Reinvigorating BAR's workforce through team building and value enhancement activities

Good teamwork is an essential ingredient in every organization. But to achieve this, there must be a harmonious working relationship between and among employees providing them with the right attitude, skills, and knowledge to be able to get pleasure from doing their jobs and not see work as a daily struggle. Keeping this in mind, the workforce of the Bureau of Agricultural Research (BAR), led by its director, Dr. Nicomedes P. Eleazar, conducted a "Team Building and Value Enhancement Workshop" on 22-23 April 2010 at the Chateau Royale, Batangas City.

Facilitating the activity was a team from the Eagle Challenge Adventure, Inc. (ECAI) led by trainor, Adreian "Ace" Concordia. Other members of the team included Felizardo Hacbang, Jewel Concordia, Janet Garcia, and Lemuel Divinagracia.

BAR Asst. Dir. Teodoro S. Solsoloy welcomed the participating staff and facilitators while Dir. Nicomedes P. Eleazar delivered an inspirational message highlighting on the importance of the activity to further strengthen and enhance camaraderie among the staff members.

ECAI lead trainor, Ace Concordia, showed the participants the importance of value formation in an environment that is stressful and full of negativities, instilling in minds the need to be positive all the time. "It is good!" he affirmed.

Participants were grouped into four, forming their own names that would best describe them: Soaring Eagles, Kerida, Warriors, and Juggernauts.

The team from ECAI prepared various activities designed to strengthen the positive attitudes of the participants through enhanced amity and unity. *(Rita T. dela Cruz)*

The way a team plays as a whole determines its success. You may have the greatest bunch of individual stars in the world, but if they don't play together, the club won't be worth a dime. ~ B. Ruth

BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

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BINHI AWARDEE (2007)
Agricultural Newsletter of the Year
FLORENDO AWARDEE (2003)
Outstanding Information Tool for Print

Volume 11 Issue No. 4 | A monthly publication of the Bureau of Agricultural Research | APRIL 2010

BAR bags 3 trophies from PAJ's Binhi Awards

BAR CHRONICLE, the bureau's official monthly publication, wins "Agricultural Newsletter of the Year" for the second time from Binhi Awards given by the Philippine Agricultural Journalists, Inc. (PAJ). Receiving the award are Dir. Nicomedes P. Eleazar (3rd from right), Asst. Dir. Teodoro S. Solsoloy (left), and BAR writers. Managing editor, Rita T. dela Cruz (third from left) is also awarded "Agricultural Photojournalist of the Year" and "Agricultural Journalist of the Year" (second place). PHOTO: EBULAO

The Bureau of Agricultural Research (BAR) received three awards during the Annual Binhi Awards of the Philippine Agricultural Journalists, Inc. (PAJ) held on16 April 2010 at the Bureau of Soils and Water Management (BSWM) Building, Visayas Ave., QC.

BAR Chronicle, the bureau's official monthly publication, won the "Agricultural Newsletter of the Year" award for the second time while its managing editor, Rita dela Cruz was hailed "Agricultural Photojournalist of the Year" and "Agricultural Journalist of the Year" (second place).

BAR Dir. Nicomedes P. Eleazar and Asst. Dir. Teodoro S. Solsoloy led the staff members from the Publication Section of the Applied Communication Division (ACD) in receiving the awards.

"We are very pleased and humbled that the efforts of our writers paid off by winning such prestigious awards from the PAJ," said Dir. Eleazar. "It only reflects the values and ethics of our staff in our commitment to deliver the newest breakthroughs and events in Philippine agriculture."

Also present during the awarding ceremony were Sanny Galvez, PAJ president, Fermin Diaz, PAJ director, and Noel Reyes, PAJ vice president for internal affairs.

Meanwhile, Department of Agriculture (DA) Undersecretary Joel Rudinas gave an inspirational message to an audience composed of agricultural journalists, students, and representatives from the private sector.

Also present were former Food Minister Jesus Tanchangco and SL Agritech Chairman and CEO Henry Lim, who shared their thoughts on agricultural journalism and its importance in the Philippine agriculture as a whole.

Other winners during the awarding included: Anselmo Roque of the Philippine Daily Inquirer (Agricultural Journalist of the Year), Noel Providio of DA-Region 11 (Agricultural Journalist of the Year, third place), Neil Jerome Morales of the Business World (Agribeat Reporter of the Year), Amy Remo (Agribeat Reporter of the Year, second place), Nestor Cuartero of the Manila Bulletin (Environment Journalist of the Year), the Philippine Rice Research Institute (Agricultural Magazine of the Year), MRDO-Info Ace of the DA-Mindanao Rural Development Program (Agricultural Info/Media Campaign), and "Palay-Aralan sa Radyo" of DA-PhilRice (Agricultural Radio Program of the Year).

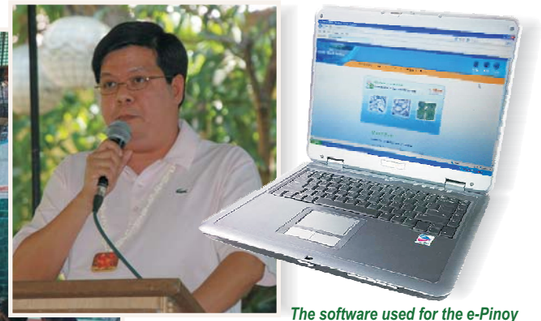
Three were elevated to the Hall of Fame status this year. They are: Anselmo Roque (Agricultural Journalist in English), Melody Aguiba (Agribeat Reporter), and Greenfields (Agricultural Magazine).

