BAR holds 2nd Quarter Research...from page 4

Presenting on their respective zonal cluster's accomplishments and updates are (L-R) CVIARC Manager Robert Olinares of DA-RFO 2 for the Luzon cluster, Ms. Rufelie Gula of DA-RFO 8 for the Visayas cluster, and NOMIARC Manager Juanita Salvani of DA-RFO 10 for the Mindanao cluster. PHOTOS:RDELACRUZ/PLESACA

Mr. Joell Lales, head of the Planning and Project Development Division (PPDD), reported the status of updating the RDEAP 2017-2022 and the activities for the second leg of the Regional Organic Agriculture Stakeholders' Consultation Workshop to be held in Naga City. He also presented updates on Rice, Corn, and High Value Crops Development programs.

PPDD's Ms. Cynthia de Guia discussed the DBM's Circular on Grants and Donations. She also encouraged research managers to comply with the early submission of the required financial documents.

Ms. Maria Elena Garces of the Technology Commercialization Division presented the updates on the division's preparations for the upcoming "2015 Philippine International Biomass Conference" scheduled on 16-18 June 2015 in Clark, Pampanga and the 11th National Agriculture and Fisheries Technology Forum and Product Exhibition set on 7-9 August 2015 at the SM Megamall, Mandaluyong City.

Ms. Digna Sandoval, head of Institutional Development Division (IDD), presented the status of the R&D Centers funded and supported under the Institutional Development Grant. Ms. Sandoval also shared some highlights of the 4th DA-BAR Scholars' Fellowship Night held in April 2015.

Ms. Julia Lapitan, head of the Applied Communication Division, updated the group on the back-to-back trainings on Knowledge Management which was organized by the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) in partnership with BAR. She urged all the RM Managers to send their knowledge and information officers in future trainings. Ms. Lapitan also discussed the compendium of all BAR-supported R&D projects in the regions, which will be officially launched in 2016.

The zonal updates and activities were also presented. CVIARC Manager Robert Olinares of DA-RFO 2 presented for the Luzon cluster, Ms. Rufelie Gula of DA-RFO 8 for the Visayas cluster, and NOMIARC Manager Juanita Salvani of DA-RFO 10 for the Mindanao cluster.

To further understand the role of women in agriculture and fisheries sector, BAR technical adviser on Gender and Development (GAD), Ms. Lorenza Umali, presented on "Gender in Research" which tackled on women and men playing distinct roles and must be appreciated. She also sliced on the notion of "boxing of roles" which should not be categorized as dominant gender driven.

Meanwhile, lectures on AgroEcosystem were given by Professors Nestor C. Altoveros and Teresita H. Borromeo of the University of the Philippines Los Baños (UPLB). The resource speakers expressed the importance of plant genetic community banks and seed storage facilities.

BAR Assistant Director Dr. Teodoro S. Solsoloy officially closed the event and thanked everyone for the presentations of accomplishments and updates.

The research managers' meeting is organized by the bureau to keep all its regional partners updated on the recent R&D priorities and programs of DA. The meeting provides a venue to discuss issues that are relevant to R&D particularly those supported by BAR in the regions. ###

(Patrick Raymund A. Lesaca)

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5M IDG project to put up a PGR lab and training center

Leading the signing of Memorandum of Agreement (MoA) for the project "Establishment of Plant Genetic Research (PGR) Laboratory and Training Center" are (front row, L-R) Prof. Josephine Cruz, Vice President for Research and Development, CBSUA; Dr. Georgina Bordado, President, CBSUA; Dr. Nicomedes Eleazar, Director, BAR; and Ms. Evelyn Juanillo, Executive Assistant, BAR-Office of the Director. PHOTO:OD

The Bureau of Agricultural Research (BAR), through its director, Dr. Nicomedes P. Eleazar, officially sealed its support to the project "Establishment of Plant Genetic Research (PGR) Laboratory and Training Center" at the Central Bicol State University of Agriculture (CBSUA) on 19 May 2015. Signing the Memorandum of Agreement (MoA) for the PhP 5M-project opposite Dir. Eleazar was CBSUA President, Dr. Georgina Bordado, and Vice President for Research and Development, Prof. Josephine F. Cruz.

Funded under the bureau's Institutional Development Grant (IDG) Program, the project is set to be instrumental in promoting sustainable use of PGR and to capacitate Bicolano researchers, scientists, students, farmers, and other stakeholders on PGR research and development (R&D). CBSUA, known to be the center of excellence in agriculture in the Bicol region, is one of the bureau's partners in promoting PGR specifically its initiative on biodiversity conservation.

The facility, which will house science laboratories, a museum, and a training center, will serve as CBSUA and the entire Bicol region's center in the conduct of planning, development, and implementation of regional programs on PGR as well as the region's germplasm bank of economically-important plants in the locality. It will be open to farmers, researchers, and the general public who wish to be trained and be capacitated on PGR practices and other relevant information.

