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funded projects on technology commercialization came from the Department of Agriculture – Research Outreach Station (DA-ROS) Sorsogon, Congressional Commission on Science, Technology and Engineering (COMSTE), UPLB, Bulacan Agricultural State College, University of Rizal System (URS), Aurora State College of Technology, Nueva Viscaya State University (NVSU), Farmers Community Development Foundation International, Hapicows and Tropical Dairy Farms (Quezon), and Pangasinan Goat and Sheep Raisers Association (PAGSRA), Inc.

The Consulting Services of SEARCA which is headed by Dr. Mercedita Sombilla is the close partner of BAR's Technology Commercialization Unit (TCU) headed by Mr. Anthony B. Obligado in organizing the series of training. Ms. Evelyn H. Juanillo, technical expert on agribusiness, is TCU's point person in the training and is also coordinating the compliance of project proponents in preparing the profitability analyses of their projects. (Christmas B. de Guzman and Miko Jazmine J. Mojica)

Six sweet sorghum... from page 1

On February 2007, BAR, ICRISAT, and UPLB signed a memorandum of understanding (MOU) for the production and development of hybrid varieties of sweet sorghum. Under this agreement, the three agencies will promote sweet sorghum in the Philippines as a major feedstock for ethanol. BAR is now supporting the propagation of hybrid varieties of sweet sorghum.

the 19 sweet sorghum hybrids from ICRISAT evaluated in UPLB and in Tayug, Pangasinan. Based on the trials, the hybrids showed low level of occurrence of diseases and insect pest damage. It was suggested that demonstration trials of the promising hybrids be done in actual farmer's fields. To date, Cabiao, Nueva Ecija served as actual farmers' field.

The promising hybrids are among

“We have to make sure that the

More rice...from page 1

the region. The rehabilitation and improvement activities were done through the support of DA-Ginintuang Masaganang Ani Rice Program with technical and financial supports from ARMMIARC.

With this initiative, DA-ARMMIARC believes that quality rice will increase in the region and other areas in Mindanao. Partnerships with local government units and rice farming communities will be linked to sustain efforts on rice sufficiency. Additionally, DA ARMMIARC will also continue to conduct Community-based Participatory Action Research (CPAR) in rice-based farming areas with technical and financial support from the Bureau of Agricultural Research (BAR) to promote and demonstrate viable technologies that will help improve production and increase profit of farmers in Mindanao. (Marlowe U. Aquino, PhD)

hybrids will be acceptable to the prospective growers and considerable numbers of grower will adopt the promising hybrids for bioethanol production,” the evaluators echoed.

Sweet sorghum is considered a diversified crop as it can be used either for food, feed, or fuel. It is nearly three-fold higher in ethanol production capacity on a yearly basis compared to sugarcane on the basis of water requirement and processing. The cost of ethanol production is lower compared to sugarcane and corn. (Ma. Eloisa E. Hernandez)



Six sweet sorghum hybrids identified for seed production

Six promising sweet sorghum hybrids were identified and recommended for seed production and characterization. These are: 1) ICSA502 x ICSV700, 2) ICSV511 x ICSV700, 3) ICSA702 x SSV74, 4) ICSA502 x SPV422, 5) ICSA502 x SSV74, and 6) ICSA675 x ICSV700

This was the result of a semi-annual review for the project, *Sweet sorghum hybrid parents improvement for bioethanol production for sustainable energy security in the Philippines*, held at the UPLB-DA-BAR Network Office, UPLB, College, Laguna, on 15 January 2009.

After a year of implementation, the Bureau of Agricultural Research (BAR), the International Crop Research Institute for the Semi-arid Tropics (ICRISAT), and the University of the Philippines Los Baños (UPLB) held a semi-annual review to assess the progress of the project implementation.

Mr. Amador C. Macabeo of the Research Coordination Division of BAR officially opened the event and gave the overview of the activity. Evaluators included Dr. Jose E. Hernandez and Dr. Renato C. Mabesa of UPLB.

