



BAR is best performing agency



The Bureau of Agricultural Research (BAR) was rated as the Best Performing Agency under the Department of Agriculture (DA) for FY 2016. This was announced during a meeting facilitated by the Performance-Based Incentive System (PBIS) Technical

Working Group of the Department.

BAR bested five other staff bureaus of DA, achieving agency performance targets on its Major Final Outputs (MFOs) under the Performance Informed Budget (PIB) of the FY 2016 General Appropriations Act (GAA), as well as the targets for Support to Operations (STO) and General Administration and Support Services (GASS).

The Bureau also achieved a 100 percent satisfaction rate on the Good Governance Conditions (GGCs) set by the Inter-Agency Task Force on the Harmonization of Government Performance Monitoring, Information, and Reporting Systems (Administrative Order No. 25 s. 2011). Such conditions include maintaining the Agency Transparency Seal and enforcing accountability; maintaining and updating of the posting of all Invitations to Bids and awarded contracts in the Philippine

Government Electronic Procurement System (PhilGEPS); and compliance with the President's directive on improving all frontline services.

BAR scored a total of 95.20 percent in the final screening. Rounding up the six performing agencies under the DA's staff bureau group are the Bureau of Agriculture and Fisheries Standards (BAFS), Bureau of Plant Industry (BPI), Bureau of Soils and Water Management (BSWM), Bureau of Animal Industry (BAI), and the Agricultural Training Institute (ATI).

BAR Director Dr. Nicomedes P. Eleazar emphasized that pursuant to the present administration's order in enforcing a more transparent bureaucracy that is accountable to Filipinos, BAR is committed to deliver its mandate efficiently and truthfully, in service to the agriculture sector and the Filipino people as a whole. ### (Daryl Lou A. Battad)

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The Bureau of Agricultural Research (BAR) led a consultation meeting with the Centre for Agriculture and Biosciences International-Southeast Asia (CABI-SEA) on 14 December 2017.

Represented by Integrated Crop Management Advisor Arnaud Costa, CABI expressed its intent to contribute to the Philippines' research on the control and management of onion armyworm (*Spodoptera exigua*) populations to avoid infestations and outbreaks. Also, present were experts from the University of the Philippines Los Baños - National Crop

Protection Center (UPLB - NCPC) and Pampanga State Agricultural University (PSAU).

BAR Director Nicomedes Eleazar, represented by Digna Sandoval, head of the Institutional Development Division (IDD), discussed the rationale of the meeting in view of collaboration with CABI shedding light on the issue of the onion armyworm outbreak. Moreover, she gave an overview of the Department of Agriculture (DA)'s research program to address the infestation and the on-going projects that the bureau has funded since July 2017.

DA included the need for a comprehensive study on the alternative control measures for onion armyworm among its research priorities as a response on the first outbreak reported in Tarlac, Nueva Ecija, and Pangasinan in 2016. As cited in a UPLB-NCPC study, approximately 5,330 hectares were affected with losses amounting to PhP 1.6 billion.

To identify research areas yet to be addressed, proponents of the on-going onion armyworm projects from UPLB-NCPC gave presentations about their progress and recent findings. Dr. Marcela Navasero

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AFACI recognizes ATIN Philippines as 2017 most outstanding project



Ms. Julia Lapitan (right), AFACI-ATIN principal investigator, presenting the accomplishments of the project during the 2017 ATIN Workshop in Lao PDR. PHOTO COURTESY OF JLAPITAN

A few days before the year ends, the Agricultural Technology Information Network in Asia (ATIN) Project in the Philippines, headed by Bureau of Agricultural Research (BAR) Director Nicomedes Eleazar, was recognized by the Asian Food and Agriculture Cooperation Initiative (AFACI) Secretariat as the “2017 Most Outstanding Project”. Meanwhile, Ms. Julia A. Lapitan, head of the BAR-Applied Communication Division, was recognized as the “2017 Most Outstanding Principal Investigator (PI) of ATIN”. The announcement was made through an official letter sent by Jang Jung-hee, deputy secretary general of AFACI, on 14 December 2017.

ATIN is one of the projects under the Extension Program that is being coordinated by AFACI, to which the Philippines is a member-country. ATIN is an initiative that aims to build a standardized network and/or web-based information

database system for agricultural knowledge and share information among AFACI member-countries. Among its expected outputs include maintenance of AFACI website as a platform to upload and share technological innovations and relevant information; publication and distribution of IEC materials including crop calendars, production guides, etc.; and building network of database on agricultural information from research outputs that can be systematically shared and retrieved by member countries.

Aside from ATIN, the Philippines was also recognized for its Postharvest Project and its PI, Dr. Perlita A. Nuevo, assistant professor, Postharvest Horticulture Training and Research Center-University of the Philippines Los Baños (PHTRC-UPLB).

