



PROJECT DEVELOPMENT

*T*he Project Development Division (PDD) spearheads the planning and formulation of national and regional R&D/E agenda and programs. It puts together guidelines and procedures in R&D/E prioritization, budget allocation, and implementation. The division also reviews and evaluates national and regional project proposals for funding and facilitates the release of funds and other support services for the implementation of R&D/E program and projects.

The PDD generates R&D resources by packaging proposals for local and foreign funding; identifies funding sources for R&D/E proposals, and disseminates this information to the National Research and Development System for Agriculture Fisheries (NaRDSAF).

It also serves as a liaison on the submission of R&D/E proposals to prospective donor agencies, and coordinates the implementation and monitoring of foreign-assisted projects managed by the Bureau.

Part of the division's function is providing support in the form of grants, policies, and guidelines to strengthen the capabilities of the NaRDSAF member-institutions, and help in the formulation of human resource and facility development plan for the RDE system of the Department of Agriculture.

Project Packaging

For the Bureau, the job does not end with giving out funds for agriculture and fisheries research. We also package project proposals for local and foreign funding. Major activities of the Project Packaging Section were focused on proposal development and developing linkages with foreign and local donors.

In 2005, BAR submitted three project proposals to the Department of Agriculture for funding. Two of these proposals are to date, under negotiation. These are: Research Program on the Development of Rubber Industry in Central Mindanao, Philippines to be funded by the Agricultural Competitiveness Enhancement Fund, and Philippine High Value Crops R & D Program for Ginintuang Masaganang Ani -High-Value Commercial Crops (GMA-HVCC).

The section also developed the project proposal on Corn R&D Program for GMA Corn funding. We were able to source out funds from GMA Corn Program that supported R&D projects on corn.

For external funding, four project proposals were packaged and submitted to the Department of Agriculture for endorsement to donor agencies. These are:

- Enhancing Agricultural Sustainability Project for funding by the Perez Guerrero Trust Fund
- Coffee R&D Program in the Philippines for funding by the Centre de Coopération Internationale en Recherche Agronomique Pour le Développement (CIRAD).
- Strengthening Community-Based Participatory Action Research Program for funding by Japan International Cooperation Agency
- Sustainable Conservation and Utilization of Philippine Indigenous Crop Species for funding under the United Nations Development Program Global Environment Facility. This project has been endorsed by the Department of Environment and Natural Resources, being the global environment operational focal point to the United Nations Development Program (UNDP).

Four collaborative projects with international institutions were approved and implemented this year. These are:

- Community-Based Watershed Management Approach for Improving Livelihood Opportunities in Rainfed Areas in collaboration with the International Crop Research Institute for the Semi-Arid Tropics(ICRISAT) and the Bureau of Soil and Water Management (BSWM)
- Introduction, Promotion, and Efficient Seed Support System of ICRISAT "Asha" Peanut Variety in Region II, Philippines with ICRISAT
- Promotion of Indigenous Vegetables for Poverty Alleviation and Nutrition Improvement of Rural Households in the Philippines with Asian Vegetable Research and Development Center(AVRDC)
- Coconut-based Product Diversification to Reduce Poverty in Coconut-Growing Communities with International Plant Genetic Resources Institute - International Coconut Genetic Resources Network (IPGRI-COGENT)

L-R: BSWM Director Rogelio Concepcion, DA Secretary Domingo Panganiban, ICRISAT Director-General William Dar, former DA Secretary Leonardo Montemayor, and BAR Director Nicomedes Eleazar attend the inauguration of the watershed project in Bulacan



The Section coordinated the conduct of regional consultations on RDE priorities. Fourteen regional consultation meetings and field visits were conducted from March to May 2005 to update and prioritize each region's R&D program and activities based on the Department of Agriculture's twin goals.

The three most common R&D priorities in the regions were:

Development of low-cost, alternative feeds.

Minimization of the use of pesticides, and enhancing the use of organic agriculture practices.

Genetic upgrading of swine and native chickens.



The five commodities most prioritized by the regions were: (1) seaweeds and corn; (2) livestock and tilapia; (3) vegetables, poultry, and milkfish; (4) mango; and (5) banana.

The results of the consultations revealed that the rising cost of feeds for livestock and fisheries remains the major production constraint. More RDE activities directed at developing low-cost, alternative feeds (such as duckweeds for tilapia) were identified. The utilization of locally available raw materials, farm wastes and crop residues as potential substitutes for the expensive and imported commercial feeds were presented as major R&D areas.

Protecting public health and the environment by minimizing the use of pesticides and practicing organic agriculture are the common needs in many regions. R&D activities on soil fertility management through the use of Bio-N has been proposed. There will be further studies on how to effectively use waste materials as organic fertilizers.

