CONT...

BAR participates...from page 12

PHOTO BY RBERNARDO

livestock as per the Research and Development Extension Agenda Programs (RDEAP) for 2011–2016. With problems on breeding, diseases, and waste management and utilization still holding back the industry, gatherings like this provide better opportunities to resolving current issues, and providing other developments in researchable areas including breed, meat, and milk.

Exhibits and events like this trade fair demonstrate the commitment of the private sector and government agencies to realize our Filipino goal of sustainable development and food security. Conventions that bring sectors of an industry together under one roof breathes nothing but a productive atmosphere that will yield better production techniques and healthier and improved livestock.

The three-day activity focused on small ruminant production—because of the commitment of the participants, exhibitors, and the organizers—will definitely have a longer lasting effect on the goat and sheep industry in the Philippines. *(Ricardo G. Bernardo and Zuellen B. Reynoso)*

Bioversity...from page 2

enhance the skills of the stakeholders, effective information, education and communication (IEC) will be produced and disseminated for information awareness.

"The scope of work focuses on the overall goal of reducing risks to food security and livelihoods of smallscale farmers in banana-based agricultural systems by preventing the further spread of *Fusarium* Tropical Race 4 (TR4) and by generating scientific knowledge for improved grower management of Fusarium wilts," stated Dr. Emile Frison, director general of Bioversity International.

Both projects will be conducted in Davao and Los Baños, Laguna from 2012 to 2015. The collaborating agencies include: BAR, Bureau of Plant Industry (BPI)-Davao, DA-Regional Integrated Agricultural Research Centers (RIARCs)/Regional Crop Protection Center, Institute of Plant Breeding (IPB)-UPLB, Lapanday Food Corporation, and the Federation of ARB/Banana Based Cooperative (FEDCO).

Bioversity International, a leading global research-for-development non-profit organization, strives to ensure sustainability and progress of smallholder farming communities in developing countries. For a long time, Bioversity has been involved in participative and collaborative research on banana with various high-end research institutes, national research partners, and banana-producing communities in Asia, Africa, and Latin America. It also has banana breeding programs for the enhancement of the commodity. *(Leila Denisse E. Padilla)*

BARChronicle
BUREAU OF AGRICULTURAL RESEARCH
RDMIC Bldg., Visayas Ave.,cor. Elliptical Rd.
Diliman, Quezon City 1104
PHILIPPINES

Entered as second class mail at the Quezon City Central Post Office under permit no. 753-01 NCR

BAR Chronicle
BUREAU OF AGRICULTURAL RESEARCH
ISSN 1655-3942
Visit our official website at http://www.bar.gov.ph

Volume 13 Issue No. 3 | A monthly publication of the Bureau of Agricultural Research | March 2012

Stakeholders convene to boost smallscale fisheries, aquaculture

Dr. Maripaz L. Perez, WorldFish Center | Dr. Nicomedes P. Eleazar, BAR | Atty. Asis G. Perez, BFAR | Dr. Patricio S. Faylon, PCAARRD

PHOTOS BY LPADILLA

In an archipelagic country where water forms bridge the gaps among islands and vast oceans surround its territory, marine and freshwater resources become one of its valuable staples. Hence, these resources require proper governance and management if longevity and sustainability are desired.

Guided with the vision to mitigate famine and poverty through effective and sustainable aquaculture and fisheries research and development (R&D), the WorldFish Center organized a national consultation titled, "Strengthening Governance and Sustainability of Small-scale Fisheries and Aquaculture Management in the Philippines" to provide a venue for involved stakeholders to tackle issues concerning fisheries management and aquaculture development.

The event, which was held on 8 March 2012 at the G Hotel in Malate, Manila, was attended by representatives from various government agencies including, the Bureau of Agricultural Research (BAR), Bureau of Fisheries and Aquatic Resources (BFAR), Department of Interior and Local Government (DILG), Department of Science and Technology (DOST), local government units (LGUs), National Fisheries Research and Development Institute (NFRDI), and Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD). International organizations and the private sector, particularly the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), Southeast Asian Fisheries Development Center/Aquaculture Department (SEAFDEC/AQD), Ritsumeikan Asia Pacific University, League of Municipalities of the Philippines (LMP), and AGHAM Party

turn to page 4

IN THIS ISSUE...

Bioversity International, BAR sign MOA for two banana projects

A Memorandum of Agreement (MOA) was signed between the Bureau of Agricultural Research (BAR) and Bioversity International to formally launch two projects, "Mitigating Banana *Fusarium Wilt* Tropical Race 4 through a Farmer-participatory Approach of Developing Disease Management Strategies" and "Enhancing Capacities of Farmers, Extension Agents and Local Researchers towards the Effective Management of *Foc* (*Fusarium oxysporum* f. sp. *cubense*) for Small-scale Cavendish Banana Sector".

Signing the agreement were Dr. Nicomedes P. Eleazar, director of BAR and Dr. Agustin B. Molina, senior scientist of Bioversity International and project leader, at the Office of the Director, BAR, Visayas Ave., Diliman, Quezon City on 28 March 2012. Also present during the signing were: Mr. Joell H. Lales, head of BAR's Planning and Project Development Division (PPDD), Mr. Raymond Patrick L. Cabrera of PPDD, and Ms. Jayne Generoso of Bioveristy International who served as witnesses.

The project on mitigating banana *Fusarium wilt* aims to provide smallholder farmers an urgent solution to alleviate the epidemic of *Foc* TR4 that presently damages their farms through formulating strategic disease management procedures. The project will conduct a farmer-participatory selection of improved GCTCV (*Candevish* banana variant) genotype(s) with improved yield and agronomic traits, disease tolerance, fruit quality and marketability. Through this, greatly damaged plantations will be rehabilitated and planted with *Foc*-disease resistant banana varieties.

Dr. Agustin B. Molina (left), Bioversity International senior scientist and Dr. Nicomedes P. Eleazar (center), BAR director, during the MOA signing of two projects. Also in the photo are: Mr. Joell H. Lales (right) and Raymond Patrick L. Cabrera (center, back row) of BAR-PDD and Ms. Jayne Generoso (left, back row) of Bioversity. PHOTO BY LPADILLA

Meanwhile, the project on capacity-building for the effective management of *Foc* in smallscale *Candevish* banana sector aims to develop and execute various capacity building methodologies that would boost capabilities on participatory varietal selection, disease management, and appropriate eradication techniques. The beneficiaries of the project are the farmer-cooperators but it will also train local researchers and extension agents to enhance their technical capacities in doing research on *Foc* TR4 management. To efficiently facilitate and

turn to page 20

BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

BAR CHRONICLE is published monthly by the Applied Communication Division of the Department of Agriculture - Bureau of Agricultural Research, RDMIC Building, Visayas Avenue, cor. Elliptical Road, Diliman, Quezon City 1104 Philippines.

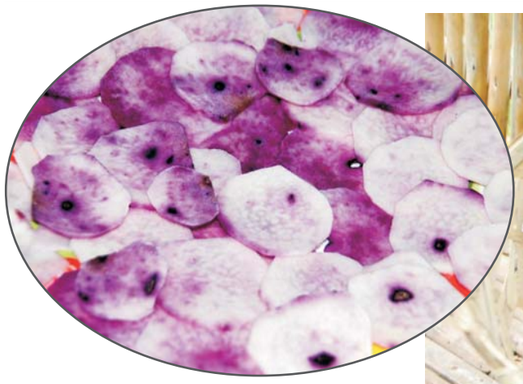
This publication provides regular updates on DA-BAR's activities as the country's national coordinator for agriculture and fisheries R&D. It also highlights features and news articles concerning NaRDSAF-member institutions.