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SPV-422 is one of the parental varieties used in crossbreeding the six sweet sorghum hybrids.

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More rice in Muslim Mindanao

In support to the government's effort on rice sufficiency, the Department of Agriculture (DA) in the Autonomous Region in Muslim Mindanao (ARMM) has opened a new site for the production and promotion of quality seeds for farmers in Kilangan, Pagalunga, Maguindanao.

The opening of the new seed production area is made possible through the ARMM Integrated

Agricultural Research Center (ARMMIARC) under the leadership of Mr. Siya Belongan. DA-ARMMIARC has rehabilitated and improved the facilities of the Maridagao Experiment Station for the seed production network of the region. It has a total area of 6.8 hectares which is ideal for sourcing of quality seeds which will be distributed to rice growing areas in

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RDMIC Bldg., Visayas Ave., cor. Elliptical Rd.
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Nueva Vizcaya farmers urged to maximize land use and profit through CPAR projects



JLAPITAN

“CPAR is specifically designed to teach farmers on how to make lands more productive with the integration of high value crops and vegetables and managing livestock and fish pens to increase their production and profit.”

The Provincial Agriculturist Office (PAO) in Bayombong, Nueva Vizcaya urged all farmers in the community to maximize the use of their farm land for agribusiness and other additional source of income.

Alex Domingo, supervising agriculturist, said farmers should learn from the Community-based Participatory Action Research (CPAR) program which aims to hasten the use of the new agricultural technologies on the farmers' fields.

CPAR is a platform for technology assessment that involves the

participation of the community in close coordination with experts and researchers in identifying the most appropriate technologies that meet the community's priority needs. This modality increases the total farm productivity and income of the farmer-cooperators and other adopters within the context of a sustainable production system and farming system approach.

Domingo, also the current manager of the Nueva Vizcaya Farmers Information and Technology Service (NVFITS), reiterated that CPAR is specific to the needs of the community.

“It is designed to teach farmers on how to make lands more productive with the integration of high value crops and vegetables and managing livestock and fish pens to increase their production and profit,” he said.

In Region 2, there are 16 CPAR projects; three of these are in Nueva Vizcaya, four in Cagayan, seven in Isabela, and one each in Batanes and Quirino.

These CPAR projects are funded by the Department of Agriculture (DA) through the Bureau of Agricultural Research (BAR). *(Rita T. dela Cruz with reports from DA-RFU 2)*



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Commercialization of Agricultural Products in the Cordillera.”

Setting community-based participation

The BSU-FPC, NPRCRTC and DA-BAR project aims to establish the means for the Cordillera communities to engage in agribusiness venture using feasible and viable technologies developed by the university R&D centers for sustainable development through increased production and profitability. It also supports the top priority concerns of the region by addressing poverty and malnutrition in the rural areas and creating livelihood for farmer's and women's groups.

Using the concept of community-based participatory action research, the project has set new directions for Cordillera agricultural production. The NPRCRTC works on the establishment and improvement of community-based seed systems to produce quality potato seeds. This was done by strengthening the capability of government agencies and farmer-based informal seed system. Creating strong and sustainable linkage between them. The Bad-ayan, Buguias Development and Multi-purpose Cooperative (BABUDEMPCO) and Immaculate Conception Community Multi-purpose Cooperative (ICCMC) seed nurseries are the sources of farmers in producing generation zero seeds to be multiplied in the field for bulking. In later production stages, the potato seeds produced from bulking will be used by potato growers who badly need quality planting material.

Additionally, the center looks at other root crops which have cultural relevance to the local farmers. This activity is mainly focused on the processing of ginger, root crop and fruit into wine, tea and other products which have been introduced to women's groups. Hands-on-trainings are being conducted to encourage the strong participation of women to produce and process agricultural commodities.

