RP, Japan...*from page 11*

calculated as an average over the five years. The six GHG are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF6).

Under the CDM, governments or private entities in developed countries will assist developing countries like the Philippines to implement emission reduction projects and receive credit in the form of certified emission reductions or CERs.

In the Philippines, DENR is appointed by the national government as the designated national authority (DNA) to examine and approve voluntary participation in CDM projects aimed at sustainable development.

During the forum, Dr. Rodel Lasco of the World Agroforestry Center (ICRAF) lectured on the status of climate change and the concept of CDM in the international perspective while Ms. Joycelyn Goco of the DENR's Environmental Management Bureau (EMB) presented the government's initiatives on CDM for the Philippine energy sector. Mr. Arnold S. Bufi, country director of Eco Securities in the Philippines, likewise presented CDM opportunities in the waste management sector. *(Miko Jazmine J. Mojica)*

BAR realigns...*from page 10*

programs and to provide tighter focus in setting the priorities.

Among the key issues highlighted at the annual review and planning workshop were: expansion of CPAR projects with the local government units as key proponents; R&D fund allocation for the *Super Regions* in accordance with President Gloria Macapagal-Arroyo's prescribed resource allocation; State Universities and Colleges to conduct more relevant R&D programs; alignment of BAR programs vis-à-vis CGIAR priority programs for developing countries; revitalizing the agriculture sector; and intensifying the use and application of knowledge management and information

Who's new at BAR

photos by ELLAINE NAGPALA

Jojee H. Lales

The Bureau of Agricultural Research (BAR) welcomes the new year with two new additions to its staff to further strengthen its manpower.

A BS Agriculture graduate from the University of the Philippines Los Baños, **Jojee H. Lales** is the newest and youngest staff member in the Research Coordination Division (RCD). Jay-jay, as he is fondly called, is a native of Los Baños, Laguna.

This tall and slender lad enjoys playing table tennis and watching TV shows. He relates that his patience and enthusiasm to learn new things are among his qualities that he can share to the Bureau in attaining its goals.

Miko Jazmine J. Mojica or Miko is a familiar face among those in the BAR staff. A BAR returnee, Miko first joined the bureau in March 2005 as a writer based in the Applied Communication Section. She writes news and feature article for the regular publications of BAR, and was also in-charge of the bureau's several special publications such as the Research Highlights, NRS proceedings, and the technology calendar.

She is now based at the Technology Commercialization Unit of BAR and is responsible for the documentation of the activities of the unit. Miko is a BS Development Communication graduate from the University of the Philippines Los Baños and is currently pursuing an MS degree in Development Management at the same university. *(Ellaine Grace L. Nagpala)*

Miko Jazmine J. Mojica

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Agricultural Newsletter of the Year

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BAR realigns plans and programs for 2008

The Bureau of Agricultural Research (BAR) started the year right by conducting its "Annual Review and Planning Workshop" on 10-11 January 2008 in Antipolo City.

The activity was set to realign the bureau's plans and programs for 2008 in complementation with the current priorities of the Department of Agriculture (DA) and in response to the trends and issues in world agriculture. The activity was also conducted to assess the bureau's performance during the previous year.

In his opening message, Director Nicomedes P. Eleazar acknowledged the bureau's accomplishments and its continued commitment to strive what has been targeted and planned in 2007. This is amid the relatively small budget released to R&D last year.

Although this year's budget for R&D has been increased, he stressed that this is no reason to be complacent. He further that the R&D sector needs to continue what it has been doing in the past and to surpass the accomplishments by bringing down the impact of R&D to the ground level.

Eleazar presented the "Consultative Group on International Agricultural Research (CGIAR) Priorities for 2005-2015". BAR, being the sole representative of Philippine agriculture in CGIAR, must align its priorities and programs with that of the Consultative Group particularly on the issue of world poverty and food concern.

The overall goal of CGIAR research is to improve the livelihood of low-income people in developing countries and address the following key issues on: 1) Sustaining biodiversity for current and future generations, 2) Producing more and better food at lower cost through genetic improvements, 3) Reducing rural poverty through agricultural diversification and emerging opportunities for high-value

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photo by NICANOR DEL ROSARIO III

BAR Director Nicomedes P. Eleazar (right) delivers his opening message and specific instructions to the bureau s key personnel to serve as guidelines in crafting of plans and programs for 2008.

In this issue...

PINOY SCIENTIST DISCOVERS INDIGENOUS, GIANT MUSHROOM

photo courtesy of CLSU

Dr. Renato Reyes (left), researcher and dean of the Central Luzon State University (CLSU), discovered a giant mushroom, *Collybia reinakeana* (P. Henn) or locally known as *Kabuteng Calao* . The giant, wild and edible mushroom was first discovered in Nueva Ecija, Philippines.

story in page 4...

More responsive programs in agriculture and fisheries sectors in 2008 SA CY

In consonance with the mandate set by President Gloria Macapagal-Arroyo for the Department of Agriculture (DA) under the Medium-Term Philippine Development Plan (MTPDP), DA Secretary Arthur C. Yap is continuously aligning the Department's programs, activities, and interventions for 2008 through the Five Developmental Pillars for Agriculture and Fisheries. These are: 1) market access, 2) postharvest and storage, 3) credit facilitation, 4) technology and extension, and 5) irrigation. This is to considerably uplift the productivity and profitability of farming, fishing, and agribusiness ventures, more so improving the country's food security and job generation.