PAJ has been conducting the Binhi Awards since 1976. *(Don P. Lejano)*

What's inside...

CPAR M/E System on *e-Pinoy* FARMS for fisheries launched

Fisherfolk beneficiaries of CPAR attend the launching of the e-Pinoy M&E System in Balanga City, Bataan. BAR Dir. Nicomedes P. Eleazar (inset) graces the activity as guest of honor and keynote speaker. PHOTOS: RDELACRUZ & EAGRON



The software used for the e-Pinoy M&E System for CPAR Fisheries which was launched in Bataan.

To provide quick information dispatch and install a functional feedback mechanism among fishery project partners through systems automation, the Community-based Participatory Action Research (CPAR) Monitoring and Evaluation (M&E) System on *e-Pinoy* FARMS for fisheries was launched on 21 April 2010 in Balanga City, Bataan.

The launching of CPAR M/E System on *e-Pinoy* FARMS for fisheries served as a kick-off event for the nationwide implementation of a decision support system (DSS) for Research, Development, and Innovation of the Department of Agriculture-Bureau of Agricultural Research (DA-BAR), the Bureau of Fisheries and Aquatic Resources (BFAR), Regional Fisheries Research and Development Centers (RFRDCs), and the local government units (LGUs).

"This project aims to equip and strengthen RFRDCs in 16 regions with a process-driven, coastal and inland resource management system as an enabling tool BAR and the regional centers to help them effectively manage their CPAR for fisheries and aquatic resources projects. It shall pro-actively address local needs, such as technology upgrading and enterprise development, through proper application of R&D outputs for growth and innovation," said BAR Dir. Nicomedes P. Eleazar during the event.

"We are advocating the cost-free use of information for bottom-up planning and multi-level decision-making in rural development management. With the outputs generated from the CPAR M/E System, farmers and fisherfolk and their organizations will be able to mobilize and harmonize their activities, and interact with the assigned change agents in a timely, systematic, and predictable manner," Eleazar further explained.

Cheryl Natividad, CEO of Optiserve Technologies, the developer of

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BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

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This publication provides regular updates on DA-BAR's activities as the country's national coordinator for agriculture and fisheries R&D. It also highlights features and news articles concerning NaRDSAF-member institutions.

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DRIP IRRIGATION:
Addressing the "thirst" in agriculture

Text by:
EDMON B. AGRON
Photos by:
AMERCADO JR./SANREM

The Philippines is currently being beset by El Niño episodes causing rivers and dams to run out of water. Farms are withering resulting to tremendous damage in almost all crops planted and harvested during the first and second quarters of this year.

Aside from the alarming issues of climate change, studies show that the demand for freshwater is increasing globally because of the needs of a growing population and associated urbanization that accelerates water consumption for drinking and other household uses as well as for urban and industrial uses. However, the agriculture sector is still considered the biggest user of freshwater resource in most developing countries, including the Philippines.

The research on low-cost drip irrigation conducted by Dr. Victor B. Ella, professor and former dean of the College of Engineering and Agro-Industrial Technology University of the Philippines Los Baños (CEAT-UPLB), is part of an effort toward the development of water-saving technologies for agriculture. Also, this is an initiative to address the irrigation problem particularly, in areas where water is a limiting factor.

Drip irrigation, also known as trickle or micro-irrigation, is an irrigation method that involves the delivery of water through a pipe distribution network consisting of a main pipe, submain, manifold and lateral pipes under low pressure and its emission through small outlets of drippers or emitters into the soil surrounding the crop to be irrigated.

Drip irrigation system works by applying water slowly and directly to the soil. It is considered to be the most efficient method of irrigating crop because: 1) water soaks into the soil before it can evaporate or run off; and 2) water is only applied where it is needed and when it is needed most.

In a seminar organized by the Bureau of Agricultural Research (BAR) in Quezon City, Dr. Ella presented the results of his USAID-funded research project on low-cost drip irrigation technology for sustainable vegetable agroforestry system in the Philippines.

According to Dr. Ella, drip irrigation has many advantages. It is adaptable to any crop, soil, and topographic condition. It can be used even with limited water supply and can provide relatively high water use efficiency. Drip irrigation system is easy to install and operate and can reduce the incidence of leaf diseases caused by direct water contact on some plants. Drip irrigation can also facilitate liquid fertilizer application through fertigation.

Dr. Ella also emphasized the applicability of drip irrigation systems even for upland vegetable production areas in the Philippines. In fact, in the field experiments conducted in Lantapan, Bukidnon, through the Sustainable Agriculture and Natural Resources Management (SANREM) research program, showed that the crops irrigated with drip irrigation system gave significantly higher yield than the rainfed crops, given that the same production inputs were applied for both treatments. For instance, the average yield of cabbage and tomato under drip irrigation system is 4.45 kg and 4.78 kg per square meter, respectively, compared to the average yield of the same crop at 3.38 kg and 3.93 kg per square meter under rainfed conditions. Furthermore, drip irrigation also resulted in relatively higher plant height and larger sizes of produce, Dr. Ella added.