AFACI, established in 2009 in South Korea, is a multilateral initiative aimed to promote sustainable agricultural growth and contribute in the economic

development of the Asian region through technological cooperation and networking in food and agriculture sector. Its Secretariat is based at the International Technology Cooperation Center (ITCC), Rural Development Administration (RDA) in Jeonju, South Korea. ### (Rita T. dela Cruz)



Ms. Julia Lapitan, principal investigator of AFACI-ATIN Philippines. PHOTO: RDELACRUZ

—EDIBLE LANDSCAPING— launched in Sorsogon

Director Nicomedes Eleazar of the Bureau of Agricultural Research (BAR) graced the inauguration and turnover ceremony of the Edible Landscaping (EL) project in Sorsogon on 1 December 2017 in Casiguran, Sorsogon.

The University of the Philippines Los Baños (UPLB) introduced EL technology in 2010. It is an innovative approach to creating attractive and functional spaces while producing safe and nutritious food including fruits, herbs, and medicinal plants instead of the usual ornamental plants which are used mainly for its aesthetic value.

Funded under BAR's National Technology Commercialization Program (NTCP), the project covers the establishment of demonstration gardens in five different sites in Sorsogon. These include the Dairy Technology Farm in Cabid-an; Bicol University-Gubat Campus (BUGC); Local Government Unit (LGU)-Barcelona; LGU-Casiguran; and Sorsogon National High School.

Present during the

launch were Rep. Evelina G. Escudero of the First District of Sorsogon; Dr. Edgar Madrid, regional technical director for Research and Regulations of the Department of Agriculture-Regional Field Office 5; Dr. Dolores E. Ricafranca, center chief, Regional Dairy Production and Technology Center-Regional Outreach Station (ROS) 5; and Dr. Rosemarie Jadie, director of BUGC.

Dr. Eleazar, in his message, commended the dedication and enthusiastic spirit of the whole EL Team to accommodate requests for trainings from various organizations. He also shared that the EL sites can be adopted not only in the backyards but it can also serve as agri-tourism sites that can be established in schools, offices, municipal halls, among others, hence, create established linkages among various institutions like the government, private sector, and other stakeholders.

Dr. Edna A. Aguilar, director of the Institute of Crop Science, College of Agriculture and Food Science, UPLB, represented UPLB Chancellor Fernando

Sanchez, Jr. and delivered his message. "It is also our hope that in time, what we have here in Gubat, Sorsogon shall also inspire other locales in our country to adopt the edible landscaping program in their own communities and integrate

it their respective development plans. With the inauguration of the Edible Landscaping Project here in Sorsogon, we believe that the opportunity for resolving food security and malnutrition in our communities is now at hand," said Chancellor Sanchez.

During the turnover ceremony, Dr. Eleazar and the EL Team handed over to officials and representatives of the five different sites: Mr. Samuel Encinares, SB member, Casiguran; Hon. Maria France Fortades, vice mayor of Barcelona, Sorsogon; Dr. Jadie.; Ms. Marilyn Divina, school principal, Sorsogon National High School; Rep. Escudero; and Dr. Ricafranca.

Dir. Eleazar visited the EL sites BUGC and at the Casiguran Municipal Hall, Sorsogon.

Prior to the launch and turnover ceremony, a hands-on training was conducted last year and was facilitated by the EL Team and BAR staff at DA-Regional Dairy Production and Technology Center in Cabid-an, Sorsogon City. This was attended by on-the-job students currently at their station for training; active and retired teachers from state universities and colleges and Farmers-Field-School program and staff of DA-ROS 5. ### *Ma. Eloisa H. Aquino*)

PHOTO: MEHERNANDEZ



BAR Director Nicomedes Eleazar delivers a message during the EL inauguration and turnover ceremony.

PHOTO: FGRETCHIN



(L-R) Dr. Edgar Madrid, RTD for Research and Regulations of DA-RFO 5; Dr. Dolores Ricafranca, center chief of the Regional Dairy Production and Technology Center-ROS 5; Rep. Evelina Escudero of the First District of Sorsogon; and BAR Director Nicomedes Eleazar in a photo op during the event. PHOTO: FGRETCHIN

Aligning R&D regional projects with DA priorities highlights RM meeting



PHOTO: RDELACRUZ

Bureau of Agricultural Research (BAR) Director Nicomedes Eleazar stressed the need to align all research and development (R&D) activities in the regions, including state universities and colleges (SUCs), with the directives and priorities set by the Department of Agriculture during the 4th Quarter Research Managers' (RM) Meeting held on 4 December 2017 in Tagaytay City. He also mentioned specific R&D initiatives that emanated from Secretary Emmanuel Piñol that the regions and selected SUCs are

leading and implementing including projects on water lily and banana stalk, Spanish Red pineapple, and jute sack.

Dr. Eleazar acknowledged the contributions of the regions in delivering the necessary R&D outputs for the sector. "It is a group effort. We are a family in research. The DA-Regional Field Offices (RFOs) have created the great impact in your support to BAR. We cannot do it without you," the bureau chief said.