PRODUCTION TEAM

Editor/Layout:	Rita T. dela Cruz
Consulting Editors:	Julia A. Lapitan and Joell H. Lales
Writers/Contributors:	Ma. Eloisa H. Aquino, Daryl Lous A. Battad, Ricardo G. Bernardo, Anne Camille B. Brion, Rita T. dela Cruz, Diana Rose A. de Leon, Maria Anna M. Gumapac, Patrick Raymund A. Lesaca, Leila Denisse E. Padilla, Jacob Anderson C. Sanchez, Zuellen B. Reynoso
Reproduction/Printing:	Ricardo G. Bernardo and Anthony A. Constantino
ACD Head:	Julia A. Lapitan
Adviser:	Dr. Nicomedes P. Eleazar, *CESO IV*

ISSN 1655-3942

For subscription and inquiries please contact us: Tel. Nos: +63 (2) 928-8505, 928-8624, 920-0234 local nos. 3011, 3012, 3027 Fax No. +63 (2) 927-5691 Email: *acd@bar.gov.ph.*
Articles are also available online, visit our official website: *http://www.bar.gov.ph/barchronicle*



Bohol's purple varieties

According to reports, *ubi* production in Bohol started with 780 hectares only which involved more than 3,000 farmers. Average production area was only less than a hectare (2,247 sq m) with an average production of 17.9 mt per hectare making Bohol the large-producing province in the country and its aromatic *ubi* widely associated to this province.

Specifically for the BAR-funded CPAR project (implemented in 2003-2004), the *ubi*-based farming systems proved to be profitable than the corn-based farming systems which resulted to negative income. "The average yield of ubi was 9 tons per hectare giving the farmer-cooperators a net income of P38,853.87 per hectare and a return of investment of 46.7 percent," explained Mendelin.

Engr. Antonio S. Du, BES chief, reported that "due to the good results obtained from the CPAR project on *ubi*, the local government fo Guindulman, where the project site was located, expanded the implementation of the *ubi*-based farming system to other barangays."

Engr. Du added that, under the BAR-funded ADP project (implemented in 2005), the number of farmers who participated in the *ubi* project increased from 7 to 24 with an aggregate production area of 1.2 hectares.

Ubi growers in Bohol are planting the purple varieties: *kinampay*, *baligonhon*, and PSB VU2. *Kinampay* is the most popular and favored *ubi* variety. Its flesh is a marbled purple color and is well-known for its aroma. Baligonhon is of same color with that of *kinampay* although not as aromatic, it serves as main ingredient for ice cream or pastries. Meanwhile, PSB VU-2 is a National Seed Industry Council (NSIC) variety developed by the Philippine Root Crop Research and Training Center (PhilRootcrops), based in Visayas State University (VSU). Other local varieties of ubi being grown in Bohol are: *kabus-ok, iniling, tamisan, baligonhon, binanag, binugas/gimnay and binato*.

Products from ubi

One of the important components of the techcom project on *ubi* is product development, particularly, to establish a strong and sustainable system for *ubi* and its by-products. After ensuring the production of *ubi*, the researchers from CENVIARC developed product lines from *ubi* to increase the promotion of this violet rootcrops.

Considering that *ubi* is seasonal, it is important that we develop processed products to enhance its promotion and use.

The Food Processing Laboratory in CENVIARC is developing three processed products from *ubi*, namely: spread, chips, and wine.

These products were developed because during a consultation meeting with the *ubi* farmer-partners in Guindulman, it was found that aside from jam, pastilles and polvoron, spread, chips, and wine have manifested a good market demand.

"The processing technologies for *ubi* spread and *ubi* chips are ready for adoption by interested agri-entrepreneurs. We have refined the technologies from its development to its packaging," said Mendelin on the status of the project.

Meanwhile, the *ubi* wine is yet to be perfected. "Before it can be manufactured and commercialize, much is still needed for the development of the ageing process, determination of ideal alcohol content, shelf-life, and packaging technology," reported Mendelin.

In the processing of *ubi* products, Mendelin reported that color is important. "One of the prevailing concerns of *ubi* growers in Bohol is the purple coloration in *kinampay* and *baligonhon* varieties," she explained. According to her, color in *ubi* may vary depending on the types of soils. It is important to note that these *ubi* varieties are endemic to the soil and climate type in Bohol.

To address this, researchers in CENVIARC have collaborated with PRCRTC to determine the different levels of NPK fertilization using a micronutrient, Biozome 200. Study showed that this micronutrient fertilizer was able to enhance the purple pigmentation in *ubi* tubers. Moreover, it showed that the average yield of *ubi* increased with the application of the micronutrient fertilizer.

Currently, the group of Mendelin is intensifying the promotion and knowledge enhancement particularly to increase level of awareness and appreciation on *ubi* production, processing, and marketing. To ensure the sustainability of the project, partnership among key players and stakeholders in the *ubi* industry is continuously being strengthened. ###

Enhancing tech promotion of Bohol's aromatic ubi and its processed products

Text and photos by

BY RITA T. DELA CRUZ

Ubi (*Disoscorea alata*, L.) is a popular rootcrop because of its many uses. It can be consumed as fresh tuber or it can be processed into various food products such as powder, flour, flakes, or dehydrated yam or as flavoring ingredient for ice creams, bakery, and confectionary products. Even its peeling is processed and used as natural food coloring additive.

Recognized for its characteristically unique aroma and violet sweetness which is known to be endemic only to the soil type and climate of Bohol, *ubi* has strategically placed the province and Central Visayas in a relatively advantageous position given its growing demand and competitiveness in the industrial food sector. In fact, the popularity of *ubi* as a speciality food ingredient has resulted to the growing interest to develop more product lines from this purple and aromatic underground rootcrop.

Although Bohol is the largest ubi-producing province in the country, hence "the epicenter of ubi industry," the potential of this rootcrop is not being fully tapped in terms of production, product promotion, utilization and marketability.

To optimize the potential of ubi particularly as processed food, the Bureau of Agricultural Research (BAR) through its National Technology Commercialization Program (NTCP) funded an R&D project on the "Technology Promotion, Utilization and Commercialization of Ubi for Development in Central Visayas". This R&D endeavor is being implemented by the Bohol Experiment Station (BES), Central Visayas Integrated Agricultural Research Center (CENVIARC) which is based in Ubay, Bohol.

"This techcom project on *ubi* is an offshoot of a successful implementation of the 'Ubi Agribusiness Development Project (ADP)' in Bohol wherein CENVIARC initiated the efforts to bring ubi into large-scale commercialization given its increasing market demand and need to systematize relevant product standards," explained Amancia C. Mendelin, chief of the R&D Extension Division, BES and focal person for the ubi project.

Mendelin further that, given that production of *ubi* is already in tact and there is a great demand for it, there is a need to "widen and sustain technology promotion of *ubi* alongside the efforts to commercialize it." To attain this, Mendelin said, "production of *ubi* needs to be sustained and its production areas must be increased so that it will able to meet the volume of market demand."

PHOTO BY ACONSTANTINO

12 Tech Com projects identified for their high impact and upscaling potentials

Twelve technology commercialization (Tech Com) projects supported by the Department of Agriculture (DA) through the National Agricultural and Fisheries Council (NAFC) and the Bureau of Agricultural Research (BAR) through its National Technology Commercialization Program (NTCP) have been identified to have potentials for upscaling due to their high impacts and benefits to intended beneficiaries.

This was the report of a Study Team commissioned by BAR to conduct Project Benefit Monitoring and Evaluation (PBME). The PBME was conducted to generate information on the benefits and impacts of the projects to various stakeholders, problems/constraints encountered and lessons learned that would serve as sound bases for implementers to ensure effective implementation and replication in other areas to benefit a wider mass-based of beneficiaries.

The 12 are commercialization type of projects that involve farmer-beneficiaries during the project implementation. These were identified due to their benefits and impacts particularly in increasing incomes of underprivileged farmers, contributing to food security, alleviating rural poverty, and overall growth of the agriculture sector.

