Bill Gates commends ICRISAT's work on reducing hunger and poverty

With food insecurity and malnutrition persisting as the greatest challenges facing humanity in the coming decades, Mr. Bill Gates acknowledged the works of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) on grain legumes and dryland cereals in helping millions of smallholder farmers in the drylands of Asia and sub-Saharan Africa lift themselves out of hunger, malnutrition and poverty.

Mr. Bill Gates, co-chair of the Bill & Melinda Gates Foundation, visited the ICRISAT headquarters in Patancheru, Hyderabad in May. This was Mr. Gates' first visit to this Institute where he held discussions with the management and several key scientists to gain a better appreciation of the foundation's research for development investments to ICRISAT.

"ICRISAT crops are great – as they target millions of smallholder farmers globally," said Mr. Gates. The tour highlighted the uniqueness and importance of the works and initiatives of ICRISAT and its partners, particularly in providing modern crop improvement technologies and best management practices on once 'orphan' or neglected crops like grain legumes and dryland cereals.

"The drylands are home to 644 million poorest of the poor, and highly nutritious, drought-tolerant crops such as grain legumes and dryland cereals are the best bets for smallholder farmers in these marginal environments to survive and improve their livelihoods," explained Dr. William Dar, ICRISAT director general.

Dr. David Hoisington, ICRISAT deputy director general for research, highlighted the case of grain legumes and dryland cereals: "Chickpea, pigeonpea and groundnut are the 'poor people's meat'–crucial for ending global malnutrition. Sorghum and millets provide food security to the poorest people."

Mr. Bill Gates (right) receiving the ICRISAT Ambassador of Goodwill plaque from Dr. William Dar, ICRISAT Director General (left) PHOTO:ICRISAT

ICRISAT scientists demonstrated the different high-end sciences that the institute uses– genomics, bioinformatics, phenotyping and genetic engineering–all integrated or complementing each other as part of its crop improvement program for smallholder farming.

Considered as international public goods, scientists and national partners worldwide can have free access to ICRISAT's genotyping and phenotyping data, captured and analyzed through its work on bioinformatics, for their respective molecular breeding processes.

"That was cool!" was how Mr. Gates reacted on ICRISAT's lysimeter facility for phenotyping, a first of its kind in the world and the largest within the CGIAR system. The facility is now being successfully used for measuring plant responses to water stress related to drought and climate change adaptation.

Mr. Gates also engaged in a roundtable discussion with ICRISAT scientists on the impacts and challenges of applying the science on the ground. Two projects funded by the foundation were highlighted as the case: the HOPE project (Harnessing Opportunities for Productivity Enhancement of Sorghum and Millets) in sub-Saharan Africa and South Asia which seeks to increase by 30 percent the productivity of sorghum and millets in 200,000 farmers' fields; and the Tropical Legumes project which aims to enhance productivity of six legume crops (groundnut, cowpea, common bean, chickpea, pigeonpea and soybean) by at least 20 percent through improved cultivars and management practices and the development of markets and value chains.

The poor in the target areas of these two projects are the most malnourished, food-insecure in the world, unable to earn adequate incomes from agriculture which is their only source of food, nutrition and livelihoods. The impacts and achievements of these foundation-funded projects are now changing the lives of the poor, providing millions of smallholder farmers with tools and opportunities to boost their yields, increase their incomes, and build better lives for themselves and their families.

Recognizing the consistent and generous support of the Bill & Melinda Gates Foundation to the institute, ICRISAT honored Mr. Bill Gates as its first Ambassador of Goodwill. ### ***(ICRISAT News)***

BARChronicle
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BAR reports R&D accomplishments during NAFC Sectoral Comm Mtg

BAR Director Nicomedes Eleazar (left) mentions the importance and function of BAR in the RDE continuum and the DA system as a whole. On the other hand, NAFC Executive Director Ariel Cayanan commends BAR for its efforts in disseminating R&D results to the stakeholders of the sector. PHOTO:DDELEON

Attending the meeting are representatives from the seven Sectoral Committees of the National Agriculture and Fisheries Council (NAFC) and officials and focal persons of the Bureau of Agricultural Research (BAR). PHOTO:DDELEON

To ensure that agricultural research is coordinated and undertaken for its maximum use to agriculture is an integral part of the mandate of the Bureau of Agricultural Research (BAR). As the lead arm of the Department of Agriculture (DA) for research and development (R&D), this function is not limited to funding R&D, the bureau must also ensure the dissemination of research results and outputs to the sector.

Given this, the National Agriculture and Fisheries Council (NAFC) requested the bureau to present its current R&D initiatives and accomplishments as well as how research results are disseminated to the public. In attendance were representatives from NAFC and its Sectoral Committees and BAR officials. The meeting was held on 21 June 2013 at the BAR Conference Hall, Visayas Ave., Diliman, Quezon City.

Director Nicomedes Eleazar, in his opening message, underscored the role of BAR in the RDE continuum and how the bureau functions in the DA system. He also mentioned the importance of the briefing and presentation of BAR's accomplishments to the Sectoral Committee of NAFC. "The bureau sees this as an opportune time, not only to orient you with what we have accomplished vis-à-vis the directives and priorities of DA, but also to introduce to you the local and international partnerships that we have fostered and the lives that we have touched in our 26 years of existence," said the bureau chief.

In response, NAFC Executive Director Ariel T. Cayanan recognized and commended the efforts of BAR particularly on how

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IN THIS ISSUE...

Hawaiian ginger for mass propagation; looks into export potential

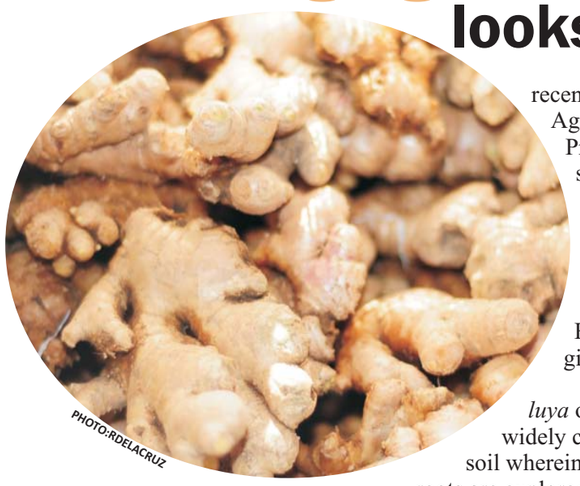
PHOTO:RDELACRUZ

Due to the high export potential of ginger in the world market, the Department of Agriculture (DA) looks into the mass propagation of Hawaiian variety of ginger in the Philippines.

In response, Dr. Nicomedes P. Eleazar, director of the Bureau of Agricultural Research (BAR), called for a consultation meeting on 3 June 2013 at BAR Conference Room, Quezon City to come up with a project plan for the commodity. Specifically, the plan is to mass produce the Hawaiian variety of ginger by tissue culture and to create production protocol for this variety of ginger in the country.