Institutionalized in 2014, the RM Meeting is a quarterly

activity led by BAR that serves as a venue to update the regions on the various agriculture and fisheries R&D programs, projects, and activities. It paves the way for the complementation of all R&D efforts and priorities and facilitates a discourse on emerging issues and concerns in the sector.

Among the specific topics discussed during the meeting included policies and guidelines on RDE income utilization, financial matters, zonal RDE network updates, Information and Knowledge Management (IKM) Mentorship Program, among others.

Attending the meeting were regional technical directors (RTDs) including Ms. Rose Mary Aquino of DA-RFO 2, Dr. Edgar Madrid of DA-RFO 5, Dr. Elvira Torres of DA-RFO 8, Ms. Ma. Melba Wee of DA-RFO 9, Dr. Angelina S. Pancho of DA-RFO 11, and Dr. Segundina Gaerlan of DA-Bureau of Fisheries and Aquatic Resources (BFAR) Region 1. Also in the meeting were research managers from the research divisions of 16 DA-RFOs and BFAR-Regional Offices, and key officials and technical BAR staff.

The RM Meeting is facilitated and organized by the Program Monitoring and Evaluation Division. ### (Rita T. dela Cruz)



BAR Director Nicomedes Eleazar (center) leads the RM Meeting. With him are RTD Ma. Melba Wee of DA-RFO 9 (right) and BAR Asst. Director Teodoro Solsoloy (left).

PHOTO: RDELACRUZ

FARMERS' FIELD DAY PROMOTES BIOCON AGAINST EGGPLANT PEST



Participants from vegetable and fruit growers associations during the field day and tech demo held at the MJD Farm in Lucena City.

PHOTO COURTESY OF PLESACA

A group of organic vegetable and fruit growers associations, participated in the field day and technology demonstration on the effectiveness of earwig and botanical insecticides against the major insect pests of organically-grown eggplant. The field day was held on 13 December 2017 at the MJD Farm, owned by Engr. Bonifacio and Engr. Millet Seguit, in Lucena City.

Among those associations that participated were the Magsasaka at Seyentistang Kapisanan Pangkaunlaran (MASIPAG)-Lucena; Federasyon ng Magsasaka ng Gulay at Prutas (FEMAGUP); and Bukluran ng Magsasaka sa Bagong Lucena (BMBL).

The lecture-demo featured the project titled “Management of Eggplant Fruit and Shoot Borer (EFSB) and other Major Insect Pests of Organically-Grown Eggplant with Emphasis on Biological Control Agents and Botanical Insecticides in Quezon, Laguna and Batangas” funded by the Bureau of Agricultural Research (BAR).

The activity was organized by Dr. Pio A. Javier, project leader and formerly a professor from the Institute of Weed Science,

Entomology and Plant Pathology, College of Agriculture, University of the Philippines Los Baños (UPLB), and his colleagues led by Ms. Evangeline G. Punzalan, also from UPLB.

The technology demonstration was held to capacitate farmer-beneficiaries who are directly involved in the project and to share and cascade the different technologies and control methods that were reported to be effective against EFSB. The EFSB is a menace in eggplant production, not only to farmers, but also to neighboring farmer-groups, particularly in the provinces of Quezon, Laguna, and Batangas. EFSB, also known as shoot borer, has been one of the most lethal insect pests, for it attacks flowers, flower buds, young shoot tips, stems and fruits. Losses attributed to shoot borer ranged from 50 to 75 percent.

Part of the activity was a welcome message of BAR Director Nicomedes Eleazar, read by Mr. Ryan Ogao-Ogao of the Project Monitoring and Evaluation Division. Dr. Eleazar mentioned that “the bureau has been braving the path towards improving and optimizing our valued commodities, such as rice, corn, fruits and vegetables, fisheries,

livestock and poultry, and that we do not only utilize for health-wise consumption but also for generating sustainable income and livelihood.”

Dr. Javier, prior to the actual demonstration on the effectiveness of the different control methods, gave a lecture on pest management and other diseases affecting fruits and vegetables in the country. The project leader also concluded that the different non-chemical control methods such as release of earwigs, spraying of *langkauas* + oregano crude water extracts, and sanitation were as effective as the spraying of *Methomyl*, the conventional method of controlling EFSB.

As a testament of support to the organic agriculture industry and in helping farmers appreciate organic farming, BAR, through its Applied Communication Division, distributed the publication, “Compendium of BAR-Funded Projects under the National Organic Agriculture Program 2011-2016” to farmer-participants. The compendium featured projects on farming and fishing technology of choices and innovations that will spur food production through organic farming methods. ### (Patrick Raymund A. Lesaca)

BAR seminar features heirloom rice and rice-based products



Dr. Vera Cruz of the International Rice Research Institute presents their research on heirloom rice.



