

## PGMA creates **FIELDS** for aggie sector food production drive

President Gloria Macapagal-Arroyo officially announced her administration's new food production drive for the agriculture sector clustered into six assistance packages. The program has been dubbed FIELDS, with each letter standing for Farmers, Irrigation, Education and training of farmers and fisherfolk, Loans, Dryers and other postharvest facilities, and Seeds of high-yielding hybrid varieties.

"We are going to cluster our food production drive in six assistance packages, which are the essential ingredients in making food abundant accessible and affordable," the Chief

Executive said.

The President's P43.7 B package under the FIELDS program will cover the following:

- P500 million for fertilizer support from the Agricultural Competitiveness Enhancement Fund (ACEF), with special focus on the use of organic fertilizers;
- P6 billion for rehabilitation of all irrigation systems that need to be repaired or rehabilitated by 2010;
- P6 billion for farm-to-market roads and other rural infrastructure such as roll-on roll-off (RORO) ferry ports and no frills airports for agricultural cargo;
- P5 billion for continuous training of farmers on new technologies and research and development (R&D) in order to increase yields and lower production costs. This includes a budget earmarked for R&D, and a portion each for capacity building programs, trainers' training, and the agriculture and fisheries education system;
- P15 billion allotted in credit for farmers, fisherfolk and other small rural borrowers;
- P2 billion for dryers and other postharvest support such as storage facilities; and
- P9.2 billion for hybrid and certified seed production and subsidies until 2010. The target is to plant certified seeds in 600,000 hectares in 2008 and hybrid seeds in 900,000 hectares over the 2009-2010 period.

President Arroyo announce the program at the National Food Summit held at Fontana Convention Center, Clark Airbase on 5 April 2008 in consonance with her agenda "*Pagkain sa Bawat Mesa, Negosyo sa Sakahan-Laban sa Kahirapan*". The summit aimed to fine-tune the government's rural development thrusts until 2010.

Central issues during the summit were focused on the five commodity clusters,

namely: rice, corn, high-value commercial crops (HVCC), livestock and poultry.

The summit capped the two-month series of sectoral and regional consultations conducted by the Department of Agriculture (DA) aimed at attaining the long-term goal of national self-sufficiency in rice, corn, and other food crops benefiting consumers; boost agricultural exports; and make farming more profitable.

In a press statement, Agriculture Secretary Arthur C. Yap considered the regional consultations as necessary tool for the DA to consolidate the main agriculture-related issues and concerns at the national and local levels and later on identify intervention measures, including food-sufficiency initiatives and budgets needed to keep the farm sector on its high growth course in the medium term.

The program supports DA's five developmental pillars, namely: market access, postharvest, research, development and extension (RDE); irrigation; and credit facilities.

During the summit, rice leaders and other commodity subsectors presented their respective recommendations to the President and to the Secretary on improving the productivity and profitability of the agriculture and fisheries sector.

Strongly supportive of the President's FIELDS are the Philippine Food Processors and Exporters Organization Inc. (Philfoodex), Philippine Chamber of Commerce and Industry (PCCI), Philippine Maize Federation (PHILMAIZE), Philippine Association of Broiler Integrators, Philippine Fishing Federation, and Philippine Vegetable Council.

During the summit, the President and the Secretary led the send-off for a 55-truck caravan containing truckloads of rice, vegetables, chicken, eggs, fruits, and other foodstuff to be distributed to DA's *bagsakan* or drop-off centers in Metro Manila. (Ma. Eloisa E. Hernandez)



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2007 BINHI AWARDEE  
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## Sorsogon eyes commercialization of *Asha* peanut

The Bicol region may soon be known not only for its famous *pili* nut but for being an active producer of "*Asha*" peanut in the Philippines.

The Research Outreach Station (ROS) in Sorsogon, under the supervision of the Bicol Integrated Agricultural Research Center (BIARC), is now evaluating the performance of *Asha* peanut (CV Pn-1) in the hope of promoting the commercialization of the technology to farmers in the province.

*Asha* peanuts, which are almost double the size of the local variety, were introduced in the Philippines in 2007 and were initially grown in Cagayan and Isabela for possible commercial production.

The Bureau of Agricultural Research (BAR) has supported this effort jointly with the India-based International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), which introduced *Asha* peanut in the country.

Initial tests indicated that the *Asha* peanut variety is commercially viable in the Philippines. *Asha* gave 41-77 percent higher pod yield than the farmers' varieties (UPL Pn 10, *Namnama*, and BPI Pn 9) in the Cagayan Valley region in the wet season of 2005.

The performance evaluation and promotion of *Asha* peanut variety under



Sorsogon condition is being funded by BAR through its National Technology Commercialization Program (NTCP). (Miko Jazmine J. Mojica)

## BAR honors six NaRDSAF graduates for 2008



The scholars (1st row, 2nd from left): Dr. Liberty Canja, Dr. Herminigilda Gabertan, Dr. Nenita Baldo, Dr. Rosana Pinduma, Dr. Nancy Roman, and Mr. Ommal Abdulkadil are flank by Dr. Carmencita Kagaoan (left) and Dr. Virginia R. Cardenas (right). With them in the photo are key officials of UPLB and BAR (2nd row, L-R): Dr. Cecilio Arboleda, Dr. Candida Adalla, Dr. Teodoro Solsoloy, Dr. Rey Velasco, Dr. Enrico Supangco, and Dr. Roberto Rañola.

To give due recognition to the recipients of its Degree Scholarship Program, the Bureau of Agricultural Research (BAR) conducted a scholars' night for its six graduates on 24 April 2008 at the Office of the Chancellor, University of the Philippines Los Baños (UPLB), College, Laguna.

Under its Institutional Development Program, BAR implements a scholarship program for the member-institutions of the National Research Development System for Agriculture and Fisheries (NaRDSAF). The program was instituted in support to the Agriculture and Fisheries Modernization Act (AFMA) and

the bureau's mandate to strengthen the manpower capability of the whole R&D system.

The scholars, who also attended the 36<sup>th</sup> Commencement Exercises of UPLB on 26 April 2008, are Mr. Ommal Abdulkadil of the Philippine Rice Research Institute (MS in Plant Pathology); Dr. Nenita B. Baldo of the Central Mindanao University (PhD in Plant Breeding); Dr. Liberty H. Canja of the Philippine Coconut Authority-Davao (PhD in

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# Eleazar gives keynote address at Isabela State U's 30<sup>th</sup> Commencement Exercises

**"Graduation is one of the great milestones in life."**

Thus stated BAR Director Nicomedes P. Eleazar at the 30<sup>th</sup> Commencement Exercises of the Isabela State University (ISU) at Andaya Student Multipurpose Center, Cabagan Campus on 9 April 2008, as the event's commencement speaker.

ISU was founded in 1978 and is mandated to provide advanced instruction in agriculture, natural and applied sciences and technology. The University is also tasked to engage in research and seek new technologies, promote sustainable development, and generate new knowledge in other professions. It has a wide offering of courses both in the graduate and undergraduate levels.

Exactly 399 graduates from

ISU's Cabagan Campus, including those in the secondary, undergraduate, and graduate levels, were motivated by Director Eleazar towards taking a proactive stance in building their career paths during his keynote address.

Out of the graduates, 55 finished agriculture and agriculture-related courses, according to Ms. Melanie dela Cruz of the Office of the Registrar.

