DA-IRRI hi-tech project to boost palay yields

With the use of mobile phones or Internet, farmers and agricultural extension workers anywhere in the country, and anytime of the day, will know what kind, type and amount of fertilizers they need to apply to their rice crop.

This is made possible through a one-year project between the Department of Agriculture (DA) and the International Rice Research Institute (IRRI), titled "Electronic Extension Services for Agricultural Extension Workers on Proper Nutrient Management for Rice in the Philippines."

Through this initiative, extension workers and farmers will have access to technical information on proper nutrient management for *palay* in only 15 minutes through the use of an information technology-based resource support tool developed by IRRI, called Nutrient Management for Rice (NMRice).

Agriculture Secretary Bernie G. Fondevilla and IRRI Director General Robert Zeigler recently forged an agreement to implement the project that will also tap the existing Farmers' Contact Center (FCC) managed by the DA's Agricultural Training Institute (ATI).

The IRRI has developed the NMRice or fertilizer management guidelines and recommendations based on data gathered from various rice-growing Philippine provinces, rice varieties, production practices, and yields.

Fondevilla said the project will be useful in improving *palay* production as farmers would know what kind and how much fertilizers they need to apply, depending on type of soil, location, and season.


PHOTO: RDELACRUZ

The system is user-friendly, as farmers and extension workers will only have to answer 10 -15 simple questions either by clicking on a computer or pressing numbers on a cellular or landline phone. Their request will be answered within 15 minutes.

For ATI's part, Dir. Asterio Saliot said IRRI will provide the data on improved production practices, while DA will promote the NMRice system and put in place the mechanism for delivering the information to farmers.

DA, through the ATI, will release P1.8 million to the IRRI to carry out the project.

For this project, the DA and IRRI will tap the services of Globe Telecom to provide information to farmers through Interactive Voice Response via a four-digit hotline number which will be announced soon.

The DA through ATI has set up the FCC to allow farmers to talk extensively with the DA experts or LGU agricultural technicians to get guidance and information on various concerns. Farmers don't have to worry about high prices on call rates when contacting the FCC, as the Philippine Long Distance Telephone Company (PLDT) has agreed to set a flat rate of only P7 per call.

Both the *NMRice* and FCC projects are part of the extension component of the DA's FIELDS program.

Through the FCC, farmers, fishers, and the general public, can ask anything on agriculture, fisheries and related issues and concerns, such as current prices of commodities, schedule of irrigation water releases, marketing of farm produce, and control measures for crop pests and animal diseases. ***(DA Press Release)***

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BAR is focal agency for Organic Agriculture RD&E


PHOTOS: DLEJANO & RDELACRUZ

The Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA) has been tasked under *Section 20* of the Organic Agriculture Act of 2010 or the Republic Act (RA) 10068 to lead and coordinate among executive agencies of government who are engaged in agrarian reform, science and technology, and education, as well as interior and local government agencies, strategic agricultural-based state universities and colleges (SUCs), and private organizations to develop, enhance and support, and consolidate activities for the formulation and implementation of unified and integrated organic agriculture research and development and extension (RD&E) plans and programs from the national down to the field level.

Under this law, BAR is tasked to create and organize an Organic Agriculture RD&E Network composed of research and educational institutions, local government units (LGUs), non-government organizations (NGOs), and recognized associations of interest groups such as organic fertilizer manufacturers and distributors, agricultural engineers, agriculturists, soil technologists, and farmers. Furthermore, national, regional and provincial organic RD&E centers will be organized, established, and integrated as a major component of the existing centers of DA, Department of Science and Technology (DOST), Department of Environment and Natural Resources (DENR), SUCs, and LGUs.

BAR's assigned work under RA 10068 is in line with its mandate and commitment to consolidate, strengthen, and develop the agriculture and fishery R&D system for the purpose of improving its effectiveness and efficiency.

The Organic Agriculture Act of 2010 or RA 10068 provides for the development and promotion of an organic agriculture in the country through a comprehensive program to be executed by the newly institutionalized National Organic Agricultural Board (NOAB), a policymaking body that provides direction and general guidelines for the implementation of the National Organic Agricultural Program (NOAP).

The NOAB is attached to the Office of the Secretary of Agriculture as the agriculture secretary is its chairman. The secretary of Interior and Local Government will act as its vice chair.

turn to page 11

What's inside

BAR is focal agency for Organic Agriculture.....1
RA 10089 creates Philippine Rubber Research.....2
DA celebrates 112th anniversary.....3
Book on DA's FIELDS program launched.....4
BAR provides server to PhilAgriNet.....5
2KR Program Grant supports BPSU's organic.....6
Balik scientist develops sustainable biofuel.....7
High-yielding variety is the way to go.....8
Milking profit from dairy farming through CPAR.....9
Tech forum and exhibit to showcase.....10
DA-IRRI high tech project to boost palay.....11

RA 10089 creates Philippine Rubber Research Institute; BAR leads drafting of IRR

Recognizing the importance of rubber as a high-value crop and the rubber industry as a potential dollar earner of the country, Republic Act (RA) No. 10089 has been recently passed creating the Philippine Rubber Research Institute (PRRI).