Ms. Rocafort of the National Food Authority – Food Development Center discusses their research on *tupig*, *bibingka*, and *puto*.

PHOTOS: RHERMOSO

The Bureau of Agricultural Research (BAR), through its Applied Communication Division, conducted an in-house seminar featuring BAR-funded research projects on heirloom rice and rice-based products. Dr. Casiana M. Vera Cruz, senior scientist from the International Rice Research Institute, and Ms. Rachel F. Rocafort, senior research specialist from the National Food Authority - Food Development Center, served as the resource speakers for the seminar held on 14 December 2017.

Dr. Vera Cruz discussed their research project titled, “Raising Productivity and Enriching Legacy of Heirloom Rice through Empowering Communities in Unfavorable Rice-based Ecosystem” (also known as the Heirloom Rice Project). According to her, the goal of the Heirloom Rice Project was to reduce poverty and improve the quality of life of the rural highland indigenous peoples’ (IP) communities in the Cordillera Administrative Region.

She talked about identifying and characterizing the heirloom rice varieties, enhancing local capacity and enterprise building, identifying opportunities for value addition and market linkages for heirloom rice using value chain analysis, and

documenting model, knowledge management, and participatory monitoring and evaluation of project activities.

She also discussed the activities that added value to the heirloom rice: registering cooperatives under the Cooperative Development Authority; registering collective mark under the Intellectual Property Office of the Philippines; crafting codes of practices; developing business plans and series of workshops and trainings; improving packaging material, labelling, and assessing shelf-life; and, doing promotional campaigns.

On the other hand, Ms. Rocafort talked about their project titled, “Improving the Quality and Shelf-life of *Tupig* and Other Rice-based Products.” According to her,

the quality of rice-based products such as *tupig*, royal *bibingka*, and *puto* varies because most of these products are from small scale productions. Thus, there is no standard formulation. Normally, these rice-based products have a short shelf life from two to three days. This is dependent to the product’s initial quality, the type of packaging material used, the presence of oxygen and water vapor, and the storage condition.

She talked about improving the quality of *tupig*, royal *bibingka*, and *puto* through optimization using mixture experiments, determining if the target shelf life of two months will be achieved, and assessing the type of packaging materials that will extend the shelf life of the said rice-based products at different temperatures. ###
(Rena S. Hermoso)



PHOTO: IIRI

RDA-Korea officials visit BAR



Dr. Hyo-sub Lee of RDA-Korea



Dr. Dan-bi Kim of RDA-Korea



Ms. Julia Lapitan, head of BAR-Applied Communication Division, hands over some publications to the visitors.

PHOTOS: PRLESACA

Officials from the Rural Development Administration (RDA) of South Korea, Dr. Hyo-sub Lee and Dr. Dan-bi Kim, visited the Bureau of Agricultural Research (BAR) on 14 December 2017.

The visit was part of their research initiatives on pesticide residues on crops. Meeting them were officials and technical staff of BAR led by Julia A. Lapitan, head of the Applied Communication Division (ACD) and principal investigator of

the RDA Asian Food and Agriculture Cooperation Initiative-Agricultural Technology Information Network (AFACI-ATIN).

The meeting focused on the understanding and appreciation of the two agencies' directions toward government-led policies on residual pesticides. Other related research and development (R&D) initiatives on the matter were also discussed.

Also present during the meeting were Mr. Gideon Torollo of the International Rice Research

Institute (IRRI); and Mr. John Gregory Aquino and Mr. Vincent Tecson of the Bureau of Agriculture and Fisheries Standards (BAFS), who presented the bureau's mandates on food security measures and protocols pertaining to commodity-specific Philippine National Standards.

RDA is the central government organization responsible for extensive agricultural research and services in Korea. It is based in Jeonju, South Korea ### (*Patrick Raymund A. Lesaca*)



Korean visitors with BAR staff, Mr. Gideon Torollo (right, second row) of the International Rice Research Institute; and Mr. John Gregory Aquino (right, first row) and Mr. Vincent Tecson (2nd from right, first row) of the Bureau of Agriculture and Fisheries Standards.

Last leg of workshop on commercial crops held



National Review and Planning Workshop for BAR-funded R&D Projects on Commercial Crops (Fruits)
December 4-8, 2017

Serving as the last leg of the series of workshops on commercial crops, the Bureau of Agricultural Research (BAR), in collaboration with the High Value Crops Development Program (HVCDP), conducted the “National Review and Planning Workshop for BAR-funded R&D Projects on Commercial Crops (Fruits)” on 4-8 December 2017 in Tagaytay City.

The activity aimed to put research and development (R&D) interventions in place, this time with emphasis on fruits, to support the targets of the industry, the HVCDP, and the agriculture department as a whole. The series of workshops that BAR conducted since June serves as an important bases in the prioritization of R&D efforts, specifically for commercial crops. Taking into account every sub-system of the whole value chain, the workshops are expected to come up with streamlined and prioritized R&D projects for the next five years that are aligned with the current thrusts and priorities of the Department.

