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DA-BAR, WorldFish Center collaborate on aquatic resources systems projects



(Sitting, left to right) BAR Director William Medrano, DA Secretary Luis Lorenzo, Jr, WorldFish Center Director General Stephen Hall, and WorldFish Center-Philippines OIC Boris Fabres. (Standing, left to right) Dr. Rustico David, head of BAR-PDD; Dr. Catalino dela Cruz, BAR senior technical adviser for fisheries; Atty. Benjamin Tabios, OSEC legal consultant; Dr. Santiago Obien, BAR senior consultant; and Mr. Vic Guiam, head of BAR-PIRU.

The Department of Agriculture-Bureau of Agricultural Research (DA-BAR) and the WorldFish Center signed a Memorandum of Understanding (MOU) on 22 March 2004 at the Office of the Secretary (OSEC) to develop cooperative and collaborative projects and activities for the sustainable management and development of aquatic resources.

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Signing the agreement were DA Secretary Luis P. Lorenzo and WorldFish Center Director General Stephen J. Hall along with Dr. William C. Medrano, director of BAR and Mr. Boris A. Fabres, OIC of WorldFish Center-Philippine Office.

The DA-BAR and WorldFish Center agreed to undertake research and research-related activities for the improvement of various mechanisms for sustainable use and increased production from aquatic resource systems. Both agencies will also participate in cooperative research and training programs.

Through these collaborative projects and activities, BAR hopes to strengthen its capabilities in the field of

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Luzon RDE agencies commit to converge

Luzon RDE agencies pledged to commit in seeing to it that convergence efforts succeed.

The Department of Agriculture (DA), through the Bureau of Agricultural Research (BAR) and Agricultural Training Institute (ATI), and the Department of Science and Technology (DOST) through the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), held the national research, development, and extension convergence consultation workshop for agriculture with its regional partners in Luzon in Angeles, Pampanga, March 18-19, 2004. The Luzon-wide consultation was first of the three major island consultations.

The regional partners, which are the Regional RDE Networks (RDEN) for BAR, the Consortia for PCARRD, and the ATI regional offices, in Ilocos Region, Cagayan Valley, Central Luzon, Southern Tagalog, the Bicol Region and the Cordillera Autonomous Region (CAR) were consulted on the following

see Luzon RDE...page 4

Devolution of agri-services: Some insights

Giving the local government units (LGUs) autonomy is giving them the opportunity to grow and develop on their own. This means charting their own direction, moving toward it and seeing to it that they are successful as they implement their plans toward development. The Local Government Code of 1991 stipulated that the LGUs capabilities shall be enhanced by providing them opportunities to participate actively in the implementation of national programs and projects.

About 13 years into this landmark law, are our barangays, the smallest political unit of government, better today than yesterday? There is no categorical or absolute answer because the word better is relative. Better in relation to what? Its situation from year to year or its standing among other units? And yet, we can safely say that when a leader is strong, the barangay is also strong. When the mayor is strong, the municipality is strong. And when the governor is strong the province is also strong. When the leaders have integrity and their constituents feel that they are out to improve their community and not their own vested interest, they can rally their constituents behind them. Then there is movement.

The country is basically an agricultural country so we still depend on the rural areas in increasing the gross domestic products. Except for the highly urban barangays and municipalities, agriculture and fisheries are still the main sources of livelihood for most of our people. Dr. Rolando T. Dy, executive director for Center for Food and Agri Business of the University of Asia and the Pacific analyzed the agriculture situation in the

country. He said that agriculture and fisheries directly account for about one fifth of the total economy; directly employs 10 M people (nearly 40 % of the labor force). These sectors' annual growth was 2 % in 1990-2000 with China, Indonesia, and Thailand doing much better. The drivers were mostly non-land based such as poultry, livestock, and fisheries; the downers were the crops that are land-based agriculture. Corn had a negative growth, -0.5 % in 1990-2000; 0.3% in 2000-2001; and -4.6% in 2001-2002, Dr. Dy reported.