The 12 projects identified are:

1. Accelerated Pigeon Pea Production and Utilization;
2. Commercializing and Integrating Hybrid Squash Seed Production Technology into the Cropping System;
3. Mangrove Crab Fattening;
4. Enhancing the Productivity of Abaca Farms in the Bicol Region through Integrated Farming System: Abakayamanan Program;
5. Technology Promotion of Promising Varieties of Peanut under Coco-Based Areas;
6. Sweet Sorghum Processing and Marketing towards Commercialization in Batac, Ilocos Norte;
7. Beekeeping Situationer in Sorsogon;
8. Breeds to Cross the Challenges: Medium Scale Commercial Goat Breeder and Fattener Production through Upgrading Technology;
9. Commercialization and Technology Promotion of Mango Wine and Dried Mango;
10. Poverty Alleviation and Enhancement of Food Security of Rice Farms in Central Luzon;
11. Native Swine for "Lechon de Leche" Production: Improving Feed Availability through Integration of SAKWA as Forage Feed in Coconut-Based Production System; and
12. Technology Commercialization Project: Processing of Carabao Milk into Dairy Products.

According to the Study Team who conducted the PBME, "the positive impacts of these projects to the various stakeholders, although on a limited scale due to small area of coverage clearly show their potentials for implementation on a commercial scale and replication in other areas." The team added that, projects of this nature when implemented efficiently can contribute to the growth of the agriculture sector, create employment opportunities, increase income among farmers and help alleviate poverty in the countryside.

The 12 projects were identified and evaluated out of the 25 high-potential projects which were supported through a grant funds received from the Government of Japan (GOJ) for projects

turn to page 15

Stakeholders convene...from page 1

(L-R) Dr. Michael D. Pido, Palawan State University (PSU) vice president for Research and Extension; Dr. Nicomedes P. Eleazar, BAR director; Dr. Maripaz L. Perez, WorldFish Center regional director for Asia; Ms. Ma. Elena M. Garces, BAR-TCD coordinator for fisheries; and Mr. Len R. Garces, WorldFish Center research fellow . PHOTO BY LPADILLA

List, also convened for the said activity.

The WorldFish Center is an international, non-profit research organization and a constituent of the Consultative Group on International Agricultural Research (CGIAR), a worldwide research organization that links and unites research organizations that are engaged in sustainable development. Mr. Len R. Garces, a research fellow of the WorldFish Center, served as the facilitator of the event.

Research in development: Road to better fishing environment

"We are not talking about 'research and development' or 'research for development' anymore. It is now 'research in development'." This was underscored by Dr. Maripaz L. Perez, regional director for Asia of the WorldFish Center, who discussed the background and rationale of the consultation. She mentioned that the event should focus not only on the large-scale fisheries and aquaculture facilities instead it should concentrate on the small-scale facilities which could be owned and operated by our fisherfolk.

Dr. Nicomedes P. Eleazar, director of BAR, supported this idea of strengthening research as the baseline of all successful project implementations and technology advancements in the entire process of development. In his welcome message, he stressed the importance of R&D in finding ways to strengthen different agricultural sectors, including the fisheries and aquaculture sector. "We are confident that this occasion will serve as an opportunity and thus will create the needed momentum in generating vibrant fishing communities and sustaining marine life without environmental deprivation," he stressed.

The vital role of proper implementation of policies and research was accentuated by AGHAM Party List Representative Cong. Angelo B. Palmones. He said that the ability to apply knowledge is more important than knowledge itself and we should use the knowledge we have to help our fishermen as they are "the poorest of the poor and the most deprived of good nutrition," he added.

Zoom-in: Fisheries and aquaculture in the Philippines

The Philippines is rich in water resources since it is filled and surrounded with water forms. According to BFAR, the country's territorial water area totals to 2,200,000 sq. km. and with this vast water resource area comes complex and weighty responsibilities.

Atty. Asis G. Perez, director of BFAR, discussed about the current initiatives on fisheries and aquaculture, including its five core programs: resource protection, resource enhancement, production enhancement, postharvest and infrastructure support, and organizational development. He envisioned that through these initiatives, the Philippine fisheries and aquaculture sector will become a healthier and richer environmental resource.

However, even with commendable advocacies and efforts, our fishermen still remain to be poor and deprived. As discussed by Mr. Melchor M. Tayamen, interim executive director of the National Fisheries Research and Development Institute (NFRDI), "our fishermen are challenged with lack of capital, limited resources, and susceptibility to risks, which restricts them from adopting and sustaining fish farms."

To help these fishermen own and sustain fish farms, they should be provided with low-cost technologies, access to resources, and product channel markets through various interventions that will assist the beneficiaries in terms of appropriate skills, land and water, financial support, organizational

turn to page 15

in GAP for fruits and vegetables as it tackles the safety procedures and standards for mango alone. The GAP for Mango tackles the practices for pre- and post-production of safe and high quality mangoes intended for domestic and export markets.

For compliance, there are 6 key areas that undergo assessment. These are 1) farm location – suitability of agricultural land for mango production; 2) farm structure – cultivation, storage, packing areas and water system as well as equipment used; 3) farm environment – soil and water assessment; 4) farm maintenance – hygiene and cleanliness; 5) farm practices – pesticide and fertilizer application, pest and disease management, and post harvest handling and; 6) farm management – farm records, traceability, staff training. Every nooks and crooks are being inspected and if it did not conform to the GAP principle, necessary adjustments and overhaul are needed to be done by the farm owner.

Soon-to-be GAP certified mango farms in the country

One of the pressing issues of GAP in the country is the lack of certified farms especially in mango which is considered as non-existent. Through a project initiated by the DA-Ilocos Integrated Agricultural Research Center (ILIARC), this scenario will change as certain mango farms in Ilocos Norte and Pangasinan are hopefully certified as it's almost completed the needed requirements for GAP certification.

Region 1 was selected for the project as the region has the highest mango production in the country. "Since our region has the highest mango production, why not put the first GAP-certified mango farms here" said Ms. Connie Belarmino, ILIARC manager and project proponent. In Ilocos region alone, mango production accounts to 43 percent of total production in the country.

The project was funded by the Bureau of Agricultural Research (BAR) through its National Technology Commercialization Program and the DA-High Value Crops Development Program (HVCDP).

The project is a joint venture of ILIARC and the Central Luzon Integrated Agricultural Research Center (CLIARC) in Region 3 with Zambales as the project site. At the end of the day, the two research stations aim to establish GAP-compliant mango farms in these two regions and at the same, encourage other major mango producers in Luzon to adopt the GAP.

The ILIARC was able to tap the services of Mr. Ricardo Tolentino as their farmer-cooperator for the project. He owned hectares of land which accommodates hundreds of mango trees. After Mr. Tolentino's farm got his GAP certification, Ms. Belarmino saw the potentials and the capability of Mr. Tolentino to persuade other mango growers to go into GAP as he is the incumbent president of the Federation of Mango Growers Association in Region 1.

BAFPS has already sent the ILIARC a copy of results of the initial inspection done to Mr. Tolentino's farm in February 2012. Aside from minor non-compliances such as putting up a warning sign in the pesticide storage facility and record of fertilizer preparation, Mr. Tolentino's farm is graded as having 'high level of adherence to GAP principles'. A final inspection will be done on the date of harvesting (which will be this coming April) so that the inspectors can take necessary mango samples for laboratory analysis. If he will pass the final inspection, this is a breakthrough for Mr. Tolentino as he will be the owner of first GAP-certified mango farm in the Philippines.

GAP and the market

"Being GAP-certified is not yet fully realized here in our market because we do not require it. However, we cannot tell in the future. As there is what we called trade liberalization where we have to improve our products especially in terms of safety and quality to make it at par with the other products available in the international market" asserted by Ms. Belarmino.

Tragic as it may seems, local consumers still do not fully comprehend the significance of buying a GAP-compliant commodity. As it already proliferated in other countries, only a handful of farms in the country are able to put into action the GAP principles. Moreover, there is no yet defining market price distinction between the GAP-compliant produce and those which did not.