Although the technology has been introduced to farmers in Bukidnon, Dr. Ella said that further research and continuous development of this technology is needed to maximize its potential.

He appealed to the government and non-government organizations for necessary institutional and financial support for further improvement and development of the technology. He also recommended that this technology be considered as part of the food security and poverty alleviation program for farmers as well as part of climate change program of the government in the country.

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Drip irrigation system works by applying water slowly and directly to the soil and is considered to be the most efficient method of irrigating crop.

Vegetable agroforestry: Providing multiple benefits to farmers and env't

Text by:
EDMON B. AGRON
Photos by:
AMERCADO JR./ICRAF

Vegetables are important sources of vital nutrients such as vitamins, minerals and even antioxidants essential in combating the most common and even life-threatening illnesses and diseases. This might be the reason, why vegetable consumption is continuously increasing over the years. The trend of changing lifestyle among Filipinos has opened many opportunities such as more market for the vegetable harvests of the poor upland farmers.

However, productivity is sometimes compromised with sustainability and poses threat to the environment and even in the life of the people in the community.

According to AVRDC-The World Vegetable Center, the increased in production of vegetables in the Philippines reflects both yield increases and expansion of areas planted with vegetables (Johnson et.al, 2008). The Department of Environment and Natural Resources (DENR) also reported that, in 2007 forest areas are rapidly converted into vegetable plantations. For instance, in Cordillera Administrative Region (CAR) alone, one of the major production areas for vegetables in the country converted an average of 220 hectares per year of forest lands into vegetable gardens (Cariño, 2007). This poses a serious threat in the country's forest areas and increases the risks of soil erosion incidents.

In a seminar conducted by the Bureau of Agricultural Research (BAR), Dr. Agustin R. Mercado Jr. of ICRAF-The World Agroforestry Center, presented a study on agroforestry and sustainable vegetable production in Southeast Asian watersheds. He reported that intensive vegetable production in the Philippine uplands particularly monoculture systems are not sustainable, however, integrating trees in vegetable production systems as contour hedges to control soil erosion will provide multiple of benefits such as increase in the income of upland farmers and enhance on-farm biodiversity and environmental sustainability. This technology is called "Vegetable Agroforestry*"* or VAF.

VAF is a technology that understands the relationship and/or interaction of trees and vegetable in the uplands as key factor in successful vegetable farming endeavor. According to Dr. Mercado, VAF is the most appropriate technology for the uplands farmers to enhance the productivity and profitability while reducing production risks and environmental hazards inherent to vegetable production systems.

According to Dr. Agustin, to improve economic viability of vegetable agroforestry systems, proper considerations must be followed. First, reduce competition between trees and vegetables. In planting vegetable in the upland areas, always consider crop with high adaptability indices and can thrive in low light environment, use trees which are less competitive, implement tree root pruning and root barrier, and employ irrigation to supplement water needs of the crop. Second, increase trees-vegetable complimentarity. Appropriate pruning procedure is important in vegetable agroforestry systems as it provides a good growing environment both for trees and vegetables in the area. Third, choose valuable trees as integrated component of vegetable production system. It also provides additional income to upland farmers.

Aside from increasing farmer's income due to agri-diversity (tree and vegetable products), vegetable agroforestry system also provides a favorable environment for vegetable production due to tree micro-climate amelioration such as reduction of wind speed, high relative humidity, and higher surface moisture of the soil. VAF also maintains soil organic matters due to litterfalls and root decays and purposively reduces soil erosion as trees served as contour hedges or barrier to soil erosion particularly on sloping farms.

This study was funded and supported by the Sustainable Agriculture and Natural Resources Management – Collaborative Research Support Program (SANREM-CRSP) and the World Agroforestry Centre (ICRAF). *(Edmon B. Agron)*

Dryland crops from India show promising results in RP soil

Dry-tolerant but high-yielding varieties of peanut, pigeonpea, and chickpea, developed by the International Crop Research Institute for Semi-Arid Tropics (ICRISAT), an advanced international agricultural research institute headquartered in Andhra Pradesh, India, were found to thrive well in Philippine soil. This was the result of the first year trial of the project titled, "Field Testing of ICRISAT Legume Varieties and Technologies in Selected Regions of the Philippines" funded by the Bureau of Agricultural Research (BAR).

The project tested several varieties of peanut, pigeonpea (*kardis* or *kadyos*), and chickpea (*garbanzos*) for their suitability under local conditions in seven pilot regions, namely: Regions 1, 5, 6, 7, 8, 9, and 10. Package of technologies (POT) for growing these crops are also being developed to ensure high yield under different Philippine climate types.

With the introduction of these new crops, the project aims to develop alternative crops that will help Filipino farmers cope with increasing dry spell events in the country and address food inadequacy in the rural areas.

According to Dr. Nicomedes P. Eleazar, director of BAR, "based on the reports submitted, several ICRISAT varieties introduced in the country for field testing have already shown promising results and have been identified for their potential breeding lines." These breeding lines, according to Dr. Eleazar, if found stable in producing high yield in the succeeding yield trials, can already be included in the national screening preliminary to their introduction to farmers nationwide.