The reasons claimed in Dy's analysis were: a) the AFMA requirements were partially met, meaning that the budget allocated was not released; b) inefficiency of public investment- that money was spent on areas with low returns but are politically popular such as rice; and c) management and delivery of support services have been hampered because of the local government code which devolved extension and delivery of services to the local government units.

What is the government doing to the issue on corn negative production growth? There are many but which people are not aware of. I had the opportunity to attend corn techno showcase and corn-based Community Participatory Action Research (CPAR) projects field days in Quezon, Batangas, Laguna, Camarines Sur, Albay, Masbate, and Ilocos Norte. I attended the first annual symposium and conference workshop on corn where all you hear is corn from early morning until evening, then I worked on the proceedings going through the manuscript many times until it becomes camera-ready. And so, it was corn, corn, corn, and corn. In these encounters, now I can say that corn has captured the attention and interest of government and farmers. And who would not be with the extraordinary size

of corn shown during the field days and the price per kilo for it that went as high as P 11/kg for yellow corn and P 21/kg for white corn. The price for white corn is that high because of the existing *kornik* industry in the region. It is projected that if farmers are enticed into corn production (and we can be sure of it gauging from their enthusiasm during the field days), then there will be no more corn importation from China. It will be our country's turn to export to this country considering that many of their rural populace is moving to the industries in the cities.

What has these insights to do with the devolution of agri services to the local government units? The political leaders who make agriculture one of their thrusts find the devolution of the Department of Agriculture employees to their advantage. They can participate actively in the implementation of national programs and projects. This was one thing we found as we attended the field days. The LGUs were strong partners in the implementation of our BAR-funded programs. But for officials who see in the devolved employees a source of manpower to clean the streets and to do odds and ends for them, woe is to them who cannot see the potentials for development using people. It takes good leaders to be great managers of man. (VAD)

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Convergence initiative moves southward

by Ma. Lizbeth J. Baroña



Two weeks after the inter-agency working committees consulted with the regional partners in Luzon, the national organizers went down south to Mindanao, the “food basket” of the country, to consult and get the support of the regional partners.

The consultation was held at the Grand Regal Hotel in Davao City, March 30-31.

Power statements, and challenges

Bureau of Agricultural Research (BAR) Director William Medrano, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD) Executive Director Patricio Faylon, and Agricultural Training Institute (ATI) Director Asterio Saliot presented their respective agency banner programs, and expressed their commitment to the endeavor they started almost eight months earlier.

While admitting that the task is daunting, Dr. Medrano recognized the contributions the regions can make in the convergence effort by quoting a lesson from a parable, “It is the sand and the pebbles that make up mountains”.

Dr. Faylon guaranteed the participants that the time they spent away

from their families to attend the workshop will not go to waste by assuring them that their presence in the workshop will be remembered five to 10 years from now when the fruits of the convergence effort will finally be reaped.

Reiterating the importance of delivering the research goods to the farmers, “...the clientele are the strongest link between research and extension,” Director Saliot said.

The activity was attended by former Secretary of Education Ricardo Gloria, who called for unity, solidarity and teamwork for Mindanao’s sake, and commended the efforts to converge and share resources in times when resources are scarce. He also challenged those present to work harder to make Mindanao an improved “food basket” of the country.

Dr. Eufemio Rasco, president of the University of Southern Mindanao (USM), put emphasis on the importance of research in solving the country’s food sustainability problems. He also dissuaded the concerned institutions from making the same agenda the industry had a couple of decades ago and challenged them to put more effort in creating opportunities, and rise to the call of the times by making market intelligence a

vital component in research.

Dr. Rasco also presented gist of his paper, *From Regions to Networks*. His paper espouses radical changes in the R&D environment by calling for new breed of leaders, greater linkages among individual researchers, and market intelligence as prerequisite for determining key researches. His

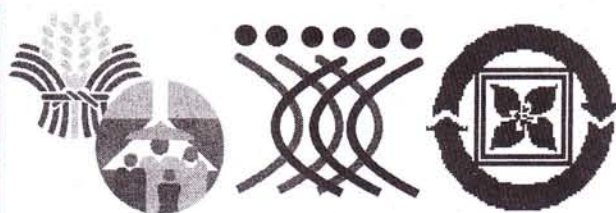
presentation wittingly set the tone for the workshop that followed.