BSU-FPC is working on new alternative products derived from strawberry and *ubi*. New product lines have been introduced to the local farmers to assist them in establishing their own small to medium-scale enterprises. People's empowerment and social capital building are highlighted in these activities. These are designed to encourage and set business opportunities to farmers within the municipalities of La Trinidad, Tublay, and Tuba Benguet, and some parts of Baguio City.

New products in local markets

Sustainable and secure supply of products for competitive market is the ultimate goal of the different community-based enterprises in preparing, processing, packaging, and distributing of their products, ensuring quality assurance. In attaining this, strict monitoring and evaluation is done by the locals in support to health and sanitation ordinances set by the local government units, markets and the Department of Agriculture. With these in place, these products are now ready for consumers, including tourists, who come and visit the source of the products for the novel taste and affordability.

Processing at the farm level, therefore, enhances value addition, reduces post-harvest losses and creates additional income for the farmers. Value addition increases market value of crops and this encourages farmers to improve the standards of their production. Involving a consumer-oriented approach in product development, new product formulation is more easily accepted. This was done with sweet potato, ginger wine, instant ginger tea and dehydrated ginger.

Wines are fermented from anthocyanin rich sweet potato varieties and fruits such as strawberry, bignay, cherry and pineapple. Ginger tea is processed by extracting the juice and cooked with sugar until dry. The extractant or the residue is then fermented into wine or dehydrated. In addition, developed root crop and fruit-based products, including cakes and pastries, and candies are now available in the market.



Expanding the community of practice

The operation and institutionalization of community-based enterprises for strawberry and other rootcrops is the starting point for small business development. Farmers including youth and women's groups need to be provided with appropriate technical and financial support. Through the interventions provided by government agencies, more communities could be benefited. It is here where BAR helps institute a community-based enterprise development by building and using community of practice strategy.

Lessons learned and experiences of farmers and their communities have been documented for effective and efficient use of other farmers. These were further processed for information sharing and knowledge exchange. As a major task of BAR, the community-based approach to enterprise development must be institutionalized for a secure agriculture-based Philippine economy.

As emerging food technologies and outputs of R&D become available, BAR's efforts to make agriculture productive and profitable through relevant and appropriate information and technologies including products, processes, and services must be heightened. This is necessary for agribusiness to become the practice of farmers and fisherfolk who are envisioned as information-sensitive and development-oriented and knowledgeable in the use of innovative information and communications technology systems. ■

Technologies on food processing to boost community-based enterprise dev't

story & photos by Marlowe U. Aquino, PhD

Today, consumers' preference has changed the patterns of food preparation. They go for quick and easy-to-cook food because of the fast-paced lifestyle and activities. In addition, people do not have time to go to wet markets anymore and prefer to go to supermarkets and big department stores.

Recently, the emergence of new processing technologies has created an opportunity for small farmers and women's groups to venture and add value to some of their produce. This happened to local communities in the Cordilleras. Benguet and Mountain Province farmers producing rootcrops particularly sweet potatoes, yacon, white potato, and yam ventured into processing especially when farm prices reached season low. With this option, they engaged in alternative livelihood that combines entrepreneurial skills and food technology. In the case of farmers in La Trinidad, Tublay, and Tuba they produce strawberry but continued to discover new products to address the demand of consumers particularly tourists who want to see new product lines aside from jams, jelly, candies, and wine.

Food processing R&D

Not so long ago, the Benguet State University – College of Home Economics and Technology (BSU-CHET) embarked on research to formulate and develop new products out of the local commodities in the area. The CHET together with the university's Food Processing Center (FPC) developed chayote catsup and candies, carrot tarts and candies, sweet potato candies, and even ventured into the preparation of Kimchi, a well-known Korean appetizer. All products went through rigorous research and development to ensure that these will be properly processed, packaged, handled and placed in the market. Many products now sold in the market are produced by local women's groups and communities.