In his message, BAR Director Nicomedes P. Eleazar mentioned the significant role that the fruits sector plays in international agricultural trade, especially in terms of foreign earnings from export-related activities. “The Philippine government through the agriculture

department gives utmost priority to these national fruit crops – along with other high value crops – not only for augmenting foreign earnings, but also for their potentials in generating jobs. Following the pronouncement of Agriculture Secretary Emmanuel Piñol, processing and value-adding will be the key words in the high value crops sector. Equal importance is likewise given to the regional champion fruit commodities and indigenous fruit crops that are of economic importance and contribute significantly to our bid to achieve food security,” he said.

Prior to the workshop proper, industry status of national priority fruit commodities were presented by Ms. Jallyne Remoquillo of the Bureau of Plant Industry’s HVCDP for fruits (overview), Mr. Antonio Rola of the Philippine Council for Agriculture and Fisheries for mango, Dr. Agustin Molina of Bioversity International

for banana, and Ms. Marylene Perez of Dole Philippines, Inc. for pineapple. Meanwhile, focals from BAR reported the status, updates, and accomplishments on fruits R&D.

Meanwhile, in the break-out sessions, the participants were grouped into three to work on: 1) national priority fruit commodities, 2) regional champion fruit commodities, and 3) indigenous fruits. Outputs were presented afterwards by a representative from each group.

In closing, BAR’s Program Development Division (PDD) Head Joell Lales acknowledged the participation of everyone and mentioned that the collective efforts exerted by the group will be contributory to the overall objective of the workshop.

Spearheaded by PDD, the workshop was attended by commodity experts, research directors, regional coordinators, focals, and representatives from the DA family, academe, and private sector. ### (Anne Camille B. Brion)



BAR Director Nicomedes Eleazar stresses the significant role of the fruit sector in world agricultural trade. PHOTOS: ACBION



BAR supports commercialization of goat processed products



Canned chevon products



Packed, microwaveable chevon products

PHOTOS: GAMALINAO

Chevon or goat's meat is a common dish in the rural areas. Various Filipino celebrations often include specialty cooked goat dishes such as *kaldereta*, *kilawin*, *pinapaitan*, and *sinampalokan*.

Putting added-value to the usual goat's meat, the Isabela State University - Cagayan Valley Small Ruminants Research Center (ISU-CVSRRRC) in Echague, Isabela developed various products from chevon which are now packed into canned and microwavable meals capturing a wider scale of the Filipino market.

Now under its trade name, *Chevlon Valley*, ISU-CVSRRRC developed various products from chevon: canned and ready-to-eat. Among the canned chevon products include Goat's Happy Feet, Chevon Curry, Chevon Mechado, Chili-garlic Chevon, and Pounded Chevon with filings; while the ready-to-eat products include chevon meat balls and classic dip, chevon with white sausage toppings, and chevon ribs with chestnut sauce.

"Canning was conducted to preserve the food from one year or more. By doing so, chevon products can reach market outside the country, such as Middle East wherein demand for goat is high," said Dr. Jonathan

Nayga, director of CVSRRRC who also serves as the project leader.

He shared that goat meat production is regarded as the principal function of goat raising among developing countries. In the Philippines, the province of Isabela as dominated by *Ilokanos* are known to be "goat-eating" people. And as a common practice in the past to sell goat on a per head basis, Filipinos are now introduced with the healthier option of consuming chevon among the usual red meats available in local markets such as pork and beef, and even chicken meat.

Chevon can be consumed fresh, chilled, or frozen. It has lower amount of saturated fats and has high levels of unsaturated fats as compared to other meats. Saturated fats increase the risk of acquiring cardiovascular diseases while unsaturated fats help improve blood cholesterol levels and lowering the risk having heart diseases. It has lower calories and cholesterol, and has high levels of iron and protein when compared to equal serving sizes of chicken, beef, and pork. Compared to other commercially-available canned meat, ISU's products have no preservatives.

Seeing the potential to capture larger Filipino consumers, capturing the exquisite tastes of

the local delicacies, especially those living in the urban areas and at the same time to help the goat raisers in the country, the Bureau of Agricultural Research (BAR) funded in 2014 the technology transfer of chevon product processing and commercialization of new chevon products under the National Technology Commercialization Program (NTCP).

Realizing the potential of this growing industry, Region 2 has implemented various R&D projects encompassing the whole production-to-processing cycle since 2006. Goat raising in particular is an ideal livelihood options for farmers in the rural areas since goat raising has low capital investment, and can make use of locally available forages and grasses. "Moreover, the current demand for chevon in the international market also initiates local producers to raise more," Dr. Nayga added.

Based on the computed return of investment (ROI), all chevon products has a positive profitability with chevon meat balls having the highest ROI at 62.32 percent among the processed chevon sold at meal boxes.