Genetic upgrading of swine, native chickens, and native goats emerged as the most common livestock and poultry RDE priority in seven regions of the country. The researchers, in coordination with the private sector and other stakeholders, aim to produce breeds of animals that are easy to reproduce, resistant to bacterial and viral infections, and have the best quality meat.

Coordination in the monitoring and evaluation of foreign-assisted projects was conducted for this year. The projects evaluated include nine under the Philippine restricted grants to the Consultative Group on International Agricultural Research (CGIAR) with one project implemented by AVRDC, and one project by the BSWM.

The following are the implementing agencies and the projects:

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

- Enhancing Adoption of ICRISAT Legume Varieties and Technologies in the Philippines
- Introduction, Promotion, and Efficient Seed Support System of ICRISAT "Asha" Peanut Variety in Region II, Philippines

International Livestock Research Institute (ILRI)

- Rural Enterprise Development Through Innovative Goat Production Systems

International Plant Genetic Resources Institute (IPGRI)

- Introduction, Evaluation, and Adoption of Improved and Superior Land Races of Banana for the Rehabilitation of the Banana Industry (IPGRI-INIBAP)
- Conservation and Use of Tropical Fruit Species Diversity in the Philippines (IPGRI-APO)
- Coconut-based Product Diversification to Reduce Poverty in Coconut-Growing Communities (IPGRI-COAGENT)

International Rice Research Institute (IRRI)

- Developing New Plant Types for Direct Seeding Rice Production Systems in the Philippines
- Improving Knowledge Exchange and Decision Making Among Rice Stakeholders Through ICT-based Technology Promotion and Delivery Systems

WorldFish Center

- Dissemination and Adoption of Milkfish Aquaculture Technology in the Philippines

Asian Vegetable Research and Development Center (AVRDC)

- Promotion of Indigenous Vegetables for Poverty Alleviation and Nutrition Improvement of Rural Households in the Philippines

Bureau of Soils and Water Management (BSWM)

- Community-Based Watershed Management Approach in Improving Livelihood Opportunities in Selected Areas

The PDD also coordinates the Diversified Farm Income and Market Development Project (DFIMDP) Technology Cluster by conducting the preparation and amending of the program contract, preparation of the DFIMDP progress report for submission to DA, participation in the World Bank Review Mission, participation in the meetings and budget hearing, coordination of technology cluster meeting, revision and finalization of the Competitive Research Grant Manual (CRGM), CRGM Orientation for BAR staff, DA bureaus and attached agencies.

Project Evaluation

The PDD coordinated the conduct of eight BAR in-house screening and review of project proposals submitted by various DA R & D implementing units (RFUs, Attached Agencies, Staff Bureaus), SCUs, GOs, NGOs and private sectors.

From these reviews, 333 project proposals were screened and evaluated. One hundred thirty-three were further recommended for funding.

The Project Evaluation Section also assisted the Research Coordination Division (RCD) in the conduct of two pre-implementation meetings of two approved corn projects held at the University of the Philippines Los Baños (UPLB).

The Section also facilitated the conduct of three corn zonal workshops, namely:

Mindanao : Davao City, October 20, 2005 at Grand Men Seng Hotel

Visayas : Bohol, November 9, 2005 at Dao Diamond Bed and Breakfast

Luzon : Baguio City, December 9, 2005 at El Cielito Inn

Institutional Development

The Human Resource Development Program focuses on three areas: the DA-BAR NaRDSAF Degree Scholarship and Thesis/Dissertation Assistance Program, the Non-Degree Assistance Program, and the Productivity Enhancement Program. The HRD Program strengthens the critical mass of research staff of the Department of Agriculture and partner institutions under the National Research and Development Systems for Agriculture and Fishery (NaRDSAF).

The **DA-BAR NaRDSAF Degree Scholarship Program** provides financial support to M.S. or Ph.D. students pursuing their degrees in accredited universities. The **Thesis/Dissertation Assistance Program (TDAP)** awards financial support to thesis or dissertation studies that address major problems and concerns in agriculture and fisheries.

The **DA-BAR Non-Degree Assistance Program** provides financial assistance to NaRDSAF researchers and scientists who attend specialized training (local or abroad), to represent the country in collaborative R&D undertakings or present research papers in international scientific fora (conferences, seminars, or symposia). Financial assistance is also granted to scientists or research personnel who wish to engage in short-term basic research through post-doctoral or fellowship awards. The program aims to enhance the skills and update the knowledge of R&D personnel in specific professional, technical, and scientific areas in agriculture and fisheries, locally and abroad.

These scholarship programs aim to enhance the capability of researchers and support staff to develop highly competitive technologies and approaches in agriculture and fisheries.

The **Productivity Enhancement Program (PEP)** provides assistance for corporate planning workshops and incentives for researchers. The program also promotes the DA scientists and recognize their outstanding achievements through incentives.

