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S&T POST

Juan Time – the new Filipino Time is more than rhetoric

Sans the usual fanfare in government offices, the very first "National Time Consciousness Week" (NTCW) celebration was silently observed on the first Monday of 2014. It was the 6th of January when the Department of Science and Technology (DOST) led the entire country in what was envisioned as simultaneous flag raising ceremonies.

To reinforce information dissemination of Republic Act 10535 or the Philippine Standard Time Act of 2013, the S&T Post editorial team takes its share of letting the people know about this legislative measure that touches on a sensitive practice.

Known as the PhST as the law's moniker, Juan Time is featured in more ways than one; stories that deal on time consciousness, socio-economic values, and way of life, among others.

With the enactment of the law, it could not be helped for criticisms to arise since tardiness has become "fashionable" especially in social events. And this is one concern that we should look into as a people.

The law has mandated the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), the official timekeeper of the country, and the Science and Technology Information Institute (STII), the information arm of the DOST, in collaboration with government agencies to organize activities for the observance of the NTCW. Other government agencies through the Civil Service Commission are also encouraged to issue the necessary guidelines to all government agencies to follow PhST.

To celebrate the week, the public is likewise required to participate and cooperate actively in the activities as well in propagating a culture of punctuality and practicing wise time management. As mentioned, the initiative to push for change is more than rhetoric. Despite the legislation, this one requires full cooperation of the entire society. Change, this time, should come from within – an honest-to-goodness willingness from every individual.

Aside from the "new" Filipino Time-related articles, the Post for the first quarter issue in 2014 has continued with its regular sections such as latest news and technologies, developments in the regions, and news from around the world, among others. Focus is also given to what's going on about disaster preparedness with discussions on the latest DOST initiative dubbed *"Iba na ang Panahon:* Science for Safer Communities" – a 17-region information, education and communications drive that started in March and is expected to culminate in the fourth week of May 2014. It showcases appropriate tools needed for early warning and early action that have been developed by the DOST and its partners.

Aristotle P. Carandang, PhD

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Telefax: (02) 837-7520
Tel No.: (02) 837-2071 to 80 local 2148
Email: dost.digest@gmail.com;

Visit:
www.stii.dost.gov.ph

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Our Cover

Clocks from various generations depict the diversity of time devices common among Filipinos, as well as the variations of time that we follow. This brings confusion, worsened by our diversity as a people and other cultural factors that affect our concept of time. Pushing for a scientific intervention, we at STII began our movement for one nation, one time in a campaign called "Juan Time." With the enactment of RA 10535, we as one nation now have to follow only one common time- the Philippine Standard Time. (Concept and design by James B. Intia)

E-beam irradiation facility to perk up research & industry

By HANS JOSHUA V. DANTES
S&T Media Servise, *DOST-PNRI*

THE PHILIPPINE Nuclear Research Institute – Department of Science and Technology is establishing an Electron Beam (EB) Irradiation Facility at the PNRI compound, bringing the country's technology at par with the international community through the applications of radiation processing in various industries.

With this new facility, the Institute takes the next step in its use of irradiation technologies. PNRI's present Cobalt-60 Multipurpose Irradiation Facility has demonstrated many of the applications of radiation processing using gamma-rays and has been regularly serving clients from the food, packaging, medical products and pharmaceutical industries.

While the facility operates on a semi-commercial scale, the institute currently encourages industries to establish commercial irradiators to make an impact on the country's sustainable development.

Over the past 30 years, both developed and developing countries all over the world have already established around 1,200 E-beam accelerators dedicated to commercial and industrial purposes. PNRI's 2.5 MeV electron beam accelerator will be the first in the country intended for full-scale research and development and semi-commercial E-beam services.

While irradiation through gamma rays has certain advantages in radiation processing such as the deeper penetration of gamma rays for thicker materials, electron accelerators are capable of delivering higher dose rates than gamma radiation sources, speeding up the irradiation process. Electron beams can deposit the same energy as gamma radiation would, but in seconds instead of hours, allowing for applications which would otherwise be impractical using radiation sources since it would take extremely longer periods of time.

Hence, faster irradiation opens the doors to more potential applications such as improving the quality of automobile parts, plastics, fibers and semiconductors, better waste management, nanotechnology and jewelry – in addition to the already well-proven capabilities of gamma radiation.

An illustration of a typical Electron Beam (EB) Facility from EB-TECH of Korea. The same model of EB accelerator was supplied to the Philippine Nuclear Research Institute (PNRI).

Instead of using chemicals to harden, cure or change the composition of polymer and plastic-based products, radiation from electron beams can induce the cross-linking of molecules in various materials. In cross-linking, polymers interact with each other to form a three-dimensional network, making tires, rubber sheets, wires, batteries and electrical industrial cables tougher and more resistant to heat, corrosion and chemical damage. The same process may also be applied to improve fabrics, paints, and food packaging materials.

"When you do cross-linking, you can practically increase the toughness of much lighter materials such as carbon fiber or reinforced plastic," said Jordan Madrid, a Science Research Specialist from PNRI's Chemistry Research Section.

Madrid participated in a regional training course in Korea in 2013 under a project titled "Electron Beam Applications for Value Addition to Food and Industrial Products and Degradation of Environmental Pollutants in the Asia- Pacific Region." The project was spearheaded by the United Nations Development Program (UNDP) and the Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific (RCA).

E-beams may also be used for polymer grafting, where polymer chains are "grown" from the surfaces of polymers."There are so many possible applications of polymer grafting, but for the meantime, PNRI scientists are focusing on developing applications such as metal ion absorbents for water purification, catalysts for desired chemical reactions and chemical sensors, among others." said Madrid, who also worked with electron beams in his research on polymer grafting under the Japanese government's MEXT program.

In agriculture, electron beams will prove useful in irradiating food products for sprout inhibition, delaying fruit ripening, pasteurization and microbial decontamination. Its applications in the medical field ranges from sterilizing medical pharmaceuticals and "high-purity" equipment such as scalpels and syringes to reinforcing specialized membranes with electronic and biological sensors without damaging sensitive components. Electron beams can also be used for synthesizing nanogels and microgels such as PNRI's recently commercialized hydrogels for wounds and burns.

The higher dose rates would allow for faster irradiation of food and medical products, said Biomedical Research Section head Zenaida De Guzman."If it takes six to seven hours to irradiate

Low-cost handicraft dryer now available at FPRDI

By RIZALINA K. ARARAL
S&T Media Service, *DOST-FPRDI*

ONE OF the biggest concerns of the country's handicraft-makers is quality but affordable drying – finding the cheapest way to thoroughly dry their raw materials and products.

"Many small and medium players in the local handicraft industry do not have their own dryers because of the high investment cost," according to Dr. Romulo T. Aggangan, director of the Department of Science and Technology-Forest Products Research and Development Institute.. "They simply rely on the sun to dry their materials or products and so they often end up victims of bad weather. The rainy season cripples their production. They cannot deliver on time and their products are prone to the attack of molds because these are not thoroughly dried."

To address this problem, the FPRDI recently developed a low-cost handicraft dryer. "We made a cheaper dryer by simplifying the design of the FPRDI furnace-type lumber dryer, and by using quality surplus materials to save on material and fabrication cost," says Wency H. Carmelo, Senior Science Research Specialist of FPRDI's Technology Innovation Division.

"The (low-cost dryer) is 40 percent cheaper than other FPRDI-designed dryers. A 10-cubic meter prototype worth Php 250,000 has been tested at R.A. Bagabaldo Wood Carvings in Paete, Laguna and was found to be as effective yet 23 percent more efficient on wood fuel use than our previously designed furnace-type lumber dryer of the same capacity," Carmelo revealed.

Two other companies adopted the new dryer but built ones with bigger capacities. Starwood, Inc. in Valenzuela, which makes export-quality handicrafts from driftwood, has built two units of 18-cubic meter-capacity dryers in its plant. According to Mr. Larry S. Tan, company owner, they can now deliver their products on time without worrying that these will be attacked by molds. Masaeco Development Corp. in Indang, Cavite which makes handicrafts from handmade paper now uses a 35-cubic meter capacity dryer instead of their previous kerosene-fired dryer that consumed as much as Php 60,000 per month worth of kerosene.

DOST-FPRDI's 10-cubic meter prototype worth Php 250,000 at R.A. Bagabaldo Wood Carvings in Paete, Laguna is effective yet 23 percent more efficient on wood fuel use than the previously designed furnace-type lumber dryer of the same capacity.

The Philippines continues to be a leader in handicraft production worldwide. According to the Philippine Chamber of Handicraft Industries, Inc. (PCHI), our exporters are eyeing new markets in South America, Africa, Russia and Vietnam. In 2012, Philippine handicraft exports were estimated to have reached US$130 million.

ARARAL

our samples with gamma rays, the electron beam could deliver the same results in two hours. Overseas, however, electron beams could do it in as fast as thirty minutes," she said.

De Guzman chaired the annual review on the joint UNDP-RCA project on applications of the electron beam technology for the Asia-Pacific region held last year in Marriott Hotel, Cebu City from November 21 to 22. Electron accelerators are already used for commercial and industrial purposes in China, Korea, Malaysia, Indonesia, Thailand and Vietnam.

The Biomedical Research section will be actively involved in research and development studies on the effects of the E-beam to meat and poultry or fully cooked meals such as chicken and pork adobo developed for patients needing clean or sterile diets. "We aim to be able to extend the shelf-life of meals such as adobo compared to our previous results with gamma rays. With electron beams, we could even get faster results at even lesser doses of radiation," she said.

Their more recent research on rice-in-a-box-style emergency meal for calamity victims consists of fried rice and chicken adobo. The experimental meal may also be developed to serve as military and relief rations. The accelerator's capabilities are also a welcome development in fighting pollution, particularly the E-beam's potential in "hygienizing" sewage sludge and in treating or reprocessing of waste water and flue gases.

With enough doses, electron accelerators are able to alter the color and composition of gemstones, proving itself useful to the jewelry industry. The establishment of the electron beam facility in the Philippines received financial support from the International Atomic Energy Agency, the Japanese and US governments, and the Department of Science and Technology. After completing the installation and commissioning of the electron beam facility targeted in the middle of this year, PNRI will conduct trial runs on different samples and products.

DANTES

Honey to treat wounds

By **HANS JOSHUA V. DANTES**
S&T Media Servise, *DOST-PNRI*

THE PHILIPPINE Nuclear Research Institute – Department of Science and Technology (PNRI-DOST) has developed an effective wound dressing from local honey sources in the Philippines.

Science research specialists from DOST-PNRI's Biomedical Research Section are taking advantage of the antimicrobial properties of honey to produce a cheaper and comparable alternative – if not a better one already – to antibiotics for treating exudating wounds and burns.

"Honey has, since ancient days, been used for medicinal purposes; its composition makes it a very effective agent for healing wounds," said Biomedical Research Section head Zenaida De Guzman.

According to Ms. De Guzman, honey is ideal as a wound dressing not only for its antimicrobial and potentially anti-inflammatory composition, but also for its low pH level that is suitable for fast healing.

Its sugar content helps in the granulation of wounds, while its low moisture gives honey a longer shelf-life. Furthermore, honey's low water activity helps the dressing draw out water and pus, thereby drying the wound and reducing the chances of infection.

Among the samples obtained from the University of the Philippines Los Baños, three indigenous types of honey stood out: the pineapple flower honey from Bacolod which proved comparable to the average antibiotic, the scarce coconut honey from Mindanao and the natural dark honey found in the highlands of Northern Luzon, both of which matched and at times even bested antibiotics in dealing with pathogens such as Staphylococus aureus.

As they are readily available, these honey samples provided the material for the research section's honey dressings.

Results from initial testing in rabbits showed that the dressing healed the wounds around the same time as the generic Neomycin; in some cases, the honey treatment was a day ahead of that with the antibiotic.

Pre-clinical testing conducted in a government hospital showed that with the Honey dressing, full treatment of a burn patient was achieved earlier by a month than the usual healing time.

Sodium alginate made from brown algae, already used by hospitals for dressings, serves as a base for the honey. They are mixed and molded into a gauze before being sprayed with calcium chloride to bind them.

After being cured, dried and packaged in vacuum-packed aluminum foil, the dressing is irradiated at 25 kilogray at PNRI's Multipurpose Irradiation Facility to keep it microbe-free and longer-lasting.

The Biomedical Research Section applied for the honey dressing's patent last year and hopes to eventually finish the clinical tests. De Guzman expects the product's commercialization to begin by 2015.

Locally-developed food processing tools to debut this year

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

LOCAL ENTREPRENEURS in the food processing sector can now get locally manufactured food processing equipment to enhance their productivity, says the Department of Science and Technology (DOST) during a technology forum at the Industrial Technology Development Institute (DOST-ITDI).

The design and manufacturing of food processing equipment is a project under the High Impact Technology Solutions (HITS) initiative of DOST to support the growth and competitiveness of the country's small and medium enterprises.

In the forum, DOST presented seven food processing equipment. These include the water retort -- a cooking vessel capable of withstanding extreme pressures and designed to destroy all microbes to prolong shelf-life and make product safe – and the freeze dryer that dehydrates heat sensitive materials through the sublimation process, or changing solid ice into gas, under vacuum conditions to preserve perishable materials or make them more convenient for transport.

DOST also introduced the vacuum fryer, designed to fry in deep fat under reduced pressure and in a closed system that lowers the boiling point of both oil and water in food; the spray dryer that turns liquids into a spray of droplets, then converts these droplets into powder; and the vacuum packaging machine that removes air before sealing food products in retort pouches.

There is also the immersion freezer that has its contents, usually food products, submerged in cold liquid that serves as freezing agent; and vacuum evaporator that concentrates heat sensitive liquid food material.

Five of these equipment have undergone functional and performance testing, while the rest will be tested within the year.

According to HITS Project Leader Nelia Florendo, they received encouraging feedback, with only minor modifications needed to make the equipment reach their roll-out stage.

Water retort

Immersion freezer

Spray dryer

"This program has several objectives, First, DOST wanted to substitute the imported with locally designed, developed and manufactured equipment," says DOST-ITDI Director Nuna Almanzor. "Second, DOST would also want to increase local technologies and to help our SMEs, including those in the metals industry, and ultimately lower the acquisition costs of these equipment."

DOST's Project Management Engineering Design Service Office designed said equipment while the Metals Industry Research and Development Center was commissioned to fabricate the prototypes. On the other hand, DOST-ITDI provides performance testing for the equipment.

Florendo also explained that the equipment will be available for use at the Food Innovation Centers in Region 2 at Cagayan State University, Region 5 at Bicol University, Region 6 at the DOST Regional Office 6 in Iloilo City, Region 8 at Eastern Visayas State University, Region 10 at Mindanao University of Science and Technology, and Region 11 at Philippine Women's University.

The establishment of the Food Innovation Centers is one of the DOST initiatives which aim to strengthen the local and global market presence of the Philippine food manufacturing industry which, DOST hopes, will be able to compete against that of ASEAN countries at the onset of the ASEAN Economic Integration in 2015.

The industry contributes more than 40% of the total manufacturing output and approximately 20% of the country's gross domestic product per annum. However, it is presently faced with challenges such as maintaining its market share, capability of introducing new food products in the local market, and capital intensive manufacturing equipment.

LAZCANO

13 for 2013: FNRI tops NAST's int'l publication awards

By VICTOR J. ALFONSO JR.
S&T Media Service, *DOST-FNRI*

The DOST International Publication awardees from the FNRI with DOST Undersecretary for S&T Services Prof. Fortunato de la Peña (middle), NRCP president Dr. Luli Cruz (extreme left), Academician Evelyn Mae T. Mendoza (5th from right), and FNRI Director Dr. Mario V. Capanzana (6th from left).

WITH 13 awards for its awards publications in multiple international journals, the Food and Nutrition Research Institute (FNRI) topped the National Academy of Science and Technology (NAST) International Publication Awards in 2013. The other DOST agencies that were also awarded include the Philippine Nuclear Research Institute (PNRI), Forest Products Research and Development Institute (FPRDI), Industrial Technology Development Institute (ITDI) and the Philippine Textile Research Institute (PTRI).

THE 13 FNRI publications were:

Angeles-Agdeppa I., Saises M.C., Capanzana, M.V., Juneja, R. J., Sakaguchi, N. Pilot-scale commercialization of iron fortified rice: Effect on Anemia Status. Food and Nutrition Bulletin.

Angeles-Agdeppa, I., Magsadia C.R., Capanzana, M.V. Fortified Juice drink Improved Iron and Zinc Status of Schoolchildren. Asia Pacific Journal of Clinical Nutrition.

Angeles-Agdeppa, I., Kurilich, A.C., Hodjani, Y., Capanzana, M.V. The Effect of Nutrient Oat Drink on Iron Zinc Vitamin A and Vitamin C Status of among Filipino Children. World Academy of Science, Engineering and Technology.

Trinidad T.P., Liu, A., Byrne, NM., Nasreddine G Ma, L., Kijboonchoo K., Ismali MN., Kagawa,M., Poh, BK., AP Hills. Validation of Bioelectrical Impedence Analysis for Total Body Water Assessment Against The Deuterium Dilution Technique in Asian Children. European Journal of Clinical Nutrition.

Trinidad T.P., Mallillin, A., Encabo R.R., Sagum, R.S., Felix, A. dR., Juliano, B.O. The Effect of Apparent Amylose Content and Dietary Fiber on the Glycemic Response of Different Varieties of cooked Milled Brown Rice. International Journal of Food Sciences and Nutrition.

Trinidad T.P., Kurilich C.A., Mallillin, A., Walcyzk, T., Sagum, R.S., Singh, N.N., Harjani Y., de Leon, M.P., Capanzana, M.V., Fletcher J. Iron Absorption from the NaFeEDTA-fortified oat beverages with or without added Vitamin C. International Journal of Food Sciences and Nutrition.

Trinidad T.P., Liu, A., Byrne, N.M., Nasreddine, G Ma, L., Kijboonchoo, K., Ismali, M.N., Kagawa, M., Poh, B.K., Hills, A.P. Ethnic Difference in the Relationship between Body Mass Index and Percentage Body Fat among Asian Children from different backgrounds. British Journal of Nutrition.

Tanchoco, C.C., Infante, L.N., Rodriguez, M.P., Aquino, M.G.C., Orense, L.C. The Effect of Egg Consumption on Lipid Profile Among Selected 30-60 year old Filipino Adults. Philippine Journal of Science.

Serafico, M.E., Espinoza, M.M., Perlas, L.A., Tanchoco, C.C. Ecological Footprint of the National Capital Region Households: Bridging the Gap between Nutrition and Environment. Philippine Journal of Science. B

Bautista, E.N., Tanchoco, C.C., Tajan, M.G., Magtibay, V.J. Effect of Flavor Enhancers on the Nutritional Status of Older Persons. Journal of Nutrition Health and Aging.

Trinidad T.P., Felix, A.dR., Tuaño, P.P., Juliano B.O. Short term Satiety of Cooked Philippine Rice of Varying Apparent Amylose Content and Glycemic Index. The Philippine Agricultural Scientist.

Capanzana, M.V., Angeles-Agdeppa, I., Bruegger, U., Wieser, S., Felix, A.dR., Tuaño, P.P., Juliano B.O. Burden of micronutrient deficiencies by socio-economic strata in children aged 6 months to 5 years in the Philippines. BMC Public Health.

Mason, J.B., Ramirez, M.A., Fernandez, C.M., Pedro, R., Lloren, T., Saldanha, L., Deitcher, M., Eisele, T. Effects on vitamin A deficiency in children of periodic high-dose supplements and of fortified oil promotion in a deficient area of the Philippines. International Journal for Vitamin and Nutrition Research.

New DOST scholarship qualifiers leap by 11% as 3,982 HS grads hurdle exam

A GLEAM of light welcomes aspiring young scientists and engineers, all 3, 982 of them, who qualified for the Department of Science and Technology scholarship. According to DOST-Science Education Institute, qualifiers for 2014 increased by 10.7% from last year.

Out of the 2014 Science Scholarship Examination qualifiers, 3,473 belong to economically disadvantaged families and are qualified under the RA 7687 Scholarship grants. Meanwhile, 509 who topped the examination qualified under the DOST-SEI Merit Scholarship Program.

The list of qualifiers is available for viewing and download at http://www.sei.dost.gov.ph/dld/2014qua.pdf.

Qualifiers to the S&T undergraduate scholarships may pursue a four- or five-year college degree in priority science and technology fields. As benefits, RA 7687 scholars will receive tuition subsidy, monthly stipend, book allowance and many more. Scholars under the Merit scholarship program will likewise receive the same benefits except for the pro-rated monthly stipend based on the family's socio-economic status.

DOST Secretary Mario G. Montejo said the scholarship program will provide the new awardees access to quality education in leading public and private institutions. The scholarship program aims to substantially increase the number of scientists and engineers needed to boost economic productivity and knowledge creation in the country.

"We look at this as a sign that our young students consider, at the very least, carving a path in the sciences in terms of their studies and careers," Montejo said.

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. They can take up priority science and technology courses such as Agriculture, Agricultural Biotechnology; Agricultural Chemistry; Agricultural Engineering; Applied Mathematics; Applied Physics; Biochemistry; Biology; Ceramics Engineering; Chemistry with Applied Computer System; Chemistry with Materials Science and Engineering;

Chemistry Engineering; Chemistry; Civil Engineering; Computer Engineering; Computer Science; Electrical Engineering; Electronics and Communications Engineering; Environmental Science; Fisheries; Food Technology; Forestry; Geology; Geodetic Engineering; Industrial Engineering; Information Technology;

Manufacturing Engineering; Materials Engineering; Mathematics; Mechanical Engineering; Metallurgical Engineering; Mining Engineering; Molecular Biology and Biotechnology; Physics; Physics with Applied Computer System; Physics with Material Science and Engineering; Science/Mathematics Teaching and Statistics.