Eleazar recognized that Isabela, dubbed as the "Rice Granary of the North" has a lot to answer for and contribute to the rice production in the country, being the biggest province in the Cagayan Valley Region."

"Agriculture being the major industry of the people of Isabela, farming has gone a notch higher with its highly mechanized production. And with the presence of ISU, joint ventures and other foreign-assisted projects have become

more viable in contributing to the high productivity in agriculture. I challenge you...to be part of this mission of a modernized agriculture sector," Eleazar told the graduates.

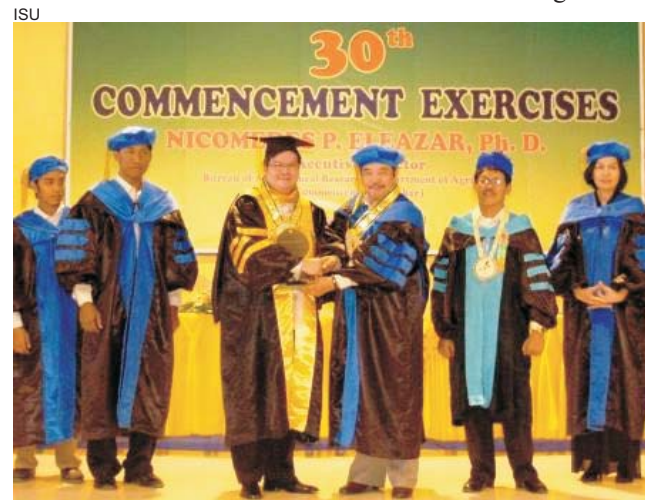


Eleazar delivers his keynote address to the 399 ISU graduates.

BAR has been supporting agriculture R&D programs and projects of ISU for a long time now. The most recent of which is the "Technology Upscaling Program for Sweet Sorghum and Pigeon Pea" with Dr. Romeo R. Quilang, ISU's recently reappointed president, at the helm.

All of ISU's 10 campuses (except Ilagan campus) offer agriculture and agriculture-related courses with its main campus based in Echague. Its other campuses are located in Angadanan, Jones, Cauayan, Roxas, San Mateo, San Mariano, and Palanan. (Miko Jazmine J. Mojica)

**"Agriculture being the major industry of the people of Isabela, farming has gone a notch higher with its highly mechanized production." - Eleazar**



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to be a development problem closely linked to poverty. When the soils in the dryland can no longer sustain crops, the poor suffer especially from its consequences because they are highly dependent on the land's productivity for their livelihood. People in the drylands have very low food production and income generation and savings enhancement capacities. In the Philippines, for instance, high poverty level could be observed in Mindanao since it is most vulnerable to drought.

**Sustained Livelihood.** The challenge is creating new jobs in rural areas and making existing livelihoods stronger and more sustainable. Rural areas tend to rely heavily on climate-sensitive resources (local water supplies and agricultural land); climate sensitive activities (arable farming and livestock husbandry); and natural resources (fuel wood and wild herbs). Climate change can reduce the availability of these local natural resources. Shifts in climate will bring different changes to different regions. Some areas may see greater natural resources because of increased rainfall, but still, the poorest regions are most likely to suffer because they are least able to adjust to new conditions.

**Macronutrient malnutrition threats.** Continuous degradation would further lower the amount of macronutrients in the very near future.

**Forest and livelihood management.** The Department of Agriculture and Natural Resources (DENR) reported in 2005 that there were only 6.24 million ha forest in the country since the dynamics of forest resource changed. Deforestation occurred at an annual rate of about 316,000 ha in the 1980s caused by land conversion, shifting cultivation, forest fires, and over-logging; much of the remaining forest is still heavily fragmented. Currently, 55% of the population of the country is located in these environmentally sensitive highlands practicing shifting agriculture. The combination of rapid deforestation, population growth, and uncontrolled expansion of upland agriculture has resulted in massive soil erosion and land degradation, which could further worsen by the emerging drought phenomena.

## What RDE can do?

With the decreasing farm lands with limited access to irrigation, a strong research, development and extension (RDE) program must be mapped out to attain food security and reduce poverty in the country.

Potential research areas such as the improvement of the crop and livestock production could be looked upon by

developing drought-resistant crops. Cutting edge innovations and new business and funding models on profitable farming that could be grown in marginal, drought-prone areas cereals (corn, sorghum, pearl millet) and legumes (groundnut, chickpea, pigeon pea, soybean, cowpea, mungbean, forage crops) can be developed. Generating/ adapting innovations on the production, processing and utilization of biofuel crops such as sweet sorghum without compromising food security can also be done.

Since water supply and land degradation are also of major concern, developing sustainable watershed-soil-environment management systems with and for small-scale farmers is another opportunity that could be looked upon.

Equally important with doing scientific studies is the implementation of strategic social science and policy research. The formulation and implementation of policies in the context of global change and the market policy support for dryland crops is a significant act. Also, capacity building, social mobilization, and communication must not be forgotten.

With the aide of Geographic Information Systems (GIS), a proactive defense for the drylands can be carried out while looking into the changes that can be caused by climate change. More so, the proposed Philippine Dryland Research Institute (PhilDRI), addresses the disadvantaged farmers in the drylands. It will promote the science of growing crops and animals under changing climate to serve the country's

increasing populations. Moreover, PhilDRI will promote not only farmer's education and training but also a full understanding in overcoming the burdens and pressures of erratic weather, soil infertility and degraded watersheds, inadequate tools and equipment, insufficient seeds, and uncertainty of prices and income.

The challenges in dryland are complex, hence, they require concerted approaches of learning and experimenting, including multi-actors with different perspective and frameworks, to take up the identified challenges. In such complex situation, the context would not only include technical or technological options, but must also consider the organizational, economic, political, social, and cultural context. The challenge should also be shared by a diversity of actors, and their collective response must generate a social impact, for our farmers and countrymen to benefit, while we face the challenges of climate change.

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# Understanding dryland agriculture:

## How RDE can make most out of Philippine's drylands

Ellaine Grace L. Nagpala



MAQUINO

Despite these conditions, drylands are habitat and source of livelihood to a large fraction of the earth's population, most of whom suffer extreme poverty. In the country alone, an estimated three million hectares of dryland are identified, distributed in Northern Luzon, Central Visayas, and Southern Mindanao. These areas are said to be inhabited by about five million households. Climate change can further aggravate the conditions of these communities.

### The challenges of dryland agriculture

**Farming in the drylands is quite risky.** A farmer dwelling in a dryland community could be living with uncertainty of constant fear of hunger and poverty as he faces the challenges that dryland agriculture imposes.

**Negative impact on crop and livestock activities.** Changes in average climate conditions and variability will have a significant effect on crop yields in many parts of Asia and Pacific. The country has suffered severely from natural disasters in the past decade such as drought and typhoons. With the changing average climatic conditions, it is expected that more provinces will be prone to drought conditions.

**Water-scarcity.** Water resources are very sensitive to climate change. In the South and Southeast Asia, region, water resources are particularly sensitive to changes in temperature and precipitation, even with changes in tropical monsoons and cyclones. A large increase in population could further strain water resources. As population in the drylands increase, especially in the urban areas, water scarcity increases in tandem.

**Land degradation.** Land degradation is defined as the diminution of the productive potential of the land, which can be due to natural process or induced human activity. Widespread land degradation affects production of dryland agricultural and rangeland systems, threatening both livelihoods and biodiversity. Dryland environments are fragile with few vegetative cover, making it more prone to degradation.