With the continuous production of quality processed goods by local communities, the BSU-CHET and FPC

were inspired to continue further R&D activities and utilize other commodities. This time, they utilized root crops and blended them with local fruits abundant in the area. The activity resulted to collaboration with another research center working on root crops, the Northern Philippines Root crops Research and Training Center (NPRCRTC). Now, these three entities

are working together in a new direction of collaborative work on local agricultural commodities in partnership with farmers' cooperatives and associations. This was made possible through a project supported by the Bureau of Agricultural Research (BAR) – National Technology Commercialization Program (NTCP) entitled, Enhancement of Community-based Participation through



BAR inks agreement with ICRISAT to field test new legume varieties



(L-R) ICRISAT Director General William D. Dar, BAR Director Nicomedes P. Eleazar, and BAR-PDD Chief Carmencita V. Kagaoan during the MOA Signing at BAR.

Intensifying further its ties with international R&D partners, the Bureau of Agricultural Research (BAR) signed a Memorandum of Agreement (MOA) with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to field test new legume varieties in selected regions of the Philippines.

The agreement was signed by ICRISAT Director General William D. Dar and BAR Director Nicomedes P. Eleazar on 12 January 2009 at the RDMIC Bldg. Visayas Ave., Diliman, Quezon City. Witnessing the signing ceremony was Dr. Carmencita V. Kagaoan, chief of the Program Development Division (PDD) of BAR.

The project, which runs for one year, will test new varieties of peanut, pigeonpea, and chickpea for their suitability under local conditions. With the introduction of these new crops, the project aims to disseminate suitable technologies that will empower Filipino farmers by providing them the means to generate higher income while addressing food inadequacy in the rural areas.

The project covers four implementing strategies: 1) varietal introduction and field testing, 2) on-station

seed production, 3) technology dissemination and promotion, and 4) educational enhancement of R&D personnel through research fellowships and trainings at ICRISAT. The project will be implemented by ICRISAT in collaboration with selected Regional Integrated Agricultural Research Center (RIARCs) of the Department of Agriculture (DA).

A nonprofit, non-political organization, ICRISAT is known for its significant contributions to agriculture of several semi-arid countries in the past decades, the Philippines included. Throughout the years, it has successfully generated cutting-edge knowledge and high-impact technologies on crop genes and production systems that it shares with interested research partners.

BAR, being one of its active partners of ICRISAT in R&D in the Philippines, has been consistently collaborating in its endeavor to transfer viable technologies that will benefit the poor Filipino farmers.

Prior to this project, ICRISAT had already transferred package of production technologies particularly on the development of confectionery varieties

for Asha peanut and sweet sorghum for biofuel production. These have been proven effective and beneficial to farmer-partners who have adopted the technologies.

According to Dr. Kagaoan who, as of now is in-charge of the project, indicated that peanut germplasm and breeding lines/selections have already proven suitable under Philippine conditions. Three of the introduced peanut lines from India have already passed the standard field testing requirements of legumes National Cooperative Test (NCT).

Just recently, the world's first *cytoplasmic* male sterility (CMS) based pigeonpea hybrid (ICPH 2671) developed by ICRISAT has been commercialized. According to Dr. Dar, this hybrid pigeonpea is a product of 25 years of intense research, released only in 2005 and it is now giving the benefits of its potentials. At ICRISAT, the experimental hybrids have recorded 20% to 150% yield advantage over other varieties.

"Now if this kind of technology is shared to other countries like us, it would surely provide us with the necessary quantum leap in yield," concluded Dir. Eleazar. (Rita T. dela Cruz)

DA, UPLB to release *IPB Var 6*, a nutrient-rich corn variety



A high-lysine open pollinated variety of white corn (OPV) will soon be released for commercial production. The corn variety can boost nutrient levels in the diet of subsistence farmers who produce some two million metric tons (MT) of white corn yearly.

This was made possible through a seed production tie-up between the Department of Agriculture (DA) and University of the Philippines Los Baños (UPLB) in producing the nutrient-rich corn.

