Montejo on May 20 to welcome the 100 delegates from ASEAN member nations, including representatives from ASEAN's dialogue partners namely the United States, Austria, Belgium, Germany, China, Japan, and India. The Plenary Session underscored matters and issues previously discussed during the 64th meeting of ASEAN COST and the 7th Informal ASEAN Ministerial Meeting (IAMMST -7) held in Brunei.

Foremost among these was the Krabi Initiative 2010 , a program endorsed by S&T ministers during the 6th Informal ASEAN Ministerial Meeting on S&T held in December 2010 in Krabi, Thailand.The Krabi Initiative seeks to raise ASEAN's competitiveness in the global village by leveraging the capabilities of science, technology and innovation. Specifically, the program aims to achieve its mission via identified key areas, namely ASEAN Innovation for Global Market, Digital Economy, New Media and Social Networking, Green Technology, Food Security, Energy Security, Water Management, Biodiversity for Health and Wealth, and Science and Innovation for Life.

Establishing scientific standards in ASEAN

The Philippines is currently taking the lead in the proposal of establishing scientific standards in ASEAN with the aim of helping make the region's socio-economic activities cohesive. Common standards will improve technology transfer, collaboration, and mutual trust among ASEAN countries, according to the concept paper submitted by the Philippines.

This proposal highlights the importance of standards not only in industrial applications such as automotive, medical devices, pharmaceuticals, and others but also in technologies that keep communities safer and healthier, such as in disaster mitigation and telehealth. Particularly, the Philippines pushes for harmonizing standards in Automated Weather Stations (AWS) and Automated Rain Gauges (ARG), and intelehealth initiatives.

A unified disaster mitigation initiative may well lead the way towards building a holistic, progressive, secure, and competitive ASEAN, to a level that will help our communities develop a greater sense of resiliency as a people.

Once the differences or barriers in trade and legislation of said priority products are worked out, it will lead to their smooth integration in the ASEAN market.

ASEAN projects

The COST-65 also discussed the status of ASEAN projects, including the ASEAN Training of Trainers Workshop for Life Cycle Assessment and Green Gas Profiling and the Network-based ASEAN Language Translation for Public Service.

COST-65 noted the report of Indonesia on the 9th Asian Science and Technology Week which will be held in August 2014 tentatively in Bali/Bogor, Indonesia back-to-back with Indonesia's National Awakening Technology Day.

ASEAN is composed of Singapore, Malaysia, Thailand, Indonesia, Philippines, Brunei, Laos, Cambodia, Myanmar, and Vietnam.

NEO-ETHNIC TEXTILES
Weaving innovation into culture

By RODOLFO P. DE GUZMAN
S&T Media Service, *DOST-STII*

Who says that neo-ethnic textiles are only for the seasoned ones who had developed taste for fine Filipino fibers? With technology intervention, neo-ethnic fibers can be designed into cool gears for kids who, by the way, have the most discriminating taste in clothes. They always go for the most eye-catching and comfortable. *(Photo by Henry A. de Leon/Text by Framelia V. Anonas, S&T Media Service)*

The textile industry is now garbed with more life and color. More importantly, there is now more market opportunities to indigenous folks. This is all because of technology innovations woven by the Department of Science and Technology (DOST) through the Philippine Textile Research Institute (PTRI).

At the hem of a two-year program of developing new and green textile technologies, DOST-PTRI espouses the use of natural dyes from indigenous plants like guava, yellow ginger and "talisay" leaves to draw out the natural beauty of Filipino fabrics woven from abaca, pineapple, and those from combinations of cotton or silk.

Coincidentally, a day prior to the celebration of Philippine Independence, the intricately designed "neo-ethnic" textiles were freely showcased during the "2013 Neo-ethnic Philippine Textile Conference" held on June 11, 2013 at the Heritage Hotel in Manila.

Neo-ethnic textiles, according to Julius L. Leaño, Jr., project leader and chief of the Chemicals, Dyes, Auxiliaries and By-product Utilization Section of PTRI, are "natural and/or indigenous material, sourced and/or produced in the Philippines using updated, relevant and green scientific and technological approaches and innovations by spinners, dyers, weavers and artisans."

Though technology intervention is applied, traditional patterns and designs are retained and even enhanced, said Leaño. He also revealed how his research team respected traditions in the communities in order to protect the culture embedded in the ethnic textiles and designs.

What used to be a no-economic activity has become a revitalized livelihood opportunity, creating jobs and a niche market that is seen to benefit the local textile industry, Leaño said.

The fabrics presented during the conference were the pineapple fabrics from Kalibo, Aklan; saluyot fibers; the inabel of Paoay, Ilocos Norte; the tiniri from Abra; the hablon from Oton, Iloilo; the T'nalak from Lake Sebu, South Cotabato; the hinabol from Impasug-ong, Bukidnon; the inaul from Maguindanao; and the pineapple knitwear from the National Capital Region.

The conference tackled the history of Filipino fabric making, defined neo-ethnic textile, and explained the role of DOST-PTRI in advancing the local textile industry. Also discussed were marketing and branding of neo-ethnic textile, current issues plaguing the textile industry and the opportunities for Philippine-made clothes and accessories using neo-ethnic fabrics. One of the conference highlights was the testimonial from partner organizations that were assisted by DOST-PTRI.

Natural dyed pure silk accentuated by handmade bead work. This piece was inspired by the royal flag and symbols of the sultanate of Maguinanao. (Designer: Cris Roxas)

Bustier dress with hablon, abel, and binaol fabrics (by Pau Geronimo).

Red Kalinga top and skirt with zigzag suksuk pattern (Both by Anthony Cruz Legarda).

Natural-dyed brown, gold and white hablon plaid shirt with cream front insets.

In his talk, Leaño stressed that the new dyeing technologies enhanced the beauty of the hinabol fabric when introduced to ethnic communities like the Bukidnon's Kalandang Weavers and Sunflower Weavers.

