Yap graces UPLB Centennial Symposium; discusses challenges to agriculture

Agriculture Secretary Arthur C. Yap served as the speaker during the Centennial Symposium organized by the College of Agriculture (CA) of the University of the Philippines Los Baños (UPLB) on 9 October 2009 at the SEARCA Auditorium, College, Laguna.

UPLB celebrated its 91st Loyalty Day along with its Centennial Celebration on October 4-10, 2009 with the theme *"Mga Iskolar Para sa Bayan: Isang Daang Taon ng Natatanging Kahusayan sa Paglilingkod sa Bayan"*.

As part of UPLB's centennial celebration, the symposium titled "The Future of Philippine Agriculture" was conducted to raise issues that are relevant to the agriculture sector, which could be the priority areas of the college in its research and development endeavors in the next century of the university.

With his two-slide presentation, Yap expounded on what he ought to be the two critical challenges that the agriculture sector must struggle in the next years: climate change and trade liberalization.

As a Center of Excellence for Agriculture, Yap recognized that UPLB will play an important role in facing the challenges of climate change through the conduct of research and development (R&D) activities that will result into climate change geared technologies. He also stressed that for new technologies to reach the farmers, fisherfolk and other end-users, the university needs to further strengthen agricultural extension.

Sec. Yap also stressed how Geographic Information System (GIS) could be a powerful tool in helping farmers and fisherfolk in their production activities even under adverse effects of climate change.

Sec. Yap is conferred honorary membership to the UPLB-Alumni Association in recognition of his support to the institutional development of the CA-UPLB, particularly in strengthening its research, development and extension capacity. Through BAR, DA is a major source of fund to support CA's R&D initiatives.

PHOTO: ENAGPALA

He presented two lines of defense on the issue of trade liberalization. First, he stressed the importance of an efficient regulatory service complemented by modern facilities and equipment that will improve the quality of our farm's produce.

Another line of defense pointed out by the Secretary is increasing of productivity by lowering its cost. In this line, Yap again emphasized the importance of UPLB in developing technologies and interventions to achieve such. The importance of product packaging and value-adding were also stressed as among the weak points of our industry which can be given appropriate attention in order for our products to compete in the global market.

With reference to the DA's mandate of increasing farm outputs to increase farmer's income and reduce poverty incidence, he mentioned that agriculture must be treated and considered as a profit-based activity. Thus, he encouraged continuous interaction between government and the private sector.

After the symposium, Yap was conferred honorary membership to the UPLB-Alumni Association in recognition of his support to the institutional development of the College of Agriculture of UPLB, particularly in strengthening its research, development and extension capacity. Through the Bureau of Agricultural Research (BAR), the DA is one of the institution's major sources of fund for its R&D initiatives.

Aside from the Centennial Symposium, a UPLB Centennial Symposium on "UPLB as a National University" was also conducted. Other activities such as exhibits of food, publication technologies, products and services of UPLB, Pasyal LB (Ecotours and Town Tours), a Garden Show, the UPLB Alumni Awards and Fellowship Night, Centennial Breakfast Reception for the Jubilarians, Sentenaryong Salo-Salo (UPLB Fiesta), Loyalty Day Sagala, and UPLB Loyalty Day Concert were also organized for the weeklong celebration of the Loyalty Day. *(Ellaine Grace L. Nagpala)*

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BAR leads in setting R&D program to fight CLIMATE CHANGE

PHOTO: RDELACRUZ

The Philippines is one of the top 12 countries at highest risk to climate change according to The World Bank. Among the five main threats arising from climate change — droughts, floods, storms, rising sea levels, and greater uncertainty in agriculture—the Philippines leads the list of nations in most danger of facing frequent and more intense storms. Thus, given this alarming scenario, the Department of Agriculture (DA) has been working double time with other partner-agencies in seeking ways to abate the anticipated negative impact of climate change.

In response to Agriculture Secretary Arthur C. Yap's urgent call on "weather-proofing" the farm and fisheries sector to enable the country to adapt to the negative impacts of climate change, the Bureau of Agricultural Research (BAR), in collaboration with experts from the University of the Philippines Los Baños (UPLB), UP Diliman, Department of Science and Technology-Philippine Atmospheric Geophysical and Astronomical Services Administration (DOST-PAGASA), Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), and DA-Bureau of Soils and Water Management (DA-BSWM), led in the crafting of the Research and Development (R&D) Program on Climate Change.

The program was presented by Dr. Ma. Victoria D. Espaldon, dean of the School of Environmental Science and Management (SESAM), UPLB during the BAR activity, "Stakeholders' Consultation Workshop for Crafting the RDE Agenda and Programs for 2011-2015" which was held on 22 October 2009 in Tagaytay City.

"Given the complexity and magnitude of climate change, there is a need for a focused research effort to fully understand the drivers of climate change and provide options to reduce its impacts," said BAR Director Nicomedes Eleazar. He stressed that with an effective R&D program on climate change that is supported with economic analysis, the agriculture sector will

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What's inside...

Senator Legarda graces PEN confab; talks on climate change in agriculture

Senator Loren Legarda's speech during the recent 3rd Philippine Extension Network, Inc. (PEN) National Convention held on 13 October 2009 at the Heritage Hotel, Roxas Boulevard, Manila was well accepted and commended by PEN members. Highlighted in the speech were the significant roles of professional extensionists in national agriculture, fisheries, forestry and natural resources in the protection and proper management of our bio-physical resources in relation to the effects of climate change and in the use of extension strategies to support development operations.

In her speech, Legarda pointed out that "the country needs you (extensionists) as the vital link that will empower our food producers—the farmers and fisherfolk—not just to pick up the pieces but to transform our food system into one that provides a resilient food security blanket for our people. This is a tall order

Sen. Loren Legarda

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BAR pushes for commercialization of sweet sorghum nationwide

Now on full scale project implementation, the Bureau of Agricultural Research (BAR), the research arm of the Department of Agriculture (DA), is pushing for the commercialization of sweet sorghum given its good potential as a source of bioethanol all over the country.