“Need of the hour”

Some of the concerns the regional partners cited were lack of funds, lack of support from local government units (LGU), internet connectivity, and human resource development. They suggested the institutionalization of the involvement of the LGUs in extension, the fine-tuning of programs for human resource development, and reconsidering the budget allocated for the island. Obviously referring to the possible implications of the upcoming national elections in May, they also touched on uncertainties on the sustainability of the convergence initiatives. The three directors were unanimous that if the programs are concrete and that if guidelines will be institutionalized, uncertainties will be minimized, and the program will withstand even changes in leadership.

The representatives from each region – Regions 9, 10, 11, CARAGA, and the Autonomous Region of Muslim Mindanao (ARMM), all pledged support and commitment to the convergence effort, and added that it is a fitting endeavor, calling it the “need of the hour”. ■

BAR with NGOs propose projects for EC grant



“Extinct is forever.” - Kurt Benirschke

If this is the case, can extinction be slowed down?

BAR faced this challenge when it partnered with two non-government organizations (NGOs) for actions aiming to protect the threatened forests and marine resources of the country. Two projects were submitted to the European Commission (EC) for the Euro1.5 Million grant for Programs on Environment and Tropical Forests.

The Palawan NGO Network Incorporated (PNNI) and the Bohol-based FCB Foundation are the two NGOs that will work with BAR in saving the environment by first empowering the forest and sea dwellers comprised of indigenous people, farmers, fisherfolk, women, and children.

“BAR’s role in saving the environment is the promotion of agricultural

technologies and agri-based livelihood programs that shall serve as pathways out of poverty”, Director William Medrano declared. If given alternative sources of income, forest dwellers shall be able to lessen their escalating dependence on forest and marine resources.

Together with four Palawan-based NGOs, PNNI’s major activities include reforestation and management of watershed and mangrove forests, preparing development plans at the root level, establishment of potable water systems, and promotion of livelihood programs like *Silkalan*-making, a stove made from earth clay and rice hull. Previous studies estimate that if 1,000 families will use this stove, about 400 tons of fuel woods will be saved yearly. Cashew value adding, seaweed farming, *lagundi* production, and dried fish processing will also be promoted in the 10 target barangays of Palawan.

In Bohol, FCB Foundation will be conducting conservation activities like building pocket forests and extensive planting of *rattan* and *balete*. It shall also finance and develop the oil palm industry in 15 municipalities, with the help of its other partners – PALM Inc., and the First Consolidated Bank of Bohol. Palm oil production can convert 41% of the 110,000 hectares of barren land into productive agricultural land. Agrarian reform beneficiaries and forestland stewards can take advantage of this opportunity.

BAR’s Project Development Section learned about this grant on January 2004. Communications were immediately sent out and public announcements were posted to inform non-government organizations, one of the few qualified applicants for the Euro1.5 million grant. Government agencies like BAR are not eligible to apply. However, they can be classified as associates in the implementation of the projects. This is one of the Bureau’s initial efforts in building linkages with NGOs. (Carmela B. Brion)

Luzon RDE...

convergence program areas: RDE agenda, RDE network, technology delivery, program planning and monitoring, institutional development, and information and communication technology.

At the inception of the convergence idea last year, working committees composed of representatives from the four agencies were assigned on each program area to outline plans and initiatives, as basis for consultation with the region

before implementation. The national organizers recognized the important roles of the regional partners in the ultimate implementation of these proposed program initiatives, thus the consultation as a vital component of the effort

The outputs of the working committees were presented to the regional representatives. These outputs were the subject of the workshops by the regional partners in each region.

In the consultation, the different regions agreed to prioritize one or two

commodities considered important to the economic development of the region. These are: strawberry for CAR, tomato for Region 1, citrus for Region 2, corn for Region 3, lanzones and citrus for Region 4, and pili for Region 5. Thereafter, the regional representatives of the RDEN, the Consortia, and ATI Regional Units agreed to consult once more to work on the priority areas on the commodities they agreed to work on. Consultations on fisheries will be a

Direct seeding hybrid rice now possible

Production of hybrid rice, often regarded by detractors as tedious and capital- and labor-intensive due to extra care and added farming procedures to attain the desired yield, can now be simplified by direct seeding instead of having them grown in seedbed first before transplanting.