The product development

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PHOTO: RDELACRUZ

Adlay:

Attaining food security and empowering IP community

Story by Rena S. Hermoso

The indigenous crop, *adlay*, has recently gained much attention as a healthier alternative staple food compared to rice. It is said to be gluten-free, a great source of protein, and has low glycemic-index. It contains calcium, phosphorus, iron, thiamine, riboflavin, and niacin. With these benefits, it's no wonder why it has increasingly been the "go-to grain" for health-conscious individuals.

It was almost a decade ago when the Department of Agriculture (DA) started to promote *adlay* as an alternative staple food to help achieve food security in the country. Since then, the research and development (R&D) initiatives on *adlay* of the Bureau of Agricultural Research (BAR) and other R&D agencies

helped in improving the production and development of *adlay*.

As cultural crop

Before *adlay* took the limelight as an alternative staple food commodity, the indigenous people (IP) from the upland area in Bukidnon, Northern Mindanao have known it all their lives. Just like the Subanen tribe from the neighboring Zamboanga Peninsula, the Talaandig tribe also uses *adlay* to make wine.

Before the entrance of the modern way of living, wine drinking is a symbolic activity to encourage fruitful discussion among cultural masters according to Datu Migketay (Victorino L. Saway), Talaandig tribal administrator. He further elaborated that, "the function of *adlay* is more

on social gathering to share cultural information like customs, traditions, and beliefs in relation to the life of the community."

Aside from processing *adlay* into wine, the Talaandig tribe also uses it as a buffer crop for their rice fields. According to Datu Migketay, the farmers plant *adlay* around the area to divert the attention of rats and domesticated animals like chicken from eating into their rice paddies. He explained, "*kung maraming adlay madali silang mabubusog kasi mas malaki ang adlay kaysa rice, so hindi masisira ang crops [nila].*"

More so, according to Datu Migketay, the consumption of *adlay* as food for the community only happens in the rare event when the stock for rice, corn, and other root



PHOTOS: RDELACRUZ

Kibuwa, a variety of Adlay that grows the Talaandig Tribe abundantly cultivates in Bukidnon.

crops runs short. He emphasized that this does not happen normally “*kasi basically rice and corn lang talaga at saka root crops, ang major crops na kinakain.*”

As a commercial crop

There were two major events that encouraged and eventually led the Talaandig tribe to plant more *adlay* for food consumption, according to Datu Migketay. The first one occurred when it was identified as one of the possible cultural crops that the seven tribes of Bukidnon could use for their campaign on food security. The second one was when a researcher from the Central Mindanao University who wanted to prove that *adlay* helps in the promotion of growth among children went to their community to conduct an experiment. Through this research, they realized that *adlay* contains more nutrients than rice.

More so, upon learning that the DA-Northern Mindanao Agricultural Crops and Livestock Research Complex (NMACLRC), formerly known as Northern Mindanao Integrated Agricultural Research Center or NOMIARC, has also been promoting *adlay* and that they have developed a milling system for it, they were given more reason to focus on *adlay* and the idea of mass

producing it came to life.

Currently, they are in partnership with the Hineleban Foundation, a Bukidnon-based non-government organization. According to Datu Migketay, “Hineleban started to help the farmers as their partner, the Kauyagan team, they helped us in the production of *adlay* and open the market. Also, Hineleban provided the linkages for us, so there are prospects for it. *Marami din gustong mag-order ng adlay grains dahil sa nutritional value nito. So dito nagsimula ang concept ng pagbenta ng adlay.*”

As a means for empowerment

With the growing attention and interest on cultural crops such as *adlay* as a means to attain food security, Datu Migketay shared his insights saying, “*Sana ang pagtingin ng cultural crops, hindi lang natin makita ‘yong economic opportunities but holistic dapat ang ating pagtingin.*” He shared that, due to cultural crop such as *adlay*, we are looking towards the unity of the people, sustainability, cultural protection, and environmental conservation. We have to preserve our forests. We have these crops as instruments of conservation. It is also our tool of empowering the [IP] communities.”

More so, he also emphasized

Datu Migketay, leader of the Talaandig Tribe, discussing the role of adlay in their tribe and in the community.

that these endeavors towards attaining food security should also reflect on how the farmers should look at themselves. He said, “*Sana dito maipakita natin na farmers dapat ang tingin nila sa sarili nila, ‘they are really the backbone of this community.’*”

While it is important to attain food security in the country, it is also of equal importance to learn about and respect the IP communities that grow this crop. Besides, the success of *adlay* could benefit all of us — it could feed our people and it could help pave the way to foster understanding and good relationship between the IP community and the majority. ###

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CPAR Farmer-cooperators, Benito Abes and Warlito Manipon

Growing the same crop year after year, intensive use of pesticides, planting low yielding varieties — for some farmers, these are common agricultural practices. But for most, especially those who know the basic principles of soil conservation and management, this could be a disaster waiting to happen. The culprit could either be a lack of a better alternative or a lack of information.