Under BAR's NaRDSAF Degree Scholarship Program, five scholars, four for master`s degrees and one doctorate, were awarded scholarships effective First Semester, SY 2004-2005. Out of this number, four were from the DA family and one from an SCU-partner institution. Four scholars are enrolled in UPLB, while one is enrolled in Central Luzon State University (CLSU). This year, the scholars pursued specializations in Plant Pathology, Crop Protection and Agricultural Economics.

The five scholars are supported from enrollment until graduation by the program savings accumulated from the previous years (2000- 2004).

As of 2005, 41 of the 105 previously awarded scholars from years 2000 until 2004 have finished their degrees (23 MS & 18 Ph.D.).

BAR's Thesis/Dissertation Assistance Program awarded financial assistance to six researchers for the completion of their theses/dissertations. Out of this number, four recipients came from the DA family while two were from partner institutions.

Under the Non-Degree Program, 128 researchers participated in specialized training, 96 local and 32 foreign. They were given partial financial support. These researchers participated in international scientific seminars or underwent specialized training related to their scientific study.

Eight agencies were provided with partial support for the conduct of their various seminars and conferences. The financial support subsidized food and accommodation expenses of the participants, registration fees, or travel expenses of the participants or speakers.

Due to the limited funds released to the Bureau for fiscal year 2005, the allocated P2M for the program was not released. However, the accumulated program savings was utilized to support the program.

BAR's **Productivity Enhancement Program** received requests from the Philippine Coconut Authority (PCA)-Central Office and the Philippine Rice Research Institute (PhilRice) researchers for upgrading to scientist ranks. These were deferred pending the development of new rating system by the Department of Science and Technology (DOST).

Through the BAR **Educational Program for Scientists**, the Bureau approved the project proposal of the Cotton Development Authority, titled, "*Bench scale production, pesticide evaluation and promotion of formulated physic nut, *Jatropha curcas* L. seed oil for rice-cotton cropping system*" in the amount of P 250,000.00. This project is implemented at the Cotton Research Center in Batac, Ilocos Norte. Another project, "*Technology Dissemination, Adoption of the Embryo Cultured Makapuno*" by PCA-Albay is now on its second year of implementation. Two makapuno plantations were established in Quezon Agricultural Experiment Station (QAES) Tiaong, Quezon and Lipa Experiment Station where the embryo-cultured makapuno planting materials that were sourced out from the Leyte State University (LSU), are being maintained.

The **Infrastructure Development and Maintenance Program**, aims to strengthen the institutional capacities of the national, regional, and provincial RDE networks through the Institutional Development Grant (IDG) and the management and operationalization of the RDE network established in the regions. The IDG is a flexible funding facility for the acquisition of scientific equipment, renovation and construction of research facilities, and other critical needs of R & D centers and operationalization of the regional networks through formulation of policy guidelines, RDE agenda in the region, and review/evaluation of formulated RDE agenda. It provides fund to qualified R & D centers under the NaRDSAF with approved proposals by the External Review Team (ERT). However, the regional networking grant is provided to the DA-RIARCs/RFRDCs.

For this year, the IDG allocation is P26,968,604.39 and the Regional Networking Grant is P8.4M. There is an increase of 50% in terms of budget allocation compared to that of year 2004.

Under the IDG, 17 Regional R&D centers were provided project funds for upgrading and construction of their research facilities and acquisition of necessary laboratory equipment. These R & D centers include: 11 DA-RIARCs/RFRDCs; 4 DA-attached and staff bureaus; and 2 State Colleges and Universities. Within the year, 21 IDG project proposals were reviewed based on the IDG guidelines and policies.

Through proper coordination with the proponents and signatories, 16 Memoranda of Agreement were prepared and processed. Staff members visited and assessed the proposed renovation facilities of the BPI-La Granja and Los Banos . Also, six IDG-project terminal reports were reviewed, and realignment requests from the recipients were acted upon and facilitated.

Out of the proposed total Regional Networking Grant budget for the year, only two million and seventy five hundred thousand pesos (P2.75M) was released by the Department of Budget and Management (DBM). This amount was distributed to DA-STIARC, CVIARC, MIMAROPA RIARC, and BFAR-RFRDC 4B and 5. Twenty-nine project proposals were reviewed and 30 memoranda of agreement were prepared and processed.

Seven master station development plans from DA-CVIARC, EVIARC, CENVIARC, SMIARC, BFAR Regions 1, 2, and CAR, were reviewed based on the previous comments of the technical advisers and their approval was facilitated by the BAR management.

The Unit continuously updated the infrastructure data of the R & D centers comprising of the laboratory/farm equipment, prices, and inventories based on the submitted terminal reports. Likewise, all the IDG projects data approved from 1999 to 2005 were provided to the coordinators of the Regional Coordination Division (RCD) for their reference in monitoring and validation.