This is the technology that farmers in Isabela developed by themselves in recent months which they showcased with pride during a visit of Agriculture Secretary Luis Lorenzo, Jr. to Cagayan Valley.

Lorenzo said the hybrid rice direct seeding technique can be considered a farmers' breakthrough since the technology had not yet been applied on local farms with considerable success. Hybrid rice began to be commercialized in the country two years ago.

With 60 hectares in Cauayan City used as demonstration farm, Lorenzo said the direct seeding technology greatly reduces seed input

separate undertaking, since fisheries and agriculture have different program-based approaches.

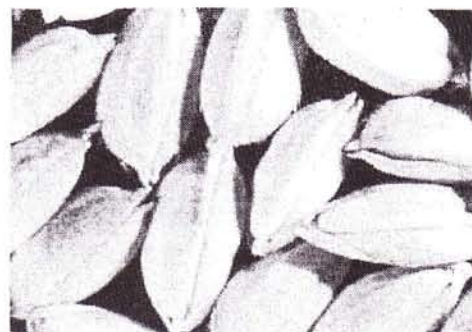
The consultations were attended by Dr. William Medrano of BAR, Dr. Patricio Faylon of PCARRD, and Director Asterio Salio of ATI, along with the agencies' key officials. The regions were represented by Regional Integrated Agricultural Research Center (RIARC) managers, regional technical directors, and consortium executive directors, and provincial agriculturist.

because it uses only between 20 to 30 kilograms of hybrid seeds per hectare compared with up to 100 kg per hectare if traditional or inbred seeds were used.

"Consequently, the technique offers considerable savings to farmers by up to P1,500 per hectare," he said.

Lorenzo pointed out that since it cuts crop maturity period by a week, direct seeding offers an advantage because it shortens the total time to produce palay which normally ranges from 116 to 120 days.

The technology developed by the Isabela farmers also requires less labor for the crop to be fully established, thereby helping solve the growing labor shortage problem felt in the farms because of migration and the lure for able-bodied men to find jobs in urban areas.



During his sortie in Isabela, Secretary Lorenzo also inspected the progress made by the Villa Luna Multi-Purpose Cooperative in Cauayan City. This group was provided in 2002 by the Department of Agriculture with a P15.85 million soft-term loan to venture into mechanized corn farming, corn milling and corn marketing.

Secretary Lorenzo said that with the loan, the cooperative has significantly improved efficiency in the way its members' plant, mill, and sell corn, thus helping Isabela retain its coveted position as the country's top corn producing province. (DA Press Release)

DA trains on GIS databasing

The Department of Agriculture (DA) under the Office of the Asst. Secretary for Operations and the Bureau of Agricultural Research (BAR) spearheaded a DA-wide geospatial databasing workshop. It was held on March 3-5, 2004 at the Philippine Rice Research Institute (PhilRice). Resource persons for the workshop were: Mr. Ricarte Castro, Engr. Winston M. Tabada, and Mr. Joel Abunda from BAR and Ms. Renalyn Asuncion and Ms. Bess M. Lim from the DA - Field Operation Service (FOS).

The workshop aimed to define the minimum dataset or information needed for sharing among DA units. It also aimed to standardize the format and structure of data that will facilitate link to the Geospatial Information System (GIS) for geospatial

presentation of information. Through this workshop, participants were expected to formulate the methodology or protocol of exchanging and sharing of information. Participants were also required to present the proposed GeoDatabase Management System template for evaluation and refinement.

The topics presented during the plenary sessions were: 1) importance of GIS-ready database; 2) presentation of the Geodatabase Management System prototype; 3) institutional report on services and data available (done by participating institutions); 4) identification of required datasets for GIS applications; 5) data standardization; 6) formulation of methodology and protocol in the exchange and sharing of information;

see DA trains on...page 8

The only choice

by Virginia A. Duldulao



“Mila and I married in our teens but I have understanding parents who accepted the situation and sent me back to school,” relates Charito Antonio of Darayday, Laoag City, Region I contender for the GAWAD SAKA award for small livestock raisers. He was then pursuing a degree in civil engineering at the University at the East. He finished his degree at the Technological Institute of the Philippines.