The MoA covers the construction of a two-storey building composed of science laboratories on Phytochemical Screening, Clinical Plant Science, DNA Testing, Tissue Culture, and Seed Testing and Planting Materials, National Science Museum, and Training Center as well as the procurement of facilities and

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IN THIS ISSUE...

CPAR national assessment

PHOTO:RDELACRUZ

targets extensive implementation

In an effort to strengthen the implementation of the Community-based Participatory Action Research (CPAR), a flagship program of the Bureau of Agricultural Research (BAR), a national review and assessment was conducted on 27-29 May 2015 at the Luxent Hotel, Timog Avenue, Quezon City. Participated in by Department of Agriculture (DA) Regional Field Offices, Bureau of Fisheries and Aquatic Resources (BFAR), and local government units, the activity aimed to assess the implementation of CPAR, review significant outputs gained vis-à-vis CPAR goals, and discuss relevant issues and concerns to improve the mechanisms of the program implementation.

CPAR implementers all over the country presented their projects that covered topics including CPAR management, community organization, production management, adoption of technology, marketing and product development, rollover scheme, participatory monitoring and evaluation, effective collaboration, LGU support, and sustainability.

In a message delivered by BAR Director Dr. Nicomedes P. Eleazar, he emphasized the numerous accomplishments of the CPAR program through its developed technologies and successful stories of farmer cooperators. With more than 200

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BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

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This publication provides regular updates on DA-BAR's activities as the country's national coordinator for agriculture and fisheries R&D. It also highlights features and news articles concerning NaRDSAF-member institutions.

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plant species were screened using the following criteria: 1) toxicity; 2) tinctorial strength (potency of the pigment) but with minimal or without imparting any flavor or aroma; 3) availability of the raw materials and ease of handling; 4) mutagenicity (capacity to induce mutations); and 5) stability of the pigment under different pH, temperature, and light regimen. Solubility in water and demand for the particular color in the market were also the two main considerations in choosing the plant pigment as food colorant.

The study zeroed in on red hue. According to literatures, red is the most appealing color for food and the most in demand color for food coloring in the market. The researcher sought to include as potential food colorants those plant species that has anthocyanins and betalains as these plant pigments are water soluble. Carotenoids were excluded in the research as these pigments are not water soluble and sensitive to light. Curcuminoids was included in the study (which can be found in turmeric), even though it is not water soluble, as it is seems to be the best alternative natural colorant to synthetic tartrazine.

To check the color stability of the natural colorants derived from the indigenous plants in a finished food product, Dr. Cardenas tested the colorants under different types of food preparation that includes fresh, steamed, boiled, and baked. She prepared salad using the Begonia and; ice cones or scramble in which the whole extract from lipote, turmeric, and butterfly pea were poured directly on top of the shaved ice. She made fondant using the lipote, 4 o'clock, and butterfly pea color extract. She also prepared gelatins, *puto*, *suman*, butter cookies, scones, and chocolates using the color extracts from *alugbati*, *lipote*, turmeric, butterfly pea, and 4 o'clock. Microencapsulation was also done in one of the extracted natural pigments for stability.

It was found that alugbati (*Basella rubra* L.) and lipote (*Syzygium curranii*) were the two best sources of red colorant followed by red 4 o'clock (*Mirabilis jalapa* L.). Also tested were turmeric (*Curcuma domestica* (L.) Val.) for the yellow pigment, butterfly pea (*Clitorea ternatea* var. *pleniflora*) for the blue pigment, and *pandan* (*Pandanus amaryllifolius* Roxb.) for the green pigment.

Duhat (*Syzygium cumini*), red gumamela (*Hibiscus rosa-sinensis* L.), and roselle (*Hibiscus sabdariffa* L.) were also tested but were dropped from the list due to several factors including toxicity, stability of pigment, availability of raw materials, difficulty in extraction of pigment, among others.

It is worth noting that not all pigments can be processed into colorants due to several factors such as low tinctorial strength, fragility, among others, but can still be used as colorants as freshly-picked ingredients to dishes that includes the begonia, talinum, oxalis, impatiens, portulaca, and nasturtium.

Some known crops that were often used as pigments were *ube*, beet root, purple *camote*, carrots, annatto, and paprika but were excluded in the study because Dr. Cardenas wanted to focus on the underutilized indigenous plant species.

As a final product, through the project, Dr. Cardenas was able to develop natural colorants in the form of freeze dried whole extracts, microcapsules, gelatin bars, and glycerine solutions. ###

Looking into the potentials of indigenous plants as a viable source of natural colors, the study aims to provide an alternative source of colorants to synthetic food colorants.

Project proponent, Dr. Lourdes Cardenas, shows a photo of pastries applied with natural colorants from indigenous plants.

The article was based from the terminal report of a BAR-funded project titled, "Biotechnology in the Utilization of Natural Colors from Indigenous Plants".

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Exploring the potentials of indigenous plants AS NATURAL COLORANTS

Story and photos by Diana Rose A. de Leon

A fondant using lipote, 4 o'clock, and butterfly pea color extracts which Dr. Cardenas used to check the color stability of the natural colorants derived from the indigenous plants.