Meanwhile, 500 second year college students who are enrolled in DOST-SEI identified institutions under its priority courses have qualified for the S&T Scholarships for Sophomore College Students. Of this number, 271 are grouped under the RA 7687 scholarship program and 229 under the Merit scholarship. Qualifiers will get to avail of and enjoy the scholarship privileges effective the Second Semester of AY 2013-2014.

Meanwhile, SEI's Supervising Undersecretary, Prof. Fortunato T. De La Peña, said he is hopeful that the increased number of passers would ultimately translate to an increased number of graduates that will pursue S&T careers in the future.

"The goal is to produce quality science professionals and we really hope that the same number of passers would become scientists and engineers who will be willing to work in the country in the near future," he said.

In addition, Sec. Montejo announced the availability of scholarship slots for the 2015 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 22, 2014. The nationwide scholarship examination is on September 21, 2014.

The DOST-SEI Undergraduate Scholarship Program is the Department'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.

The awarding ceremonies were held last December 12 and 28, 2013 at the Trader's Hotel, Roxas Boulevard, Manila.

The NAST conferred the award through the project "Evaluation and improvement of the Research Performance and IP Productivity of the DOST R&D Institutes." which encourages scientists and researchers to publish their research outputs in internationally recognized and peer-reviewed journals. This activity is part of the DOST's initiative of developing and improving the quality of research and development projects of DOST personnel.

DOST researchers now have greater motivation to publish internationally, as each award corresponds to Php 50,000 cash gift.

The numerous FNRI international publications further strengthen the Institute's place as the lead agency in food and nutrition research and development of the country and its contribution to the DOST global image building.For more information on food and nutrition, contact: Dr. Mario V. Capanzana, Director, Food and Nutrition Research Institute, Department of Science and Technology, General Santos Avenue, Bicutan, Taguig City. E-mail: mcv@fnri.dost.gov.ph, Telefax: 837-2934 and 827-3164, or call: 8372071 local 2296 or visit our website: http://www.fnri.dost.gov.ph. *(FNRI-DOST S & T Media Service: Press Release – Victor J. Alfonso.)*

ALFONSO

It's real: DREAM gets nominated in int'l geospatial awards

By MARIA ELENA A. TALINGDAN
S&T Media Service, *DOST-PCIEERD*

EVERY JUAN dreams of getting real-time weather data anytime, anywhere. The DOST therefore invested on a program that will empower every citizen to make critical life-saving decisions using intelligent data from state-of-the art technology such as LiDAR (Light Detection and Ranging). This program is called the Disaster Risk, Exposure and Assessment for Mitigation or DREAM.

The DREAM introduced the use of LiDAR technology in generating high resolution 3D maps for hazard assessment and flood modelling. With the help of UK scientists, the DREAM team, led by Dr. Enrico C. Paringit of the UP-National Engineering Center (UP-NEC), were trained on LiDAR technology, and in the last two years, the team acquired, processed, and validated data generated by the LiDAR. Currently, the team is handing over the results to local government units and national government agencies so that the information can be used for infrastructure planning, resource assessment and post-disaster rehabilitation.

With such successful life-changing technology with immediate use and impact to every Filipino and anyone in the Philippines, Germany-based LASSO nominated the DREAM to the Geospatial World Excellence in Policy Implementation Award in Geneva, Switzerland.

LASSO, the technology innovation awardee for LiDAR data processing in 2012, said that it nominated the DREAM program because it is "peculiar and very relevant to our causes in disaster management."

Dr. Paringit, project leader, said, "They liked our approach which is investing resources to develop local capacity for addressing national concerns rather than relying on foreign aid and funding."

"It (DREAM) may well serve as an example to the other developing countries in the region," according to LASSO.

Accomplishments

In 2013, DREAM completed the LiDAR survey of 18 major river basins in the country, and by June this year, it will be able to complete the remaining 50% of the survey. The completed survey produced high resolution 3D LiDAR flood hazard maps and flood inundation models for the 18 major river systems. The maps and models are now available and copies have been forwarded to concerned local government units.

For 2014, DREAM will expand its data acquisition activities from major river systems to the entire country, to involve 15 other universities and institutions in the task.

The 3D LiDAR flood hazard maps are important for localized emergency response, identification of evacuation and access routes, road closures during disasters, siting of key resource facilities and comprehensive land use planning. Flood maps and early warning systems for 48 provinces, 612 municipalities, and about 40 million residents have been completed to date.

Post-disaster assessment

The DREAM also helped out in the post-disaster assessment of the Bohol Earthquake and super typhoon Yolanda in the Visayas Region last year. With updated and high-accuracy maps, the government was able to make quick response measures and post disaster assessment to help affected communities.

As such, the DREAM program was highly appreciated not only by local governments but also by the media and the public who are now using the data from DREAM.

The Geospatial World Awards has been conferring awards and recognition for exemplary innovations and practices in the geospatial industry. According to Dr. Hrishikesh Samant, Geospatial World Awards Coordinating Judge, the Geospatial World Excellence in Policy Award is given to policy makers and implementers whose work directly impacts in the development of geospatial science technology and business.

In the past four years, notable awardees of said award include the Standards Agentschap voor Geografische Informatie Vlaanderen (AGIV), Belgium for geospatial standards; Coordinating Agency for Federal Geographical Information, Switzerland for SDI; United States National Aeronautics and Space Administration (NASA) and NASA (Earth Science Division-Applied Sciences Program) for knowledge transfer; Indonesia Geospatial Information Agency (BIG) for Geospatial Information Act; and Kadaster, The Netherlands and Geonovum, The Netherlands for 3D Standards.

The Awards will be conferred during the Awards Evening of Geospatial World Forum 2014 on May 8, 2014 in Geneva, Switzerland.

TALINGDAN

DOST website is top government site

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

THE WEBSITE of the Department of Science and Technology (DOST), *www.dost.gov.ph,* is the most popular government site in the Philippines, according to Alexa.com *(www.alexa.com)*, a leading free web metrics provider that tracks 30 million sites all over the world.

As of January 30, 2014, *www.dost.gov.ph* ranked number 108 out of the top 500 sites in the country and number one among local government websites.

The top keywords driving traffic to the site from major search engines for the past six months are pagasa, pagasa weather forecast, pagasa weather update, phivolcs, and project noah. One of DOST's frontline projects, NOAH stands for Nationwide Operational Assessment of Hazards for timely and accurate disaster prevention and mitigation. Of these five keywords or key phrases, pagasa sent the largest percentage of search traffic at 20.92 percent over the six-month period.

Of the website's subdomains, pagasa.dost.gov.ph garnered the largest percentage of visitors over the past month at 75.30 percent, followed by phivolcs.dost.gov.ph at 13.11 percent. Other subdomains which attracted the most number of visitors include noah.dost.gov.ph, dost.gov.ph, pcaarrd.dost.gov.ph, and fnri.dost.gov.ph. Two other subdomains most visited under DOST are those of the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development, Philippine Council for Health Research and Development, and the Food and Nutrition Research Institute.

Aside from the Philippines, site visitors to *www.dost.gov.ph* also include those located in the United States, United Kingdom, Singapore, and Canada. On February 13, 2013, *www.dost.gov.ph* ranked 288 in the Philippines, claiming the second spot in terms of popularity among local government sites.

According to *www.alexa.com,* "The rank by country is calculated using a combination of average daily visitors to this site and pageviews on this site from users from that country over the past month. The site with the highest combination of visitors and pageviews is ranked #1 in that country." DOST is the country's main hub of science and technology activities including research, policy formulation, and program formulation for national development.

Aside from Project NOAH, the agency's other flagship projects include Small Enterprise Technology Upgrading Program, the Advanced Device and Materials Testing (ADMATEL) Laboratory for local semiconductor and electronics firms, Smarter Philippines which leverages information and communications technology for better products and services, the Philippine Standard Time which synchronizes all timepieces in the country, the Mosquito Ovicidal-Larvicidal Trap (O/L trap) to fight dengue, and the Automated Guideway Transport or AGT – an elevated and automated transportation system currently at its pilot testing stage in University of the Philippines Diliman.

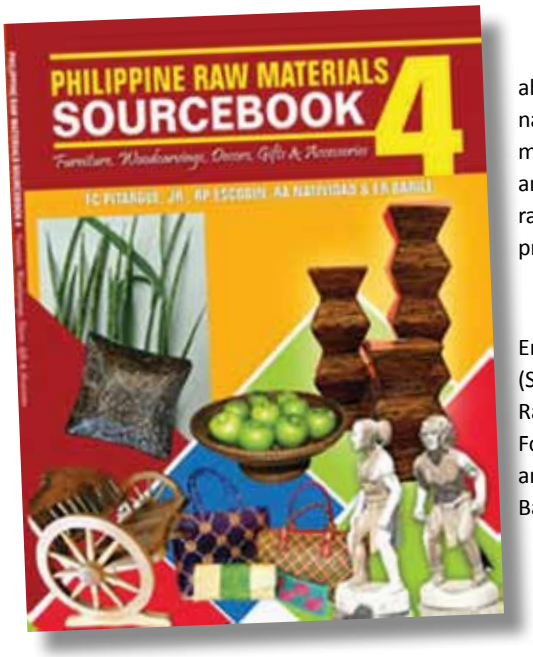

DE LEON

Raw materials sourcebook now available

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

THE PHILIPPINE Raw Materials Sourcebook 4 (Furniture, Decors, Woodcarvings, Gifts & Accessories) published by the Department of Science and Technology-Forest Products Research and Development Institute (DOST-FPRDI) is now off-the-press.

Particularly crafted for micro, small and medium enterprises (MSMEs), the book presents 29 new and traditionally-used plant species for the furniture and handicraft-sectors. It is an important reference to handicraft and furniture producers as it provides a list of alternative sources of raw materials that are relatively heavy in volume and have qualities similar to traditional ones.



The book covers basic information about the species, which includes scientific name, distribution and ecology, propagation methods, uses, economic data/tips, and pest and diseases, among others. It also lists some raw materials suppliers and producers of end-products.

Funded by the DOST- Small and Medium Enterprises Technology Upgrading Program (SETUP), the book was authored by FPRDI's Dr. Ramiro P. Escobin, For. Fernando C. Pitargue, For. Robert A. Natividad and Ms. Emerita R. Barile.

MARTIN

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juST for fun!

Einstein, Newton and Pascal are playing hide and seek. It's Einsten's turn to count so he covers his eyes and starts counting to ten. Pascal runs off and hides. Newton draws a one meter by one meter square on the ground in front of Einstein then stands in the middle of it. Einstein reaches ten and uncovers his eyes. He sees Newton immediately and exclaims, "Newton! I found you! You're it!" Newton smiles and says, "You didn't find me, you found a Newton over a square meter. You found Pascal!"

The programmer's wife tells him, "Run to the store and pick up a loaf of bread. If they have eggs, get a dozen." The programmer comes home with 12 loaves of bread.

There's a band called 1023MB. They haven't had any gigs yet.

How can you tell the difference between a chemist and a plumber? Ask them to pronounce "unionized."

Why do engineers confuse Halloween and Christmas? Because Oct 31 = Dec 25

Helium walks into a bar and orders a beer. The bartender says, "Sorry, we don't serve noble gases here." He doesn't react.

SOURCE: www.tickld.com/science

UP, USC studes get plum in BPI-DOST awards

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

THREE COLLEGE students from all over the country received the prestigious BPI-DOST Science Awards last March 6, 2014 at the Mind Museum, Bonifacio Global City in Taguig.

Alexander John Cruz, a BS Chemical Engineering student from University of the Philippines Diliman, bagged the grand prize for his project "Design and Field Testing of a Plasma-Enhanced Optical Fiber Reactor for Hydrogen Production via Visible Light-Driven Photocatalytic Water-Splitting." His study demonstrated the production of hydrogen as water passes through a reactor that uses light as separator. The technology has potential use for power generation or as source of renewable energy, something highly useful as the country struggles with limited power supply. As grand winner, Cruz received P50,000 cash prize from BPI Foundation and a graduate scholarship grant from DOST's Science Education Institute.

Meanwhile, Jessa Marie Makabenta, a BS Chemistry student from the University of the Philippines Los Baños, was awarded a cash prize of P30,000 as first runner-up for her project titled "Sodium Caseinate Encapsulation of Coconut-Oil Extracted Astaxanthin from Shrimp Wastes for Enhanced Stability, Bioavailability and Bioactivity and Controlled Release." Her study looked into improvement of the properties of astaxanthin, a chemical derived from shrimp wastes, which offers benefits in nutraceutical, cosmeceutical, and aquaculture industries.

Second runner-up was Kevin Colina, a BS Computer Science student from University of San Carlos in Cebu City, for his project entitled "Electronic-Storybook Creator with Cebuano Natural Language Processing-Based Animation for Kindergarten Educators." The storybook, developed as a response to the newly instituted K+12 Basic Education Program, was designed to help educators in using the mother tongue to motivate students to learn while enjoying. Colina received a cash prize of P10,000.

Some 29 students from ten universities made it to the short list and received a cash prize of P25,000 each. Out of the 29, seven finalists were selected, and, finally, three winners bagged the plum after presenting their science projects before a panel of judges during the morning of the awarding.

BPI-DOST 2014 Science awardees, namely, Alexander John Cruz from University of the Philippines Diliman, grand winner (middle); Jessa Marie Makabenta from University of the Philippine Los Baños, 1st runner-up (second from left); and Kevin Colina from University of San Carlos in Cebu City, second runner-up (fourth from left) are flanked by DOST Undersecretary for S&T Services Prof. Fortunato de la Peña (extreme left) and BPI Foundation, Inc. President Cezar Consing (extreme right). The BPI-DOST grand prize winner and runners-up received cash prizes of P50,000, P30,000, and P10,000 respectively plus plaque and a graduate scholarship for the grand winner. The BPI-DOST Science Awards, now on its 25th year, is a joint undertaking of the BPI Foundation, Inc. and the DOST through the Science Education Institute. (Photo by Maria Judith L. Sablan, S&T Media Service, DOST-STII)

In his message, DOST Undersecretary for S&T Services Prof. Fortunato de la Peña emphasized the need to continue beefing the S&T manpower of the Philippines. He congratulated the winners and finalists and encouraged them to continue their interest in science and technology to help the country.

"By recognizing our young researchers' innovative works, we hope to encourage many others to follow their path and pursue research," he said.

He likewise thanked BPI Foundation for its support and partnership in building the S&T manpower of the country for the past 25 years.

The BPI-DOST Science Awards was also graced by Roselle Ambubuyog, the first Filipino blind student who graduated summa cum laude with a degree in Mathematics from Ateneo de Manila University and also a past BPI-DOST Science Award winner. Ambubuyog's speech, which detailed her various struggles and triumphs in pursuing a degree, further motivated the awardees and guests alike.

"Given the right tool, nobody is handicapped," Ambubuyog said.

The BPI-DOST Science Awards, which is in its 25th year, aims to encourage students as budding scientists and researchers to explore higher levels in fields of mathematics, physics, engineering, chemistry, biology, and computer science.

Building the S&T manpower of the country is one of goals of DOST to help the country's economy. This is achieved through implementation of programs such as scholarships and other science projects in partnership with other private companies such as the BPI Foundation, Inc.

new appointees

Dr. Josette T. Biyo
Director IV
Science Education Institute

Ms. Belma G. Martinez
Director IV
Financial and Management Service

Ms. Dominga D. Mallonga
Director IV
DOST Caraga

Still looking young, Dir. Elsa Chan has reached the point when she has to bow out of government service. But her legacy of hard work and technology promotion will forever be etched in the halls of the firms she has helped and the hearts of her staff whom she inspired.

Paulina P. Nebrida tells us Ma'am Elsa's story.

DOST 1 Regional Director Elsa R. Chan says goodbye to government service

By PAULINA P. NEBRIDA
S&T Media service, *DOST-Reg 1*

MANY ARE surprised to know that DOST 1 Regional Elsa R. Chan, simply Ma'am Elsa to her staff, has retired. She looks young and exuberant, still full of energy, passion and laughter. RD Chan's last day in government service was on February 17, 2014. She will be remembered by her staff as the passionate, strong-willed, results-driven, and generous Director of DOST 1.

For over 24 years at DOST 1,Ma'am Elsa climbed the ladder of success. She started as Science Research Specialist II in November 1989. Shortly, she was appointed as the first Provincial S&T Director of Ilocos Sur, when the DOST provincial offices opened in 1991, where she served for 12 years.

While at PSTC Ilocos Sur, years before the implementation of the Small Enterprise Technology Upgrading (SETUP), she was in the thick of implementing pioneering projects to improve micro, small and medium enterprises (MSMEs) and in promoting appropriate technologies.

Transforming businesses

RD Chan was instrumental in transforming several home-based food processors in Ilocos Sur into millionaire firms as they are today due to the introduction of better product packaging and labeling, and upgraded production equipment and facilities. For instance, the Ilocos Food Products, the leading producer of chichacorn in Ilocos Sur, is now exporting its products in several countries abroad.

Ma'am Elsa is also a staunch supporter of good manufacturing practices (GMP) and food safety. Pushing for better packaging and GMP is anchored on her belief that good packaging reflects high quality food inside the package as well.

Also, the province's furniture industry was revolutionized when she first introduced the lumber kiln dryer in San Juan, Ilocos Sur in 1998.

Elsa Chan

Several furniture firms followed suit. Assured of better quality furniture pieces as a result of the use of the technology, she encouraged the producers to join trade fairs in big malls and sites in Metro Manila. This enabled the furniture firms to tap high end markets, including the owners of villas and mansions as far as Tagaytay City.

Several small farm reservoirs (SFRs) were established in Ilocos Sur during those days. The technology on sex-reversed tilapia was adopted by tilapia hatchery farms and growers. Mushroom production flourished through the active support of the Mushroom Training Center operated in PSTC Ilocos Sur.

Woman for all seasons

A "woman for all seasons", Ma'am Elsa was appointed as the Chief Administrative Officer of DOST I in 2003. By then, she left PSTC Ilocos Sur with functional library building and guest rooms that serve the needs of students,entrepreneurs, and guests from Manila and other places.

After a short stint as Chief AO, Ma'am Elsa was designated as the Officer-In-Charge of the Office of the Regional Director in 2006. She was later appointed as the Regional Director of DOST 1 in 2008 and led the pack of all-male PSTDs and the rest of the staff to implement DOST programs and projects. It was during her time that a significant number of MSMEs were given S&T interventions for higher productivity and operational efficiency. Due to world-class product packaging and labeling, more products from Region 1 reached the doorsteps of foreign buyers.

Ma'am Elsa demanded her staff to move fast and move ahead of the rest. She has a sharp memory of the agreements made with her and the reports due her. She was consistent in leading all DOST 1 staff to achieve more and better than before, gaining her the respect she deserved from all around her, including her peers at the DOST and in Region 1.

Passion for work and excellence

RD Chan's energy was ignited by passion for work and excellence. Her schedules were so tight that she was always on the go. Business meetings in Manila were only a day's affair. She would leave San Fernando at 2 AM then to everybody's surprise she would be in the office the next morning, sometimes earlier than the staff.

Ma'am Elsa lived her life to the fullest while at DOST. Her array of legacy includes warm laughters, and staff imbued with love for work and excellence. Her prudent management of government funds enabled DOST 1 to build a world-class Regional Standards Testing Laboratory and a four-bedroom guesthouse, and acquire two brand new vans.

RD Chan is likewise a very generous woman. She made it sure to give the benefits due for her staff. Everybody has a "pasalubong" whenever she had a distant travel within or outside the country. She was a Santa Claus during Chistmas.

NEBRIDA

Surely, Ma'am Elsa would be missed at DOST.

The DOST has identified core outcomes that it hopes to achieve as timely as possible for the benefit of the people. Along this objective, the Industrial Technology Development Institute aims to significantly contribute in improving the productivity, product quality, and global competitiveness of the local industry, agriculture, and healthcare sectors, among others. Hence, ITDI continues to harness the possibilities through science, technology, and innovation by developing appropriate and cost-effective technologies, science-based know-how, and establishing top-of-the-line facilities and capabilities. **Violeta B. Conoza** shares in this article what ITDI has been doing lately to help achieve the 8 DOST outcomes.

Local innovations make globally competitive products & processes

By VIOLETA B. CONOZA
S&T Media Service, *DOST-ITDI*

As 2014 stepped in, the Industrial Technology Development Institute wrapped up several technologies and products and perked up its facilities and capabilities. The best thing is that all of these developments can be readily accessed and used by its various clients.

Gaining worldwide recognition in metrology

The National Metrology Laboratory or NML, also called the Philippines' National Metrology Institute or NMI, capped 2013 with the acceptance of the country's Calibration and Measurement Capabilities (CMC) in the field of mass. CMCs are awarded by the Joint Committee of the Regional Metrology Organizations and the International Bureau of Weights and Measures. The approved CMC is now included in the International Bureau of Weights and Measures (BIPM) global database and made public online in the BIPM website, www.bipm.org.

This is quite significant because measurements, as many would not be highly aware, permeates all facets of daily life. For example, worldwide uniformity and traceability are becoming more important as technologies advance very rapidly.

The Philippines now has 21 registered CMCs on the BIPM database. With this recognition of the Philippines' competence in metrology as shown in JCRB's rigorous reviews, the country proudly joins the ranks of the world's premier national metrology institutes, such as those of Germany, USA, Japan, UK, Korea, China, and Singapore, among others.

With a Mutual Recognition Arrangement within the International Committee for Weights and Measures (CIPM) now in place, the signatory NMIs of this agreement can be internationally recognized for their technical competence in calibration and measurement. Being one of these signatories, the Philippines' NML, with the national measurement standards and the calibration and measurement standards it produces, is now mutually and globally recognized among its peers of NMIs.

