

DA, other agencies work with WorldBank to weather-proof RP against climate change

The Arroyo administration is harnessing a \$5-million grant from the World Bank for a project that DA Secretary Arthur Yap said should enable government agencies to finally obtain thorough and accurate data on weather conditions and for them to work together on a master plan to “weather-proof” Philippine agriculture and other sectors against climate change.

This was revealed by Yap following this week's Management Committee (ManCom) meeting at the DA central office where World Bank representatives had briefed agriculture executives and field officers about the Philippine Climate Change Adaptation Project which this international institution is carrying out with the DA and two more agencies through a \$5 million grant through the Global Environment Facility.

Samuel Wedderburn and Felizardo Virtucio Jr., who presented the project during the ManCom meeting, said this pilot project is meant to develop and demonstrate approaches on how to help targeted Philippine communities cope with the negative impact of climate change.

Wedderburn is senior natural resources management specialist for East Asia rural development and environment while Virtucio is operations officer for rural development. They will be working with their counterparts from the concerned government agencies on this project.

The two other agencies that will work with the DA on this project are the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and the Department of Environment and Natural Resources (DENR), which heads the technical working group overseeing the detailed

PHOTO: RDELACRUZ



preparation for this initiative.

Given that agencies like the DA are already implementing their respective programs to combat climate change, Yap expressed the hope that the project would primarily help Government on these two imperatives: 1) coming up with accurate data on weather conditions, and 2) consolidating the diverse and separate agencies dealing with climate change.

“We are hoping that this project

will help us get the big picture as far as climate change is concerned and to get us working together,” Yap told the two World Bank officials after the briefing.

“Reliable data is still absent today,” he said, “so that the DA, for one, is having difficulty anticipating weather patterns and most of the time only reacts to actual weather conditions or changes as they come.”

(DA Press Office)

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SSNM corn crop survives despite dry spell in Isabela

Farmer-cooperators of the Site Specific Nutrient Management (SSNM) for corn in Brgy. Arubub in Jones, Isabela showcase their yield during the upscaling of the project in Region 2. On the left are farmers showing corn yield from the farmers' practice while on the right is a farmer with corn crops grown with SSNM Plus Bio-N. PHOTO: RDELACRUZ

Isabela is the country's top producer of corn but with the current dry spell caused by an El Niño episode affecting the country, corn production is expected to drastically decrease this year's harvest. In an interview with Dr. Danilo Tumamao, Isabela provincial agriculture officer, he said that more than 90,000 of the 130,000 hectares of corn farms in the province have

already been affected. This is equivalent to a total production loss of more than two billion pesos worth of corn. Out of the 500,000 metric tons (mt) of projected harvests from January to June, more than 200,000 mt has already been declared as lost. “We foresee that the loss will increase in the coming weeks”, Dr. Tumamao said.

Isabela is currently under a declared state of calamity as the dry spell has already damaged hundreds-of-thousands of hectares of farmlands throughout the province. However, with proper management and farming technology introduced through the Site-Specific Nutrient Management (SSNM), the corn crops stand healthy and harvestable in Brgy. Arubub in Jones, Isabela. The corn crops survived the dry spell and are showing potential for even higher yield despite the drought that is currently devastating the region. In fact, the crops stand more than seven feet tall and bear long and big ears which promise high yields for farmers in this part of Isabela.

SSNM is a field-specific approach of farming that enables farmers to determine and apply just the optimum amount of fertilizer needed by the crop. This approach guides farmers to adjust fertilizer application according to the nutrient needs of the corn crop and the nutrient supply from naturally-occurring indigenous sources like soil, crop residues, manures, and irrigation water in given place and crop season.

Through the Cagayan Valley Integrated Agricultural Research Center (CVIARC), Barangay Arubub, Jones Isabela was chosen as the first area for upscaling after four seasons of field testing conducted all over the country. The area is composed of 30 hectares of cornfield with 42 farmer-cooperators.

The SSNM also introduced the use of the Leaf Color Chart (LCC) to help farmers decide whether the crop needs additional fertilizer or not.

SSNM promotes strategies that lower the cost of inputs and increase the profit of the corn farmers through the use of organic matter as fertilizer supplement.

turn to page 6

What's inside...

SSNM corn crop survives despite dry spell.....	1
BAR joins 9th Phil Food Expo.....	2
Agro-entrepreneurs take interest in sweet.....	2
BAR funds 2 TechCom projects	3
BAR funds new CPAR project on Sesame.....	4
Important herbs in Southern Tagalog geared.....	5
CPAR e-Pinoy FARMS for Fisheries.....	6
Asha peanut is now NSIC-approved.....	7
Mango industry vows to reduce postharvest.....	8
Last leg for CRDES regional partnership.....	9
BAR, Mag-Agri Tayo to produce video.....	10
BAR promotes ready-to-use technologies.....	11
Production of blue crabs and abalone.....	12
Biodiversity leads International Year.....	13
Rosalie Ellasus: Not your average farmer.....	14
DA, other agencies work with WorldBank.....	16

BAR joins 9th Phil Food Expo



BAR Dir. Nicomedes Eleazar (right) and Dr. Estela Taño of DA-QAES discuss the benefits of herbs during the exhibit.

The Bureau of Agricultural Research (BAR) once again joined in staging the 9th Philippine Food Expo, sponsored by the Philippine Food Processors and Exporters Organization (Philfoodex), Inc., which was held at the SM Megamall Megatrade Hall, Mandaluyong City on 25-28 February 2010.

With the theme "Building a Global Market through Quality Philippine Food Products," the opening ceremonies of the expo highlighted messages from Philfoodex President Roberto Amores, Department of Agriculture (DA) Sec. Arthur Yap, and Department of Trade and Industry (DTI) Sec. Peter Favila.

The four-day expo featured a supply-based food fair highlighting the best home-grown and locally-made food products which have very high potentials of penetrating the global market.

BAR, being one of the sponsors of the event, conducted a seminar series on "Developing New Product Lines from

Oregano" by Dr. Estela Taño of the Quezon Agricultural Experiment Station (DA-QAES) and "Simple Nutrient Addition Program (SNAP) Hydroponics" by Dr. Primitivo Santos of the Institute of Plant Breeding-University of the Philippines Los Baños (IPB-UPLB).