People experience food first, not by tasting, but by its appearance. Thus, the popular saying, "people eat with their eyes". This is because color plays an important role in our food preference. However, when an ingredient undergoes processing, it cannot retain the vibrancy of its natural color that is why color additives are being used to offset the color loss.

Synthetic color additives are the popular choice for color enhancement. Yet, the uses of these additives are strictly regulated. Although some claims are still to be validated and are subjected to debates, they can be toxic, carcinogenic, and contributory to behavioral problems.

To provide an alternative source of colorants to synthetic food colorants, Dr. Lourdes B. Cardenas of the Institute of Biological Sciences, University of the Philippines Los Baños (UPLB) explored the study, "Biotechnology in the Utilization of Natural Colors from Indigenous Plants," which looked into the potentials of indigenous plants as a viable source of natural colors.

Eat well with colors

In food, color stimulates appetite, enhance flavor, and make the food more appealing.

Color is also a visual cue for the type of plant constituents and its corresponding potential health benefitting effects that can be found in foods especially on fruits and vegetables. For instance, the red color in tomatoes and watermelon means that it is rich in lycopene which can reduce the risk of several types of cancer such as prostate cancer. The orange- and yellow-colored foods such as squash, mangoes, and carrots have carotenoids which can help in reducing the risk of cancer, heart disease, and improve immune system functions. The blue-violet color of blueberries, grapes, and eggplants indicates that the food is rich in anthocyanin which reduces the risk of acquiring cardiovascular diseases, cognitive decline, and cancer. White-colored foods like garlic, bananas, and potatoes have anthoxanthins which may help in lowering cholesterol and blood pressure, among others.

Color additives are used to help food manufacturers/producers to better market their food products. It can offset color loss due to exposure to light, air, temperature extremes, moisture and storage conditions; correct natural variations in color; enhance colors that occur naturally; and provide color to colorless and "fun" foods. Hence, color can influence the consumers' perception of the food's quality and taste, and can change the consumers' consumption and purchasing preference.

Indigenous plants as source of natural colors

In the study of Dr. Cardenas, over 20 indigenous

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CPAR national assessment...from page 2

PHOTOS:RDELACRUZ&DDELEON

In his message, BAR Director Nicomedes Eleazar gives light to the salient accomplishments of the CPAR program.

Attending the activity are CPAR focal persons and representatives from the DA Regional Field Offices, Bureau of Fisheries and Aquatic Resources (BFAR), local government units, and key officials and staff members from BAR.

Providing comments and recommendations are the panel of evaluators composed of CPAR Technical Working Group: (L-R) Ms. Josefina Lantican, Engr. Roberto Villa, and Ms. Virginia Agcopra from BAR; Mr. Elmer Enicola from the University of the Philippines Los Baños; and Ms. Rose Mary Aquino from DA-Regional Field Office 2-Cagayan Valley Research Center.

"CPAR is among the DA programs with such a unique feature because of the direct involvement of the farmers into the program."

projects and 11,000 farmer-beneficiaries, it is high time that the BAR intensifies the implementation to further reflect, improve, and stimulate holistic growth and progress. He also said that CPAR generates technologies for commercialization, which are very helpful especially to small-scale farmers, and in turn supports income generation for the community.

Dr. Eleazar stressed that CPAR is among the DA programs with such a unique feature because of the direct involvement of the farmers into the program. "CPAR, along with NTCP, are our 'contributions' to the DA, and the whole of agriculture sector that's why we really expect especially from you, our research partners, to continue what we all have started with CPAR. We, at the bureau, expect deeper commitment from you, so that we will be able to achieve the ultimate goal of what we do: to upscale and to commercialize CPAR technologies for the benefit of our farmers and fishers," he said.

With the CPAR coordinators and key persons presenting their projects in their respective regions, the three-day activity served as a platform in exchanging experiences, lessons learned, as well as challenges met in the duration of CPAR implementation. Moreover, not only technical matters were discussed, but also administrative matters which have been critical in order to determine what needs to be improved and replicated.

The activity was able to identify strategies, approaches, and best practices, as well as document the progress and success of the CPAR program. The bureau stands firm in its ideal to continuously work and collaborate with the regions to strengthen the role of CPAR as a catalyst of technology transfer and commercialization for the purpose of upholding the lives of all farming communities all over the country.

Serving as evaluators were BAR's technical advisers Ms. Virginia Agcopra, Ms. Josefina Lantican, and Engr. Roberto Villa, along with the CPAR Technical Working Group members Mr. Elmer Enicola of the University of the Philippines Los Baños and Ms. Rose Mary Aquino of DA-Cagayan Valley Research Center. ### ***(Daryl Lou A. Battad)***

BAR holds 2nd Quarter Research Managers Meeting

BAR Director Nicomedes Eleazar and Assistant Director Solsoloy pose for a photo op with the research managers according to clusters. PHOTOS:RDELACRUZ

The Bureau of Agricultural Research (BAR), as the national coordinator for agriculture and fisheries research and development (R&D), conducted the Second Quarter Research Managers' (RM) Meeting on 13-14 May 2015 in Baler, Aurora. In attendance were research managers from the Regional Field Offices (RFOs) and Bureau of Fisheries and Aquatic Resources (BFAR) of the Department of Agriculture (DA).