In 2007, DA posted a 4.68% growth in the farm sector despite the occurrence of dry spell and typhoons in the country. This is based on the official report of the Bureau of Agricultural Statistics (BAS), though it did not reach the 5% performance target for the year, this still manifested a remarkable percent within the range projected by government planners.

In a press conference, Secretary Yap said that the Department expects a 4.5% to 5.5% hike for 2008. Rice and corn production is targeted to increase by 5.78% and 10%, respectively.

The fisheries sector likewise showed production growth of 4.9 million metric tons for 2007. The fisheries and aquaculture were noted to be primary growth driver for 2007 at 6.81% increase. This year, target production denotes a 10% scale.

Secretary Yap said that in order to help sustain the growth of the fisheries sector for 2008, establishment of environment-friendly systems, such as mariculture parks, and expansion of seaweed farming are deemed important.

The Bureau of Fisheries and Aquatic Resources (BFAR), being the lead agency for the fisheries sector, has also enumerated other programs as follows: 1) farming of high-value species, 2) more responsive enforcement of anti-poaching and illegal fishing, and 3) sustained resource conservation efforts.

Secretary Yap said the two factors critical for 2008 are sustaining the growth and expansion of the sectors. Also, the Department is targeting to strike a similar full-year growth of 4.5 to 5% in order to propel gross domestic product (GDP) growth to as much as 7% for 2008.

Based on the DA's Planning Guide, all implementing units of the Department will continue to implement programs, project, and activities (PPAs) consistent with the DA's commitments in the MTPDP 2008-2010. Goal 1 for example, 1.35 M hectares are still to be developed for agribusiness and for Goal 2, continue to implement PPAs that would reduce the cost of priority wage goods, increase production efficiency and the competitiveness of the A&F sector as a whole.

photo by RITA DELA CRUZ

Secretary Arthur C. Yap

DA will support the Japan-Philippine Partnership Agreement (JPEPA) particularly on the fisheries, livestock and poultry, high value commercial crop, coconut, and sugar subsectors. However, the JPEPA has to be ratified by the senate for it to take effect. On the basis of the major final outputs (MFOs), this covers productivity enhancement measures, regulatory systems, and trade promotion

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DEPARTMENT OF AGRICULTURE
BAR Chronicle
A monthly publication of DA-BAR

BAR Chronicle is the monthly publication of the Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA), which is mandated to ensure that all agricultural researches are coordinated and undertaken for maximum utility to agriculture. This publication provides regular updates on BAR s activities as the country s national coordinator for agriculture and fisheries R&D.It also highlights features and news articles concerning NaRDSAF-member institutions.

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RP, Japan gov ts to develop biomass technologies to fight global warming

photo courtesy of UPLBFI

Participants of the Symposium on Appropriate Bioenergy T echnologies for Mitigating Global Warming held at SEARCA.

The Philippine and Japanese governments are looking into the possibility of cooperating and developing biomass energy technologies (BETs) to mitigate global warming.

This forging of efforts was discussed in a forum for the exchange of information between the two countries on the state of climate change initiatives organized by the University of the Philippines Los Baños Foundation Inc. (UPLBFI) and the Research Institute of Tsukuba Bio-Tech Ltd. of Japan at the SEAMEO Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), Los Baños, Laguna on 24 January 2008.

"The build-up in the atmospheric carbon due to excessive use of fossil fuels by industries and other human activities has been a major cause of global warming," organizers of the forum stated.

In discussing global warming, the organizers intend to foster a stronger partnership among the various sectors of the two governments in coordination with the academe and research institutions, government agencies, private sector, and other stakeholders in forging significant efforts to solve the climate crisis.

Energy technologies

Dr. Jesse Elauria, associate professor and chair of the Engineering Science Department, College of Engineering and Agro-Industrial Technology (CEAT) at UPLB and biomass focal person in the Philippines, said that the country, just like any other countries in Asia, has an abundant supply of biomass.

"Several BETs are ready for commercialization if not commercially available, however, there are several barriers that must be addressed," Dr. Elauria said, mentioning that biomass energy has high potential in addressing the energy security of the country and in mitigating greenhouse gas (GHG) emissions. He also mentioned the passage of the Renewable Energy Bill and product standards to attract investors and stakeholders to address some of the barriers.

The scientists from Japan presented in the forum the current scenario in their country with regard to biomass management and the trend of scientific research and technology development in this area of concern.

"Livestock waste and garbage from animal farms and the food industry account for the majority of biomass wastes, and recovery of biogas has been proposed for the realization of the policy. The government of Japan aims to create a recycling-oriented society in which biomass waste is recycled and reused," said Drs. Takashi Ouwa and Takaaki Maekawa who gave their perspectives of biomass energy development in Japan.

Dr. Maekawa, secretary-general of the International Commission of Agricultural Engineering (CIGR), is likewise instrumental in the development of a cost-effective and commercial scale methane fermentation system for food recycling and the introduction of Stirling engine as outer combustion engine. Both technologies were presented in the forum at SEARCA.