"We introduced the use of natural dyes and we shortened the dyeing process as part of our intervention… with top dyeing we put one color on top of the other to create variations in color, like using indigo as the first dye and top dyeing with yellow to produce a different shade of green," Leano added.

Aside from improving the quality of indigenous fabrics, the innovations introduced by PTRI resulted in positive impact on the income of the communities who produce them. During the testimonial portion of the conference, Myla Carcasona, president of Kalandang Weavers shared her experience as to how the new technologies from PTRI uplifted their plight. Translated from her native dialect called Binukid, Carcasona said, "We are very grateful to PTRI and to Sir Julius for teaching us to use natural dyes that help us improve our products. Before, we sell them at P30 per meter but now we can sell the fabrics as high as P150 per meter."

Neo-ethnic textile developed by the Department of Science and Technology - Philippine Textile Research Institute are designed into wearable casuals and chic accessories. Technology enhanced the features of the local fibers even as it preserved the culture attached in weaving them, resulting in a unique Filipino brand that is finding a niche in the market and creating opportunities to indigenous weavers. Center: Natural-dyed blue and white T'nalak fabric used as neckpiece and clutch by Kaira Dimatulac and Gelo Salanga. L-R: Natural-dyed pineapple fabric as material for bag (by Boo Malsi), natural-dyed Hinabol fabric used as material for luggage bag and hat (by Mylee Co and Madey dela Cruz), natural-dyed abel fabric as accent for earrings, hat, and shoes (by Pamela Nicole Mejia), and royal flag-inspired silk piece with beadwork (by Cris Roxas). *(Photo by Henry de Leon)*

Finally, the conference ended with a bang through a fashion show of glitz and glamour participated in by budding designers from the University of the Philippines Diliman College of Home Economics Clothing Technology and established fashion designers like Anthony Cruz Legarda, Curitthy Manzanero, Pau Geronimo, Kitty Caragay, and Monica Escano-Rayala.

The neo-textile designers (front row) led by Anthony Cruz Legarda (fourth from right). *(Photo by Framelia V. Anonas, S&T Media Service)*

Beat the heat, keep your health with this low-fat, low-sugar cream

By RODOLFO DE GUZMAN
S&T Media Service, *DOST-STII*

IN THE Philippines, hot, lazy afternoons are not complete without ice cream. But, sad to say, there is a portion of the population that shies away from this "sinful" dessert simply because they have hypertension or diabetes. So will these people have to suffer in silence and miss out the fun out of this tropical weather? Maybe not, with the Department of Science and Technology's (DOST) incredible guilt-free ice cream.

Low in fat and sugar, but equally loaded with ice cream goodness, this healthy frozen delight is a developed by food experts at the DOST- Food and Nutrition Research Institute.

Based on the September 2008 data, a cup of this FNRI-developed ice cream at 100 grams contains only 0.46 grams of fat compared with other commercial brands with about 10.9 grams. Likewise, the FNRI formulation makes use of both ordinary and substitute sugar as sweetener at less than 0.1 gram per serving.

Further, the low-fat, low-sugar ice cream is priced much lower than the competition as it requires only P 1 million in capital investment, including the use of blast freezers used for quick freezing of food items.

Dairyman Ice Cream, a local food manufacturer based in Plaridel, Bulacan,has adopted this DOST-developed technology and innovative manufacturing process. Now, the company sells these products in selected outlets in the provinces and Metro Manila in four flavors: vanilla, ube, chocolate and bukopandan.

FNRI researchers Ma. Elena G. Fernandez, Wenefrida N. Lainez and Dahlia A. Diaz developed the formula, process and manufacturing technology.

So, when the heat is on, lick it up via a scoop or two of that delicious, creamy, low-fat, low-sugar ice cream.

For more information, please contact FNRI Director Mario V. Capanzana at telephone numbers 837-2934, 827-3164, 837-2071 local 2296 or send queries through email at mvc@fnri.dost.gov.ph and mar_v_c@yahoo.com. You can also log on to the FNRI website at www.fnri.dost.gov.ph.

New fruit drinks to cool down summer

By RODOLFO DE GUZMAN
S&T Media Service, *DOST-STII*

THE DEPARTMENT of Science and Technology's Food and Nutrition Research Institute (DOST-FNRI) recently came up with natural fresh fruit drinks perfect for summer and beyond. Next to ice water, there is no better way to beat the tropical heat but drink fresh and nutritious fruit juices, *aunaturel!*

The new concoctions come in two types: one as ready-to-drink fruit juices and another in concentrated form.

The ready-to-drink juice products are available in three flavors: guyabano-nata, ripe mango-nata, and green mango-nata.

The Guyabano-Nata Fruit drink is a mixture of sweetened nata de coco, natural guyabano juice, and sugar. Every 100 ml contains fruit fiber (2.1 g), vitamin C (134.6mg) and energy (139 Kcal).

Meanwhile, the Ripe Mango-Nata Fruit drink is a blend of ripe mango fruit juice, sweetened nata de coco, and sugar. One serving of 200 ml juice is equal to 55 percentRecommended Daily Allowance (RDA) for vitamin C and 7 percent RDA for energy for an adult male. Because of its nutritional content, the juice is ideal for the prevention and management of constipation, obesity, diabetes, and hypertension.

On the other hand, the Green Mango-Nata Fruit drink is an alternate variant of the Ripe Mango-Nata drink. It contains the same nutritional benefits as the ripe mango flavor. Every 100 ml has 130.22 mg vitamin C, 140 Kcal energy and 2 g fiber.

The juice type is available in 500 ml and one-liter bottles and has a shelf life of up to six months.

Meanwhile, the concentrated form has two variants, the Carrot-Pineapple and the Carrot-Mango, that come in 375 ml glass bottles. The juices can be stored up to a year at room temperatures between 28 to 32 degrees Celsius.

Both variants contain natural carrot juice and sugar as sweetener. These drinks are rich in B-carotene and vitamin A, thus increasing body resistance against infections and help facilitate fast recovery from illnesses. To prepare a 250 ml drink, one has to mix one part concentrate and one part water.