Nevertheless, it will truly help those mango growers who are exporting their produce. As said earlier, some countries have imposed strict quarantine measures to mitigate the risk acquiring of food-borne illnesses. Being able to have certified commodities such as mangoes, we are able to penetrate this market and expand the country's market share. Currently, the major clientele for mangoes are Japan and Hongkong. Philippine mangoes also penetrated the mango markets of South Korea, Singapore, China, and United States. ###

References:

1. Commodity Proile: mango. retrieved from: *http://philagribiz.com/admin/files/Mango%20Profile.pdf*
2. Phl mango production posts 7% growth. retrieved from: *http://www.philstar.com/Article.aspx?publicationSubCategoryId=66&articleId=774732*
3. Recent trends in world and U.S. mango production, trade, and consumption. Retrieved from: *http://edis.ifas.ufl.edu/pdffiles/FE/FE71800.pdf*
4. GAPs history. Retrieved from: *http://ncsu.edu/enterprises/ncfreshproducesafety/good-agricultural-practices-gaps/gaps-info/gaps-history/*

Improving quality and safeness of Phl mangoes through GAP

BY DIANA ROSE A. DE LEON

The uncertainty of the market demand, both domestic and international, pushes the country's agricultural sector to continuously adjust and keep up with changes happening in its environment. Concurrent with the high demand on fresh and safe foods, stringent quarantine measures are being imposed by major importers to the country's primary agricultural exports, one of which affected is the country's pride – the carabao mangoes. These safety measures have been enforced due to the threat of food-borne illnesses derived from imported agricultural products.

Although the country remains on the world's top 10 mango-producing countries which accounts to 3.5 percent of world supply and provide most of the Southeast Asia's market demand together with Thailand, the figure can still be raised if the mango industry players can maximize the full potentials of mango cultivation and production in the country, especially in areas that ensure the safeness and good quality of the mango. One of the seen counter-measures is establishing Good Agricultural Practices (GAP) – compliant mango farms in the country.

GAP: An evolving concept

GAP is "a set of consolidated safety and quality standards formulated for on-farm fruit and vegetable production". GAP is not a new concept in agriculture. Way back in 1997, the United States experienced a high case of food-borne illness brought upon by importation of fruits and vegetables, thus an initiative that focuses on instituting safety standards on all the stages of 'farm-to-table food chain' was set into motion. Through the times, the concept has evolved, expanded and modified depending on the commodity concerned.

In 2005, the Department of Agriculture (DA) approved the Administrative Order (AO) No. 25 which solidify the compliance in GAP for fruits and vegetables farming through the certification program of the DA. The certification scheme for GAP ensures that highest health and safety standards for agricultural products are highly ensured and met. It zone in on the reduction of risks from pathogens, heavy metals and pesticide contamination with high regards on workers health and safety and protection of the environment.

Prior to the issuance of certification, the concerned individual growers or farms in the fruit and vegetable sector should first conform to the necessary requirements of GAP compliance and undergo rigorous inspection by the DA's Technical Working Group composed of various government agencies such as the Bureau of Plant Industry (BPI), Bureau of Animal Industry (BAI), Fertilizer and Pesticide Authority (FPA), Bureau of Agriculture and Fisheries Product Standards (BAFPS), among others. BAFPS chaired the group and facilitated the awarding of GAP certification.

GAP for mango

Philippine carabao mango, without question, is one of the in-demand varieties not only in the local market but to the international market as well. That is the reason why in 2011 the country was able to export 20,115 tons of fresh mangoes, 36,000 tons of dried mangoes, and 9, 328 tons of processed mangoes which enabled the country to earn a total of $50 million.

However, it is still uncertain if the country's mango will be continuously favored due to stiff competition in the world market especially in meeting the expectations on quality and safeness.

In this regard, a Code of GAP for Mango was especially formulated by the DA to the commodity. It is different

next page

> ***Prior to the issuance of certification, the concerned individual growers or farms in the fruit and vegetable sector should first conform to the necessary requirements of GAP compliance and undergo rigorous inspection by the DA's Technical Working Group...***

PHOTO BY LPADILLA

BAR, UPLB conduct training on rubber prod'n and processing

Can you imagine the world without rubber?" This was the question posed by Dr. Eugenio A. Alcala, a remarkable pioneer in the field of advancing the Philippine rubber industry, during the "Short Training Course on Rubber Production and Processing" held by the Institute of Renewable Natural Resources (IRNR-UPLB) in partnership with the Bureau of Agricultural Research (DA-BAR).

Conducted within the premises of the College of Forestry and Natural Resources (CFNR-UPLB), the two-day training aimed to equip key stakeholders from the government and the private sector with fundamental knowledge and skills on rubber production and harvesting strategies.

Held on 22-23 March 2012, the training was attended by participants from nine provinces of the Philippines namely, Manila, Nueva Vizcaya, Quezon, Bulacan, Laguna, Apayao, Batangas, Cagayan Valley, and Cotabato. Most of them are business entrepreneurs and farmers and the rest are from the academe and government offices like the Municipal Agricultural Offices in Laguna and Quezon, Environmental and Natural Resources Offices in Quezon and Batangas, and the Municipal Agriculture and Fisheries Council (MAFC) in Laguna.

The Institute of Renewable Natural Resources (IRNR), established in 1998, is the center of excellence in the science of natural resources management and an active leader in the sustainable and integrated management of renewable natural resources.

Rubber industry in the Philippines

The rubber industry has a great potential in bringing the country into a state of financial and ecological stability and this perspective was strengthened as rubber expert and farmer Dr. Alcala highlighted the three E's: economy, environment, and employment, that can be positively affected if the industry reaches its optimum course.

Dr. Alcala said that rubber, also known as the weeping tree, is "a bank because every drop is money". This high-value crop has a high demand in the local and international market because of its various essential uses and functions. He said that Filipino farmers tend to ask "Why rubber?" and he emphasized that by knowing how vibrant the rubber industry is, surely farmers will look at this crop at a new light.

Rubber industry, if optimized, can contribute to the stabilization of the Philippine economy because it will bring income to the farmers and to the country as well. Aside from that, it is also known as a major carbon sequester, which can help mitigate climate change and global warming.

next page

> ***Rubber industry, if optimized, can contribute to the stabilization of the Philippine economy because it will bring income to the farmers and to the country as well.***

BAR Director Nicomedes P. Eleazar (3rd from left) with the experts and participants of the training on rubber production and processing. PHOTO BY LPADILLA

As raised by the participants, the country is presently troubled with the lack and high cost of rubber planting materials. Experts said that current efforts on rubber are focused on production enhancement so that when the country is ready for mass-rearing of rubber, the planting materials are already available and affordable to the stakeholders.

R&D as an essential step in rubber industry upscale

"Before, we had the impression that rubber can only grow in Mindanao. But based on the results of our collective R&D efforts, it has been proven that rubber can also thrive in Luzon and Visayas," said BAR Director Dr. Nicomedes P. Eleazar in his keynote message.

As the RDE component of the National Rubber Development Program (NRDP), BAR has been acting on its commitment to pursue exemplary rubber production outputs in order to meet domestic demands and to increase the feasibility of exporting Philippine rubber. With the discovery that rubber can thrive in LuzViMinda, it is hoped that this pursuit will be attained as soon as possible.

With the continuous increasing demand for rubber, it is essential that its production in the Philippines be accelerated and optimized through R&D endeavors not only to provide sustainable livelihood for our farmers but also economic leverage to the country.

"As of 2011, there are currently 55 ongoing rubber RDE projects funded by DA-BAR that covers specific areas in Luzon, Visayas, and Mindanao. These include benchmarking, adaptability trials, establishment of budwood gardens, rubber production technologies, and commercialization projects, as well as projects under DA-BAR's Community-based Participatory Action Research (CPAR) and National Technology Commercialization Program (NTCP) banner programs. All of these initiatives are very important to capacitate our pool of experts and farmers," Dr. Eleazar concluded.