"We take pride in joining this momentous event because we were given a venue to showcase the products of our research endeavors like the newest technologies on oregano and SNAP hydroponics. It is also a way of introducing these new products and technologies to the people in line with the commercialization program that we have at the Bureau of Agricultural Research," said Nicomedes P. Eleazar, BAR director. Meanwhile, a 100-member delegation of buyers from Japan, Hong Kong, China, Korea, Malaysia, Singapore, USA, and the Middle East visited during the four-day run of the exhibition. (Don P. Lejano)



BAR Dir. Eleazar and Julia Lapitan of ACD pose with BIARC staff members.

Agro-entrepreneurs take interest in sweet sorghum for commercial ventures

Sweet sorghum is now being tapped and developed by agro-entrepreneurs as a viable source of food, fuel, feeds and fertilizer, according to agriculture officials as they bared that two local agribusiness companies have started processing this versatile crop into various uses for large-scale commercial ventures in the next two to three years.

These two firms, Hazchem and Venvi Agro Industrial Ventures Inc., have established their respective plantations and facilities to develop sweet sorghum for commercial uses, according to the Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA).

Dr. Heraldo Layaoen, who is national program coordinator for the BAR sweet sorghum project, reported to Agriculture Secretary Arthur Yap that these agribusiness companies have begun using sweet sorghum, which requires minimal time and cost to produce as a livestock feed ingredient, are now testing it as feedstock for ethanol production.

He said that Hazchem has set up a 5.4-hectare plantation in Naujan, Oriental Mindoro and acquired a juice concentrator, mobile cane crusher and fermentation tanks to conduct trials on sweet sorghum from planting to distillation.

Layaoen said that Venvi Agro, which operates the biggest feedmill and is the largest supplier of fresh eggs in the Ilocos Region, is testing sweet sorghum as a livestock and poultry feed.

BAR has funded nine multi-localational trials of sweet sorghum with the support of local government units (LGUs) and financing institutions, said Layaoen in his report to Yap.

The DA and Pampanga Agricultural College (PAC) have likewise launched a book on the human food

turn to page 5

Reaping the fruits of biotechnology

Rosalie is not simply a corn farmer. Having witnessed the benefits from planting Bt corn, she has been planting stacked corn (YG/RRC2) since 2006 to the present.

"When I started farming, I only got 25 percent of what I was farming and, at that time, the most that I got as yield was 3.5 mt/ha only. When I availed of the IPM-FFS program, I got 4.8 mt/ha. However, when I started planting Bt corn, I got 7.363 mt/ha which was my first yield out of planting Bt corn which was already big for us especially since we were able sell them at a good price. The farmers here in the Philippines are

She added that in getting the full potential of the products of biotechnology, the crops needs cultural management which she religiously practices.

On the environmental issue of planting Bt corn, Rosalie said, "farming Bt corn is safe. My granddaughter and I usually go around the farm early morning and afternoon and we leisurely look over the crops. The leaves of the corn are also fed to the cattle and goats as forage since we are running out of grasses for them to graze. I also use them to improve the feed for my piggery since I am also into enhancement technology which includes utilizing the surplus from my harvest-produce."

"Biotechnology is really one tool that can help us farmers. In fact, because of Bt corn, I was able to send my three children to college in reputable universities."

On being a modern farmer

"It is a big help to be a modern farmer because you become more open to new technologies. It is easy for me to accept innovations and adopt them especially if I know that it will help me increase my production and ultimately improve



Rosalie explains how to get the potential yield from growing bt corn and achieving higher profit for farmers.

lives, a point which most conventional farmers miss out on."

Being a farmer-leader in her town, Rosalie is creating a ripple effect. Her corn field does not only serve as a model farm for other farmers in Pangasinan. It also prodded other people who are opposed to Bt corn to look at the other side and witness for themselves the fulfilled benefits of biotechnology.

On being a model farmer, Rosalie said, "I am proud to be a model farmer in our town and being a biotechnology advocate to all the members of our Cooperative. Most of them do not want to engage in conventional hybrid corn anymore. Being a model farmer, people are seeing for themselves the benefits of what I am advocating. And because of the success I got, farmers here listen to what I have to say." ■

well benefitted because of this technology," Rosalie explained.

When Rosalie started planting stacked corn, her yield increased to 9.2 mt/ha, her highest yield ever. Stacked corn is hybrid corn that already contains the genes for resistance to ACB and the readiness for glyphosate herbicide application. This was made possible through genetic engineering. ACB is a dreaded insect pest of corn that could cause huge losses to farmers. The readiness of stacked corn to tolerate glyphosate herbicide applications enables farmers to apply the herbicide in their corn fields to kill weeds without worrying about burning their crop.

"In terms of production cost, Bt corn helped us a lot. I do farm bookkeeping that is why I was able to keep track of expenses. I usually spend P32,000 for a hectare. If my yield is 9 mt and I am able sell it at 10 pesos per kilo, which is cheap, that is already P90,000 gross income for us. And that's already a lot of money for a farmer," Rosalie explained.



Rosalie discusses with her co-farmers and co-workers what she learned from a recent training/seminars she attended.



Rosalie shows her tractor which she acquired from her income in the farm.



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Rosalie Ellasus: Not your average corn farmer

Text and Photos by:
RITA T. DELA CRUZ

She has her own Facebook account and uses the Yahoo Messenger to communicate with her fellow farmers. She goes around her 10-hectare corn field and willingly stops to discuss with her farm workers what she had learned from a recent training/seminar she attended abroad. She's been to Australia, Mexico, USA, and Peru, not to travel for pleasure, but as a farmer-advocate of biotechnology proving to the world its fulfilled promises in production and income-generation.

A BS graduate of Medical Technology, Rosalie has no prior knowledge in farming. To help her husband, she worked as an OFW for 11 years in Singapore and Canada leaving her three sons in the Philippines. Her husband passed away in 1995 forcing her to come home and find luck in her own country. Luckily, she saved enough money to purchase a 1.3 hectare of farm lot and planted rice and corn through a farmer-tenant sharing. To augment her income, she also started a backyard

piggery business and invested in a public use vehicle.