DOST's baby food now manufactured in Pangasinan

By RODOLFO DE GUZMAN
S&T Media Service, *DOST-STII*

THE FOOD and Nutrition Research Institute (FNRI) of the Department of Science and Technology (DOST) formally turned over its newly developed complementary baby food manufacturing technology to Longlive Pharma during the inauguration of the latter's plant facility in Barangay Malanay, Sta. Barbara, Pangasinan last May 6, 2013.

Longlive Pharma is a DOST-SETUP assisted company that partnered with FNRI to commercialize the FNRI-developed rice-mongo instant blends and rice-mongo curls.

FNRI's complementary food products for infants six months and older are a smart alternative to commercially available baby food preparations. The products, which come in powder form and in hygienically prepared packaging, are available in three variants: ready to eat rice-mongo-sesame variety, rice-mongo instant, and ready to eat snack pack in the form of curls.

FNRI developed the complementary food primarily to address the incidence of malnutrition among infants and kids. At the same time, this product is a cheaper alternative to well-known brands in the market with equally high nutritional value. Likewise, this initiative will generate additional livelihood opportunities for the people of Pangasinan.

Based on FNRI's pilot scale test, the complementary food product costs around P5.00 per serving which is significantly cheaper than commercial brands.

Present during the turnover ceremonies were Usec. Carol M. Yorobe (representing DOST Sec. Mario G. Montejo), FNRI Director Dr. Mario Capanzana, DOST Region I Director Elsa R. Chan and Longlive Pharma General Manager Racky Doctor.

Doctor said that Longlive Pharma accepts the challenge to commercialize the product not because of sole business interest, but to "be of service to the Filipino people by taking part in making the product available, thus reducing the prevalence of malnutrition among children in the country today."

Project NOAH adopts Indonesian technology for disaster mitigation

By RODOLFO P. DE GUZMAN
S&T Media Service, *DOST-STII*

THE DEPARTMENT of Science and Technology's (DOST) Project NOAH (Nationwide Operational Assessment of Hazards) is adopting the disaster mitigating technology called InaSAFE from Indonesia. InaSAFE is an acronym for Indonesia Scenario Assessment for Emergency. It is an open source technology, which means it is free, readily accessed from the internet and may be modified by users. With this technology, data coming from weather scientists, local government units and the communities are gathered and consolidated to provide accurate information on future disaster events.

NOAH adopted Indonesis's InaSAFE as it has a lot in common with the Philippines, especially in topography and natural hazards.

This was disclosed during the multi-stakeholder assembly titled "Enhancing Community Resilience Through the Use of New Technology" conducted by Project NOAH recently held at the Oracle Hotel in Quezon City.

Abigail Baca, disaster and risk management officer of the World Bank East Asia and Pacific Region said that InaSAFE proved effective during the recent floods in Jakarta, Indonesia and it can be applied in the Philippines.

Dr. Alfredo Francisco Mahar Lagmay of Project NOAH disclosed that InaSAFE will be integrated into Project NOAH to supplement existing technologies used to mitigate, if not totally prevent, massive destruction caused by strong typhoons similar to Sendong in 2011 and Pablo in December 2012.

During his presentation, Dr. Lagmay said, "It is important to develop information tools that will help centralize risk information at the NOAH website and make them available to a wider community."

Since its launch in July 2012 in Marikina City, Project NOAH has continuously upgraded and strengthened its capability through installation of various weather forecasting equipmentin various disaster-prone areas in the country. Among these are the Hydromet water level sensors and Doppler radars used to measure amount of rainfall in a specific area.

To date, there are 525 Hydromet sensors installed in different river systems including those in Tullahan River, Marikina River and San Juan River in Metro Manila. Likewise, the Project NOAH team has put up billboards in Pampanga showing flood maps to inform residents of the high-risk areas in their communities.

Further, Dr. Enrico C. Paringit, project leader of NOAH's DREAM LiDAR (Disaster Risk and Exposure Assessment for Mitigation - Light Detection and Ranging) said," Since November 2012, we were able to do three-dimensional or 3D mapping of the Pampanga river basin, Agno River, Cagayan de Oro and Iligan. By the end of May this year, 3D mapping for Iloilo will be complete and next in line is the Panay river basin."

DOST, Oriental Mindoro ink MOA for Hydromet Project. The ceremonial Memorandum of Agreement (MOA) signing between the Department of Science and Technology (DOST) and the local government units of Calapan City, Baco, Naujan, Victoria and Bansud in Oriental Mindoro for the Hydromet Project officially starts the development of weather tracking devices to monitor the Calapan River Basin during heavy rains and floods. The Hydromet Project is a key component of Project NOAH, a flagship program of DOST which seeks to provide science-based and technology-driven disaster management and prevention solutions. Shown in photo during the signing are (from left): DOST Assistant Secretary and Science and Technology Information Institute Director Raymund Liboro, Naujan Mayor Hon. Ma. Angeles Casubuan, Municipal Planning and Development Coordinator for Victoria Caroline Manuel, Municipal Engineer of Baco Engr. Evan Aceveda, and DOST-MIMAROPA Regional Director Dr. Josefina Abilay. Oriental Mindoro, one of the provinces in the MIMAROPA region, committed to install 16 weather tracking devices. (Photo by Gerry Palad; Text by Angelica A. de Leon, S&T Media Service, DOST-STII)

DOST seals commitment to Oriental Mindoro Hydromet Project via MOA signing

By ANGELICA A. DE LEON
S&T Media Service, *DOST-STII*

THE DEPARTMENT of Science and Technology (DOST), thru DOST-MIMAROPA Regional Director Dr. Josefina P. Abilay and Assistant Secretary Raymund E. Liboro, concurrent director of the DOST's Science and Technology Information Institute (STII), inked a Memorandum of Agreement (MOA) with officials of Oriental Mindoro for the Hydromet Project, a component of Project NOAH or Nationwide Operational Assessment of Hazards.