Also known as the "Philippine Rubber Research Institute Act of 2010", the establishment of PRRI aims to comprehensively realize the goals of human empowerment and economic development in the countryside through programs and projects that will increase rubber production in the country, and improve the quality of life especially in poor rural communities that depend primarily on this industry.

As stated in RA 10089, PRRI will be "under the control and supervision of the Department of Agriculture (DA)" as one of its attached agencies which is mandated to initiate and administer research and development (R&D) programs to improve quality and increase productivity of rubber especially for the benefit of smallholder rubber producers and processors.

Specifically, PRRI is tasked to: 1) propagate and promote the planting, maintenance, and wise-use of rubber trees as source of latex and finished rubber products; 2) enable rubber producers and processors to access quality rubber tree seedlings, modern production techniques and other support services from production to marketing; 3) undertake training and capacity-building programs for rubber producers, processors and cooperatives to increase production of quality rubber and raise level of income of poor smallholders; 4) assist in establishing village-based rubber enterprises to generate livelihood opportunities and improve general well-being of the majority of workforce in agriculture sector; 5) promote cooperative development among smallholders and provide them access to resources, technological know-how and decision-making processes; 6) initiate R&D projects on rubber to address technology and policy gaps in promoting a robust rubber industry; and 7) enter into an agreement and receive grants from local and foreign funding agencies through the DA.

The Philippine Rubber Research Institute Act of 2010 or RA 10089 provides for the development of policies and programs to improve the state of technologies needed for the rubber industry to be executed by the PRRI Advisory Board. It is composed of the DA secretary as chair, and undersecretary as vice chair. Its members include the executive directors of the Bureau of Agricultural Research (BAR), Bureau of Plant Industry (BPI) and PRRI, and one representative each from the rubber producers and rubber processors.

BAR, being the national coordinator for rubber RDE in the country, is also tasked to coordinate the preparation of the Implementing Rules and Regulations (IRR) of the newly-created institute. ***(Rita T. dela Cruz)***

PHOTO: RBERNARDO

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Book on DA's FIELDS...from p4

under the Support System for the *Tipid Abono* Fertilization Program. Out of the 1,380 packages, 428 or 31 percent were distributed in the Mindanao Agribusiness Super Region, 315 in the North Luzon Agribusiness Quadrangle, 430 in Central Philippines, 204 in the Urban Luzon Beltway and 3 in the National Capital Region (NCR).

For Irrigation and other rural infrastructure, about P79.7 billion has been released for the restoration and rehabilitation of national and communal irrigation systems nationwide, making available 140,042 hectares of new areas. A total of 1,480,826 hectares located in the four super regions were also restored and rehabilitated.

The government also constructed since 2001 a total of 18,929 kilometers of farm-to-market roads worth P26.77 billion and established 50 mariculture parks covering a total of 49,073 hectares.

For Extension, the DA provided a total of 22,941 various agricultural technology trainings and orientations from 2001 to 2009 to 977,713 farmers, agricultural extension workers, and farmer entrepreneurs.

For the Loans component, from 2001 to 2009, a total of P28.8 billion was released under the government's Agro-Industry Modernization and Credit Financing Program and the Quedancor to farmer-beneficiaries. If *palay* production loans from the Land Bank and releases from other financial institutions and agencies are included, the total would amount to P465 billion.

For Dryers and other postharvest facilities, a total of 2,016 units of flatbed dryers were delivered, installed and completed. Through the mechanical drying system, an estimated 25,724 metric tons of *palay* valued at P437 million were saved in 2008. Moreover, a total of 39 cold chain facilities were completed and are currently operational nationwide.

For the Seeds component, the DA provided 1.68 million bags of hybrid and 12.5 million bags of certified *palay* seeds from 2001 to 2009 to farmers nationwide. The DA also established the development of climate-ready seeds including saline-, drought-, and flood-resistant varieties. ***(DA Press Office)***

BAR is focal...from p1

Specifically, the law seeks to promote, propagate, and further develop the practice of organic farming in the Philippines which is expected to: 1) increase farm productivity; 2) reduce environmental degradation and prevent the depletion of natural resources; 3) protect the health of farmers, consumers and the general public; and 4) help cut expenses on imported farm inputs. The law also establishes a comprehensive national agricultural program which will promote, commercialize, and inculcate organic-farming methods through farmers' and consumers' education; and the extension of assistance to LGUs, peoples' organizations, NGOs, and other stakeholders.

The term "*organic"* as defined under *Section 3a* refers to the particular farming and processing systems, described in the standards and not in the classical chemical sense. The word organic is also synonymous in other languages to "biological" or "ecological". It therefore, directly supports biodiversity conservation.

Organic agriculture includes all agricultural systems that promote the ecologically sound, socially acceptable, economically viable, and technically feasible production of food and fiber. It dramatically reduces external inputs as it excludes the use of chemical fertilizers, pesticides and pharmaceuticals. ***(Patrick Raymond A. Lesaca)***

DA celebrates...from p3

Usec. Joel Rudinas leads the renewal of pledge on the DA's mission and vision. PHOTO: EAGRON

Frederick Taylor, Harry Edwards, Adriano Hernandez, Galicano Apacible, Rafael Corpuz, Silvestre Apostol, Rafael Alunan, Sr.,Vicente Singson Encarnacion, Eulogio Rodriguez, Benigno S. Aquino, Sr., Rafael Alunan, Sr., (BPI) to elementary schoolchildren.