Getting involved in her new-found career, she decided to become a hands-on farmer studying how to grow rice and corn through the Integrated Pest Management Farmers' Field School (IPM-FFS), a program of the Department of Agriculture (DA).

Everything started with a curiosity

Rosalie's journey towards becoming an active advocate of biotechnology started with a curiosity. In March 2002, she visited a barricaded demonstration trial of Bt corn in Sta. Maria, Pangasinan. At that time, Bt corn was not yet acceptable to farmers. She was impressed by the clean leaves and cobs and the absence of Asiatic corn borer (ACB) infestation. True enough, it was the same curiosity that made her decide to conduct her own on-farm trial on Bt corn. A year after, she and the farmer-members of the Cooperative started planting Bt corn on a commercial scale.

"I was impressed by what I witnessed in that demo trial that I volunteered to conduct the same trial in my own farm. During that time, my knowledge on Bt was limited but because I had the agricultural technician and the technology developer to help and guide me, I made it," Rosalie recollected.

She added that, "being a hands-on farmer, I've seen it myself—higher yield, good performance. All the promises of biotechnology that was introduced to us, I was able to realize them and I was greatly benefitted in terms of yield and profit."

"For non-Bt corn, farmers have to spray chemicals heavily to get the potential yield which is not true in the case in Bt corn. On Bt corn, I only sprayed once and that was the herbicide, RoundUp™. Spraying *Furadan* for ACB is risky for farmers' health. But with Bt corn, no more spraying and you can really see the result. In between hills, there are no weeds."

BAR funds 2 TechCom projects on herb-enhanced smoked *tamban* and *dilis*-fortified *malunggay* powder

In an effort to create livelihood opportunities to increase the income of households and address the issue of malnutrition particularly in the rural areas, the Bureau of Agricultural Research (BAR) recently funded two projects under its National Technology Commercialization Program (NTCP), namely, "Herb-Enhanced Smoked Tamban" and "Dilis-Fortified Malunggay Powder".

Implemented by the Southern Luzon State University-Judge Guillermo Eleazar (SLSU-JGE) campus, the two NTCP projects aim to create an economic impact serving as a model for entrepreneurship in the area of Tagkawayan, Quezon and neighboring provinces.

A Memorandum of Agreement (MOA) signed between BAR Director Nicomedes P. Eleazar and SLSU JGE President Dr. Cecilia N. Gascon formally sealed the support and paved the way for immediate implementation of the two income- and employment-generating projects.

Specifically, the *Tamban* project aims to commercialize the improved fish-smoking technology in the region, develop future fishery entrepreneurs, and promote sustainable demand for fish products particularly herb-enhanced smoked-fish, in Quezon province. *Tamban* (*Sardinella longepices*) is rich in Omega 3.

Meanwhile, the healthful

benefits of *Malunggay* (*Moringa oleifera*) prompted researchers from SLSU-JGE to formulate the *Dilis-Fortified Malunggay Powder* project. This undertaking hopes to increase the levels of food consumption and awareness of highly nutritious food blended and fortified with malunggay. The project is likewise geared towards generating market demand for processed malunggay-fortified marine products.

Both projects will be simultaneously implemented in Tagkawayan, Quezon under the technical supervision of SLSU-JGE Campus Director, Prof. Cesar L. Nazareno over an 18-month project cycle. Once the developed technology is



Herb-enhanced smoked Tamban



Dilis-fortified with Malunggay powder

ready for dissemination, linkages and coordination with agencies, associations and groups will be established. The local government units (LGUs), cooperatives, fisherfolk, organizations, and rural worker groups will also be tapped to ensure success of the project.

NTCP is one of the banner programs of BAR providing an effective means to accelerate and consolidate all commercialization efforts on agriculture and fishery technologies generated from R&D. The program has also enabled the bureau to work closely and coordinate developmental process with the national and regional offices of government, public and private entities, farmers and fisherfolk, and the state university and colleges (SUCs) in developing commercially viable technologies. (Patrick A. Lesaca)

"Once the developed technology is ready for dissemination, linkages and coordination with agencies, associations and groups will be established. The local government units (LGUs), cooperatives, fisherfolk, organizations, and rural worker groups will also be tapped to ensure success of the project."

BAR funds new CPAR project on Sesame in Bicol

A familiar catchphrase, “open sesame!” is not just a magical incantation. The plant, sesame, especially its seeds, is considered a nutritional goldmine. Sesame (*Sesamum indicum*) is rich in minerals and has two proteins that are not normally found in other vegetables. It can even be an alternative source of calcium for those people with milk allergies.

But there's another explanation to the incantation “open sesame” as the phrase also describes the distinguishing characteristic of the sesame seed pod which bursts open when it reaches maturity.

Sesame is quite popular in other parts of the globe but not in the Philippines wherein corn, rice, and coconut are the most common cultivated agricultural crops.

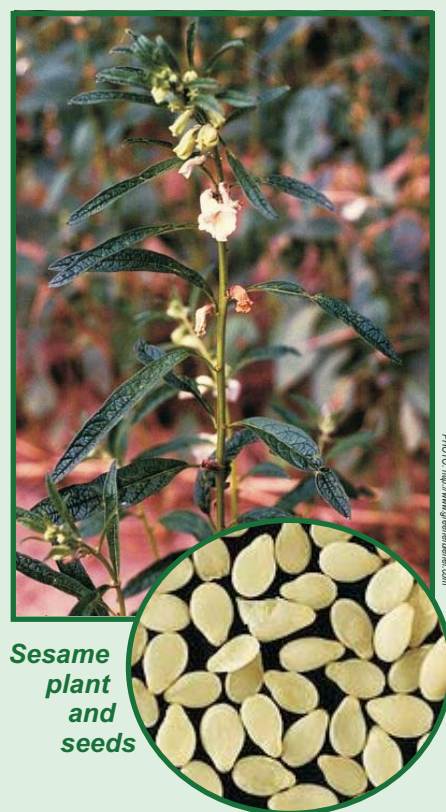
Aside from being the oldest seed known to man, sesame is also one of the first condiments and crops processed for oil.

In the province of Camarines Sur, specifically in the municipality of Nabua, farmers in two barangays,

Brgy. Topas and Brgy. La Purisima, plant sesame after corn, upland rice, legumes, and other upland crops. The plant serves as an alternative cash crop and intercrop to coconut, fruit trees, or banana.