RESEARCH COORDINATION

*T*he Research Coordination Division (RCD) facilitates the implementation, monitoring and evaluation of mostly BAR supported projects on agriculture and fisheries.

These include networking and linkage development, on-station, on-farm, Community-based Participatory Action Research, R&D facilities and other projects implemented by the DA's Regional Field Units (DA-RFUs), Bureau of Fisheries and Aquatics Resources (BFAR), and other R&D institutions nationwide. The division also coordinates, monitors, and evaluates the implementation of agriculture and fisheries R&D/E activities under the national/regional R&D/E networks agenda and programs, stabilizes and

strengthens linkages and collaboration among existing R&D/E systems at the national and regional levels to enhance sustained growth in agriculture and fisheries, assists/participates in periodic reviews, workshops, meetings of the national/regional R&D/E networks and stakeholders, assists in the formulation and updating of the NIRDEAP and RIRDEAP, facilitates the processing and release of financial contributions to partner R&D/E institutions, assists in the identification and assessment of technology/ information for adaptation, verification, commercialization, disseminations and patenting, and maintains and updates database/inventory of agriculture and fisheries R&D/E projects.

For 2005, a total of 111 BAR-funded on-going projects and 44 other agency-funded on-going projects were monitored by the division.

RCD facilitated 21 pre-implementation meetings and reviewed 33 new projects; 10 semi-annual reviews and evaluated 21 on-going projects; 48 annual/agency in-house reviews and evaluated 108 completed and on-going projects; 5 terminal reviews and evaluated 10 completed projects. Most of these activities were performed by nine RCD coordinators and seven technical support staff.

For its function of monitoring RDE funds, RCD reviewed 166 financial reports based on the approved line-item of budget, assisted in 27 financial audits, reviewed 39 project extension requests and reviewed 37 requests for budget realignment.



More importantly, RCD assisted in the identification and assessment of technology and information for verification, commercialization, dissemination and patenting. It identified 3 technologies for intellectual property, 44 for verification, 11 for commercialization and 31 for dissemination. By commodity, it identified the following: 77 for crops, 7 for livestock, 6 for fisheries, 20 for products resources and systems.

The RCD staff monitored Institutional Development Projects (IDPs) on manpower and R&D facility improvement of R&D partner-institutions. For this year, RCD assessed the following number of R&D capacity-building projects: 6 NaRDSAF scholars, 19 R&D facilities and 10 Agriculture and Fisheries Research and Development Information System (AFRDIS).

Also this year, RCD assisted in the formulation and updating of NIRDEAPs and RIRDEAPs. Nineteen RIRDEAPs (3 RIARCs completed; 16 RIARCs initial preparation) were updated/validated. Updating of agenda and program is in line with the twin goals of DA in A/F production, profitability, and job opportunity.



RCD established and strengthened collaboration among existing R & D systems at the national and local levels to enhance sustained growth in agriculture and fisheries. The activities of the National RDE networks and 16 Regional RDE Networks were coordinated by RCD.

This year RCD participated in RDE consultation workshops/meetings - 13 national, 30 zonal/regional networks, 1 provincial LGU and 4 sectoral community groups.

While it facilitated the processing and release of financial contributions, it also monitored RDE funds utilization. It participated in, and funded 8 regional symposia, 17 RRDCC meetings, 14 field days/exhibits and provided technical assistance to three scientific societies/ organizations.

Seventeen RCD staff members participated in eight international conferences/workshops and updated the BAR Project Monitoring and Evaluation Guidelines, Community-based Participatory Action Research Manual, and Process/Procedures in Research Coordination.

The following are the promising technologies identified by the RCD for verification and dissemination:



Biotech-produced cellulase



A sustainable superior goat-breeding stock

Rotational Grazing in Signal Grass + Centrosema Pastures for Beef Production at Malaybalay Stock Farm (RFU 10)

Organic Production of Chickens (UPLB)

Implementation of Ginintuang Masaganang Ani (GMA) Livestock Program at Central Luzon State University (CLSU)

Establishment of a Barangay Goat Breeder Production Project (CLSU)

Mobilizing the Agricultural Colleges and Universities in Accelerating Agriculture and Fishery Productivity, Job Generation, and Income (CLSU)

Development of Gender Training Manual for Development Workers in Crop Animal System (CLSU)

Increasing Efficiency of Artificial Insemination (AI) Program in Nueva Ecija (CLSU)

Characterization, Improvement and Conservation of Goats (UPLB)

Utilization of BIOTECH Cellulase as Feed Additive for Poultry and Swine Diets: Other Application Studies (Phase 2) (UPLB)

Feeding Trials on the Efficacy of BIOTECH Acid Protease as Feed Additive in Swine and Poultry (Phase II) (UPLB)

Brooding, Growing, and Laying Performance of Different Genetic Groups of Poultry (BAI)

Feed Development of Potential Forages for Poultry and Livestock Study 2b: Effect of cutting interval on the yield and feed composition of potential tree legume (BAI)

Technologies identified by RCD for verification and dissemination, cont'd.