It will be produced for commercial distribution after going through local suitability tests and improvement, this according to UPLB Vice Chancellor-Research and Extension Enrico P. Supangco.

Called the "*IPB Var 6*," the corn was originally produced by Mexico-based Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT) or International Maize and Wheat Improvement Center.

It has been adapted and propagated extensively in Ghana and other African countries and is already used by several Asian countries. It is also good for livestock.

"It is what we availed of from CIMMYT because we have people

eating white corn like they do in Ghana," said Dr. Artemio M. Salazar, UPLB professor and former DA-GMA corn director, in an interview.

Most of those who eat white corn for their staple are the farmers themselves who set aside an amount from their harvest for their own food and their families.

DA will produce 10,000 bags of the white corn's seeds by perhaps May this year.

The nutrient-enhanced corn has high levels of both lysine and tryptophan which are essential amino acids important to the growth and development of humans and also livestock and poultry. Lysine content has been enhanced by around 100 percent in the white corn variety.

With this enhancement, livestock raisers no longer need to put lysine or tryptophan additives in their feeds as these additives prices have already become expensive in the market.

Aside from enhancing lysine and tryptophan content in corn for feed mills use, Salazar said the high-lysine white corn will benefit Philippine white corn-eating populations, not only in Visayas and Mindanao, but in Luzon including Cebu migrants in Quezon.

DA Undersecretary Dennis

Araullo said planting of white corn is being extensively done over 100,000 hectares nationwide by DA and Philippine Coconut Authority in coconut areas for the farmer-families own intake.

Salazar said one other commercial use of white corn is for starch. White corn has advantage for use in starch because the color is already white, he said. Some producers of starch that use white corn are found in Davao and Cagayan de Oro.

IPV Var 6 has already been approved for propagation under the National Cooperative Testing of the Bureau of Plant Industry.

DA will be providing a subsidy to farmers in the purchase of their first bag *IPB Var 6*. DA also funded the seed production.

A big advantage is that this an OPV, rather than a hybrid whose seeds have to be purchased repeatedly since subsequent seeds from original hybrids do not retain the hybrid vigor. Farmers will not need to keep on purchasing seeds. They just have to normally store OPV seeds for future planting from their own harvest. (DA Press Release)

Multi-stakeholder workshop on biofuels production held at UPLB



The Cagayan Valley Program on Environment and Development (CVPED) together with the World Agroforestry Centre Philippines and the College of Forestry and Natural Resources (CFNR) at the University of the Philippines Los Baños (UPLB) organized a multi-stakeholder workshop on sustainable biofuel production systems at the SEARCA Residence Hotel, UPLB, College, Laguna on 14-16 January 2009.

The two-day workshop involved stakeholders' presentation on various biofuel initiatives covering various topics on R&D, environmental and social impact, policy, and different sources of biofuel. The workshop focused on identifying potentials and addressing constraints on sustainable biofuel production in marginal lands particularly in South East Asia.

During the first day of workshop, issues that were raised included concerns over the lack of knowledge on the environmental impact of planting biofuel feedstock production, lack of policies geared towards securing food production, and availability of land. In general, the pressing need for evidence-based assessments of sustainability and impact of various biofuel crops on greenhouse gas (GHG) emissions, economics, social issues, biodiversity, and ecosystem services were discussed.

Attending the workshop were 45 participants from different government agencies, local government units (LGUs), non-government organizations, state universities and colleges, and private firms. Specifically, the following members of the agencies were represented in the event: Bureau of Agricultural Research (BAR), DA-Region V, Phili Forest Corporation, National Economic Development Authority (NEDA) Region II, Department of Energy (DOE), Philippine Council for Agriculture,

Forestry and Natural Resources Research and Development (PCARRD), Isabela State University (ISU), Xavier University-CDO, UPLB, Mariano Marcos State University (MMSU), LGU-San Mariano Isabela, Palacian Economic Development Association, Inc., Mabuwaya Foundation, Kagay-an Watershed Alliance, World Agroforestry Centre (ICRAF) Philippines, Conservation International, ECOGOV, SECURA, Highland Development Co., AB Philippines, Eco-Global Bio Oils, Inc., and CVPED.