"A promising feedstock for bio-ethanol production, sweet sorghum answers both food and fuel security in the country. Its stem contains high amounts of sugar which can be extracted by simple milling and fermented into bioethanol and its grains can be milled for food products," said BAR Director Nicomedes P. Eleazar during the conduct of the "First National Review of BAR-Funded Projects on Sweet Sorghum" held on 6-7 October 2009 at the Fernando Lopez Hall, Bureau of Soils and Water Management in Visayas Avenue, Diliman, Quezon City.

"Not to push out other important crops such as corn and sugarcane, which are also good sources of bio-ethanol, but we must look at sweet sorghum not as a competitor but as an opportunity given its potential, production- and yield-wise," stressed Dr. William D. Dar, director general of the India-based International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) who was also responsible for introducing sweet sorghum crop into the country. Dr. Dar further explained that an evolutionary approach is appropriate in this trying times saying that "while we continue the science of developing sweet sorghum for biofuel as a long term plan, we must also look into intermediary approaches such as developing value-added food products from sweet sorghum."

Since its launch in the country in 2005, BAR has supported R&D activities in the initial production of sweet sorghum.

Given the DA's prior success in Ilocos Norte, the Bicol Integrated Agricultural Research Center (BIARC) of DA-RFU 5 has developed its own region-wide commercialization of sweet sorghum with funding and coordinative support from BAR. This included the development of village-level technologies on food products and production of organic fertilizer.

Other regions followed suit. From the pilot areas in Ilocandia, the program was subsequently implemented in Cagayan Valley, Cordilleras, and Central Luzon, aside from Bicol, and in some provinces in the Visayas and Mindanao and, recently, in Mindoro Island, Cotabato and Bantayan Island.

According to Dr. Heraldo L. Layaoen of the Mariano Marcos State University (MMSU) in Batac, Ilocos Norte and national program coordinator for the sweet sorghum project, the area planted for sweet sorghum in the country presently totals to 310 hectares all of which are still in piloting mode. MMSU piloted the field trials of sweet sorghum and currently has a stock of 288 varieties of sorghum, of which 19 varieties are said to be promising for ethanol production.

Dr. Dar has encouraged BAR to double if not triple the allocation for sweet sorghum. "It is important that BAR sustain its efforts on this crop and, as a long term plan establish an integrated Research Development and Extension (RDE) program on sweet sorghum," said Dar.

Dr. William D. Dar (left) of ICRISAT and Dr. Nicomedes P. Eleazar (right) of BAR hold products from sweet sorghum. PHOTO: RBERNARDO

In response, BAR has earmarked a budget of P10-million for the implementation of sweet sorghum projects. Currently, the bureau is coordinating and funding 16 projects all over the country 13 of which are on varietal adaptability trials of sweet sorghum implemented by the Regional Integrated Agricultural Research Centers (RIARCs) of DA. *(Rita T.dela Cruz)*

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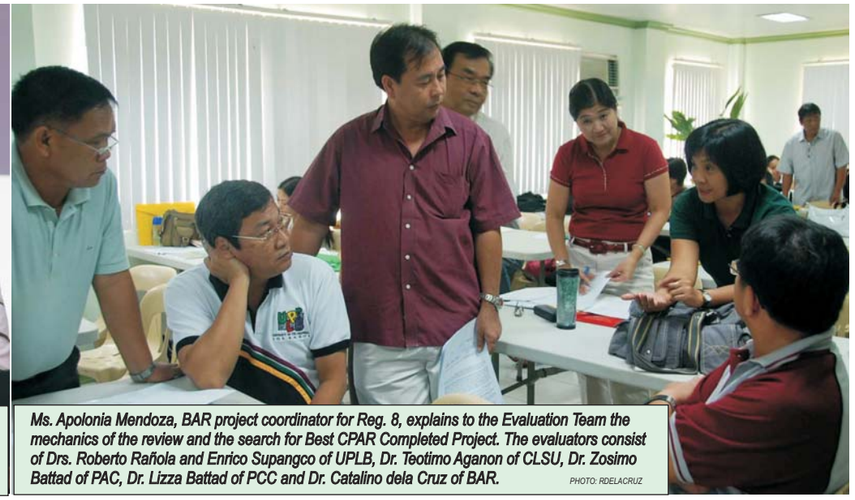
BAR evaluates 26 Visayas CPAR projects; 3 CPAR ACHIEVERS awarded

Dr. Roberto Rañola, chair of the CPAR Evaluation Team, gives the group's comments and recommendations after the presentations. PHOTO: RDELACRUZ



Ms. Apolonia Mendoza, BAR project coordinator for Reg. 8, explains to the Evaluation Team the mechanics of the review and the search for Best CPAR Completed Project. The evaluators consist of Drs. Roberto Rañola and Enrico Supangco of UPLB, Dr. Teotimo Aganon of CLSU, Dr. Zosimo Battad of PAC, Dr. Lizza Battad of PCC and Dr. Catalino dela Cruz of BAR. PHOTO: RDELACRUZ

Two months after the Mindanao CPAR Project Review, the Bureau of Agricultural Research (BAR) conducted another project review, this time for the Visayas CPAR projects. The activity was held on 27-29 October 2009 at the Eastern Visayas Integrated Agricultural Research Center (EVIARC), Babatngon, Leyte.

The zonal review was conducted to evaluate the implementation of CPAR projects with specific emphasis on the strategies, process of implementation, and beneficial impact to the community. This activity serves as a monitoring mechanism for BAR particularly in identifying lessons learned, strengths and weaknesses and areas for improvement. Part of the activity was to give recognition to CPAR achievers/performers.

The review was divided into two phases, a visit to selected CPAR project sites for field validation, and the actual presentation of projects for review and evaluation.

Leading in the review was a panel of evaluators composed of: Dr. Roberto Rañola and Dr. Enrico Supangco both from the University of the Philippines Los Baños (UPLB), Dr. Teotimo Aganon of the Central Luzon State University (CLSU), Dr. Zosimo Battad of the Pampanga Agricultural College (PAC), Dr. Liza Battad of the Philippine Carabao Center (PCC), and Dr. Catalino de la Cruz of BAR.