Benito Abes, 47, has been a farmer ever since he could remember. He owns an agricultural land in Simimbaan, Roxas, Isabela which, he inherited from his parents. For more than 30 years, he's been into

DEVIATING FROM AN OLD PRACTICE

with CPAR

Story and Photos by Rita T. dela Cruz

monocropping system, a farming practice of growing a single crop year after year on the same land. His main crop is either rice or tobacco, which are predominantly planted in the progressive town of Roxas. He also uses chemical fertilizers intensively to nourish his crops with the hope that he will harvest the expected yield for that particular cropping season.

"This is a common practice here," he retorted. He's heard of good agricultural practices (GAP) before particularly, integrated pest management (IPM), and has been toying with the idea of switching to other short season crops like lowland vegetables but he does not know how and where to get the information.

Warlito Manipon, 49, residing in the same town, has also been into monocropping. He grows hybrid yellow corn which causes him expensive farm inputs and hard labor. It takes him 3-4 months to harvest, "wala pang kalahati ang tubo" he said. He wanted to engage into other crops as well, but doesn't know what varieties are good for his land, and where to get the seeds.

CVRC on CPAR

The Cagayan Valley Research Center (CVRC) of the Department of Agriculture-Regional Field Office (DA-RFO 2) has been one of the driving forces in implementing various Community-based Participatory Action Research (CPAR) projects in the region. CPAR, a flagship program of the Bureau of Agricultural

Research, is a location-specific research cum extension activity that introduces improved farming system technologies for specific micro agro-climatic environments within a province or a municipality.

"All of our CPAR projects are problem-based. We try to provide exactly what the farmers need. And since CPAR looks into the holistic aspect of the community, we see to it that everything is covered so, as not to waste the government's resources," explained Rose Mary Aquino, DA-RFO 2 regional technical director for research and regulations.

CVRC is also a prime plant breeding institution in Region 2. Most of the seeds are either bred and produced in the center to cater to the specific needs of the farmers and suited to the region's own agro-climatic condition.

One of the primary goals of CPAR projects is the improvement of crop yield, which will eventually redound to the improvement of farmers' income. One of the CPAR projects that CVRC is currently being implemented is the "CPAR on Off-Season GAP-based Pinakbet Vegetable Production in Support to the Food Trading Business in Roxas, Isabela".

Mary Jane B. Ibarra, CPAR co-project leader, cited that the main objective of the project in Roxas is to increase the lowland or pinakbet vegetable production and to increase the income of farmers by introducing

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Farmer-cooperators, Benito Abes (2nd from left) and Warlito Manipon (right) and other farmer-members of the Simimbaan Farmers' Association religiously practice recordkeeping as taught in CPAR.

package of technology (POT). “Eventually, the project hopes to turn the CPAR site into an agri-enterprise business and establish sustainable support mechanisms and benefit more stakeholders,” she added.

Roxas, a rising town

Situated in the central-western part of Isabela Province, Roxas is a partly urban and partly rural town. Its rural area is composed mainly of rice fields with rice as the predominant crop, planted twice a year, followed by corn.

Roxas also prides itself as the top producer of lowland or “pinakbet” vegetables in Cagayan Valley. In fact, to further boost its production, a trading center was established at the heart of this progressive town.

Established in 2015, the Roxas Agri-Pinoy Trading Center (RAPTC) is a farmer-led trading system that sources out and sells products directly from the farmers and agri-processors within the locality or in target catchment areas. This is a collaborative project of DA-RFO 2 and the local government of Roxas. It serves as a market venue for vegetable growers not only in Roxas

“ CVRC introduced an improved production technology with GAP-based production for off-season pinakbet vegetables. The technology was introduced and demonstrated in demo-farms in Simimbaan, Roxas, Isabela with 18 CPAR farmer cooperators. ”

but its neighboring municipalities and provinces.

Brgy. Simimbaan is an adjacent vegetable-growing barangay in Roxas, which is also one of the CPAR sites. During the participatory rural appraisal conducted in the area, it was found that some of reasons for the low supply of *pinakbet* vegetables in the trading center were: low yield due to pest and disease infestation, poor soil fertility, and use of low yielding varieties.

In the report of Ibarra during the CPAR project review, she mentioned that aside from monocropping, which has been a common practice in the area, farmers lack the knowledge on pest

and disease management. “This aggravated the buildup of disease virulence particularly in areas wherein monocropping is being practice,” she cited. The common practice of farmers is to use chemical pesticides in a monocropping system making the crops susceptible to pests and disease thereby reducing the volume of produce.

It was also found that most farmers in the area do not have access to new and high-yielding varieties, “so they resort to low-yielding varieties while poor soil fertility was due to farmer’s inability to procure sufficient inputs to sustain their crops,” she added.