The meeting started with a backgrounder of Dir. Eleazar on the recent instruction of Agriculture Secretary Proceso J. Alcala. He shared that Ms. Teresa Saniano of the Secretary's Technical Advisory Group (STAG) was instructed to get the sample of Hawaiian variety of ginger in Davao.

Locally called as *luya* or *kabasi,* ginger is widely cultivated in Philippine soil wherein its tops, leaves, and roots are explored due to its active constituents and uses. Besides its many uses (e.g. relieves coughs, flu, among others and its antioxidant property), ginger is popularly known as a flavoring agent and condiment.

In the Philippines, several varieties are being cultivated. Among them include: Native, Red Native, Imugan, Hawaiian, Jamaica 'Oya', and Canton or Chinese Large. Hawaiian variety executes strong export potential, with its less pungency that is well preferred by foreigners. This large, plump variety is sometimes pinkish or yellowish brown in color and yields 20-30 tons per hectare.

In attendance during the meeting were former University of the Philippines Los Baños (UPLB) Chancellor Luis Rey I. Velasco, researchers from UPLB-Institute of Plant Breeding (IPB), and key officials from the DA-Regional Integrated Agricultural Research Centers (RIARCs) who will be serving as project implementers for the two-year project.

BAR will lead the project management and monitoring for the tissue culture and mass production/propagation of Hawaiian variety of ginger to be implemented by UPLB-IPB and RIARCs, respectively.

The projects are for possible funding under the DA-High Value Crops Development Program (HVCDP). Regions that have existing production of the ginger variety will continue mass propagating while the other regions will source out planting materials from UPLB. The university is also willing to provide technical assistance, train farmers, and assist in the production of Hawaiian ginger using the existing areas. BAR Agribusiness Coordinator Evelyn H. Juanillo gave a briefer on ginger production in the Philippines, highlighting its uses, products, and by-products. Ginger can be prepared and sold either fresh, dried, or processed (preserves, candies, pickled, beverages).

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BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

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grain formation, growth stunting, and more.

In terms of physical effects, the climate hazards have caused increase in flooding depths, loosening of soil, frequent landslides and collapse of dikes and walls, and soil infertility.

The major effect on health is the lowering capacity of farmers to work in the terraces during extreme weather conditions. Since the farmers belong to the middle and older age groups, they have become more vulnerable to diseases and illnesses since cold months have gotten colder while warm months have gotten warmer.

"Viral diseases such as acute respiratory infection, fever, flu, and pneumonia obtained the highest frequency in all the sites. Dengue fever tends to be more dominant in Ifugao and Kalinga but not in Apayao and Mt. Province, There are reported cases of malaria in all the study sites but appear to be more pronounces in Apayao and Kalinga," Dr. Ngidlo discussed.

PHOTO:ABRION
Dr. Robert Ngidlo shares the rationale behind the project, its objectives, and milestones. He also relays the major climatic hazards experienced in the area such as erratic rainfall, El Niño, and La Niña among others.


PHOTO:ABRION
A brief meeting is held between Dr. Ngidlo and BAR monitoring and documentation team to discuss on the accomplishments of the project as well as the problems encountered during project implementation.

Adaptation strategies amidst climate extremes

The survey and documentation found that the farmers in all sites have been employing certain adaptive methods in order to combat against the effects of climate change.

The primary strategy they have been employing is adjusting the cropping calendar. "Farmers have successfully evaded injuries imposed climate hazards by moving their cropping calendar to the more favorable months of the year which coincides with the warmer months from January to June," the proponents stated.

The farmers are also successful in classifying which traditional rice varieties are apt for wet and dry seasons which improved yield and income. Modern farming practices such as 1) mechanization, 2) use of pesticides, herbicides, and fertilizers, 3) use of high-yielding and early-maturing rice varieties, are also performed in order to hasten and optimize production.

Since water is the most vital constituent in rice terraces farming, most of the activities being held by the farmers are concentrated on water/irrigation management. The documented water management strategies are 1) repair and maintenance of dikes, 2) use of PVC pipes to convey water from source to the terraces, and 3) use of irrigation canals.

"The four study sites use a variety of ways to control pest and diseases. These are: use of resistance rice varieties, use of chemical spray, manual removal or handpicking, proper timing of planting to avoid pest, and no control measures being applied," Dr. Ngidlo elucidated.

To address soil infertility, the farmers utilize commercial organic fertilizer with inorganic fertilizer and compost. They also use less aromatic varieties which can thrive well in nutrient-less soil than the traditional heirloom rice varieties.

It is also documented that farmers conduct alternate flooding and draining of water in the rice paddies in order to allow sunlight hit the paddy surface and to reduce zinc deficiency, a disease locally known as *Lisao* or *Lanu*, which affects soil health and plant growth.

Local policies were also arranged in order to have equal and harmonious rice production among communities. The *Lampesa system* is implemented to manage the distribution of water during water-lean months.

"The *Lapat system* is declared when a member of the community passes away, putting a portion of a river or forest off limits to human activities for a certain period of time. The length of *Lapat* is based on the status or prominence of the person who passed away. Although the *Lapat system* is more on the conservation of biodiversity, it may also enhance climate change resiliency when natural resources are restricted from use to allow healing even for a limited period of time," Dr. Ngidlo explained. ###

Rice terraces farmers fight climate change

Story by Leila Denisse E. Padilla

PHOTO:LPADILLA

The beholding terrain and vast coverage of the rice terraces found in the Cordillera Administrative Region (CAR) is still one of the most proud-to-be-*Pinoy* spots in the Philippines.

However, due to the pervasive effects of climate change, rice terraces farmers are more determined to protect the 2000-year old natural heritage and to sustain rice productivity which is one of the major sources of livelihood in the region.

Impacts of climate change on production, environment, and health

The Ifugao State University (IfSU), in collaboration with the Bureau of Agricultural Research (BAR), implemented a study titled "Assessment of Climate Change Impacts, Vulnerabilities, and Adaptation Strategies in the Traditional Rice Terraces of the Cordillera Region" to document the overall impacts of the weather anomalies being experienced in the region and how farming communities in Ifugao, Mt. Province, Kalinga, and Apayao adapt to sustain production and income.

The study, which was conducted from August 2011 to November 2012, also aimed to document policies on good practices in rice production to aid in optimizing productivity and preserving cultural heritage. Towards the end, the proponents created information materials and convened the rice farmers to discuss the findings and results of the study.

"The selected rice terraces clusters are Viewpoint and Bangaan in Banaue, Ifugao, Fidelisan, Pide and Aguid in Sagada, Mt. Province, Magsilay in Pasil, Kalinga, and Tanglagan in Calanasan, Apayao. The four study sites falls either under the Type 1 and 3 climatic classification of the Philippines which is dry from December to April and wet during the rest of the year," discussed by Dr. Robert T. Ngidlo, project leader from IfSU.

After the survey conducted among 175 farmers/key informants, it was found that there are six major climatic hazards that occur across the four project sites, namely 1) erratic rainfall, 2) low temperature, 3) typhoon, 4) El Niño, 5) La Niña, and 6) fog/cloudiness.