The ceremonial MOA signing took place last April 16, 2013 in conjunction with the opening ceremony of the 2nd Regional Contest and Exhibits – MIMAROPA held at the Filipiniana Hotel in Calapan City, Oriental Mindoro.

Project NOAH is one of DOST's centerpiece programs which fuses science and technology to come up with high-impact disaster management and prevention solutions. The Hydromet Project dovetails with this aim by using state-of-the-art weather tracking equipment to provide a better picture of the country's surface waters. Data from said equipment will help experts and leaders make informed decision during severe weather conditions and floods.

The project is being implemented by DOST with the local government units of Calapan City, Baco, Naujan, Victoria, and Bansud in Oriental Mindoro – one of the provinces comprising the MIMAROPA region or Region IV-B.

Under the Hydromet Project, DOST's Advanced Science and Technology Institute, will develop weather tracking equipment such as automated rain gauges, water level monitoring sensors, and automated weather stations. These devices will be installed all over the Philippines, especially along the country's 18 major river basins.

In the case of Oriental Mindoro, said equipment will be installed at the Calapan River Basin which runs through the capital city of Calapan and the municipalities of Baco, Naujan, Victoria, and Bansud.

During the National Consultative Meeting on the Hydromet Project held at the DOST Region 2 office in Tuguegarao from April 15-16, 2013, Region IV-B has committed to install 16 weather tracking devices in 16 sites all over the region. Of this number, nine are automated rain gauges while seven are water level monitoring sensors.

As of April 17, 2013, all 17 regions in the country have committed to build a total of 525 devices in 427 identified installation sites.

"Under the project, we are under strict orders of President Aquino to install a total of 500 weather tracking equipment by the end of May, or if worse comes to worst, by mid-June, covering the whole country," said Project NOAH staff Alan Taule.

Of the total number of devices indicated in the summary report, more than 400 have already been put in place. "However, there are still many parts of the Philippines where installation sites have yet to be identified. But at present, I believe we are on track," said Taule.

SETUP props up quality of baked goodies, woodcraft, and pancit in Zambo

By THELMA E. DIEGO
S&T Media Service, *DOST-IX*

TWO BAKESHOPS, a furniture shop, and a pancitfactory are the latest beneficiaries of SETUP's innovation system support assistance in Region IX.The financial assistanceis expected to spur technological innovation and operations upgrade to boost the productivity and competitiveness of these micro, small, and medium enterprises located in various parts of the archipelago.

Isabela Seaport Bakery and Restaurants: sweeter success now in the offing

From Isabela City, Isabela Seaport Bakery and Restaurants received Php 604,500.00from DOST IX as assistance under the project titled "Upgrading of Bakery Equipment and Facilities."

Established in 2008, Isabela Seaport General Merchant has gradually established its foothold as the native Tausug's favorite bread and food service in town. The bakeshop offers sumptuous bread products and tasty local delicacies like junay (spicy peppered rice), waked (sticky rice), pasung and tabid-tabid (a.k.a. chikalang).

The level of quality of SeaportBakery's culinary delights is expected to climb several notches higher with DOST-IX's interventions that include system improvement, product improvement, manpower development through trainings on food safety and good manufacturing practices, and process improvement. The project assistance covers the acquisition of bakeshop equipment such as dough roller, oven with 24 plates, bread slicer, spiral mixer, cake mixer, stainless steel stove, steel racks (36 plates cap), stainless steel working table and planza.

Through the project, the bakeshop is expect to increase its volume of production by 30%, create local jobs, increase income by at least 30 percent, develop at least two new product lines, meet customers' demand of the products in the market, and acquire equipment and facilities needed to improve quality of bread and pastries.

Care Cakes and Pastries truly cares for quality

In Turno, DipologCity, Care Cakes and Pastries is showing all and sundry that it truly cares for customer satisfaction.

As the enterprise yearns to produce good quality products, its owner Mariles C. Regencia, applied for innovation support assistance. It received the nod of SETUP officials with assistance totaling Php 262,000.00.

These interventions are system improvement, product improvement, manpower development, and process improvement. The total cost includes acquisition of dough mixer, bread slicer, stainless steel working table, proofing rack, siopao steamer, and counter-type bread showcases.

These are expected to improve/ standardized product quality, increase the volume of production, create jobs locally, increase income by at least 20 percent, and meet market demand.

The bakeshop, which formally opened in January 2002, has built up a strong customer base in and out of Turno in Dipolog with its delectable cakes and native products. Yet despite this, Care Cakes and Pastriescontinues to strive for quality service. SETUP will help them achieve this.

Rene Woodcraft and Furniture: Building up for the regional market

With his special interest in furniture making which he nurtured from a young age and the experience he gained from TESDA furniture training courses, Rene Hapona established his furniture shop in 2007 in Sta. Clara, Naga, ZamboangaSibugay.

Rene Woodcraft and Furniture produces various designs of wood panel doors, French windows, bed frames, dining set, sala set, office furniture, cabinets, mouldings, balusters, and other wood products.

He started with a very small capitalization, but now, Hapona, selected as best TESDA alumnus, envisions to expand his market coverage to include the entire region within the next five years, and further penetrate the export market in the next ten years.

To attain his vision, he sought the assistance of DOST-SETUP and was granted assistance amounting to P 658,500.00.

The amount will cover the purchase of the latest carpentry tools and equipment such as table saw, table planer, mouldingmachine, spindle moulder, sliding compound miter saw, scroll saw, band saw, sliding panel saw and jointer plane. In addition, DOST IX, through the FPRDI experts, will also provide technical training on wood treatment and finishing, and technical consultancy on proper plant design and layout.

Rene Furniture and Woodcraft is aiming for significant developments with the release of the funding. First, it is expected to increase productivity by 50%, decrease rejects and back jobs on repairing cracks by at least 80%, penetrate new markets, employ at least two additional workers, and enhance the quality of its furniture products.

AjeroFood Industry: Cooking up oodles of ingredients for success

Inheriting the enterprise from his uncle, the current owner of Ajero Food Industry, Richard Ajero, purchased second-hand equipment to improve the production of the family's pancit making facility located in New Lituban, Siocon, Zamboanga del Norte. However, the facility was not enough to comply with government standards for producing quality products.