From the 26 CPAR projects that were presented and subjected to review, eight are already completed or 18 are on-going and newly-approved. After the presentations, Dr. Rañola, chair of the evaluating team, discussed their findings and comments on the CPAR projects. Specific to each completed project, their comments were classified according to the project identification, evaluation, implementation, and recommendations as CPAR endeavors.

Meanwhile, from the eight completed CPAR projects, the evaluators chose the best three CPAR achievers/performers. Criteria used for judging included: scientific significance (analytic perspective, creativity, originality and quality of work); impact (profitability, productivity and environmental impact), and presentation (mastery, delivery and effectiveness of presentation tools used).

Winning the first prize was "CPAR on Hybrid Rice Production System in Barangay Talustusan, Naval, Biliran" presented by Dr. Marciano Sacay of EVIARC/DA-RFU 8 while the second prize went to "CPAR on Gabi Chips Processing in Liloan, Southern Leyte" presented by Dr. Julieta Roa of the Visayas State University (VSU). The third prize was awarded to "CPAR on Rainfed Rice-based Farming Systems in Llorente, Eastern Samar" which was also presented by Dr. Sacay. The best CPAR achiever received PhP 9,000 while the second and third placers won PhP 6,000 and PhP 3,000, respectively. *(Rita T. dela Cruz)*

Dr. Marciano Sacay (2nd from left) of DA-EVIARC receives the grand prize for the Best CPAR Achiever. PHOTO: RDELACRUZ

UPLB technologies highlighted anew in NBN-4's Mag-Agri Tayo program

Various crop protection technologies and biotechnology projects being undertaken at the University of the Philippines Los Baños (UPLB) were documented on a three-day shoot conducted by the crew of NBN Channel 4's *Mag-Agri Tayo*. Joining them are staff members from the Applied Communications Division (ACD) of the Bureau of Agricultural Research (BAR).

Among those featured under the College of Agriculture's (CA) Crop Protection Cluster (CPC) were the preparation of *Trichogramma* cards against field pests, the preparation of earwigs for biological control against Asian corn borer and the preparation of *Spodoptera nucleopolyhedrosis* virus (NPV) against cutworms.

Under the CA's Crop Science Cluster (CSC), the subjects that were reported on were the virus resistant abaca, the fruit and shoot borer resistant eggplant, the papaya ring spot virus resistant papaya with delayed ripening trait, the virus resistant sweet potato and the virus resistant *lakatan* banana.

Meanwhile, the different products developed by the UPLB Institute of Molecular Biology and Biotechnology (BIOTECH) that were promoted were Pelmictrol, MykoVAM, MykoGroe, BioGroe, BioFix and BioQuick.

Pelmictrol is a microbial larvicide containing the bacterium, *Bacillus thuringiensis*,which is used to control mosquito larvae. MykoVam is a soil-based biofertilizer useful for reforestation species, fruit trees and agricultural crops. Mykogroe is a mycorrhizal tablet containing spores of ectomycorrhizal fungi inoculated into each seedling of eucalyptus, pines, *agoho*, acacia and dipterocarps during pricking or transplanting in the nursery.

BioGroe is a solid-based microbial plant growth promoter containing plant growth promoting bacteria (PGPB). BioFix is an enrichment inoculant enhancing the nutritive value and effectivity of the bio-organic fertilizer (BOF). Lastly, BioQuick is a composting inocula containing the fungus *Trichoderma sp.*

CPC-CA Director Avelino Raymundo, CSC-CA Deputy Director Artemio Salazar and BIOTECH Director Ida Dalmacio granted the team of Mag-Agri Tayo an interview wherein they gave an overview of their respective projects. Aside from this, the proponents of each projects were also asked to give a detailed account about their respective products and technologies.

(From top left, clockwise) CPC-CA Director Avelino Raymundo, BIOTECH Director Ida Dalmacio, CSC-CA Deputy Director Artemio Salazar during their on-cam interview. Also in the photo are staff members of NBN's Mag-Agri Tayo program (Patrick Daffon), UPLB-OVCRE (Florante Cruz), and BAR-ACD (Rita dela Cruz).

PHOTOS: NDELROSARIO III and DLEJANO

According to Ms. Julia A. Lapitan, head of BAR-ACD, "This series of documenting the newest products and technologies developed through research is still part of the Bureau's commitment in making the people know of the latest breakthroughs in the field of agriculture. We do not want these products and technologies shelved and so we are bringing them to the farmers for them to utilize through mass media."

"We understand that TV is ephemeral, so once the episode has already been aired, people would not be able to watch it again. And so we are making the past episodes of *Mag-Agri Tayo* available for viewing at the R&D Tech Comm Center located at the BAR lobby. Everybody is welcome to view the very interesting episodes not only from UPLB but also from other state universities and colleges and our regional partners," added Ms. Lapitan.

Mag-Agri Tayo is hosted by Mr. Phillip "Ka Ipe" Daffon and airs every Saturdays at 9-10 AM over at NBN Channel 4. *(Don P. Lejano)*

BAR promotes SNAP hydroponics for wider adoption

Given its commitment to help Filipino farmers and the urban poor families in improving their incomes, the Bureau of Agricultural Research (BAR) is promoting the technology on Simple Nutrient Addition Program (SNAP) hydroponics in Metro Manila and various provinces in the country for wider adoption and utilization. This technology which is being promoted as a *low-cost and pesticide-free* vegetable farming system, has been featured in agriculture shows like, NBN's *Mag-Agri Tayo* and was highlighted in various exhibits, forums, and symposia.

SNAP hydroponics is an alternative system of growing plants without soil. It uses an inert media and a nutrient solution containing essential elements needed by the plant to grow. The technology was developed by Dr. Primitivo Jose A. Santos and Dr. Eureka Teresa M. Ocampo of University of the Philippines Los Baños (UPLB) under a project funded by BAR that is primarily designed for urban farming and backyard vegetable farming systems.