The effects of these hazards were categorized into three: 1) biological, which focuses on the life processes such as growth, resistance, and reproduction; 2) physical, which focuses on environmental physical conditions; and 3) health, which focuses on farmers' well-being.

The documented biological effects are interference in pollination during the flowering stage, increase in insect pest population particularly rice bugs, thickening of stalks and leave, delayed panicle initiation and

BAR, IRRDB, IEC tie up for a carbon market workshop

PHOTOS:DDELEON

(left) Mr. Adrian Ward and (right) Dr. Paul Dargusch' lectures focus on climate change science and policies, and carbon market. They also provide the participants with hands-on exercises on carbon inventory and web-based emissions trading simulation called Carbon Game.

Given the clamor on the adverse effects of climate change, one of the mitigation strategies that is being proposed is the reduction of greenhouse gases emission (measured in CO_2-equivalent) by highly-industrialized countries under the Kyoto Protocol.

The question now is, how does a country such as the Philippines which is not a significant carbon emitter, contribute to carbon emission reduction?

This is where carbon market comes in which was the focus of discussion during a two-day short course sponsored by the Bureau of Agricultural Research (BAR), the International Rubber Research and Development Board (IRRDB), and the International Energy Centre (IEC).

Held on 13-14 June 2013, the lectures focused on review of climate change science and policies, carbon market, carbon inventory and trading principles. It also included topics on how rubber can help in carbon sequestration and its implications on the rubber industry in the country.

Carbon market is "a carbon trading system through which countries may buy or sell units of greenhouse gas emissions in an effort to meet their national limits on emissions." This strategy is under the Clean Development Mechanisms (CDM) of the Kyoto Protocol. There is no monetary exchange involved in this scheme, but instead, the payment is in terms of funding projects and other initiatives related to climate change in developing countries (such as the Philippines) or any industrialized country which had already met its carbon reduction target.

"Carbon market holds both opportunities and challenges to us – thus, the importance of knowing it better", said BAR Director Nicomedes P. Eleazar. He emphasized that as a country that is not a large contributor of carbon, the opportunities presented by this trading scheme must be capitalized in initiating research and development (R&D) projects.

Invited as guest lecturers were Dr. Paul Dargusch and Mr. Adrian Ward of IEC. Dr. Dargusch is currently a senior lecturer at the School of Geography, Planning and Environmental Management in the University of Queensland. He is known for his work on climate change and carbon management for the Queensland Government and the United Nations Development Program. Mr. Ward, on the other hand, has been a consultant for various agencies on carbon, energy and corporate sustainability and communication-related projects.

Also highlighted in the lecture was the importance of rubber in carbon sequestration. It is found out that the carbon sequestration in a rubber-based farming system ranges from 235-574 tons per hectare in 30 years. This is why engaging into rubber-related projects such as reforestation and afforestation projects are being explored by many industrialized countries and other organizations.

Aside from the lectures, Dr. Dargusch and Mr. Ward prepared some practical exercises for the participants to experience on how to do carbon inventory at a particular organization, and a hands-on activity on web-based emissions trading simulation. This simulation is called a Carbon Game which aims to educate the participants on the enormous financial, social, and environment opportunities that a price on carbon can bring.

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BAR Director Nicomedes P. Eleazar reiterates the importance of knowing how the carbon market works. PHOTO:DDELEON

BAR conducts midyear review
and crafts plan for the remaining half of 2013

The Bureau of Agricultural Research (BAR) conducted its "Midyear Review and Planning Workshop" with the aim of strengthening its effective coordination in various research and development (R&D) programs, projects, and other initiatives on 25-26 June 2013 in Legaspi City, Albay. The midyear assessment determines whether BAR has accomplished its specific targets set during the previous year, review what has already been done, and come up with new strategies and approaches to enhance further plans.

Since the activity was held in Bicol, the group was welcomed by Dr. Edgar T. Madrid, regional technical director for Research and Regulations of the Department of Agriculture-Regional Field Unit (DA-RFU) V, who expressed his appreciation for making Region V the host for the activity. He reiterated the role of BAR as instrumental in the development of agri-fisheries R&D projects in the region.

The activity officially kicked off with the remarks from BAR Director Nicomedes P. Eleazar who reported on the accomplishments during the first two quarters of 2013. He pointed out the need to redefine the organizational goals to meet the demands and challenges of tomorrow. In particular, he underscored the change in coordination strategy that the bureau employed. BAR has shifted from a region-based to program-based type of coordination which provided more focus on the projects that BAR is currently supporting. This also ensured a smooth facilitation and coordination between BAR and its direct partners, especially the Regional Integrated Agricultural Research Centers (RIARCs). The bureau chief added that, "when we implement projects across the country, we should also evaluate actual performance/s and thus, it is important that we do impact assessments."

Key officials and staff members of BAR participate in the workshop. They are welcomed by (front row, 4th from left) Dr. Edgar Madrid, regional technical director for Research and Regulations of DA-RFU V and Ms. Luz Marcelino, (front row, rightmost) manager of Bicol Integrated Agricultural Research Center. PHOTO:BAR

Accomplishments and plans

Mr. Joell Lales, division chief of the Planning and Project Development Division (PPDD), presented the performance of the agriculture sector and enumerated DA's Outcome Commitments for 2013-2016 as well as measures on mitigating malnutrition and poverty in the country. Ms. Cynthia Remedios de Guia of PPDD presented the accomplishments of the Policy and Planning Section and explained that policy research focuses on continuing research on the latest trends in agriculture and fisheries R&D, while Mr. Raymond Patrick Cabrera also of PPDD presented the Project and Evaluation and Project Packaging Sections' salient accomplishments. Continuous updating of relevant information of BAR's program portfolio which contains details of all major R&D programs as well as the screening and prioritization of R&D project proposals, among others are in the PPDD's pipeline of activities for the second half of the year.

Mr. Anthony Obligado, OIC head of the Technology Commercialization Division (TCD), reported on the National Technology Commercialization Program (NTCP) including activities cutting-across all commodities and major programs. He also presented that a consultation meeting on the Hawaiian ginger transpired as per instruction of Agriculture Secretary Proceso J. Alcala to propagate the variety in the Philippines. NTCP has commercialized 14 technologies for the first two quarters of the year and 69 projects from the 81 have already been reviewed. Preparations for the coming 9th Technology Commercialization Forum and Product Exhibition, trainings on Intellectual Property Rights (IPR) appreciation, and workshop on multi-location adaptability trials of imported sweet potato seeds from Singapore and Japan were among the TCD's plans for the next semesters.

Ms. Ligaya Santos, assistant head of the Project Monitoring and Evaluation Division (PMED), presented the division's accomplishments and activities. PMED is coordinating 231 Community-based Participatory Action Research (CPAR) projects

introduced crop from India, sweet sorghum is drought-resistant and is suitable for planting even in non-irrigated, marginal areas. Also, collecting feedstocks (syrup) is much easier and larger in volume compared to Stevia plant wherein sweetener is mainly extracted from its leaves.