And while the Institute is already established on physical measurements, the ITDI also seeks to establish a national measurement infrastructure for chemistry or metrology in chemistry (MiC). This aims to

ensure comparability and traceability in the results of tests done in different laboratories, regardless of country, field of application, or time performed, echoing the MiC mantra, "Once tested, accepted everywhere."

The ITDI is now implementing the program Development of National Standards for Chemical Measurements that aims to establish internationally recognized national measurement standards in chemical analysis, to develop traceability and comparability of analytical test results, and to disseminate the chemical measurement accuracy to the users in the country and other stakeholders.

Through the project, proficiency testing (PT) services for contaminants in food and metals in water are now being conducted. This PT program aims to assist laboratories in evaluating their quality control measures and improving their measurements through inter-laboratory comparisons. In accordance to ISO/IEC 17025 accreditation requirements, PT is being done to gauge the laboratory's competence based on pre-established criteria to ensure traceability and accuracy in measurements. Currently, the MiC program conducts PT on samples for benzoic acid in mango juice and metals in water.

Starting January 21, 2014, the ITDI has been designated as the Institute for MiC in the Philippines under the International Committee on Weights and Measures – Mutual Recognition Arrangement as already posted in the BIPM website .

Top-of-the-line semicon facility

On May 31, 2013 President Aquino inaugurated the ADMATEL or the Advanced Device and Materials Testing Laboratory that was established to address the failure analysis

and testing gaps plaguing the country's electronics and semiconductor industry.

With ADMATEL, electronics firms need not send their samples abroad to be tested; it can already be done here in their own backyard. The President was optimistic and said in his speech during the inauguration, "without doubt, this facility will pull our semiconductors industry up the value chain, and move them closer to their target of becoming a 50-billion dollar industry by 2016."

Since January this year, ADMATEL has been providing testing services mostly to clients from the electronics and semiconductor industry, though it can also cater to other industries that may require their services and expertise. The number of companies or

clients availing of the facility's services has been increasing and 45 per cent of them are considered as returning customers. Also, 22 per cent of the regular members of SEIPI (Semiconductor & Electronics Industries in the Philippines, Inc.) are already being serviced by the facility and this is envisioned to increase in the coming months. It operates six days a week, but eventually it vows to serve the industry 24/7.

Improving healthcare & disaster preparedness

Ready to Eat (RTE) chicken arroz caldo has been developed as a disaster mitigation/ relief food. It is shelf stable for a year and can be given to disaster victims to immediately address their hunger pains since it can be readily eaten or consumed without any preparation or drink. Its packaging structure is lightweight and very handy, designed to withstand aerial distribution from about 800 to 1000 feet. This new development can be a measure to address or avoid the sad experiences of calamity victims such as those of the recent typhoon Yolanda, many of whom reportedly, had no food for three days, some even more.

Field testing and validation study of RTE chicken arrozcaldo will soon be conducted in collaboration with the Department of Social Welfare and Development (DSWD) using their distribution protocol. Meanwhile, other RTE disaster preparation foods are also being developed. Process validation is on-going for chicken tocino rice meal, product development for beef tapa rice meal, and shelf life study for corn soup.

Dietary antioxidants or health supplements from local plants are also being developed. Among the plants being studied

are duhat, guyabano, mango, mangosteen, pomelo, rambutan and turmeric. Initial products were developed in the form of capsule, teabag, and chewable tablet. Bioactive chemical substances from the leaves and young stems of Sinta herbs were also isolated and have indicated positive anti-hyperglycemic activity.

Meanwhile, the DOST ceramic-based water filters are now being rolled out nationwide. These filters can remove microbial/particulate contaminants in drinking water and are suitable for home use. Three models were developed, two pot-type ceramic

water filters of 6 L and 1.5 L capacity; and the latest edition, the candle-type water filter. The filters can purify tap water, deep well water, and raw water (from ponds and spring), making it possible to have safe, potable drinking water readily available and accessible even in remote areas. The filtered water also passed the Philippine National Standard or PNS for drinking water in both tests/counts for Coliform and Escherichia coli, the most common water-borne disease-causing micro organisms.

To help improve access to potable water especially those in the far-flung areas of the country, ITDI did a nationwide rollout of the water filter. Most recently, ITDI delivered 100 pieces of ceramic pot filters to Tacloban City to help make potable water available in the devastated areas. Additional 10,000 pieces are also being produced to be deployed in other areas affected by the recent earthquake and typhoon Yolanda. Last December 2013, in Vigan City, 100 pieces of candle-type ceramic filters were distributed to various beneficiaries for performance testing in cooperation with the city government. Another potter in Cagayan de Oro City also joined the roll out, expecting more recipients to benefit from the technology.

Raising productivity thru local technology/innovation

Through the DOST-HITS (High Impact Technology Solutions)project – Design and Development of Process Equipment for Food Processing Firms that aimed to locally design and fabricate food processing equipment and make our own technology work for our local industry needs, and hopefully do away or lessen imports, seven equipment were designed, fabricated, and performance-tested, namely: water retort, vacuum fryer, vacuum packaging machine, spray dryer, freeze dryer, immersion freezer, and vacuum evaporator. ITDI also field tested with target cooperators to monitor the actual operating performance of the equipment, and innovate or repair if needed, to improve their efficiency or performance.

The project is now on its second phase and beginning January 2014, the developed equipment will be rolled out nationwide. Except for the immersion freezer and vacuum evaporator, all the other five equipment prototypes will be launched in 16 regions to promote and demonstrate their functionality leading to commercialization. This shall take place in the Food Innovation Centers (FIC) that will be established by the DOST regional offices in cooperation with state universities or SUCs and partners from the private sector.

Once in place, the FICs will help a lot in improving the productivity and innovative capacity of food processors in the regions, and the quality of their products. Designated operators in the regions will also be trained.

Our local agricultural products are also being “dressed up” to create visual impact and identity, and be at par with similar products in the Region. This is achieved by employing distinct packaging design, appropriate packaging technology, and branding.

To date, competitive packaging design and country brand for upland rice, sweet potato, queen pineapple, and Philippine citrus were developed that can increase their market potential and enhance their competitiveness vis-à-vis other counterparts. The products in new packaging design and brand were introduced in national, e.g., Agrilink, and international trade fairs, e.g., Foodex Japan and ANUGA in Germany. Such innovations can also result in increased income for farmers.

Caring for the environment

In the course of conducting R&D to fulfill its mission, the ITDI takes measures to address the effects that R&D activities may pose to the environment and help care for mother nature. By conducting an environmental impact assessment, all significant impacts of ITDI’s operations, whether positive or negative, were identified and an Environmental Performance Report and Management Plan or EPRM was prepared. This document outlines how to address the adverse effects through appropriate mitigating measures, while the positive impacts were further enhanced.

The EPRMP was submitted to the Environmental Management Bureau of DENR for which an Environmental Compliance Certificate (ECC) was issued to ITDI. The ECC serves as a planning tool that the Institute is now implementing to ensure that its operation does not cause any adverse impact on the environment and to the health and welfare of the researchers and neighboring communities. Its employees and researchers are also properly educated and guided through seminars.

And while having achieved all these outcomes, the ITDI is continuously working on projects that are in the pipeline that may yet result in developments or solutions that can again be used for the industry’s and the people’s gain. •

CONOZA

A pledge for 8 DOST priorities

SKYLINE BALLOONS FLY. The DOST family flies yellow balloons to indicate everyone's commitment in achieving the "8 DOST Outcomes." The balloons are written with individual wishes of personnel so that the 8 Outcomes will be harmoniously achieved. ***(Photo by Val Zabala, S&T Media Service, DOST-NRCP)***

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

With sunny yellow as the Department of Science and Technology's (DOST) unifying color on a mild gray Monday morning, the Department's workers, officials and executives pledged their commitment to intensify their individual and collective efforts to achieve the "8 DOST Outcomes" on the so-called DOST Commitment Day held yesterday, February 3, 2014 at the DOST Complex in Bicutan, Taguig City.

Said outcomes involve the use of science and technology (S&T) interventions to enhance eight areas, namely agriculture, MSMEs, industry, IT-BPM, government service, healthcare, human resources, and weather and geologic hazards en route to national development for 2014 and beyond.

Clad in yellow shirts and clutching yellow balloons, officials and employees of DOST, its various agencies and advisory bodies, as well as representatives of its regional offices, gathered to pledge their commitment to the Department's eight identified outcomes, the first of this kind of event ever held at the Department.

"As traditional industries are transformed and new industries such as nanotechnology are created, we need to ensure that our country be at a position of advantage in the global economy. We have to find our niches in order to compete effectively in high-value added sectors mentioned in the eight major outcomes and reap the many economic benefits this can bring," said DOST Secretary Mario G. Montejo in his opening message during the Commitment Day ceremony.

Montejo also reminded everyone to deal more effectively with issues concerning negative responses to science. "Whether these feelings stem from false premises – for instance, the environment versus technological advance, or from a simple misunderstanding of the impact of scientific advance, we have to do a better job in reminding the general public about the virtues of science," he remarked.

After his speech, DOST directors, employee association presidents, and Sec. Montejo himself formally signed the Declaration of Commitment on a larger than life-sized tarpaulin with the title "Juan Direction: Our commitment to the 8 DOST Outcomes."Called the "Wall of Commitment", this was installed at the DOST Main Office Quadarangle.All DOST employees and workers are expected to affix their signatures on the tarpaulin to signify their commitment to work hand in hand for the realization of said eight major goals.

The commitment signing was followed by the highlight of the ceremony – the releasing of the yellow balloons on which personal wishes for the Department, the science community, and the country as a whole, were written. Sec. Montejo led the balloon release before the 3,000-strong warm bodies, a number significantly greater compared with ordinary Monday mornings when flag ceremonies are held at the main office.

Representatives from DOST regional offices as well as agencies located in Quezon City and Los Baños, Laguna boosted the group's number and upped the tempo for collective commitment as symbolized by affixing their signatures on the so-called "Wall of Commitment" and releasing balloons with their written wishes.

Titled "Juan Direction," a phrase coined by the DOST community to refer to the concept of the Filipinos' single, harmonized journey to progress, the DOST Commitment Day coincided with the weekly 8:00 am flag ceremony for government employees and served as year-starter for the Department's activities and projects for 2014.

With high salaries, quick promotions and waves of benefit packages, are BPO workers really happy with their jobs? **Jaime M. Ragos** reports in this article the findings of a very interesting study on happiness measures of workers in the BPO industry.

What makes BPO workers happy with their jobs?

By JAIME M. RAGOS
S&T Media Service, *DOST-NRCP*

BPO workers, such as call center agents, are said to be highly paid, given various benefits by their companies. But are they happy in their workplaces?

To find the answer to this question, the National Research Council of the Philippines (NRCP), with Dr. Socorro M. Rodriguez as researcher and Dr. Nimfa B. Ogena as co-researcher, conducted the research study *Health and Social Policy Issues of BPO Workers in the Philippines: Is Happiness at Work Attainable?.* The study looked into the health and social life of BPO workers and proposed policy recommendations for them to have productive, healthy, and happy lives.

Online questions included: How would you describe your current state of health? In your current work, how happy/unhappy are you in this company? Which problem(s) arising from BPO industry need to be addressed at present by the government?

Based on the responses, the top three reasons why respondents joined the BPO workforce are: high salary (77%), gain experience (65%), and benefits package (64%).

Respondents of the online survey totalled 698 BPO workers: 51 percent were from NCR, 21 percent from Cebu, 15 percent from Davao, and 13 percent from North Luzon. Majority of them were employed in call centers and the rest were into non-voice services such as back office, software development, medical transcription, and engineering.

To validate the online responses of BPO workers, the researchers conducted separate FGDs for BPO supervisors and BPO workers in selected five sites.

Common health problems of BPO workers

The study revealed that majority of the BPO respondents were of "average health" (50%) and "healthier than average" (25%).

According to Dr. Rodriguez, BPO workers who are of "average health" are those who are not afflicted with serious diseases, don't have hypertension, diabetes, and other diseases, and do not need to be hospitalized for treatment. But they sometimes suffer from headaches, cough, and other minor ailments due to smoking and lack of sleep.

Meanwhile, BPO workers who are "healthier than average" are those who do not suffer from any ailments. Since most of the BPO workers are very young, they don't easily get tired, catch cough, or suffer from headache and other minor ailments.

The most common current health problems as cited by the BPO respondets include colds and cough, fever and flu, and asthma resulting from too much smoking. Other health complaints include headache, migraine, insomnia as a result of difficulty in having daytime sleep, and hypertension due to unhealthy diet, among others.

Social problems

Meanwhile, top social problems identified in the FGDs include lack of quality time with family and friends, addiction to alcohol and smoking, and marital problems. According to the respondents, they would rather sleep or rest during leisure time.

So, are BPO workers happy at work?

The study showed that happiness at work is positively influenced by the importance given by a BPO worker on job productivity in the workplace and the mean number of hours of uninterrupted sleep.

What makes BPO workers happy

Many of the BPO workers are very young and fresh college graduates. Their state of happiness rests on financial, medical, and social factors, the study revealed. However, they are likely to leave their current BPO employer in the next 12 months for higher salary offered by other BPO companies, especially if they experience fatigue and stress due to overtime at their current work. Their work activities are constantly monitored by strict supervisors, respondents said.

The online survey was conducted in selected BPO companies in NCR, Luzon, Visayas, and Mindanao, and the research instrument was developed in collaboration with the Business Processing Association of the Philippines (BPAP). Seven BPO companies participated in the research, three from NCR, two from Luzon, one from Cebu, and another one from Davao. Respondents were selected by HR managers.

Policy recommendations

The study also conducted a multi-sectoral forum held last September 2013 at the Pearl Hotel in Manila participated in by government, academe, and representatives of BPO companies. The forum resulted in several policy recommendations and program interventions including: review of current health and safety guidelines for the BPO industry, technical assistance from appropriate government agencies, positioning of Filipinos competitively through training that allows for career development within the BPO industry, and the use of Philippine unit chrono questionnaire tools to identify workers who are really fit to work at night.

Although there have been social, health programs, and policies that the government implemented to protect BPO workers, not all are complied with by BPO companies, the study revealed.

What will make BPO workers really happy, the study emphasized, is when the government pushes for BPO companies' compliance with standards and programs, and tripartism during consultations.

RAGOS

Our own shelters are built to protect us and give us peace of mind. But sometimes, due to the sheer strength of a calamity, these shelters give in. Despair not, as DOST-FPRDI has a solution: the F-House. Its exciting new features are highlighted in this article by **Framelia V. Anonas.**

F-House, a reliable shelter during emergencies

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

It's called the "F-House" – a fast-build, firm, and fold-away shelter that can be highly useful in times of emergency. It can be assembled as quickly as a tent to house people during disasters, and can also serve as a depot for emergency supplies or distribution center for food, medicine and other supplies. It's very versatile, and it is locally available because it is made by Filipino experts.

Developed at the Department of Science and Technology - Forest Products Research and Development Institute (DOST-FPRDI), the F-House comes very handy in times of emergency.

"Like tents, the F-house can be folded, packed, stored and used repeatedly," said Dr. Rico Cabangon, chief of FPRDI's Engineered Products and Development Section. "Unlike tents, however, the F-house has a floor that can be mounted on specially designed prefabricated footings."

According to Dr. Cabangon, the height of the footings of the F-House can be adjusted when the terrain is not flat.

With regard to security, the F-House can be well-secured just like the regular house. It also offers the same indoor comfort and amenity of a permanent house because its structural design allows it to be resistant to weathering, extreme temperatures, winds, and other harmful natural forces.

The F-House is also stable during storms as tension cables tied to ground anchors secure the roof. The F-house can also be easily transported. It can be put in a rigid case and placed at the back of a trailer or in a low-bed truck, in case of multiple deliveries. When dismounted from the trailer or truck, the F-House can be wheeled to destined location through prefabricated footings previously positioned and leveled. "The rigid case can be unfolded and erected into a house in just one hour or less," assured Dr. Cabangon. "This can be easily done by four medium-built unskilled workers, using only simple carpenter's tools and gadgets."

Built to comfortably house a family of five, the prototype shelter can be very handy when not in use. "It can be stored in a space approximately five times smaller than its actual service size," informed Cabangon. Because it is highly compact when not in use, several units can be stored in a small warehouse.

The walls, floor, and roof are sheathed with weather-, termite-, fungi-, and fire-resistant wood wool cement board panels that are fixed and fastened using specially designed light-weight metal sections. The prototype F-House is already integrated with provisions for power supply. Cabangon also revealed that that the cost of fabricating one prototype with double walls was PhP 75,000 or roughly PhP 6,500 per square meter. The cost can still be lowered when mass-produced or when the walls are singly sheated.

In contrast to site-built low-cost houses that typically takes three to four months to build from planning to construction, the F-House can be acquired and erected instantly. "We assure end-users that the fabrication of the F-House was adequately supervised in the shop using only quality-tested materials," said Cabangon. "The method of erecting the shelter was well planned and engineered. Hence, buying the F-house is like buying time when a safe and comfortable refuge is needed most."

Currently, Cabangon and the research team are working on for more improvements on the F-House, including its size, features, materials, and transportability, among others.

House built for emergency. It's called the" F-House" -- fast-build, firm, and fold-away – a shelter that can be a secure refuge for families and disaster workers. Developed by experts from the Department of Science and Technology - Forest Products Research and Development Institute, the F-House is packed with emergency features yet it is handy, transportable, and low-priced compared with commercial emergency shelters. *(Photo by DOST-FPRDI)*

Dr. Mario Aurelio: Fault-finder and more

Fault-finding, as we know it, is a negative trait. But many lives will be saved if fault-finding involves looking for fractures in the earth's crust. **Espie Angelica A. de Leon** introduces us to a multiple-hat scientist who even won a prestigious award for being, yes, a fault-finder.

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

The man wears multiple hats. He plays guitar and drums in a band called Unconformity Band. He plays forward striker in his football team during the University of the Philippines (UP) College of Science Sportsfest. He swims, plays table tennis and other ball sports. And, he also teaches in UP.

To mix academics with music, every semester, he asks his students who among them are interested in music. Out of those who raise their hands, he forms another band.

Yet, these activities only take up portions of his schedule. His real business is fault finding.

However, this is one fault finder who maintains his friendships, makes people laugh and stays happily married. His fault finding even got him an award.

The job of finding faults

"My field is structural geology. Fault finder, that's what they call us. Half of our job is spent finding faults," explains Dr. Mario Juan A. Aurelio, associate professor and head of the Structural Geology and Tectonics Laboratory at the UP National Institute of Geological Sciences (UP-NIGS).

A fault is a fracture or discontinuity in the earth's crust. A moving fault is what causes an earthquake. And a fault moves because of force or pressure caused by the movement of tectonic plates, also called tectonic stress, which had built up.

Dr. Aurelio is the 2005 Outstanding Young Scientist (OYS) awardee of the National Academy of Science and Technology (NAST), an advisory body of the Department of Science and Technology (DOST). Aurelio is one of only five structural geologists in the Philippines.

According to NAST, he was cited for his scientific and technological achievements in structural geology specifically in the study of Philippine natural disasters including earthquakes.

He says his study on the 1,200-km long Philippine Fault is his main contribution. "It (Philippine Fault) has been the culprit of many big earthquakes in the past. The most recent big one was the 1990 earthquake in Luzon. It was caused by the 100-km long Digdig Fault which is only a segment of the long Philippine fault. So if the Philippine Fault moves again in that region, the next area likely to be affected would be the one adjacent to the segment of Digdig Fault that ruptured in 1990," he elaborates.

As part of this thesis, Dr. Aurelio made a study on Bondoc Peninsula in Quezon Province before 2000. In 1973, he said, Quezon was hit by a magnitude 7.2 earthquake with the epicenter located in Ragay Gulf, displacing the shoreline by more than three meters and damaging several houses and bridges in the town of Calauag.

"The purpose was to try to understand the processes during an earthquake, with the ultimate objective of trying to apply these lessons in forecasting [an earthquake]," he tells S&T Post. "They can say, 'There's a 50 percent chance that a magnitude so and so will occur in this general vicinity....' As of now, that is the state of the art of earthquake prediction. Somehow, this is already a big help because everyone will be forewarned," he says.

What about undiscovered faults, like the one which caused the October 15, 2013 earthquake which rocked Bohol? Dr. Aurelio answers there is no better approach than experimentation and research. Aside from PHIVOLCS which is mandated to undertake such research, their own team at UP-NIGS is also pursuing other areas of research.

Faulty connections

A research project by one of his students dealt with determining whether the February 6, 2012 earthquake in Negros had something to do with the 2013 tremor in Bohol, considering their proximity and the fact that the fault in northwest Bohol had not yet been discovered earlier on. If a fault or a segment of it moves, the stress which caused it to move is released. It is then transferred someplace.

"It is possible that the Bohol earthquake is the consequence of stress transferring from the fault in Negros," explains Dr. Aurelio.

He laments though that certain technologies needed for this kind of research are costly. However, his team plans to send a proposal to DOST on this initiative.

Energy and geology

His NAST citation also reads, "His researches addressed specific problems in the fields of energy resources caused by geologic structures."

One problem that his researches addressed involves locating sources of geothermal energy.

Dr. Aurelio uses his inverted cup to explain the concept of a petroleum trap (left) and a newspaper to illustrate the meaning of "fold" in geologic terms. *(Photos by Henry A. de Leon, S&T Serivice, DOST-STII)*

These require the presence of several elements: a young volcanic edifice, a fault system, and water that can circulate underground. Another is locating energy resources concentrated in a single area to prevent multiple extractions or drillings which can be costly and, therefore, cannot deliver the expected profits. Geologic structures such as faults and folds are crucial components of a petroleum system.