The first-ever Department of Agriculture and Manufacturing was created on 23 June 1898 after President Emilio Aguinaldo declared the independence of the Republic. The Department's first head was Jose Alejandrino.

Through its 112 years, 34 Filipinos and 5 Americans have served as agriculture chiefs.

They included Graciano Gonzaga, Leon Ma. Guerrero, Frank Lamson-Scribner, W. C. Welborn, George E. Nesom, Vicente Singson Encarnacion, Mariano Garchitorena, Placido L. Mapa, Vice President Fernando Lopez, Salvador Araneta, Juan G. Rodriguez, Cesar Fortich, Jose Locsin, Benjamin M. Gozon, Jose Y. Feliciano; Arturo R. Tanco, Jr., Salvador H. Escudero III, Ramon V. Mitra, Jr., Carlos G. Dominguez , Senen C. Bacani. Roberto S. Sebastian, William D. Dar, Edgardo J. Angara, Domingo F. Panganiban, Leonardo Q. Montemayor, Luis P. Lorenzo, Jr., and Arthur C. Yap. ***(DA Press Office)***

CPAR on dairy farming...from p10

Meanwhile, TADAFCO Chairman Patricio S. Ultiano mentioned how the CPAR project on dairy cow feeds processing is able to help the small dairy farmers in Tacunan. “There was a big increase in our milk production and we earnestly hope that with the good results of this project we will be able to encourage more farmers to go into dairy farming and contribute more to the national production of milk in the country,” he said.

“Prior to this CPAR project, our average daily milk production is 104 liters which amounts to P14,560. After we started formulating our own feeds, our average daily milk production is 117 liters of P16, 380. On a daily production basis, we get a net profit of P1,820 or P7,280 monthly,” Ultiano added.

Cantilla, said that although the CPAR project is still in its early stage of implementation, good results are already being reaped by the beneficiaries. “We are hoping that more dairy farmers will be able to adopt the technology introduced in this project so that more of them will be benefited not just the Tacunan dairy farmers.” ###

Tech forum and exhibit to showcase commerciable technologies from agriculture and fisheries research

Showcasing the full potential of commerciable technologies generated from agriculture and fisheries research and development (R&D), the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) will spearhead the “6th Agriculture and Fisheries Technology Commercialization Forum and Product Exhibition” on 5-8 August 2010 at the Mega Trade Hall 2, SM Mega Mall.

With the theme, “Facing Global Challenges through Technology Commercialization in Agriculture and Fisheries”, the activity will showcase viable and commerciable technologies developed by state universities and colleges (SUCs), DA national and regional offices, and other R&D partner-institutions.

The activity aims to strengthen the partnership between and among research organizations and the private sector towards a more progressive and sustainable agriculture and fishery industries.

BAR, together with its R&D partners, hopes that the business sector will take this occasion as an opportunity to choose and shop for the best technologies to invest in and capitalize for commercial ventures.

The activity will kick off with the ribbon cutting and opening of product exhibits on August 5 to be led DA Secretary Proceso J. Alacala and other DA key officials. The technology forum and product exhibit will coincide the 23rd BAR Anniversary which be highlighted with the video and book launch.

“The SM Megatrade Hall has been our home since 2008 and we are proud and happy to be back in this venue which is strategically positioned to attract visitors from all walks of life making our products and displays more accessible providing maximum exposure and broad captive market,” said BAR Director Nicomedes P. Eleazar.

Aside from the exhibits and product displays, the four-day activity will include a series of seminars and product demonstrations on various topics featuring practicable technologies developed with funding support from BAR through its National Technology Commercialization Program (NTCP).

NTCP is one of the flagship programs of BAR that gives importance to the effective transfer of technologies generated and developed from R&D to benefit intended beneficiaries. With this program, access to and adoption of new technologies through promotion and commercialization is now a reality. Clients are presented with alternatives based on what R&D has to offer to improve agricultural production and ultimately, the lives of poor farmers and fisherfolk. ***(Rita T. dela Cruz)***

DA celebrates 112th anniversary

The Department of Agriculture (DA) celebrated its 112th anniversary on 23 June 2010 highlighting on the government's major achievements in the agriculture and fisheries sector under President Arroyo's record farm spending and flagship food security and sufficiency program dubbed as FIELDS.

On the occasion of the Department's anniversary, two initiatives—the DA-AFMIS and Nokia mobile data gathering system and the Online Import Application, Processing and Approval of Permit project—were launched in the presence of DA Sec. Bernie G. Fondevilla and other agriculture officials and guests.

In a message on the occasion of the DA's anniversary, President Arroyo said that the shift in spending in agriculture—from providing dole-outs to farmers to investing more in infrastructure—has helped sustain the growth of the Philippine farm and fisheries sector in the long term.