This technology is doable in apartments or townhouses where a small space is available for growing crops for home consumption. A small space is easy to protect against rain and strong sunlight. Crops like lettuce, sweet pepper, cucumber, and celery are among the vegetables suitable for this farming system.

In an interview, Dr. Santos said that SNAP hydroponics is more practical than the conventional farming system. Supplies are cheap and can be sourced out from recyclable materials. In fact, a single unit of snap hydroponics will cost only PhP 38.00 at most, making it affordable and easy to set-up.

In Pasay City, Engineer Rolando Londonio, head of the City's Cooperative Development Office (CDO), tried SNAP hydroponics at home and saw that it is a good livelihood project. He incorporated the SNAP Hydroponics livelihood program in their two existing programs: 1) the Pantawid Pamilyang Pilipino Program – a national poverty reduction and social development program of the national government that assists extremely poor households improve their health, nutrition, and education; and, 2) Pasay HOPES program which is designed to empower the youth, particularly the Out of School Youth (OSY), to become skilled and productive members of the community. These programs are conducted in collaboration with the National government thru DSWD and the United Nations' Children's Fund (UNICEF).

In support to the programs, Engr. Londonio conducts training sessions in three Barangays in Pasay City on SNAP Hydroponics Systems with the help of Dr. Santos of UPLB to capacitate the project beneficiaries on the basic knowledge about the technology. To date, the CDO has put-up a nursery to supply the seedling materials needed by the outreach community particularly in Barangay 201, Barangay 14 and Barangay 193 of Pasay City.

Like Engineer Londonio, Mr. Arthur Dimalanta, church leader and businessman who learned about the technology from a friend, is putting up a livelihood program to help the less privileged urban dwellers in Quezon City. SNAP hydroponics will be a part of the effort in their subdivision where a vegetable business will be established to serve their community.

On the other hand, in the seminar conducted by BAR during the celebration of the prestigious Agrilink, Foodlink, Aqualink Expo 2009 at the World Trade Center, interested audience showed willingness to try the technology in their own backyards. Most of the participants were from urban villages composed of church leaders, government employees, factory workers, businessman, farmers and other vegetable enthusiasts mostly from highly populated areas in Metro Manila.

"We're happy that our urban communities are now adopting this technology. This will eventually improve household income and increase our per capita vegetable consumption and, therefore, will lessen malnutrition," said Dr. Santos.

The increasing number of technology user is apparent based on the increasing number of orders and sales of the SNAP solution said Dr. Santos. He also noted that the number of inquiries through email and by phone also increased. *(Edmon B. Agron)*

For more information about SNAP Hydroponics email Dr. Primitivo Jose A. Santos at pjasantos@yahoo.com or call him at 09186536899.

BAR joins 2009 Agrilink at WTC

The Bureau of Agricultural Research once again participated in the Agrilink/ Aqualink/ Foodlink with the 2009 event held at the World Trade Center in Pasay City on 8-10 October 2009 with the theme, "Sustainable food production: focus on the Filipino market".

. This year's event showcased products, services, technologies and innovations Agriculture, fisheries, food and food processing. It was well attended by various companies in the said fields as well as government and non-government institutions.

BAR participated by exhibiting various products made from the *malunggay* such as tea, powder and capsule. Visitors of the trade show were given samples of the *malunggay* products. Samples of vegetable salad, *champorado* made of corn and *malunggay* tea were also given out for the visitors to taste. Wines from *bignay*, mango, *yacon* and oregano were the highlight of the exhibit. Long lines formed when it was time for the wines to be tasted.

Aside from edible products, an exhibit on SNAP (Simple Nutrient Addition Program) hydroponics drew interest from many visitors. This technology of growing plants without soil was developed by Dr. Primitivo Jose Santos and Dr. Eureka Teresa Ocampo of the Institute of Plant Breeding at the University of the Philippines Los Baños (UPLB).

BAR also sponsored a seminar on indigenous plants for health and wellness. Dr. Evelyn Rodriguez of the Institute of Chemistry, UPLB enlightened the participants on the health benefits that can be derived from fruits and vegetables with emphasis on the indigenous plants which are readily available. She encouraged everyone to include fruits and vegetables in their diet to achieve maximum wellness.

Other agencies under the Department of Agriculture, such as Bureau of Soils and Water Management, Agriculture Credit Policy Council and the Bureau of Postharvest Research and Extension also participated in the three-day event. *(Johanna B. Benavente)*

Regional Tech Com Center to boost Bicol R&D products

Finally, a venue for the best of the best products from the Bicol Region developed through research is now serving the public at the Department of Agriculture Regional Field Unit 5 (DA-RFU 5) Compound in Pili, Camarines Sur.

The Regional Technology Commercialization Center (RTCC) has been gaining an increasing number of visitors including students, researchers and even tourists who would like to buy "pasalubong" and other souvenir products since its inauguration on 18 September 2009.

Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar and Regional Executive Director for DA-RFU 5 Jose V. Dayao were guests of honor during the center's inauguration.

"I am very glad that we now have this Regional Technology Commercialization Center wherein the wide array of products in Bicol can be put on display. I am sure that this will help our farmer cooperators and researchers in commercializing their products because this establishment would mean exposure for them," said Dir. Eleazar.

Presently, the product display in the RTCC showcases of pili nuts and other pili by-products, sweet sorghum and malunggay cakes and pastries, bottled Bicol express and Bicol patis, pickled vegetables, moringa and seaweed noodles, barong Tagalog, hand-woven and other handicrafts to name a few.

Books, brochures and other reading materials about different technologies are also on display and are available at the RTCC. Completing the setup are three internet kiosks which can be used for research purposes inside the center.

Meanwhile, in a recent field visit to the region, a team headed by Ms. Digna Sandoval of BAR's Technology Commercialization Unit (TCU) along with The Manila Bulletin correspondent Ms. Melody Aguiba, interviewed some of the manufacturers of the products on display at the RTCC.