“I had to stop schooling altogether because the babies started coming,” joins Mila who was pursuing a business degree at a local college in Laoag City at the time of their marriage. She was from Mangato, the barangay adjacent to Darayday.

“I took the board exams but unfortunately I did not pass it. At that time, my parents were also migrating to the U. S. I got no choice but to take over the management of our farms and to take over the backyard piggery of my parents, adding to the one sow that they started with. For three years, we planted garlic

in Burgos (which is a northern coastal town of Ilocos Norte where garlic grows well.) This was the time when garlic was a profitable agri-business enterprise and we were able to buy four tractors for renting out.” Charito recalled as he brought us to a structure where sacks of corn are piled up and where his grinding and mixing equipment were also housed and one heavy duty tractor was parked.

“This is the only tractor left. I had to sell the others since farmers can now buy the small one which can easily be manipulated,” explains Charito. “I used the money to transfer our piggery from our backyard to its present site. The surrounding families had been complaining and reported us to the authorities because of the smell. I started with a small pen but when I found that it was profitable, I sold my two tractors and bought breeders.”

LAOAG CITY WAS adjudged cleanest city in a national contest and it is unthinkable for it to tolerate the existence

of a piggery at 65-sow level. At this volume of production, one can imagine that even at a far distance one can already smell that characteristic whiff of a piggery but there was nothing that I could smell even when we were already there in the pig pens. There was no name of the project except that of the owner, Charito Antonio, in a streamer of B-Meg and a billboard of an Environmental Compliance Certificate issued by the Environmental Management Bureau of the Department of Environment and Natural Resources (DENR).

The young couple, in their early forties, does not even look like typical livestock growers but like professionals working in air-conditioned rooms. The more one wonders if Mila tells that she caponizes the piglets and vaccinates the small pigs leaving the big ones for Charito to handle. The eldest daughter, one-time dentistry student, and the youngest also help in the vaccination. It is an all-family business with one helper to clean the pens. Charito hires one to two laborers to help him when he mixes the weekly feed supply. This is done for two days once a week, to keep the feeds fresh. The pigs consume a total of 180 bags a month. By formulating and mixing his own livestock feeds, Charito saves from P250 to P350/bag. Besides, he has observed a high feed conversion rate in his pigs through their waste that look blackish and the skin of the pigs is pinkish compared to the effect when he was feeding commercial brands. He sources out his ingredients such as fish meal, soya, and copra from Vigan, Ilocos Sur.

The corn component is from his 6-hectare farm that he contracted out to farmers in their barangay. He used to plant corn himself but soon found that with the area he was planting, it took much of his time from his piggery. His advice to would-be agri-entrepreneurs is to concentrate on only one business at a time to be successful.

What is success to him? Getting an income six times over that of a director of an institute? Maybe, yes. It is also recognition of his capability in the field he entered for which he had no choice. There was even a time when his Kabir breeder won in an Agri Fair contest. Regrets? None. Even for marrying young? The more that they have no regrets because at a young age their children will have finished college and their

see They who stand...page 8

Do cows get pneumonia?

by Jumelyn S. de la Rosa

Yes. Cows and water buffaloes can get sick with hemorrhagic septicemia- a deadly pneumonia-like disease caused by a bacteria called *Pasteurella multocida*. Infected cows may die within 6-24 hours after the first recognized signs. The first signs are dullness, reluctance to move, and sudden increase in temperature (41-42 degrees Centigrade) followed by salivation and nasal discharge, and lesions or swellings on the neck, head and brisket, and hemorrhage.

Hemorrhagic septicemia is triggered by abrupt changes in weather especially the rainy season, poor nutrition, and poor physical health such as in overworked draft animals. This disease infects cattle in many parts of the world but it is more common in Southeast Asia.

How is the disease spread?