When it comes to coco sugar, sweet sorghum sweetener has a better advantage. It is cheaper to produce. Unlike coconut sap sugar production, which is done virtually by manual methods from harvest to cooking for sugar crystallization, the production of sweet sorghum sweetener is mechanized allowing for bulk volume. And with the spray-drying facility to back up the anticipated demand in volume, the prospect becomes more promising for the sweetener from sweet sorghum.

Packaging and marketing

Part of the component of the project is its taste improvement and testing. Packaging and labeling will be the last segment which is important in attracting customers and reaching the international market.

Bapamin will produce a sample volume soon. "We intend to release it in August during BAR's National Agriculture and Fisheries Technology Forum and Product Exhibition at SM Megamall," announced Engr. Arcangel.

"This will be sold in specialty stores, more of a niche market that is into selling organic and natural products like Healthy Choices in Greenhills. Hopefully, after we launched the product, we will tap 10 outlets in Metro Manila. We want to cater to the anti-diabetics, travelers, food, coffee shops and others that need a fixed sweetener volume of single packs," Engr. Arcangel explained.

Although not in the mainstream market yet, Bapamin has been an active participant in various agricultural trade fairs and exhibits wherein they have been showcasing the sweetener from sweet sorghum.

"Two years ago, we met someone in the Agrilink exhibit who has been using coco sugar. We urged him to try our sweetener and mix it with the sweet sorghum vinegar. We also asked him to have his condition regularly monitored by his doctor to know if it's effective. Ever since, until today, he comes to our house to get his supplies. He is even willing to give his testimonies for our product. After two years of using the sweetener, he felt strong and he can now walk without a cane," Engr. Arcangel shared. ### ***(Rita T. dela Cruz)***

PHOTOS:RDELACRUZ


1 sweet sorghum extract which is processed into syrup


3 spray dryer machine to powderize the syrup


2 the syrup is converted into powder through spray drying method


Engr. Antonio Arcangel, general manager of Bapamin Enterprise, holds a sample of the finished product.

SOON TO HIT THE MARKET:

An anti-diabetic, natural sweetener from sweet sorghum

PHOTO:RDELACRUZ

A natural sweetener from sweet sorghum syrup will be hitting the market soon. And it comes in fine, milky-looking powder form.

When asked how different the sweet sorghum sweetener is from the commercially available sweetener in the market, Engr. Antonio S. Arcangel, general manager of the Bapamin Enterprise, had no qualms in proudly stating the facts. “It's all natural and it has medium-low glycemic index compared to other sweetener which is good for diabetics.”

“In terms of physical attributes, sweet sorghum powder is fine in texture and slightly hygroscopic which means that it has good solubility even in cold water and has high flavor retention. Taste-wise, it is milky and has a distinctly sweet taste that does not leave any after taste in the tongue or add any unnecessary flavor to your beverage,” he said.

Engr. Arcangel developed the sweetener from sweet sorghum syrup through the project, “Value Added Technique in Sweet Syrup: Spray Drying and Packaging for Convenience Market,” which is funded by the Bureau of Agricultural Research (BAR) under its National Technology Commercialization Program (NTCP).

The goal of the project is to convert the sweet sorghum syrup into a high value food product such as the powder sweetener and package them into sachets for convenient handling and longer shelf life. “An important component of this project is the acquiring of a spray drying machine to do the main job: convert the syrup into powder in large volume,” Mr. Arcangel explained.

The spray drying machine

On 6 June 2013, together with a visiting group from BAR's Technology Commercialization Division (TCD) and Applied Communications Division (ACD), Engr. Arcangel and his group conducted a dry-run to test the machine. According to him, the machine originally came from Germany and was eventually fabricated in the Philippines. “At about 15 feet tall, the spray dryer for sweet sorghum is only the fifth of its kind in the Philippines,” he added.

In a six hour operation, the machine can process and convert a 10-kilo of the sweet sorghum feedstock (syrup) into powder form. This will be packaged in sachet, each containing 10 grams. The 10 kilo powder sweetener will produce around 1,000 sachets. The suggested retail price will be at P3.50 per sachet which makes it competitive.

Comparing it to other natural sweeteners

Probably two of the great competitors of sweet sorghum sweetener in the market are Stevia and coco sugar. Both are packaged and sold as natural sweetners which are also anti-diabetic. But Engr. Arcangel has more to say about his product over the two top competitors.

“Plantation-wise, sweet sorghum is easy to grow and maintain. Since it is an

BAR Director Nicomedes P. Eleazar (left) specifies his marching orders. On the other hand, division heads and focal persons present their respective accomplishments for the 1st semester of the year. (clockwise) Mr. Joell Lales (PPDD Head), Mr. Anthony Obligado (TCD Head), Ms. Marjorie Mosende (IDD staff), Ms. Melissa Resma (IMU Head), Mr. Roberto Quing, Jr. (Finance head), Ms. Julia Lapitan (ACD Head), Ms. Ligaya Santos (PMED Asst. Head), and Ms. Cynthia De Guia (PPDD staff). PHOTOS:PLESACA

covering 551 sites nationwide, benefitting 11,014 farmers from 10,704 of December 2012. The division is preparing for the proposed launching of the first CPAR Congress tentatively set in November 2013. The congress will highlight the efforts of CPAR implementers and farmer-partners, disseminate information about the success of CPAR, and strengthen linkages among its partners.

The human resources and R&D facilities development as well as the institutional linkages activities of the Institutional Development Division (IDD) were reported by Ms. Marjorie M. Mosende. IDD has sponsored six new scholars for MS and PhD. This year's scholars are in the fields of Food Science, Agronomy, Agricultural Economics, Development Studies, Entomology, and Animal Science. Three applications for thesis/ dissertation assistance were also granted. In terms of research facilities, the division provided funding grants to 24 Institutional Development Grant (IDG) projects of DA-Bureaus, RIARCs, state universities and colleges (SUCs) and local government units (LGUs). Preparations for the 25th are also underway as well as those for the coming Plant Genetic Resources (PGR) training and workshop, and collection and documentation of “PGR Germplasm of Solanaceous Crops” from different regions are the on-going activities of the division.

In the area of information dissemination, Ms. Julia A. Lapitan, OIC head of the Applied Communications Division (ACD), presented its communication advocacies and activities. She reported that five publications have already been completed in the first half of the year through the Special Publications Grant (SPG). She informed the group that aside from PTV4's “Mag-Agri Tayo”, ACD has partnered with Mr. Gerry Geronimo of the “Ating Alamin” program to assist the bureau in its information campaign and to increase media mileage. The advocacy on Knowledge Management (KM), tri-media coordination, and production of in-house publications of R&D materials were among the division's lineup of activities.

The Information and Communications Technology (ICT) portion was presented by Ms. Melissa A. Resma, OIC head of the Information Management Unit (IMU). She reported that the unit has completed the migration of various publications and portals into the archives system. The migration process is necessary for R&D information needs of the agency and its clients. Configuration of the new servers and migration of the databases, deployment and training of users for the new Document Tracking System, as well as the revision of the proposed Voice over IP (VOIP) telephony with the University of the Philippines Technology Development Center (UPITDC), are currently in the finalization process.