**Persistent poverty.** Since the poor are the most dependent on agriculture in the drylands, land degradation and desertification are increasingly recognized

the three most important contributors to global warming: fossil fuels, land use, and agriculture. While the country depends on the agriculture sector for food supply and source of livelihood, it is the major driving force in the gas emissions and landuse effect that is thought to be the cause of climate change. Being a significant user of land and fossil fuel, agriculture contributes directly to greenhouse gas emissions through practices such as rice and livestock production.

Climate change poses a major threat to food security, according to the Food and Agriculture Organization (FAO). Changes in the air temperature and rainfall, as well as more frequent floods and droughts will have long-term effects on the viability and productivity of world agro-ecosystems.

### Farming in the drylands

Dryland ecosystems are the consequences of the increase in the average temperature of the earth's near-surface air and oceans. Drylands are considered areas with limited water resources because of rainfall variability, recurrent but unpredictable droughts, high temperature, and low soil fertility. These lands are distributed all over the world, accounting for roughly 47.2 percent of the global land mass, where roughly 60-70 percent are said to have undergone some level of desertification.

A year ago, the Ilocos region experienced an extreme drought along with other provinces in Luzon. Only 50% of the total acreage devoted to rice had been planted owing to unfavorable planting conditions. Shortage of water for irrigation was experienced and the scorching heat from the sun dried up almost every farm. Losses amounting to millions of pesos were incurred, leaving most farmers empty handed for the next cropping season, and their farms non-arable.

A drought is an extended period of months, or sometimes years, when a region notes a deficiency in water supply. This may be caused by above average prevalence of high pressure systems, winds carrying continental air masses, i.e. reduced water content, El Niño and other oceanic temperature cycles, and climate change.

### Climate change and agriculture

The dramatic change in weather patterns, variable intensity of storms, frequent occurrence of drought, disappearance of glaciers and ice caps, the rising of temperature and sea level—all of these are concrete manifestations of the occurrence of climate change.

The Intergovernmental Panel on Climate Change (IPCC) identified

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## Value-adding from mango is a booming enterprise in Davao

expansion based on the Community-based Participatory Action Research (CPAR) on Mango-based Farming System introduced of the DA-Southern Mindanao Integrated Agricultural Research Center (SMIARC) in Bago Oshiro, Davao City.

Since the first intervention introduced in San Isidro, Sta. Maria, Davao del Sur, the farmers did not have second thought when they were involved in the CPAR project with DA-SMIARC.

Based on the gains derived from the mango-based farming system, the farmers decided to proceed with the processing of mangoes for value-adding. These activities were supported by the

local government and farmers. The processed products included mango puree, mango juice, dried mangoes, and jam.

With these products locally produced by the farmers, several agencies helped the SICARBA in its activities. The marketing was supported by the Department of Trade and Industry – Region 11, and the provincial government of Davao del Sur for the agribusiness development, including the market positioning of the products at the KMCC mall in Davao City.

On the other hand, DA-SMIARC continues to provide the needed technical assistance in the expansion of the CPAR project in other areas with similar conditions for productive mango enterprise. (Marlowe U. Aquino, PhD)

## Sultan Kudarat reaps its harvest from CPAR project

After successfully implementing the Community-based Participatory Action Research (CPAR) on Banana-based Farming System in Sultan Kudarat, the Isulan Farmer Association identified their performance indicators to intensify their project. This time, it focused on the processing of banana into chips which has a demand both for domestic and international markets.

Mr. George Mariscal, municipal agricultural officer, and Ms. Epifania dela Cruz, assigned agricultural technician of the Isulan CPAR project, and their farmer group seek to address the increasing production of fresh banana for chips.

"Our production tremendously increased because of the strategies employed in our CPAR project. We wanted to increase the value of our produce and for our farmers to increase their share of the harvest," they said.

With the strong support provided by the DA-Central Mindanao Integrated Agricultural Research Center (CEMIARC) under the then leadership of Mr. Niceto Agduyeng, the project caught the attention of the municipal government and agreed to establish and build a banana processing center.

Today, the CPAR project is closely coordinated by Mr. Eduardo Solomon, the OIC manager of DA-CEMIARC, with his staff providing the necessary support to intensify the project.

The project has been expanded to three more areas forming a cluster of banana producers.

In a joint activity, the Agricultural Training Institute (ATI) of DA-Region 12 is conducting capability building activities such as banana chip preparation and processing, and mushroom production. These activities were identified during the CPAR expansion consultation with the farmers for added livelihood projects.

Another product envisioned to be supported through CPAR is the "pinasugbo", a local sweet delicacy originally from Iloilo. It will be processed with the use of muscovado, which is produced by a local sugarcane milling plant in Isulan.

In addition, the Isulan CPAR site and other expanded areas will



undergo enterprise development capability building under the orchestration of the Bureau of Agricultural Research (BAR) when CPAR projects are ready for the next stage of production and management activities – commercialization of the agricultural product.

Based on initial marketing of the banana chips in Isulan, the product is now available in major stores and supermarkets in the region and market expansion is likely to take place in other areas using the brand name "Crunchy Saba." The product is believed to support the pressing food production, sustainability, and profitability concerns of local farmers and producers in the region. (Marlowe U. Aquino, PhD)

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## BAR, The Royal Netherlands Embassy support publication on sea urchin

The Department of Agriculture-Bureau of Agricultural Research (DA-BAR) and The Royal Netherlands Embassy supported the publication of “Sea Urchin Grow-Out Culture: Coastal Resources Management Tools.”

The manual is based on a study on sea urchin conducted by the University of the Philippines-Marine Science Institute (UP-MSI). It highlights the success of grow-out culture technology with variability on the growth and survivorship rates of chosen sites.

Sea urchins (*Tripneustes gratilla*) are common in oceans all over the world. Locally known as “maritangtang,” it is the most commercially exploited sea urchin species in the Philippines.

Large population of *T. gratilla* was once observed in the coastal municipality of Bolinao, Pangasinan, until the local people realized the lucrative export market for it, particularly its gonads or roe which is rich in glycogen, carotenoids, alanine, valine, glycine, methionine, glutamic acid, inosinic acid, and gluanylic acid.

The grow-out culture for sea urchins can contribute largely to coastal

resource enhancement. As it is, the technology on sea urchin in cages/pens functions as mini-reproductive reserves and a supplemental source of livelihood for fisherfolk.

Grow-out culture effectively protects juveniles from natural predators, increasing survivorship to reproductive maturity and enhancing recovery of depleted natural population. As examined, the increase of sea urchin in the area has remarkably resulted in the growth of sea cucumber and other species not found in the area prior to the introduction of sea urchins.

Sea urchin grow-out culture, being a resource management tool and a good source of livelihood at the same time, is relatively new. Coastal communities in Pangasinan are more accustomed to open access fishery practices. Consequently, the need for information on practices that can harmonize both economic and ecological needs towards sustainable utilization of the fishery resources is important.

The studies conducted by the UP-MSI have shown that the success of sea urchin grow-out culture is largely dependent on the particularities of a

### Sea Urchin Grow-Out Culture

Coastal Resources Management Tools

Marie Antonette Juinio-Meliez  
Maria Celia Defrance Malay  
Helen Grace P. Bangi



chosen site – different growth and survivorship rates could be expected from different places. It is recommended that prospective fisher-growers may need to subject the grow-out process to initial testing.