The disease is spread directly through infected cows and indirectly by contaminated equipment, contaminated feedstuff or water and or carriers such as the contaminated apparel of persons who come into contact with the sick cows. The carrier state may be greater than 20 percent shortly after an outbreak, but within 6 weeks the rate is usually less than 5 percent. The causal agent does not survive for more than 2 to 3 weeks in the soil or on pastures. Close herding and wetness that occur during the rainy season, appear to contribute to spread.

Scientists reported that when favorable circumstances for the growth and multiplication of *P. multocida* in the

body of the sick animal occur, severe septicemia develops within a few hours. However, some carrier animals can carry the pathogen without showing any symptoms. Also, unhealthy or frail cattle usually get the severe cases of the disease.

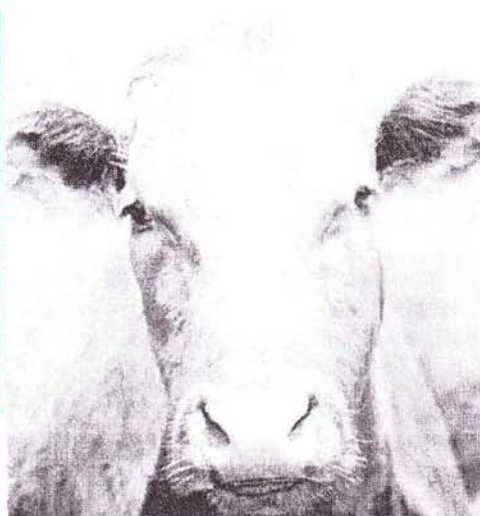
Control and Treatment

Hemorrhagic septicemia has a high morbidity and mortality. It can affect the entire herd in a matter of days and infected cattle usually die within the next 24 hours. In some cases, sulfonamides and antibiotics such as penicillin and tetracycline can be used successfully to treat the disease in its early stages. In some outbreaks in Southeast Asia, animals with high temperatures are isolated and treated intravenously with a soluble sulfonamide.

In endemic areas, scientists recommend that farmers follow an integrated program of vaccination and maintenance to protect the animals from the disease. These include the isolation of sick animals and quarantine infected premises; proper disposal of dead animals or carcasses by burning or burying them in the soil; segregating sick animals and treating them with antibiotics, vaccinating apparently healthy and unexposed animals and cleaning and disinfecting used instruments and equipment.

Improved vaccine for hemorrhagic septicemia

Dr. Agnes Rola and Ms Agnes Chupungco from the National Institute of Molecular Biology and Biotechnology (BIOTECH) and the Institute of Strategic Planning and Policy Studies (ISPPS)



developed and improved a vaccine for hemorrhagic septicemia in cattle.

The new vaccine works by facilitating the slow release of the antigen to produce a high antibody response in cattle. An antigen is a substance usually a protein, on the surface of a cell or bacterium that

stimulates the production of an antibody.

Based on the economic or cost return analysis, backyard cattle raisers who used the new vaccine earned more than the non-users at a net income of P2,360 to P5,705 compared to P1,536 to P3,984 for non-users.

Source: *Ex-ante Assessment, Policy Analysis, Communication Strategies for Agricultural Biotechnology Products Phase I* by Dr. Agnes Rola and Ms Agnes Chupungco of the National Institute of Molecular Biology and Biotechnology (BIOTECH) and the Institute of Strategic Planning and Policy Studies (ISPPS)

DA-BAR, WorldFish...

aquaculture and fisheries through cooperative use of facilities and human resources.

The WorldFish Center is an integral part of the Consultative Group on International Agricultural Research (CGIAR). It is an international non-profit, scientific research center to accelerate research for improved production and management of sustainable fisheries resources to benefit present and future generations. WorldFish Center is based in Penang, Malaysia with Dr. Stephen J. Hall as the newly designated director general.