Assessment of Crop-Livestock Production in Rosario, Batangas: Applying Land Use System Approach (BAI)

Semen Evaluation of DPT Bulls at NESF (BAI)

Development of an Early Warning System for Broiler Industry: Focus on Production Forecasting (BAI)

Trichantera Gigantea as Partial Replacement to Commercial Feeds for Growing-Finishing Pigs (BAI)

Feed Development of Potential Forages for Livestock Study 2a: Performance of Trichantera Gigantea under Different Heights and Intervals of Cutting (BAI)

Development of Low-Cost and Shelf-Stable Meat Products Suitable for Asian Markets (BAI)

Controlled Test on the Efficacy of Ivomec-F Against the Common Gastrointestinal Parasites of Goats (Capra Hircus) (BAI)

Adaptability Testing of Corn Hybrid Varieties Under Different Locations in CARAGA (CARIARC)

Adaptability Yield Trial of Corn Open Pollinated Varieties Under DA-CARIARC Environment (CARIARC)

On-Farm Varietal Trial on Open Pollinated Varieties of Corn (CARIARC)

Quality Assessment of Selected Vegetables Stored and Transported in Cold Chain Environment (BuPRE)

Gastight Outdoor Storage of Registered Inbred Paddy Seeds Using GrainPro Cocoons (BuPRE)

Preservation of Mestizo 1 (PSB Rc72H) Seeds Using Hermetic and Low Temperature Storage Technology (BuPRE)

Collaborative Project on Postharvest Database and Master Planning (BuPRE)

Establishment of Feedmill Utilizing Corn in Agusan del Sur LGU, Sta. Josefa, Agusan del Sur

Culture of Get EXCEL Tilapia in Pen in Bulusan Lake (ARMMIARC)

Collaborative Project on Postharvest Database and Master Planning (BuPRE)

Tilapia Production in the Terraced Ponds of Natonin, Mt. Province (BFAR-CAR)

Aquaculture as an Alternative Livelihood of the Affected Families of the San Roque Multi-Purpose Dam Project in Itogon, Benguet (BFAR-CAR)

CPAR-OFR: Finfishes Polyculture in Cages (BFAR-ARMM)

Community-based Participatory Action Research (CPAR)

BAR enjoins the active participation of communities to sensitize them to the value of information-based decision-making. The community is empowered by organizing their production management systems. BAR clearly recognizes that to modernize agriculture and fisheries, a new production system modality must be instituted. This can only be done through an integrated information management system complemented by an equally effective knowledge management system.

The participatory nature of CPAR is intended to give attention to a holistic orientation to the overall management of production. This includes: farming systems development, resource management orientation, community-based, systems approach, complementation and integration. These processes are instituted through a farm model framework focused on community-based resource management systems.

CPAR has been one our strongest tools in serving our clientele.

A farmer's CPAR encounter

The joy of seaweed farming*

It all started with a simple curiosity, the others just followed and soon, he is hooked. This is the case with Mang Ramiro Panganiban, one of the successful farmer-cooperators of the Community-based Participatory Action Research (CPAR) on "Seaweeds Showcase Project" in Pilar, Sorsogon. The project is being implemented by the Bureau of Agricultural Research (BAR) together with the Bureau of Fisheries and Aquatic Resources (BFAR) Region 5, the Sorsogon State College (SSC), and the Local Government Unit (LGU) of Pilar.

For Mang Ramiro, 38 years old, his being into seaweed farming started with a simple curiosity and the will to succeed. Before engaging into seaweed farming, he was into drift gill net or *pagpapalutang*, getting by and providing his family on a mere subsistence level. From his fellow fishermen, he learned about the potential of seaweed farming and the growing number of fisherfolk engaging into it. He also learned about the LGU's project on seaweeds. "Try-try lang baka dito pala ako kikita!" (I just tried. Maybe this is where I will have better earnings) says Mang Ramiro with a glee.

He started seaweed farming in 2003. It was also during this time that he became one of the farmer-cooperators and was appointed chairman of the Seaweed Farmers and Traders Association (SFTA) in Dao, Pilar, Sorsogon. Composed mainly of seaweed farmers from 11 coastal barangays of Pilar, the organization is headed by Mr. Jose Razel Monzales, also a seaweed farmer. In 2005, the Association grew from three to its now 138 members. As farmer-cooperator, Mang Ramiro was given materials for seaweeds farming like straw, rope, boat, and 15 kg of seaweed seeds as starters.

Benefits

For Mang Ramiro, the additional income that he would bring home to his family was his initial motivation for engaging into seaweed farming, although, he believes in its potential to change the lives of his fellow fishers. He is not aware of the statistics of seaweed farming but he was right all along.