“This is the goal of the FIELDS program,” the President said. “Along with the DA, and in cooperation with the local government units and the private sector, we carried out our twin goals of food sufficiency and being free from food imports.”

FIELDS stands for the six areas of agriculture where President Arroyo has focused the unprecedented level of public spending on her watch—Fertilizer, Irrigation and other rural infrastructure, Extension and education services for farmers, Loans, Dryers and other postharvest facilities, and Seeds and other genetic materials.

President Arroyo said her administration doubled spending on agriculture, which reached P21 billion on her watch, as compared to the P11 billion during the Ramos administration and P17 billion during the term of her predecessor, Joseph Estrada.

The increase in funding paved the way for the expansion of farm areas to 1.6 million hectares; P465 billion worth of loans to farmers; and the conduct of 23,000 training workshops for farmers and agricultural workers, she noted.

Agriculture Sec. Bernie G. Fondevilla views the exhibit during the opening featuring former DA secretaries and their respective accomplishments and contributions during their terms.

PHOTO: EAGRON

More than one million hectares were opened for agribusiness development from 2005 to 2009, which led to the creation of more than 2.5 million jobs, the President said.

Her administration was also able to construct more than 18,000 kilometers of farm-to-market roads, along with cold chain systems nationwide, more than 80 *bagsakan* or drop-off centers and more than 500 *barangay bagsakans*, which provide farmers with a steady market for their produce and consumers with affordably priced basic goods.

For his part, Fondevilla said that on the Department's 112th anniversary, he is confident that it will be able to hurdle new challenges brought about by climate change and the heightened competition in international trade market as a result of globalization.

“Despite the many changes and challenges that the Department has faced through the years, it remained a stable pillar of the government and truly cares for the welfare of our farmers, fisherfolk and other rural workers,” Fondevilla said.

“The Department remains up to now, fully determined to free our people from hunger, poverty, and hopelessness,” he said.

The anniversary celebration included a photo exhibit showcasing the major events at the Department through its 112 years of existence, a thanksgiving mass, and the awarding of loyalty plaques to DA employees who have rendered more than 20 years of service and citation plaques to top sales performers of the DA's Agribusiness Export Showroom.

Fondevilla also presented during the affair the certificate that the DA received from the Office International dez Epizootis (OIE) or World Animal Health Organization declaring most parts of Luzon as free of the Foot and Mouth Disease, which is a major step towards declaring the entire Philippines FMD-free. The entire Visayas and Mindanao have already been declared FMD-free by the OIE in 2001 to 2002 respectively.

The other activities included a *tiangge* at the DA parking lot and the distribution and feeding of dairy milk from National Diary Authority (NDA), and free taste of *malunggay lugaw* and *malunggay* and *saluyot* ice cream courtesy of the Bureau of Plant Industry

turn to page 11

Book on FIELDS program launched

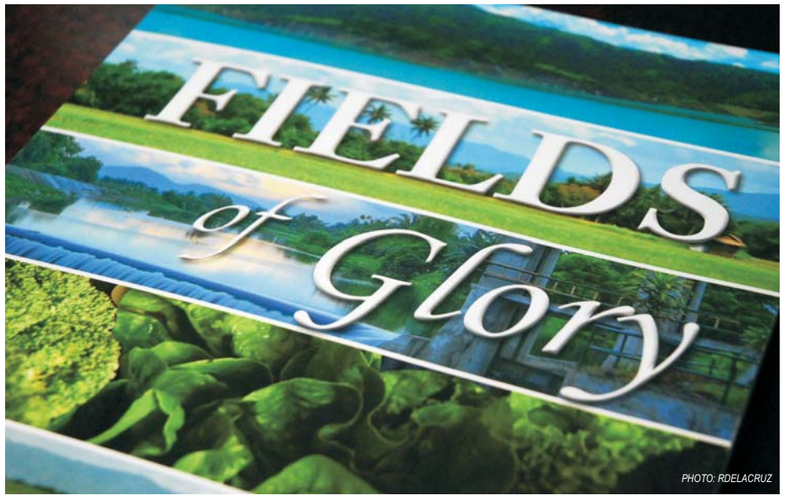


PHOTO: RDELACRUZ

President Macapagal-Arroyo and Department of Agriculture (DA) Secretary Bernie G. Fondevilla led the formal launching of a coffee table book on DA's FIELDS program chronicling the major achievements of the Arroyo administration in its centerpiece agenda on food security and sufficiency on 17 June 2010, BSWM Convention Hall, Visayas Ave., Quezon City.

Titled, "Fields of Glory," the book illustrates what President Arroyo has delivered on her commitments to the agriculture and fisheries sectors through her flagship project dubbed FIELDS and other farm-related intervention programs.

Joining the book launch was former DA Secretary and now representative of the third district of Bohol, Arthur C. Yap, who shepherded FIELDS for most of its part under the Arroyo's watch.

FIELDS stands for the six areas of agriculture where President Arroyo has focused, an unprecedented level of public spending, namely: Fertilizer, Irrigation and other rural infrastructure, Extension and education services for farmers, Loans, Dryers and other postharvest facilities, and Seeds and other genetic materials.