The full-scale fermentation system was developed as a high-performance hybrid biomass conversion system and was operated on a commercial scale in Kyushu, Japan.

According to Dr. Maekawa, these regulations are applicable to waste management in food industries, and their cost and carbon dioxide (CO2) reduction are possible.

The Stirling engine, used as energy supply system, uses a multi-fuel outer combustion (heating) engine.

Dr. Maekawa introduced the technology with Drs. Nobatoshi Tetsuka and Saturo Shimada. According to them, biomass fuels such as wood chips, biogas, ethanol, and plant oils are suitable for operating the Stirling engine.

Kyoto Protocol and CDM

The forum was also used as a venue to explore strategies on renewable energy technologies under the Kyoto Protocol's Clean Development Mechanism (CDM). The organizers of the forum cited the commitment of the Philippines and Japan in the 1997 Kyoto Protocol in adopting more climate-friendly policies and technologies as a collective response to the climate crisis.

According to the Department of Environment and Natural Resources (DENR), under the Protocol, the developed countries commit themselves to reduce their collective emissions of six key greenhouse gases by at least five percent. Each country's emission target must be achieved during the period of 2008-2012. The emissions will be

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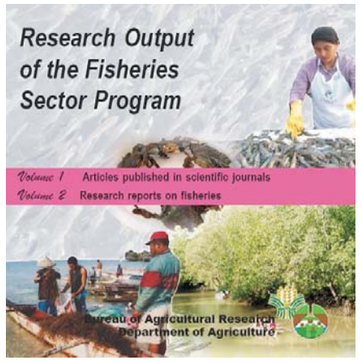
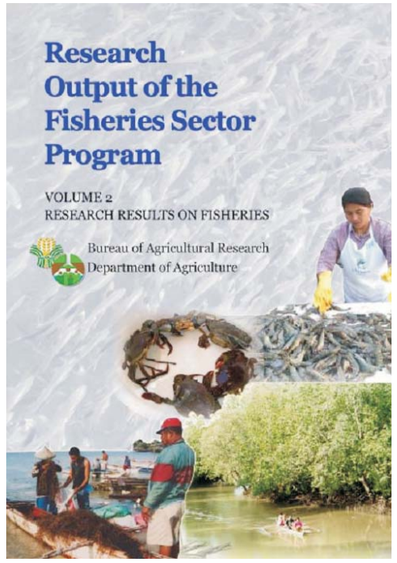
FSP Volumes 1 and 2 now available in e-book





The Bureau of Agricultural Research (BAR), in close coordination with the Aquaculture Department of the Southeast Asian Fisheries Development Center (SEAFDEC/AQD), recently published two volumes of the ***Research Output of the Fisheries Sector Program*** (FSP) in e-book format for easy access and dissemination to the fisheries R&D sector and other concerned institutions.

SEAFDEC/AQD packaged the two volumes of FSP books into a user-friendly CD booklet.

FSP Volume 1 contains 34 research papers published in scientific journals and other publications and has a printed version released in November 2002. FSP Volume 2 consists of 32 BAR-funded researches on fisheries R&D reflecting the Department of Agriculture's (DA) directions and priority programs on fisheries.

This is the latest addition to the FSP publications published in this CD format.

The CD has an accompanying jacket of abstracts for easy browsing of research outputs. It also includes Acrobat Reader version 5, 6, and 7 for computer compatibility. The CD will auto-run in computers with Windows XP as operating system.

BAR Director Nicomedes P. Eleazar underscored the importance of the publications given the economic importance of the fishery sector, both as income- and employment-generating activities, particularly in coastal areas of the Philippines.

BAR, being the national coordinator for fisheries research and development (R&D), must take on the challenge to optimize the use of digital media as an engine of progress for the fishery sector, he said.

Eleazar further stressed that the fishing industry could benefit from the new information and technologies generated from the research results to improve not only the production but also the marketing aspect, especially export marketing. He expressed that the two volumes of FSP books would serve as valuable references not only for the R&D community but also other concerned individuals who may find the information relevant and useful in their endeavors.

For e-copies of the FSP books, please send an e-mail to Mr. Raymond Patrick L. Cabrera of the Program Development Division (PDD) at rcabrera@bar.gov.ph. It can also be downloaded from BAR official website at http://www.bar.gov.ph. *(Rita T. dela Cruz)*

More responsive...*from page 2*

and facilitation.

The primary focuses for the Super Regions created by the Department are the North Luzon Agribusiness Quadrangle (NLAQ) and the Agribusiness Mindanao.

For 2008, DA is committed to increase land productivity, build up new small-scale irrigation facilities, construct 708 kilometers of farm-to-market roads, and establish 200 units of market-related infrastructure, such as *Barangay Food Terminals* (BFTs) and *Bagsakan* or drop-off centers in Metro Manila. This aims to expand market access and facilitate trade for the country's small farmers and fisherfolk and likewise to minimize the effects of the continuous increase in prices of oil in the world market. These are all based on President Arroyo's directive. *(Ma. Eloisa E. Hernandez)*

Sources:

DA to build 708 kms of farm-to-market roads by Mariane V. Go, The Philippine Star, 09 January 2008.