The publication was created to function as coastal resources management tool and as an intervention strategy to disseminate data on the general considerations, grow-out procedure, management and culture. (Christmas B. de Guzman)

## Visayas Zonal Cluster refocuses and redefines AFRD programs

The Visayas Zonal Cluster in Agriculture and Fisheries Research and Development (AFRD) held its first meeting at the Cebu Grand Hotel, Cebu City on 22 April 2008. The meeting, which was hosted by DA- Central Visayas Integrated Agricultural Research Center (DA-CENVIARC), highlighted the refocused and redefined programs and capability for more zonal coordination, complementation, and collaborative management of the three regional research centers in Western Visayas, Central Visayas, and Eastern Visayas.

The meeting agreed that the zonal programs should support and intensify the Community-based Participatory Action Research (CPAR) through the *e-Pinoy* FARMS monitoring and evaluation system; enhance and operationalize the integrated laboratory services in the Visayas to provide the needed support to crop, animal, and fishery production management system; enhance and strengthen the information and knowledge management of

agriculture and fisheries program through the inventory of zonal researches; and use the geographic information system and support to the agriculture and fisheries research and development information system. Also, the inclusion of the fishery R&D network in the Visayas Zonal Cluster was formalized during the meeting.

Although, these are still in the pipeline, each region will start the implementation of their respective regional R&D activities in the coming months.

An increase in zonal R&D networking funds was suggested to oversee the coordination and management of these activities for the zone to reap the gains of agriculture and fisheries R&D.

In a related activity, the Central Visayas-Fishery Integrated Research and Development Network (CV-FIRDN) met on 29-30 April 2008 in Siquijor State College, Siquijor to integrate the social dimension in their undertakings through relevant and attuned fishery social science researches.

This was done through a seminar-workshop conducted by BAR to set the tone of quality fishery social researches, increase

awareness of fishery technical staff on the social aspects of fishery programs and projects, and the responsibility and accountability of social researchers to the people and community they are working with.

The meeting discussed issues related to fishery interaction, relationships, and transformation of fishery communities into more responsive and development-oriented. Also, complementation strategies were identified for the network to act on pressing issues on fishery trends affecting central Visayas and the zone as a whole. In so doing, the CV-FIRDN will start with CPAR fisheries on floating net cages, cultural management, and social researches focusing on people's reaction and participation in CPAR and fisheries technology demonstration activities.

It was envisioned that this initiative will be conducted in Western and Eastern Visayas since majority of the regional activities also involve fishery activities and most of the natural resources are found in marine and brackish waters. (Marlowe U. Aquino, PhD)

## Promising potentials of rice bran explored

Rita T. dela Cruz



Rice bran and its oil may be among the most important sources of functional food components/nutraceuticals and cosmeceuticals available in the world today. This was pointed out by Dr. Evelyn B. Rodriguez of the Institute of Chemistry at the University of the Philippines Los Baños (UPLB) at a seminar on “Food Plants as Source of Nutraceuticals and Cosmeceuticals Ingredients” organized by the Bureau of Agricultural Research (BAR) on 29 April 2008.

Rice bran or “darak” is to the tan, hard outer layer covering a rice kernel and is often produced as a by-product of milling in the production of refined grains. The bran removed from the rice grains is an excellent source of nutrients, minerals, and fiber.

Since rice is arguably the world's most important food, a staple food to more than half the world's population, the worldwide production of rice bran is vast. But given its amazing number of nutrients and potential for product development, rice bran, according to Dr. Rodriguez, “is largely underutilized and is poorly used for human food consumption.”

Unfortunately in the Philippines, instead of using rice bran to nourish people, it is mostly thrown away or used as feed supplement for swine production. Swine raisers mainly use it for fiber and protein quality which is practical in the provinces where rice bran is cheap. In other parts, rice bran is burned as fuel or dug back into the soil as fertilizer.

### Rice bran as a functional food

As a functional food, rice bran provides health benefits beyond basic nutrition. Already, it is dubbed as the “new super food” owing to its amazing number of nutrients.

In hope that people would look at

nutrients that fight off free radicals in the bodies. Free radicals cause premature aging and many of the degenerative diseases of old age. This is also the reason why rice bran is an important ingredient for cosmeceutical purposes.

Specifically, rice bran contains phytosterols, polysaccharides, beta-sitosterol, fiber, Vitamin E complex, and a large complement of B vitamins, including B15, which is a vital antioxidant.

These antioxidants are known for their hypocholesterolemic and hypolipidemic effects, anti-cancer, anti-inflammatory properties; enhance insulin production; and protect skin against ultra violet rays-induced oxidative stress, among other things.

Rice bran is also rich in co-enzyme q10, omega 3, and omega 6 fatty acids and even oleic acid which are also found in olive oil.

With its packed of nutrients and health benefits, Dr. Rodriguez cited products that may be developed from rice bran. They may not be considered new anymore since other developed countries have already adopted them. The Filipino entrepreneur however, could exploit its potential use since rice bran is practically underutilized in the country. Among the products she mentioned were rice bran as breakfast cereal and rice bran oil (RBO).

### As breakfast cereal

Rice bran could be a solution to the current rice crisis, an alternative for rice, Dr. Rodriguez said when asked of its potential as a functional food. The only problem she sees is how to entice Filipinos to eat rice bran.

“Eating functional food is a lifestyle change. It's a whole new set of ideology,” she reiterated. In encouraging Filipinos to eat rice bran, there is a need to

rice bran in a different view, Dr. Rodriguez mentioned some of the functional components of this often squandered food source.

Rice bran contains several important antioxidants and astounding quantity of other health-giving nutrients. Antioxidants, according to her, are the

first change their perspective on eating habit, meaning eating right.

As a food source, rice bran has a huge potential to make it to the market scene. “It's ironic that it's the developed countries that are making full potential of this by-product from rice when we in the developing countries just squander them and feed them to the pigs.”

The idea of rice bran for breakfast is not new at all. Since it is rich in dietary fiber and contains significant quantities of starch, protein, vitamins, and minerals, it is often used to enrich breads and breakfast cereals. In fact, big companies in the United States such as Nutracea and Kellogg Company have been using rice bran to make their consumers' products for years (i.e., bran breakfast cereal).

### Oil from rice bran

Oil products from rice bran can either or both be used for nutraceutical and cosmeceutical purposes.

As it is, rice bran oil (RBO) already contains several constituents with potential significance in human diet and health. Dr. Rodriguez particularly focused on the gamma-oryzanol or g-Oryzanol, a naturally occurring mixture of plant chemicals called sterols and ferulic acid esters.

In the study conducted by Dr. Rodriguez and her group, they found that the g-oryzanol in rice bran produces potent antioxidant activity, anti-cancer properties, prevents bone loss, promotes skin capillary circulation, and increases sebaceous secretion of the skin (repairs damaged or dry skin), contains UV B screening activity and neuro-regulatory action (improves memory and diabetic neuropathy), and acts as anabolic steroid that increases body and muscle mass.

Another health component is *Myo*-Inositol Hexaphosphate (*InsP<sub>6</sub>*) which aids the body in its use (metabolism) of calcium and other minerals. Studies showed its significant activities for anti-cancer, involved in liver cell regeneration and management of kidney and gall bladder stones; helps improve blood circulation and stimulate cell turnover when used topically; reduces hair loss and stimulate hair growth; reduces plaque; and promotes skin lightening.