Hosted by DA-RFO 3, Dr. Irene M. Adion, Central Luzon Integrated Agricultural Research Center (CLIARC) research manager, welcomed the participants on behalf of Regional Executive Director Andrew C. Villacorta. In his message, as read by Dr. Adion, he expressed his appreciation for hosting the meeting and underscored the importance of research as a key driver towards agricultural modernization and development.

BAR Director Dr. Nicomedes P. Eleazar, in his opening message, pointed out that the institutionalization of the meeting is a positive development as this fosters effective collaboration, and thus, must continue to be harnessed. He urged all research managers to actively support the bureau in its R&D programs and thrusts. Dr. Eleazar also took the lead in providing a glimpse of the agency's first quarter accomplishments in terms of completed and on-going projects, updates on financial matters, as well as the proposed compendium of BAR's completed projects from 2005 to 2014 wherein all of the regions are involved.

To keep abreast on what had been agreed and accomplished during the first quarter meeting, Ms. Salvacion Ritual, head of the Project Monitoring and Evaluation Division (PMED), presented highlights of completion to the body. She also presented updates on PMED activities including the CPAR Project Assessment Review in June and the Second CPAR Congress in November.

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Reducing climate variability...from page 12

Through Participatory Rural Appraisal, project leader Glenn Banaguas discusses with the community in Polillo as part of the risk assessment.

The significance of this study is to **create positive impacts** to the poorest and most vulnerable sector in the society—that is the agricultural sector, which is composed of farmers and fisherfolk.

social science scheme," explained Engr. Banaguas.

The study aimed not only to identify the risks but more importantly, to manage the risk. "People who are living in those vulnerable areas with high poverty incidence, low human development index, old and young people, more educated and uneducated people, rich and poor, all these factors have to be considered in determining the risks and how we can effectively manage them," Engr. Banaguas added.

One of the methodologies done was the assessment of the risk using Participatory Rural Appraisal (PRA). The group went to different barangays of Polillo to interview people, local government officials, and different organizations. Among the areas that they looked into were: biophysical assessment, socioeconomics, psychological, and policy issues.

"Important outputs for this study are hazard maps, exposure maps, and vulnerability maps. Combining all of these, we will have the risk maps. These maps were derived from the simulation models. The technical findings have to coincide with the social science aspect for validation," said Engr. Banaguas. These maps will be used by the local government unit and non-government organizations in Polillo in their risk management plans.

This DLSAU-BAR initiative won the gold prize during the 26th National Research Symposium under the socioeconomics category. ###

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Farmers' association in Leyte...from page 9

hectarage, but to plant first on a household level for household consumption. "Sinunod namin iyon. Ngayon, ang mga soybeans ang aming nagiging kape sa umaga, soya milk naman para sa mga bata, at iba't iba pang uri ng soybean-based dishes," the Brgy. Captain furthered.

When it comes to selling their produce, interested farmers and individuals from other barangays are visiting their barangay to buy the seeds. "Sila ang pumupunta dito sa amin. 'Yung ibang nagrerequest, nag-coconduct kami sa kanila ng trainings regarding production and processing, at 'yung pagpoproseso ng soya milk ang pinaka-in demand. 'Yung iba nakakabenta na din ng soya seeds tulad namin," she added. Because of the activities that the association engaged in, they have now generated funds from soybeans. "Dahil din sa soya seeds at soya milk, may funds na kami for soya. Nagagamit ito ng members ng association para sa pagpapa-aral ng kanilang mga anak," the Brgy. Captain said.

A low maintenance leguminous crop, soybean is being grown as a source of protein, oil, and animal feed. It is considered as a wonder crop of the 20th century due to the benefits it can give to humans. For one, it contains anti-cancer and anti-inflammatory properties and also aids in preventing osteoporosis, diabetes, and other cardiovascular diseases. As a legume, soybean has the capability of biological nitrogen fixation where the *Rhizobium* bacteria found in its root nodules fix the nitrogen from the air. This enables corn, rice and other cereals rotated or intercropped together with soybeans to be benefitted as well. ### ***(Anne Camille B. Brion)***

REDUCING CLIMATE VARIABILITY
in Polillo Islands through Risk Analysis

Story and photos by Rita T. dela Cruz

Given the high incidence of natural hazard events, the Philippines is regarded as one of the world's most disaster-prone countries and therefore most vulnerable to climate variability. In fact, a recent report by the United Nations identified the Philippines as the third most at risk from climate change in the world, behind Vanuatu and Tonga, both of which are South Pacific nations. The study revealed that the reason is mostly geographical, including regional wind patterns which can worsen the risk from extreme rainfall events.

Specifically a hotspot to natural and anthropogenic disasters is Polillo Islands in Quezon Province. Studies have shown that most tropical cyclones that enter the Philippine Area of Responsibility (PAR) is located in Bicolandia and Quezon Province, specifically Polillo.