Fisheries still seen to boost agri growth by Amy R. Remo, Philippine Daily Inquirer, 11 January 2008.

Agriculture likely grew 5%, Manila Bulletin, 15 January 2008.

Agriculture sector grew 4.68% in 2007 by Amy R. Remo, Philippine Daily Inquirer, 22 January 2008.

Agri sector posts 4.68% growth in 2007 by MarianneV. Go, The Philippine Star, 22 January 2008.

Agriculture posts 4.68% growth in 2007-DA by Marvyn N. Benaning, Manila Bulletin, 22 January 2008.

BAR realigns...*from page 1*

commodities and products, 4) Promoting poverty alleviation and sustainable management of water, land, and forest resources and, 5) Improving policies and facilitating institutional innovation to support sustainable reduction of poverty and hunger.

Eleazar also presented "Revitalizing Agriculture/Fisheries (A/F) in the Philippines" which was originally presented by Albay Governor Jose Clemente "Joey" Sarte Salceda to substantiate the importance of R&D in the agriculture sector and why the need to increase its budget.

The BAR director presented these to serve as guidelines in realigning the bureau's agenda and

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MIT students urge RP gov't to support wide-scale *malunggay* production

photos by MIKO MOJICA

MBA students from the Massachusetts Institute of Technology (MIT), namely: Jesus Benavides (Mexico), Alex Rall (Germany), David Salamon (France), and Jose Torbay (Venezuela), present their study on the viability of the global commercialization of *Moringa* in a forum organized by the DA's Biotechnology Program Office.

A team of graduating MBA students from the Massachusetts Institute of Technology (MIT), Sloan School of Management in the US, is urging the Philippine government to support the wide-scale production of Moringa (malunggay) after it was identified as a potential crop in the Western market particularly as a natural ingredient in their diet, biofuels, and even in their cosmetic products.

In a forum organized by the Department of Agriculture's Biotechnology Program Office (DA-BPO) on 17 January 2008 at the DA Compound in Quezon City, the students, namely: Jesus Benavides (Mexico), Alex Rall (Germany), David Salamon (France), and Jose Torbay (Venezuela), presented their study on the viability of the global commercialization of Moringa.

They likewise gave their recommendations for a realistic marketing strategy that will position the Philippines as the main source of *malunggay* in international trade.

"Time is crucial. You need to act now or some other country will do it," said the students, citing the geographic and economic advantages of the Philippines in supplying the demand for Moringa and its by-products.

Market outlook

According to the study, there is currently no mass scale production of *malunggay* in the world although the extracts from its seeds and leaves are already being used as bases for low-scale production of shampoo, food supplements, beauty creams, and energy drinks.

The MIT students identified the increasingly health-conscious US and European markets as attractive markets for Moringa oil, especially since it contains low trans fatty acids and has a longer product shelf life.

According to the students' research, the chemical composition and physical properties of *malunggay* are ideally suited for the high-end market because of its high oleic acid content which renders it a good emollient (used to soothe and soften skin) and its perceived nutritional benefits in the form of dietary supplements.

"Moringa has a cost advantage over main competitors such as sunflower oil or olive oil and has a lower price sensitivity of potential clients than in other markets," the MIT students added.

As a potential biofuel source, Moringa has a "low iodine value better than diesel and low cetane (ignition) number that is better than both coconut fat and diesel" they stressed.

Market risks

As for the downside of going into the commercialization of *malunggay*, the students cautioned its audience regarding some market risks that the Philippines should be aware of. One of these is that *malunggay* could be stereotyped as a "fad" that will eventually wane and be overtaken by another novel commodity. Alex Rall cited as example the promising Jojoba oil which became a one-time fad diet in the US.

Since the market is Western, a large marketing investment is also likely to establish the commodity's credibility and acceptability. "It is likely that a process that will remove the nutty flavor and smell of *malunggay* oil will be required," Rall said.

The students also noted the big switching cost that will be incurred by potential importers because it will entail a change of suppliers, operators, marketing, and packaging of a new product. Foremost to that, the Moringa oil, being a novel commodity, will have to undergo a stringent and tedious process of approval from the US Food and Drug Administration (FDA) and the European Food Safety Authority (EFSA).

Strategic recommendations

The assessment of *malunggay*'s market attractiveness led the students to come up with a three-phase market entry strategy, starting with the aggressive entry into biofuels before progressing into the high-end/cosmetics market and food industry.

Timeliness and speed in filling

turn to page 6

BAR to support nursery and techno-demo facility as part of agri-park set in Tanay, Rizal

photos by MIKO MOJICA

Land use map for the proposed 30-hectare agri-park set in Tanay, Rizal.

BSWM Asst. Director Willie Cabezon (right) orients BAR-TCU's Anthony Obligado and Evelyn Juanillo (left) on the planned establishment of a nursery and technology demonstration facility at the agri-park.

The Department of Agriculture-Bureau of Agricultural Research (DA-BAR) is funding the establishment of a nursery and technology demonstration facility for herbal and medicinal plants and sweet sorghum as part of the agri-park development of the hillylands of Cuyambay, Tanay, Rizal.