Mr. Roberto S. Quing, Jr. of the Finance Unit presented the financial performance and fund utilization of the agency as of June 2013.

Alongside with the presentation of accomplishments of each division, Dr. Eleazar outlined his specific marching orders for the remaining half of 2013. Dr. Eleazar also acknowledged and commended the staff for a job well done. ###

(Patrick Raymund A. Lesaca)

BAR-supported SOY-based products unveiled; new processing plant inaugurated

Different soy-based products developed by the MGSK include soy coffee (3-in-1, instant coffee, brewed), taho, tokwa, soymilk, noodles, pastillas,and polvoron.

PHOTO:RDELACRUZ

(below photo, L-R) Ms. Rose Mary Aquino of CVIARC, Ms. Ellen Garces of BAR, and Mr. Navis of MGSK lead the ribbon cutting during the inauguration of the new soybean processing plant (above photo) PHOTOS:RDELACRUZ

In an effort to expand the market potential of Philippine-grown soybean, the Makabagong Gabay sa Kalusugan (MGSK) Health Products unveiled its packaged soy-based products to the public on 4 June 2013 in Bayombong, Nueva Vizcaya. In attendance were stakeholders from the soybean industry both from the government and private sectors.

MGSK is a private company established in 1997 dedicated to developing and offering healthier and natural alternative food products to lessen or prevent the occurrence of diseases brought on by improper nutrition or diet. It has been an active partner of the Department of Agriculture (DA), particularly the High Value Crops Development Program (HVCDP) and the Bureau of Agricultural Research (BAR), in its promotion to intensify soybean production in the country.

Its proprietor, Mr. Ricardo B. Navis, Jr. believes that soybean is an important protein food source that is both safe and healthy because "it does not produce uric acid."

"I have developed various products from soybean but I needed funds to improve their packaging. From then on, I have been looking for funding support to help me with this project. It was here that I came to know BAR through our participation in their annual technology forum in Megamall. They saw the potential of my products," recalled Mr. Navis on how MGSK was able to avail of fund support from BAR.

"Since we lack the funds, we cannot develop good packaging strategy for our products. Even though we have good quality products, it's hard to sell them because they were poorly packaged. With the funds from BAR, it helped us improved sell our products. *Malaki ang iginanda ng aming mga produkto dahil sa magandang packaging na naging posible dahil sa project na ito with BAR,"* (The presentation of our products improved a lot due to good packaging which was made possible through this project with BAR) added Mr. Navis.

BAR is supporting the product development and packaging of various MGSK soy-based products which is now being marketed in specialty stores and selected supermarket. Among

BAR reports R&D accomplishments...from page 1

(L-R) Mr. Joell H. Lales, head of PPDD, discusses on organic agriculture, climate change, and rainfed agriculture programs. Mr. Patrick Cabrera, technical staff of PPDD, enumerates BAR-funded under the High Value Crops Development Program. Mr. Anthony Obligado, head of TCD, presents BAR's National Technology Commercialization Program. Also present during the event is BAR Assistant Director Teodoro S. Solsoloy. PHOTOS:DDELEON

R&D results are being disseminated in the sector. He also mentioned how the meeting will serve as "a solid first step towards a robust partnership with the bureau as it aims to intensify the dissemination of the results of the agriculture and fisheries research." He said that R&D plays a key role for a country to be competitive, and thus, emphasized on the need to increase the participation of the private sector and even the farmers and fisherfolk in R&D initiatives.

PHOTO:DDELEON

Asec. Dante de Lima reading the BAR Digest, a quarterly publication of the bureau which contains articles on R&D technologies and results in the agriculture and fisheries sector.

BAR's presentations started with "Major R&D Programs and Accomplishments" by Mr. Joell Lales, head of Planning and Project Development Division (PPDD). He discussed the three thematic priority programs of the bureau which include: organic agriculture, climate change, and rainfed agriculture.

Mr. Raymond Patrick Cabrera, also from PPDD, presented the "Significant Outputs/Success Stories (by commodity and/or thematic area)" including specific projects under the High Value Crops Development Program (HVCDP).

Last to present was Mr. Anthony Obligado, head of the Technology Commercialization Division (TCD), who reported on the accomplishments and specific funded projects under the National Technology Commercialization Program, one of the banner programs of the bureau.

Present in the event were representatives from the seven NAFC Sectoral Committees: 1) Committee on Food Crops, 2) Committee on Commercial Crops, 3) Committee on Fisheries and Aquaculture, 4) Committee on Poultry, Livestock and Feed Crops, 5) Agriculture and Fishery Mechanization Committee, 6) Committee on International Trade, and 7) Committee on Climate Change. They were joined in by DA Assistant Secretary Dante de Lima and Secretary's Technical Advisory Group Member Ms. Teresa Saniano.

The committees provide a venue for private sector participation in the policy decision making processes that the government would pursue which is achieved through regular and special meetings, and public consultations. The output of these meetings and consultations are policy recommendations which are submitted to either DA or NAFC. The committees also provide NAFC and the DA with feedback from the private sector regarding agricultural and fishery issues and concerns.

The briefing/meeting was concluded with an open forum to clarify various issues and concerns of the members of the sectoral committees. ### ***(Diana Rose A. de Leon)***

"[This meeting] is a solid first step towards a robust partnership with the bureau as it aims to intensify the dissemination of the results of the agriculture and fisheries research." ***–NAFC Dir. Cayanan***

Soybean AYT and food products...from page 8

A brief program was held before the cooking demonstration proper. Ms. Jennilyn Castañeto (left), soybean focal person of BAR; Dr. Edito Sumile (middle), DOSCST President III; and Mr. Elmer Enicola (right), National Technical Working Group (TWG) for the Soybean Program, provide information and updates on soybean. PHOTO:NDELROSARIO

Healthy and delectable food and dishes made from soybean

Over 25 food products and recipes were showcased during the two-day cooking demonstration held in DOSCST in Mati, Davao Oriental. Ms. Maria Lourdes Lesaca, a nutritionist, headed the cooking demonstration and some of the recipes were her invention.

A short opening program was held before the cooking demo.

Dr. Jessie Alzate, research and extension director, gave an insightful welcome address in which he acknowledged the importance of research and extension in agriculture, especially in commodity development and optimization.

Afterwards, Mr. Elmer Enicola of the National Technical Working Group (TWG) for the Soybean Program gave an overview of the national soybean industry in the Philippines.

Dr. Edito Sumile, DOSCST president III, commended the successful efforts towards soybean development in the province during his message and assured the support of DOSCST in the upcoming initiatives on soybean. Ms. Jennilyn Castañeto, focal person for soybean in BAR, highlighted the potentials of soybean in inducing economic rise because of its versatility as a crop and the high demand in domestic and foreign markets.