DOST regional test labs get accreditation, awards

From left, clockwise: DOST-X analyst checks the juice sample for shelf-life evaluation, while DOST-CAR lab staff and DOST-II staff with Dir. UrdujaTejada (third from left) show their recognition.

EXPERTS AT DOST's Regional Standards and Testing Laboratories (RSTL) recently proved their competence in laboratory works as a number of the labs received accreditation and awards. For one, the Accelerated Shelf-life Evaluation Laboratory (ASEL) of the Department of Science and Technology Regional Office X (DOST-X) was awarded ISO/IEC 17025:2005 accreditation for chemical tests relevant to shelf-life determination by the Philippine Accreditation Office (PAO).

The lab got accreditation number LA-2013-243A in chemical testing for the duration 10 May 2013 to 09 May 2018 after assessment of its quality management system, policies, procedures and methods showed that these conform to the requirements of the international standard. Philippine National Standard (PNS) ISO/IEC 17025:2005 is an international standard for the general requirements for the competence of testing and calibration laboratories.

The other two DOST-X laboratories, the Chemical Testing Laboratory (CTL) and Microbiological Testing Laboratory (MTL), are also PNS ISO/IEC 17025:2005 accredited since 2005. These two laboratories were granted renewal of accreditation until May 2018 during the same assessment conducted by PAO this January 7-9, 2013 with additional approved signatories and significantly more matrices, test parameters and methods in the scope of accreditation.

Meanwhile, the DOST-CAR RSTL was cited as one of the Outstanding Regional Testing Laboratories from the 14 DOST RSTLs in the country for generating the highest income and conducting the highest number of tests from 2006 to 2012 for PCIEERD funded projects.

Further, DOST II's RSTL bagged the "Most Improved Regional Standards and Testing Laboratory" for achieving the highest rate of increase in income from P108,840 in 2007 to P1,064,551 in 2012 generated both by its Microbiology and Chemical Laboratory. The DOST II-RSTL, an ISO/IEC 17025:2005 accredited laboratory is formally recognized for its competence in providing microbiological and chemical testing servicesfor water, foods, feeds, plants and plan extracts. Aside from the testing services, the RSTL provides food safety and Good Manufacturing Practices (GMP) trainings to food industry establishments. The laboratories received the recognition on March 25, 2013 during the Planning Workshop at Los Baños, Laguna by Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) Executive Director Rowena Cristina L. Guevara. The awards are based on the PCIEERD-funded projects include the "Rationalized Upgrading of Regional Laboratories" and "Strengthening the Testing and Analytical Capabilities of DOST Regional Laboratories to Support the Competitiveness of Local Industries (STARLABS)." (with reports from Admer Rey C. Dablio/DOST-X, Sylvia T. Lacambra/DOST-II, and Sheila Marie Singa-Claver /DOST-CAR)

In pursuit of improving product quality, Ajeroinitiated to upgrade his production plant and received P 660,000.00 as assistance from DOST IX. This will cover acquisition of Stainless Steels food upgrade equipment. Also, the regional office will provide product testing services to achieve better quality products, trainings on Good Manufacturing Practices (GMP) and Basic Sanitation and Hygiene for Food Handlers, and technical consultancy on the proper plant layout. These developments will fully transform the enterprise into a standardized production firm complying with FDA requirements.

These are expected to boost Ajero Food Industry's productivity and income by 30 percent, develop quality food products, create sustainable employment opportunity in the area which would eventually translate into better economic opportunities for the people of Siocon, Zamboangadel Norte.

For more information, interested parties may visit or call DOST-Regional Office IX, Pettit Barracks, Zamboanga City with tel. no. (062) 991-1024; the Provincial S&T Center in Upper Turno, Dipolog City, tel. no.(065) 212-2244; Provincial S&T Center in Rizal Avenue, Pagadian City, tel. no. (062) 925-1152; and the Provincial S&T Center in 2/F Faundo Bldg., National Highway, Poblacion, Ipil, ZamboangaSibugay with tel. no. (062) 333-2793.

Clockwise: 1) Winning the Most Outstanding Utility Model plum is Veronica Pasion (2nd from left) for her flavored salted eggs using brine mixtures of herbs, spices, and various flavors. Also in photo are DOST-Oriental Mindoro Provincial Science and Technology Director Jesse Pine (far left) and Technology Application and Promotion Institute (TAPI) Invention Development Division Chief Dr. George M. Colorado (far right) among others. 2) The research "Varying Levels of Fermented Nami Extracts as Organic Insecticide on Rice Bugs" won for Occidental Mindoro State College's Chrisna Alla Aina B. Busto (left) the top prize for Most Outstanding Student Creative Research for College, also called the SIBOL Award. The study emphasizes the benefits of *nami* extracts as organic insecticides which are more environment friendly than chemical insecticides. (3) Aira C. Antonio (middle) of Bansud National High School – Regional Science High School for MIMAROPA bagged the Best Student Creative Research for High School for her research work on the RubBush Pusher, a device used in the removal and installation of rubber bushing in vehicles.

DOST-MIMAROPA picks regional reps to nat'l inventors contest

By ANGELICA A. DE LEON
S&T Media Service, *DOST-STII*

The Department of Science and Technology (DOST) - MIMAROPA Regional Office has chosen qualifiers for the national level competitions for researchers and inventors set for 2014, as entries from Romblon, Occidental and Oriental Mindoro emerged as winners of the 2nd Regional Invention Contest and Exhibits (RICE) for MIMAROPA last April 17, 2013 at the FilipinianaHotel in Calapan City, Oriental Mindoro.

RICE-MIMAROPA is a project of DOST thru its attached agency, the Technology Application and Promotion Institute (TAPI) and DOST-MIMAROPA in cooperation with the Provincial Government of Oriental Mindoro, Local Government Unit of Calapan City, and Mindoro State College of Agriculture and Technology (MinSCAT).