A team from the Technology Commercialization Unit (TCU) of BAR, together with staff members of other DA-attached agencies and offices involved in the project for the promotion of DA banner programs, visited the site on 18 January 2008 for site validation.

The Bureau of Soils and Water Management (BSWM) is spearheading the development of the 30-hectare land area donated by the local government unit (LGU) of Tanay for the project.

"We expect to complete the center by 2010," said Mr. Wilfredo E. Cabezon, BSWM assistant director, referring to the proposed research, demonstration, and training center envisioned by the bureau for the hillylands of Tanay.

The center, which will double as an agri-park, will showcase an assortment of technologies on agriculture and fisheries promoted by DA, thereby enhancing agro-biodiversity and agri-eco-tourism. It will likewise "promote a public-private partnership in undertaking research and demonstration and build farmers' capacity to establish conservation farms through participatory approach of learning by doing."

Aside from catering to the needs of farmers and researchers, the agri-park will develop a total techno-demo and leisure farm suited to the location by putting up dormitories, function rooms, view deck, living museum on soil and water conservation, forest garden, and a pick- and pay-harvesting experience, among other features, to attract tourists and potential investors. *(Miko Jazmine J. Mojica)*

Pinoy scientist discovers indigenous, giant mushroom

Another dedicated and hardworking Filipino scientist is on the go to reveal his work on indigenous mushroom.

Dr. Renato Reyes, researcher and dean of the College of Arts and Sciences of the Central Luzon State University (CLSU), serendipitously discovered a giant mushroom after the July 1990 earthquake that struck the North-Central Luzon region.

The indigenous mushroom, *Collybia reinakeana* (P. Henn), is a giant wild edible mushroom found in the Philippines. It is popularly called "Kabuteng Calao" but Dr. Reyes named it *Novoecijanotake* owing to its place of origin though the mushroom is not endemic in Nueva Ecija.

In September 1990, the giant fruiting bodies were found in the eroded areas in Puncan, Carranglan, Nueva Ecija, and its cell lines were rescued by Dr. Reyes and his students.

Fascinated by its size, Dr. Reyes conducted a thorough investigation on the bio-physiological profile of the new-found mushroom at Tokyo University of Agriculture through a Japan Society for the Promotion of Science (JSPS) Post Doctoral Fellowship Program. His significant findings led to its successful domestication and eventually resulted in its local production.

Dr. Reyes and his team continued to rediscover the potentials of the mushroom for nutraceutical and pharmaceutical properties which could result in the development of patentable technologies (*Marlowe U. Aquino, PhD*).

1st Nat'l Sweet Sorghum RDE Conference slated in March

photos by RITA DELA CRUZ

While the agriculture sector is continuously being hounded by the recent food-versus-fuel debate on biofuel feedstocks, the Bureau of Agricultural Research (BAR) continues on its stance regarding the benefits of biofuel, particularly the promotion of sweet sorghum.

BAR, being the assigned focal agency of the Department of Agriculture (DA) on biofuels R&D has been tasked with providing a critical role in the coordination and management of researches towards the creation of a unified biofuel plans and programs.

In connection with this, the Bureau, in cooperation with the Mariano Marcos State University (MMSU) conducted a pre-conference briefing for researchers to discuss the "First National Sweet Sorghum RDE Review and Planning Conference" slated on 12-14 March 2008 in Batac, Ilocos Norte.

The event is organized in coordination with partner agencies, namely: Commission on Higher Education (CHED), Department of Science and Technology-Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (DOST-PCARRD), DA-Philippine Agricultural Development and Commercial Corporation (PADCC), Department of Energy (DOE), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), the India-based international organization that first brought to the Philippines the first varieties of sweet sorghum for testing.

In reaction to recent reports that biofuels development will adversely affect the country's ability to produce food, ICRISAT Director General William D. Dar, who was recently in the country, reiterated that "Investing in biofuels is not counterproductive and will not adversely affect the country's ability to produce its own food."

Dr. Dar, former acting agriculture secretary and current chairman of the Committee for Science and Technology of the United Nations Convention to Combat Desertification (UNCCD), asserted: "A science-based approach to biofuels can help ensure an alternative to fossil fuel, help reduce the adverse impacts of climate change, and improve the livelihood of poor dryland farmers without compromising food security. We have proven this in farmers' fields at ICRISAT in India, where the biofuel feedstocks we are producing are environment-friendly, provide additional income to farmers, and do not compromise food security."

The coming sweet sorghum RDE conference is expected to be attended by at least 100 researchers, extension specialists, policymakers from various government institutions, directors and vice-chancellors of R&D from selected state colleges and universities (SCUs), representatives from the private sector, non-government organizations (NGOs), farmers, and other concerned stakeholders.

According to Dr. Santiago R. Obien, senior consultant of BAR who was also the key facilitator during the pre-conference briefing held on 24 January 2008 at 4/F RDMIC Building, Diliman, Quezon City, the main objective of the conference is to develop a national framework for RDE on sweet sorghum in the context of the Philippine biofuel industry.