When Dr. Rodriguez and his group tested the percentage of the unsaponifiable matter in rice bran, they found it higher than that found in sesame seeds and corn kernel. Unsaponifiables are components of oil or fat that do not saponify. Unsaponifiables are important when creating a soap recipe in the process of soapmaking as they can be beneficial to a soap formula owing to their desirable properties such as moisturization, conditioning, vitamins, and texture. 🌱



## Research managers'...from page 11



**PHILARM President Heraldo L. Layaoen (middle) awards Dr. Emil Q. Javier (right), the 2008 Research Leadership Excellence Award for his significant achievements and pioneering efforts in research which have enhanced the role of research managers in the country. Also in the picture is Chairperson of the Awards and Recognition Committee Angel S. Morcozo, Jr. (left).**

area a contemporary strategic area for research and policy. He stressed: "The advent of biofuels may forecast well for agricultural producers due to the new markets that will be potentially available. However, its implications to food security, poverty and environments need to be more examined closely. Integration of its research, development and extension (RDE) should be imperative."

Meanwhile, Dr. Emil Q. Javier, president of the National Academy for Science and Technology (NAST), was conferred the 2008 Research Leadership Excellence Award for his significant achievements and pioneering efforts in research which have enhanced the role of research managers in the country.

In his response speech, the former University of the Philippines (UP) president, stressed the importance of a "science-based policy making" to enable the country to make a desired and wise decision based on science. The current rice crisis, he asserted, has brought the agriculture sector to the limelight, allowing policymakers to put their attention and focus on agriculture, particularly, on how to use and mobilize science and technology.

Responding to Gov. Salceda's presentation, Dr. Javier suggested three points to address the problem on food security, particularly with the current rice crisis.

On the lack of agricultural

lands, one solution is to increase the cropping index, Javier said. Rather than planting and harvesting once a year, do it three times a year to effectively increase food production.

He also cited the crucial role of the state universities and colleges (SUC), being the oasis of research and technology generation, in every government-initiated program. Specifically, he suggested for SUCs include in their budget a proposal

for a dedicated extension unit over and above their teaching budget and hire able people whose designation is extension. This serves as a backstop to the provincial extension offices providing them support in planning and evaluation, and information dissemination as well as assist the Department of Agriculture (DA) and the local government units (LGUs) to achieve food security.

Lastly, he emphasized the need to target rice self sufficiency. He said, "Self sufficiency is the surrogate of modernization in agriculture and that by fueling the needed inputs to attain sufficiency in production we develop our irrigation system, improve farm to market road, extension, postharvest facilities and marketing system." Given the constraints in government's budget, there is a need for DA to reclassify its budget.

Established in 1989, PHILARM is a professional organization dedicated to the promotion and enhancement of the role of managers in improving and sustaining productivity in research. Its vision is to become the leading professional organization of research in the Asia Pacific Region.

PHILARM is currently chaired by Dr. Heraldo L. Layaoen, vice president for administration, planning, and external linkages of the Mariano Marcos State University (MMSU) in Batac City. The association has now more than 1,000 members mostly from the fields of research and research management. (Rita T. dela Cruz)



**"The Philippines is good in reproduction but bad in production" - Gov. Salceda**

## ISU embarks on sweet sorghum and pigeon pea commercialization

The Isabela State University (ISU) is now bent on the commercialization of its high-value crop-related technologies developed by its researchers and scientists in the field of agriculture.

With funding support from the Bureau of Agricultural Research (BAR), Dr. Romeo Quilang, ISU president and his researchers, embarked on a two-year Technology Upscaling Program for Sweet Sorghum and Pigeon Pea in Isabela.

The program, which started last year, is adopting improved varieties of sweet sorghum and pigeon pea that were earlier found suitable in the Mariano Marcos State University (MMSU) in Batac, Ilocos Norte, and the Pampanga Agricultural College (PAC), respectively. The program aims to demonstrate and promote the production of sweet sorghum and pigeon pea to increase the productivity and income of farmers not only in Isabela but in other provinces of Region 2 as well.

In the progress report submitted to the Bureau by ISU, it stated that initial planting were done in early July and mid August last year in time for the rainy season. Dr. Edwin Macaballug, project leader for pigeon pea, and Prof. Raul B. Palaje, project leader for sweet sorghum, were allotted at least 1-ha each within the ISU premises to plant their respective crops to produce high quality seeds for distribution to farmers in Region 2.

The program plans to put up five-hectare technology demonstration farm per crop and conduct field days to fast track the adoption of sweet sorghum and pigeon pea in the Region. The program leaders believe that the

commercial production of these crops is a good alternative to increase farmer's income as it will also transfer technologies on the processing of the crops into various by-products at the village level. They are also incorporating technical assistance on marketing to create a demand for the commodity.

While the production of sweet sorghum seeds is also eyed as feedstock for bioethanol and as grains for poultry feed, the program leaders observed that the production of seeds has become challenging because of the critical bird damage causing significant losses on grain yield.

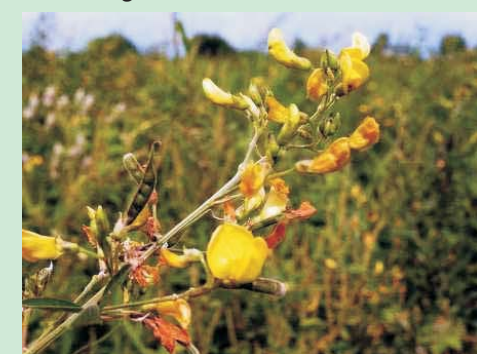
"We tried bagging the panicles, which is effective and environmentally sound but it is expensive. In India, they have also been experiencing bird damage but the infestation is lesser than what we are experiencing," the program leaders lamented. To resolve this, they are planning to replicate India's noise-making equipment used to scare birds away from the crops.

To emphasize the prospects of generating rural small enterprise, the program is promoting the production of organic food products from sweet sorghum such as vinegar, wine, and jaggery while waiting for the establishment of distillery by private sectors. The program leaders reported that actual jaggery and vinegar production have already been conducted in trade fairs they have participated in the region. On pigeon pea, the program leaders said that it is best eaten as fresh vegetable while the grain could be sold as feeds as substitute for cowpea.

"The encouraging initial finding



sweet sorghum



pigeon pea

of the study conducted to control stemborer with the use of predatory earwigs and bio-nutrient extracts will be integrated into the package of technology for the on-farm trials being conducted by 10 farmer-cooperators in San Pablo, Tumauni, and San Mariano in Isabela. The vermi-compost is also used for the balance fertilization in the production of sweet sorghum and pigeon pea," the progress report says.

The program is conducted in cooperation with the India-based International Crops Research Institute for the Semi-arid Tropics (ICRISAT), Department of Agriculture (DA) Regional Field Unit 2, farmer associations, cooperatives, non-government organizations (NGOs), and local government units (LGUs) in the region. (Miko Jazmine J. Mojica)

## BAR honors...from page 1

Soil Science); Dr. Herminigilda A. Gabertan of the Bureau of Plant Industry-Los Baños National Crop Research and Development Center (PhD in Environmental Science); Dr. Rosana Pinduma of the Department of Agriculture and Fisheries-Autonomous Region of Muslim Mindanao (PhD in Horticulture) and; Dr. Nancy Roman of the Aurora State College of Technology (PhD in Animal Science).