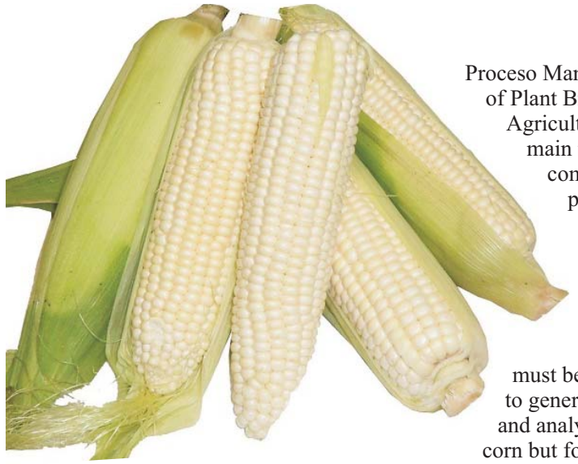
Dr. Juan M. Pulhin, dean of CFNR-UPLB, also emphasized the importance of R&D efforts and partnerships to build a stable and sustainable rubber industry. "At the end of the day, we all have the same goal which is to enrich our natural resources," he said.

Demo of rubber planting techniques

To give the participants a hands-on experience on rubber planting strategies, demonstrations on rubber budding and tapping and nursery techniques and management were conducted by the experts.

Dr. Alcala gave a detailed demonstration on how to perform rubber budding and tapping, where each of the participants was given a chance to properly perform the said techniques. Meanwhile, Dr. Arturo SA. Castillo, associate professor and project training coordinator of IRNR and For. Nicasio M. Balahadia, university extension specialist of Makiling Center for Mountain Ecosystems (MCME) demonstrated techniques in nursery maintenance and management.

Through this training as one of the many activities and efforts being done for the advancement of the Philippine rubber industry, it is ensured that concerned stakeholders from various sectors will be aware of the value and potentials of this crop and will soon invest in an industry where every drop truly counts. *(Leila Denisse E. Padilla)*



The importance of this method is being able to identify, validate, and promote the newly developed improved white corn and promising genotypes, associated production technologies in target sites, and varieties most suitable for the specific conditions and those preferred by farmers.

The second day of the in-house review was spent on evaluating the project results by far and providing recommendations to improve not only the quality of the yields, but also all practices involved in establishing white corn varieties as staple food for Filipinos.

To keep up with a more systematized scheme as far as white corn is concerned, the Statistical Analysis System (SAS) software was introduced and proposed by Mr. Proceso Manguiat of the Institute of Plant Breeding, College of Agriculture, UPLB, as the main tool to use in compiling and presenting all data gathered. Through the SAS software, researchers can acquire improved data management. It was agreed that there must be a common software to generate a uniform report and analysis, not only for corn but for crops under the High Value Crops Development Program (HVCDP). The software was found out to be useful and at the same time, user-friendly.

Dr. Artemio M. Salazar, Corn Research Development and Extension team leader, said that "there is a great need to standardize field procedures"—from planning to the implementation to the postharvest activities of the project."

On continuity of the project

The schedule of the second cropping was set which will commence on the third week of March up to the last week of June, depending on the readiness of each participating region, rest assured that all of the experiences and recommendations will be considered as learning processes to further improve the project.

The impact of this will not only yield a potential increase of productivity in white corn growing areas, but more importantly serve as a baseline to attract prospective partners and collaborators for the adoption, dissemination, and diffusion of the technology introduced.

Dr. Labios emphasized that each region will have their own preferred variety, thus improving the acceptability and marketability of white corn. Indeed, the first season of this project showed more opportunities to slowly prove that white corn can keep up with the fast-paced agricultural game plan, thus establish corn sufficiency in as early as 2013. ###

...the first season of this project showed more opportunities to slowly prove that white corn can keep up with the fast-paced agricultural game plan, thus establish corn sufficiency in as early as 2013

12 Tech Com...from page 3

and initiatives under the KR2-Grant Assistance for Underprivileged Farmers (GAUF). The grant from GOJ is intended to support a range of diverse projects that aim to demonstrate the adoption of appropriate technology for commercialization.

"As a funding and as a policy-recommending agency, it is important for us at BAR to appraise and assess whether these publicly-funded R&D have indeed reached our target beneficiaries. This PBME was conducted specifically to appraise the project in terms of its potentials, impacts, contribution to the sector, and most important, to determine if stakeholders are able to maintain and sustain these projects," explained Dr. Eleazar.

Overall, the outputs of these studies will serve as an important basis in the prioritization of public expenditure for agricultural research and in the modification of development program implementation processes to achieve targets and objectives of DA particularly in addressing innovation and productivity in the agriculture and fisheries sectors. *(Rita T. dela Cruz)*

Stakeholders convene...from page 4

arrangements, and access to infrastructure that they can adopt, operate, and sustain.

After the series of presentations, the participants were divided into three working groups during the workshop proper. They were grouped based on three foci, namely: 1) policy and advocacy, 2) governance/management, and 3) research/livelihood development.

Each group identified issues and barriers in fisheries management and aquaculture development based on their focus, strategies and activities to answer the identified problems, and indicative partnerships among sectors who will implement these strategies.

With the cooperation and efforts of involved government agencies and concerned institutions and organizations, it is hoped that the fisheries and aquaculture sector, either large- or small-scale, will become sustainable and available to the next generations. *(Leila Denisse E. Padilla)*

WHITE CORN AS STAPLE FOOD is the next best thing

BY DARYL LOU A. BATTAD

In a country wherein most people are rice-eaters, the demand for rice increases significantly each year. With the demand superseding the supply for rice, the government imports stocks from other countries just to fill in the gaps and keep the prices at stable rates.

Given this, the government must exert efforts to look into other potential sources of staple food crops to lessen the demand for rice. An important aspect is to look into alternative food staple that are not only readily available and cheap but most importantly, as nutritious (if not more nutritious) than the old time favorite, rice.

White corn as a staple

Next to rice, white corn has been the most potential source of staple food in the Philippines. About 20 percent of the population uses white corn for food. According to DOST-FNRI (2003), corn and its products constitute 4.5 percent of the people's diet quantified at about 13 kilograms per year or roughly about 36 grams each day. More significantly, the Visayas and Mindanao regions are already considered "corn-eating" areas because majority of the population there are accustomed to utilizing corn as their basic commodity.

As a result, various programs have been mandated by the government to support the production of white corn and expand its promotion at a national level. There have been a range of projects formulated, dedicated to establishing a more stable supply of white corn, and at the same time, continuously establishing new varieties to diversify the preferences of each region.

To contribute to this advocacy, a team led by Dr. Romeo V. Labios from the Agricultural Systems Cluster (ASC) of the University of the Philippines Los Baños (UPLB), implemented a project titled, "Adaptation and Dissemination of Newly Developed Improved White Corn Varieties as Alternative Source of Staple Food." The project aimed to increase productivity, yield and income of the farmers in the project area under consideration utilizing the Participatory Varietal Selection (PVS) approach and technology innovation systems.

The undertaking

To assess and evaluate the status of the project, it was subjected to an in-house project review at the ASC, UPLB College of Agriculture on 7-8 March 2012.

Dr. Romeo V. Labios, in his presentation, emphasized on the different project strategies which they will use to better the implementation of the project in the succeeding seasons. Highlights of the project included the on-farm PVS and sensory evaluation of white "flint" corn. This is considered as one of the components of the research, which involved both farmers and researchers in the conduct of the preference analysis of white corn in terms of the quality, physical and agronomic traits at various growth stages of different white corn varieties.

next page

Next to rice, white corn has been the most potential source of staple food in the Philippines. About 20 percent of the population uses white corn for food.

Database content management capacitates PhilAgriNet members

Dr. Nicomedes P. Eleazar addressing the librarians, information managers during the PhilAgriNet workshop in Tagaytay City. PHOTOS BY MVALDEABELLA

One can never underestimate the importance of agricultural literatures in strengthening research and development. The need for such literatures by researchers and various stakeholders from the agricultural sector gave rise to the Philippine Agricultural Information Services Network (PhilAgriNet), a database where members can have access to agriculture-related documents.

However, a database cannot operate on its own. It needs people who are equipped with proper knowledge and skills for it to be fully useful and functional. Hence, the Bureau of Agricultural Research (BAR), in partnership with PhilAgriNet, conducted a seminar-workshop on updating and enhancing the skills of PhilAgriNet members on database content management on 1-2 March 2012 at Hotel Kimberly, Tagaytay City. The activity also served as a venue for a general assembly meeting among its members.