"The unified RDE framework for sweet sorghum is crucial to complement and synergize efforts of various stakeholders and make the biofuels industry viable, commercially profitable and most important, sustainable in improving the livelihoods of the poor," Dr. Obien stressed.

Other objectives are: review R&D projects on sweet sorghum and recommend strategic researchable areas; identify strategic options and research priorities in designing and evaluating integrated food and energy production systems; and organize the human and physical infrastructure needed to sustain the bioethanol RDE program in the country.

Among the strategic issues lined up to be discussed in the conference are: 1) *technical issues* (major RDE results, research gaps and strategic areas for production, post-production and processing); 2) *socioeconomics issues* (impacts of sweet sorghum with emphasis on improving the livelihoods of the poor farmers), 3) *technology sharing and community mobilization* (innovative commercialization approaches for sweet sorghum), and 4) *institutional arrangements and resource mobilization* (structural and manpower organization and complementation, public-private-farmer partnerships in producing, processing and marketing of sweet sorghum for bioethanol). *(Rita T. dela Cruz)*

Revitalizing the green sector through job creation and poverty reduction

"Green sectors comprised of agriculture and agroforestry serve as engine of Gross Domestic Products (GDP) growth and driving force for job creations and poverty reduction through diversification and productivity".

This was the main message of Albay Governor Joey Sarte Salceda's presentation on GREEN PHILIPPINES Pangkat Green: Magsasaka Angat during one of the President's Cabinet meetings. Governor Salceda, serving as one of the President's economic advisers, highlighted the importance of investing more in agriculture and agroforestry.

In line with this, the Department of Agriculture (DA) has adopted the program through its "Growth in Green" strategy. This aims to sustain development through environmental protection and climate change adaptation and mitigation.

Based on the World Development Report of 2007, Philippine agriculture and fisheries should be the centerpiece of economic development agenda for it: 1) is a powerful engine of growth; 2) is an effective poverty reduction measure; and (3) can sustain development through environmental protection and climate change adaptation and mitigation.

To date, the agriculture sector accounts for 18 percent of the National GDP generated employment to 11.5M workers or 34.5 percent of the country's total workforce in 2007. At the end of the year, an official report from the Bureau of Agricultural Statistics (BAS) posted a 4.68% growth in the farm sector despite the occurrence of dry spell and typhoons affecting agricultural lands.

photo by RITA DELA CRUZ

Salceda underscored the importance of investing in A&F development, taking into consideration the rising global commodity prices, growing demand for feedstock for biofuels without jeopardizing food security, and opportunities derived from early harvest with China and the World Trade Organizations (WTO).

One of the current issues concerning the government today is hunger mitigation. In line with this, the Department has set productivity-enhancing programs to increase food production focusing on the livestock and crops sector, marine regeneration (mangrove and coastal fishery development), *Gulayan ng Masa* program, and increased irrigation through collaborative efforts with the Department of Environment and Natural Resources (DENR).

In increasing productivity of agricultural crops, the cost of goods should also not be affected more so improving its quality for export.

For 2008, the Department has set to grant new investment in agri-research, technology extension, and marketing support. Together with the major sectors (rice, corn, fisheries, and livestock), technologies and interventions will focus on postharvest facilities, farm-to-market roads, and irrigation vis-à-vis production support.

This is all part of the Medium-term Philippine Development Plan (MTPDP) serving as the 10-point legacy of the Arroyo administration. MTPDP is a detailed roadmap towards reducing poverty through job generation and enterprise. *(Ma. Eloisa E. Hernandez)*

ICT-based...*from page 5*

research and development, agribusiness, and marketing.

C-PREMS or Commodity-Production Resource Management System is a system that enables agriculture and fishery trading more attuned to competitiveness and globalization. Initially, it tracks the production and marketing activities of onions from producers, traders and distributors. This year the system will gradually be expanded to other commodities such as vegetables (tomato, eggplant, okra, etc), fruits (mango, pineapple and banana), rootcrops (potato, sweet potato, cassava), ornamentals (roses, mums, daisies, etc.), and goat and other dairy products.

Through the CAFIAMS, the efforts of research, development and extension/education (RDE/E) portal of the DA envisions to be more interactive, systematic and relevant to the needs and requirements of the farmers and fisherfolk for a more productive, profitable, and sustainable agriculture and fisheries.

It will ensure that the different systems will adhere to the requirements of the key players and stakeholders with BAR as the lead agency for RDE/E and the strong support of the ATI and Optiserve Technologies, Inc. (*Marlowe U. Aquino, Ph.D*)

BAR realigns programs with CGIAR system priorities

To be more responsive in addressing the needs of the agriculture and fisheries (AF) sectors, the Bureau of Agricultural Research (BAR) has realigned its programs in harmony with the systems priorities of the Consultative Group on International Agricultural Research (CGIAR).

CGIAR as a consultative group is a strategic partnership of countries, international and regional organizations, and private foundations. The Philippines is among the member-countries of CGIAR, in which BAR serves as the CGIAR's primary contact.

In general, the consultative group aims to achieve sustainable food security and reduce poverty in developing countries through scientific research and research-related activities in the fields of agriculture, forestry, fisheries, policy, and environment.