Copping the top prizes were: Veronica Pasion of Occidental Mindoro State College for her flavored salted egg products as Most Outstanding Utility Model, Engr. Orley Fadriquel of Romblon State University for his versatile Tiger grass Pollen Remover con Woodworking Machine as Most Outstanding Creative Research or LIKHA Award, Aira C. Antonio of Bansud National High School – Regional Science High School for MIMAROPA for her innovative RubBush Pusher with features that are useful for car suspension system maintenance as Most Outstanding Student Creative Research for High School, and Chrisna Alla Aira B. Busto of Occidental Mindoro State College for herentry, Varying Levels of Fermented Nami Extracts as Organic Insecticide on Rice Bugs, as Most Outstanding Student Creative Research for College. The last two student winners fall under the SIBOL Award for both high school and college categories.

The RICE - MIMAROPA leg, which opened on April 16 in Oriental Mindoro's capital city, kickstarted the 2013 edition of the competition in various regions of the Philippines.

With the theme "Inventions and Innovations for a Smarter Philippines," RICE aims to generate appreciation of local inventions especially those for practical use in daily living and thus have the potential for commercialization. On a larger scale, the event also seeks to discover world-class inventions which can penetrate the international market.

"(The) government is here to assist you, but you have to come up with world-class products which can be winners and compete on the global stage," said DOST Assistant Secretary and concurrently Science and Technology Information Institute (STII) Director Raymund Liboro during the opening ceremony.

Dir. Liboro stressed that DOST is now focusing its efforts on innovating for the poor such as tapping biodiversity to foster technological innovations for health initiatives such as lagundi-based medicines.

He emphasized, however, that government cannot do this alone. Instead, government, the private sector, and the academe, should join hands to assist and direct this innovation process.

TAPI Invention Development Division Chief Dr. George M. Colorado echoed Dir. Liboro's statements as he emphasized the need to intensify the country's science and technology activities. "Technology is one single input which does not depreciate, no matter where you use it, whether in agriculture or any other sector. And this is what DOST is emphasizing," Dr. Colorado remarked.

The winners, who received cash prizes among others, bested entries from other schools and universities in the MIMAROPA region which is composed of Mindoro Oriental and Occidental, Marinduque, Romblon, and Palawan. They will represent MIMAROPA in the national championship in 2014.

DOST Sec. Mario G. Montejo shared his thoughts about the potential increase of income of farmers, processors, and the local government with the establishment of the DOST Agri-Processing Plant in Aborlan, Palawan. Also attending the launch were (from left to right) Aborlan Mayor Jaime Ortega, DOST-MIMAROPA Regional Director Ma. Josefina Abilay., Nature's Tropical Delight CEO Marylou Fernando, and Celsa Adier, who represented Palawan Governor Abraham Kahlil Mitra.

(L-R) DOST Secretary Mario Montejo, Aborlan Mayor Jaime Ortega, DOST-MIMAROPA RD Ma. Josefina Abilay, Nature's Tropical Delight CEO Marylou Fernando, and DOST Undersecretary Carol Yorobe check out the procedures at the newly-launched Agri-Processing Plant in Isaub, Aborlan, Palawan

MILLIONS FROM MANGO

DOST's agri-processing plant to help raise farmers' income in Palawan

By PACIFICO T. SARIEGO III,
DOST-PSTC Palawan

MANGO FARMERS could raise their income if processing of these pulpy, juicy fruits will be done according to accepted food safety standards. This is the fearless forecast of DOST Secretary Mario Montejo as he led the launch of the DOST Product Development and Agri-Processing Plant in Isaub, Aborlan, Palawan on April 26, 2013.

He further said that, when processed, fruits from the estimated 240,000 mango trees in the area could rake in millions of income for mango farmers and the processors. At present, income from mangoes is not fully realized because of the quarantine procedures for fresh mangoes from Palawan. Quarantine was implemented when mango pulp weevil or Sternochetus frigidus, a pest that feeds on mango flesh, was detected in the province. The pests are difficult to detect because the damage does not show on the skin of the fruit. There are also very few processors who buy and use mango for processing into puree, dried or other high value products.

The plant launch kickstarted the value adding operations by the Natures Tropical Delight (NTD), a corporation engaged in the processing and export of products from fruits and root crops. The activity was attended by Dr. Carol Yorobe, undersecretary for regional operations; Dr. Ma. Josefina Abilay, DOST-MIMAROPA regional director; Atty. Cipriano Santiago, DA-MIMAROPA regional director; Jennifer Remoquillo, DA Commercial High Value Crops program director; Mayor Jaime Ortega of Aborlan, Palawan; Celsa Adier representing Governor Mitra; Bart Duff of the Palawan Chamber of Commerce and Industry; Marylou Fernando, Natures Tropical Delight CEO; representatives of local and national agencies in Palawan; and farmers from Aborlan.

Sec. Montejo emphasized the importance of using science and technology to innovate to come up with new products and to make the production process efficient and profitable. He also underscored the importance of the collaboration between NTD and the national and local agencies to make sure that good quality fruits and root crops are supplied to NTD which process and market the finished products.

Plant facilities include the sweep potato peeler, slicer, cabinet dryer, automatic chip fryer, walk-in chiller, all brought in by NTD, and the mango pulper provided by DOST-MIMAROPA. The mango pulper churns out puree in one spout, and the seeds and peels in another at the rate of 200 to 300 kg per hour. Aside from mango, the plant also processes sweet potato, banana, and young coconut (buko).

Located 58 km south of Puerto Princesa City, the DOST Product Development and Agri-Processing Plant was established to provide a food safety compliant facility initially for the processing of rootcrops. The facility is intended to spur the development of new products from existing crops in the area, and the commercial production of these products.

The Isaub area is noted for root crops ginger and purple yam, and once they were able to supply 300 tons of purple yam to a major ice cream manufacturer in Manila. The plant is expected to boost the productivity of farms and farmers in the area, and help realize the vision of inclusive growth in the countryside by bringing more income and jobs for farmers and their families.