Ms. Aguiba gathered materials which she will be using for her articles in the said broadsheet. "The projects are very admirable especially the seaweed noodles production in Sorsogon and Tabaco, Albay. Also, the production of queen pineapple in Camarines Norte has very good potentials. I didn't know that there are projects such as these."

According to Dr. Elena delos Santos, Bicol Integrated Agricultural Research Center (BIARC) manager, "Indeed, the products from Bicol have a lot of potential. We are glad to be receiving a lot of support from BAR in commercializing our products. We shall ensure the sustainability of our on-going projects and we are very positive that soon, our products will be recognized and become more competitive in the local and even in the global market."

To further promote the commercialization of the R&D products from Bicol, the media team of NBN 4's Mag-Agri Tayo will be documenting the successful BAR-supported projects in the region for airing soon. *(Don P. Lejano)*

Photos during the RTCC launch with BAR Dir. Nicomedes P. Eleazar as guest of honor and recent visit of TCU and ACD staff members with with Ms. Melody Aguiba of the Manila Bulletin.

PHOTOS: BIARC and DLEJANO

Typhoons *Ondoy, Pepeng* prompt R&D response

In the aftermath of typhoons "Ondoy" and "Pepeng" and their damage to the agriculture and fishery sectors, researchers found new areas for research that consider the changing landscape, and productivity, communities under distress conditions and the future directions of development. These researchable areas parallel concerns related to climate change within the social sciences.

The typhoons affected most of Luzon island and this led social researchers to study farmers' and fisherfolk's responses to changing climatic conditions vis-à-vis production management systems including processing and marketing. It also looked at farmers' and fisherfolk's coping mechanisms, and their management of resources. Research on the community's distress and disaster preparedness followed.

The immediate documentation on the extent of damages in agriculture and fisheries on major commodities in affected areas especially in Northern Luzon was conducted in coordination with regional and local government units. A complete assessment was done by the regional agriculture and fisheries offices of Cagayan, Isabela, Ilocos Norte, Pangasinan, and provinces in the Cordillera Region. The results of the documentation and assessment will support further the researchable areas in the next six to eight months and which will help enable the government to prepare workable and effective policies on agriculture and fisheries development including support and relief operations to affected people and communities.

In order to properly use the

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BAR, stakeholders set medium term agri and fishery RDE agenda and programs

PHOTO: NDELROSARIO III

The Bureau of Agricultural Research (BAR), in consultation with various stakeholders of the agriculture and fisheries sectors, held a consultative workshop to craft the Research and Development, Extension Agenda and Program (RDEAP) for the next five years (2011-2015) on 22-23 October 2009 in Tagaytay City.

BAR, being the national coordinator for R&D in agriculture and fisheries took the lead in setting the platform for an integrated R&D agenda and programs which will serve as a unified scheme for prioritizing research.

"The Bureau hopes that, through this activity, we will be able to discuss and identify major problems and concerns besetting the agriculture and fisheries sector given the current global trends, developments, and emerging challenges," said BAR Director Nicomedes P. Eleazar.

Among the recent challenges and trends that the activity addressed are the issues of climate change and enhancing of food security by tapping Philippine indigenous plants for health and wellness.

The output of this activity was a consolidated document containing the RDEAP in agriculture and fisheries of the Department of Agriculture for the next medium term.

"This piece of document will be an important manifesto for BAR as this will serve as our reference in prioritizing our R&D programs. And since the RDEAP is a product of a concerted effort between and among concerned stakeholders, we are ensured of client-oriented agenda and R&D activities that are harmonious with the priorities not only of the current administration but of the whole agriculture sector," said Eleazar.

He added that with the RDEAP, the R&D community is assured that the researches that are being funded and supported are highly relevant and contributory to the growth of the Philippine economy. "Let's do research that really matters to the sector. And let research do its role which is to effectively guide policy-making and program development, "Eleazar enthused.

The workshop was attended by more than 100 participants from the Department of Agriculture's (DA) national R&D units, state universities and colleges (SUCs), DA regional research institutions, and other R&D agriculture and fisheries stakeholders. *(Rita T. dela Cruz)*

Typhoons... *page 4*

collected data and information on the typhoon damages, the Bureau of Agricultural Research (BAR), the R&D arm of DA, is banking on its partners to identify and provide appropriate research and development directions for the coming years. This shall be a major topic in the stakeholders' consultation for the preparation of the 2010-2015 National Research, Development and Extension Agenda and Programs (RDEAP) on 22-23 October 2009 at Tagaytay City.

The National RDEAP provides researchers and development practitioners with a blueprint of sectoral, commodity and discipline-based research themes for institutional research collaboration and cooperation.

Once research on aberrant climate change is completed, the country can be better prepared for tomorrow's climatic disturbances and people can learn how to be more adaptive and responsive to such conditions. BAR will ensure that the national and regional RDEAP will be allocated with funds and that this shall be adhered to by its member-partners under the DA National Research and Development System in Agriculture and Fisheries (*Marlowe U. Aquino, PhD*).

Eat a rainbow... *page 5*

One does not have to eat raw food always in order to receive the health benefits of foods that are rich in phytochemicals. Many phytochemicals are reasonably heat stable and most of them are not water soluble meaning they are not appreciably lost during conventional cooking methods, Dr. Rodriguez said.

Exercising regularly, avoiding tobacco, reducing stress and maintaining a healthy body weight is essential to every person's health. On top of these, having a diet rich in fruits and vegetables can become a part of an effective strategy to maintain good health and to reduce the risk of diseases.

"Eat fruits and vegetables regularly to achieve a healthy body and avoid diseases," Dr. Rodriguez mentioned numerous times throughout the seminar to remind everyone. *(Johanna B. Benavente)*

UP-MSI Professor is 2009 Gawad Saka outstanding agri scientist

This year's winner of the Department of Agriculture's (DA) Gawad Saka in the Outstanding Agricultural Scientist Category is different from the previous years. The awardee comes from the fisheries sector and not from the usual agricultural crops or livestock and poultry sector.