The cooking demo began with some of the basic products developed from soybean. These were milk, tofu, *yuba* (thin wrapper made from dried soy milk), textured soy protein, textured wheat and soy protein, soy protein crumbles, soy sausage, powdered soy milk, *taho*, and soy sauce.

Fifteen delectable dishes were prepared afterwards. These were tofu omelet, vegetarian tofu steak, vegetarian tofu *adobo*, penne rigati carbonara, vegetarian barbecue, tofu *kilawin*, tofu sticks, fried tofu *lumpia*, fried tofu, fresh tofu lumpia, okara cookies with raisins, okara tan bread, red beans con veggie carne, braised tofu with lohan chay, and veggie burger.

"These soybean-based products and dishes are not only healthy, but they are also affordable and easy-to-make. Isn't it exciting to eat something that is creative and healthy and does not have the health hazards posed by fatty foods?" Ms. Lesaca said after the entire cooking demonstration. ### ***(Leila Denisse E. Padilla)***

34 farmers graduate...from page 10

Mang Rufo shows the motor pump, one of the products from his goat farming. PHOTO:ABRION

strategies among farmers through the conduct of trainings. From the initial 18 farmers, the project has already helped 87 farmer-cooperators in 8 municipalities of the province with 230 goats distributed.

According to Dr. Arthur Dayrit, member of the CPAR Team in Region III, goat raising has a big potential in the region because there is a demand, but not enough supply. Venturing in this business enterprise is indeed profitable as it is not labor intensive and requires only low capital. More importantly, the goats can reproduce up to three times within a span of two years, hence faster return of investment for the farmers.

One of the farmer-cooperators who is now reaping the benefits of goat raising is Mang Rufo D. Dolueras, a second batch graduate of the FLS-IGM. From the initial 5 goats that he received from the project in 2010, he produced 38 goats, from which 10 offsprings were already returned to be loaned out to other interested farmer-cooperators. With all the learning that he readily applied in his own farm, he already earned 30 thousand pesos from goat farming alone.

He will never forget the story of how raising goats helped him acquire a motor pump which is helping him greatly in his farming endeavors. He shared how once a visiting mining engineer was captured by the quality of one of his goats. The engineer then made a deal with him to give him a motor pump in exchange of the goat. He did not think twice and the deal was sealed. He was very thankful to all the collaborating agencies for helping small-scale farmers like him. Now, he need not worry about where to get money whenever he needs it because his goats are now becoming a ready cash asset for him.

As of now, plans to expand the project to other sites in Iba, Zambales are now being explored because of the numerous requests received from the farmers in the said municipality to conduct the same training. ### ***(Anne Camille B. Brion)***

Mr. Ricardo Navis, proprietor of MGSK and developer of all its soya-based products, endorses his latest product from soya, the soya ice cream, which was a big hit during the product launch. PHOTOS:RDELACRUZ

the soy-based products developed by MGSK include: soy coffee (3-in-1, instant coffee, brewed), *taho*, *tokwa*, soymilk, noodles, pastillas, and *polvoron*.

In the pipeline are siomai with soybean, soy sauce, and miso. "We really want to develop a soy sauce with no added chemicals. I want to make soy sauce from natural fermentation," said the very enthusiastic MGSK owner.

Aside from the product launch, the soybean processing plant was also inaugurated. The plant is seen to boost the soybean industry as this will attract more farmers to plant soybean given its demand and potential as an agribusiness.

In the message of BAR Director Nicomedes P. Eleazar during the product launch, which was read by Ms. Ellen Garces of the Technology Commercialization Division (TCD) in his behalf, he underscored the success of MGSK as one of the fruitful outcomes of a public-private partnership initiative. "I commend MGSK's efforts in making the vision of DA a reality and in making the local soybean industry alive and kicking. We are happy with such kind of outcome as we are ensured that government funds are being properly utilized to benefit the industry," Dir. Eleazar said.

The bureau chief added that the DA's soybean program has gone far towards reaching its goals which is well manifested by the expansion of the coverage area and the growing interest by the private sector and other stakeholders particularly those in the food and feed business. "We are targeting 4,748 hectares for 2014 in all the 16 regions of the country for soybean production," he concluded. ### ***(Rita T.dela Cruz)***

"Malaki ang iginanda ng aming mga produkto dahil sa magandang packaging na naging posible dahil sa project na ito with BAR."

PHOTOS:RDELACRUZ

Soybean AYT and food products in Davao showcased

In 2010, the Department of Agriculture (DA), along with the Bureau of Agricultural Research (BAR) and other implementing agencies, crafted the Philippine Soybean Roadmap for 2010-2014 titled "Building Sustainable Soybean Industry in the Philippines" that envisions a *productive farming communities that unite as providers of healthy and nutritious food to Filipinos and the neighboring Asian countries through building a strong community-based sustainable production unit and establishment of viable soybean processing industry through public-private partnership initiative.*

Since then, BAR has been active on implementing and supporting projects on soybean research, development and extension. The projects are conducted nationwide together with regional partners and state universities and colleges (SUCs).

On 24-27 June 2013, a monitoring and documentation activity of the adaptability yield trial (AYT) of organic soybean in the Southern Mindanao Integrated Agricultural Research Center-Research Outreach Station (SMIARC-ROS) in Manambulan, Davao City was conducted along with a program titled "Organic Soybean Processing Demonstration, Utilization, and Video Documentation" that showcased the developed soybean food products and recipes through a cooking demonstration organized by the Davao Oriental State College of Science and Technology (DOSCST).

Soybean AYT in Davao City shows encouraging results

In SMIARC-ROS, Manambulan, 14 soybean varieties are planted and each are regularly assessed according to important biological and physical characteristics including the length of maturation, number of pods, number of seeds per pod, stalk height, climate resilience, pest resistance, and more that affect the quality and quantity of yield.

It is a predetermined trait required by some foreign buyers that the only soybeans they will buy should have lighter or white hylum because it looks more appealing than the varieties that have dark hylum. Hylum is the scar or mark on the seed that is left from its former connection to the ovary wall. In Manambulan, seven out of 14 varieties possess lighter hylum and one of which thrives well in the area.

Meanwhile, two out of 14 varieties are black soybeans. Only the seed coat of these two varieties is black but the inside is yellowish white. The black soybean has a potential to be used in replacement of *tausi*. Among the 14 varieties, *Tiwala 6* and *8* recorded the highest yield while *NSIC SY9* recorded the fastest maturation.

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(above photo) Advanced yield trial of soybean located at SMIARC-Research Outreach Station in Manambulan, Davao City.

(below photo) A sample of freshly harvested soybean PHOTOS:NDELROSARIO

Value-adding technologies for profit highlight BAR seminar series

Value-adding technology processes enable farmers and fisherfolk additional income-generating opportunities for their existing produce.

On 27 June 2013, the Bureau of Agricultural Research (BAR) featured two topics on "Tuna and Bangus Canning" and "Chevon Value-Adding Technologies". Both topics involve processes that improve the value of their products by adding technologies that extend profits as well as the project's clientele.