DOST's Project NOAH and TV White Spaces bag FutureGov Awards

By ALLAN MAURO V. MARFAL
S &T Media Service, *DOST-STII*

FUTUREGOV, ASIA'S longest running and multi-awarded magazine for government, healthcare and education, recognized the Department of Science and Technology (DOST)'s two banner projects for their contributions in driving the country towards sustainable development.

Said two projects, the Nationwide Operational Assessment of Hazards (NOAH) and TV White Spaces Technology, gained FutureGov's nod along with eight other top picks for "helping push the successful modernization in government, education and healthcare organizations in Asia-Pacific region."

Project NOAH's mobile application was adjudged as the best in this category for enabling Filipinos to get information relevant to weather conditions and disaster preparedness on the palm of their hands, thereby saving lives and potential economic loss.

"When it comes to accessing real-time information, there is nothing more ubiquitous than a mobile phone. In the wake of natural calamities, new ways of using mobile devices has paved the way for governments and communities to streamline and improve their search and rescue and disaster prevention efforts," James Smith, managing editor of FutureGov magazine and chairman of judging panel, said.

Project NOAH is DOST's response to step up national efforts toward greater and more intensive disaster risk reduction and management procedures in the country.

Meanwhile, TV White Spaces Project, another DOST project through its Information and Communication Technology Office (ICTO), received the Technology Leadership Award.

"Leadership is about setting a path for others to follow-and the FutureGov Technology Leadership Award recognizes ICTO-DOST for the scope and underlying vision of the TV White Spaces project," Smith said.

DOST Undersecretary Louis Napoleon Casambre , head of the Information and Communications Technology Office (ICTO), receives the Best Mobile Application award for Project NOAH (short for Nationwide Operational Assessment of Hazards) and Technology Leadership Award for ICTO's TV White Spaces Project in the recent FutureGov Awards Philippines held at New World Hotel, Makati City. Project NOAH was recognized for its major role in providing information relevant to weather conditions and disaster preparedness. According to FutureGov Magazine managing editor Mohit Sagar this project has "the greatest potential transformative impact of any of the projects surveyed." (Photo from FutureGov)

DOST's TV White Space Projects is DOST-ICTO 's initiative to deploy new wireless data communication standards, such as the unused TV channels in UHF and VHF bands. Apart from providing Internet access to rural communities, TV White Space technologies can also be used to support government projects requiring data connectivity.

Other recipients of FutureGov Awards include the Department of Budget and Management as Government Organization of the Year, Juan Evangelista of Government Service Insurance System (GSIS) as CIO of the Year, Revenue Administration Reform Project of Bureau of Internal Revenue for Service Innovation, Personally Controlled Health Records of Philippine Health Insurance Corporation for E-Government, Philippine Geoportal of National Mapping Agency for Information Management, Department of National Defense for Information Security and Makati City Hall for Data Center.

The awardees were selected by FutureGov Magazine's editorial team, who are acknowledged experts in the development of e-commerce in the region. The awarding ceremony was held recently at the close of the annual FutureGov Forum Philippines at the New World Hotel in Makati City.

FutureGov Awards Philippines highlighted the commitment and hard work of the country's public sector to deliver more reliable and efficient services to its constituents.

SETUP opens doors for door maker

With the increased demand due to real estate developments in the region, Wood Works ably supplied the burgeoning market

WHEN YOU buy a door at Citi Hardware, one of the largest hardware chains in the country, chances are, it is made by Woodworks Kiln Dried Products, one of the most successful DOST-SETUP adoptors in Southern Mindanao. The story of how a small-time furniture maker became a supplier to a hardware and building supply giant with 36 branches nationwide is filled with challenges and risks but is ultimately inspiring.

In 1994, Ricardo "Ric" Talaboc was a college instructor recently married to Melody Parker, a bank employee, when he asked the carpenters who built their house to make a few furniture pieces to furnish their new home. Soon friends and neighbors noticed the furniture items and made orders, eventually convincing Ric to leave his teaching job and go full time with their new furniture business called Woodworks.

An eager learner, Talaboc participated in various trainings, seminars and fora. Among the trainings he attended were on lumber drying facilities, varnishing techniques, machine graded lumber technology, wood processing techniques, composing jigs, spray booth finishing techniques, and value chain analysis. Earning a modest income, he was already satisfied with the fact that he was doing what he liked while providing a livelihood to people in his community. And then the kind of opportunity that happens very rarely to a backyard operation came knocking on his door, literally.

Citi Hardware, a national chain of DIY superstores and building supplies needed a supplier of panel doors. Any company would have immediately jumped at the chance of getting such a deal, but there was a catch. The doors would have to fit certain production standards and should be kiln-dried. Ric felt that he was still not ready for such a demand and wisely declined.

But soon help came in the form of the Small Enterprise Technology Upgrading Program, or SETUP, one of the major programs of DOST. Under SETUP, Wood Works was able to establish a 20-board foot capacity Kiln Lumber Dryer and other equipment, enabling them to produce the doors as required by Citi Hardware, which eventually made a deal with them. In 2005, the company also acquired a Wide-Belt Sander, which greatly increased their production capacity, since manual sanding of the doors was then a major bottleneck in their operations. Ric admits that it was the timely assistance of SETUP that enabled them to meet the demands of the market.

Wood Works was also one of the beneficiaries of the Manufacturing Productivity Extension Project (MPEX) , in which DOST sends production management experts to coach SMEs in process systems improvement. The MPEX assistance immediately increased the company's productivity and established an improved system of workplace functions. With the increased demand due to real estate developments in the region, Wood Works ably supplied the burgeoning market. Woodworks later acquired a Computer Numerical Control (CNC) wood engraving machine, cutting the production time for wood carving, a time consuming process prone to mistakes when done manually. DOST again provided technical assistance in the operation of the machine and computer aided design. The CNC operation shortened the wood carving process from three days to four hours, with a very high quality of design execution.