The adaptability yield trial on peanut showed that ICGV 00350 and ICGV 99046 peanut lines were consistent high-yielders among the four ICRISAT entries evaluated. Noticeably, these two promising selections significantly out-yielded most of the national and local check varieties (NSIC Pn 11, NSIC Pn 12, NSIC Pn 14, and NSIC Pn 15) in almost all the test stations. The two promising lines will be considered for further yield and adaptability test on-station and on-farm to obtain more reliable results for inclusion as test entries under National Cooperative Test (NCT) in the Philippines.

In the adaptability trial for pigeonpea, it was found that four genotypes (ICPL 88034, ICPL 88039, ICPL 81 and ICPL 161) bear flowers and developed into pods in all locations where the lines were tested. These genotypes produced a seed yield of 0.87-1.28 t/ha. Although ICP 7035, ICPL 87091, ICPL 87051 and ICPL 87119 did not perform well in the Visayas, these genotypes performed better in Regions 5, 9 and 10.

Results of the adaptability yield trials for chickpea showed very encouraging results and with bright future for chickpea production, particularly in trials conducted in Northern Mindanao. Initial results revealed similar performance of chickpea with those in Benguet Province and noted that the agro-climatic condition is ideal for chickpea production. The Philippines import about 735 tons of chickpea per year (valued at US$ 442T or P20M) to meet local demand for "garbanzos".

Dr. William D. Dar, director general of ICRISAT is hopeful about this project endeavor with BAR. "We hope that through this project, we will be able to identify varieties for peanut, chickpea, and pigeonpea that we could recommend to our farmers in the drier areas of the country that provide stable yield and higher incomes," he said. *(Rita T. dela Cruz)*

(Top) Focal persons from various regions and BAR staff learns proper management of pigeon pea given the RP agro-climatic condition. (Bottom) Review of ICRISAT-BAR project, "Field Testing of ICRISAT Legume Varieties and Technologies in Selected Regions of the Philippines". PHOTOS: MRAMOS AND EAGRON

BAR conducts 2nd National Review and Conference for Rubber RDE

DA Usec Salvador Salacup and BAR Dir. Nicomedes Eleazar (center) with the resource speakers and participants of the rubber review and workshop.

PHOTO: NDELROSARIO III

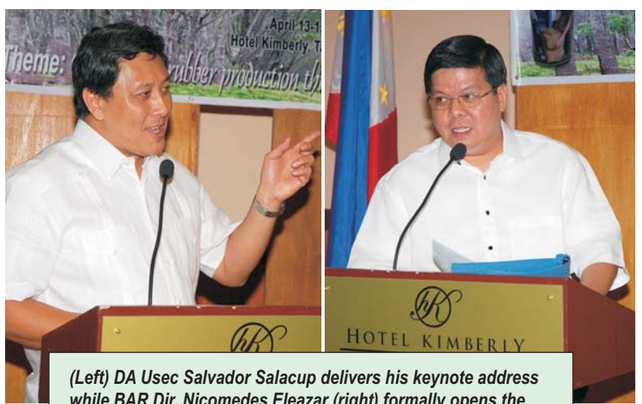
To facilitate the interactions and exchanges of experiences and fast track the commercialization of rubber production technologies in the country as well as establish benchmarks and protocols on RDE project planning and implementation, the Bureau of Agricultural Research (BAR) convened all rubber RDE stakeholders for the "2nd National Review and Consultation Conference on Rubber Research and Development and Extension (RDE) Agenda and Program" on 14-15 April 2010 in Tagaytay City.

Natural rubber enjoys a lucrative market in the global rubber industry and is expected to see price increases in the next 20 years. Hence, global consumption for natural rubber may well reach 31.8 million tons by 2020.

With this scenario, DA has given priority to rubber as a high-value commercial crop and therefore created the National Rubber Development Program (NRDP). Specifically, BAR is tasked to lead the R&D component of the NRDP and give support to its extension activities.

Through the program, DA is targeting to increase the current area planted to rubber from 120,000 ha to at least 300,000 ha, which consequently will increase production and exports to $960 million in 2020.

For this year, DA is looking into expanding the country's natural rubber production to 450,000 metric tons by replanting 36,000 hectares with rubber as part of its 15-year plan to make the Philippines a major player worldwide.



(Left) DA Usec Salvador Salacup delivers his keynote address while BAR Dir. Nicomedes Eleazar (right) formally opens the activity with his welcome remarks. PHOTOS: NDELROSARIO III

Also, to sustain profit, current challenges faced by the rubber industry must be addressed. Among these include: looming end of maximum productive years of existing rubber trees, high production cost because of rising prices of farm inputs, and difficulty of rubber farmers in accessing sustainable credit facilities due to long gestation period of rubber trees.

Currently, the Philippines has 380,000 metric tons of natural rubber produced. Among the provinces identified as viable areas for rubber production are Sultan Kudarat, Isabela, Maguindanao, Benguet, Camarines Sur, Palawan, Antique, Negros Oriental, Negros Occidental, and Mindoro Occidental.

"It is important that we conduct this review and conference not only to document and assess the status and accomplishments of the BAR-funded rubber RDE projects but more importantly for us to formulate recommendations to further improve the planning and implementation of these projects," said Dr. Nicomedes P. Eleazar, director of BAR who was present during the event.