Over 40 people attended the seminar, mostly from state universities and colleges (SUCs) including Camarines Norte State College (CNSC), Central Luzon State University (CLSU), Isabela State University (ISU); DA-attached agencies including the Agricultural Training Institute (ATI), Bureau of Fisheries and Aquatic Resources (BFAR); and representatives from various Regional Field Units (RFUs).

BAR Technical Adviser Virginia Agcopra formally welcomed the guests and visitors in behalf of BAR Director Nicomedes P. Eleazar. The message reiterated the importance of value-adding, "value-adding technologies, packaging, and labeling are essential tools for product development."

The first topic, "Tuna and Bangus Canning" was presented by Ms. Rosalinda Maling of the Mindoro State College of Agriculture and Technology (MinSCAT). Her presentation focused on tuna in oil and bangus fresh style. Ms. Maling shared the step-by-step process in ensuring that the canned fish meat is preserved and delivered properly to the consumers. The process is scrupulously discussed as the preparation will ensure the quality of the preserved tuna, and in turn guarantee customer satisfaction.

The second topic presented was "Chevon Value-Adding Technologies" by Dr. Jonathan Nayga of the Isabela State University (ISU). Dr. Nayga shared the importance of carefully preparing the goat meat for canning as well as the available update on the traditional way of preparing the meat. He emphasized the process of slaughtering the goat because this determines the outcome of the meat. He also mentioned that "we are concerned more on the research component of the commodity… *para malalaman po natin iyong economic value ng kambing*" ("… so that we will know the goat's economic value").

Both projects are funded under the National Technology Commercialization Program (NTCP) of BAR. These projects promote value-adding technologies that will increase profitability and support the sustainability of the products. "Both projects are essential to BAR's vision of attaining food security and reduce poverty through technology-based agriculture and fisheries sector," said Ms. Agcopra.

The BAR Seminar Series is a regular activity of the bureau which being coordinated and facilitated by the Applied Communications Division (ACD). The activity aims to inform the public on the latest research and development (R&D) results, trends, and issues through a lecture-type seminar to further enhance their understanding on a variety of topics in agriculture and fisheries. ### ***(Zuellen B. Reynoso)***

Dr. Jonathan Nayga (top) and Ms. Rosalinda Maling (middle) discuss on the value-adding of tuna and chevon, respectively. Samples of canned tuna and bangus (below, left) and canned chevon (below, right) were displayed.

Hawaiian ginger for mass propagation...from page 2

(L-R) Former UPLB Chancellor Luis Rey Velasco, BAR Director Nicomedes Eleazar, and Agribusiness Coordinator Evelyn Juanillo lead the discussion on creating a project plan for the Hawaiian ginger. PHOTOS:MEAQUINO

By-products also include essential oil and neutraceutical. With the many potential products and by-products of ginger, it was suggested to develop local products to be funded under BAR's National Technology Commercialization Program (NTCP).

As per recent inventory, CAR, Regions II, IVA, IVB, IX, X, XI and XII have areas planted with Hawaiian variety of ginger. In Bohol, a cooperative is already producing *instant salabat*, a native beverage prepared from the rhizomes. ### ***(Ma. Eloisa H. Aquino)***

PHOTO:BERNARDO

Regional Seminar Series on EL and SNAP concludes in Region 8

The Bureau of Agricultural Research (BAR), in collaboration with the University of the Philippines Los Baños-Crop Science Cluster (UPLB-CSC), and the Department of Agriculture-Regional Field Unit VIII (DA-RFU VIII), conducted its third Regional Seminar Series on Edible Landscaping (EL) and Simple Nutrient Addition Program (SNAP) Hydroponics on 27-28 June 2013 at the DA-Eastern Visayas Integrated Agricultural Research Center (EVIARC) in Babatngon, Leyte.

Ms. Maria Charito E. Balladares, university researcher from UPLB-CSC, discussed the concept of EL and its integration to agritourism. Ms. Balladares presented some facts and figures showing that Filipinos eat less vegetables, thus people should be encouraged to eat what they plant by producing their own food aesthetically through EL. Further, she explained that EL will help attain sufficiency from household level, community level, up to provincial level.

Meanwhile, Mr. Bryan V. Apacionado and Mr. Ryan Rodrigo P. Tayobong, both instructors from UPLB-CSC, discussed the principles and elements of design and facilitated the hands-on training on the application of the principles and elements of design, respectively. Mr. Tayobong also explained site analysis and base map creation.

The participants conducted site orientation and evaluation within the EVIARC vicinity, followed by the conceptualization and creation of a bubble diagram and base map. Resource speakers evaluated the participants' outputs and gave necessary recommendations for the improvement of their master plan.

On the other hand, Mr. Ricardo G. Bernardo from the Applied Communications Division of BAR discussed the concept of SNAP Hydroponics. He conducted demonstration on how to prepare the medium and liquid solution. Some of the participants were given the chance to prepare the medium using different containers such as styrophor and coffee cups.

In attendance were 50 participants, mostly from DA-RFUs, and selected state universities and colleges. Due to the popularity of the topics, the Regional Seminar Series on EL and SNAP Hydroponics is extended for another six months. ### ***(Liza Angelica D. Barral)***

(counterclockwise) Ma. Charito Balladares, Bryan Apacionado and Ryan Rodrigo Tayobong discuss the technical aspect of EL and facilitate the hands-on training and application. Mr. Ricardo Bernardo of BAR discuss the process of preparing the proper solution and medium for SNAP Hydroponics. PHOTOS:ACD

BAR, IRRDB, IEC tie up...from page 3

The workshop was attended by climate change, agroforestry, and rubber experts and researchers from state universities and colleges, regional field units of the Department of Agriculture, and other government agencies.

The workshop is part of IRRDB's commitment to increase people's awareness on carbon market by hosting short courses on carbon market for the IRRDB member countries. The idea to bring it to the country was raised during the International Conference on Smallholder Rubber-based Agroforestry organized by BAR in December 2012. ### ***(Diana Rose A. de Leon)***

PHOTOS:ABRION

Ifugao's Tinawon increases production through CPAR

Preserving a taste, protecting a heritage – this is how the rice growers of Ifugao want the heirloom rice production to be recognized.

Tinawon, one of the heirloom rice varieties thriving in the Cordillera region, is creating a niche market in the global world. What makes it special? Aside from being planted in a world heritage site, this kind of rice is being planted through organic means which adds to its value and quality as an export commodity. Due to its exquisite aroma, distinct taste, and unique texture, the Tinawon rice is yearly exported to the United States where demand is constantly rising.

In 2011, the Bureau of Agricultural Research (BAR) supported the Tinawon production project under its Community-based Participatory Action Research (CPAR) program. It aims to increase the production of Tinawon as well as to supplement the export volume in order to sustain the needs of the farmers. Through the project, farmers were taught on using bio-organic and foliar fertilizers, early transplanting, and proper distancing.

According to Dr. Catherine Buenaventura, supervising agriculturist of Ifugao's Provincial Agriculture Environment and Natural Resources Office (PAENRO), "these interventions led to a five percent increase in the production of Tinawon rice during the first cycle." As for the project development, she furthered that the procurement of facilities such as thresher and other equipment for the processing of by-products such as rice coffee and rice wine will be needed.