In specific terms, CGIAR has five areas of focus in which it tends to address the problem on poverty and food security. These are: 1) sustaining biodiversity for current and future generations, 2) production of more and better food at lower cost through genetic improvements, 3) reduction of rural poverty through agricultural diversification and emerging opportunities for high-value commodities and products, 4) promotion of poverty alleviation and sustainable management of water, land, and forest resources, and 5) improvement of policies and facilitating institutional innovation to support sustainable reduction of poverty and hunger.

As the lead agency in coordinating and funding research and development (R&D) activities, BAR focuses its programs and R&D thrust on alleviating rural poverty and in ensuring food security. This is exemplified by the bureau's banner programs, which are the Community-based Participatory Action Research (CPAR) and National Technology Commercialization Program (NTCP).

CPAR aims to enhance the role of R&D in technology transfer and production management system and develop strategies for effective integration of support services for agribusiness development. The program encourages active community participation in the management of AF resources.

NTCP, on the other hand, is focused on the commercialization of mature technologies developed in the academe and other research stations. Through the NTCP, technologies are made accessible to the countryside where most farmers and fisherfolk are situated. It is expected that the farmers and fisherfolk, being the end-users of the technologies, would increase productivity and income, at the same time provide food for the people in general. *(Ellaine Grace L. Nagpala)*

ICT-based initiative intensifies agribusiness development

To strengthen the use of information and communication technology (ICT) in agriculture and fisheries, the Bureau of Agricultural Research (BAR) has teamed up with the Agricultural Training Institute (ATI) and Optiserve Technologies, Inc for a more information-driven and action-oriented management system.

The newly conceptualized and developed system is called the Comprehensive Agriculture and Fisheries Integrated Agribusiness Management System (CAFIAMS). It is an integrated management system that unifies the application of agriculture and fisheries information from production to marketing for farmer and fisherfolk use. It also enables the users and beneficiaries to actively participate in the decision-making process of their enterprises or agribusiness activities to achieve the desired and optimum production and profit.

CAFIAMS has three major components, namely: *e-Learning*, *e-Pinoy FARMS*, and *C-PREMS*.

The *e-Learning* is handled by ATI and focuses on the transfer and exchange of experiences based on packaged learning modules of priority commodities in agriculture and fisheries. It is an on-line system that helps farmers and fishfolk use ICT and have a face-to-face interaction to obtain relevant and pertinent agriculture and fisheries technologies.

The *e-Pinoy FARMS* is an ICT-based system that enhances and supports the Department of Agriculture, through BAR, in the implementation of the bureau's Community-based Participatory Action Research (CPAR). It supports the monitoring and evaluation of CPAR projects for better technology refinement and systematic processing of community information and stakeholder characterization for appropriate and timely decision-making for agriculture and fisheries policies on

e-Pinoy FARMS software

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BAR expands CPAR implementation; LGUs to lead projects

"The local government units (LGUs) will be the lead proponents of all the CPAR projects to be implemented this year. They are identified as key partners for the implementation of CPAR expansion."

Thus, Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar announced at the "BAR Annual Review and Planning Workshop" held on 10 January 2008 in Antipolo City. The pronouncement was made in connection with the bureau's effort to expand the implementation of all Community-based Participatory Action Research (CPAR) activities in the regions.

CPAR is one of the banner programs of BAR. It aims to address the weak research-extension linkage with the ultimate goal of increasing total farm productivity and income in the context of a sustainable production system following the farming system approach. It serves as a platform for technology assessment involving the active participation of the community together with the experts and researchers in identifying the most appropriate technologies to meet the community's priority needs.

For 2008, BAR targets the implementation of at least 400 CPAR sites, doubling the target from last year's 233 regular CPAR sites (plus 33 sites more conducted in the 10 poorest regions).

Eleazar said that, this early, the bureau is soliciting "quality CPAR proposals" with the provision of the revised guidelines in availing of funds. He instructed the BAR regional coordinators to invite the regions to submit proposals and immediately facilitate the release of funds.

He stressed that proponents must come either from the Regional Field Units (RFUs) of the Department of Agriculture (DA)-the Regional Integrated Agricultural Research Centers (RIARCs), Bureau of Fisheries and Aquatic Resources (BFAR) Regional Office— the Regional Fisheries Research and Development Centers (RFRDCs), and the local government units.

So far, 11 regions have been identified to submit CPAR proposals to BAR. From these regions, eight are for agriculture (Regions 3, 4a, 7, 8, 9, 10, 11, and Cordillera Administrative Region), one for fishery (Region 4b), and two for agriculture and fishery (Regions 2 and 5).

All CPAR proposals must be specific to on-farm researches with specific discipline, indicated funding mode, and qualified to organized groups for easy tracking and documentation.

Location site must be specifically indicated with one component

photos by RITA DELA CRUZ

technologies which is similar for one CPAR site for replicability of the research. The ratio must be 1:1:3 (1 CPAR:1 municipality:3 barangay sites).

In view of this recent pronouncement, BAR, through its Research Coordination Division (RCD), will schedule a meeting of the RIARCs/RFRDCs to discuss the revised guidelines and to facilitate the submission of CPAR proposals for funding this year. *(Rita T. dela Cruz)*

MIT students...*from page 3*

photo courtesy of BPI

the value chain by launching a production program and establishing contacts are foremost to the strategy in entering the biodiesel market.