Fondevilla and Yap jointly turned over the book to the President Arroyo with DA officials, farmers, and other agricultural stakeholders attending to witness the event.

FIELDS was unveiled by the President during the DA-sponsored National Food Summit at the Clark Special Economic Zone in Pampanga in April 2008.

The book cited the accomplishments of the Arroyo administration under FIELDS and its various farm programs since she assumed the presidency in 2001.

Various stakeholders of the agriculture sector cited the tangible benefits they have received from the administration's vigorous implementation of its FIELDS program.

One of them, Ronelio Barsatan of the CBCP-NASSA-National Farm Center in General Natividad, Nueva Ecija, pointed to the establishment of national and diocesan farm centers across the country to promote organic farming.

Ariel Dolores, a farmer from Guimba, Nueva Ecija, noted that he was able to pull down his production costs as a result of the government's FIELDS program. "We used to spend P40,000 per hectare to plant *palay*, but because of the irrigation provided under FIELDS, we were able to significantly reduce our costs especially since we no longer spend as much for fertilizer and other inputs. The soil we till has become rich with natural fertilizer from the clean water we get from irrigation."

Efraim Acacio of Sta. Ana Cagayan noted that the free technical assistance provided by the government - from selecting the right seeds to harvesting *palay* - helped him a lot in increasing his income. "I am proud to say that our dream will soon be fulfilled. We will soon complete the construction of a small concrete house for our family beside our farm."

Judy Aruta, who is a loan beneficiary of the Bukidnon Cooperative Bank, said that the easy-to-pay credit provided by government financial institutions to small farmers has been helping her carry out her plans of expanding her rice farm. "Because of FIELDS, we were able to provide for the needs of our family, send our children to school, and save for the future," she noted.

In Camarines Sur, Miller Bicaldo said the benefits of using the flatbed dryers provided by the DA have resulted in increased yields for farmers in the province. "The results of drying using flatbed dryers are strikingly different from the usual practice of highway drying. We were able to store more palay when we used flatbed dryers," he said.

Gelises Ladores of San Antonio, Nueva Ecija recalled how, during the rainy season in 2008, he was able to harvest 100 cavans of *palay* from his 1.5 hectare farm using submergence-tolerant rice seeds from the Philippine Rice Institute which were made available by the DA through the FIELDS program. "I did not expect the Swarma-Sub1 submergence-tolerant seed variety to yield that much *palay*. My only wish at that time was to be able to harvest despite the strong rains," he said.

Other beneficiaries like livestock trader Cinco Placido Jr. and farmer Ramil Barte of Sariaya, Quezon lauded the benefits they received from the DA's initiatives on expanding market access for small farm stakeholders, while Bronzeoak Clean Energy President and CEO Jose Maria Zabaleta cited the positive impact of the DA's biofuels program on pioneering investors like him, and BT corn farmer Edwin Paraluman of South Cotabato noted the benefits of the DA's biotechnology program in increasing corn harvests.

For the Fertilizer component, the DA provided 1,380 technology packages on environment-friendly, community-based composting facilities

turn to page 11

Milking profit from dairy farming through CPAR on processing feeds

Story by:
RITA T. DELA CRUZ
Photos by:
RICARDO G. BERNARDO

Dairy farming is a profitable industry. In Brgy. Tacunan, majority of the household population is into dairy cow raising. But with the increasing cost of commercial feeds, many dairy farmers have shied away from engaging further in this business. In dairy farming, feeding system is crucial. The kind of feeds given to the cattle highly determines the amount and quality of milk that they produce. Commercial feeds are still the best choice, but they are expensive.

Given this problem, the Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA) funded a Community-based Participatory Action Research (CPAR) project on "Dairy Cow Feeds Processing" in Brgy. Tacunan, Tugbok District, Davao City. The project is implemented in coordination with the DA-Southern Mindanao Integrated Agricultural Research Center (DA-SMIARC) and the local government unit (LGU) of Tugbok District.

One of the beneficiaries of the CPAR project is the Tacunan Dairy Farmers Cooperative (TADAFCO), a cooperative whose farmer-members are mainly into dairy farming. They were also the beneficiaries of the dairy animals which were dispersed through a loan granted by the National Dairy Authority (NDA). With an original 22 dairy farmer-members, it started its operation in 2003 with 11 dairy cows distributed to four farmer-cooperators. This started as initial investment for the cooperative.

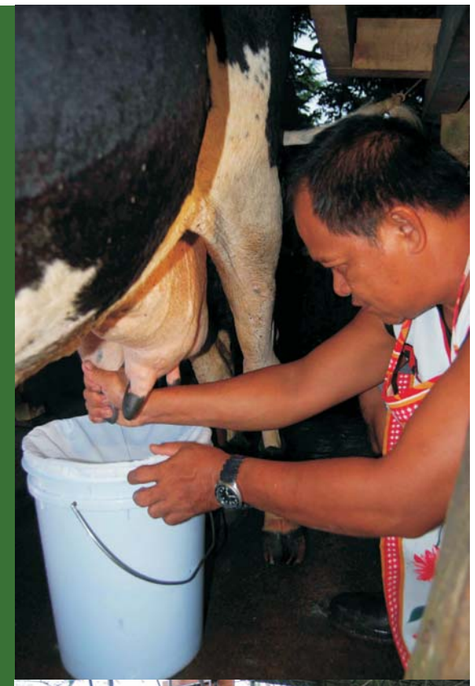
Specifically, the CPAR project aims to address the problem on expensive commercial feeds by providing the TADAFCO farmer-members quality but affordable feeds for their lactating cows. By formulating their own feeds, the cooperative can also sell them to non-members in relatively cheaper price hence, providing additional source of income for the farmer-members.