A third concern addressed by his studies is whether an earthquake affects the volume estimate of hydrocarbon resources in that area. Specialists are concerned with the possibility that some of these resources trapped underground may have flowed out of their traps or sources during an earthquake, thus affecting their computations for volume estimates.

Dr. Aurelio's research output also underscored the importance of detailed structural studies in the development and management of mineral and energy exploration programs. A detailed structural study involves several activities like mapping or creating geologic maps which indicate the areas with faults, as well as the degree of faulting or fracturing.

Given these data, exploration proponents have enough information in order to decide which areas to explore further – whether for minerals, steam, or petroleum. According to Dr. Aurelio, although such studies have not been taken seriously in the Philippines in previous years, they have now become the norm.

Maintaining links

Though "fault finding" is his trade, the 2005 OYS awardee concedes that teaching offers a different kind of gratification. "It's a different kind of feeling when you are inside the classroom, teaching, and you see your students reacting," he tells S&T Post.

He reveals he keeps in touch with former students. "I also do research work for the industry sector. Some of my former students are now bosses. It's such a great feeling to see your students become successful," he muses.

Dr. Aurelio lectures his Structural Geology class about the geologic structures of the Cordillera mountains along Kennon Road in Tuba, Benguet

"Even if you sometimes caught them sleeping in your class," he adds with a laugh.

Fun man

His interest in music and sports finds its way into his schedule during his spare time. "We're called Unconformity Band because we play unconformably. We're simply not in harmony with each other," he laughs. "In geology, unconformity refers to a structure that implies 'no evidence was left behind.' So this means, whenever we perform, it's as if nothing happened."

Is he joking? Maybe, maybe not, he answers, still laughing, causing the S&T Post staff to laugh along with this funny man who is engaged in the serious, highly specialized business of "fault finding." He relates that when his group performs, the audience always erupts in laughter whenever they explain why they call themselves Unconformity Band.

His bandmates are also geologists including UP-NIGS Director Dr. Carlo A. Arcilla, and they jam at a place in Cubao at least once a month. He says he prefers jazz music when playing the guitar, but often jams with the band in rock and roll playing drums. "Earl Klugh ako pag tumugtog sa gitara (I'm Earl Klugh when I perform on guitar)", he states with a smile, "but I can also like pop, ballad, rock and roll – depends on the occasion."

Sports may be a different story though and he may not be like Argentina's Lionel Messi on the football field. But Dr. Aurelio takes it all in stride. "Forward striker is the most tiring position. I'm not getting any younger and so I just wait for the ball to be fed to me. My teammates are my students and so they just make things easy for me," he claims, laughter still ringing in his voice.

Wedded bliss

The man is just as happy with his family life. He and wife Pollen will be celebrating their Silver Wedding Anniversary in 2015. They are blessed with two sons: Gian who is in third year in UP taking up BS Biology, and Jabby who is in first year high school at the Ateneo. He tells us a secret: He is preparing something special for Pollen the following day, Valentine's Day, which is also her 50th birthday. "Minsanan na lang, (Just this one time"), he jokes, referring to the convenience of a double celebration on February 14.

Indeed, Dr. Mario Juan A. Aurelio wears different hats – as geologist, professor, musician, sportsman, and family man. And he wears each hat with pride and aplomb. Certainly, the man finds no fault in that.

Being on time may for now be a "long shot" or suntok sa buwan. **Dr. Aristotle P. Carandang** in this article dissects the "Juan Time" campaign: how it came into being, how it caught up with people and institutions, how it came into law, and how we as a people can change our mindset to have the proper attitude towards time.

Suntok sa Buwan

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

Suntok sa buwan is a Filipino idiom that describes something that is "long shot" or something that is almost impossible to achieve.

Sadly, *suntok sa buwan*, was the very first description given to *Juan Time* on its conceptualization stage by a handful of individuals who were in a sort of brainstorming session for new activities over cups of boiling hot, brewed *kapeng barako.* They were the creative souls from the Science and Technology Information Institute or STII, the information arm of the DOST. Fortunately, however, what was supposed to be a figurative expression has become a solid reality wrapped in a really strong punch about three years after.

Juan Time as a concept

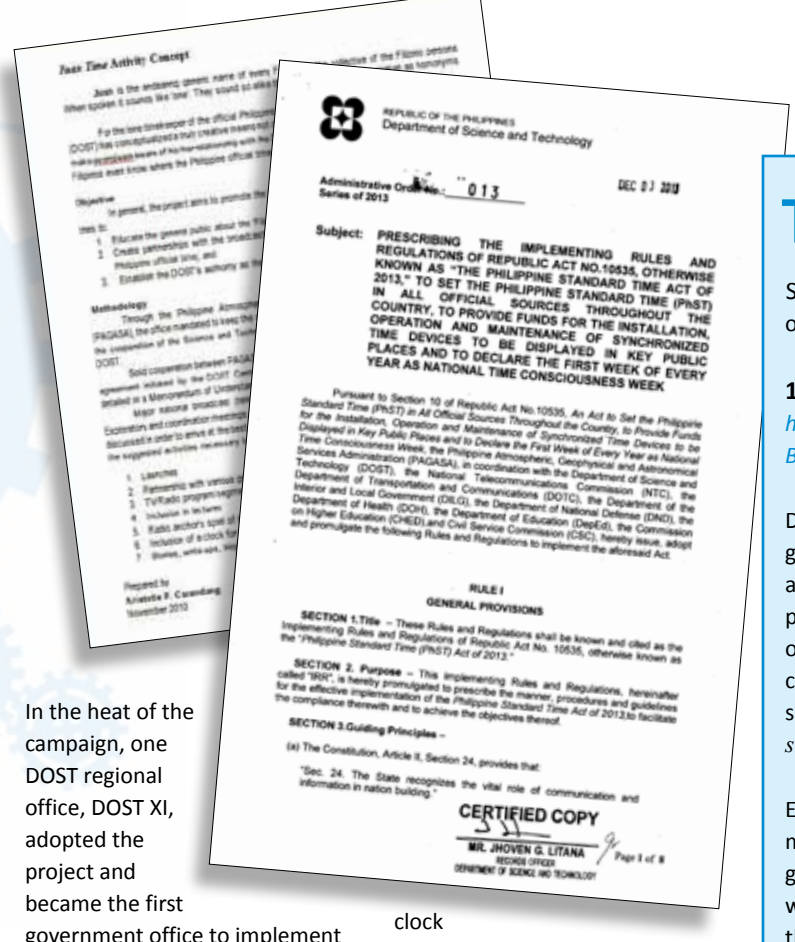
Juan is the endearing generic name of every Filipino – the collective of the Filipino persona. When spoken it sounds like "one". They sound so alike that they are oftentimes mistaken as homonyms. Initially, the initiative aims to partner with DOST-PAGASA so that the latter will also be identified as the official timekeeper of the country, a fact that not so much Filipinos know about. At the same time, the initiative aims to raise consciousness on the importance of time.

Soon after, *Juan Time* evolved into a national campaign. It pushed the idea that **the Filipino can be on time** and highlighted the value of punctuality as well as the socio-economic repercussions of tardiness. It has become part of the Changing the Mindset Program that was implemented by DOST-STII from August 2011 to December 2013. It adopted two major goals: 1) To promote the Philippine Standard Time which will be used in all government offices and participating offices, and 2) To help Filipinos gain awareness on the importance of time.

From concept to action

Juan Time goes beyond time synchronization as it tries to transform our attitude towards time, a precious but undervalued commodity.

Officially launched on 30 September 2011 at the Music Hall, Mall of Asia, *Juan Time: The New Filipino Time* came out as a big social event. The calls to push for this advocacy was warmly welcomed by SM Supermalls, Nido Fortified Science Discovery Center, Timex, Petron, Chevrolet, Sagittarius Mining Development Corp., Team Manila, Lamoiyan Corp., PICAR Development, Inc., AMA Universities, Discovery Channel, and Metro Manila Development Authority.The event was also supported by WATCH (We Advocate Time Consciousness and Honesty) with musician Jim Paredes as emcee. Present during the affair were VP Jejomar Binay, Communications Sec. Sonny Coloma, DOST Secretary Mario G. Montejo, Mr. Tony Meloto of GawadKalinga, and Mr. Bam Aquino, among others.


Juan Time Activity Concept

REPUBLIC OF THE PHILIPPINES
Department of Science and Technology

Administrative Order No. 013
Series of 2013

DEC 03 2013

Subject: PRESCRIBING THE IMPLEMENTING RULES AND REGULATIONS OF REPUBLIC ACT NO.10535, OTHERWISE KNOWN AS "THE PHILIPPINE STANDARD TIME ACT OF 2013," TO SET THE PHILIPPINE STANDARD TIME (PhST) IN ALL OFFICIAL SOURCES THROUGHOUT THE COUNTRY, TO PROVIDE FUNDS FOR THE INSTALLATION, OPERATION AND MAINTENANCE OF SYNCHRONIZED TIME DEVICES TO BE DISPLAYED IN KEY PUBLIC PLACES AND TO DECLARE THE FIRST WEEK OF EVERY YEAR AS NATIONAL TIME CONSCIOUSNESS WEEK

Pursuant to Section 10 of Republic Act No.10535, *An Act to Set the Philippine Standard Time (PhST) in All Official Sources Throughout the Country, to Provide Funds for the Installation, Operation and Maintenance of Synchronized Time Devices to be Displayed in Key Public Places and to Declare the First Week of Every Year as National Time Consciousness Week*, the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), in coordination with the Department of Science and Technology (DOST), the National Telecommunications Commission (NTC), the Department of Transportation and Communications (DOTC), the Department of the Interior and Local Government (DILG), the Department of National Defense (DND), the Department of Health (DOH), the Department of Education (DepEd), the Commission on Higher Education (CHED),and Civil Service Commission (CSC), hereby issue, adopt and promulgate the following Rules and Regulations to implement the aforesaid Act.

RULE I
GENERAL PROVISIONS

SECTION 1.Title – These Rules and Regulations shall be known and cited as the Implementing Rules and Regulations of Republic Act No. 10535, otherwise known as the "*Philippine Standard Time (PhST) Act of 2013.*"

SECTION 2. Purpose – This implementing Rules and Regulations, hereinafter called "IRR", is hereby promulgated to prescribe the manner, procedures and guidelines for the effective implementation of the *Philippine Standard Time Act of 2013*,to facilitate the compliance therewith and to achieve the objectives thereof.

SECTION 3.Guiding Principles –

(a) The Constitution, Article II, Section 24, provides that:

"Sec. 24. The State recognizes the vital role of communication and information in nation building."

CERTIFIED COPY

MR. JHOVEN G. LITANA
RECORDS OFFICER
DEPARTMENT OF SCIENCE AND TECHNOLOGY

Page 1 of 5

In the heat of the campaign, one DOST regional office, DOST XI, adopted the project and became the first government office to implement and promote the Philippine Standard Time. On 17 November 2011 in Davao City, Dr. Anthony C. Sales, DOST Region XI director, partnered with Davaoeños to launch the advocacy in the south.

Meanwhile, the first local government unit that adopted *Juan Time* was San Pablo City. During the city's flag ceremony on 12 December 2011, the digital clock that bears the country's official time was unveiled at the capitol building. Another digital clock was placed in the middle of the city plaza.

Soon after, all the DOST offices have included PhST on their respective websites. Some of the discussions about the advocacy were held at Don Mariano Marcos State University,

Thoughts on tardiness

SOME NON-FILIPINO writers have already shared their thoughts on the matter:

1. Being Tardy - A Sign of Disrespect

http://www.professorshouse.com/Relationships/General/Articles/Being-Tardy---A-Sign-of-Disrespect/

Do you always find yourself rushing to your next meeting only to get there ten minutes late? Are you always the last one to arrive to a dinner party with friends? If so, you may have a chronic tardiness problem. Not only will this problem put you in a perpetual state of chaos and haste, but you may convey a message to friends and coworkers that you do not value their time. If this description sounds accurate, take note as we begin to explore being tardy…*a sign of disrespect*!

Everyone has someone in their life that can never be on time no matter how much extra notice or how many extra reminders are given. People usually recognize this habit early in a relationship and will come to expect the constant late arrival, maybe even telling the tardy friend that a party starts ½ hour before it really does, or telling the person to meet them for coffee 15 minutes before they intend to arrive themselves. Anyone who does this to compensate for another person's lack of impetus for on-time arrival should be considered a very understanding friend. Many others grow annoyed with the constant waiting and excuses for being late and will become resentful at the late arriver for wasting their own time because – you know what? They have things to get done too! Most often the latter takes place.

2. How habitual tardiness impacts coworkers

Kenneth Andrews
http://www.helium.com/items/2201301-how-habitual-tardiness-impacts-coworkers

Punctuality is one of those attributes which can be undervalued - it is often reasonably expected that showing up on time is the least that a professional person can do. But the way in which habitual tardiness impacts co-workers suggests that timekeeping could be one of the most important values to instil in a workforce.

Sometimes people are late to work - that's an unavoidable fact of life. The excuses don't often tend to stand up to a great deal of scrutiny (heavy traffic is an old favourite, for example, but the fact is that heavy traffic is a daily feature of most large towns during rush hour; no sensible adult should be surprised by busy roads), but it is accepted as an occasional inevitability.

The problem is when one person is consistently and habitually late. As no one really enjoys getting up early and bolting their breakfast in order to be at work on time, a habitually tardy colleague can have a profound impact. Co-workers will resent that person.

CONTINUED ON PAGE 27

Batac City, Ilocos Norte during the Philippine Agricultural Economics and Development Association, Inc. Convention in 2011 and at the La Piazza Hotel, Legaspi City, Albay by the Kapisanan ng mga Brodkaster sa Pilipinas -Albay Chapter in 2012.

From House Bill No. 164 and Senate Bill No. 3284, Republic Act 10535 came into being when President Benigno Aquino III signed the bills into law on 15 May 2013. However, it was only 21 December 2013 when RA 10535 took effect, 15 days after the publication of its implementing rules and regulations.

With the enactment of the law, more and more establishments started to get involved.It was in this instance when the Philippine media played a truly significant role.

And on 6 January, the first Monday of 2014, the first simultaneous flag raising ceremonies all over the country was held.

And they say

It was natural that some people raised eyebrows on the advocacy, perhaps even saying that this is indeed *suntok sa buwan*.

A browse on the web revealed a few thoughts:

> "Wala sa oras yan, nasa disiplina ng mga tao yan... yung iba ina-advance kunyari ang mga relo nila para hindi sila ma-late. You know what? Alam din nila na advance yong relo nila kaya nandiyan pa rin ang dilly-dallying...kaya walang kwenta kung synchronized o hindi ang oras ng Pilipinas... DISIPLINA ANG KAILANGAN NG MGA PILIPINO NA DAPAT PANGUNAHAN NG MGA NAMUMUNO SA BANSANG ITO. DISIPLINA POOOOOOOOO !!!!!!!!!" (Boy Peter)

> "The Philippines already has a standard time; it is Z+8. The problem is a cultural one, where no one cares about the time. When a Filipino says I will be there at 9, it is invariably 10 or 11 when they arrive. At my son's 3rd birthday party, the invitation said "2-4." People were still arriving at 3:20! We need to change the culture." (Edward)

> WHATEVER changes the Philippines makes about changing time, people will still be LATE solely because it's in their blood from day immemorial... (Drew)

> "For me, the DOST mantra – With PST, "Filipino time" is now "on time" is almost as laughable as betting on a blind rooster at a cock fight." (Michael, foreigner)

> I don't think "Filipino Time" will go away any "Time" soon! Hehe (Randy, foreigner)

As a matter of fact

The truth of the matter is that not everyone is happy. Not everyone jumps for joy. Really, not everybody is excited.

Although we, as a race, may not be ready for a major cultural change, we as a people are capable of change. This may be an uphill struggle but this is one that can be hurdled. If we can manage change to whatever manner we want, only time can tell.

Here are a few thoughts posted online:

> "What a nice law... simple at walang dating man ito sa iba pero nakikita ko na magiging malakas ang impact nito... kasi iba iba ang oras na ginagamit kaya nakakahilo kung ano ba talaga ang tama... at least may susundin na tayong time..." (Mark)

> Let us give a try to the new law and congratulation to the author. (Orlando P)

> Jef Menguin of Good News Philippines, in his blog entry titled "Are you practicing Filipino Time? (How to Make the World Respect Filipinos)," has this to say:

> "But forgive me, an American who is always late, or who keeps you waiting is not practicing American Time. An action of one American should not be attributed to all

Americans. Do you not wonder why Americans have to invent "Time Management' and why productivity blogs sell?

Filipino Time as the phrase connotes is not an attribute that all Filipinos practice and value. A little reading of Philippine history will show the opposite. Travel around the country, and you will find many Filipinos who value their time and respect yours.

When we say Filipino Time with contempt, we slander against Filipinos who make the most of their time.

If you are a Filipino, you better give a new meaning to Filipino Time. One that you will be proud of. I can say the same if you are an American, Italian, Polish, German, Malaysian, etc. You will see the world the way you want to see it. You may need a new set of eyes.

Because making the best use of time is an attitude.

The above thoughts on Filipino time are echoed in the hearts too of many Pinoys. It is difficult to observe time as we Filipinos have made it a habit to be a lax about time. But as time changes, we also need to change, and we can.

The time to start to change is now. Thus, we know, making Filipino time on time is not *suntok sa buwan*.

(Thoughts on the Filipino time were lifted from: https://ph.news.yahoo.com/can-new-law-change--filipino-time---103627533.html, http://retiredinsamar.com/tag/filipino-time/)

CARANDANG

THOUGHTS ON . . . FROM P25

If habitual tardiness continues unchecked, however, resentment of one persistent latecomer can have a serious effect on team morale. "Why should I bust a gut to be here on time every day if that guy can rock up five minutes late every morning and get away with it?" is a thought which will cross even the most conscientious workers' minds sooner or later. The truth is that one person being five, or even 20 minutes late, will not in and of itself have a serious impact on a company's bottom line. If co-workers start to adopt the same slack-working habits out of resentment, however, any organisation can find itself in serious trouble very quickly.

Similar effects can come about when one member of a team is habitually late back from their lunch. With many workers in these uncertain economic times cutting short lunch breaks and eating at their desks, one person sloping off for an hour and a half is going to provoke resentment and gossip at the very least, and it can often spark a trend for habitual tardiness among co-workers which can end up resulting in a damaging loss of morale and productivity.

Habitual tardiness impacts co-workers by damaging morale in the workplace, provoking sentiments of jealousy, resentment and bitterness among a team and risking productivity in the long term. It is simply unprofessional, and any professional person who is habitually late to work or tardy in returning to their desk after breaks should expect to face disciplinary procedures and the censure of their employer sooner rather than later.

3. The Effect of Tardiness on Businesses

by Lynda Moultry Belcher, Demand Media
Houston Chronicle
http://smallbusiness.chron.com/effect-tardiness-businesses-19150.html

It may seem as though being a few minutes late to work is no big deal, and for some companies that is exactly the case. However, for many others, tardiness is not only a blatant show of disrespect for your position, but also it can have a ripple affect across the entire business that results in lessened productivity and a loss of focus for others in the office.

Identification

Tardiness is defined as being late -- in any time increment. This might mean two minutes or 20 minutes; the point is that at the moment that an employee should be in his office, he is just pulling into the parking lot or not even on the premises yet at all. It might seem like a small problem, but tardiness can actually have quite an impact on a company and its productivity.

Effects

Tardy employees affect more than just their own productivity; yes, they are not technically getting work done when they are late. But the flurry of activity caused by coming in late also throws others around them off focus, leading to a decrease in overall productivity in the office. Bottom line: You aren't getting what you pay for when an employee is consistently late and not getting started on work-related tasks in a timely manner.

Why can't we be on time all the time? **Framelia V. Anonas** digs into the reasons why we Filipinos are so lax when it comes to time: from the cultural aspect to traffic to PhST enforcement. The reasons are myriad, but it's only we Filipinos who can change the concept of Filipino time from negative to positive.

The origin of Filipino time

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

It's something that is perfectly normal in the country but drives foreigners, especially Westerners, crazy. But while they are in the country, they have no choice but to accept it without, of course, consenting to it. It's called "Filipino time", the notorious Filipino habit of arriving late or starting events at a later time than scheduled.

We don't know who coined the term but "Filipino time" pulls us down as a people. It encapsulates our so-called lax attitude toward time. It connotes our general attitude of never being punctual, especially during gatherings.

Why are we, in general, so unfashionably late?

We often blame the traffic, the weather, other people, and a caboodle of reasons why we can't get to our destination on time. But it all boils down to culture, to something that is already ingrained in our psyche as a people.

Skimming through several materials, S&T Post came up with the following reasons why there is such a thing called "Filipino time":

Spanish influence

Historians say that we picked up our habit of tardiness from the Spaniards who colonized our country for more than 300 years. According to Jon E. Royeca in his article The Real Filipino Time published in Emanila.com, the Spaniards as colonizers relished being served, adored, and given attention by Filipinos.

This superiority complex was most distinct during occasions. The more important people arrived later, and the most important ones arrived last.

Important persons come late. Our national hero Jose Rizal narrated this in Noli Me Tangere when a party could not start because a Spaniard named Linares did not yet arrive "for being an important person, he must come much later than the others. There are people who are flattered for each hour of delay because... they become more significant."

Again in his second novel El Filibusterismo, Rizal underscored the Spaniards' penchant for being late during occasions. In the scene which the play The Bells of Cornville was not able to start on time, it was caused by the late arrival of the governor general. Of course, the governor general got all the attention being late, but he was not the last one to arrive. A lady arrived a few minutes after him, taking the last seat left in the theater.