The scholars' night started with a welcome remarks delivered by BAR Assistant Director Teodoro S. Solsoloy. He congratulated the six graduates in behalf of Director Nicomedes P. Eleazar.

He emphasized that the scholars' night is being held to acknowledge the job well done by the scholars for finishing their degrees. In conclusion, he left the graduates an inspiring and challenging message by quoting Mohandas Ghandi, "We must become the change we wish to see this world."

Meanwhile, Dr. Carmencita V. Kagaoan, head of BAR-Program Development Division, recognized and introduced the graduates before the key officials of UPLB.

Giving his congratulatory address to the graduates, UPLB Chancellor Luis Rey I. Velasco stressed the changing of roles that one has to undergo after

graduation from being an *Iskolar ng Bayan* to being an *Iskolar para sa Bayan*. He likewise commended the graduates and encouraged them to serve more and do well with their newly acquired degrees.

Also present in the event were UPLB Vice Chancellor for Instruction Rita P. Laude, UPLB Vice Chancellor for Research and Extension Enrico P. Supangco, UPLB Vice Chancellor for Community Affairs Virginia R. Cardenas, UPLB Vice Chancellor for Administration Roberto F. Rañola, College of Agriculture Dean Candida B. Adalla, and UPLB Foundation, Inc., Executive Director Cecilio F. Arboleda. (Ellaine Grace L. Nagpala)



## Mycological Society holds 10<sup>th</sup> Anniversary and Symposium

The Mycological Society of the Philippines (MSP) based at the University of the Philippines Los Baños (UPLB) celebrated its 10<sup>th</sup> Anniversary by holding its Annual Scientific Symposium and Training on Mushroom Production and Improvement of Homemade Fruit Wine at Benguet State University (BSU), La Trinidad, Benguet, 14-16 April 2008.

Members of the academe and their students, government agencies, farm owners, and interested individuals participated in the well-attended event that showcased several breakthrough studies and technologies in the field of mycology. Mycology is the branch of botany that studies fungi and fungus-caused diseases.

The event kicked off with a lecture on the improvement of homemade fruit wine by Mr. Elbert Pigtain, a multi-awarded exporter of tropical fruit wines such as *bignay*, *duhat*, and mango.

Mr. Pigtain shared his own success story in wine making and how he was able to penetrate the high-end market in the United States and Europe.

The training on mushroom production was divided into two modules: 1) pleurotus and oyster mushroom

production, and 2) shiitake mushroom production. Two professors from BSU, Dr. Bernard Tad-awan and Dr. Janet S. Luis, served as resource persons for the two trainings, respectively.

Mushroom production is prized in Benguet as it commands a high price in the market compared to other crops. Both trainers, however, recognized that mushroom production requires a lot of trial and errors as mushrooms are highly sensitive to contaminants such as the pathogen *Trichoderma*.

During the symposium proper which carried the theme "Fungi in Organic Agriculture", more than 20 scientific papers were presented in two days composed of non-competing and competing papers as well as three manuscript defenses vying for the first Tricita H. Quimio Undergraduate Thesis Award.

Dr. Quimio, chairperson of the organizing committee of MSP founded in 1998 in UP Visayas, is recognized in the international science community for her expertise and contribution to the advancement of mushroom research.

Dan A. Saclangan, a graduating student of BSU's College of Agriculture, won the award for his study, "Preliminary Study on the Field Application of

*Trichoderma* spp on Strawberry Flower Using Honey Bees *Apis mellifera* L.", a unanimous decision from the judges.

In the Best Research Paper category, awardees were: Arbuscular Mycorrhiza (*Glomus aggregatum*) Alleviates Heavy Metal Toxicity in Sunflower (*Helianthus annuus* L.) by Dr. Venecio Ultra Jr., University of Eastern Philippines, North Samar (1<sup>st</sup> Place); Pleurotus Growers' Best Practice in Central Luzon: To Wrap or Not to Wrap? by Aaron Roy Aquino, Pedrito S. Nital, et. al., Central Luzon State University (2<sup>nd</sup> Place); and Partial Characterization of Mutants from a Plastic-degrading Black Fungus by Mary Ann T. Tavanlar and Emil C. Lat, BIOTECH, UPLB (3<sup>rd</sup> Place).

In the Best Poster category, awardees were: Fungal Root Endophytes Isolated from *Musa* spp as Biocontrol Agents Against the Plant Pathogen *Fusarium oxysporum* by Andre Adducul, Rizza Cabalfin, et.al, UST (1<sup>st</sup> Place); Finding Ways to Convert Problematic Waste Slurry from Corn-Nut Processing Plants into Beneficial Uses/Products by Anjelyn B. Del Rosario, UP Manila, Fides Z. Tambalo, BIOTECH, UPLB, and Dexter M. Belenar, KSK Company (2<sup>nd</sup> Place); and Biosorption of Mercury by the Marine Fungus *Dendryphiella salina* from the Mediterranean Sea by January Aninipot, Roanne Dahonog, et.al., University of Sto. Tomas (3<sup>rd</sup> Place).

Non-competing papers in the symposium were no small feat either as these drew out keen interest from the participants with regard to the study of fungi and its significance in the Philippines.

Some of the interesting presentations were given by Dr. Virginia C. Cuevas, a respected professor and scientist at UPLB and expert in the field of Ecology, on organic agriculture and biowaste compost with *Trichoderma*; Dr. Romulo H. Malvar, president, Marinduque State College, on the planned Fern and Mushroom Park, Research and Livelihood Center in Marinduque; and from the private sector, Mr. Gil Carandang, Herbana Farms owner, on the significance of indigenous beneficial microorganisms in soil fertility and pest and disease control.

The event was capped by the induction of new members and officers of MSP with Dr. Jocelyn T. Zarate from BIOTECH, UPLB as President. Sponsors of MSP included the Bureau of Agricultural Research (BAR), Bureau of Soils and Water Management (BSWM), and Department of Science and Technology (DOST). (Miko Jazmine J. Mojica)

## BAR promotes indigenous plants for health and wellness industry

Ms. Marjorie P. Lopingco, president of the Spa Association of the Philippines, Inc. (SAPI), introduced the prospects of spa industry using indigenous plants in the Philippines during the 6<sup>th</sup> Seminar Series of the Bureau of Agricultural Research (BAR) on 30 April 2008 at the 4F RDMIC Building, Visayas Avenue, Diliman, Quezon City.

In behalf of BAR Director Nicomedes P. Eleazar, Management of Information Systems Division (MISD) Head Marlowe U. Aquino stressed the importance of the BAR Seminar Series as a venue for exchange of information and knowledge, trends, challenges, and opportunities in the agriculture and fisheries R&D sector.

Ms. Lopingco reported that the "SPAmamia" is now earning US\$24.3 B earnings a year. For the



SAPI President Marjorie P. Lopingco

Philippines, a 7.9 percent growth rate has been noted per year with a 71 percent increase since 1999.

To date, there are 158 health and wellness-related registered companies in the country manufacturing organic and natural products, herbal and natural

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## 18<sup>th</sup> PHILARM confab heightens research managers' role to address food-fuel security



RDELACRUZ



Director Nicomedes P. Eleazar (inset) delivers his message during the opening program. At the VIP table are: (L-R) PHILARM Vice President Erlinda Aromin, ICRISAT Scientist Prabhakar Reddy, PHILARM President Heraldo Layaoen, BAR Director Eleazar, Albay Governor Joey C. Salceda, and NAST President Emil Q. Javier.