After the conduct of Participatory Rural appraisal (PRA) in these sites, the Bicol Integrated Agricultural Research Center (BIARC), through the leadership of Dr. Elena delos Santos, found out that most of the farmers in the area have low income and low produce.

The Bureau of Agricultural Research (BAR), being committed to enhance the productivity and profitability of smallhold agriculture, has acknowledged and given support to the endeavor of BIARC to help the farmers by developing sustainable and adoptable technologies and strategies to increase their yield and income. Hence, a Community-based Participatory Action Research (CPAR) project was established titled, “CPAR on the Enhancement of Sesame-based Farming System in the 4th District of Camarines Sur”.



Sesame plant and seeds

The CPAR project is divided into three components which are anchored on the three aspects of community-based agriculture, namely: technology evaluation and utilization, farmers' skills enhancement, and institution development.

As farmer-cooperators of the CPAR project, they will be provided with high-yielding sesame seeds and will be trained on the various interventions and a package of technology (POT) on sesame production.

As an output of the project, various products and by-products from sesame will also be developed as part of the value-adding technologies. Trainings will be conducted to enhance the skills and capabilities of the farmers who are involved in the project. The CPAR project will also serve as an active link between the community and the market and credit facilities. (Amavel A. Velasco)

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Dried sesame

PHOTOS: <http://www.sesaco.net> and <http://linnaeus.nlm.nih.gov>

Bioversity leads “International Year of Biodiversity” awareness campaign

In collaboration with a wide range of partners, Bioversity International is mounting a global awareness campaign after the United Nations declared 2010 as the International Year of Biodiversity (IYB), guaranteeing a wealth of partners and opportunities for promoting the importance and value of agricultural biodiversity.

The campaign, “Diversity for Life,” highlights the bond that connects agricultural biodiversity with culture and tradition, livelihoods, household food security, sustainable agriculture, adapting to climate change effects, and nutrition and health.

Food security issues make imperative a major effort to promote and increase awareness on the importance of agricultural biodiversity. However, the conversion of agricultural lands has further limited the amount of space available for producing food, thus contributing to the current food crisis. Ironically, this threatens agricultural biodiversity, the very tool that is most likely to offer a solution to the significant growth in population against finite resources.

In the Philippines, Bioversity International kicked off the Diversity for Life campaign in collaboration with the Pest Management Council of the Philippines (PMCP) during the council's 41st Annual Scientific Conference held in Davao City on March 9-12. PMCP

adopted the theme, “Biodiversity Conservation through Science-based Pest Management” in support of Diversity for Life.

In his message, Bioversity International Director-General Emil Frison articulated on the significance of genetic diversity as an integral part of an effective pest and disease management system. According to Dr. Frison, now, more than ever, agricultural biodiversity is a resource that we must harness for agricultural sustainability as it will provide the needed resilience especially against the backdrop of many biotic and abiotic stresses such as the impending effects of climate change on agricultural productivity.

Dr. Agustin B. Molina, senior scientist and regional coordinator for Asia and the Pacific of Bioversity International's Commodities for Livelihoods Programme, said that the choice of Davao City is a fitting conference venue as the region is considered the food basket of the country. Among the many crops produced here, plantation crops like bananas and pineapple bring in huge foreign currency earnings through exports. These crops, which are commercially grown in monocultures, are threatened by serious disease and pest problems. Recently, the dreaded Tropical Race 4 of Panama wilt disease reportedly caused outbreaks in some banana farms in Davao thus



threatening the long term survival of the industry. Black Sigatoka also continues to be a major production constraint. It is urgent that a science-based, agro-ecological approach to managing pests and diseases be adopted. (Ma. Lizabeth J. Baroña, Bioversity International)

Bioversity International is one of the 15 centres of the Consultative Group for International Agricultural Research (CGIAR). PMCP is a federation of three scientific societies—the Philippine Phytopathological Society, the Philippine Society of Entomology, and the Weed Society of the Philippines—and four crop protection industry associations.

The campaign, “Diversity for Life,” highlights the bond that connects agricultural biodiversity with culture and tradition, livelihoods, household food security, sustainable agriculture, adapting to climate change effects, and nutrition and health.



Production of blue crabs, abalone intensified

The Department of Agriculture (DA) is stepping up the production of blue crabs and abalone to commercial quantities this year and eventually export them overseas where these marine products are in high demand and command high prices.

Agriculture officials said the program would be pilot tested in Eastern Visayas where the Bureau of Fisheries and Aquatic Resources (BFAR) had set up a seaweed culture farm in the mariculture park of Basey in Samar in preparation for the commercial production of abalone and blue crab.

BFAR also put in place tanks that can reproduce 40,000-50,000 juveniles of abalone.

"The expansion of hatcheries for abalone and blue crab will pave the way for the commercial production of these two marine products, which are of high value but require low-cost inputs," BFAR assistant director Gil Adora said in a report to Agriculture Secretary Arthur Yap.

Part of the DA's priorities on Yap's watch is not only to boost farm production but to raise the incomes of farmers and fisherfolk by providing postharvest facilities to reduce their postharvest losses that eat up profits and undertaking an aggressive campaign to find markets for their produce both here and abroad.

Blue crabs feed only on small plants and fishes, while abalone feed on



BLUE CRABS

glacilaria, a genus of red algae that can be easily cultured. It takes eight months to raise abalone, while blue crabs need four months in a pond before these can be harvested.

Besides this project, the BFAR is also collaborating with the Southeast Asian Fisheries Development Center (SEAFDEC) and non-government organizations (NGOs) in Northern Samar in a project meant to help small mud crab catchers improve their incomes and ensure the sustainability of fishery resources in four municipalities.

BFAR and the SEAFDEC-Aquaculture Department (AQD), which is headed by Dr. Joebert

Toledo, has been helping these catchers adopt mud crab production technologies developed from studies funded by the Australian Center for International Agricultural Research (ACIAR).

With the SEAFDEC-AQD and the National Irrigation Administration (NIA), BFAR is also carrying out a freshwater aquaculture production program in Capiz to help improve the living conditions of marginal farmers in the municipality of Dumarao affected by the implementation of the Badbaran community irrigation project.