The seminar-workshop aimed to review and update the current status of the PhilAgriNet database. Moreover, it intended to further improve the skills of PhilAgriNet members regarding database content management of their respective databases. On the other hand, the general assembly focused on the following aspects: 1) comprehensive assessment of the inputs of each member to the database; 2) identification of best practices and obstacles encountered; 3) possible solutions to identified obstacles and future plans; and 4) election of officers.

Ms. Julia A. Lapitan, head of the BAR-Applied Communication Division presents the current status of the PhilAgriNet Database including updates on the network's membership, review of objectives, and information on the statistics of records in the database. PHOTO BY MVALDEABELLA

BAR Director Nicomedes P. Eleazar welcomed the participants and delivered a message commending PhilAgriNet's efforts for creating a systematized network among agricultural agencies, making agricultural literatures more accessible. "We envision that through this endeavor, researchers and concerned sectors will be provided with the privilege to access agricultural literatures with less time and effort," he said. He added that upgrading and enhancing the skills of the members will promote a faster and more efficient transfer of data to the PhilAgriNet Central Database.

The two-day activity was divided into three sessions. The first session started with a review on the PhilAgriNet Database and Database Content Development which tackled the current status of the database including updates on the network's membership, review of objectives, and information on the statistics of records. Topics such as Dspace and subject indexing were also included. The second session introduced the workshop proper where Dspace encoding was demonstrated and hands-on exercises on automated indexing were given to the participants. Lastly, the third session was devoted for the election of officers and zonal coordinators.

Experts from various institutions acted as resource speakers for the seminar-workshop. Among them were: Ms. Julia A. Lapitan, head of the BAR Applied Communication Division (ACD), Ms. Mila M. Ramos, member of the BFL-PRC, Ms. Concepcion DL. Saul, university librarian of the University of the Philippines Los Baños (UPLB), Ms. Carmelita S. Austria of the Christian School International (CSI), and Ms. Cherry Ann N. Barrientos of BAR Information Management Unit (IMU).

(Anne Camille B. Brion)

BAR funds 2 MSU projects; Solsoloy leads inauguration of MSU Nutraceutical Lab

BAR Asst. Director Teodoro S. Solsoloy (left) hands over the two cheques to MSU Chancellor, Atty. Abdurrahman T. Canacan (right) that is to be used to implement the establishment of fish processing and nutrition analytical laboratory and agri-service diagnostic lab for SOCKSARGEN.

PHOTO BY NDELROSARIO III

Bureau of Agricultural Research (BAR) Assistant Director, Dr.Teodoro S. Solsoloy, in behalf of the BAR Director Nicomedes P. Eleazar, awarded two cheques to the Mindanao State University (MSU) General Santos City during its 33rd Baccalaureate Services and Awards Ceremonies on 26 March 2012. Dr. Solsoloy was the invited keynote speaker for the baccalaureate services and awards ceremonies.

The awarded cheques, with a combined total of Php 8.3M will be used for the implementation of two BAR-funded R&D projects in support to MSU's endeavor to capacitate and strengthen their institutional development program. The two projects are for the: 1) Establishment of Fish Processing and Nutrition Analytical Laboratory, and 2) Establishment of Agri-Service Diagnostic Laboratory for SOCKSARGEN growth area.

Accepting the cheques was MSU Chancellor, Atty. Abdurrahman T. Canacan.

In the afternoon, Dr. Solsoloy joined Chancellor Canacan, and Dr. Edna P. Oconer, MSU director for Research and Development Center in the inauguration of the PhP 3.7 M worth Nutraceutical Laboratory. This BAR funded facility was completed earlier than expected, from one year target of completion to six months only.

The facility will be used to identify benchmark information to support claims to health-promoting properties of certain indigenous plants. The lab is divided into two: 1) Phytochemistry room for extraction of plant and animal specimens and 2) Bioassay room which will be used to screen laboratory samples and house laboratory mice. Equipment includes digital centrifuge, digital hot plate and rotary evaporator, among others.

With the nutraceutical lab, Dr. Oconer said that aside from conducting experiments, they can use the facility as an income generating project to sustain the needs of the lab. Likewise, she mentioned that it will also serve as an instructional tool to improve the capability of their researchers and students. *(Jacob Anderson C. Sanchez)*

BAR Asst. Director Solsoloy (2nd from left) leads the ribbon cutting ceremony during the inauguration of the Nutraceutical laboratory. He is assisted by MSU administrative officials. The Nutraceutical Laboratory houses equipment for phytochemical screening, extraction, fractionation, isolation and detection of bioactive compounds from indigenous plant and animal species having potential medicinal properties.

PHOTO BY NDELROSARIO III

CPAR re-orientation for BAR staff held

The Bureau of Agricultural Research (BAR) demonstrates its continued effort to increase the success rates of the projects under its banner program, the Community-based Participatory Action Research (CPAR) as it holds a "CPAR Re-orientation/Leveling-off on CPAR Concept and Implementation for BAR Staff" held on 8-9 March 2012 at 4/F RDMIC Building, Visayas Ave., Diliman, Quezon City.

The two-day workshop invited participants from the various technical divisions of the bureau, including staff members from the Technology Commercialization Division (TCD), Project Monitoring and Evaluation Division (PMED), Planning and Project Development Division (PPDD), Institutional Development Division (IDD), and Applied Communication Division (ACD). They were also joined in by senior consultants, Ms. Virginia Agcopra and Ms. Josefina Lantican.

Guest speaker, Ms. Rose Mary G. Aquino of the Department of Agriculture-Cagayan Valley Integrated Agricultural Research Center (DA-CVIARC) also attended the training with Mr. Elmer Enicola of the University of the Philippines Los Baños (UPLB), and Dr. Catalino dela Cruz of the Professional Regulation Commission (PRC). Dr. Teodoro S. Solsoloy shared a few inspiring words to formally open the activity.

Facilitated by PMED, the re-orientation was created both as a refresher course for CPAR project implementers and BAR staff members who evaluate and monitor the projects. This also served as an avenue where issues could be brought forward and solved for project completion. Discovering new techniques to efficient and effective implementation was also the intention of this re-orientation workshop, as needed support services could be identified.

What is CPAR?

CPAR started in 1998 as BAR's contributive project in the research and development (R&D) component to the Agriculture and Fisheries Modernization Act (AFMA) of 1997. It aims to: 1) enhance the role of R&D through technology transfer, 2) develop strategies for effective integration of support services, and 3) institutionalize active community participation in management of farm and agribusiness development.

Communities involved in CPAR projects become not only recipients and beneficiaries of technologies that are products of continued R&D, but they also become the partners of BAR, Regional Integrated Agricultural Research Centers (RIARCs), Regional Fisheries Research and Development Centers (RFRDCs), and local government units (LGUs) around the country in developing further the techniques in increasing production and providing sustainable development.

With projects, sites, and farmer beneficiaries consistently increasing through the years, more and more farmers' way of living are improved. More and more communities are able to produce their own harvest and become equipped in production techniques.

To date, there are 205 CPAR projects in operation throughout the country, and there are currently 10,243 farmer beneficiaries in 502 sites nationwide.

Communities involved in CPAR projects become not only recipients and beneficiaries of technologies that are products of continued R&D, but they also become the partners

Workshop output

The re-orientation discussed the basics of CPAR, including concepts and existing guidelines with the aim to shed light on the process of applying for project grants. The process flow, discussed by PMED Head Salvacion Ritual, includes 1) site selection, 2) conduct of Participatory Rural Appraisal (PRA), 3) CPAR action planning, 4) mechanics/implementation arrangement, 5) monitoring and evaluation, 6) data gathering and analysis, and 7) institutionalization.

Participants were divided into three groups to discuss CPAR process flow, PRA flow and validation of results, and proposal packaging.

Highlighted in the workshop proper were the outputs submitted by each group. Recommendations on site selection activities, community action plan proposals, project intervention techniques, and CPAR proposal packaging practices were presented during the second day.