Rizal observed: "Indeed, there are persons who come to the theaters like asses in a race: he who arrives last is the winner. Sane men we know would rather mount the scaffold first than turn up at the theater before the start of the first act."

To some Filipinos who picked up the habit, Rizal had his to say: "What will you be in the future? A people without character; a nation without liberty; everything that you will possess shall be borrowed, including even your own defects."

Royeca said that our ancestors imitated this Spanish defect of being late, and then passed it down to the next generations. Most of those who picked up the habit, according to Royeca, belonged to the wealthy elite and the government offices. Arriving late made them "more dignified" with all the people waiting for them in events.

Indios required to be late. Social events during Spanish colonization highlighted the social strata in which the Spaniards were treated supreme while the indios were considered second class citizens. According to Randy L. in his blog "Retired in Samar", Filipinos were required to come later during parties hosted by Spaniards when all the prime guests have been all seated. Since they arrived late, they were expected to have taken their dinner before going to the party or they had to excuse themselves from being served dinner as it was a polite thing to do.

As the main guests have all been seated, the Filipinos would be on the sidelines where they would socialize for business and politics. They would applaud or dance as directed by party organizers, or provide entertainment as needed. This practice stuck for many generations in the 300-year Spanish rule.

Other habits that the Spaniards handed down related to time include the mañana habit, or the Filipino's penchant to procrastinate, and the afternoon siesta, or the short nap after lunch. Both habits reflect the consciousness that

time can be "put on a pause" and resumed when convenient.

American lingo

After the end of Spanish rule in 1898, the American period began and the new colonizers had the tendency to criticize and degrade everything that was identified as Filipino. To justify their regime, the Americans said that they needed to "educate the Filipinos, and uplift, and civilize, and Christianize them."

Thus when they finally met the wealthy elite and the government workers who already formed the habit of not being on time, the Americans were floored. They again found another opportunity to criticize (and insult) the Filipinos, floating the idea that "Filipino time" was always late in contrast to "American time" that was always on time. This idea was then inculcated into the Filipino psyche, according to Royeca.

In short, it was during the American regime when the tem "Filipino time" was born.

Eastern concept of time

Being Malays, it is innate for Filipinos to be quite relaxed in movements and actions. In his "Inner Mind" column published Aug. 5, 2003 at the Philippine Daily Inquirer, Jaime Licauco said that Easterners, including Filipinos, have a circular concept of time in contrast to the Western concept which is linear.

The latter concept believes that once time has gone, it is gone forever. Thus opportunities can be forever missed and mistakes may often be irreparable. For the linear concept of time, life is a series of problems to be solved within some reasonable time frame.

The Eastern concept though, which is circular or spiral, suggests continuity. In life, Easterners believe that there are lessons to be learned and there are also second chances.

According to historians, the ancient Filipino's concept of time was measured by seasons or by events. There was hunting time, planting time, harvest time, or time for merry-making. In fact, even now, some old folks would still refer to timeline of some events as "noong panahon ng Hapon" (Japanese time), "noong panahon ng kopong kopong" (in 1900s or thereabouts, as "kopong meant zero), "noong araw" (during younger years), and others.

Traffic jam!

Of course, this is the perennial reason why we Filipinos get late in our appointments, whether true or just a convenient excuse. Contrary to what we know though, the root cause of traffic jam is not the inefficient traffic enforcers or narrow roads, as these are just a part of the equation.

According to Dr. Hussein S. Lidasan, transport economist from the UP-National Center for Transportation Studies, "Traffic congestion is not the root but rather the manifestation of the intertwining technical and institutional problems [that affect urban transportation] in the region."

In his study entitled, "A Look at the Transportation Situation in Metro Manila and Mitigating Measures to Alleviate the Impacts of Traffic Congestion," Dr. Lidasan notes that bottom line of traffic jam in the metro is the absence of an integrated master plan agreed upon by cities in Metro Manila.

Aside from the bloating metro population, transportation is so inadequate and can not cope with the growth in other areas. Shopping malls, condominiums, and other structures have mushroomed in several areas, and Lidasan pointed out that this condition breeds traffic problems because of "the lack of parking spaces, the narrow roads, incomplete road network, the lack of efficient mass transit system, and inadequate traffic signal and control system."

To address this problem, DOST has been developing the Automated Guideway Transit and the Road Train to help ferry passengers around the metro in the following years.

No standard time

Ask a small group what time it is and you get different answers. Usually, there are 5- to 30-minute differences even among people who live or work together. This is because people adjust their time pieces to "office time", "school time", "church time," and other myriad reasons. Others deliberately advance their time so that they "will not be late."

Actually the standard time has been set a long time ago, with DOST-PAGASA as the country's official timekeeper. However, enforcement of the Philippine Standard Time or PhST was not taken seriously, until Pres. Benigno S. Aquino III signed into law the Philippine Standard Time Act or RA 10535 on May 15, 2013.

The DOST spearheads the enforcement of PhST and teaches the public how to set their time pieces to PhST. RA 10535 also sets the National Time Consciousness Week celebration every Jan. 1-7 yearly, with DOST's Science and Technology Information Institute and PAGASA as lead agencies. These efforts are expected to result in one common time among all the people in the country's 7,107 islands.

Filipino time indeed is known all over the country and is still practiced. But the good thing is that more and more Filipinos are getting educated on respecting the time and other people's time. With the government's efforts and the nation's collective open mind, there is big hope that "Filipino time" can transform from "being late" to "being on time."

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ANONAS

Time is an abstract idea but it is a commodity, a highly valuable one. It is up to people to "spend time" or "waste time." **Maria Judith L. Sablan** explains in this article why time should be valued and spent wisely because, as a resource, it has cost.

The cost of time

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

http://blog.jobstheword.co.uk/2013/12/09/

Time is of the essence in construction and engineering.

http://business.inquirer.net/

Traffic in Metro Manila alone costs us P2.4 billion daily.

Mr. Salvador went to the bank to pay for his credit card, which is due that day. He was surprised to learn it was already closed. The guard said it just closed about 3 minutes ago. He checked his watch and saw that he still has five minutes before closing time. But then again, his time is not synchronized with the bank.

This means that Mr. Salvador has to wait for tomorrow to pay his bills. Late payment means additional charges like late payment fee and other finance charges.

Time is highly essential. Every minute counts. In the case of Mr. Salvador, the missed opportunity of paying on due date or the right time will cost him exactly the amount the bank will charge for late payment. Had he paid on time he could have saved such amount and used it for other meaningful expenses of his family.

Mr. Salvador's experience is just one of the many missed opportunities, which is unintentional. The unsynchronized time, even with just a minute variation, has affected his timely record with the credit company. Although it may only have a minor effect on his financial capacity, charges, when repeated, may eventually accumulate and bring major effect on his finances.

Value of time precision in science

Time precision is highly important especially in science. Just like in cook books were measurements have to be followed, in science time accuracy is also very important especially in laboratory experiments and researchers. Aside from the need for materials to be exact, time element is likewise important such as the exact time an ingredient or a particular chemical has to be added in a solution or for how long a certain method has to be performed. For example, how long will a solution be centrifuged or a certain ingredient has to be submerged in a chemical solution.

This is very valuable because scientific method has to be reproducible, meaning anyone capable of performing the experiment can repeat the same method and come up with the same result. Otherwise, it will directly affect the public's trust in science. Maintaining a good reputation or credibility in the scientific field is very valuable because science must always be based on truth.

Time essentially affects every aspect of human lives. For engineers for instance, time is highly valuable because they need to finish work based on the specified estimated period or duration. Otherwise, once a project is delayed, it will certainly affect labor cost due to the additional time needed to finish the project or if additional workers are hired.

Time accuracy is likewise important to navigation and transportation as well as communication. Knowledge of time is essential to precise knowledge of location when navigating the ocean or high seas as well as the skies. In airports for example, every second counts because planes that take off and land may otherwise collide in the runway if the control tower personnel is not precise in his time measurement. Precise time synchronization is needed to efficiently provide the right information to determine the right track or path and be able to travel safely.

In the field of medicine, proper timing in the delivery of medicine or drugs is highly valuable in saving lives. Even in weather forecasting and emergency response, delay in the delivery of message and services can cause devastating effect.

Time as a resource

But even with its significant value, time is often taken for granted because it is not usually considered as a resource. According to Webster Dictionary a resource is "a stock or supply of something that someone has and can use when it is needed." A resource is thus a source or supply from which benefit is produced. It can be money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively. But unlike other resources such as money, energy, food, water or other material resources, time is intangible and it cannot change in quantity, making it hard to account.

Other resources are freely exchangeable or replaceable, in whole or in part, but not time. If one loses money, he can make more money by working or earning more. But if time is lost, it is gone forever. Time cannot turn be turned back; people cannot repeat or do whatever they missed to do at a certain point. Though the quantity of time can not be changed, how it is used can be planned or managed.

The number of hours in a day is fixed. Although each one is given the same number of hours in a day, how much you accomplish within those hours may differ depending on how you properly and effectively manage your time.

The traffic congestion in Metro Manila, for example, wastes so much time. A single individual may lose up to two hours in traffic jam; multiply that with the number of people on the road at a certain point in time. In two separate studies done by the Japan International Cooperation Agency and the Department of Transportation and Communication in 1999, and the University of the Philippines National Center for Transportation Studies in 2011, it was clear that the country loses billions of pesos a day due to traffic jam.

Both studies pegged the country's loss at P2.4 billion a day in potential income from the traffic jams in Metro Manila alone. This includes lost work hours, lost business opportunities due to delays and missed deadlines and wasted fuel; as well as indirect losses such as withdrawal of potential foreign investments, missed business opportunities and reduced capital inflow.

Time is important in conducting experiments.

The losses can reach as high as P576 billion a year merely for the economic cost of traffic on weekdays, the studies revealed. By 2030, experts calculate the Philippines' loss to escalate to P6 billion a day.

The Price of Time

Time, they say, is the most valuable commodity. We seem to always have lack of it. So, how much really does time cost?

There are various methods now formulated by well-known economists to calculate the price or cost of time. However, at the end of the day, each one of us has only 24 hours a day. The price or cost of time will mainly depend on how we manage or use time efficiently. The cost of the time spent on any given activity is the value to use of what we otherwise would have been doing with that particular time. Thus, it will basically rely on our choices. As we increase time spent on one activity, we give up more time for another potential activity.

In this digital age, everyone seems so busy. Because of the daily rush, it is tough to manage time. It becomes a challenge for everyone. Managing time by prioritizing tasks is the key. It includes attending to important tasks and performing your job (well), enough time for your family and friends as well as rest and sleep. Managing time is like managing anything else, it is based on priority, ability, need, and cost.

Want to value your time more? Choose to spend your time well and avoid time wasters!

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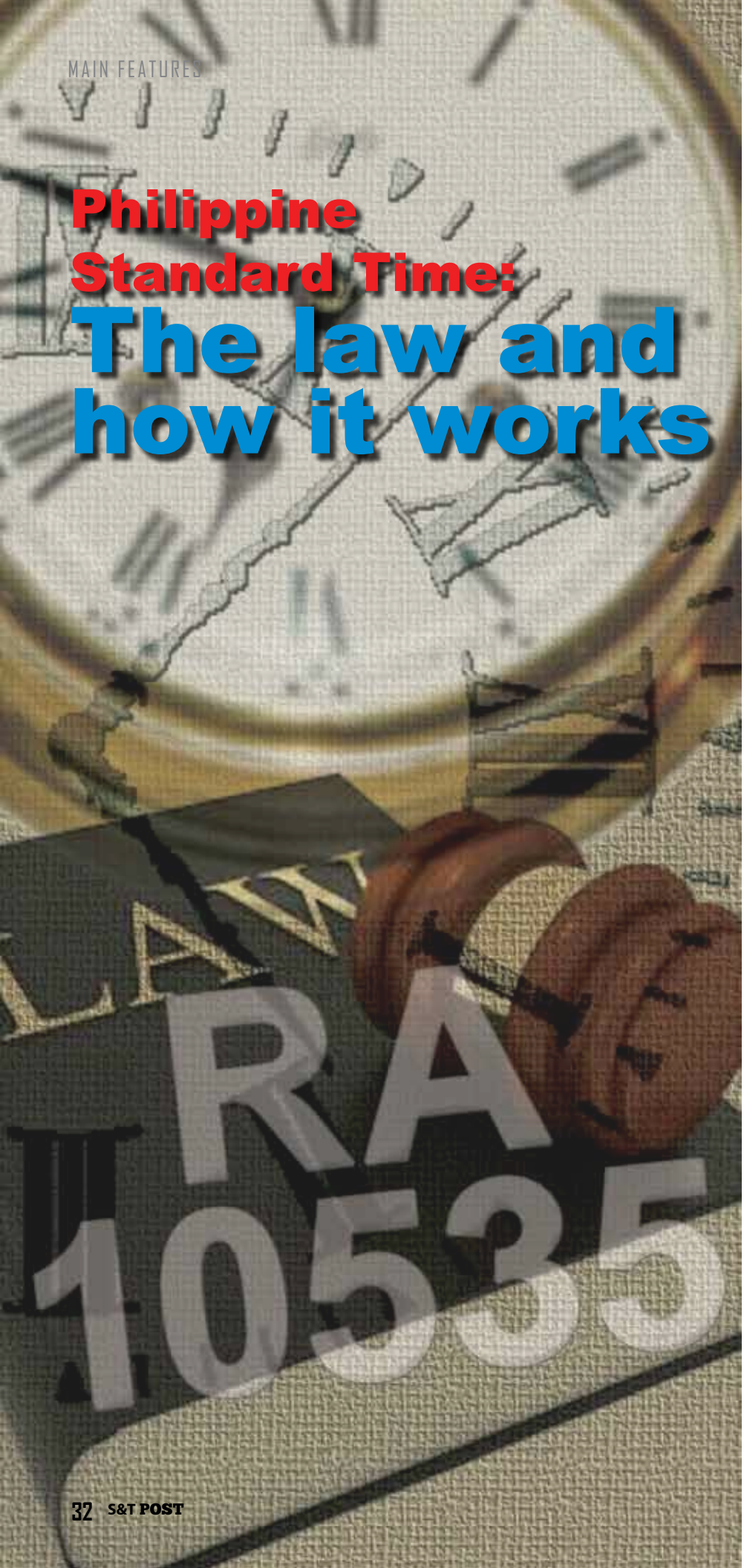
SABLAN

Philippine Standard Time: The law and how it works



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

With the signing of the law which directs all national government agencies and local government units, as well as private institutions, in observing the Philippine Standard Time, this piece of legislation is regarded as a key component that will set the tone towards progress.

Republic Act 10535, better known as the Philippine Standard Time or PhST, is eyed by Secretary Mario G. Montejo as a major factor that will unite and guide the Filipinos in conducting simultaneous activities and ultimately redefine the Filipino's concept of time.

The law aims to set one common time for the country's 7,107 islands and, on the cultural side, reshape the notorious "Filipino time" into a positive and more accepted culture of punctuality.

Similarly, Valenzuela 2nd District Representative Magtanggol Gunigundo, principal author of the House version of the law, views the law as one that will put the nation into "symmetry, moving as one in economic, military, transportation, health, religious, cultural and other nation-building activities."

Common time for PH

The law requires all national and local government offices to observe the PhST in all its activities and use it as the official time reference in all official time devices based on the DOST's Philippine Atmospheric, Geophysical, and Astronomical Services Administration (DOST-PAGASA) network time protocol (NTP).

RA 10535 Implementing Rules and Regulations define NTP as an Internet standard protocol that assures accurate synchronization to the milliseconds of computer clock in a network computer.

Consequently, these offices are required each month to coordinate with DOST-PAGASA's Time Service Unit (TSU) in synchronizing their timepieces and other similar devices to the PhST.

Official timekeeper

Moreover, DOST-PAGASA is tasked to ensure a reliable and accurate timekeeping system in the country. The agency, which is more known as the country's weather bureau, is expected to disseminate the precise time throughout the country and monitor the compliance of all concerned institutions including broadcast stations

Led by Vice President Jejomar Binay (7th from left) with DOST Sec. Mario Montejo on his right and ShoeMart Incorporated Executive Vice President Hans Sy on his left, Juan Time partners give the gesture "one" to symbolize their being one in pushing "Juan Time" in the country. *(S&T Media Service)*

The 2011 New Year countdown via Juan Time was celebrated by DOST, represented by DOST-STII Director Raymund Liboro (extreme right) with partners Pizza Hut, Timex, and Jacque Ruby of Discovery Channel (second from right). Hosts were beauty queens Shamcey Supsup and Venus Raj. *(S&T Media Service)*

-- public and private-- which are required by the National Telecommunication Commission to publicly display PhST in all their programs.

Penalty for not being on time

However, should broadcast outfits fail to comply, Section 7 of the law says that "Owners of private television and radio stations who shall fail to calibrate and synchronize their time devices with the PST during their broadcast shall, upon hearing and due proceedings, be penalized with a fine of not less than Thirty thousand pesos (P30,000.00) but not more than Fifty thousand pesos (P50,000.00) and in case of second offense, revocation and cancellation of their franchises to operate."

The fine to be collected as penalty for the violation of this Act shall go straight to the general fund of the National Treasury, according to the implementing rules and regulations of RA 10535.

Let's sync our watches

The government will help fund the installation of several huge time displays in key public places and in all DOST-PAGASA's field stations. The weather bureau will ensure that these time displays will be periodically calibrated.

The PhST can be accessed straight through the DOST-PAGASA head office in Agham Road, Quezon City or through its field stations nationwide. It can also be accessed through other government offices and websites. Radio and TV broadcasts are the quickest channel to sync the time pieces.

Time conscious

In order to educate the people towards observing PhST and be aware of the importance of being on-time, the law set the National Time Consciousness Week every first week of the year. Filipinos are encouraged to actively participate and cooperate in the said activities as this will help us spread the culture of punctuality and practicing proper time management for a progressive and smarter Philippines.

Just last New Year's eve celebration, DOST initiated the national New Year countdown using PhST and kicked off the PhST adoption of major TV networks and telecommunications companies.

Last January 6 of this year, DOST spearheaded a nationwide simultaneous flag-raising ceremony requiring all government agencies to participate in the said activity dubbed "Juan Time: Pinoy Ako, On Time Ako." During the event, DOST Sec. Montejo said, "Lateness often leads to missed opportunities. What we want is for Filipinos to arrive on time as the new norm."

Juan Time for every Juan

RA 10535 started as a movement in the DOST through its information arm the Science and Technology Information Institute branded as "Juan Time", a word-play on "One Time" (single or unified time) and "Juan" being the common name for Filipinos.

DOST, through STII, officially launched "Juan Time" in September 2011 at the Music Hall of SM Mall of Asia where Vice President Jejomar Binay, SM Prime Holdings President Hans Sy, and Presidential Communications Operations Office Secretary Herminio Sonny Coloma were among the top personalities present.

A network of partners then supported the movement which include Metro Manila Development Authority, SM Supermalls, Nido Fortified Science Discovery Center, Timex, Petron, Chevrolet, Sagittarius Mining Corporation, Team Manila, Lamoiyan Corporation, PICAR Development, Inc, and AMA Universities, as well as media partners Discovery Channel, BusinessWorld, and People's Television Network, Inc.

That year, one of the country's leading pizza chain jumped into the Juan Time campaign as Pizza Hut adopted the use of the PhST as its reference for its pizza delivery service. According to Pizza Hut Marketing Manager Raymund Nobleza, "Pizza Hut's well-known 'Hate Late' campaign is attuned with Juan Time, as it focuses on being 'on time, all the time.'"

STII also made several campaigns in the regions as the Local Government of San Pablo City installed a huge time display of the PhST.

Through its notable intention of uniting the whole country with one reference time, DOST's "Juan Time" campaign spurred new development and allies as many people even in the legislation saw its importance not only in the day-to-day conduct of business but also in reshaping the habit of tardiness in the country and bringing in new perspectives on the importance of time.

LAZCANO

STII staff look up for Juan Time.

DOST-NCR


DOST-CALABARZON

PhST launch at DOST

DOST-Romblon

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

There's on-time and there's Filipino Time. Filipinos have long been known for this, which unfortunately equates to tardiness. We've all seen it, and been part of it – coming late to school, reporting late for work and for appointments, events that start 30 minutes or even one hour after the time stated in invitations. Previously, what compounded this problem was the fact that television and radio stations in the country displayed varying times - from a few seconds to minutes.

However, this negative concept of Filipino Time is slated to change and has become Juan Time, which denotes punctuality, discipline, and regard for other's people's time.

This much awaited shift is expected to materialize now that Republic Act 10535 or the Philippine Standard Time Act of 2013, has been signed into law by President Benigno S. Aquino.

Juan Time does not merely correspond with the Philippine Time Zone; it subscribes to the Coordinated Universal Time or UTC as well. UTC is the primary time standard followed by the entire world.

Thus, DOST's Juan Time campaign "*Pinoy Ako, On Time Ako"* was launched to promote PhST and to implement the synchronization of

The law requires all government agencies to adhere to and display the PhST in their respective offices. This makes government bodies not only united but also in sync with each other, a perfect gesture of synergy needed to efficiently run a bureaucracy. In this article, ***Espie Angelica A. de Leon*** *discusses how government agencies, especially DOST offices, observed "Juan Time," especially on the first working day of this year.*

In sync for Juan Time

all watches, clocks, and time setting devices in the country, including bundy clocks in offices and workstations, both in the government and private sectors.

Early this year, the Philippine Standard Time Act of 2013 got a boost from the Department of Education. DepEd urged all students in the country to set the time in their laptops, tablets, and smartphones in accordance with PhST as they returned to school in January this year after the Christmas and New Year breaks.

For its part, the Department of Transportation and Communication produced and conspicuously displayed tarpaulin banners enjoining stakeholders to observe PhST.