"As part of the project intervention, TADAFCO farmer-members underwent a 40-hour training and seminar on feed mixing and formulation conducted by the Technical Education and Skills Development Authority (TESDA)," said Myrna S. Cantilla, SMIARC senior agriculturist and CPAR project leader.

Cantilla explained that in feed formulation, crude protein (CP) is an essential consideration. CP estimates the total protein content of feeds and usually, the higher the CP content in commercial feeds, the more expensive it is. The lactating mash that TADAFCO formulated is essential to produce large volume of quality milk with 20 percent CP.

Mr. Javier Oliveros, a TADAFCO farmer-member, said that "in the feeds that we produce, the CP is higher but still cheaper. This is indeed good news for small dairy farmers like us. For members, we sell the feeds P13.20/kg while for non-members we sell it for P16.50/kg so that for every kilo that we sell, our Coop earns additional P3.30/kg net profit."

turn to page 10



Shift to high-yielding varieties is the way to go

PHOTO: RDELACRUZ

Even with limited or dwindling rice areas, the Philippines can still be rice self-sufficient and limit its rice importation if most farmers will just shift to high-yielding varieties. With self-sufficiency, the country will no longer be dependent on other countries for the supply of its staple food. It can even afford to export fancy and organic rice thus giving more profit to Filipino farmers.

As of now, the country is not yet self-sufficient so it imports rice from neighboring countries like Thailand and Vietnam. Thailand and Vietnam are blessed with great river networks and smaller populations relative to land area that's why they have bigger total irrigated rice area as compared to the Philippines so they can afford to export some of their produce.

To attain self-sufficiency in three years time, we need to use proven farming technologies that not only increase yield but raise the farmer's income as well," said Dr. Frisco Malabanan, rice program director of the Department of Agriculture (DA).

"In terms of average yield, Vietnam has overtaken us but we are relatively better than those of Thailand because of the use of high-quality genetic materials and other productivity-enhancing technologies," he said. "High yield starts with sowing quality seeds, whether hybrid or inbred rice."

Before, farmers were not quality conscious. They have always relied on their own seeds and sometimes those from other farmers, relatives, etc. Likewise, they used as much as 150 kilograms per hectare (kg/ha).

Today, more farmers are now shifting to modern rice varieties, which are easily available through local seed growers. The DA's rice program is continuously educating farmers to shift to either hybrid or inbred rice certified seeds (CS). A farmer needs only 15-20 kg/ha and 40 kg/ha of hybrid rice seeds and CS, respectively. He should also buy new seeds every planting season to ensure high yields.

Prices of both hybrid and CS are being subsidized by DA to encourage more farmers to use them. After many years of promoting CS, it is now planted in a much bigger area than hybrids because most farmers have already accepted its positive impact of producing more yield than "farmers' home-saved seeds" (FHSS).

In the past, few farmers planted CS because these had to be purchased every season and was regarded as an expensive input that had uncertain quality. Before the start of the DA's rice program in 2001, CS was planted to only 350,000 ha. In cropping year 2009, it was already planted to 2.73 million ha. Back then, hybrid rice was seen as a new and low adoption technology among farmers since it is a season- and location-specific technology that needed further information campaigns. Back in its early years, only a limited number of hybrid rice varieties were available for farmers to choose from.

But nowadays more private companies, in addition to the public sector, are engaged in hybrid rice research and development (R&D), and seed business that there now is a range of varieties available in the market that caters to the individual farmer's needs.

Just like CS, hybrid rice will soon be acceptable to most farmers considering that they can harvest 6-12 metric tons per hectare (mt/ha). It has a yield advantage of 15-30 percent over the best CS.

In Nueva Ecija, farmers are again overwhelmed with the benefits that they are reaping from their hybrid rice farms. More than 55,000 ha of rice fields were planted to hybrid rice in the 2010 dry cropping season and the farmers there have harvested an average of 7.73 mt/ha in yield. As for inbred rice CS, of the 93,000 ha planted to this variety, an average yield of only 5.70 mt/ha was obtained.

Hybrid rice technology is seen as the most viable option for raising farmers' yields without having to increase the rice hectarage. Over the past three decades, the technology has helped China achieve food security. It has yet to reach its full potential in the tropics. Hybrid rice technology can raise the yield of rice and, thus, overall rice productivity and profitability in Asia.

Hybrid rice cultivation is basically the same as that for inbred rice varieties. Although it requires greater attention in seed and seedling management, hybrid rice is grown much like inbred varieties.