Recognizing the importance of research and the role of research managers in achieving food and energy security in the country, the Philippine Association of Research Managers, Inc. (PHILARM) held its 18<sup>th</sup> National Convention on 22-25 April 2008 at the Casablanca Hotel in Legazpi City, Albay.

The convention, which carried the theme "Mobilizing Research Managers for Food and Energy Security," gathered more than 100 research managers from all over the country to discuss two of the most pressing issues hounding the sector today: food and fuel.

At present, the agriculture sector is at a turning point with the high demand to produce more and address food and fuel security in the country. The unrestrained growth of population has caused food prices to increase, resulting in a higher demand to produce more food.

With the need to secure energy resource and climate change standing in the midst, there is also a need to re-structure further the equations of supply and demand and the resources available to resolve them.

The challenge, therefore, is how to address energy security without compromising lands for food production. At its current state, increasing concerns in the agriculture sector and how to mobilize the research managers towards its realization must be addressed.

Providing a wealth of experience from the financial markets and an economist's point of view was Governor Jose Clemente "Joey" Salceda, who served as the keynote speaker and guest of honor. His presentation titled "Nature's Vengeance, Farmers' Revenge: A Roadmap to Food Security" provided the participants with valuable insights on the current food production status and, more important, policy options and sequencing in response to the current food price crisis.

In his presentation, he identified the uncontrolled growing population of the country as the main cause why the country is experiencing rice shortage. He said, "The Philippines is good in reproduction but bad in production".

With the growing number of mouth to feed and the diminishing agricultural land areas to cultivate, the demand for food is high. When farmers produce less, expect the price to increase. He said that food production has an eventual effect on how the country's agricultural lands are being

used as there is a structural limit to land expansion.

Rice, according to Salceda, is a good policy instrument and researchers and research managers have a crucial role to play in it. "For every problem in the sector, there must be a research because every research answers a policy," he stressed.

Others who spoke at the convention were Legazpi City Mayor Noel E. Rosal, Bicol University (BU) Vice President Helen M. Llenaresas, and Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar.

Dir. Eleazar emphasized the need to meet the growing food needs given the constraint in resources. The challenge, he said, is for the research community to make further shifts in the yield potential of rice by developing high-yielding varieties to reduce farmers' agricultural inputs and increase their income.

On energy security, Eleazar underscored the need for research managers' aggressive pursuit to make this

next page

**'Rice is a good policy instrument and researchers and research managers have a crucial role to play in it. For every problem in the sector, there must be a research because every research answers a policy.'- Gov. Salceda**



## Central Visayas is source of cassava for bioethanol

Getting into the mainstream of agricultural development on food security and biofuel production to address the pressing and increased oil price in the world market is one of the ultimate objectives of the Department of Agriculture (DA).

Although there are a lot of debates on these concerns, the Philippine government, through the DA's *Ginintuang Masaganang Ani* (DA-GMA) Corn Program, developed the National Cassava Program for Alternative Use.

Highlighting the industrial importance of cassava as alternative sources, for biofuel and bio-ethanol, the Central Visayas was eyed by the DA-GMA Corn Program as the source of planting materials to be distributed to other regions.

Using the KU50 or NSIC CV22 variety, the crop was propagated in the research and production site of DA-Central Visayas Integrated Agricultural Research Center (DA-CENVIARC) in Ubay, Bohol. The target planting material production is good for 23 hectares with 3-4 meters with at least 4 to 6 nodes per meter stalk.

Cassava, regarded mainly as food in marginal areas, is now given a new usage to increase the production



RDELACRUZ

and profit of marginal farms. The program is piloted in Regions 2, 10, 7, and 12.

In Central Visayas, the DA-CENVIARC is the lead region to provide the needed planting materials for the proposed 23 hectares in the Bicol Region.

Furthermore, cassava ethanol production will be expanded in regions IVa and IVb, 6, 5, and 8. These Regions will purchase and obtain their initial planting materials from DA-CENVIARC, giving the Center an added income to support other RDE activities.

In addition, DA-CENVIARC,

together with Philippine Rootcrops Research and Training Center (PRCRTC) in the Visayas State University (VSU) based in Baybay, Leyte will provide technical and financial support to the commodity, particularly on its marketing activity with the San Miguel Corporation initially linked to PRCRTC.

With this initiative, DA and its partner agencies can actively participate in the government's goal in identifying and providing alternative commodities for food, feed/fodder, and fuel uses. (Marlowe U. Aquino, PhD)

## BAR prepares an e-Learning course on seaweed farming for profitable livelihood

The Bureau of Agricultural Research (BAR) has prepared an online course on "Seaweed Farming: A Profitable Livelihood for Coastal Communities" under the e-Learning Program of the Department of Agriculture (DA). This serves as an additional program to other existing offered courses on goat, banana, corn, citrus, durian, and others.

Seaweed farming is considered as the most productive form of livelihood in coastal communities, benefitting about half a million of the country's population. The Philippines ranks as the third in the world market in seaweed export.

The e-Learning module provides additional knowledge on improved seaweed farming of *Eucheuma sp.* or *Kappaphycus sp.* This includes site selection, preparation, transport, and care and maintenance of seedlings, harvesting, postharvest handling, drying, packing, and

storing of seaweed.

The e-Learning program is one of the components of the e-Extension services of the agriculture/fisheries (A/F) sectors.

As per Department Order No. 03 series of 2007, the DA-Agricultural Training Institute (ATI) was designated as the lead agency for the provision of e-Extension services in collaboration with other agencies, bureaus, and organizational units under the Department.

e-Extension envisions to establish a network of institutions providing efficient and effective e-Extension services for A/F to attain a modernized agriculture and fisheries where farmers and other stakeholders have enhanced productivity, profitability, and are competitive in the global market.

Other components of e-Extension are e-Farming and e-Trading which provide online and blended courses on A/F technologies and offer digital online

courses purposely designed for agricultural extension workers, farmers, and fisheries in the country.

e-Learning serves as an offshoot of ATI's commitment under the Open Academy for Philippine Agriculture (OPAPA). Courses in the e-Learning integrate field activities and face-to-face interaction between learners and experts. They were developed in collaboration with BAR, Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Bureau of Plant Industry (BPI), Philippine Carabao Center (PCC), Philippine Coconut Authority (PCA), National Dairy Authority (NDA), and other regional centers of government agencies.

Representing BAR in this endeavor are Ms. Julia Lapitan, assistant head of MISD; Ms. Apolonia Mendoza, research coordinator of RCD; and Ms. Rueth Cabral, programmer of MISD. (Ma. Eloisa E. Hernandez)



## DA Usec Paras underscores backyard hog raisers' role to food sufficiency

Department of Agriculture (DA) Undersecretary Jesus Emmanuel M. Paras who spoke in behalf of Secretary Arthur C. Yap pointed out that backyard hog raisers are the most important people as far as livestock is concern, particularly in hog production. This he said during the 17<sup>th</sup> National Hog Convention and Trade Exhibits on 24-26 April 2008 at the Cebu International Convention Center (CICC), Mandaue City.

He stressed that "With regard to today's issue on rice production, food sufficiency is not a problem if the efforts of all local government units (LGUs), private sectors, and other institutions are unified."

With this year's theme, "Enhancing Pork production for the Export Market," the convention through

various exhibitors featured the latest swine production equipment and techniques and new medications for hogs. It was hosted by the Cebu Association of Meat and Poultry Products Multi-Purpose Cooperative headed by Chairman Pluy Ong.