According to the Food and Agriculture Organization (FAO), commercial production of seaweeds through farming is at present limited to a few countries in East Asia making it a high value crop with a high demand in the world market. The Philippines is noted for the culture of seaweeds (particularly *Eucheuma* and *Caulerpa*) along with Japan, China, Korea, and Taiwan.

In Pilar, Sorsogon, the most widely cultivated species of seaweed is the *Kappaphycus alvarezii* (known before as *Eucheuma cottonii*), due to its high marketability and demand compared to seaweeds like *K. striatum* or *Saccul* and *spinosum* type now known as *E. denticulatum*.

When asked about the benefits Mang Ramiro gets from seaweeds farming, he was jubilant in saying, "Ah marami!" (Plenty!) In the span of three years, aside from the boat and the materials he got as farmer-cooperator, his income increased. The volume of production in one harvest amounts to about 4, 200 kg of fresh seaweeds or 600 kg when dried. His own seaweed farm, which measures 50m x 50 m, earned him P50,000 in 2003 when he harvested 900 kg of fresh seaweeds. With this income, he was able to put his three children to school. Aside from seaweed farming, Mang Ramiro did not stop from his old job as drift gill net fisher because as he says, "Dagdag kita din ito!" (It's an additional income).

Since Mang Ramiro is a bonafide member of SFTA, pricing of his produce is not a problem. The Association also serves as a sure market outlet for him and the other members.

Hurdles

Like any endeavor, Mang Ramiro encountered some problems like weather condition, i.e. storm. In 2005, for instance, he said that his income went down to P3, 000 per harvest of 800kg of fresh seaweeds due to the erratic weather condition. Since their seaweeds are cultivated in the shallow part of the sea, the fluctuation in the salinity of water needs also to be closely monitored because it affects the quality of the seaweeds. When asked why his harvest went down from 900 kg of seaweeds in 2003 to 600 kg last year, he explained that he gave some of the seeds to his colleagues so they too could start. "Gusto rin kasi nilang mag-try magtanim kaya minsan pinanimigay ko yung seeds, (They also like to try so I gave them the seeds)" reckoned Mang Ramiro.

Although seaweed farming is not as demanding in terms of maintenance, Mang Ramiro said that sometimes, it becomes difficult for him since he does everything from planting to harvest. He regularly clean the ropes (every 3 days) where the seaweeds are planted. He also does the delivery of the harvest to the market.

Mang Ramiro believes in the saying, "No pain, no gain" and added that in every endeavor, one must persevere to achieve something. What is important, he said, is that people learn from experience. When asked whether he will farm seaweeds for life, he said an astounding "yes" and ends it with, "Bilib ako sa seaweeds (I believe in seaweeds)."

Sources:

1. *Seaweed (Gracilaria) Farming Trials in Sorsogon, Philippines. Field Document 09. Published by the Food and Agriculture Organization Philippines. Can also be retrieved from:*
<http://www.fao.org/docrep/field/003/AC069E/AC069E01.htm>

2. *Juanich, G. L. Manual on Seaweed Farming. Published by the Association of Southeast Asian Nation (ASEAN/SF). Manual No. 2, April 1988. Can also be retrieved from:*
<http://www.fao.org/docrep/field/003/AC416E/AC416E00.htm>

Mang Ramiro shows off his grown seaweed



*Article and photo by Rita T. Dela Cruz
published at the BAR R&D Digest
Jan-Mar 2006 Issue.



MANAGEMENT INFORMATION SYSTEMS

*T*he Management Information Systems Division (MISD) develops and manages a computerized system for monitoring and evaluation of agriculture and fisheries R&D/E projects; develops and maintains the AFRDIS link to the national information network; provides technical and financial assistance in the improvement and upgrading of ICT facilities and equipment of the NaRDSAF member-institutions.

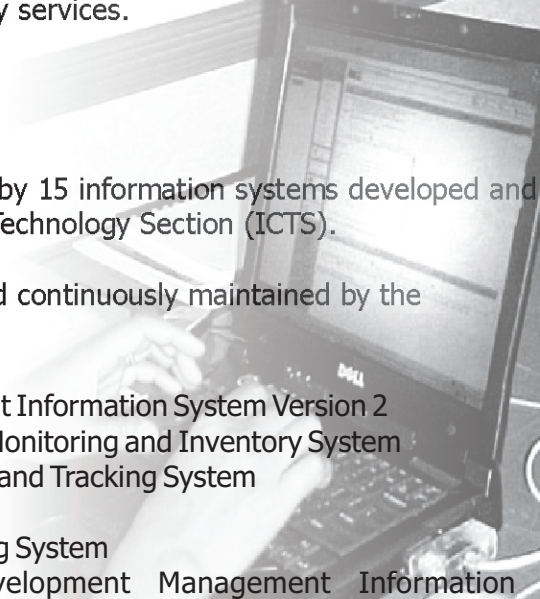
It also conducts knowledge

management through its Applied Communication Section (ACS) by gathering, packaging, and disseminating R&D/E information and technologies to different clients through various multi-media approaches. MISD also handles the operation and improvement of our library services by providing scientific literature and exchange service with the members of the NaRDSAF and other institutions and organizations; and strengthening the regional capability in the management of knowledge products and library services.