In the succeeding seasons, seed subsidies can be reduced or phased-out entirely. However, the rice industry still needs more extension activities like cluster demonstration, farmers' training, and accessible credit to sustain and expand the hybrid rice and certified seeds commercial cultivation.

To sustain the increase in local rice production, the DA must continue its irrigation and infrastructure projects, and provision of postharvest facilities, and composting facilities so that farmers especially the marginalized farmers will be encouraged to plant more.

Given enough budget and support of all the players in the industry, the DA's target of self-sufficiency in 2013 is possible. The DA will continue to work with the farmers, the local government executives, and other industry stakeholders because they play vital roles in making things happen to achieve production targets. ***(DA-Rice Program)***

BAR provides server to PhilAgriNet; agricultural info database launched

Mr. Victoriano Guiam of BAR (left) turns over the server to Dr. Roberto F. Rañola of UPLB (center). Also in the photo is Ms. Concepcion DL Saul (right), president of ALAP and project leader of the PhilAgriNet project. PHOTO: RDELACRUZ

Given the importance of developing and strengthening public information program for research and development (R&D), and bringing relevant research-generated information to where it is needed the most, the Bureau of Agricultural Research (BAR) has provided a server to the Philippine Agricultural Libraries and Information Services Network (PhilAgriNet). This was made possible through a BAR-funded project titled, "PhilAgriNet: An Electronic Database and Network to link Philippine Agricultural Knowledge to Prospective End-users".

The donation of the server was made official through a brief turnover ceremony held on 2 June 2010 at the College of Engineering and Agro-Industrial Technology (CEAT) Auditorium, University of the Philippines Los Baños (UPLB), College, Laguna. The turnover ceremony was held during the opening program of the 38th General Assembly and Seminar of the Agricultural Librarians Association of the Philippines (ALAP).

PhilAgriNet is a network of Filipino agricultural librarians organized to electronically link participating member institutions as well as researchers for mutual access to agricultural knowledge, starting with a central database then moving on to actual exchange or delivery of documents. Its office is based at the UPLB Campus.

Ms. Lea delos Reyes of IRRI, webmaster for the PhilAgrinet website facilitates a walk-through to the system. The PhilAgrinet website is hosted by BAR through its official website, BAR Online. PHOTO: RDELACRUZ

The server that BAR provided serves as the central database that will house important agricultural knowledge needed to electronically link participating member-institutions, including researchers, for mutual access and sharing of relevant information.

Mr. Victoriano B. Guiam, head of the BAR Applied Communication Division (ACD) representing BAR Director Nicomedes P. Eleazar, turned over the server to Dr. Roberto F. Rañola, UPLB vice chancellor for administration representing UPLB Chancellor Luis Rey I. Velasco, and Ms. Concepcion DL Saul, ALAP president and PhilAgriNet project leader.

In the message of the Dir. Eleazar, as read by Mr. Guiam, he emphasized the relevance of the occasion in relation to BAR's commitment to bring good research-generated information to the far corners of the archipelago and to a wider array of recipients. He said "we are proud of this contribution in this noteworthy event—of boosting access and the use of information through a more capable PhilAgriNet."

Dr. Rañola delivered an acceptance message expressing UPLB's gratitude to BAR for providing the server and for its continuous support to the university particularly its contribution in developing an electronic central database of Philippine agricultural literature to create an increased awareness of local agricultural output.

Aside from the turnover of server, the PhilAgriNet website and database were also officially launched. Facilitating a walk-through to the system was Ms. Lea delos Reyes, the webmaster. The PhilAgriNet website is hosted by BAR through its official website, *BAR Online (http://www.bar.gov.ph)*

Also present during the event were: Dr. Arsenio N. Resurreccion, dean of CEAT; Ms. Rita T. dela Cruz, assistant head of BAR-ACD; and Ms. Melissa A. Resma, head of BAR- Information Management Unit. ***(Rita T. dela Cruz)***

2KR Program Grant supports BPSU's organic vegetable production through protective cultivation technology

PHOTOS: BPSU

Given the increasing awareness level among Filipinos on the importance of proper nutrition and the availability of nutritious food, and the government's response to continuously promote a healthier lifestyle, a project to promote organic vegetable production was earmarked.

The project titled, "Promotion of Protective Cultivation Technology for High Value Organic Vegetable Production" which is being implemented by the Bataan Peninsula State University (BPSU) is also in harmony with the Department of Agriculture's (DA) battle cry, *"Sapat na Pagkain sa Lahat"* which serves as a benchmark for food sufficiency and security. The challenge therefore is to provide nutritious, affordable and accessible food for every Filipino.

The objective of the project is to 1) produce off-season high value organic vegetables, 2) utilize animal waste and plant residue as a source of organic fertilizers, and 3) determine the least cost combination of farm inputs while providing sufficient supply of nutritious and safe high value vegetables in the market. The project also focuses on the economic benefits of the technology in addition to the health and environmental concerns.