Given that the Philippines is an archipelago, it is but fitting that this year's awardee comes from the marine sciences, specifically, the aquaculture sector. In the advent of climate change, sustainable fisheries management is one of the key solutions to save the environment and increase the income of our fishing communities. This is the mission that Dr. Marie Antonette Juinio-Meñez has taken to heart.

Dr. Meñez is a professor at the Marine Science Institute, University of the Philippines Diliman. She is passionate about her work though, at times, too modest to admit her accomplishments. She is often surprised to hear from others that her research discoveries and technologies have become widely accepted and adopted by fisherfolk.

The impact of her researches and contributions in the field was noticed when the National Technical Committee (NTC) for the Gawad Saka Search, headed by the Bureau of Agricultural Research (BAR), conducted field validations.

Fishermen who were interviewed were thankful for the technology that helped save their livelihood. Her long-term work on sea urchins (*Tripneustes gratilla)* has rehabilitated the stock, which was once on the verge of total depletion. The results of her research have also provided fisherfolk an alternative to fishing, hence creating a more sustainable coastal environment. She did not only teach the fishermen to culture invertebrates, but she has included them in the research process.

During an interview at a project site in Bolinao, Pangasinan, Dr. Meñez told the Committee (NTC) that in one of her researches, sea urchins developed a disease causing discoloration. However, instead of determining the cause herself, she asked the farmers to look into it, which they later found out was caused by the pollution generated by nearby milkfish pens, particularly, from the waste of the feeds used.

She stressed that for programs and projects to be sustainable, researchers must involve the fisherfolk. They must learn how to think for themselves and be given the feeling that they have as much stake in the success of the project as the project leader or researcher.

Her projects have strengthened the bond of the communities as well as their relationship with the local government units in the area. Her work

Dr. Marie Antonette Juinio-Meñez

with various local government units (LGUs) have shown her commitment to helping the poorest coastal families by demonstrating that science and development can be implemented in harmony with the researcher and their study group, both benefiting in the process. At present she is developing an environmentally-sound culture technology for sea cucumbers (*Holothuria scabra).*

Dr. Meñez specializes in ecology and culture of marine invertebrates, coastal resources management, and population genetics. She has a Doctor of Philosophy (Ph.D) in Biological Sciences from the University of Rhode Island in the USA. *(Jude Ray P. Laguna)*

Senator Legarda... page 1

because, as we all know, there is, unfortunately, a preponderance of calamities in this beloved country of ours." She further stressed that "Extension must address concerns relating to globalization and liberalization, environmental concerns, social justice for the rural poor, energy security, climate change, peace and development, and a host of other goals not traditionally associated with extension."

Following this line, people in the agriculture, fisheries and forestry extension service must be well-versed on extension strategies and in communicating the proper information to enhance activities in the rural sector especially those affected by climate change. The changes are in evitable and need to be addressed properly by research and extension for the proper application of technologies especially in farming and fishing.

Based on this, Senator Legarda will work for institutional reforms such as the allocation of a budget for extension for the Department of Agriculture (DA) on FIELDS program to include grants-in-aid for local extension works, as proposed in the National Extension Bill, consistent with the AFMA law. Also, the proposed bill will professionalize extension through rewarding career paths that will make the extensionists more competent and capable in addressing issues and concerns in agriculture, fisheries and forestry extension services.

Furthermore, she will ensure that extension services shall complement the efforts of environment and natural resources research and development for better delivery of programs and services to its clientele on environmental protection for forest and coastal communities. This will also encourage communities to be organized and their members provided with functional literacy through novel pedagogical approaches like the Alternative Learning System.

Senator Legarda ended her speech with a challenge to the network members by advocating the reforms in development through food security efforts, environmental protection and management, and sustainable development of the agriculture, fishery, forestry and natural resources sectors.

The PEN marked the occasion by giving its 2009 awards to the outstanding workers and projects in support to agriculture, fisheries and forestry development. The winners are: Outstanding Extension Project - Sustainable Agricultural Participatory Research and Extension Model Projects (SAPREM) of UP Pahinungod; Outstanding Extensionist (Field Extensionist Category) - Ms. Norma Lagmay, provincial agriculturist of Ilocos Norte; and Outstanding Extensionist (Subject Matter Specialist Category) - Dr. Jose Medina of UP Pahinungod based at UPLB, College, Laguna. (*Marlowe U. Aquino, PhD*)

BAR joins APAARI experts' consultation on biopesticides & biofertilizers in Taiwan

As a member of the Asia-Pacific Association of Agricultural Research Institutions (APAARI), the Bureau of Agricultural Research (BAR) participated in the "Expert Consultation on Biopesticides and Biofertilizers for Sustainable Agriculture" held on 27-29 October 2009 in Taichung, Taiwan. Representing BAR was Assistant Director Teodoro S. Solsoloy.

The expert consultation workshop is organized by APAARI in collaboration with the Taiwanese Council of Agriculture (COA), Taiwan Agricultural Research Institute (TARI) and the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB). Need for this consultation is being felt in view of the increasing awareness for the use of biological agents as pesticides and fertilizers to achieve much needed sustainable agriculture.

According to recent studies, the indiscriminate use of agrochemicals has resulted to undesirable effects on both biotic and abiotic components of the environment. This has led to the substantial pollution of soil, air and water. Contamination of ground water is resulting to the eutrophication of lake and river waters causing depletion of oxygen and, thus, death of aquatic life, nitrate pollution, increased emissions of gaseous nitrogen and metal toxicities. The presence of nitrate in potable water has been blamed for health anomalies such as birth defects, cancer and impaired nervous system.

However, with the increasing global awareness on the harmful effects of synthetic plant protection agents and unabated production of agrochemicals, the demand for technologies and products based on biological processes has also increased leading to the development of biopesticide and biofertilizers.

Although some ASEAN countries have made significant advances in the development and use of biopesticides and biofertilizers, their potential remains largely underutilized due to variable efforts and experiences in different countries.