Engr. Shyr Lynn Albao, technical staff for biofuels of BAR's Technology Commercialization Unit (TCU) attended the workshop with Dr. Herald Layaoen, project leader of various BAR-funded projects on sweet sorghum.

CVPED is the academic partnership of the College of Forestry and Environmental Management (CFEM) of ISU in the Philippines and the Institute of Environmental Sciences (CML) of Leiden University in the Netherlands to identify and investigate the underlying causes of environmental problems in the Cagayan Valley region. (Miko Jazmine J. Mojica)



Dr. Denyse Snelder (center) of Leiden University in The Netherlands, one of the resource persons in the workshop, promotes her book on biofuels.

BAR, SEARCA conduct training on profitability analysis



BAR Dir. Nicomedes P. Eleazar (front row, center) with participants of the first batch of trainees and SEARCA officials, namely: Dr. Mercedesita Sombilla, manager of Consulting Services (left of Dir. Eleazar); Dr. Gil Saguiguit Jr., deputy director for Admin (right of Dir. Eleazar); and Dr. Corazon Aragon (front row, second from right), overall training expert.

The Bureau of Agricultural Research (BAR) of the Department of Agriculture and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) conducted the "Training Course on the Profitability of New Production and Processing Technologies" on 27-30 January 2009 at SEARCA, Residence Hotel, University of the Philippines Los Baños (UPLB).

This was the third training batch since November 2008, with 16 participants attending the four-day activity from the public and private sectors including project managers, researchers, and members from the academe.

Training experts were tapped from UPLB's College of Economics and Management (CEM) led by Dr. Corazon T. Aragon who conducted the lecture on "Cost and Return Analysis, Income Statement Analysis, Partial Budget Analysis, Break-even Analysis, and Financial Cash Flow Analysis". Meanwhile, Dr. Cesar B. Quicoy, Prof. Alessandro Manilay, and Prof. Antonio Jesus Quilloj guided the participants during practical exercises to test the

participants' understanding on the lectures.

Dr. Corazon Aragon stated that a number of mature technologies have long gestation periods. These technologies produce benefits that extend over several years such as food and biofuel processing technologies and use of improved varieties in agriculture. Financial or investment analysis is the most appropriate tool in determining the profitability or financial viability of technologies or investment projects with long gestation period. Meanwhile, cost and return analysis is the most common analytical method of determining and comparing the profitability of various farm practices/technologies, short-term farm enterprises, or cropping patterns in a given accounting period.

Participants were also trained on the use of partial budget analysis in assessing the profitability of new technologies. It is a relatively simple tool to test profitability of a proposed new technology versus current practice (e.g. comparison of the profitability of 0 vs. NaCl application on coconut

trees). It is a valuable instrument that shows the effects of marginal changes on overall profitability and choosing between technologies and enterprises.

On the last day of the training course, BAR Director Nicomedes P. Eleazar delivered his closing remarks. "We know that this training could prove strenuous not only to us organizers but to the participants as well but we found our project proponents to come out of it more capable and confident in evaluating the financial viability of their own projects," Eleazar said.

He reminded the project proponents that they are responsible in assessing the profitability of the technologies they develop to make sure these are worthy to be pursued by farmers and investors. He added that doing so will enable both the proponents and the users of the technology to keep pace with the changing needs of the marketplace and realize an acceptable if not, high returns.

The participants, who are project proponents of different BAR-

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Rubber program for Southern Mindanao now in full swing

"In unity there is strength," said Dr. Roger C. Chio, regional executive director of DA-RFU XI as he recognized projects collaborated in by various government agencies during a formal launch of the Rubber Development Program in Southern Mindanao at RIARC Satellite Station for Hillyland in Marahan, Marilog, Davao City. That was in 2006, when the vast, idle, and barren hilly terrain in the area was all that could be seen.