As a research institution, WorldFish Center aims: a) to improve the biological, socioeconomic, and institutional management mechanisms for sustainable use of aquatic resource systems; b) to devise and improve production systems that will provide increasing yet sustainable yields; and c) to strengthen national programs to ensure sustainable development of aquatic resources. (Rita T. dela Cruz)

BAR updates commodity-based researches in the Philippines

Assessing the state of knowledge of the commodity-based researches in the country and identifying research gaps to recommend research priorities particularly on swine and citrus, the Bureau of Agricultural Research (BAR) through the Policy, Planning, Monitoring and Evaluation Division held a seminar-workshop on 31 March 2004 at the BAR-CERDAF Conference Room.

This activity is a result of the review of the project, "State of the Art: Agricultural and Fisheries Commodity Researches" which is funded by BAR and implemented in 2003. This is in line with BAR's mandate to provide the research institutions, researchers and policy makers with updated information on commodity-based researches. Likewise, this is to keep them updated on the present research accomplishments and trends. The output of this project review helps the researchers and planners in making their work more effective in addressing problems confronting agricultural commodities.

Presenting the "State of the Art on Citrus and Swine" was Dr. Dave Manalo, project team leader. According to Dr. Manalo, this project review is an important milestone

in R&D as most publications on the status of commodity researches are outdated. He also mentioned that comparing the researches in citrus and swine with the needs of the industry helps provide directions and research priorities of the industry.

Among the outputs of the project review include: a forum to validate and further improve the team's output; an updated information to benefit concerned agencies and individuals; important reference point in prioritizing R&D activities; publishable documents on the R & D status of swine and citrus; and relevant recommendations on research priority areas.

Also included in the teams are: Domingo E. Angeles, Calixto M. Protacio, and Oscar S. Opina (citrus), and Elpidio M. Agbisit Jr, Synan S. Baguio, Celina Donna Q. Bantoc, Mary Jean G. Bulatao, Rectorino P. Escobin Jr., Renato S.A. Vega, and Apol Yadao (swine).

The seminar was attended by more than 40 participants consisting mostly of researchers from the R&D community. An open forum to discuss and appraise the project framework and results followed. (Rita T. dela Cruz)

The only...

responsibility will be over. Their agribusiness is a full time job and can even employ their children later on if they will not be able to find employment somewhere

At the far end of the piggery are three tanks, one for the effluent that they use to water the corn farm across the piggery, a second, as pond for carp and the third for tilapia. There are Kabir and native chickens scouring the undigested corn grits from the pig pens so that nothing is wasted. They have goats they can butcher any time they feel like eating *kilawen* or *kaldereta*.

"I even sell eggs because we can't consume all," Mila beams. "But while we are self-sufficient in food, we also do all the work, which is also tiresome," she continues.

The Antonios credit the Department of Agriculture, particularly the Provincial Veterinary Office under Dr. Loida Chee, for their technical assistance and for linking them to chemical and farm machinery companies.

Luck comes in many forms. It can even be in the only choice left as what happened to Charito. But luck must be coupled with determination, hardwork, and sensitivity to changes and opportunities in the environment ■

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Web news



CIMMYT sows first transgenic wheat field trials in Mexico

(<http://www.cimmyt.org/english/webp/support/news/dreb.htm>)

Quality protein maize from Ghana

(http://www.ajc.com/news/content/news/atlanta_world/0304/03ghana.html)

GM tobacco for cervical cancer

(<http://www.scienceinfrica.co.za/2004/march/vaccine.htm>)

DA trains...

and 7) geodatabase prototype refinement.

Workshop participants had a field trip to the Bureau of Fisheries and Aquatic Resources (BFAR), Philippine Carabao Center (PCC), Central Luzon State University (CLSU) and Bureau of Postharvest and Extension (BPRE). The BPRE staff presented their nationwide postharvest inventory and their GIS application. The BPRE staff also showed their output maps for the local government units (LGUs).

Points and issues raised were regarding standard template, standard base map, GIS funding, protocol on exchanging data, database management, special order (SO), and institutionalizing GIS. It was suggested that a small group of GIS committee members should convene to resolve these issues first before any activity can push through.

There will be a third batch of GIS training for focal persons in each DA institution who failed to attend the first and second batch of trainings. This training will be the last batch for the GIS Applications in Agriculture and Natural Resources. (Likha C. Cuevas)