In time, Ric's wife Melody also had to give up the bank job to help in the family business. By 2010, Wood Works was producing 600 doors per month, with annual sales breaking the eight figure barrier. Ric and Melody eventually won awards from various agencies and organizations for the work they have done in turning a backyard enterprise into a supplier of nationally distributed products and employing more than 50 workers. But they attribute their success mostly to the assistance of DOST and the loyalty of their employees, with whom they also share their blessings by taking care of their welfare and even creating a motorcycle ownership plan.

For Ric and Melody Talaboc, success came not only because of their hard work, but also with timely help from others, now their concern is giving back to those who helped them.

FNRI-DOST gets GEMS recognition

By SALVADOR R. SERRANO
S&T Media Service, *DOST-FNRI*

THE REGIONAL Office for the Western Pacific of the World Health Organization (WHO) under the United Nations (UN) recently recognized the Food and Nutrition Research Institute of the Department of Science and Technology (FNRI-DOST) as the Philippine government's designated national institution to participate in the work of the WHO Global Environment Monitoring System (GEMS), particularly on the Food Contamination Monitoring and Assessment Programme (CMAP).

Ina communication sent to the Philippine government through the Department of Health by Dr. Shin Young-soo, WHO Regional Director for the Western Pacific, FNRI's membership to the GEMS Food Network was formalized. FNRI will have a one-year term, subject to tacit renewal before the end of each year.

The National GEMS Food Centers (NGCs) are national institutions designated by national authorities and recognized by the WHO for participating in the work of GEMS-CMAP.

Since 1976, the GEMS/Food has informed governments, the Codex AlimentariusCommission and other relevant institutions, as well as the public, on the levels and trends of chemical contaminants in food and their contribution to dietary exposure. The Codex Alimentarius, a Latin word which means "food law" or "code" is the result of the Commission's work: a collection of internationally adopted food standards, guidelines, codes of practice and other recommendations, according to the FAOWHO website on the codex.

The Codex Alimentarius Commission is an intergovernmental body with over 180 members, within the framework of the Joint Food Standards Programme established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). The purpose is to protect the health of consumers and ensure fair practices in food trade, the website further disclosed.

The Commission, which publishes the codex, also promotes coordination of all food standards works undertaken by international governmental and non-governmental organizations.

According to the WHO, one of the three GEMS/Food main areas of activity is data collection for hazard occurrence, food composition and food consumption and sharing of information for accurate international risk assessment.

The second main area of activity of GEMS/Food involves training and capacity building at national and regional levels for chemical exposure assessment based on Total Diet Studies, the WHO added. The WHO also underscored the third GEMS/Food main area of activity concerning development and dissemination of guidelines and recommendations for exposure assessment methodologies.

The list of GEMS/Food collaborating institutions updated in December 18, 2012 includes the Philippines under the Western Pacific Regional Office, with the FNRI as the designated National GEMS/Food Centre (NGC) of Manila recognized by the WHO. Another NGC of the Philippines recognized by the WHO is the Food and Drug Administration of the Department of Health (FDA-DOH).

Meanwhile, the radio program titled Family Matters, which includes a five-minute segment bythe Department of Science and Technology's Food and Nutrition Research Institute (DOST-FNRI), and aired over DZAS 702, bagged the Best Radio Magazine Program award from the 21st Golden Dove Awards.

The Golden Dove Awards is an annual event of the Kapisanan ng Mga Brodkasterng Pilipinas or KBP where recognitions are given to outstanding television and radio programs that exemplify the ideals and advocacies of the broadcast industry.

Menu ni Mommy is the FNRI segment in the two-hour radio program hosted by HeideeSampang. The program, which is moderated by Josefina Gonzales of DOST-FNRI, goes on air every Wednesday at DZAS, a Christian radio station that promotes programs with redeeming values. The segment format includes dissemination of nutritional recipes that mothers can use and serve to their families; breastfeeding tips; malnutrition statistics from the National Nutrition Survey and the latest research and developments in the field of nutrition, diet management, alternative healthy products and general wellness. (With a report from Rudy de Guzman, DOST-STII).

Invitation to ExpoScience 2013. DOST Assistant Secretary and concurrent STII DirectorRaymund E. Liboro (top photo), DOST-Philippine Council for Health Research and Development Executive Director Jaime C. Montoya, and DOST-Science and Technology Information Institute Chief SRS Aristotle P. Carandang all served as Guest of Honor and Speaker at the flag-raising ceremonies of various agencies, including the Office of the President, Office of the Vice-President, Department of Agriculture (DA), Department of Health, Philippine Drug Enforcement Agency, and Department of Energy. The DOST speakers rounded several government agencies to promote the 2013 National Science and Technology Week (NSTW) July 23-27 at the SMX Convention Center, SM Mall of Asia , Pasay City. The DOST officials also promoted the use of the DOST-developed Ovicidal-LarvicidalTrap, which was later distributed to the employees. Admission to the Exposcience 2013 is free. **(Alan C. Taule,S&T Media Service)**

Cloud Top at work. Selected Grade 6 pupils of Tambubong Elementary School in San Rafael, Bulacan try using the Cloud Top, a collaborative project between the Department of Science and Technology and the Department of Education. Cloud Top consists of thin clients and servers for educational purposes that will minimize the acquisition costs of hardware and software for computers. It will also use government cloud applications for sustainable energy solutions. **(Text and Photo by Allan Mauro V. Marfal, S&T Media Service, DOST-STII)**

President Benigno S. Aquino III leads the test ride of the Automated Guideway Transit (AGT) System during the Demonstration Run at the University of the Philippines (UP) in Emilio Jacinto St., Diliman, Quezon City on Monday (April 15, 2013). A flagship project of the Department of Science and Technology (DOST) in collaboration with UP, the AGT is an elevated train that is electrically powered and emission free. It is capable of transporting up to 60 passengers from station to station, like the AGTs and other elevated carriers in other countries and the rail transit systems in Metro Manila. Upon completion, the AGT will be "driverless" and may be built within central business districts or serve as a link between the city's main airports.

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