BAR is supporting the commercialization of the recommended rubber clones in the country, and other production and processing technologies through technology demonstration and promotion in suitable rubber areas nationwide.

Currently, BAR is providing funding assistance to 17 on-going rubber RDE projects implemented in 10 Regional Integrated Agricultural Research Centers (RIARCs), 4 statue universities and colleges (SUCs), and 1 DA staff bureau.*(Rita T. dela Cruz)*

R&D efforts to manage and restore sea cucumber populations underway

"Ugly as you may see it but sea cucumber is a delicious and nutritious delicacy," said Dr. Marie Antonette R. Juinio-Meñez, professor from the University of the Philippines Diliman-Marine Science Institute (UP-MSI) and project leader of a sea cucumber research program based in Bolinao, Pangasinan.

Sea cucumbers which are locally known as "balat" are soft-bodied tubular invertebrates that live in the bottom of coastal waters. Like earthworms, they are important in the cycling of sediments and nutrients in marine ecosystems.

These bottom-living animals are considered a great delicacy in Chinese and other Asian cuisines, such as Malaysia (*gamat*), Singapore, Japan, Korea, and Indonesia (*trepang*), and often eaten during feasts and holiday celebrations. Sea cucumbers are also considered a delicacy in certain Mediterranean countries such as Spain.

Aside from being delicious and nutritious, they are also valued for their medicinal properties. In Chinese medicine, sea cucumbers are good for nourishing the blood and vital essence, kidney disorders including reproductive organ problems, debility of the aged, constipation due to intestinal dryness, and problem of frequent urination.

Sea cucumbers are also called a tonic food because of their high protein and low fat contents than most of the other food served in restaurants. That's why dried and extracted sea cucumbers are used as a nutritional supplement and now come prepared in tablet and capsule forms.

With their high market demand, sea cucumbers are major fishery and export commodity in the fisheries sector.

In the Philippines, there are over a hundred species of sea cucumbers and about 40 species are reported to be commercially important. Production of sea cucumber relies solely on wild catch. However, most of the wild populations have been over-harvested or depleted resulting to a reduced biodiversity and the loss of an important source of livelihood for fishers. This translates into multi-million losses in both export and local markets.

To help address the problem of rapid depletion of sea cucumbers and other echinoderms, the Bureau of Agricultural Research (BAR), together with the experts from UP-MSI, embarked on a project titled, "Refinement of sea cucumber (*Holuthuria scabra)* culture techniques and assessment of co-culture system for commercially important echinoderms."

PHOTOS: MMENEZ/ACIAR

Sea cucumber

The project aims to improve the hatchery and the field grow-out methods to increase survivorship of cultured *H. scabra* or sandfish locally known as "putian". It also aims to contribute to the development of environment-friendly mariculture methods and subsequently expands the options available to the local aquaculture industry.

In the first year of the project, successful spawning trials were carried out using broodstocks from Bolinao, Pangasinan, and Masinloc, Zambales producing a total of 175,000 juveniles that were used in various experiments while 30,000 larger juveniles were released in the pilot sea ranching sites.

Furthermore, the project also assessed different food types to determine the best diet to improve growth and survivorship of early juveniles that led to the identification of a brown seaweed, commonly known as *Sargassum,* as an effective diet for sea cucumber juveniles to grow faster due to its high nutrition content.

Generally, this project has gone through important steps to manage and restore the depleting populations of sea cucumbers, said Dr. Meñez. Through this project, one of the high-valued species of sea cucumbers can now be bred in captivity with broodstock collected in the wild.

Adults are induced to spawn with thermal shock. In hatchery tanks, the fertilized eggs are reared. Juveniles are reared in ponds and in ocean nursery systems to about 5g and then released in sea ranch until they attain the desired market sizes, she added.

Dr. Meñez also explained that this project is part of a broader national research program titled, "Sea ranching and Restocking of Sandfish in Asia Pacific" supported by the Department of Science and Technology (DOST) through the Philippine Council for Marine and Aquatic Research and Development (PCMARD), and the Australian Center for International Agricultural Research (ACIAR) through World Fish Center. This program is developing culture and resource management technologies to restore natural populations of sea cucumber not only in the Philippines but also in other regions in the Asia Pacific to provide sustainable supplemental livelihood for poor fisher families.

According to Dr. Meñez, research and development in culture technologies for commercially important invertebrates like sea cucumber is very important not only to increase its production and ease the harvest pressure in the wild, but also to enhance the country's ability to capture the international market demand, and supply a highly valued, in-demand marine resource - the sea cucumber. *(Edmon B. Agron)*

50 Million and more people at risk from climate change - report

PHOTO: EAGRON

Approximately 50 million people and more are at risk from climate change given its looming adverse effects in the agricultural and fisheries sectors. Food security is at risk given its serious effect on coastal fisheries providing food and employment to around 1M Filipinos. Also at risk are the country's watersheds, forests and biodiversity affecting 1.5 M of agricultural lands that are dependent on these areas for irrigation water. The livestock and poultry industry are also affected as emergence of diseases is expected to occur.