Today, this formerly bare area has become a sprawling productive agricultural hub of indigenous and tropical cash crops of vegetables, high value fruit crops, root crops, and plantation crops.

"Research is now focused on this 50-ha area. We want to empower and help our poor indigenous brothers not only earn from their labor, but for them to become entrepreneurs in the near future," quipped Dr. Alfredo M. Cayabyab, chief of the Southern Mindanao Integrated Agricultural Research Center (SMIARC).

He added that various rubber-based projects were also established in the area in close collaboration with various units and programs of DA-RFU 11, private sector, local government units (LGUs), members of the academe, and concerned stakeholders.

Noel T. Estellena, SMIARC senior agriculturist and chief of the hillyland farming station in Marilog said that the "rubber program came at time when DA RFU 11 was starting to focus on developing the station. He added that, it was an opportune time because the Bureau of Agricultural Research (BAR) had included rubber as its priority commodity for research and development (R&D).

"Rubber is a viable agro-forest crop suited to hilly areas. The crop's increasing trend in market demand and Davao's favorable climate make it ideal for growing rubber which is comparable to Malaysia's", Estellena stressed.

On how this project will gain impact, Prospero Tanutan, regional rubber coordinator and program leader, explained that rubber becomes productive on its sixth year but with proper care and maintenance, tapping can start as early as its fourth year. Farmer's can earn a



cumulative net income of Php32,000 per hectare from cuplumps during the second year of tapping.

With high value intercroops like *lakatan* banana, planted in between double rows of rubber, Tanutan already has yielded six cycles of harvest since his farm was established in August 2007. Initial harvests from sweet potato and cassava were likewise noted as promising. The latter cuttings were used as shade for the growing lanzones as another intercrop to rubber plants.

Jessel Cardines, project in-charge, reported on several components of the program such as an adaptability trial of different clones of rubber, where she observed the amazing growth of rubber clones, *PB 260*, *PB 330*, and *USM 1*.

The establishment of rubber nursery and budwood garden in Marahan and in Central Experimental Station (CES) in Manambulan have improved the availability of quality planting materials. Cardines reported that 18 municipalities in the five provinces of Region 11 were given quality rubber buddings from four different clones as source for their respective budwood gardens.

On technology transfer, Information, Education and Communication (IEC) activities were successfully undertaken from 2006 to 2008 wherein 452 rubber stakeholders, mostly

farmers, agricultural technicians, baranggay officials, researchers, and municipal agricultural officers were trained on planting rubber. They were also given copies of print materials as references. Rubber enthusiasts coming from different provinces in Mindanao and other regions have also come to the area for field tours of the project.

Cardines said that with BAR's continued fund support, phase II of the program is now being implemented. Three hectares expansion project was devoted to rubber-based farming systems. An initial one hectare on rubber + coffee (Robusta) has been established which will be followed by another one hectare on rubber + cacao (F-1 hybrid). Earmarked for the year are expansion projects on rubber nursery area for seedling propagation and additional area for production projects.

Part of the station initiatives was the establishment of a reservoir that supplies potable water for household use. Through the High-Value Commercial Crop (HVCC) program, manpower, infrastructure, and a vehicle were provided in support to the hillyland projects of SMIARC. This assistance serves as reinforcement to the efficient delivery of services to the stakeholders. (Anecita Telabangco and Jessel Cardines, DA-SMIARC)

Baroy folks benefit from PEACE project



Farmer-cooperators and beneficiaries of the PEACE project



Recipient with livestock package of goat and one weaned piglet.

The Productivity Enhancement in Agriculture through Community Empowerment (PEACE) project is now reaching out to community folks in three barangays of Baroy, Lanao del Norte with technology interventions and opportunities to augment income of households.