Information and communication technology

For BAR to be efficient, its operations are supported by 15 information systems developed and maintained by the Information and Communication Technology Section (ICTS).

The following are information systems developed and continuously maintained by the division's programmers:

1. BAR Payroll System
 2. Financial Management Information System Version 2
 3. Properties, Supplies Monitoring and Inventory System
 4. Document Recording and Tracking System
 5. Personnel MIS
 6. IT Equipment Tracking System
 7. Research and Development Management Information System (RDMIS)
 8. R&D Tracking System
 9. On-Going R&D Monitoring System
 10. Library Management Information Systems
 11. Vehicles Dispatching and Trip Monitoring System
 12. BAR Scholar Information System
 13. Daily Time Record System
 14. Division Head Evaluation System
 15. Agritech On-Line
- 

Geographic Information System

ICT innovation in the Bureau came in the form of Geographical Information System (GIS) with stakeholders from the agriculture and fisheries sectors seeing its potential in geographic targeting and resource allocation. The division's GIS team developed training manuals and resource books on GIS, Global Positioning Systems and GIS-based database management.

Spatial Analysis for Agriculture and Fisheries R & D

The Bureau recognizes the importance of GIS technology in agriculture and fisheries. This integrates biophysical, climatic, and socio-economic parameters for efficient and effective resource allocation and informed policy decision.

The BAR-funded manual for GIS was launched during BAR's anniversary. About 200 thematic base maps by district level in the country were created. BAR distributes these maps to partner-institutions by region, province, or municipality, free of charge, as long as they are used solely for research.

Updating of maps is done to make research results exact and realistic. Renaming of barangays, municipalities, provinces, or regions and transfer of jurisdiction of some places pursuant to administrative orders were also done on base maps. Priority was given to networks with the most urgent need for GIS technology assistance.

The team played a major role in the integration of Agricultural 2020 mapping environmental and agricultural components. Proposal is made for internet connection extending GIS projects and National Mango Congress. The team generated a cartographic mode of PhilAgri 2020.

There were two GIS trainings conducted for RIARCs, SUCs and attached agencies held at Pili, Camarines Sur entitled "GIS Applications in Agriculture and Natural Resource Management" and "Analyzing Remotely Sensed Data". The participants were expected to be proficient in the use of ArcView software and be familiar with Image Analyst extension of ArcView.

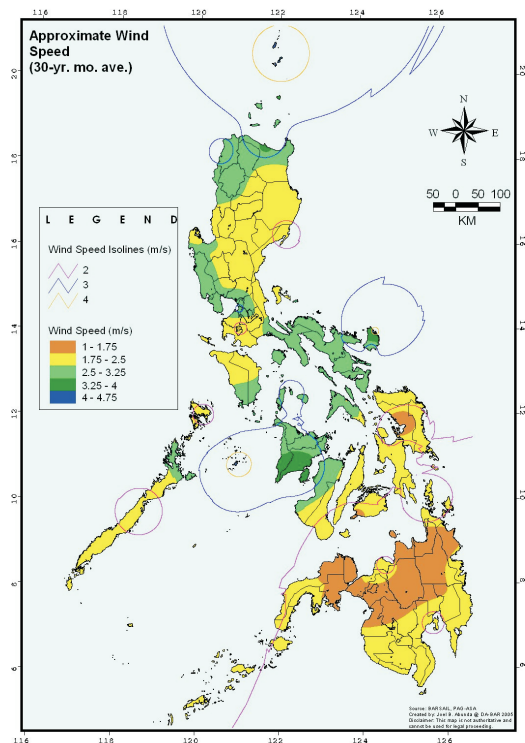


Fig. 3 A GIS map showing a wind speed map of the country

These are the institutions trained for GIS applications:

1. Bureau of PostHarvest and Research Extension
2. Philippine Rice Research Institute
3. Philippine Coconut Authority
4. DA-Region 4
5. DA-Research Field Unit 5
6. Central Mindanao Integrated Agricultural Research Center
7. Western Mindanao Integrated Agricultural Research Center
8. Southern Mindanao Integrated Agricultural Research Center
9. Northern Mindanao Integrated Agricultural Research Center
10. Eastern Visayas Integrated Agricultural Research Center
11. Cagayan Valley Integrated Agricultural Research Center
12. Central Visayas Integrated Agricultural Research Center
13. Autonomous Region for Muslim Mindanao Integrated Agricultural Research Center
14. CARAGA Integrated Agricultural Research Center
15. Central Luzon Integrated Agricultural Research Center
16. Southern Tagalog Integrated Agricultural Research Center
17. Ilocos Integrated Agricultural Research Center
18. Western Visayas Integrated Agricultural Research Center
19. Cordillera Integrated Agricultural Research Center

WEB DEVELOPMENT

Web development focused on the Bureau's web-enabled databases on national R&D agriculture and fisheries research. This includes content building in the internet and literature search for research and technologies, and marketing information for the commodities as "fillers" to Agritech Online, a knowledge and information portal for farmers and fisherfolk.