These were reports based on the presentations during a training-workshop titled, "*Climate Risk Assessment, Vulnerability and Adaptation Assessment and Monitoring and Evaluation for Agriculture and Forestry Biodiversity Sector* held on 12-16 April 2010 in Bay, Laguna. The activity aimed to address the country's limited capacity to undertake climate risk assessment which in the end will be the basis for strategic program planning and implementation in basic development sectors.

The training course focused on discussing climate change as a pressing geo-biophysical issue as well as a major socio-economic concern. Also discussed were various vulnerability and adaptation assessment (VA&A) tools to cope with climate change.

It is expected that after the course, participants are able to develop and enhance their skills on VA&A and assist in developing a climate change monitoring and evaluation framework and system for the whole Department of Agriculture (DA).

To address the current needs of the agriculture, fisheries and natural resources sector on climate change, the course identified and discussed four methods that policymakers will be able to use and incorporate in making informed decisions specifically in assessing and reducing climate risks in the agriculture and fishery sector. These are: Vulnerability Assessment (VA), Economic Valuation (EV), Geographic Information System (GIS), and Monitoring and Evaluation (M&E).

VA is used as a tool to determine risks brought about by various climatic events such as typhoons, droughts, floods, among others. It can also help in identifying potential adaptation options to address vulnerability of certain areas and sectors such as in livestock, rice and other cereals, vegetables and root crops, plantation crops (horticultural, ornamentals, bio-fuels), and postharvest processing.

EV is essential in assessing the impacts of climate change in the income and economic growth of farmers and fisherfolk in the agricultural sector. It uses the concept of willingness-to-pay in order to value the environment and the adaptation/ mitigation strategies to be implemented.

GIS Mapping is a tool in vulnerability assessment. GIS is a computerized technology for capturing, storing and processing geographically-referenced data. Main uses of GIS in agriculture include *Inventory* (i.e. base map, soils map, land use, infrastructure, and cadastre), *Analysis* (i.e. land suitability, market accessibility, land use changes, construction process, and vulnerability assessment), and *Management* (optimum land use, development scenarios, and risk mapping).

M&E includes baseline data and information on climate change impacts, responses and adaptations of natural and human systems will enable to *understand*, *predict*, and *minimize,* if not totally *avoid,* disastrous impacts of natural phenomena, thus aid in decision-making, policy reforms and interventions to reduce damages to lives and properties.

The training-workshop was organized and conducted by the National Economic and Development Authority (NEDA), through the School of Environmental Science and Management of the University of the Philippines Los Baños (SESAM-UPLB).

Participants included representatives from the policy and planning offices of DA attached agencies and staff bureaus including the Bureau of Agricultural Research (BAR), and Regional Field Units (RFUs).

As an offshoot from the activity, DA will be creating a composite team tasked to conduct capability building on CRA, VA&A, and M&E for the agriculture sector. *(Debra E. Tamani)*

STIARC paper on lanzones production wins 3rd PHILARM Best R&D Paper

Avelita Roales of DA-STIARC authored the winning paper on lanzones production which is a result of two completed BAR funded projects on CPAR and ADP. PHOTO: STIARC

The paper titled, "Research Management Strategies in Enhancing Productivity and Profitability of Lanzones Farms in Laguna and Batangas" authored by Avelita Rosales of the Department fo Agriculture-Southern Tagalog Integrated Agricultural Research Center (STIARC) won third place in the "Search for William C. Medrano Best R&D Management Paper" given during the 20th National Convention of the Philippine Association of Research Managers (PHILARM) held on 6-9 April 2010 at Aklan State University, Banga, Aklan.

The paper is a result of two recently completed projects, namely: 1) Community-based Participatory Action Research (CPAR) on Rehabilitation of Lanzones in Brgy. San Roque, Alaminos, Laguna and; 2) Agribusiness Development Project (ADP) on Lanzones in Calabarzon. Both projects were funded by the Bureau of Agricultural Research (BAR) highlighting research management strategies to enhance production and profit in lanzones production.

CPAR is one of the banner programs of BAR which entails the active participation of the community by empowering and organizing their agricultural production management system. ADP, on the other hand, is another program of BAR which aims to demonstrate the profitability of new technologies suited to the conditions of the region and to demonstrate good agricultural practices to interested farmer-adoptors.

Rosales' paper describes the actual management practices and control systems, external linkages, networking and support services undertaken in conducting the researches on lanzones. The participatory community based approach was utilized in the implementation.

Among the strategies used to achieve the desired output in these researches were: the conduct of participatory rural appraisal (PRA), analysis of strengths, weaknesses, opportunities and threats (SWOT), workshops, writeshops, diagramming, brainstorming, participatory and consultative meetings, trainings, seminars, study tours and social mobilization activities and adherence to the logical framework of the projects.

Documentation throughout the conduct of researches on lanzones lent legitimacy to the ownership of the project by the farmers since photos and videos indicated their presence in every activity or process. As a result, a manual on lanzones production was prepared, published and distributed to farmers. As more copies of this manual reached out the clients, more farmers became interested. Now, there are 142 adaptors of the improved package of technologies on lanzones production.