The project, initiated by the Department of Agriculture-Regional Field Unit 10 (DA-RFU 10) and the Bureau of Agricultural Research (BAR) through the Northern Mindanao Integrated Agricultural Research Center (NOMIARC), has provided farm inputs, livestock, technical assistance, and technology interventions to an initial 42 farmer-cooperators in Barangays Pange, Upper Sagadan, and Princesa. The rollover of benefits sustains the

project ensuring extension to more community beneficiaries thereafter.

Components of the project include crop diversification, poultry and livestock production and capability building.

Cropping patterns in diversified farming systems were introduced. Component technologies were: organic + inorganic fertilizer application, use of appropriate and improved varieties, Integrated Nutrient Management (INM), and Integrated Pest Management (IPM).

To maximize land utilization, income, and ensure affordable meat for the family, livestock production (goat and swine) is integrated in the system. Initially, improved breeds a livestock package consisting of goats (1 buck and 5 does) and weaned piglets for

each barangay were delivered to beneficiaries.

A group of PEACE staff, led by Project Leader Cora Dumayaca and Site Coordinator Jaime Jerusalem recently met the recipients of the project and discussed issues/concerns on how the project progressed in the sites.

Dionesio Artajo, one of the recipients, said he is most enthusiastic that with the PEACE and the continuing cooperation of community folks can gain greater opportunities to improved living conditions, more food available at table, more income and self-sufficiency. (*Mae Odimyrl Abarabar-Morales, DA-NOMIARC*)



Farms of farmer-beneficiaries of the PEACE project (L-R: rice, corn, and sweet potato). Inputs such as seeds, fertilizers, and livestock (goat and pig) were provided through the project.

photos by NOMIARC

Organic agriculture boosts safe food production in Cordillera

Now on its fourth year, the Cordillera Administrative Region (CAR) conducted its Organic Congress to boost the practice of organic agriculture to make the production and management system inorganic and pesticide-free including its products. It was conducted with the involvement of various stakeholders in the Ifugao State College of Agriculture and Forestry (ISCAF) campus in Nayon, Lamut, Ifugao on 29-31 January 2009. It was sponsored by Ifugao provincial government, Cordillera Organic Agriculture Development Council, Inc (COADCI), and ISCAF. The activity was attended by organic practitioners and advocates, researchers and development workers, academe, non-government organizations, and private sector.

Ifugao governor, Teodoro Baguilat, Jr., emphasized that they are all out to support for this cause, specially since their traditional agricultural practices originated from the system embedded in the world-famous Ifugao Rice Terraces. He believes that this could be replicated not only in Ifugao but in other areas which have clean and natural conditions ideal for organic agriculture. Moreover, it was confirmed by no other than Department of Agriculture-CAR Regional Executive Director, Cesar Rodriguez who said that their plans and



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programs for vegetables, rootcrops, and upland rice will adhere to organic agriculture.

In addition, the congress tackled areas on organic agriculture; trends and direction; Philippine Organic Standards for crops and livestock production and processing; lessons learned and experiences of cooperatives and farmers' groups; economics of organically produced products including marketing systems; and value orientation and stewardship. These topics were discussed to enhance the complementation and collaboration of stakeholders engaged in the practice.

In order to drumbeat the full blast implementation of Cordillera Organic Agriculture, the DA through the Bureau of Agricultural Research (BAR) provided financial support worth 1.2 million pesos for two projects to the local government unit of Ifugao. The financial support is intended for the production and processing of organic tilapia. Other projects are lined-up for funding by DA-BAR which will be implemented throughout the region. These projects support DA-BAR's initiative to increase the use of traditional technologies through Community-based Participatory Action Research (CPAR) and the commercialization of processing technologies in communities.

Through continuous promotion and development of organically relevant technologies and practices like this annual congress, Cordillera will once again find its niche in local and national markets especially in commodities with competitive advantage. It is expected that other regions of the country will work on this concern to address food inavailability and food insecurity, and overcome rural poverty in the process. (*Marlowe U. Aquino, PhD*)



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