In Misamis Occidental, the SEAFDEC-AQD provided technical assistance in improving the production of the province's aquamarine park multi-species hatchery by extending technologies it had developed on the hatchery and grow-out of grouper, with BFAR monitoring the implementation of the project.

The DA's Agricultural Credit Policy Council (ACPC), meanwhile, is likewise stepping up the implementation of a tilapia production project in Laurel, Batangas where the Land Bank granted a P500,000 loan for 30 fisherfolk beneficiaries.

This tilapia production project is covered by the Fisheries Financing Program (FFP), a joint undertaking of ACPC, BFAR and Land Bank. (DA Press Office)



ABALONE

PHOTO: RDELACRUZ

Important herbs in Southern Tagalog geared for commercialization

A new research effort called the "Identification of Important Herbal Plants in Southern Tagalog Region, Development of Natural Products, Conservation and Mass Production for Commercialization" under the National Technology Commercialization Project (NTCP) is now on the go.

Spearheaded by the Department of Agriculture-Quezon Agricultural Research Experiment Station (DA-QAES), this two year project aims to create agribusiness from the production of important herbal plants in the Southern Tagalog region.

Specifically, this project will try to locate and survey existing valuable herbal plants in the region; prioritize them based on potential, current needs and demand for herbal products; develop natural products out of them; conserve the prioritized plants together with some less important ones in community-based nurseries; from the conserved plants establish community-based nurseries as sources of mother plants for community-based plantations for herbal processors; and, market the developed herbal products.

"Right now we are still on Phase I



of the project which is the survey. We have already covered 60+ locations and identified 50+ known herbal plants still existing in the wild and in people's gardens. The interviewees included 'herbularios,' manufacturers and marketers of herbal products," explained Dr. Estela C. Taño, project leader.

"The survey also revealed how some herbals were lost over the years through changing land use, natural

calamities, and diminishing reliance on traditional health care with people's dependence on modern medicine," she added.

After the conduct of the survey, the research will proceed to the next stages which include the prioritization, product development, establishment of nurseries, extension and training, commercial production, and marketing. (Don P. Lejano)

Agro-entrepreneurs... from page 2

potentials of sweet sorghum as part of government efforts to promote the production and consumption of alternative high-value commercial crops.

The BAR-funded publication, "Sweet Sorghum Food Products: A Compendium" was written by three PAC professors, Drs. Estrella Zabala, Fortunato Battad and Norman de Jesus, and officially launched during a recent Bureau program that was attended by Yap, BAR Director Nicomedes Eleazar, DA Assistant Secretary Clayton Olalia and PAC President Honorio Soriano.

Eleazar said "the book describes the value as food of the sweet sorghum grains and stalks highlighting food products that can be made from sweet sorghum of which 24 come from grains and one from the stalk."

The book also includes valuable information such as a guide to planting sweet sorghum, forms of its utilization, nutritional content, and suggested sweet sorghum menu, he said.

"Sweet sorghum is a promising cereal crop that could address problems on

malnutrition and dwindling supply of sources of flour. It is an answer to the increasing cost of wheat flour," Eleazar added.

Zabala, a food technologist, developed the various food products from sweet sorghum, with Battad and de Jesus providing the technical support.

Among the potential food products developed are mushroom in sorghum soup, sorghum soup, veggie-sorghum soup, sorghum porridge with chicken, sorghum porridge, sorghum-choco porridge, pepper leaves in sorghum, and sorghum con moringa. Eleazar also said that sorghum grains can be processed into flour and used as a substitute.

Aside from the grains, PAC has developed vinegar from the sweet sorghum stalks.

Soriano said that "sweet sorghum has a huge potential as source of human food in various forms which have high commercialization value. Its grains can be processed and used as alternative to rice."

In terms of production, he said that



"sweet sorghum can be grown throughout the year or at least twice a year and needs minimal attention and cost compared to other field crops. It is the only crop that provides useful grain and stem which can be used to produce ethanol, sugar syrup, jaggery, flour and other food items."

Sweet sorghum grain is higher in protein and lower in fat than corn. The mineral composition differs only slightly from corn and vitamin content is similar to that of white corn. A 200 g of cooked sorghum grain is a rich source of protein, vitamin B1, B2 niacin and iron, a good source of zinc, and provides 14 g of dietary fiber. (DA Press Release)

CPAR e-Pinoy FARMS® for Fisheries deployment completed

After the successful implementation of the e-Pinoy FARMS® platform in all offices of the Regional Integrated Agricultural Research Centers (RIARCs), Optiserve Technologies, Inc. is now adapting the system for CPAR Fisheries. The e-Pinoy FARMS® CPAR Fisheries stands for Fishery and Aquatic Resource Management System (FARMS).

This year, the deployment of the e-Pinoy computer servers was completed with Regions 4A, 5, 6, 7, and 9 receiving their respective computer servers from Optiserve Chief Executive Officer Cheryl Marie U. Natividad together with BAR staff.

This initiative was funded by the Bureau of Agricultural Research (BAR) with Optiserve developing the e-Pinoy FARMS® system. The project was created to provide an enabling tool for BAR and the Regional Fisheries Research and Development Centers

(RFRDCs) of the Bureau of Fisheries and Aquatic Resources (BFAR) in the management of CPAR Fisheries. "The system will show how information could be used in designing information-driven projects for inland and coastal fisheries resource management," Ms. Natividad said.

The e-Pinoy FARMS will operationalize the research-extension linkage among major stakeholders that include fisherfolk, LGUs, private sector and community-based organizations (CDOs) through active partnership with RFRDC and, eventually, with the Regional Fisheries Training Centers (RFTCs).

At the heart of CPAR is project monitoring and evaluation or CPAR M/E. The CPAR M/E envisions achieving full realization of the dynamic interaction between information and knowledge of coastal, on the one hand, and inland resource

management on the other by providing the linkage between research and extension towards achieving sustainable fisheries development. This was explained by Ms. Natividad in the CPAR M/E Fisheries Stakeholders' Briefing e-Pinoy FARMS®.

Based on this premise, gains attained in the CPAR fisheries will be diffused to the expansion sites, i.e., to inland and coastal fisheries to hasten their entry into the world of agribusiness vis-a-vis enterprise/ industry-level operations.