Overall, the CPAR re-orientation workshop proved to be a success. Attended by DA-BAR staff familiar to the program, renewed understanding of the program and its process was achieved. As a result, recommendation on further developing these processes were served to the organizing division, so that incoming proposals and ongoing projects are screened properly and monitored more efficiently.

As a result of workshops cum training such as this, both the experienced and hopeful-proponents and BAR staff are now well equipped in pursuing the goal to sustainable development through the numerous CPAR projects in progress, and a lot more others incoming this year. *(Zuellen B. Reynoso)*

BAR participates in 5th National Goat and Sheep Congress and Trade Fair

Promoting the important roles of goat and sheep production in the Philippines as well as showcasing various technologies for the industry to adopt, the Federation of Goat and Sheep Producers Association of the Philippines, Inc. (FGASPAPI) and the Goat and Sheep Producers Association of Tarlac (GASPAT), held the 5th National Goat and Sheep Congress and Trade Fair on 22–26 March 2012 in Angeles City, Pampanga. The Bureau of Agricultural Research (BAR) participated in the event and served as one of the partner-sponsors.

FGASPAPI is a confederation of goat and sheep raisers in the country, coming together "to serve as the unified voice of the Small Ruminant Industry." With 25 member associations and 800 farmer-members from all over the country, its objectives include strengthening the market of the small ruminant industry, facilitate information dissemination of new technologies in raising goat and sheep, and provide its members with breeder animals.

The three-day event showcased goat and sheep exhibitors from all over the country. Apart from booth exhibits, the activities included seminars, consultations on networking and business enterprise, goat and sheep show, animal sales, and cooking demonstrations, which aimed to further promote the industry.

Visitors getting free IEC materials from the BAR booth during the exhibit. PHOTO BY RBERNARDO

With the theme, "*Kambing at Tupa – Negosyo ng Pinoy*" (*trans*. Goat and Sheep – Business of Filipinos), the event commanded the attention of not only members of the industry but also possible clients, with over 750 people in attendance.

Among the notable personalities and officials during the opening ceremony were FGASPAPI President Noel Ponciano Soliman, Director Efren C. Nuestro of the Bureau of Animal Industry (BAI), Governor Victor Yap of Tarlac, Congressman Agapito Guanlao, Assistant Secretary for Livestock Dave Catbagan, Executive Director of the Livestock Development Council (LDC) Manuel Jarmin, and Agribusiness and Marketing Assistance Service (AMAS) Director Leandro Gazmin.

FGASPAPI President Bienvenido A. Rara (2nd from left) leads Agriculture Secretary Proceso J. Alcala (2nd from right) at the various booth and exhibit area. PHOTO BY RBERNARDO

The cooperation of DA in this event and commitment to its purpose is evident through the support of the DA-Regional Field Unit 3 and LDC. Support of DA Secretary Proceso J. Alacala is also resounding as he visits the exhibit hall during the event, and expresses excitement as he sees the improvement of native goats.

Reiterating the importance of raising goat and sheep in our country and its profitability, Sec. Alcala shared the Department's motivation to pursuing the development of the goat and sheep industry in the country. "It presents an opportunity to create more stable income and livelihood opportunities for small farmers and their families, and help provide affordable, quality meat for consumers," he cited.

Small ruminants such as goat and sheep are included as priority

turn to page 20

Managing data easier with user-friendly software for SSNM

Site-Specific Nutrition Management (SSNM), according to the website of the International Rice Research Institute (IRRI), is "a set of scientific principles for optimally supplying rice with essential nutrients. It enables rice farmers to tailor nutrient management to the specific conditions of their field and provides a framework for best management practices for rice"—or in this case, the crop being utilized and studied is white corn.

SSNM allows farmers to fill in the deficit between the nutrient needs of a crop and the nutrient supply that is produced by "soil, organic amendments, crop residues, manures, and irrigation water. "This approach does not specifically aim to reduce or increase fertilizer use. What it aims to achieve, however, is "to apply nutrients at optimal rates and times to achieve high yield and high efficiency of nutrient use."

On 5-7 March 2012, the Bureau of Agricultural Research (BAR) held a training-workshop on "SSNM on White Corn Data Management" for new regional focal persons at Los Baños, Laguna.

Dr. Romeo V. Labios of the University of the Philippines Los Baños (UPLB) presented the training-workshop's objectives, which included a review of the SSNM research approach and methodology, a discussion on the implementation/protocol of SSNM for white corn for 2012/2013 cropping seasons—including data management, enhancing the skills of the participants in the evaluation and dissemination strategies of SSNM for white corn, and conducting of hands-on training/refresher on Nutrient Expert for Hybrid Maize (NEHM) software that can be used for white corn. The latter objective, in line with the goals of SSNM upon which the software was based upon, made for an informative session once NEHM was finally tackled during the workshop.

The major focuses of the program including the introduction, training, and application of NEHM was led by Dr. Apolonio M. Ocampo.

NEHM, as Dr. Ocampo presented, is a computer-based decision support tool developed to assist local experts in formulating fertilizer guidelines for tropical hybrid maize, based on the principles of SSNM. It also allows scientists and extension experts to jointly develop novel nutrient management strategies for evaluation.

Participants are led to an experimental farm where they were briefed and practiced on field layout, planting and fertilizer application, as well as crop cut measurements, and plant sampling . PHOTO BY AGUMAPAC

NEHM's capabilities definitely helped make the management and analysis of the data easier, in line with the training-workshop's aforementioned objectives. The NEHM's abilities include developing an optimal planting density for a location, evaluating farmers' current nutrient management practices, setting a meaningful yield goal based on attainable yield, estimating fertilizer NPK rates required for the selected yield goal, translating fertilizer rates into available fertilizer sources, developing an application strategy for fertilizers, and comparing costs and benefits between the farmers' current practice and the recommended practice. These "skills" can be translated into the five major modules that make up the program: Current NM Practice, Planting Density, SSNM Rates, Sources and Splitting, and Profit Analysis.

Furthermore, the software requires information that a farmer or local expert can easily provide. The information asked for include the following: current yield and nutrient management practice; farmers' current planting density; characteristics of the growing environment or estimate of the attainable yield; soil fertility indicators or estimates of yield responses to fertilizer N, P, and K; and crop residue management, use of organic inputs, and nutrient carryover from previous crop are used to adjust fertilizer P and K requirements as merited.

The software was developed with the following assumptions and conditions: no serious water limitation throughout the growing period; problems on soil acidity and/or micronutrients are addressed; high-yielding maize varieties are used; no major damage due to pests and diseases; proper placement of fertilizer is practiced.

Prior to the hands-on training of the program, participants were given a training/refresher course on data gathering aimed to help in data management with the NEHM. During the course, BAR staff were also in attendance to assist and answer queries from the participants in the midst of trying to install and utilize the aforementioned software. Proper data gathering ensures the proper and maximum utilization of the NEHM's capabilities.

With the help of the NEHM, participants of the training-workshop were able to see for themselves the ease of handling and practicing SSNM data management.

NEHM runs on Microsoft (MS) Operating Software XP or higher, with MS Office and MS Access 2003 or higher, and Acrobat Reader 6 or higher. The system requires at least 17MB of disk space aside from the program versions mentioned earlier. For a free download of the program, the International Plant Nutrition Institute (IPNI) Southeast Asia hosts a link to obtaining the software.

(Maria Anna M. Gumapac)

Soybean review and planning workshop held

DA Asst. Sec. Dante Delima, (inset) discussing the potentials of soybean and making the industry sustainable. In the table are: (L-R) Mr. Elmer Enicola of UPLB, Ms. Rose Mary Aquino of DA-CVIARC, and BAR Director Nicomedes Eleazar. PHOTO BY EAQUINO

In line with the current initiatives of the Department of Agriculture (DA) to build a strong soybean production and processing industry in the country, the Bureau of Agricultural Research (BAR), with the DA-High Value Crops Development Program (HVCDP), led the conduct of the "National Review of Soybean R&D Projects and Planning Workshop".