The project is being coordinated by the Bureau of Agricultural Research (BAR), funded through the Technology Management for Competitive Agriculture and Fisheries Sectors of the DA-National Agricultural and Fishery Council (DA-NAFC) and the Japan Official Development Assistance's (ODA) - 2KR Program Grant Assistance for Underprivileged Farmers. The 2KR Program Grant was borne out of the signed Memorandum of Agreement (MOA) between BAR and NAFC in 2008 to spearhead the implementation and funding collaboration of viable agriculture and fisheries projects in the country.

Dr. Delfin O. Magpantay, BPSU president, hopes that with this project, not only will they be able to provide quality and relevant education, but also to develop highly qualified and competitive human resources responsive to national and regional development and ensure its success.

Dr. Magpantay added that, protective cultivation technology in the production of high-value organic vegetable will significantly reduce the amount of chemical inputs and help address environment hazards. "The promotion of this technology will not only give economic benefits to farmers but also provide a safe vegetable supply in the domestic market," he said.

The immediate beneficiaries of the project are the marginalized vegetable growers, smallholder farmers, and consumers within the district. The agribusiness enterprise will be replicated in 100 farmers from the different municipalities of the province.

The initiative of the proponent to tap an agribusiness firm for technical assistance and market-tie up will encourage farmers to adopt this project in their own farms providing them with a profitable source of income. The undertaking will not only increase farmer's income, but it will also ensure an adequate supply of organically-grown vegetable for the community. ***(Patrick Raymond A. Lesaca)***

"The promotion of this technology will not only give economic benefits to farmers but also provide a safe vegetable supply in the domestic market," ~ Dr. Magpantay

Balik scientist develops sustainable biofuel

Dr. Fiorello B. Abenes PHOTO: NDELROSARIO III

Dr. Fiorello B. Abenes, one of the Philippines premier DOST Balik-Scientists, developed a new biofuel mixture that promises to be more sustainable in the future compared to other feedstocks being used to produce bioethanol and biodiesel. Results of his study were presented in a seminar series organized by the Bureau of Agricultural Research (BAR) on 23 June 2010.

This is a timely R&D endeavor given the country's immense promotion to fully implement the Biofuels Act of 2006, said BAR Asst. Dir. Teodoro S. Solsoloy who provided the welcome remarks during the seminar.

He emphasized the need to improve biofuel production management systems and processing of agricultural materials as feedstock for biofuel production, particularly bioethanol (an alcohol made from fermented sugar components of plant materials, mostly sugar and starch crops) production.

BAR is the Department of Agriculture (DA)'s focal agency for the research and development (R&D) component of its Biofuels Program. Since 2005, BAR has supported R&D activities in the initial production of sweet sorghum feedstock (raw materials for ethanol production).

Dr. Abenes and his team which includes Dr. Shirley C. Agrupis, Dr. Roque A. Ulep, M. Valencia, and M. Birginias of MMSU, developed a bioethanol mixture or formulation dubbed as *h*BE-20 or hydrous bioethanol (95 percent ETOH).

Hydrous ethanol is a purified from fermentations of sweet sorghum (jaggery or unrefined brown sugar from palm sap, molasses and syrup), sugar cane (*Ilocos basi,* pasteurized cane juice) and sugarcane and sweet sorghum bagasse (waste left after sugarcane/sweet sorghum is pressed to extract the juice) was used to formulate a gasohol (a petrol substitute consisting of 90 percent petrol and 10 percent grain alcohol from crops) mixture consisting of 20 percent ethanol, 79.41 percent anhydrous (ethyl alcohol that has a purity of at least 99 percent) E-10 and 0.59 percent water (H_2O).

The resulting mixture is the MMSU *h*BE-20 formulation. The researchers tested the blend for absence of phase separation under ambient and refrigerates conditions. Dr. Abenes' team composed also of undergrad students from MMSU conducted trials to run a four-stroke stationary engine, four-stroke motorcycles and a Toyota FX (which the team also used to drive from MMSU to BAR or Batac, Ilocos Norte to Quezon City).

Dr. Abenes prides the formulation as stable at ambient and cold temperatures and show promise as an engine fuel. According to the study, further testing is being done under more rigorous conditions by the MMSU and the Central Luzon State University (CLSU) Engineering Department.

The Balik-Scientist added that the fuel is more economically- and environmentally-sustainable than anhydrous mixes due to lesser resource utilization. The potential of this technology could save the country six billion pesos a year.

Dr. Fiorello "Leo" Abenes is a professor emeritus of animal and veterinary sciences at the California Polytechnic University, Pomona (CalPoly Pomona). He was awarded a Fulbright Scholar grant to lecture and perform research at MMSU in Batac, Ilocos Norte. During his stint at MMSU, he has conducted research and delivered lectures on the use of water buffalo rumen fluid as biodegrading agent for biomass to produce ethanolm, which was also featured in one of the BAR seminar series.

Attending the BAR seminar series are representatives from the DA-Sugar Regulatory Administration (SRA), University of the Philippines Los Baños (UPLB), Cavite State University (CavSU), Ramon Magsaysay Technical University (RMTU), Pampanga Agricultural College (PAC), Bronzeoak Philippines (one of the developers of ethanol production plants in the Philippines), Philippine National Oil Company, and Unioil. ***(Jude Ray P. Laguna)***

PHOTO: NDELROSARIO III