"It is only by making fisheries and agriculture information-driven and making farmers and fisherfolk-information sensitive can we improve the state of our agriculture and fisheries and make it globally competitive," Ms. Natividad added. (Ma. Eloisa E. Hernandez)

SSNM... from page 1

Organic matter such as humus increases the soil's water holding capacity while the use of Bio-N, a microbial soil inoculant for root and shoot growth, enhances root development of corn at the early stage resulting in well-developed rooting systems that penetrate deeper into the soil. The combination may have been the reason for the robustness of the SSNM corn plants despite of the El Niño.

Another factor that saved the crop from drying up was the early and synchronized crop establishment carried out by the farmer cooperators. According to Mr. Roger S. Salvador, Arubub barangay captain and farmer leader, they planted their corn field almost simultaneously and at the right time because of the technical support and inputs provided through the project. "Without the assistance from the project, many farmers would have planted later, in which case their production would have been heavily hit by the drought" said Mr Salvador.

"We also strictly followed the package of technology, especially the proper planting distance, to give the crop a better environment for growth and development to meet the optimum projected yield" He added. Salvador is a CVARRD Magsasaka Siyentista and Gawad Saka Outstanding Corn Farmer awardee (2007-2008) in Region 2.



Members of the SSNM Technical Working Group and farmer-cooperators pose for a group photo during the meeting and field visit/monitoring of the project in Jones, Isabela. PHOTO: EAGRON

In addition to better yield, the project also resulted in better cooperation among farmers who participated in the scaling-up activity because of the regular community meetings and sharing of experiences conducted as part of the upscaling activities.

The local government unit is also supportive to the project and has provided technical assistance through the municipal agriculture officer, Engr. Florante Leaño. According to Engr. Leaño, the LGU provided fuel subsidy to the farmers in order to facilitate irrigation in the 30-hectare corn plantation in Arubub. "With the good harvest we are expecting from SSNM in Arubub, we are sure that other farmers, not only in Jones Isabela but in

other parts of Cagayan Valley, will be encouraged to try SSNM," he said.

The project is scheduled to conduct a farmers' field day on 17 March 2010 at Arubub, Jones, Isabela to showcase and promote the technology to nearby farmers and to all interested corn farmers all over the region.

The SSNM for corn was implemented by the CVIARC with support from the DA-Bureau of Agricultural Research (BAR) and the DA-GMA Corn Program in partnership with the DA-Bureau of Soils and Water Management (BSWM), University of the Philippines Los Baños (UPLB) and International Plant Nutrition Institute (IPNI). (Edmon B. Agron)

BAR promotes ready-to-use technologies in 2010 Technology Partnering forum



Dr. Primitivo Santos of IPB-UPLB explains to Ms. Luli Arroyo the technology on SNAP Hydroponics during her visit to the BAR booth during the PTTC Exhibits. PHOTOS: EAGRON

In line with its mission to improve the livelihood of the Filipino farmers through the use of productivity-enhancing and sustainable technologies, the Bureau of Agricultural Research participated in the Technology Partnering Forum 2010 to showcase ready-to-use technologies to farmers, investors, licensees and technology commercialization professionals at the Philippine Trade and Training Center (PTTC) on 22 to 24 February 2010.

The event was organized by the Technology Resource Center of the Department of Science and Technology (TRC-DOST) to showcase the largest collections of technologies coming from the country's top universities, research institutions and the private sector.

The event was intended to provide prime professional development and networking opportunities for emerging companies by facilitating technology and venture development through linkages at the science-business interface. It also provides a platform for the creation and development of new business enterprises that can generate employment opportunities and spur economic growth around the country through technology partnerships.

Among the technologies promoted by BAR during the forum were different product lines developed from indigenous Philippine oregano that are now available in the market, and the affordable and easy to set-up hydroponics technology

developed through the simple nutrients addition program or SNAP.

The event also featured a "techno biz idea challenge", a business idea contest which is designed to enhance and hone the creativity and entrepreneurial skills of the youth who aspire to be technology entrepreneurs, and the "innovation opportunity camp"



DOST Secretary Estrella Alabastro reads info materials on oregano products and its healthful benefits, which were showcased at the BAR booth during the exhibit. PHOTOS: EAGRON

Among the technologies promoted by BAR during the forum were different product lines developed from indigenous Philippine oregano that are now available in the market, and the affordable and easy to set-up hydroponics technology developed through the simple nutrients addition program or SNAP.

where participants explore entrepreneurship as a career option.

Gracing the event were Secretary Estrella F. Alabastro of DOST and the President's Representative, Ms Evangelina Lourdes "Luli" M. Arroyo – Bernas, who led the untying of commemorative chimes and the formal opening of the program. In Dr. Alabastro's message, she said that this activity is very important for the community to attain its technology agenda. It is likewise an opportunity for the country's top universities and research institutions to promote their ready-to-use technologies. "I believe that economic progress can be achieved if we all work together to attain this goal" Dr. Alabastro said. (Edmon B. Agron)

BAR, Mag-Agri Tayo to produce video documentary to highlight importance of biotechnology in agri

In order to bring to light the importance of biotechnology in addressing the challenges of our current time, such as increasing population, food shortage, malnutrition and climate change, the Bureau of Agricultural Research (BAR) recently tied up with National Broadcasting Network's (NBN) Mag-Agri Tayo program to produce a video-documentary on biotechnology.

The video-doc titled, "Biotechnology in the Philippines," is a primer on the importance and potentials of biotechnology in agriculture specifically on increasing the production and productivity of the sector.

Essentially, the documentary consists of five parts: 1) biotechnology as government's solution/answer to feeding a fast growing populace; 2) establishment of regulatory framework and protocols; 3) commercialization of Bt corn in the Philippines; 4) success story on Bt corn production; and 5) launching of a first-of-a-kind book on the history of biotechnology in the Philippines.

The first and second parts highlight the role of the government in promoting biotechnology as a tool in developing Philippine agriculture and how apprehensions and diverse stands were addressed with the establishment of a regulatory framework and protocols emphasizing biosafety.