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Ms. Mary Jane Ibarra, DA-CVRC agriculturist and CPAR co-project leader, explains the various interventions adopted by the farmer-cooperators.



Mr. Benito Abes (right) discussing the benefits of being a CPAR farmer-cooperator and how he is able to assist other farmers in the community to adopt the same technologies/interventions he learned from the project. PHOTOS: DBATTAD

CVRC introduced an improved production technology with GAP-based production for off-season pinakbet vegetables. The technology was introduced and demonstrated in demo-farms in Simimbaan, Roxas, Isabela with 18 CPAR farmer cooperators. “The off-season *pinakbet* vegetables are planted from June to July and the intercropping of corn and cowpea are planted in December,” Ibarra explained.

Among the technologies or interventions introduced through the CPAR are: high-yielding varieties (*ampalaya*, eggplant, tomato, pepper, and pole sitao); Integrated Pest Management; fertilization technology (recommended rate of inorganic + organic)

Farmers go into mixed cropping

“Appeal to common practice” argues on the premise that a practice is deemed correct based on past or present tradition. It argues that something is “right because we have always done it this way”.

This has been the case of farmers, Abes and Manipon.

But ever since they’ve become CPAR farmer-cooperators, they’ve learned to deviate from their old practice. The CPAR program of the government seems a novel idea to them, but experiencing the results

themselves, they’ve learned that old practice is not always superior to new ideas.

It has been known that monocropping strikes out the nutrients from the soil leaving it weak and unable to support healthy plant growth. With poor soil quality, farmers are encouraged to use chemical fertilizers to boost production. Monocropping likewise creates the spread of pests and diseases, promoting virulence pests and diseases.

Abes mentioned that, “before I’ve been planting *ampalaya* only, but through CPAR, I learned mixed cropping and applying the technologies on IPM and proper fertilization.” He stressed that, having learned of these new technologies is what attracted him in joining CPAR. “Before we just apply chemical fertilizers in our crops but when we learned about GAP, we realized the importance of using inorganic fertilizer in recommended dosage,” he recounted.

“I was attracted in joining CPAR because they provided us good, quality seeds; and technical assistance on what specific vegetables to grow. The group of CVRC also regularly monitors our vegetables so that it’s good that we are being guided accordingly,” Manipon explained.

Both Abes and Manipon have followed the technologies in CPAR and

are now reaping the harvest of success.

In a cost and return analysis presented by Ibarra, it is estimated that by planting mixed vegetables in a 2000-square meter plot area, Abes earns a net income of Php71,400 with a cost of production of Php35,379. Meanwhile, for Manipon, with his 3200-square meter plot area planted with mixed vegetables, his cost of production amounts to Php43,343 but will earn him a net income of Php101,718.

As taught in CPAR, both farmers practice recordkeeping.

“We have trading center here so marketing our produce is not difficult. We have also recently established an association, the Simimbaan Farmers’ Association, to better organize the CPAR farmers. In four months, *malaki na ang naitulong ng CPAR sa akin. Una kapag walang mabiling pagkain, puwede na yung tanim mo. Tapos palagi pa kaming ginagabyan ng mga taga CVRC, namomonitor nila yung tanim naming lalo na kapag may sakit*,” Manipon said. ###

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PHOTO: GAMALINAO

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The ISU collaborated with Agricomponent Co., a private company, to be the exclusive franchisee of *Chevon Valley*. Agricomponent served as the private-partner of ISU responsible in the manufacturing and distribution of products nationwide. All products undergo proximate analysis to make products ready for commercialization. ### (Ma. Eloisa H. Aquino)

BAR meets...from page 2



PHOTO COURTESY OF PESTNET.ORG

Effect of onion armyworm (*Spodoptera exigua*)

has been conducting studies on the biology, development, and natural enemies of onion armyworm while Dr. Mario Navasero is into insecticide management and resistance studies. The efficacy of bio-pesticides and microbials against onion armyworm was given focus by Ms. Michelle Guerrero while Mr. Melvin Ebuenga aimed to develop a system for early detection and warning surveillance and monitoring.

After the discussions, Dr. Costa mentioned the importance of formulating long-term solutions involving the study of the root cause of the abrupt rise in onion armyworm populations. He emphasized that the importance of the technologies developed is largely dictated by their accessibility and acceptability to the farmers. Real-time communication and information dissemination is also crucial. Dr. Ravindra Joshi from PSAU noted the urgency of efficient systems for bio-pesticide production.

Following the consultation meeting was a field visit at PSAU with university president, Dr. Honorio M. Soriano Jr. along with other resident experts, officials, and staff. Being a well-recognized agricultural university in Central Luzon, their experiment stations and research facilities were visited. These may be employed in the upcoming onion armyworm project supported by BAR and CABI. ### (Ephraim John J. Gestupa and Nadine B. Coronado)



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