Given these scenarios, several technological and policy gaps have been identified and were addressed during the consultation workshop.

The activity aimed to review the current status of research, development and use of biopesticides and biofertilizers in agriculture at the regional and national level, and to develop consensus on the place of biopesticides and biofertilizers in conventional agricultural production systems. Issues of quality requirements, quality control, regulatory management, commercialization and marketing of biopesticides and biofertilizers were also tackled. It also aimed to identify the role of public and private sector organizations and public-private participation in promoting the use of bio-agents in agriculture, and to promote stewardship.

Attending the workshop were international and national experts composed of agriculturists, agro-chemists, plant pathologists, entomologists and other professionals in sustainable agriculture and biological sciences as well as representatives from civil societies and various farmers' organizations. (*Edmon B. Agron*).

EAT A RAINBOW OF COLORS

A seminar on indigenous plants for health and wellness was sponsored by the Bureau of Agricultural Research in this year's Agrilink/ Foodlink/ Aqualink 2009. Held every year at the World Trade Center in Pasay City, this activity aims to gather key players in the agriculture, fisheries and food industry to showcase products, and innovations, and be a medium for knowledge exchange. This event was held on 7-9 October 2009.

Dr. Evelyn B. Rodriguez, an Associate Professor at the Institute of Chemistry at UP Los Baños presented, "Food Phytochemicals Beneficial to Human Health: Local Food Plant Sources". She mentioned that there are many plants in our surroundings that are edible and at the same time contains nutrients needed for a healthy body. We just have to be aware of them.

Subtitled "Eat a rainbow of colors", Dr. Rodriguez explained that the color of a certain fruit or vegetable determines the essential phytochemical that it contains. Phytochemicals are defined as bioactive non-nutrient plant compounds in fruits, vegetables, grains and other plant foods that have been linked to reducing the risk of major chronic diseases.

The red color group includes lycopene, which reduces the risk of cancer, and anthocyanin, which delays several diseases associated with ageing. Tomatoes, watermelon and strawberries are rich in these two phytochemicals.

The yellow group has beta carotene and flavonoids which reduce the risk of heart diseases, some cancers and slows down ageing. Squash, mango, oranges, cantaloupes and carrots are the popular sources.

The green color group is primarily for lutein which helps maintain good vision. Plants rich in lutein are: pechay, kangkong, gabi leaves, mustard, spinach, alugbati, saluyot and malunggay.

The blue/ purple group includes anthocyanin and phenolics which also prevents cancer, heart disease and ageing. Eat eggplant, grapes, plums, duhat and blueberries to prevent the said diseases.

Lastly, the white/ tan/ brown group contains allyl sulfides and polyphenols which reduce the risk of heart disease. Banana, garlic, ginger onions, mushrooms, potatoes and white corn are just some of its sources.

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BAR announces 2009 AFMA Best R&D papers and poster awards

Rovilla (Basic) Uy (TG/IG Fisheries) De la Cruz and Legaspi (TA/TV Agri)

Garcia (Socio-economics) Bulaong (TG/IG Agri) Battad (Development) Jarilla (R&D Poster)

PHOTOS: EAGRON, DLEJANO, MHERNANDEZ, MMOJICA, RDELACRUZ

The Bureau of Agricultural Research announced the six winners of the 21st National Research Symposium held on 9 October 2008 at the Fernando Lopez Hall of the Bureau of Soils and Water Management (BSWM) Bldg., Visayas Avenue, Diliman, Quezon City.

Winning the "AFMA Best R&D Paper for Basic Research Category" was Maria Rovilla J. Luhan and Hananiah Sollesta of the Southeast Asian Fisheries Development Center-Aquaculture Department (SEAFDEC-AQD) for the study, "Growing the Reproductive Cells (carpospores) of the Seaweed, *Kappaphycus striatum*, in the Laboratory Until Outplanting in the Field and Maturation to Tetrasporophyte".

The study, "Development of a Computer Vision System for Milled Rice Quality Analysis" by Manolito C. Bulaong and Ruben E. Manalabe of the Bureau of Postharvest and Extension (BPRE) and Oliver C. Agustin of Vera Equinox Technologies won the "AFMA Best R&D Paper for Technology/Information Generation-Agriculture Category".

Tied at first as the "AFMA Best R&D Paper for Technology Adaptation/Verification-Agriculture Category" are the studies, "Adaptability Test of Technologies for the Management of Jackfruit Fruit Fly (*Bactrocera umbrosa* Fabr.) in Region 8" by Carlos S. De la Cruz, Brenda B. Almeroda and Mario Socrates P. Tisado of the DA-RFU VIII - EVIARC and "Increasing Productivity of Yam through Improved Cultural Management Practices" by Norlyn B. Legaspi and Beatriz S. Malab of the Mariano Marcos State University (MMSU).

The "AFMA Best R&D Paper for the Socio-economics Category", went to Yolanda T. Garcia of the University of the Philippines Los Baños (UPLB) and Nerissa D. Salayo for their study titled, "The Role of Infrastructure Developments on Market Price Formation of Major Aquaculture Species in the Philippines".

The last awardee was Liza G. Battad of the Philippine Carabao Center (PCC) bagging this year's "AFMA Best R&D Paper for Development Category" for the paper titled, "Intensifying Village-Level Carabao-based Dairy Cooperative-Enterprise Development in Non-Traditional Dairy Communities".

The AFMA Best R&D Poster Award went to the study titled, "Development of Improved Varieties of Mungbean (NSIC Mg14 and NSIC Mg15)" by Flora A. Jarilla, Eugenia M. Buctuanon and Ma. Ana M. Alonzo of the Bureau of Plant Industry-Los Baños National Crops Research and Development Center (BPI-LBNCRDC).

Awarding the winners were honored guests, Dr. William G. Padolina, chair of the Agriculture and Food Panel Congressional Commission on Science and Technology and Engineering (COMSTE) and deputy director general for Operations and Support Services of the International Rice Research Institute (IRRI), and Department of Agriculture (DA) Assistant Secretary for Policy and Planning Preceles H. Manzo, who was there on behalf of Secretary Arthur C. Yap.