Led and managed by Mr. Jimmy Lingayo, the Rice Terraces Farmers Cooperative (RTFC) serves as a ready market for the harvest and production of Tinawon. It is composed of farmer-members from Banaue, Hingyon, Hungduan, Mayoyao, Asipulo, Aguinaldo, and Kiangan in the province of Ifugao. In 2006, RTFC became a registered cooperative through the Cooperative Development Authority (CDA) and became a certified organic rice producer through the Organic Certification Center of the Philippines (OCCP) in 2011.

Last year, the cooperative exported 11 tons of heirloom rice to US, a significant increase from the 2006 export volume of Tinawon amounting to 3 tons. The facility also started to cater to the local market in 2009 where up to the present, 4 tons have already been supplied. Currently, a kilogram of Tinawon rice is priced at P100.

The RTFC houses the Tinawon rice export facility. It also serves as a venue for activities such as marketing of heirloom rice, selling of heirloom rice seeds, rice hulling and milling, heirloom rice gifts and souvenirs, processing of coffee and banana, micro-finance loan, and other rental activities. ### ***(Anne Camille B. Brion)***

PHOTOS:ABRION

The Rice Terraces Farmers Cooperative (above) facilitates the marketing of heirloom rice (below) and selling of heirloom rice seeds, among others.

34 farmers graduate from CPAR project school on goat

The 34 farmers who graduated from the FLS-IGM pose happily as they receive their certificates which signify the end of their season-long training on integrated goat management. PHOTO:ABRION

Graduation doesn't always mean receiving diplomas. For the farmers of Botolan, Zambales, it means receiving their much-awaited goats.

On 27 June 2013, the fourth batch of the Farmer's Livestock School on Integrated Goat Management (FLS-IGM) produced 34 farmer-cooperator graduates which recorded the most number of graduates since the project commenced. The latest batch of the FLS-IGM graduates have undergone a seven-month season long training on integrated goat management which started in October 2012. The training taught them about the different recommended production strategies on goats. These include: upgrading the genetic base of native goats, proper housing, deworming, stall feeding, improved forage, late grazing, and utilizing manure as fertilizers, among many others.

On the day of their graduation, 23 farmer-cooperators who have complied fully with the requirements, received about 2-3 goats depending on the housing that they have constructed. The remaining 11 will still have to comply with the proper housing requirements before they can receive their goats. According to the new farmer graduates, it will be a big help to them especially as a source of alternative livelihood and income that will be a means to provide for their families.

FLS-IGM is a major component of the project "Community-based Participatory Action Research (CPAR) on the Promotion of Recommended Goat Production Strategies through FLS-IGM in the Province of Zambales" which was implemented in 2009. It is aimed at increasing the adoption of recommended goat management

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PHOTOS:ABRION

After the graduation ceremony, the farmer-graduates proceeded to ROS-Botolan to claim their goats.

Technologies on goat management

*** Upgrading**
The native goats can be genetically improved through crosses with Anglo Nubian or Boer breeds.

*** Proper housing**
Goat house serves as shelter to protect them from rain which make them prone to respiratory diseases. The house can be made using locally available materials such as cogon, coco lumber, and bamboo, and should have elevated flooring.

***Deworming**
With assistance from the provincial veterinary, fecal examination should be conducted to identify worm load. Proper dewormer and deworming schedule should be strictly followed.

***Stall feeding**
Goats should be fed cut and carry with improved forages, and supplemented with leguminous tree leaves (ipil-ipil, kakawate, sesbania, etc.) and feed concentrates.

***Improved forage**
Forage pasture should be established for the continuous supply of forage necessary for their growth.

***Use of leguminous shrubs and trees**

***Late grazing**
Goats should be raised late in the morning when there is no more fog to minimize and/or control parasite infestation.

***Urea Molasses Mineral Block**
A feed supplement that serves as lick to ruminants to satisfy the nutrients deficient in native grasses and rice straws.

***Manure as fertilizer**
Goat manures are collected, composted, and applied to forage garden as fertilizers.

***Dual purpose crops**
Corn, peanut, and mungbean can be planted to provide food both for the farmers and the animals.

***Use of feed concentrates**
Feeding the goats with high protein and energy feeds during critical stage of production (last month of pregnancy period among does) is found to be profitable. Without sufficient concentrate supplement, animals may lose weight and become unproductive.

All information are based on the project proposal titled "Community-based Participatory Action Research (CPAR) Program Integrated Goat Management Production Strategies in Botolan and San Felipe, Zambales"

The delegates visiting the R&D Technology Commercialization Center of BAR

BAR publications were given to the participants as tokens of appreciation.

PHOTOS:PLESACA

AGRI TRAINERS from Indonesia visit BAR

The Indonesian delegates listen during the discussion of BAR's thrusts and functions.

A contingent from the Bureau for Agricultural Training of Indonesia visited the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) on 3 June 2013 as part of their international exposure on capacity building initiatives on research, development and extension (RDE) programs and activities being implemented in the country.

The visit to the Philippines was coordinated by the DA-Agricultural Training Institute (ATI). ATI's mandate is to provide assistance to government units' extension system through complementary extension activities. As such, the institute has been conducting capacity building program for the agricultural Indonesian trainers together with the Agricultural Extension Human Resources Development (AEHRD) based in Indonesia. ATI tapped BAR as one of its collaborating partners primarily due to the strong partnership brought about by research and extension (R&E) linkage.

Dr. Teodoro S. Solsoloy, BAR assistant director, welcomed the visiting delegates and expressed his appreciation for including BAR as part of the study tour. He said that BAR is one of the staff bureaus of DA which is tasked to coordinate the results of R&D for maximum use to the agriculture and fisheries sector. A short institutional video presentation was also shown to the Indonesian delegates for a better appreciation and understanding of the function of BAR.

Dr. Solsoloy, together with the division chiefs and officers of the bureau, discussed the priority R&D thrusts and strategic approaches of their respective divisions and units. Emphasis was given to the two banner programs of BAR: the Community-based Participatory Action Research (CPAR) and the National Technology Commercialization Program (NTCP). Asst. Dir. Solsoloy further articulated that both are the methods being employed by the bureau to empower the country's farmers and fisherfolk.

Ms. Yovina-Claire A. Paiug of ATI likewise articulated the agency's extension and training endeavors and said that by holding capacity building such as this, both countries will mutually benefit.

The Indonesian delegates, composed of nine agricultural and livestock trainers, were headed by Dr. Yulia Asni Kurniawati, agricultural trainer at the National Agricultural Training Center (NATC) in Batangkaluku, South Sulawesi Province. The duration of their training exercise was from 27 May to 9 June 2013.

Dr. Solsoloy concluded the visit by thanking all the delegates for visiting BAR and extended his gratitude to ATI for initiating the training exercise. As a token, Asst. Dir. Solsoloy handed over BAR publications to the foreign visitors.
(Patrick Raymund A. Lesaca)