DOST system: One in PhST

Finally last January 6, at exactly 8:00 am PhST, DOST led all government agencies across the country in simultaneous flag-raising ceremonies to kick off the first national observance of the National Time Consciousness Week (NTCW) from January 1-7, 2014.

The entire DOST community - regional offices, provincial S&T centers, councils, advisory bodies, service institutes, and R&D institutes – participated in this historic endeavor.

One of the first DOST agencies to put PhST into practice was DOST-NCR, true to its tagline of "Spearheading Technological Innovations in the Metropolis."

Today, clients and guests at the DOST-NCR office in Bicutan, Taguig are greeted by an automated LED outdoor digital clock equipped with a Global Positioning System receiver to display and harmonize time with the national standard. The time is regularly being updated and synchronized with PAGASA.

DOST-NCR Regional Director Dr. Teresita C. Fortuna said that her agency's compliance with the PhST is in keeping with their corporate commitment to deliver substantial and timely technical assistance to its numerous clients in Metro Manila, most of whom are micro, small, and medium enterprises. "We also want to do away with the Filipino time. We do not have the luxury of time anymore, not with the level of competition in all areas both here and abroad," Dr. Fortuna added.

The same holds true for the Provincial Science and Technology Center (PSTC) in Romblon. With their observance of the PhST and NTCW, they achieve their targets on time. "When we announce to our clients for example, that their SETUP assistance would be released on this date, everyone works hard to live up to our word," PSTC-Romblon Director Dr. Bilshan F. Servañez revealed. "And when the clients indeed get their assistance as promised, we beam with pride and get a sense of accomplishment when we see the smiles on their faces. The ultimate reward is we get credence for our programs and the morale of the PSTC staff is heightened."

PSTC-Romblon's synchronization adheres to the regional office even in targets and deadlines set by the latter not only in terms of project implementation and reports submissions but also in the case of funds disbursements. Dr. Servanez and his staff fully understand that their actions and decisions at the provincial level affects those at the regional and national levels. "Not a second lost on the value of the taxpayers' money," he affirmed.

Like the rest, PSTC-Romblon posted a digital clock at their office lobby to remind every Romblonan that there is only one standard Filipino time.

Meanwhile, DOST-Region IV-A (CALABARZON) office in Barangay Timugan, Los Baños, Laguna, was the first to use a rubidium atomic clock in the municipality. A rubidium atomic clock, which uses the rubidium atom as its pendulum, is the most accurate man-made timing device. It tells the International Atomic Time via a GPS receiver.

Not only is DOST-IV-A implementing PhST; the office likewise is enjoining others within the region to subscribe to it as well. During the regional office's 50th anniversary celebration in November 2013, DOST IV-A Dir. Alexander R. Madrigal presented Los Baños, through Mayor Ceasar P. Perez, with a special gift: the municipality's own atomic clock which Dr. Madrigal calls *"Orasan ni Juan sa Timugan."* With this very significant gift, DOST IV-A hopes to provide a time reference for Barangay Timugan residents and instill punctuality among them via adherence to the PhST.

PHIVOLCS likewise has a digital clock at its building lobby. "We have the same setup even before the PST launching at the Volcano and Earthquake Monitoring Divisions as we have to have similar time for all our operations," stressed PHIVOLCS Director Renato U. Solidum. He added that during their first flag ceremony for 2014, PHIVOLCS employees were briefed about the National Time .Consciousness Week and reminded of the importance of having a standard time at work.


DE LEON


PALAGANAS


QUARTZ

GET SET FOR THE Philippine Standard Time

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

KEEPING UP WITH THE ATOMIC CLOCK. PAGASA's Chief of Time Service Unit Engr. Mario Raymundo reveals that the agency is set to acquire a cesium clock–an even more accurate atomic clock that will not miss a second in around 30 million years. In the background is PAGASA's rubidium clock which currently gives us the Philippine Standard Time.

The passage of the RA 10535 or the Philippine Standard Time (PhST) Act of 2013 has made it easier for all to sync their timepieces to the PhST as government offices and broadcast stations --public or private-- are required to display the PhST.

The PhST must be kept according the Coordinated Universal Time (UCT)—the world's official time. Mandated to keep and disseminate the PhST is the Philippine Atmospheric Geophysical Astronomical Services Administration's (PAGASA) Time Service Unit.

How does this office ensure that we get the correct time all the time?

The GPS and the atomic clock

Since 2003, PAGASA has been using a very accurate clock, specifically a rubidium atomic clock for time keeping. The rubidium clock is one of the two most widely-used atomic clocks in the world (the other one being the cesium clock which is more accurate).

The rubidium clock in the PAGASA station is equipped with a receiver that receives timing signals from at least four orbiting satellites in the Global Positioning System (GPS) within its range. These satellites are each equipped with up to four atomic clocks which are periodically updated from a cesium atomic clock based in Boulder, Colorado.

This system keeps the PAGASA clock synchronized to the UTC.

GPS is the same technology being used for modern navigation consisting of 24 satellites which broadcast their location, status, and precise time. Precise time is necessary for the GPS to work, as this will be used to compute for the exact location of a receiver using geometry principles.

Network Time Protocol

Once the rubidium clock establishes the correct time from the satellite signals, it then disseminates this through PAGASA's Network Time Protocol (NTP), allowing those with internet access to synchronize their computer time to the Philippine Standard Time in few simple steps.

The PhST can be accessed through any of the following:

1) Call 9291237
2) Through the internet, via the NTP Server system of PAGASA (see related article)
3) Through any of the national or local government offices
4) Through government and private television and radio stations

LUMIOAN

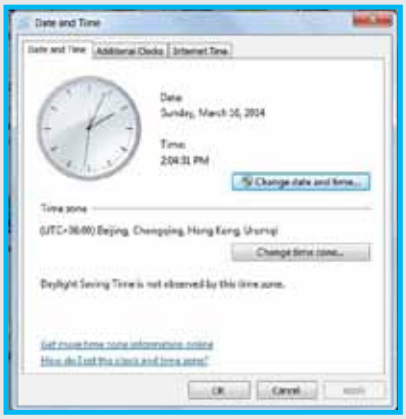
By MARIA LUISA S. LUMIOAN
S&T Media Service, *DOST-STI*

Let's get PhST!

How to synchronize your computer time to the PhST via the PAGASA's NTP server

Step 1: Click or select "Date and Time" in system icon tray located in the lower right corner of the ataskbar.

Step 2: "Date and Time" window will pop up. Then Click or select "change date and time settings"

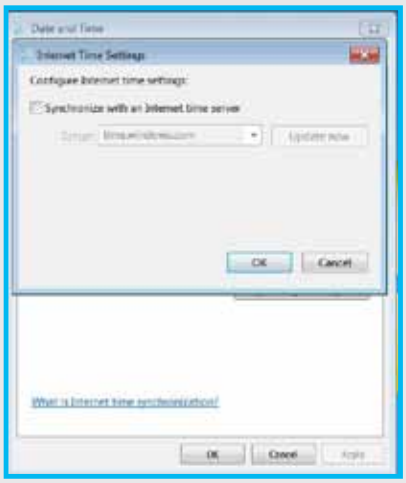


Step 3: "Date and Time Setting" window will show.

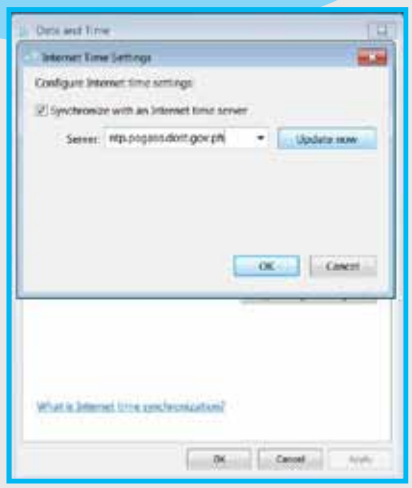
A message will inform you if update is successful.

If you notice that after synchronizing and your computer clock didn't match the PhST, just keep on refreshing until it finally syncs with PhST. It is normal at the beginning, because it will take time to load a page.

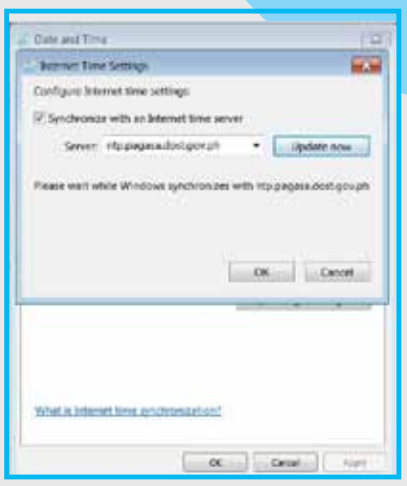
Step 4: On the "Date and Time Setting" window select the tab "Internet Time".



Step 5: After selecting the "Internet Time" tab, click or select "Change settings" button and "Internet Time Settings" window will pop up.



Step 6: Check the box beside synchronize with an Internet time server. Then in the "Internet Time Settings", type "ntp.pagasa.dost.gov.ph" in server textbox. Then press "Update now".



Step 7: Wait for your computer to sync to the server.

Precision timing:

Why every second counts

Why is a split second crucial in making that one phone call? Read on to find out how the birth of atomic clock has redefined the second, as explained by **Maria Luisa S. Lumioan**.

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

A common clock or timepiece adjusted from time to time to synchronize with the Coordinated Universal Time (UTC) will be enough for us not to miss our appointments and make it to work, school, and other appointments on time.

However, to make a phone call, travel by plane, or use navigation applications in smart phone, people need a more precise clock, a clock that will not miss a second in thousands, or even millions, of years!

Once upon an atomic time

Clocks with such accuracy are called atomic clocks. They keep time based on very precise natural oscillations (movement) or frequencies of atoms.

The very first atomic clock was invented in 1949 at the National Bureau of Standards (now NIST or National Institute of Science and Technology) based in Boulder, Colorado, USA. In 1967, cesium 133 atom's natural frequency was selected by an international committee as the basis for the international unit of time, the "SI second", which is defined as 9,192,631,770 oscillations or cycles of this cesium atom resonant frequency.

The best cesium clock we have now is the NIST-F1, a cesium fountain atomic clock at the NIST laboratories that would neither gain nor lose a second in more than 100 million years! NIST-F1 contributes to the international group of atomic clocks that define UTC, the official world time.

And if that's not enough, in an article in Tech Beat, NIST announced this year that it has developed a new strontium atomic clock so precise it would neither gain nor lose one second in about five billion years, if it could operate that long.

This time period is longer than the age of the earth, which is estimated to be 4.5 billion years old! The clock is located at the Joint Institute for Lab Astrophysics-a joint training and research institute of NIST and University of Colorado Boulder. However, despite this development, the consensus to use the cesium standard still stands to this day.

Precision time: practical applications

So, what has precise time got to do with a phone call?

A thousand people may be making phone calls roughly at the same time.To ensure that a conversation reach the other end of the line, phone companies separate the conversation into tiny packets and send these packets across the phone line along with the packets from other conversations. Each packet of information has a timestamp—the very precise time that the information was sent, which the computer and clocking systems use to designate which packets belong to each conversation.

Precise time is also very important in modern navigation which depends much on Global Positioning System (GPS). GPS is a network of 24 satellites,

with each one circling the planet twice a day in one of six orbits to provide continuous worldwide coverage. These satellites broadcast their location and timing signals from on board atomic clocks which are captured by GPS receivers on the ground. Using the fact that GPS signals travel through space at the speed of light, and noting the time it took for these signals to travel in space, GPS devices calculate the distance of each satellite (at least four) in view to determine its exact location. Thus, inaccurate time will make the GPS devices unreliable.

As well, precise time plays an important role in economic activities around the world, as financial networks (banks, stock markets) rely on precision timing for synchronization and operational efficiency.

Of course, the applications of precise timing are very important in scientific endeavors such as space navigation, weather forecasting, and mapping of gravity fields near the earth's surface.Possibly sometime in the future, precise timing can also be used in advanced manufacturing, medical imaging and diagnostics, and other areas.

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Climate change and its effect on agriculture are eco-political concerns, says expert

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

THE ISSUE about climate change is actually more than disaster – it is an issue of economics and politics, according to Dr. Rodolfo de Guzman, former Director of the World Meteorological Organization (WMO) in Geneva, Switzerland.

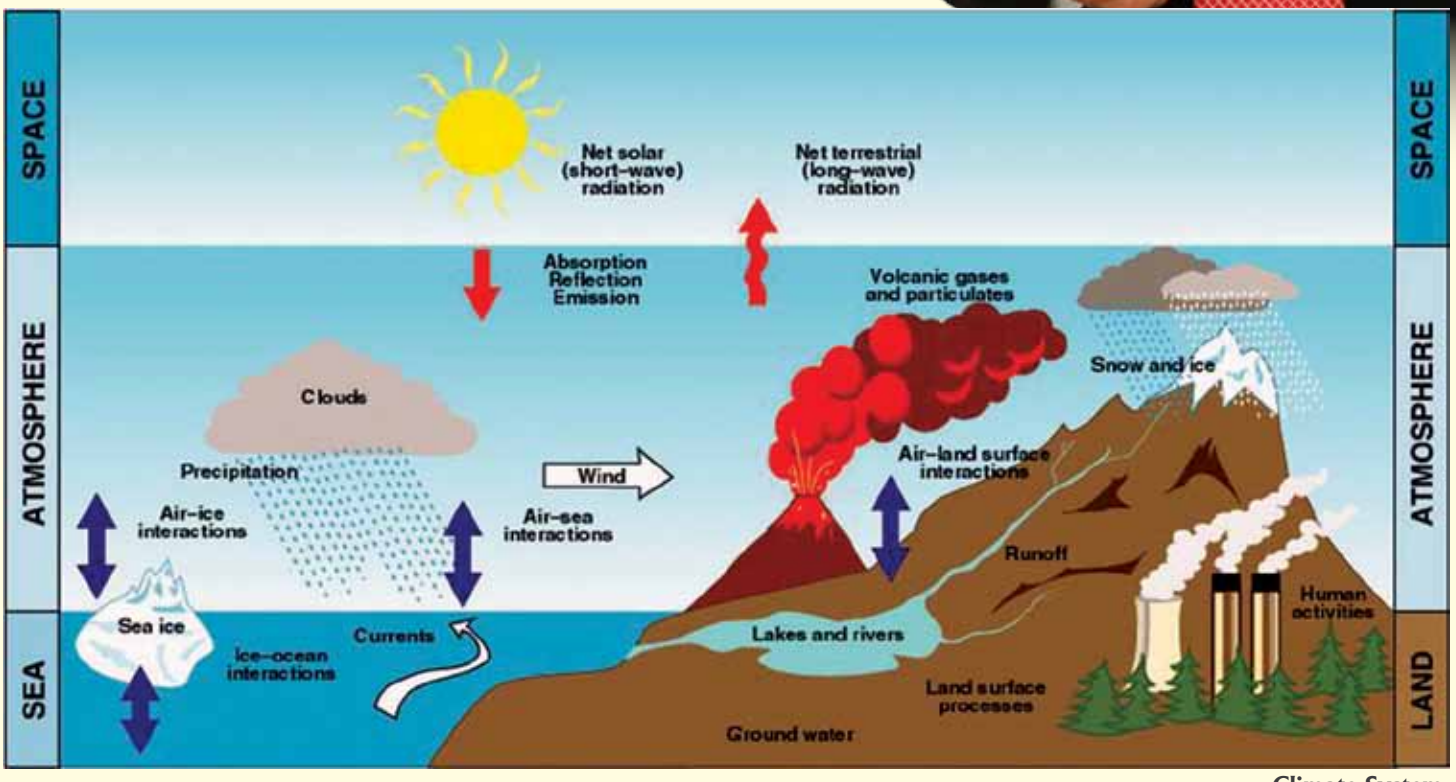
Speaking before a select group of scientists and researchers at the National Institute of Biology and Microbiology (BIOTECH) at the University of the Philippines Los Baños, Laguna, Dr. de Guzman stressed that the relationship of science and society contributes to the development of society.

"For science to progress, it needs to be nurtured by society. Simply, he said, "it is a mutual relationship."

He explained further that all human activities seemed to be affected by weather and climate especially our basic needs: food, clothing and shelter.

Defining climate change

Dr. de Guzman said that climate change means: 1) Variation in the Earth's global climate or in regional climates over time (decades to millions of years); 2) Change in the variability or average state of the atmosphere over time; and 3) Changes in modern climate largely caused by human activities in reference to its recent usage.



Climate System

Source: WMO/OMM (from the presentation of Dr. RA de Guzman)

He said, "Typhoon by itself is not a disaster; it is a natural hazard. It is us humans who make it a disaster."

He explained the observable things and events as far as climate change was concerned, "In climate change, warming of climate system is unequivocal and there is an increasing global air and ocean temperatures together with the rising global average sea level and the reduction of snow and ice."

Climate does not know boundaries, emphasized Dr. de Guzman. "It is a resource and a global common; making plans and decisions difficult to address especially those that concern geographical borders. "

Impact of climate change

Developing countries like the Philippines are most vulnerable to climate change, de Guzman emphasized. This is because of several factors, such as a large share of a developing country's economy is in climate sensitive sectors. Further, these countries have a lower capacity to adapt because of a lack of financial, institutional and technological capacity and access to knowledge.

Moreover, climate change is likely to impact disproportionately upon the poorest countries and the poorest persons within countries. This worsens the inequities in health status and access to adequate food, clean water and other resources, de Guzman said.

Rise in the sea level, for example has a huge impact in the Philippines. For example, it will affect coastal populations, habitats and infrastructures. The upstream flow of rivers too will be affected due to intrusion of sea water, resulting in loss of ecosystems and livelihoods. Moreover, there will be loss of groundwater supply due to sea water intrusion.

Said effects are significant, said de Guzman, as we have 7,107 islands; 36,289 km of coastline; and many river systems.

As a matter of fact

Climate change needs to be understood by people in order to become useful. Agrometeorological information, which he defined as the application of weather and climate information in agriculture, is useful to many people, especially the decision-makers, such as international officials (that is, the Red Cross, WFP, UN, and others), government officials, extension agents, farmers, ranchers, foresters, fishers, the media, and the general public.

He said that agrometerological information would answer two important questions: 1) What are the weather/climate events that impact agricultural decision-making?; and 2) How to relate weather/climate information to meaningful agricultural actions and practices?

Dr. de Guzman said that the ultimate goal of the users of the information is sustainable agriculture. He explained the meaning of sustainable agriculture as a support application to meteorology to manage agriculture, livestock, forestry, rangelands and fisheries sectors and it integrates three main goals – environmental health, economic profitability and social and economic equity.

"Stewardship of both natural and human resources is of prime importance and systems perspective is essential to understanding sustainability," he said.

He also emphasized that information reduces risks and (it is important) for decision-making. But slow decision-making process and unclear information often result in misunderstanding of correct information. He mentioned that failure also stem from scientists who do not want to release information because studies are still ongoing. He calls this "paralysis by analysis."

With regard to weather, Dr. de Guzman said that a forecast is accurate technically. However, when such forecast is not understood by the users especially for decision-making, then it has not much value.

He said that the Philippine Association for the Advancement of Science or PHILAAS, which is currently headed by DOST Undersecretary Fortunato T. Dela Pena, can do much more. He said, "I still believe in our capacity to transcend," and encouraged everyone to do what is right.

CARANDANG

DOST-PHIVOLCS launches questionnaire for quake-safe house

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

Is your house ready for a strong earthquake? To help owners of concrete hollow block (CHB) houses answer this question, the Department of Science and Technology - Philippine Institute of Volcanology and Seismology (PHIVOLCS) in partnership with the Japan International Cooperation Agency (JICA), launched a 12-point questionnaire last February 19 at the PHIVOLCS Auditorium in Quezon City.

The questionnaire is designed to guide homewners in assessing whether their homes are strong enough to withstand a major earthquake.

The questionnaire, titled "How Safe is My House? Self-check for Earthquake Safety of CHB Houses in the Philippines", has 12 questions, each with three possible answers. Each answer is equivalent to a point. The total number of points earned determines the strength or vulnerability of the structure.

Among the questions in the checklist are: Who built or designed my house? How old is my house? What is the shape of my house? Has my house been extended or expanded?

The rest deal with equally important information such as damage incurred from previous disasters, CHB thickness, soil condition, use of standard size steel bars, width of unsupported walls, among others.

"The solution is to recognize the problem. Where will this recognition start? It should start with the homeowner," emphasized PHIVOLCS Director Dr. Renato U. Solidum Jr. during the launch. Previously, Solidum explained that an earthquake resistant house will not collapse even if an Intensity 9 temblor strikes.

However, the questionnaire is not just useful for homeowners but also for local engineers, building officials, and local government unit authorities. "This material can also be practically used to ensure safety before the construction of houses," reminded Takahiro Sasaki, chief representative of JICA Philippines, in his message.

The questionnaire, which was tested on some damaged houses and structures in Bohol following the Oct. 15, 2013 tremor in the province, was derived from field verifications, quake damage surveys, and several experiments and tests.

Among these experiments were the full-scale Shaking Table Test of CHB Houses conducted by Filipino and Japanese experts at the National Research Institute for Earth Science and Disaster Prevention in Tsukuba, Japan in February 2011. The experiment involved two houses, an engineered model that followed the Building Code, and a non-engineered one representing the more common CHB residence in the Philippines. Tests showed the latter incurring damage immediately , leading to the eventual collapse of certain parts during the earthquake simulation.

"Casualties from past earthquakes were caused by the collapse of buildings. And part of those are from damaged to collapsed non-engineered houses," revealed Solidum.

During the open forum, Engr. Ronaldo S. Ison of the Association of Structural Engineers of the Philippines (ASEP), another project proponent, said that a strong earthquake may still cause debris to fall. However, an eventual collapse will not take place if it is an engineered house.