Organized by the National Federation of Hog Farmers Inc. (NFHFI), the launching ceremony had Convention Chairman Edwin G. Chen welcoming the guests and participants and NFHFI President Albert R.T. Lim Jr. giving the opening remarks. He said that the convention hopes to help promote and protect the interests of the country's hog farmers and serve as a venue to enhance the opportunities for growth, efficiency, equity and sustainability of the P120-billion hog industry.

As partner and sponsor, the

Bureau of Agricultural Research (BAR) participated in the event where BAR publications and research papers made by scientists associated with the bureau were exhibited in the booth. Completing the set of cooperators were DA RFU-6, DA RFU-7, DA RFU-8, Livestock Development Council, Bureau of Animal Industry (BAI), National Meat Inspection Service (NMIS), National Food Authority (NFA)-Corn Development Fund, and GMA Corn Program.

The three-day event also included a series of seminars on swine management and production, and the eradication of common swine diseases as well as a live hog exhibit. It also highlighted the addition of the 1st Backyard Hog Farmers Congress (on the third day), sponsored by Robina Agri Partners. (Christmas B. de Guzman)



The Bureau of Agricultural Research (BAR) is one of the sponsors and participants of the trade exhibit



As exhibitor, BAR displays various in-house publications, books, and journals from its partner-agencies through its Special Publication Grant (SPG). MISD Assistant Head Julia A. Lapitan (left) leads in the information drive and in welcoming inquiries from the booth visitors and participants.

photos by NDELROSARIO and CDEGUZMAN



# Confab on dryland agriculture identifies national RD&E agenda and lays groundwork for PhilDRI



DA Usec. Segfredo R. Serrano (left) delivers his keynote address during the opening of the National Dryland Agriculture RD&E Conference. Listening in at the VIP table are: (L-R) Dr. Libertad C. Rivera of DA-RFU 3 (attending in behalf of DA-RFU 3 Regional Executive Director Redentor S. Gatus), ICRISAT Director General William D. Dar, and BAR Director Nicomedes P. Eleazar.

In a bid to sustainably manage the country's dryland agriculture and contribute to poverty alleviation and social empowerment of poor communities, the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) partnered with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to conduct the first-ever "National Dryland Agriculture Research and Development and Extension (RD&E) Conference" on 17-18 April 2008 at the Oxford Hotel, Clark Special Economic Zone, Pampanga.

With the theme, "Energizing Research, Development and Extension for Sustainable Dryland Agriculture Philippines", the two-day conference assessed the contemporary situation of dryland agriculture in the country which served as the basis for identifying a national RD&E agenda for dryland

agriculture and groundwork for establishing an institution for dryland research.

The activity was attended by more than 100 participants from various government agencies, state university and colleges, representatives from the regions identified with dryland areas, and invited experts from India-based research institutions, ICRISAT and Central Research Institute for Dryland Agriculture (CRIDA).

DA Undersecretary Segfredo R. Serrano, the guest of honor, stressed in his speech the crucial role of the local government unit in the successful implementation of a national program for dryland agriculture.

Meanwhile, providing the keynote address was ICRISAT Director General William D. Dar.

## Why focus on dryland agriculture?

In his presentation, Dr. Dar referred to the "drylands" as those that are hyper-arid, arid, and semi-arid and dry sub-humid areas, including both rainfed and

upland. The dryland areas are characterized by high climate variability, high precipitation, erratic rainfall, and poor soils which subsequently result in low and unpredictable crop and livestock productions.

The Philippines has more than three million hectares of drylands distributed in Northern Luzon, Central Visayas, and Southern Mindanao. Specifically, the dryland areas include Regions 1, 2, 3, 6, 7, 12, and Cordillera Administrative Region (CAR). These are inhabited by five million households, most of whom are poor and dependent on dryland farming.

The 20 million poor people who live in the drylands are, at their most, risk living in a farming condition that is vulnerable to drought, pest infestation, poor and degraded soils, and lack of physical infrastructures and social services.

In terms of funding, Dir. Eleazar noted that dryland agriculture is one of

the most neglected sectors given that it contributes 40 percent to the total food production of the country. Over the past three decades, he said, the bulk of the agricultural RD&E investments as well as policy support and infrastructure development had mostly favored irrigated and lowland farming, neglecting poor people who live in the drylands.

## Developing national RD&E agenda for dryland agriculture

Crucial to sustainably managing drylands in the country is to first identify the challenges and constraints to agricultural and economic production and provide alternative livelihood options to the dryland communities.

Thus, there is a need to define a medium- and long-term national RD&E agenda for dryland agriculture in the Philippines. This will serve as the platform and unified scheme in planning and prioritizing R&D to efficiently identify strategies and prospects vis-à-vis the emerging issues and concerns of the dryland sector.

After assessing the contemporary situation of Philippine dryland agriculture and recognizing its contribution to its total agricultural production, participants in the two-day conference identified eight challenges and constraints that the RD&E agenda must immediately address. These are

land degradation, low soil fertility, water scarcity, climate change, poverty/farmers' low income, poor institutional linkages, foods/feeds safety and nutrition, and insufficient technical knowledge.

## Introducing PhilDRI

Consequently, after a national RD&E agenda for dryland agriculture has been identified, there is a need for a proactive research organization that will generate and adopt appropriate innovations to improve the livelihoods of poor dryland communities and that can serve as a first line of defense against drought and climate change.

Thus, a proposal on the establishment of the first-ever dryland R&D institute in the country, the Philippine Dryland Research Institute (PhilDRI), which was presented in the conference by Dr. Santiago R. Obien, senior technical adviser of BAR.

According to Obien, PhilDRI will be organized to coordinate, strengthen, and unify all dryland agriculture and biofuel researches and technologies to improve the livelihoods of resource-poor dryland communities. The institute is envisioned to serve as the venue for relevant, timely, and proactive modern agricultural research for development.

Establishing PhilDRI will be the country's proactive response against

the vagaries of drought and climate change. It is also through the establishment of this institute that the Philippines will improve the livelihoods of the poor communities in the drylands by developing cutting-edge technologies and innovations.

An Executive Order (E.O.) on the establishment of PhilDRI earlier drafted was refined during the conference. Among the key issues addressed and discussed were R&D requirements, communication and social mobilization for establishment, and organization and management scheme for PhilDRI.

India is considered as the leader in dryland agriculture working with the Indian Council for Agricultural Research (ICAR) in conducting basic and strategic researches specific on dryland agriculture. As such, BAR has collaborated with ICRISAT in laying the groundwork for the establishment of PhilDRI.

A group of scientists and experts from ICRISAT and CRIDA was invited to present papers and share their experiences in dryland research, including new science tools for upgrading rainfed agriculture for improved livelihoods, collaborative R&D projects between ICRISAT and the Philippines, and India's experience in dryland agriculture RD&E. (Rita T. dela Cruz)



BAR Director Nicomedes P. Eleazar delivers his opening message.



Dr. William D. Dar presents ICRISAT's initiatives on dryland agriculture.



Dr. Santiago R. Obien presents how the first PhilDRI will be established.



Scientists and experts from ICRISAT and CRIDA listen to the presentations.



Guests, speakers, and participants pose for a group photo..

photos by NDELROSARIO, ENAGPALA, and RDELACRUZ