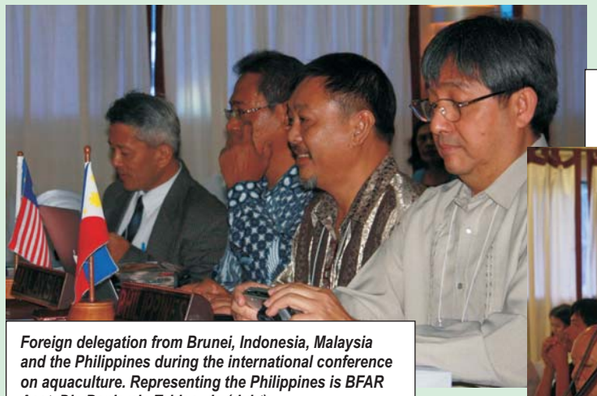
PHOTO STIARC

Involvement of the farmers in participatory planning, implementation, monitoring and evaluation inculcated the concept of project ownership. Social preparation and mobilization activities enhanced people empowerment to rehabilitate and revive the lanzones industry in Laguna and Batangas resulting to a socially-sensitized community and sustainability of the lanzones projects.

These strategies and technology innovations resulted to increased income of the farmer cooperators, generation of more jobs from the rehabilitation of lanzones tress and the establishment of nurseries. The area planted with lanzones also increased from 3,676 ha to 4,321 ha. The involvement of both the men and women folk in the production of lanzones was also enhanced. Lanzones Farmers Associations were also organized in the different project locations.

Aside from Rosales, the team was composed of other researchers from STIARC, namely: Digna P. Narvacan, Thelma M. Lambio, Virgilia D. Arellano, Merly K. Tuazon, and Elizabeth R. Gregorio, and Cristina D. Goma of the Office of the Provincial Agriculturist (OPA) of Laguna. *(Amavel A. Velasco)*

BAR participates in international conference on aquaculture dev't



Foreign delegation from Brunei, Indonesia, Malaysia and the Philippines during the international conference on aquaculture. Representing the Philippines is BFAR Asst. Dir. Benjamin Tabios, Jr. (right). PHOTOS: BIMP-EAGA SECRETARIAT

Dr. Catalino dela Cruz of DA-BAR during the opening forum.

The Bureau of Agricultural Research (BAR) participated in an international conference on aquaculture development, "BIMP-EAGA on High Value Aquaculture Business Conference" hosted by the Philippine government through the Bureau of Fisheries and Aquatic Resources (BFAR). Delegates and participants from the fishery member-countries of Brunei Darussalam-Indonesia-Malaysia-Philippines-East ASEAN Growth Area (BIMP-EAGA) gathered to promote and improve high-value aquaculture in the sub-region. The conference was held in General Santos City.

Presented during the three-day event were possible collaborative endeavors between and among fisheries stakeholders and developmental partners focusing mainly on investment potentials, creating aquaculture business opportunities, establishing market access and challenging key players in the sub-regions to strengthen fisheries cooperation in line with the establishment of the fisheries consortium in BIMP-EAGA.

The conference was highlighted by reports of country situationers led by Mr. Sabri Haji Mohd Taha who presented the paper, "Fisheries Investment Potential in Brunei Darussalam", and Indonesian Deputy Dir. Ateng Supriatna who spoke on their country's policy to substantially increase aquaculture investment.

Meanwile, Mr. Rooney Biusing of Sabah, Malaysia talked on "High Value Aquaculture and Investment Opportunities in the State of Sabah".

From the Philippines, Mr. Vicente Encena III and Ms. Ma. Rovilla J. Luhan of SEAFDEC-AQD, discussed the Philippine abalone and status of the Philippine seaweed industries, respectively. Dr. Jose A. Ingles of the World Wildlife Foundation based in the Philippines also presented the "Economic Potential *vis-à-vis* Environment Conservation".

During the open forum, participants actively joined in the discussions and shared their actual experiences, observations, and recommendations especially on issues concerning the rapid development of the fishing industry coupled with unsustainable fishing practices.

Although the activity tackled the institutional and developmental framework of the fishing industry in general, the BIMP-EAGA fisheries working group identified high-value aquaculture as one of the areas of collaboration along with tuna, sardines, and seaweeds. It also highlighted best practices and recent breakthroughs on aquaculture farming and marketing for which BAR will collaborate with BFAR on its R&D aspect.

Tasked to welcome the foreign delegates was BFAR Asst. Dir. Benjamin F.S. Tabios, Jr. who also presented the conference overview and reported the updates on the fisheries consortium BIMP-EAGA framework.

BAR was represented by Dr. Catalino Dela Cruz, technical adviser on fisheries and Ms. Ma. Elena Garces of the Technology Commercialization Unit (TCU).

EAGA's history began with a discussion among ASEAN heads of states in Brunei Darussalam in October 1992. The endorsements and confirmations of then Indonesian President Suharto in September 1993, Sultan Haji Hassanal Bolkiah of Brunei Darussalam in November 1993, and Malaysian Prime Minister Mahathir Mohammad in February 1994, paved the way for the BIMP-EAGA Inaugural Senior Officials' and Ministers' Meeting (SOMM) in Davao City, Philippines in March 1994 which was led by then President Fidel V. Ramos.