The presentation will also focus on the potential and impact of Bt corn and how its commercialization in 2004, as approved by BPI, is considered a milestone for Philippine agriculture. Bt corn is the first product of modern biotechnology to be allowed for commercial adoption in the country, a first in Asia. The Philippines is one of only 11 developing countries to provide access to genetically modified

(GM) crops to their farmers.

The last part of the documentary discusses the publication of a book titled, "Modern Biotechnology and Agriculture: A History of the Commercialization of Biotech Maize in the Philippines," by Dr. Leonardo A. Gonzales, Dr. Emil Q. Javier, Dr. Dolores A. Ramirez, Dr. Flerida Cariño, and Mr. Arthur Baria.

According to Dr. Leo Gonzales, president of SIKAP/STRIVE Foundation and one of the authors, this book attempts to document the development of the framework and protocols, including biosafety risk assessments on Bt corn, and the struggles that accompanied the drafting of the publication to enlighten the general public.

"Perhaps one of the best efforts on spreading the good news about biotechnology is the book's description of corn within the context of the Philippine agricultural landscape, analyzing the determinants of biotech corn adoption by farmers, measuring the socioeconomic impacts of Bt corn in major corn producing areas of the country, and presenting the challenges faced by Philippine crop agriculture and how emerging biotech techniques can help face the challenges," Dr. Gonzales explained.

The production of the primer is an initiative of BAR with the aim of presenting biotechnology, its potentials and impact on the agriculture sector. In a recent pronouncement of BAR Director



(Clockwise) Dr. Candida Adalla, director of DA-Biotech Program; Dr. Leo Gonzales, president of SIKAP/STRIVE Foundation; Dr. Clarito Barron, assistant director of BPI during their on-cam interviews. Also in the photo is Ms. Rosalie Ellasus, a successful biotech farmer and advocate from Pangasinan reviewing the tapes with Mr. Patrick Daffon, executive producer of Mag-Agri Tayo program.

PHOTOS: RDELACRUZ

Nicomedes P. Eleazar, he noted how biotechnology R&D in agriculture is seen as an answer to concerns on food security and agricultural productivity.

BAR is currently intensifying its biotechnology R&D program, giving specific attention to both traditional and modern biotechnology. The program focuses on integrated processing to increase the value and competitiveness of traditional crops intended for local and world markets. This includes the production of natural ingredients with the application of traditional and modern technology and the creation of clusters of natural ingredients industries. "With the Philippines being rich in biodiversity, exploiting and creating new products and medicine for the growing global market are now possible," Dir. Eleazar stressed.

The documentary was produced in collaboration with other stakeholders including the Department of Agriculture-Biotechnology Program (DA-Biotech), the Bureau of Plant Industry (BPI), and the private sector.

The biotech primer will be aired in NBN's Channel 4 through the Mag-Agri Tayo program hosted by Mr. Philip "Ka Ipe" Daffon. (Rita T. dela Cruz)



Mag-Agri Tayo crew and staff members of ACD-BAR during a documentation project in Pangasinan.

PHOTOS: RDELACRUZ & EHERNANDEZ

Asha peanut is now NSIC-approved

After passing a series of tests and careful evaluation by the National Seed Industry Council (NSIC) based at the Bureau of Plant Industry (BPI), Asha peanut (*Arachis hypogaea*) is now a certified seed, said Rose Mary G. Aquino of the Cagayan Valley Integrated Agricultural Research Center (CVIARC) of the Department of Agriculture Region 2 based in San Felipe Ilagan, Isabela. Aquino is also the lead person for promoting Asha peanut production in the Philippines.

Asha, which means 'hope' in the Hindi language, was introduced into the Philippines from India through the International Crops Research Institute for Semi-Arid Tropic (ICRISAT) in 2005, and was initially field tested and evaluated to determine and compare its adaptability and agronomic performance with the commercially grown peanut varieties in Region 2.

ICRISAT, a member of the Consultative Group on International Agricultural Research (CGIAR), is a nonprofit, non-political organization that conducts innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe.

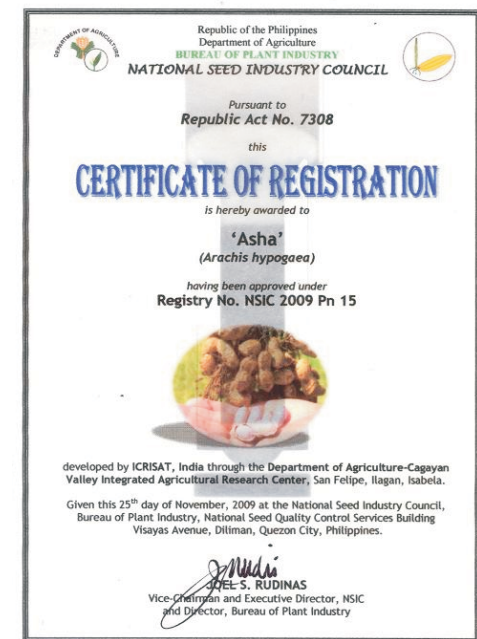
The Bureau of Agricultural Research (BAR), under the leadership of Dr. Nicomedes P. Eleazar, supported this R&D initiative with initial tests indicating that Asha could be

commercially viable in the Philippines. In the 2005 wet season field trial it showed that Asha (2.96 t ha⁻¹) gave 41-77 % higher pod yield than farmers' varieties (UPL Pn 10, Namnama and BPI Pn 9) in the Cagayan Valley region.

Through another project, "Introduction, Promotion, and Efficient Seed Support System of ICRISAT Asha Peanut Variety in Region 2, Philippines", CVIARC conducted various varietal tests on-station and on-farm taking into consideration plant spacing, fertilizer and lime application rates, and other technology interventions. As a result of this project, a Package of Technology (POT) for the production of Asha peanut variety was developed and was made available to improve productivity of local peanut farmers not only in Region 2 but in the whole country as well.

"Seed certification is very important. Poor quality seeds give poor yield. The choice of seed can determine if the farmer will get a good harvest or a poor one. A certified seed ensures varietal purity, genetic identity, and the overall quality of the seeds which effect production, processing, storage, and distribution," explained Aquino.

Asha peanut was approved under registry NSIC 2009 Pn 15 and



was awarded the certification on 25 November 2009 at the National Seed Quality Control Services (NSQCS) Building, BPI.