Given this, a study titled, "Strategic risk analysis of long-term climate variability in Polilio Islands, Quezon Province," was conducted by a group of researchers from De La Salle Araneta University (DLSAU) led by Engr. Glenn S. Banaguas. Funded by the Bureau of Agricultural Research (BAR), this initiative sought to reduce climate vulnerability in Polillo by conducting strategic risk analysis. Specifically, the project aimed to quantify and model the risks arising from hydro-meteorological hazards by providing scientific and numerical bases and provide weather and climate risk management practices and policy, disaster risk reduction, and risk transfer on specific municipalities. Another objective was to produce solid and validated climate change scenarios to enable the local stakeholders to make informed decisions on adaptive measures and disaster risk reduction to climate change.

"The first objective focuses on existing risks in a particular municipality, in this case, Polillo, while the second objective addresses how risk patterns can change climate change in the future," expounded Engr. Banaguas.

Areas that are at high risk to climate vulnerability are likely to affect their level of food production and livelihood, making poor people poorer. "The significance of this study is basically to create positive impacts to the poorest and most vulnerable sector in the society. That is the agricultural sector, which is composed of farmers and fisherfolk. Most of the people living in Polillo belong to the fishing communities—a sector that is mostly likely affected by climate change," explained Engr. Banaguas.

The risk analysis looked into two important aspects: risk assessment and risk management. "Under the risk assessment we have the technical aspect of the research wherein we conducted climate modeling by identifying the temperature and rainfall patterns from 1900 to the present scenarios. We also looked into the social aspect wherein we conducted PRA in the project sites to validate the results that we got from the technical findings. This was done using the

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Luzon leg of OA Workshop held in Bicol

PHOTO:PLESACA

More than 100 organic agriculture advocates gathered together in Naga City, Camarines Sur for the conduct of the "Luzon Stakeholders' Consultation Workshop on Crafting the Regional Organic Agriculture Research and Development Agenda" on 18-23 May 2015. The event was the 2nd leg of the Bureau of Agricultural Research's (BAR) consultation dialogue among the various project proponents of the Organic Agriculture (OA) Program of the Department of Agriculture (DA).

Dr. Elena delos Santos, regional technical director for Operations, welcomed the participants on behalf of Regional Field Office (RFO) 5 Regional Executive Director, Engr. Abelardo R. Bragas. Dr. delos Santos mentioned in her remarks that it was a privilege to host the event and convening the multitude of OA stakeholders signals the country's readiness to organic farming.

BAR Director Nicomedes P. Eleazar, in his opening remarks, said that the consultation workshop is imperative for the success of the program. Sharpening the mission for a cleaner environment and healthier living is a challenge not only for the government alone, but also for everybody. Dr. Eleazar said that harmonizing the implementation of organic-related projects of the department is indispensable to its success. He also acknowledged the presence of National Organic Agriculture Board (NOAB) members Ms. Elsa Parot, National Organic Agriculture Program (NOAP) coordinator; Dr. Georgina Bordado, state universities and colleges (SUCs) representative; Fr. Ian Trillanes, non-government organization (NGO) representative; Dr. Adoracion Armada, Department of Science and Technology (DOST) representative; and Mr. Marciano Racelis, Luzon Small Farmer representative. The bureau chief also acknowledged the support of the Luzon Cluster for their continuing support to the program and likewise thanked DA-RFO 5 for co-hosting the event.

To update participants on what transpired during the National OA R&D Agenda Consultation Workshop which was held in April 2014, Mr. Joell Lales, head of the Planning and Project Development Division (PPDD), cascaded the results of the workshop and articulated that the adopted National OA Framework will serve as a guide among regional implementers in the identification of their regional priorities.

Regional presentations and workshops

The presentations kicked-off with the OA focals and representatives presenting their respective updates and on-going initiatives as follows: Ms. Adelina Losa, DA-RFO 5; Engr. Brigida G. Mercado, DA-RFO 4A; Mr. Michael Iledan, DA-RFO 4B; Dr. Irene M. Adion, DA-RFO 3; Mr. George A. Caday, DA-RFO 2; Mr. Norman Patungan, DA-RFO 1; and

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Luzon leg of OA Workshop...from page 5

Ms. Lilibeth C. Paraoan, DA-RFO-CAR.

Ms. Maylen Villareal of PPDD and BAR's OA alternate focal, explained the workshop mechanics and discussed the parameters of the researchable areas. The presentations of initial outputs of the regions, which was conducted by the Luzon Cluster prior to the event, were given by DA-RFO 5's Research Division Chief Luz R. Marcelino followed by Mr. Wilmer Faylon, DA-RFO 4A; Research Division Chief Marissa R. Luna, DA-RFO 4B; and Research Division Chief, Dr. Irene M. Adion, DA-RFO 3; Ms. Chonnalyn Pascua, DA-RFO 2; Ms. Cathy B. Pastor, DA-RFO 1; and Ms. Hilaria Badival, DA-RFO-CAR.