EAGA comprises the entire sultanate of Brunei Darussalam; 10 provinces in the Indonesian islands of Kalimantan, Sulawesi, Maluku, and Irian Jaya; Sabah, Sarawak, and Labuan in Malaysia; and Mindanao and Palawan in the Philippines *(Patrick L. Lesaca)*

CPAR... from page 2

the CPAR M/E System, said that they chose to launch in Bataan because they wanted to use the CPAR Fisheries in the area as a model for information gathering system. Specifically, the collective behavior manifested by the members of the *Samahang Mangingisda ni Apo San Rafael ng Sibacan* and the proactive support and participation of the LGU and RFRDC in making the "CPAR Project on Blue Crab Fishing Using Gill Nets" a viable social enterprise.

Prior to the launching program, a hands-on training was provided by the Optiserve and BAR to the RFRDC representatives of the 16 regions who were taught how to operate the monitoring and evaluation system.

Present during the event were Serafin Q. Roman, vice governor of Bataan, Rodolfo H. de Mesa, city administrator of Balanga, and Remedios E. Ongtangco, regional executive director of BFAR Region III. *(Don P. Lejano)*

Institutionalization of partnership urged in SSNM National Review and Planning Workshop

PHOTO: DLEJANO

Let us institutionalize partnership and focus on the solution, not on the problem." Thus, said Mr. Milo delos Reyes of the GMA Corn Program during the National Review and Planning Workshop for 2009-2010 Dry Season of the Site-Specific Nutrient Management (SSNM) for Maize in the Philippines that was held last 28-30 April 2010 at the 4th floor of the RDMIC Bldg., Visayas Ave., Diliman, Quezon City.

According to delos Reyes, "Each one of us should be GROs or good research officers. By being such, we should know how to look at the things that we have and not for things that we don't have. We seek help from our partners and in return, we share the resources and information that we think might be useful to them."

Spearheading the said event were the GMA Corn Program of the Department of Agriculture (DA), the Bureau of Agricultural Research (BAR), Bureau of Soils and Water Management (BSWM), University of the Philippines Los Baños (UPLB), and the International Plant Nutrition Institute (IPNI).

Time was allotted for representatives from all regions to present their reports on the SSNM Dry Season and Micronutrient Trials. Questions and issues raised during the discussions were responded to by the members of the technical working group (TWG) composed of Dr. Carmencita Kagaoan (DA-BAR), Dr. Gina Nilo (BSWM), Dr. Apolonio Ocampo (UPLB), Dr. Candido Damo (GMA Corn), and Mr. Milo delos Reyes (GMA Corn).

After all the papers were presented, Mr. Severino Tumamang of the Cagayan Valley Integrated Agricultural Research Center (CVIARC) presented the workshop results and the 2010 plan of activities for the upscaling project in Jones, Isabela.

As soon as the workshop results were presented, Dr. Mirasol Pampolino of IPNI led in the presentation and hands-on coaching on maize nutrient management. Likewise, Ms. Julie Mae Pasuquin (also from IPNI) and Dr. Ocampo provided a hands-on coaching the use of a quick guide for maize and on farmer participatory evaluation, respectively. Both Dr. Pampolino and Ms. Pasuquin gave a workshop on the quick guide of maize for all the regions.

The workshop ended with the impressions and feedbacks given by the participants and general agreements reached.

*"Huwag tayong magkawatak-watak dahil sa pagsunod sa SSNM, **S**asaya **S**a **N**ayon ang **M**amamayan,"* said delos Reyes in his closing message, coining a new meaning for SSNM. *(Don P. Lejano)*

Industry dialogue for metals and engineering technology roadmap held

To address potential changes and be globally competitive, especially with the impact of technology advances, the implementation of the "Free Tariff Trade Rules" in 2015, and the move to a common Asian currency, the Metals Industry Research and Development Center (MIRDC) and the Philippine Council for Industry and Energy Research and Development (PCIERD) organized a series of industry dialogues to craft a highly focused technology roadmap for the metals and engineering industry.

With the theme "Strengthening strategic partnerships towards a globally competitive metals and engineering industry", the dialogue aims to determine the following: 1) high priority research needs of the Metals and Engineering (M&E) Industries in terms of products and markets, processes, technologies and human resources to be able to compete in a free trade environment; 2) the testing and calibration requirement of the M&E Industries to ensure quality products, reliability and consistency of services; and, 3) the areas for expansion which could contribute to global competitiveness.

On 27 April 2010 the dialogue was focused on Machining and Fabrication Sectors and participated by stakeholders from the private sectors, mostly from the Metalworking Industries Association of the Philippines, Inc. or MIAP, and the government sector specifically from MIRDC, PCIERD and DA-BAR.

Dr. Danilo N. Pilar, chief of the Industry Assistance Division of MIRDC, provided the participants with a presentation, "Understanding the Roadmap". With the assistance of experts from PCIERD, Dr. Pilar also facilitated the dialogue during the first three sessions and workshop on setting the stage, scenario building and visioning exercise.

At the end of the first of the several series of dialogues, the group came up with a vision, "A Machining and Fabrication Industry Providing Globally Competitive Products and Services". The criteria for competitiveness include quality, price and delivery.

For the next dialogue, the group agreed to invite more individuals, institutions and other stakeholders to clarify the status and issues of the metals and engineering industry from the different perspective (marketing, materials technology and production, environment, human resource, academe, among others) and to consider all other factors needed in coming up with a comprehensive technology roadmap. *(Ethyl G. Bulao)*