"Establishing the supply chain and building brand recognition is necessary to preempt the competition and expand the client base," the study stated.

When the reputation is cemented and demand is satisfied, the study recommends investing in more research and development to create new product brands that will excite the market.

Socioeconomic benefits

Based on the students' assessment, a significant increase in jobs and income can be earned by rural communities, especially farmers assuming that each farmer will be allotted ten hectares for *malunggay* production. This will translate more than P2 million in revenues per farmer in the first year of planting and harvesting if the biofuel market will reach 16 billion liters per year by 2010.

Given this estimate, the annual income from planting *malunggay* appears more profitable compared to planting corn which would earn the farmer P1.4 million or coconut with P814, 000, still based on the students' research. *(Miko Jazmine J. Mojica)*

BAR allocates R&D funds to *Super Regions*

Following the directives of President Gloria Macapagal-Arroyo on the strategic program fund allocation for research and development (R&D), the Bureau of Agricultural Research allocates the prescribed 30-20-20-30 scheme in funding the R&D of the *Super Regions*.

The *Super Regions* as mentioned by the Chief Executive in her pronouncements include North Luzon Agribusiness Quadrangle, Metro Luzon Urban Beltway, Central Philippines, and Agribusiness Mindanao.

The *Metro Luzon Urban Beltway* consists of the CALABARZON (Cavite, Laguna, Batangas, Rizal, Quezon), Region 3, Bataan, Bulacan, Pampanga, NCR (National Capital Region), MIMAROPA (Mindoro, Marinduque, Romblon, Palawan). The *North Luzon Agribusiness Quadrangle* includes CAR (Cordillera Administration Region), Regions 1, 2,3, Aurora, Nueva Ecija, Tarlac, and Zambales.

Regions 5, 6, 7, 8, and MIMAROPA compose the Central Philippines while Regions 9, 10, 11, 12,13, and ARMM (Autonomous Region in Muslim Mindanao) make up the *Agribusiness Mindanao.*

The program fund allocation per super region will be: 30% for North Luzon Agribusiness Quadrangle, 20% for the Metro Luzon Urban Beltway, 20% for the Central Philippines, and 30% for Agribusiness Mindanao.

The Super Regions were created by President Arroyo as part of her grand vision to develop the country into five Super Regions by 2010. The idea of grouping the regions and provinces in the country according to their economic strengths was officially announced at t her sixth State of the Nation Address (SONA).

BAR Director Nicomedes P. Eleazar emphasized that while the less-developed provinces should be given priority in the R&D allocation, it must not be limited to them. He cited CALABARZON as an example, saying that it is already developed but this is not a reason to put off any investment in this area as some areas still need R&D investments.

He also instructed concerned divisions that while BAR is keen on prioritizing the GMA Banner Programs such as the High-Value Commercial Crops (HVCC) i.e., banana, mango, pineapple, rubber, and abaca—funding must not be limited to them. Eleazar said that these are just rankings for prioritization. Funding must also take into account the current market demand and needs of the sector. *(Rita T. dela Cruz)*

GMA-HVCC keen on supporting BAR's technology commercialization program

photo by MIKO MOJICA

Dr. Rene Rafael C. Espino (left), GMA-HVCC national program coordinator, explains the importance of responding to the needs of the farmers and the demands of the market in order to successfully promote agricultural technologies. With him in the photo are BAR Director Nicomedes P. Eleazar (middle) and Optiserve Technologies CEO Cheryl Marie Natividad (right).

The Department of Agriculture's (DA) Ginintuang Masagang Ani – High-Value Commercial Crops (GMA-HVCC) Program has committed its support to the Bureau of Agricultural Research (BAR) for the commercialization of appropriate technologies for priority commodities such as banana, mango, coffee, rubber, pineapple, and vegetables.

Dr. Rene Rafael C. Espino, GMA-HVCC national coordinator, said the program is eager to grant funding support to BAR for the commercialization of appropriate technologies that can be adopted by farmers to realize a market-driven production system for high-value crops. These technologies must be cost-efficient and competitive in the local and foreign market.

"Having a good technology is not enough, we have to make sure that the packages of technologies are in place for their effective promotion and transfer. We have to convince the farmers that what we are promoting will benefit them." Espino said at a consultation meeting with BAR.

BAR Director Nicomedes P. Eleazar presented to Espino a partial list of HVCC-related technologies that are either BAR-funded or have been at least identified by the bureau for the past couple of years as mature technologies that have potential commercial value.

Espino expressed interest in supporting some of the technologies included in their priority commodity list and urged BAR to develop suitable programs that will formalize the partnership of BAR and GMA-HVCC in promoting technology commercialization.

OptiServe Technologies, Inc. led by its chief executive officer, Cheryl Marie U. Natividad, was also present at the meeting. OptiServe has an on-going partnership with BAR for the e-Pinoy FARMS (Farm Resource Management System) Project, a transaction-based software developed by OptiServe to cater to the need of BAR to consolidate and provide timely access to information by stakeholders for effective decision-making. *(Miko Jazmine J. Mojica)*