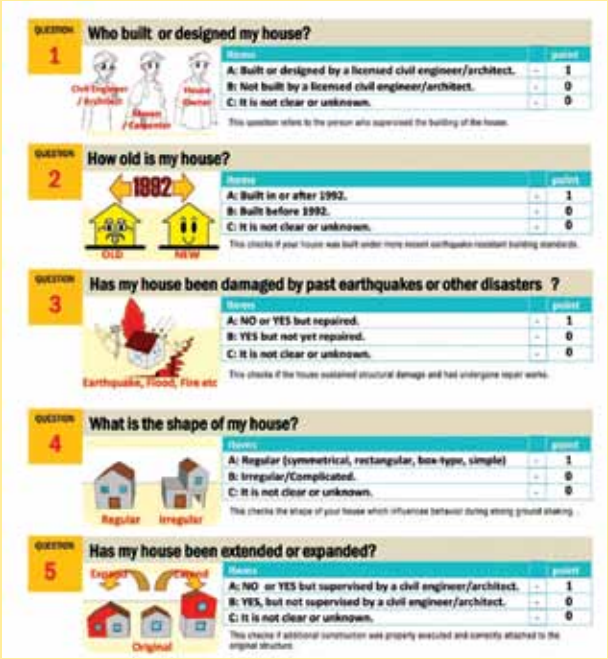
"What we're trying to do is to educate everybody, that even if you employ masons and carpenters, they should be following certain standards. It is the right time for us to inform the public that we should not just rely on masons and carpenters to build our houses," declared Engr. Ison.

The PHIVOLCS director added that a safe house should be combined with appropriate response from people living in it to make them safer and further prevent damage and injury.

PHIVOLCS and its partners are currently preparing a Tagalog version of the 12-point questionnaire and plan to come up with a similar checklist for wooden houses. Also in the pipeline is a computer simulation program to test the earthquake readiness of engineering and architectural designs.

Aside from PHIVOLCS, JICA, and ASEP, the Japan Science and Technology Agency is also involved in the project. "How Safe is My House? Self-check for Earthquake Safety of CHB Houses in the Philippines" may be downloaded at http://www.phivolcs.dost.gov.ph.

EARTHQUAKE RESISTANCE CHECKLIST FOR HOMEOWNERS. Do you want to know if your house is strong enough not to collapse or be damaged in the face of a strong earthquake? The Department of Science and Technology - Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS) launched "How Safe is My House? Self-check for Earthquake Safety of CHB Houses in the Philippines" last February 19 at the PHIVOLCS Auditorium to provide a 12-point checklist for owners of concrete hollow block (CHB) houses. The questionnaire helps residents to determine whether their CHB homes are earthquake resistant or not. The material may be downloaded at http://www.phivolcs.dost.gov.ph.



DOST-DILG kick off joint program on disaster preparedness

S4SC launch in Clark Field, San Fernando, Pampanga last March 3-4, 2014

THE DEPARTMENT of Science and Technology (DOST), in partnership with the Department of Interior and Local Government and the Office of Civil Defense kicked off the first leg of its regional disaster information campaign dubbed as "Iba na ang Panahon! Science for Safer Communities" last March 3 at the Oxford Hotel, Angeles City, Pampanga.

The two-day event gathered provincial governors, city/municipal mayors, and disaster risk reduction managers in Central Luzon to arm them with the latest information, tools and technologies that help them understand the possible impact of hazards in their respective communities which is crucial in their formulation of local disaster preparedness and risk communication plans.

The collaborative project starts this March to help arm local governments in preparing for potential hazards in the future.

CONTINUED NEXT PAGE

Batangas

Romblon

Iloilo

Flood

Storm surge

Typhoon

Volcanic eruption

Landslide

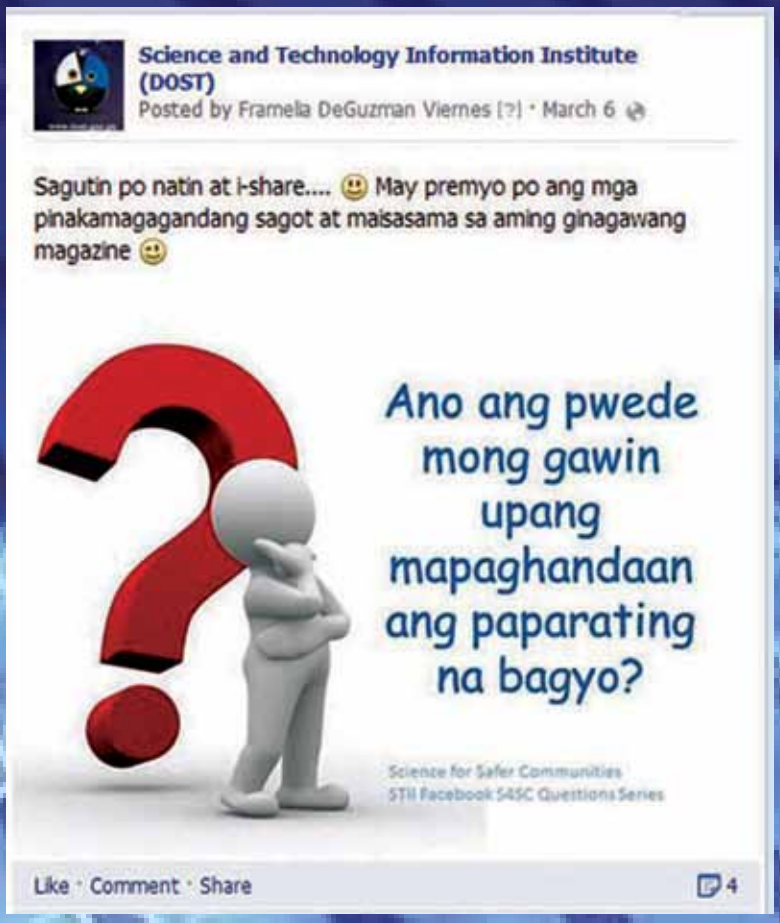
In his message, Science Secretary Mario G. Montejo explained that Iba na ang Panahon! "embraces the change in our seasonal climate and weather patterns and the severity of the impact of weather-related natural hazards in the country." He added that the campaign highlights the availability of new tools such as latest high resolution maps and flood modeling solutions that allow scientists to bring better forecast warnings down to communities.

Inter-government effort for safer communities

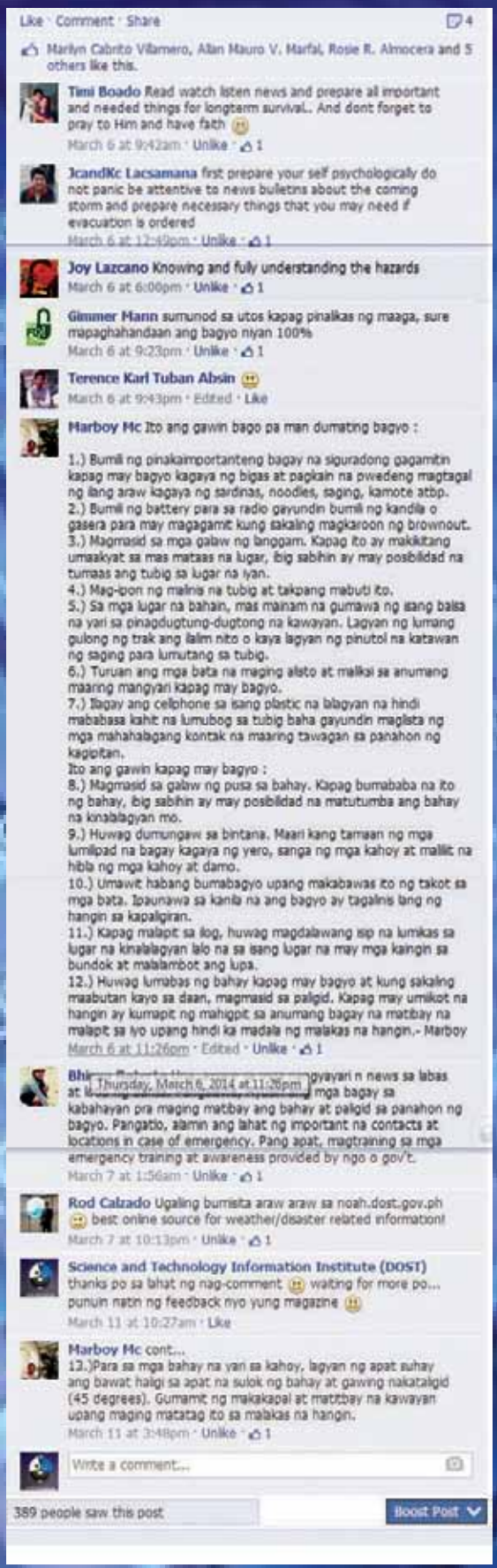
The launch sets off the government's mobilization of its resources to enhance capabilities of local communities across the country to deal with calamities the magnitude of typhoon Yolanda. Op exercises

Participants, in table top exercises, went through hazard maps in their very own localities, identifying hazards such as fault lines, previous flood and storm surge episode, and others that affected and may still affect in the future certain parts in their communities. Having been introduced to tools and technologies such as 3D maps, apps, and others, they were able to project possible impact of certain hazards in their communities and formulate plans to prevent or minimize disasters.

"Early warning leads to early action," said Sec. Montejo. "If our local leaders are able to act early, then they will be able to minimize loss and lead their communities into early recovery." *(S&T Media Service)*



What our FB friends say...



DOST pushes eHealth technologies for smarter healthcare

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

DOST Secretary Mario G. Montejo (center) listens to Dr. Kristine Magtubo (left) of the University of the Philippines National Telehealth Center as she explains the features of RxBox during the First Philippine eHealth Summit held last February 4 at the Sofitel Philippine Plaza. RxBox is a biomedical device that measures and stores vital patient health information which can be transmitted to remote medical specialists. With them are Congressman Victor Yu, chairman of the Congressional Committee on Science and Technology and 1st District representative of Zamboanga Del Sur; and Oriental Mindoro Governor Alfonso Umali, president of the Union of Local Authorities of the Philippines. *(Photo by Henry A. de Leon, S&T Media Service, DOST-STII)*

THE DEPARTMENT of Science and Technology's (DOST) trailblazing projects for the health sector took the spotlight at the First Philippine eHealth Summit held last February 4 at the Sofitel Philippine Plaza in Pasay City to pave the way for smarter healthcare by maximizing information and communications technology (ICT).

Using ICT for health, also known as eHealth, "is envisioned to transcend the constraints brought about by the country's archipelagic setup and limited budget," DOST Secretary Mario G. Montejo said during the event.

Sec. Montejo is optimistic that very soon the government's goal of providing universal health care would truly be achieved. "This collaboration between the DOST and the DOH- led by Sec. Enrique Ona, in exploring the electronic dimension in delivering health care services is unprecedented.".

Montejo said there has been a problem improving access to health care due to the archipelagic nature of the country, among other things.

He said people in remote rural areas usually fail to access quality health care services because 90 percent of medical experts are in urban areas.

DOST projects for smarter healthcare include the RxBox, eHealth Technology Assisted Boards for LGU Efficiency and Transparency

(e-TABLET), and the Philippine Health Information Exchange (PHIE).

RxBox: Connecting medics

Developed by University of the Philippines Manila-National Telehealth Center and DOST, the RxBox is a medical device which enables health workers in remote communities to consult with medical experts in urban areas, thus providing better access to life-saving healthcare services in isolated and disadvantaged communities nationwide.

"The device also allows information gathering, storage and processing at the community level," Montejo explained.

Developed by the DOST and the University of the Philippines, the RxBox has built-in medical sensors for monitoring blood pressure and blood oxygen levels, assessing the strength of contraction of the mother's uterus, as well as electrocardiogram and fetal heart monitor. The data acquired by the sensors are stored in the device and may be transmitted to a specialist as the need arises and upon patient's consent. The RxBox is currently deployed in 21 sites in the Philippines.

e-TABLET: Managing medical records

The e-TABLET, on the other hand, is a tablet-based electronic medical record system developed by Ateneo de Manila's Institute of Philippine Culture and Ateneo Java Wireless and Competency Center.

Apart from being a platform for health workers to input and manage patient records, e-TABLET is also a decision-making tool for local government units which are given access to summarized simple medical data in the tablet. Armed with real time information, LGUs can make decisions such as allocating resources and manpower to respond to a certain medical situation in their locality. e-TABLETalso features a messaging system between the mayor and the municipal/city health officer. The tablet is currently deployed in 10 sites, namely San Jose Buenavista, Antique; Alcoy, Cebu; Sta. Rita, Pampanga; Isulan, Sultan Kudarat; Paombong, Bulacan; Anilao, Iloilo; Lallo, Cagayan; Dumalinao, Zamboanga del Sur; Guimba, Nueva Ecija; and Dinalupihan, Bataan.

PHIE: Centralized medical records

To further enhance the country's healthcare delivery system, DOST and the Department of Health are also setting up the PHIE system by the end of 2014. PHIE will provide centralized database of health and medical records nationwide, allowing patients and doctors retrieve medical records from anywhere in the country. With this system, patients can save time and effort, and avoid expenses from unnecessary or duplicate examinations.

The PHIE was jointly developed by DOST Information and Communication Technology Office, and Advanced Science and Technology Institute.

"The PHIE platform would work to ensure that only accurate information are made available to health practitioners and decision-makers," Montejo said.

PATIENT INFORMATION IN A TABLET. The e-TABLET is primarily a patient record system where health workers input and manage patient information. Individual patient information (above) remains with the attending doctor. Meanwhile, the summarized data in graphical form, such as the number of dengue cases (below), can be viewed by the local chief executive in his dashboard.

Enhancing eHealth via TVWS connectivity

To ensure that the full benefits of eHealth can be realized, the DOST through its Information and Communication Technology Office (ICTO) is working to expand internet connectivity in far-flung areas. In particular, DOST-ICTO is tapping into the potential of TV White Spaces (TVWS) , or unused frequencies between broadcast TV channels, to provide an extremely cost effective means for internet connectivity and data delivery in areas underserved by telecommunications companies.

Aside from eHealth, DOST-ICTO also aims to maximize TVWS technology for applications in environmental sensor networks, educational content delivery, and government information systems.

Iron-fortified rice is best iron source for school kids

By CZARINA TERESITA S. MARTINEZ
S&T Media Service, *DOST-FNRI*

THE 7TH National Nutrition Survey by the Food and Nutrition Research Institute of the Department of Science and Technology (FNRI-DOST) affirmed that rice is still the top most frequently consumed food among school children six to twelve years old.

The dietary component of the survey reveals that about 94 percent of the children surveyed say that they eat rice almost three times a day. The survey reported that the average rice consumed by the school-age children daily is 235 grams or about 1 ½ cups.

On the other hand, the biochemical component of the survey found that there two out of 10 school-aged children are suffering from iron deficiency anemia.

Based on the World Health Organization (WHO) standard, the anemia status of the Filipino school-aged children is classified as "of moderate public health significance". The WHO says that iron deficiency is a major cause of anemia.

Iron deficiency anemia (IDA) occurs when children do not eat enough food that contain iron and when the body is not able to absorb sufficient amount of iron needed by the body.

Children suffering from IDA may show poor physical, mental, and overall school performance. IDA may be prevented if school-aged children are given iron-rich food like liver, granular organs, red meats, poultry, and fish.

Other sources of iron from plants are nuts and beans like squash seeds, chickpeas, cowpeas, white beans, red beans, lentils, and soybeans. Green leafy vegetables such as malunggay leaves, kulitis, talilum, gabi, saluyot, kinchay and kamote are also sources of iron.

It is best to eat iron-rich food together with foods rich in vitamin C like citrus fruits to help the body absorb iron from plant sources.

Iron fortified rice is an excellent source of iron.

The Philippines has adopted food fortification as one of the strategies in fighting IDA. Philippine lawmakers recognize that food fortification is one of the strategies in fighting micronutrient malnutrition. Thus, RA 8976 known as the "Philippine Food Fortification Act of 2000" is the legal basis for the mandatory food fortification of rice with iron, along with other staple food items like flour, sugar and cooking oil.

Food fortification is the addition of nutrients at levels above the natural state for commonly consumed food items. Specific micronutrients are added to the food that is widely consumed by at-risk groups.

Rice is widely consumed by school-aged children, so it is an excellent food vehicle for iron fortification.

The FNRI Food Research and Development developed an improved technology on iron-fortified rice. It developed an iron rice pre-mix made from rice flour mixed with micronized iron fortificant. The mixture is passed through the hot extruder to form a rice-shaped kernel. The iron rice premix is added to ordinary rice at one is to two hundred (1:200) ratio or 10 grams iron-fortified pre-mix to two kilos of ordinary rice.

Iron-fortified rice is cooked in the same way as ordinary rice. In a sensory evaluation conducted among trained panelists, they gave cooked the iro-fortified rice a rating of like moderately to like very much. The FNRI is vigorously promoting iron rice pre-mix and iron-fortified rice and is actively looking for partners who will invest and adopt the technology.

MARTINEZ

Tips in buying safe cooked food

By MA. IDELIA G. GLORIOSO
S&T Media Service, *DOST-FNRI*

TODAY, MORE people are resorting to buying cooked foods outside the home. This is for practical reasons like saving time in planning and preparing meals, convenience, availing of choice of reasonably-priced and flavorful food, and experiencing other special treats aside from the usual family menu.

Cooked and street foods are easy to find in carinderias, outside the school premises, churches, parks and even in malls.

However, there are safety issues in buying cooked and street foods.

These foods are safe to eat provided that the food handlers have the proper knowledge and training on food handling and services, food preparation, personal hygiene and maintaining a clean and safe environment.

The sixth message of the 2012 Nutritional Guidelines for Filipinos emphasizes that we should "consume safe foods and water to prevent diarrhea and other food-related and water-borne diseases."

Here are simple tips to prevent food and water-borne diseases:

- Buy cooked food from known safe sources.
- Avoid foods with mayonnaise or similar dressings. These spoil quickly.
- Avoid buying foods cooked in tomato sauce and coconut milk because they also easily spoil.
- Buy frozen or refrigerated fresh cooked food like embotido or morcon.
- -Buy only newly-cooked foods and avoid foods that have been long-standing. Examples of these are foods cooked in the morning and sold until the afternoon, or evening or on even the following days.

GLORIOSO

Phyllicia Anne Baguyo writes about the soft launching of the DOST-MIMAROPA Regional Standards and Testing Laboratory (RSTL) Microbiology Laboratory that brings the lab to the clients' doorstep.

Finally, MIMAROPA has its own service lab for MSMEs

By PHYLLICIA ANNE M. BAGUYO
S&T Media Service, *DOST-MIMAROPA*

WATER AND food testing can be quite problematic for micro-, small-, and medium-scale enterprises (MSMEs) in the island-provinces of the MIMAROPA Region, especially in Palawan. Most of the time, they have to fly water or food samples to Manila, something that is very expensive and time-consuming. While there are other existing laboratories in Palawan, their services are not specifically tailored to the needs of MSMEs.

Seeking to address this problem — and in line with Republic Act 10611, or the Food Safety Act of 2013 — the Department of Science and Technology-MIMAROPA Region (DOST-MIMAROPA), established the DOST-MIMAROPA Microbiology Laboratory.

The labortory was established as part of the "Strengthening the Testing and Analytical Capabilities of the Regional Laboratories to Support the Competitiveness of Local Industries (STARLABS)" project funded by the DOST Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD).

Meanwhile, the Food Safety Act of 2013 aims to protect the public from food-borne and water-borne illnesses and unsanitary, unwholesome, misbranded or adulterated foods, and enhance industry and consumer confidence in the food regulatory system.

Bringing the lab to the clients' doorstep

"Manila is simply too far away to test your water, so we brought the testing at your doorstep." quipped DOST-MIMAROPA Regional Director Dr. Ma. Josefina P. Abilay during the soft launching of the Microbiology Laboratory at the Provincial Science and Technology Center in Puerto Princesa City, Palawan last December 17, 2013.

The DOST-MIMAROPA Microbiology Laboratory, which aims to provide relevant laboratory testing services to both the government and MSMEs, addresses the need for microbiological test services for various kinds of water -- surface, ground, drinking, tap, bottled, waste -- and food products. Tests such as fungi count, heterotrophic plate count, total coliform, fecal coliform, and bacteriological exam for drinking water are available for water and wastewater, while tests such as total/fecal coliform (MPN), standard plate count, and fungi count are also available for food and food products.

DOST-MIMAROPA Regional Director Dr. Ma. Josefina P. Abilay introduces the Microbiology Laboratory at the Provincial Science and Technology Center in Palawan. Seated with her at the table is Provincial Science and Technology Director Engr. Pacifico T. Sariego III.

Complementing other labs

Dr. Abilay, however, stressed that the Microbiology Laboratory is not intended to compete with other existing service laboratories in Palawan, but rather to complement with these laboratories. During the soft launching, a discussion ensued on inter-laboratory partnerships and cooperation, out of which a consortium — initially dubbed "Palawan Inter-Laboratory Consortium"— was proposed. The group discussed the differences among the services and fees offered by each laboratory. They also agreed that once a potential customer inquires, they would refer the customer to laboratories that are applicable to their needs.

The soft launching was attended by representatives from the Palawan Council for Sustainable Development Staff, Provincial Health Office, Western Philippine University, Palawan State University, Puerto Princesa City Water District, Provincial Information Office, City Information Office, Department of Labor and Employment-MIMAROPA, Department of Environment and Natural Resources, and Philippine Information Agency-Palawan. Also present were RGMA, ABS-CBN, Palawan Times, Repetek, and proprietors of SETUP-assisted establishments and some owners of water-refilling stations.