To further refine the initial outputs, the body simultaneously conducted workshops and produced priority lists of identified crops including fruits and vegetables, livestock, poultry, and fisheries proposed R&D projects. The final outputs were presented by: Gennie Soyon of Benguet State University for DA-RFO-CAR; Ms. Cathy Pastor for DA-RFO 1; Ms. Chonnalyn Pascua of DA-RFO 2; Professor Rafael Rafael of Pampanga State Agricultural University for DA-RFO 3; Mr. Brian Belen of ATO Belen's Farms for DA-RFO 4A; Ms. Marissa Luna; and Ms. Loren Hernandez of the Central Bicol State University of Agriculture (CBSUA).

The individual recommendations and insights from NOAP members as well as comments from BAR's technical pool of experts contributed significantly to the refinement of priorities. Ms. Elsa Parot shared inputs and recommendations pertaining to OA programs being implemented by the regions. She also recommended the study of the Philippine National Standards (PNS) as a basis for R&D driven proposals. The profiling of the OA industry and the credit facility being extended to farmers were just some of the things she floated during the course of discussion.

During the workshop, the participants identify priority lists of identified crops including fruits and vegetables, livestock, poultry, and fisheries proposed R&D projects. PHOTOS:PLESACA/LBARRAL

Scientific and educational tour

The Luzon contingent visited CBSUA where Dr. Josephine Cruz, vice president for Research, presented the university's R&D initiatives on OA, while Dr. Carmelita Cervantes and Ms. Loren Hernandez presented the overview of the academe's OA project and the BAR-funded project titled "Validation and Documentation of Organic Production Systems for Lowland Rice, Tomato and Lettuce in Camarines Sur and Organic-Techno-Science Park".

The group also visited the Organic-Techno Science Park inside the campus, which is noted for its uniqueness due to enhanced aesthetic value for using recyclable materials like computer monitors and CPUs, large containers, and old vehicles. Ms. Marcelino toured the group to DA-RFO 5's BAR-funded project on "Production and Purification of Native Chicken known as the Camarines Strain".

Also part of the itinerary were visits to the organic farms namely: 4VK's Integrated Organic Farm and Culmort Talistis Organic Farm in Tigaon, Camarines Sur and Pecuaria Development Cooperative in Bula, Camarines Sur.

BAR OA focal persons served as secretariat and facilitators. ### ***(Patrick Raymund A. Lesaca)***

PHOTOS:DOCUMENTATION COMMITTEE

BAR'S TEAM BUILDING
strengthens teamwork and camaraderie

Annually, the Bureau of Agricultural Research (BAR) conducts team building activities in order to harness teamwork and foster camaraderie among its management and staff. For this year, the manpower of the bureau went to Lucban, Quezon on 6-8 May 2015 for fun-filled games and exciting activities that were designed to strengthen unity and familiarity.

Compared to the previous years, wherein groupings were based on their respective divisions or units, the staff members were divided into five groups, randomly clustered by the Mechanics Committee. This allowed them to bond and be familiarized with each other through the prepared grouping arrangements. As there were already established bond within respective divisions/units, the grouping provided a venue for staff to explore their horizon and gain new friends in their respective groups.

Leading the activity were BAR Director Nicomedes P. Eleazar and Assistant Director Teodoro S. Solsoloy.

Indoor games were prepared but this did not limit the creative minds of the staff to enhance group dynamic skills. Games were intended to facilitate better communication skills and motivate co-members, improve morale and leadership skills, and improve the ability to solve problems. Staff could bring these ideals and apply them to their respective tasks when they go back to their work after the team building activity.

As there were groups hailed as winners, it was still worth mentioning the sportsmanship and fun day shared by all staff. Culminating the activity was a Fellowship Night wherein staff members were encouraged to wear Hawaiian outfits. In the spirit of fun and excitement, the Mr. and Ms. BAR 2015, and Mr. and Ms. Luau 2015 were announced.

The Technology Commercialization Division served as the overall organizer for this year's team building activity. ### ***(Ma. Eloisa H. Aquino)***

5M IDG project...from page 1

BAR Director Eleazar also visits some BAR-funded projects in the university, such as the "Validation and Documentation of Organic Production Systems for Lowland Rice, Tomato and Lettuce in Camarines Sur".
PHOTOS:OD

The facility will serve as the center for planning, development, and implementation of regional programs on PGR; and germplasm bank of economically-important plants in the locality.

equipment.

With attaining food sufficiency and food security at the forefront of the goals and priorities of DA, PGR R&D has become one of BAR's major strategies towards strengthening the conservation of plant genetic diversity. With this, the bureau has placed great emphasis on PGR R&D as it focuses on exploring, collecting, regenerating, characterizing, evaluating, and conserving traditional crops which are crucial in ensuring food sources.