This year's competition focused on the theme, "*Sakahan, Kaalaman, Kaunlaran: Improving the Lives of our Farmers and Fisherfolk through Research and Development*" which defines the important role of R&D in meeting the challenges of poverty and food security, particularly in the rural areas through research results that have impact at the grassroot level.

BAR holds this yearly event not only to promote R&D excellence but more importantly, to give due recognition to the accomplishments of agriculture and fisheries researchers for their notable achievements in the field. It also serves as a good venue to disseminate new technologies and knowledge, in support to agriculture and fisheries modernization.

Winners of the 2009 AFMA Best R&D Paper Awards for each category received PhP50,000 while the first and second runners-up got PhP 30,000 and PhP 20,000, respectively. Meanwhile, the AFMA Best R&D Poster for 2009 received PhP 10,000, while the first and second runners-up took home PhP8,000 and PhP5,000, respectively. *(Rita T. dela Cruz)*

Winners of DA 3rd OMG Cooking Contest announced

Now on its third year, the Department of Agriculture (DA) finally announced the winners of the 3rd O! May Gulay Cooking Contest held on 11 October 2009 at the World Trade Center, Manila.

Hosting the show were ABS-CBN TV reporter, Ginger Conejero and comedian, Jason Gainza. Meanwhile, Agriculture Secretary Arthur C. Yap officially opened the activity with his welcome remarks.

Six participating schools made it to the finals, namely: Bonifacio Javier National High School, Muntinlupa Business High School, Dalandanan National High School, Doña Teodora Alonzo High School, Pitogo High School, and Dr. Josefa Jara Martinez High School.

Winning the grand prize were students, Adrian Caseñas and Rommel Albano of the Dalandanan National High School with their recipe, "Veggie Dynamite". The second and third prize went to students Angelito Irorita Jr. and Rhea Jane Alano of Doña Teodora Alonzo High School (Eggplant Lasagna) and Shiela Mae Palacio and Shiela Marie Cesario of Dr. Josefa Jara Martinez High School (Pechay Relleno in Coconut Sauce), respectively.

This activity is in support to the National Nutrition Month Celebration with the ultimate aim of encouraging households in the urban areas (most especially the youth) to cook affordable and nutritious food using local agriculture products. This activity is designed to encourage the development of vegetable recipes that are easy to prepare, affordable, and delicious. The contestants are students from public high schools from the National Capital Region (NCR).

BAR Director Nicomedes P. Eleazar and Asst. Director Teodoro S. Solsoloy were also present to support the event.

Student cooks, Adrian Caseñas and Rommel Albano of Dalandanan National High School win the grand prize. PHOTO: RDELACRUZ

The O!May Gulay Cooking Contest is an initiative of DA in collaboration with the Bureau of Agricultural Research (BAR) and the Office of the Presidential Adviser for Job Creation (OPAJC). *(Rita T. dela Cruz)*

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be able to identify the most cost-effective measures to mitigate climate change. "We need research to predict climate-related changes, both at national and regional levels, so that we can identify and take measures that will enable us to adapt to them as well as facilitate the formulation of practical policy objectives to support the sustainability of the program" he added.

According to Dr. Espaldon, the R&D Program on Climate Change aims to generate technologies for the mitigation and adaptation to climate change and improve the adaptive capacity of farmers and fisherfolk by providing relevant technologies and information. Through the program, BAR and its partners hope to breed plants/animals/fishery resources that are more resilient to climate variability, assess the vulnerability of aquatic and marine resource to climate change, and promote cost-effective alternatives to fossil fuel use in agriculture.

The program specified several priority researchable areas which were categorized as short- and long-term adaptation strategies, and the short- and long-term mitigation strategies.

Dr. Espaldon identified 10 priority researchable areas under the short-term adaptation strategies. These included: 1) documentation of indigenous knowledge, 2) promotion and dissemination mechanisms of soil and water conservation, 3) development and promotion of technologies for water use efficiency in agriculture, 4) development of an updated dynamic cropping calendar for major crops, 5) localized weather-based early warning system for agricultural production, 6) developing sound methodologies for localized seasonal climate forecast system, 7) establishment of climate change sensitive mariculture zoning system, 8) development of agri-aqua farming systems in inundated areas, 9) promotion of value adding strategies for agricultural produce, and 10) improvement of the Comprehensive Agricultural Land Use Plan incorporating climate change risk information.

For the long-term adaptation strategies, she cited five areas for research. These included 1) selection/breeding of drought-resistant, pest/disease-resistant, and flood-tolerant varieties, 2) knowledge-based crop forecasting using advances in S&T, 3) improved estimation of loss in fish production due to climate change, 4) estimation of carrying capacity of seaweeds and other mariculture commodities under increased temperature, 5) monitoring of ocean acidification, salinity and ocean color, 6) vulnerability mapping in coastal areas/assessment of marine resources/marine protected areas, and 7) changes in spatial distribution and migration patterns of fish.

For the short-term mitigation strategies, five priority researchable areas were identified. These were: 1) assessment of marginal lands/grasslands for expansion of food production using lesser known fruit trees species, 2) implementation of community-based watershed projects, 3) reduction of methane emission from swine farms, 4) management and control of new and resurgent diseases and pathogens of livestock and poultry, and 5) improving capacities by thorough climate risk assessment and management.

For the long-term strategies, the researchable priority areas include, 1) utilization of agricultural waste and biomass for biofuel production, 2) freshwater production using cost-effective community based hybrid biomass-solar desalination system, 3) assessment of crop quality in different agro-climatic conditions, 4) evaluation of agricultural management practices for soil carbon sequestration and mitigation of greenhouse gases in long-term crop protection under upland agro-ecosystem, and 5) identification of changes in the soil microbial diversity in the lowland, upland, and hilly lands as affected by climate change. *(Rita T. dela Cruz)*