Officially opening the thee-day activity was BAR Director Nicomedes P. Eleazar. The director welcomed the participants and noted that there is a "tremendous domestic demand for soybean food products for human consumption and soybean meal for the livestock and poultry industry, however, Filipinos are presently driven to import almost P2B-worth of soybean. What we need now is to let our locals know the potentials and viability of the soybean industry," Dir. Eleazar said in his speech.

DA-HVCDP National Program Coordinator Jennifer Remoquillo presented the updates on the Soybean Program. She acknowledged BAR's initiatives and mentioned that the "linkage of BAR and HVCDP was again connected to a stronger relationship in terms of R&D." She highlighted the need to strengthen and give best efforts to the soybean industry, hence, underscores the production and marketing aspect of the program which is to link soybean traders to a good market.

DA Asst. Secretary Dante Delima gave an inspirational message. He emphasized the importance of inexpensive soy protein for human health and wellness and encourages intake of more protein foods to reduce consumption of food. *"Maganda ang future ng soya, kailangan tutukan natin ang pagdevelop ng mga adaptable and potential varieties. Magkakaroon ng dagdag na kita ang ating mga magsasaka, may magagamit tayo sa usaping food consumption at puwede din as feeds"* (The future of soya is good, we need to focus our efforts in developing adaptable and potential varieties. Our farmers will have additional profit and answer to food consumption issue which is also good as feeds) Asst. Sec Delima said.

BAR, through the Technology Commercialization Division, supports and coordinates the program titled, *"Building Sustainable Soybean Industry in the Philippines"*. There are two components on this program. Component I is the Organic Soybean Production Development on which there were 13 regions funded for Organic Production Technology Promotion and Organic Soybean Seed Production. And for the Organic Soybean Varietal Development and Evaluation, there were 8 regions and 2 attached agencies funded for the multi location yield trial. Meanwhile, 5 attached agencies were involved in Component II: Organic Soybean Utilization Production and Marketing.

Component 1 involved: 1) farming community site selection and evaluation, 2) establishment of techno demo trials, 3) conduct of hands-on training using FFS approach, and 4) promotion of small farm implements. There were 28 techno demo trials conducted with more than 1,200 farmers in attendance.

To review and evaluate the funded projects under the Soybean Program, representatives from the different concerned Regional Field Units presented their respective Organic Soybean Production Technologies. Services offered and how they were delivered to target beneficiaries, lessons learned and the documented success stories were likewise discussed. This is in return served as a venue to identify and provide recommendations to problems encountered in project implementation.

Technology Commercialization Division Head Anthony B. Obligado, Technical Advisers Josefina Lantican and Virginia Agcopra serve as panel of evaluators.

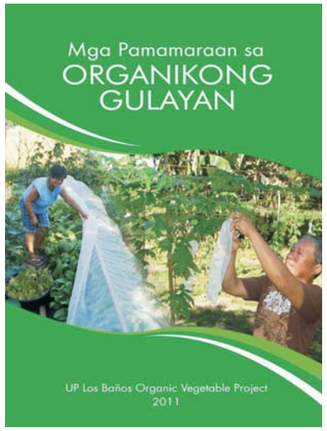
Ms. Ethel Banzuela of the Bureau of Soils and Water Management (BSWM) presented the Land Resource Evaluation of Strategic Production Areas for Soybean Development. This was followed by a discussion on the status of the project titled, "Development of Production and Post Production Mechanization Systems for Soybeans" by Engr. Renita dela Cruz of the Philippine Center for Postharvest Development and Mechanization (PhilMech).

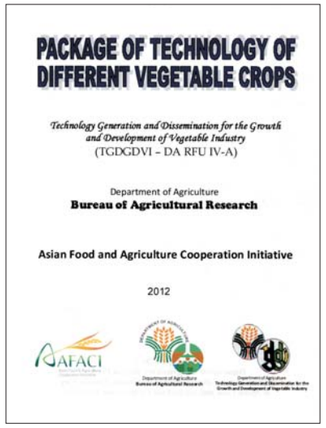
The second day was devoted for planning workshop. Soybeans Technical Working Group Chairman Rosemary G. Aquino and Vice-Chairman Elmer Enicola served as moderators, likewise provided inputs and shared their expertise and experiences in soybean production.

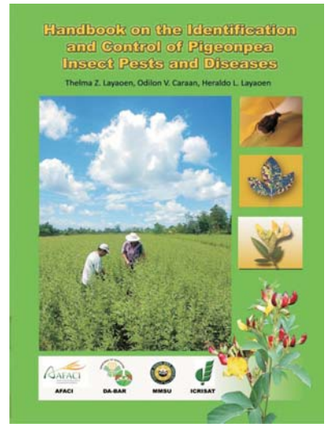
BAR Assistant Director Teodoro S. Solsoloy officially closed the three-day workshop.

There were 60 participants, composed of members of the Soybean TWG and Regional HVCDP coordinators, who were actively present during the activity. *(Ma. Eloisa H. Aquino)*

AFACI, BAR to launch 3 agri books







While it is important for a country to develop and manage its own platform of agriculture-related information, there is still a need to obtain such kinds of information in other countries to further improve what already exists as well as to gain new knowledge from them.

The Asian Food and Agriculture Cooperation Initiative (AFACI) is currently implementing its three-year project titled, "Establishment of Agricultural Technology Information Network in Asia" (ATIN). The project is aimed at facilitating a web-based agricultural information and knowledge sharing among member countries like Bangladesh, Cambodia, Indonesia, Korea, Lao PDR, Mongolia, Nepal, Sri Lanka, Thailand, Vietnam and the Philippines. The Department of Agriculture-Bureau of Agricultural Research (DA-BAR) serves as the partner organization for the Philippines represented by Ms. Melissa A. Resma, head of BAR's Information Management Unit (IMU).

Part of the activities of the project is the reproduction of publications such as handbooks, manuals, and other related agricultural materials that will provide relevant information and recent technologies generated from R&D.

"This activity aims at facilitating the publication and distribution of agricultural technology books for providing agricultural technologies directly to local farmers and sharing educational materials in their local languages or English," said Mr. Yang- Hee Cho, acting secretary-general of AFACI.

With this, AFACI, in partnership with BAR, is sponsoring three agriculture books which will be launched on 3 May 2012 at the Rural Development Administration (RDA), Republic of Korea in time for its 50th Anniversary celebration.

The three Philippine publications that will be launched are: 1) *Mga Pamamaraan sa Organikong Gulayan* (Organic Vegetable Farming) by the University of the Philippines Los Baños (UPLB), 2) Package of Technology of Different Vegetable Crops by DA-Regional Field Unit (RFU) 4A, and 3) Handbook on the Identification and Control of Pigeonpea Insect Pests and Diseases by the Mariano Marcos State University (MMSU).

The book, "*Mga Pamamaraan sa Organikong Gulayan* (Organic Vegetable Farming)" gives information on how to preserve soil fertility and to protect the environment while performing pest and disease control in vegetable farming. Highlighted in the handbook are experiences and learning of farmers who participated in the implementation of organic farming in selected areas in CALABARZON.

Another handbook, "Package of Technology of Different Vegetable Crops" tackles the different ways to increase the production of quality vegetables. It also gives emphasis to the efforts of the DA- Technology Generation and Dissemination for the Growth and Development of Vegetable Industry towards the improvement of the production, postharvest handling and marketing of vegetables through technologies. Steps on farming techniques and practices, including new crop varieties, are also found in the handbook.

The publication, "Handbook on the Identification and Control of Pigeonpea Insect Pests and Diseases" offers readers a short introduction about pigeonpea. It focuses on the characterization of pigeonpea's pests and the description of how these pests can affect the said crop. Enumeration of the measures on how to control and prevent them is also included.

The three publications are products of BAR-supported projects. Information gathered and learned from each of these handbooks will help not only farmers, but researchers, extension workers, policymakers and other concerned sector in agriculture. One thousand copies of each handbook will be reproduced while 15 copies of each will be sent to Korea for the book launch. *(Anne Camille B. Brion)*