In doing this, the bureau coordinates two international projects on PGR. These are: 1) "Strengthening PGR (Plant Genetic Resources) Management System: Conserving the Diversity of Priority Vegetables (Solanaceous Crops) Germplasm of the Philippines," in collaboration with the Asian Food and Agriculture Cooperation Initiative (AFACI); and 2) "Integrating the Conservation of Plant Genetic Resources for Food and Agriculture Into Decentralized Landscape Management for Food Security and Biodiversity Conservation in Critical Eco-Geographic Regions of the Philippines (ITPGRFA project)", funded through the United Nations Development Plan Philippines.

While both projects seek to enhance and capacitate the Philippine farmers' capacity for conservation and sustainable use of plant genetic resources for food and agriculture, they both have target or priority crops. Implemented in 16 regions and selected state universities and colleges (SUCs) of the country including CBSUA, the AFACI-PGR project gives priority to traditional tomato, eggplant, and pepper germplasm, while ITPGRFA project has rice, yam, taro, and sweet potato as its target crops. The University of the Philippines Los Baños (UPLB) implements this project.

One of the major programs of BAR, IDG provides support to the rehabilitation and construction of various R&D infrastructures and facilities that could enable our researchers and scientists to generate, develop, improve, and up-scale technologies that address the Department of Agriculture's goal of attaining food security while ensuring productivity and competitiveness in the agriculture sector.

As part of the visit to CBSUA, the bureau director also looked into the status of some BAR-funded projects in the university and provided recommendations for further collaboration between the two agencies. ### ***(Mara Shyn M. Valdeabella)***

PHOTOS:RBERNARDO

BAR joins *Urban Agriculture* exhibit

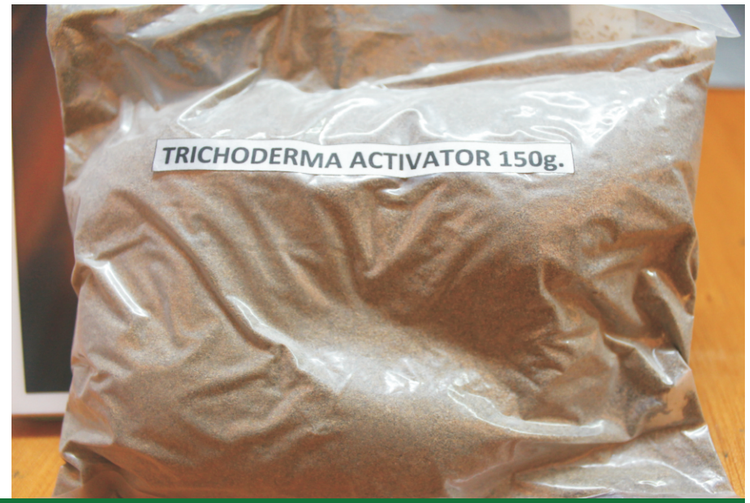
In an effort to promote practical techniques and user-friendly technologies used in producing food in urban areas, the Agriculture Magazine of the Manila Bulletin Publishing Corporation held its first-ever trade show titled "Urban Agriculture" on 1-3 May 2015 at Rockwell Tent, Makati City.

To support the event, the Bureau of Agricultural Research (BAR) participated as one of the sponsors and exhibitors. Among the featured technologies that BAR highlighted in its booth were Edible Landscaping and Simple Nutrient Addition Program (SNAP) of the University of the Philippines Los Baños (UPLB). These were featured in the exhibit through audiovisual presentations and distribution of Information Education and Communication (IEC) materials. Majority of the visitors were interested on how to grow vegetables through SNAP Hydroponics and how to landscape their own garden using green leafy vegetables and other herbs and spices.

UPLB College of Agriculture Dean, Dr. Domingo Angeles, spearheaded the ribbon-cutting ceremony together with Mr. Zac Zarian, Agriculture Magazine editor. Majority of the exhibitors were sponsors from the government and private sectors, and businessmen engaging in urban and organic agriculture. Also present in the event was Senate Committee Chairperson on Food and Agriculture Senator Cynthia Villar.

Also part of the event was the conduct of seminars related to urban agriculture. Dr. Primitivo Santos of UPLB-Institute of Plant Breeding, presented on "Container Gardening through SNAP Hydroponics," while UPLB Chancellor Dr. Fernando Sanchez, Jr. discussed on "Edible Landscaping". The resource speakers answered the visitors' inquiries particularly on how to properly utilize the technology, availability of the SNAP solution, and schedule of upcoming trainings. At the end of the seminar, BAR provided 10 Edible Landscaping kits as raffle prizes.
(Liza Angelica D. Barral)

Assuring healthy, bigger crops with Trichoderma



Product samples of Biospark Trichoderma and Trichoderma activator wherein the latter, a fungus, is used for rapid composting of agricultural residues to product compost. PHOTOS COURTESY OF TCD

"The technology will help minimize economic losses due to diseases, increase savings with reduced use of synthetic fertilizers and chemical pesticides, and increase crops' yield resulting to increased income," thus said by Dr. Virginia C. Cuevas describing the benefits of the *Trichoderma* microbial inoculant (TMI-Biospark Trichoderma), a technology developed by the University of the Philippines Los Baños (UPLB) and supported by the Bureau of Agricultural Research (BAR) under its National Technology Commercialization Program.