Asha underwent 17 national cooperative trials (from 2007 wet season to 2009 dry season) with results showing that Asha consistently ranked as number one in terms of yield surpassing the NSIC national check variety (Pn 11) by 22 and 10 percent during wet and dry seasons, respectively.

Asha is the only peanut variety released in the Philippines that has produced the highest recorded yield of 3,991 kg per hectare which is double the yield of commercialized peanut varieties in the country.

This peanut variety from India, which is resistant to bacterial wilt and other foliar diseases such as *Cercospora* leaf spot and rust, is also ideal as livestock forage due to high fresh biomass and dry matter content.

NSIC approved Asha peanut seeds are available at CVIARC's Agri-based Technology Products' Store located in San Felipe, Ilagan, Isabela. For more information, please write or call:

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Asha peanut

(*Arachis hypogaea*)

Mango industry vows to reduce postharvest losses

To ease the climate change impact that brought the country's mango production to record lows in the last couple of years, stakeholders of the mango industry resolved to trim down substantial postharvest losses incurred by mango from initial harvest to distribution and marketing. This was the hub of the discussion as the 12th National Mango Congress held at the Narciso Ramos Sports and Cultural Center in Lingayen, Pangasinan on 24-26 February 2010 was concluded.

"For the medium term, our goal is to save at least 12 percent of the mango output in Pangasinan alone, which contributes one third of total production in the country. That is equivalent to 43 million kilograms or P200 to P300 million savings a year that would otherwise go to waste," said Patricio Evangelista, president of the Federation of Mango Growers and Handlers Association of Pangasinan, Inc. (FMGHAPI), the lead organizers of the event. "We plan to establish village-level processing centers to help the 31 municipal associations and various cooperatives in the province," he added.

Highlighting the event was Dr. Rene Rafael Espino's presentation on the future directions of the Department of Agriculture-High Value Commercial Crops (DA-HVCC) program and its commitment to empower the mango industry organization.

On the R&D aspect, the Bureau of Agricultural Research (BAR) likewise presented the Research and Development and Extension Agenda and Programs (RDEAP) on mango for 2011-2015. The program was presented by BAR Crops



PHOTO: RDELACRUZ

Coordinator Digna Sandoval.

The RDEAP on mango contains researchable areas, problems on mango production, and development of technologies such as pest- and disease-resistant cultivars, value-added products, and compliance to Good Agricultural Practices (GAP). This document serves as a reference material in setting priorities and actions within the country's RDE program for the medium term and as BAR's basis for funding R&D projects.

The congress served as an opportune time for the bureau to make linkages with freight forwarding companies who expressed willingness to provide affordable logistics solution for fruit traders. "If these companies are sincere in partnering with us, this is very

good news to all our stakeholders especially to our mango farmers who are inhibited by the steep freight cost," said Sandoval.

The official report from the Bureau of Agricultural Statistics (BAS) stated that mango production continued to slow down by three percent annually since 2003 and recorded a 13 percent drop from the period of January to September 2009. BAS pointed to continuous rainfall during the flowering stage of trees in Cagayan Valley which affected the commodity's performance last year as the main cause.

In its Crop Statistics report from the period of 2003-2008, BAS said that the country produced 884 thousand mt of mango in 2008, 14 percent lower than the 1,024 thousand mt in 2007. This drop, according to the report, resulted from the adverse effects of typhoon Frank, rains during flowering stage, less flower induction, toppling down of trees due to typhoon Cosme, and the attack of anthracnose.

In a separate occasion, however, the DA expressed a bullish prospect for Philippine fruit exports in 2010 onwards specifically for banana, mango, and pineapple with the rising global demand especially in Europe and the United States.

Former Agriculture Secretary Arthur Yap, nevertheless, earlier challenged the Bureau of Plant Industry (BPI) to develop better-engineered food crops that would withstand the negative impacts of climate change. (Miko Jazmine J. Mojica)



PHOTO: BAR CROPS

Last leg for CRDES regional partnership and action planning held in Bicol

After the "Regional Partnering and Action Planning" for Regions 4a and 4b held in January in Batangas, another action planning meeting was conducted, this time for Region 5. Held in Naga City on 9 February 2010, the activity is part of the BAR-funded program, "Collaborative Research, Development and Extension Services (CRDES) for Food Security: The Case of Regions 4A, 4B, and 5" with the University of the Philippines Los Baños (UPLB) as the lead implementer of the program.

UPLB Chancellor Luis Rey I. Velasco welcomed the participants and partners of the regions consisting of farmers, provincial and municipal agriculturists, presidents and Research and Extension (RDE) directors from state universities and colleges (SUCs), and representatives of partner-agencies from UPLB, Department of Agriculture-Regional Field Units (DA-RFUs), and DA-Regional Integrated Agricultural Research Centers (RIARCs).

CRDES is a program with the main goal of building and strengthening partnerships among DA, SUCs, local government units (LGUs), DA-RFUs, civil society organizations (CSOs) and farmers to attain rice self-sufficiency at the provincial level, among others.

Through quick response studies, the CRDES program hopes to identify production constraints of rice and other crops and solutions for improved productivity. The project also seeks to come up with relevant information on best strategies and practices in the implementation of FIELDS (Fertilizer, Irrigation, Extension, Loans, Dryers, and Seeds) Program. One of its target outputs is increased capacities of SUCs, LGUs, and CSOs, in program planning, implementation, and monitoring and evaluation, as well as RDE agenda setting. At the end of the project, the CRDES implementers also hope to see all regions having improved rice action plan and drafts of local ordinances for food security.

The Community-based Participatory Action Research (CPAR) is part of the CRDES program as one of its components. CPAR is one of the banner programs of BAR under the auspices of Director Nicomedes P. Eleazar.



As a sign of support and commitment to the program, the different partner institutions agreed to participate in the program and signed a Memorandum of Understanding (MOU) to formalize the collaboration effort.

Dir. Marilyn Sta. Catalina, the new OIC Regional Executive Director of

DA-RFU 5, graced the action planning meeting to give her support.

The action planning meeting provided opportunities for the farmers and LGU partners to bring out their concerns regarding rice production in their respective municipalities and barangays. (Amavel A. Velasco)



PHOTO: VELASCO