The Microbiology Laboratory's ISO 17025 certification, the most important standard for calibration and testing laboratories around the world, is currently under process. The certification is to ensure that the customers are given precise and accurate data.

BAGUYO

DOST-MIMAROPA bares high-demand natural products

By JELYN E. DOCTOR
S&T Media Service, DOST-MIMAROPA

Natural products assisted by DOST-MIMAROPA featured at the "Kita Tayo" episode of Umagang Kay Ganda on January 6, 2014.

DOST-MIMAROPA Regional Director Dr. Ma. Josefina P. Abilay with UKG host Bernadette Sembrano.

UKG host Ariel Ureta checks out Tugdaan Hibiscus Nectar Concentrate with calamansi. Dir. Abilay herself explains the benefits of the featured products.

WHAT'S IN for year 2014? Business forecasts say that food, service and tourism will be the "IN" sectors this year.

On food products, the so-called "hot" food, or the healthy, organic and traditional food, will be more in-demand as more and more Filipinos are becoming health conscious. These products are low-calorie and chemical-free, and offer the "lasa ng probinsya" (traditional taste) to the consumers.

Said "hot" foods took the limelight recently as the Department of Science and Technology-MIMAROPA presented its assisted natural products that are seen to ride the tide in the shift to healthy and natural options. DOST-MIMAROPA Regional Director Ma. Josefina P. Abilay recently presented several DOST-assisted natural products at the "Kita Tayo" segment of the Pambansang Morning Show, Umagang Kay Ganda.

According to Dr. Abilay, the products, having gone through S&T interventions, will have "better market opportunities."

Some of the featured DOST-MIMAROPA assisted natural products include SIKAP's Coco Sugar, Lucile's Paluan Honey, GIMALA Healing Tea, Rovilla's Ginger Powder and Turmeric Powder, Rejano's Coco Spread, Myron's Coco Jam with Cashew, Mama's Yami Deli Peanut Butter with Coco Sugar, Mama's Yami Deli Peanut Butter (No Sugar Added), Rejano's Arrowroot Cookies with Coco Sugar and Pinipig, Merl's Suman sa Lihiya, Tugdaan Calamansi Concentrate (with honey), and Hibiscus Nectar Concentrate (with calamansi) with Dr. Abilay herself as the endorser.

On the service sector, expected to be hits this year are products and services on health, beauty and wellness; maintenance; and, hospitality. In the tourism sector, medical and wellness, eco-adventure, educational heritage, trade expos, and talents will make it big this year.

"The year 2014 is a transition of great opportunities not only for local successes but also for global opportunities," is Dr. Carl Balita's good news for the year.

DOCTOR

Starwood Manufacturing Company:

Innovation + Artistry

By AURORA F. MARCELO
S&T Media Service, *DOST-NCR*

Starwood driftwood products exported to other countries

Starwood adopted the low-cost multipurpose dryer designed by DOST- FPRDI

STARWOOD MANUFACTURING Company, Incorporated, exporter of high quality but reasonably-priced handicrafts and home decors, takes pride in its creative use of indigenous materials such as capiz, seashells, abaca, different kinds of driftwood, and recycled wood or palo china.

The company started as a subcontractor for handicraft exporters. It eventually grew till it became the major direct exporter that it is today with markets in the USA, Germany, Israel, Canada, France, Spain, Turkey, Italy, UK, Australia, and New Zealand.

Because of the high demand for its products, Starwood subcontracts some of its production processes. It has 25 subcontractors, with the Valenzuela facility doing the finishing steps. The mother company however, is very much involved in the operations of its subcontractors, putting into place protocols to ensure that items subcontracted are complying with the specifications of the company and are of good quality.

Being forward-thinkers, and cognizant of the need for innovation, Starwood's owners sought technical trainings from DOST's Forest Products Research and Development Institute (FPRDI) to streamline its production. Satisfied with the assistance given, the company eventually acquired the FPRDI-designed low cost multipurpose dryer through the Small Enterprise Technology Upgrading Program (SETUP) to address the company's drying, fungi, and mold problems.

With the installation of the dryer, the company was able to increase its productivity by 10-15 percent. In addition, Starwood improved its product quality by eliminating the appearance of molds and fungi caused by inefficient drying process. With the shift from sun-drying to drying using FPRDI's low cost dryer, Starwood was able to consistently improve its product quality, improve process control, and reduce claims from clients by at least 35 percent.

As it continues to compete in the global market, Starwood is adopting a scientific approach to business. This means investing in research and development to have an in-depth knowledge of the market, as well as of the company's own capabilities and strengths. More importantly, the people behind Starwood have a clear roadmap of where they want the company to be, and are prepared to devise the needed strategies accordingly to be a pro-active player in their chosen niche.

MARCELO

JMK Jewelry Manufacturing:

Home-grown jewelry designs make it to big time fashion

By ROMELEN T. TRESVALLES & AURORA F. MARCELO
S&T Media Service, DOST-NCR

JMK, THE brand behind the now famous high-end fashion jewelry, traces its roots to a family-owned gold jewelry manufacturing business in Tabaco Albay which operated in the early 1970s.

In 2009, the company shifted to the production of rings, earrings, necklaces, cuffs, bracelets, pendants and other accessories made from brass, silver, gold, gemstones and other indigenous materials. This shift in design gave birth to JMK Jewelry Manufacturing, which is now owned and managed by Jonathan Lacsa de Dios, great grandson of the founder.

The company's competitive advantage lies on the owner's knowledge of wax casting technology, modeling techniques and his exposure to jewelry designing from his years as a jewelry design teacher at the former La Salle College International.

JMK is now a regular subcontractor for Rajo Laurel, whose products are marketed in Rustan's, Singapore, Hongkong and the US. The company also indirectly supplies its products to major players in the local and international market as a subcontractor.

JMK has started to aggressively advertise its designs through highly visible media. Their diamond and fashion jewelry pieces are worn by celebrities like Ms. Pilita Corrales and in shows such as Star Power and Bb. Pilipinas. JMK has likewise started to come up with its own jewelry publication to promote not just its own designs but the Philippine jewelry industry as well.

With the company's shift to marketing its own designs and its plans to be an aggressive player in the market came the need to upgrade its mainly manual processes.

JMK then sought the assistance of the Department of Science and Technology-National Capital Region through its Small Enterprise Technology Upgrading Program. Under the program, the company was provided with a prototyping machine, faceting machine, ultrasonic cleaner, main controller set, and heavy-duty pneumatic sprue cutter.

The workers were also trained on spin casting. These technical interventions enabled the company to increase its production output by 150 percent; increase employment; automate and shorten its engraving process from 2-3 hours to 15-30 minutes; shorten cutting process to less than three minutes; automate the cleaning process; improve product quality; increase client confidence; and decrease product prototype development from three days to three hours. In addition, the automated prototype development resulted in improved product design and development capabilities.

With these technological upgrades, unique and innovative designs, aggressive marketing and promotions, JMK Jewelry Manufacturing is surely on its way to becoming one of the country's major players in jewelry design and manufacturing.


TRESVALLES


MARCELO

Primark Tooling Industries Corporation:
Making CNC machines available in PH

By JENNIFER A. PALAGANAS
S&T Media Service, *DOST-NCR*

IN THIS new age, automation is being practiced as part of industry's day-to-day processes, allowing work to be completed quicker than usual.

In the metal industry, Computer Numerical Control or CNC machines are a must-have to produce quality precision worksand make fabrication quicker. This was realized by Primark Tooling Industries which traces its humble beginnings in 2007 as an importer of CNC machines such as router, laser, and plasma machines.

Initially, the company imported CNC machines from various CNC manufacturing countries such as China, U.S. and European nations. However, every time they deliver the machines to their clients, they would hear complaints, causing the company to rework the equipment.

This prompted Primark to start their reworking and fabrication of CNC machines in 2008. Thanks to 15 years of experience in his father's machinery shop, Engr. Christopher Arzadon, company owner and a mechanical engineer, had enough confidence to embark on the fabrication of Filipino-made CNC machines. Mr. Arzadonand his company envisioned to manufacture CNC machines for industries engaged in advertising and signage, furniture, metalworks and crafts. Initially, the company had a hard time due to limited equipment. Thus, they sourced out portions of the fabrication work.

Primark products includes stamping, sealing and coding types.

In 2011, after learning about DOST's SETUP from one of their clients in Mindanao, Primark immediately sought the assistance of DOST-NCR for its application to the said program. The application was approved and granted upgrading of equipment which included the CNC lathe, turret milling, hydraulic box bending, and a cast iron welding jig.

As a result, the firm leveled up in the metalworks industry. From a company engaged in the mere reworking of machine fabrication, Primark is now outfitted with necessary machinery to do machine fabrication itself and provide quality products and services for engraving, marking and cutting solutions from simple processes to a new and innovative approach in the manufacturing metal industry. The company's clients include DOST's Metals Industry Research and Development Center (MIRDC)for which they have fabricated equipment design on CNC plasma and CNC router machines. Engr. Arzadon also serves as one of MIRDC's consultants on CNC designs and fabrication.

Before the SETUP intervention, the company only fabricated a total of two to three CNC machines. But over the years with SETUP'said,this number has more than tripled. In addition, from an 11-man team, the company has more than doubled its workforce. Primark now has 25 regular employees aside from the increased number of on-the-job training students it has been accepting. Aside from Primark's provision of technical expertise skills for their OJTs, the company also gives stipend to these students as part of their corporate social responsibility.

In the latter part of 2012, the company shifted from being a sole proprietor to a corporation, thus demonstrating Primark's big move to be visibly competitive not only in the country but in the international market as well. This is bolstered by its latest accomplishments: The company received its ISO 9001:2008 certification from QAS International, an established certification company operating for more than 20 years. The ISO 9001:2008 is an international standard for Quality Management Systems within a business to ensure customer satisfaction. In Primark's case, the ISO certification recognizes the company's administration system that applies to the design, manufacture, installation, service and maintenance of CNC engraving/cutting machines and surface coating machines.

PALAGANAS

Primark Tooling Corporation upgraded their production through innovation system support via acquisition of CNC machine, Hydraulic Machine Box Bending Machine and Cast Iron Jig.

Ivatans gaze upon a STAR

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

BASCO, BATANES-- In this northernmost province of the Philippine archipelago, known to many as a storm-ravaged place but a paradise to the "knowing" few, the celebrated locals called Ivatans warmly received science workers.

True enough, the hills in Basco came to life as local officials and most of the islanders gazed upon STARBOOKS flown in the province by the Science and Technology Information Institute (STII), the information arm of the Department of Science and Technology (DOST) and its Regional Office No. II. Host school for the launch was Batanes National Science High School that received newly installed STARBOOKS.

Batanes Governor Vicente Gato said he was happy to know that students and teachers in Batanes will have ready access to information compared with his difficult experience as a student on the island. Further, Basco Mayor Paul Demetrius Narag, an educator himself, congratulated DOST for coming up with an innovative project and thanked the DOST through STII and DOST-II for bringing in the islands of Batanes a tool that will help students be updated in the most relevant S&T information through the STARBOOKS.

Library in a box

STARBOOKS or Science and Technology, Academic Research-Based Openly Operated Kiosk System is a library in a box, the first of digital science library in the country. It contains thousands of digitized science and technology resources in various formats (text and video/audio), and comes in specially designed pods set in a user-friendly interface.

DOST-II Asst. Regional Director Engr. Sancho A. Mabborang welcomes the DOST-STII STARBOOKS team who installed units of this stand-alone digital science library in Batanes Science High School. Others in photo are DOST-STII Chief Dr. Aristotle P. Carandang, Basco Mayor Paul Demetrius Narag, and Batanes Gov. Vicente S. Gato .

STARBOOKS is special because it is a stand-alone kiosk where information can be accessed even without Internet connection; a one-stop S&T information source. It also contains videos dubbed "Tamang DOSTkarte Livelihood Videos" to stimulate entrepreneurial capacity.

The main aims of STARBOOKS are to create interest in the field of Science and Technology which may increase the number of Filipinos enrolling in S&T courses and encourage great and curious minds to develop new ideas---inventions and innovations.

Engr. Sancho Mabborang, Assistant Regional Director of DOST-II, who represented Dr. Urduja Tejada, explained that the DOST takes special interest in Batanes since the province is difficult to reach. He also emphasized that others may view the waters that separate Batanes Province from the mainland, but the DOST sees it as the water that unite us as a people.

The team from STII has started installing STARBOOKS in Basco and hopes to provide more in all the municipalities of Batanes Province. Interested parties may contact DOST-STII through telephone numbers 837-2191 / 837-7518 or visit www.stii.dost.gov.ph. Queries may be sent through the following e-mail address: starbooks@stii.dost.gov.ph.

NASA, JAXA launch rain, snow-tracking satellite

The most precise instrument yet for measuring rain and snowfall, capable of recording amounts as small as a hundredth of an inch in an hour, has been set into orbit.

A Japanese H-IIA rocket carrying the 4-ton Global Precipitation Measurement (GPM) satellite set off for space at 1:37 p.m. EST Thursday, Feb. 27 from Tanegashima Space Center on Tanegashima Island in southern Japan. The GPM spacecraft separated from the rocket 16 minutes after launch at an altitude of 247 miles.

A joint project of the National Aeronautics Space Administration (NASA) and the Japan Aerospace Exploration Agency (JAXA), the highly advanced satellite will use both radar and microwave instruments to detect falling snow.

"We can start using the data for all sorts of applications -- for floods, for landslide predictions, for tracking hurricanes so we know what part of the coastline to evacuate," said Gail Skofronick Jackson, GPM's deputy project scientist .

Jackson added that with the GPM's data combined with data from other satellites, we can have a snapshot of worldwide precipitation every three hours.

"With this launch, we have taken another giant leap in providing the world with an unprecedented picture of our planet's rain and snow," added NASA Administrator Charles Bolden. "GPM will help us better understand our ever-changing climate, improve forecasts of extreme weather events like floods, and assist decision makers around the world to better manage water resources."

The $900 million spacecraft has enough fuel for at least five years, said Jackson. It was the first of five launches NASA has planned for 2014.

SOURCES:
http://edition.cnn.com/2014/02/27/tech/innovation/nasa-satellite-launch/

http://www.nasa.gov/press/2014/february/nasa-and-jaxa-launch-new-satellite-to-measure-global-rain-and-snow/#.UzzD06iSwms

Korea to invest in R&D as DOST takes food innovation route

Even with South Korea's current standing in the Global Competitive Index in 2013-2014, ranking 25th among 148 countries, Korea recently announced plans to pour more money into research and development (R&D) to boost small and medium enterprises.

For this initiative, Korea's Ministry of Science, ICT and Future Planning plans to allocate 68.7 billion won or more than US$64 million for this year alone.

Funds will mainly be used for the establishment of R&D base stations in four Korean cities catering to small and medium-sized firms. More than US$54 million are set to go into businesses that commercialize research outputs while the rest will be funnelled to improve its support to start-ups.

On the homefront, the Department of Science and Technology (DOST) tries a different approach in supporting local SMEs via the rollout of Food Innovation Centers (FICs) in some regions across the country.

An FIC is a regional R&D center in various partner state universities and colleges which aims to develop a globally competitive food industry.

It tries to follow the concept of an industrial district where major firms in a specific industry, the academe, and R&D institutes form a strong group in a specific area. Here, they develop and complement innovative technologies and products for the market. One significant example is the Marikina Shoe District during its heyday.

The innovation centers will house several locally developed food processing equipment and machineries such as water retort, freeze dryer, vacuum fryer, vacuum packaging machine, immersion freezer, and spray dryer among others to enable innovation in processed food products.

DOST hopes to get a huge market share especially in the South East Asian region out of these initiatives where Thailand lords it over with a total export of more than US$12B in 2009. The Philippines posted US$1.195 in exports in the same year.

DOST has other support programs for SMEs such as the Small Enterprise Technology Upgrading Program which provides technology upgrading to improve the manufacturing capability of SMEs.

SOURCE:
http://www.arirang.co.kr/News/News_View.asp?nseq=158607

HS eng'g class gives Connecticut studes a chance to invent, link up with engineers

A technology that will retract power cords and headphones back into the iPhone case. A mechanism installed in a car's windshield to heat it and help melt ice. A parking lot sensor informing a car owner how long his vehicle has been parked there.

These high-tech wonders are now swirling in the minds of youngsters in Connecticut, USA. And at the back of their young but prolific minds flow the words of Charles Forstbauer, their teacher: "Develop something, sell it, patent it, or put it on Kickstarter." Kickstarter is a website connecting creative projects with potential investors.

Forstbauer, who teaches engineering at Farmington High School in Farmington, Connecticut, recites these words in each class. The engineering class is a new one, debuting at Farmington High in September 2013.

"The idea came from our frustration of tangled headphones," his student Antonia Wuechner said. Together with classmates Lisha Li and Evelyn Pantelopoulos, Wuechner is working on

redesigning the iPhone case using springs after speaking with engineers at Plymouth Spring Inc. in Bristol. "Nobody wants to carry around a bulky phone," she added. Wuechner, Li and Pantelopoulos plan to take up engineering in college.

Meanwhile, Harshith Harpaldas and Dustin Despres are still in the brainstorming stage of their invention for melting ice and heating the windshield.

The same goes for Kristopher Picard and his team who are now busy figuring out the details of the parking lot sensor.

"It's an interesting class to teach because students are 99 percent responsible for their projects. They went out and made contacts with real-life engineers, and now they have to keep them," Forstbauer remarked. "It's exciting for them."

Forstbauer's students have to submit their projects to Project Lead The Way by April 2014. Project Lead The Way is a non-profit organization that offers curriculums for science, technology, engineering and math.

SOURCE: The Hartford Courant (http://www.courant.com/community/farmington/hc-fx-farmington-school-spotlight-0313-20140304,0,5882892.story)

Severe flood incidents in Europe may increase, scientists say

More frequent episodes of extreme flooding similar to that which recently affected parts of Great Britain may hit Europe by 2050 if climate change escalates and more people continue to reside in flood-risk areas.

This was the finding of a study undertaken by scientists at several European and Australian universities and research centers. According to the scientists, severe flooding which presently occurs once in 50 years, may take place sooner and more frequently – once in 30 years in the future – thus leading to more cases of extreme damage and financial losses.

The study, published in the journal Nature Climate Change, further indicated that a catastrophic event which causes severe damage, takes place once in 16 years. With climate change however, this could occur once in 10 years instead.

With this scenario, Europe's average financial losses set at 4.9 billion euros a year could climb to 23.5 billion euros in 2050.

The scientists based their findings on climate change models, river discharge data, and economic data.

Aside from climate change and population, land use and wealth likewise account for the rising costs from flood damage incidents.

Meanwhile, a United Nations panel of climate scientists report the onset of more floods, heat waves, droughts, and rising sea levels brought about by melting ice sheets. On the other hand, the European Environment Agency said that rising temperatures in Europe may cause a change in rainfall patterns, thus causing the occurrence of more harsh flooding in many areas.

However, the study also indicated that allocating around 1.75 billion euros for flood protection projects may significantly slash Europe's annual financial losses by around 7 billion euros by the year 2050.

In December 2013, Great Britain was pummelled by a series of major storms, bringing fierce winds and rains that destroyed power lines and caused widespread flooding – Britain's worst since 1776. Among the most badly hit were the Thames Valley area west of London with more than 1,000 homes flooded, and Somerset Levels in South West England which remained underwater for nine weeks.

SOURCE: Reuters (http://news.yahoo.com/europes-flood-losses-soar-2050-research-shows-180838384--sector.html)

MOA signing between DOST Secretary Mario G. Montejo and COHRED Executive Director Dr. Carel IJsselmuiden for the 2015 Global Health Forum for Health Research held during the 32nd anniversary of DOST-PCHRD at the Makati Shangri-La Hotel last 14 March 2014, with PCHRD Executive Director Jaime Montoya (standing)**. (Photo by Ceajay Nepomuceno Valerio, S&T Media Service, DOST-STII)**

CELEBRATING WOMEN'S MONTH. Selected women and men in DOST form the white ribbon during the March 24 flag ceremony held at the DOST Quadrangle as the Department joins the world in celebrating the International Women's Month. **(Photo by Ceajay N. Valerio, S&T Media Service, DOST-STII)**

DOST scientists among The Outstanding Filipino 2013 (TOFIL) awardees. President Benigno S. Aquino III with TOFIL 2013 awardees (from left): Public Works and Highways Secretary Rogelio Singson for Governance and Public Service, DOST Forester Arsenio Ella for Environmental Conservation and Sustainable Development; and Project NOAH Executive Director Dr. Alfredo Mahar Francisco Lagmay for Geology and Earth Science. **(Photo sourced from the Official Gazette of the Republic of the Philippines)**

President Benigno S. Aquino III shares the stage with Department of Science and Technology Region XI Director Dr. Anthony Sales (left of Pres. Aquino), Undersecretary for Regional Operations Carol Yorobe and Assistant Regional Director for Technical Services Elsie Mae Solidum (2nd from right and extreme right, respectively) for a snapshot during the 16th Philippine Quality Award (PQA) Conferment Ceremony at the Rizal Hall of the Malacañan Palace. **(Photo by Benhur Arcayan / Malacañang Photo Bureau)**

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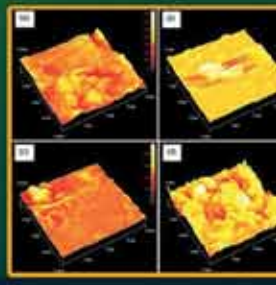

For submission of manuscripts and subscription inquiries, please contact:

The Managing Editor
Philippine Journal of Science
STII Bldg., DOST Complex, Gen. Santos Ave.

(02) 837-7520
(02) 832-2071 to 82 Local 2142
email: pjs@dost.gov.ph