Under the study titled, "Promotion of the Package of Technology for Biocontrol of Major Diseases of High Value Crops in Benguet and CAR," the TMI aimed to be further commercialized and to increase the number of its farmer adopters.

Considered to be environment-friendly through less use of toxic chemicals, the technology contributes to environment protection and conservation. "TMI is for the biocontrol of crop diseases and with fertilizer effect which reduces the use of synthetic fertilizers by 50 percent and reduces use of chemical pesticides," Dr. Cuevas explained.

To date, close to 600 farmers already received free samples of 50-gram sachet of Biospark Trichoderma product and 100-gram of Trichoderma activator. The latter is a fungus used for rapid composting of agricultural residues to product compost. More than 100 farmers are now regularly utilizing and buying this product in an outlet in Abatan, Buguias, Benguet.

"With the use of Biospark Trichoderma, farmers are assured of more uniform, healthy, bigger crops harvested," Dr. Cuevas added.

Cultivated in Benguet, 24 high-value crops are being subjected into field trials. These include cutflowers (carnation, chrysanthemum, anthurium); leafy vegetables (cabbage, wombok, broccoli, romaine, lettuce, *pechay*, celery, beets); roots/tubers (potato, carrot, taro, beets, onion); fruit vegetables (beans, sweet peas, bell pepper, tomato, California pepper); fruit and plantation crops (citrus, strawberry); and grain crop (rice).

The area of Ambiong, La Trinidad, Benguet were visited by BAR staff members composed of Ms. Evelyn H. Juanillo, Mr. Alvin L. Fontanil, Mr. Gian Carlo R. Espiritu, and Ms. Leoveliza Carreon of the Technology Commercialization Division (TCD) for a field monitoring activity.

During the visit, Dr. Cirilo A. Lagman of the Benguet State University emphasized that the use of compost processed with activator in high-value crops on the farm site improves the physical soil condition and can thereby reduce the risk and impacts of climate change variability and extreme weather conditions such as droughts, dry spells, and heavy rains.

As result of the monitoring, the team recognized the big potential of *Trichoderma* as a biocontrol agent for diseases like damping-off and seed blight. Furthermore, its application accelerates composting of organic materials available in vegetable farms. ### ***(Ma. Eloisa H. Aquino)***

Farmers' association in Leyte benefits from soybean trainings

Convinced of the health benefits and economic potentials of soybean, members of the Dumarag Farmers' Association in Brgy. Dumarag, Pastrana, Leyte still actively engage and are able to maintain the planting of soybean. PHOTO:ABRION

Collaborative efforts among the Department of Agriculture (DA) through the Regional Field Office (RFO) 8, Bureau of Agricultural Research (BAR), High Value Crops Development Program (HVCDP), Cagayan Valley Research Center (CVRC), and other local agencies led to the conduct of various initiatives on soybean production and processing conducted in Region 8.

After the onslaught of Typhoon Yolanda in November 2013, series of trainings and seminars have been conducted focusing on the potentials of soybean as a source of food and livelihood. Leading these initiatives were Ms. Rose Mary Aquino, chair of the National Soybean Technical Working Group (TWG); Mr. Elmer Enicola, vice chair of Soybean TWG; and Ms. Jennilyn Castañeto, soybean focal person of BAR.

Upon seeking help from the DA-RFO 8, Sister Eloisa David of the Agricultural Rural Alternative Development Options (ARADO) Foundation, Inc. gathered farmers and representatives of farmer associations in different municipalities and barangays in Leyte to attend different soybean-related activities. Sister Eloisa is actively involved in rehabilitation efforts in the region, specifically in the agriculture sector. "Isa sa mga kaibigan ko 'yung kapitan sa Dumarag. She was one of our health workers before kaya sabi ko I can invite her and maybe we can start with her barangay. They have a very cooperative barangay. Until now, they're keeping their projects while the others have already laid low," Sister Eloisa said.

The Dumarag Farmers' Association in Brgy. Dumarag, Pastrana, Leyte believed and was convinced of the health benefits and economic potentials of soybean. "Mula po sa mga itinuro sa amin sa trainings, talaga pong napatunayan namin na napaka-healthy ng soybean. Kaya po mula sa limang representatives na nagpunta sa training noon with Sister Eloisa, itinuro namin ito sa mga kasamahan namin sa asosasyon dito sa Dumarag. Hanggang ngayon, patuloy pa din ang pagtatanim namin ng soybean," Teofila Mas, Brgy. Captain of Dumarag, shared.

Composed of 30 members, the association is one of the organized groups that still actively engages and is able to maintain the planting of soybean. Fifty percent of the seeds that they produce are being maintained for production, while the other half are being sold at P30 for half a kilo. According to Kapitana Mas, one thing that they have learned is not to focus on increasing

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> "Dahil sa **soya seeds** at **soya milk**, may **funds** na kami for soya. Nagagamit ito ng members ng association para sa **pagpapa-aral** ng kanilang **mga anak**."