BAR Online

Monthly updates of the homepage were maintained throughout 2005. One of the highlights of the year is the real-time broadcast of the 17th National Research Symposium (NRS) in October.

The web development section has changed its site layout and continuously updates its web pages. The new interface provides a more user-friendly navigation and easy to update sections through the use of server side. BAR Digest is now up-to-date with 239 web pages archived. Issues dating back from 1999 were maintained to conform to the new page layout. The online version of BAR RDE Digest has eleven sections -fisheries, plant protection, rice, corn, soil and water, plantation crop, poultry, coconut, tobacco, postharvest and news bits.

BAR Chronicle, the Bureau's monthly publication, has now a total of 591 pages which is updated on a monthly basis. The new layout makes it easier for the reader to browse what is inside every issue. BAR Chronicle contains news about the activities of the Bureau.

Revisions were made on the Agriculture and Fisheries R&D database of completed projects funded by BAR, as well as to the R&D Human Resource database to incorporate a search engine. We are also continuously updating **Agritech On-Line**, a web-enabled ready and easy access to information like farming technologies, best practices, cost and return analysis, harvesting and post-production procedures. Market information has been added to last year's number of information systems developed. The process of systems development and maintenance is continuous. To meet the needs of the Bureau for efficient operations, the ICTS regularly revises the different information systems.

HARDWARE MAINTENANCE

One of the main functions of hardware maintenance personnel is the refurbishing and repair of all ICT equipment such as workstations, printers, laptops, and LCDs as well as the maintenance of the Bureau's PABX system. The team keeps the local phone lines secured and monitored for heavy call traffic and volume density, 24 hours a day, 7 days a week. The team is also responsible for the inventory and deployment of all ICT equipment to regional institutions. Software-related problems are considered part of its task.

Cabling and LAN administration requires the physical maintenance of the Bureau's network connectivity. When a staff changes workstation, the hardware team is responsible for rerouting or relocation of telephone and network cables from one place to another, and the provision of additional electrical outlets without the risk of tripping and overloading. The maintenance personnel is also in charge of maintaining the Main Distribution Frame and conducts preventive maintenance measures to provide sufficient power to the Bureau.

Applied Communication

The Applied Communications Section serves as the link between the technical world and the laymen. ACS produces two regular publications, BAR Chronicle, the monthly newsletter, and the BAR R&D Digest, a quarterly. BAR Chronicle reports monthly events and activities involving BAR, and technologies in popular form, in some occasions. BAR R&D Digest features popularized and semi-technical versions of researches of the NaRDSAF-partner institutions.

During the third quarter last year, the section decided to devote every issue of the BAR R&D Digest to a specific commodity, that includes a situationer of the industry the commodity belongs to, technologies developed for the commodity, and other technologies involving other commodities. The July to September issue was devoted to the fruit industry, while the last quarter issue focused on the fiber industry.

The section also produces the annual publications of the Bureau, such as the Annual Report, the National Research Symposium Proceedings, the R&D Highlights, and the BAR Techno-Calendar.

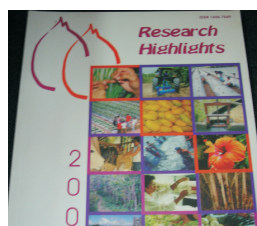
Last year, ACS packaged 289 R&D information, extension and communication materials, produced and distributed a total of 15,035 in-house publications. The Section also managed the production and publication of 1,500 copies of BAR Primer, and 9,000 copies of Technology Commercialization brochures featuring nine technologies.

ACS conducted six trainings, seminars, workshops and forums and facilitated the final printing of two volumes of the geographic information systems manual. All of BAR's regional partners were given a pair of the manuals.

Under the Scientific Publication Grants (SPG) Program, the Section facilitated the review and funding of 12 scientific and professional societies. The Section also coordinated and facilitated two training-workshops on news and feature writing for NaRDSAF member agencies.



2004 Annual Report



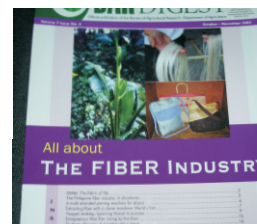
2004 R&D Highlights



**2005 issues of the
BAR Chronicle**



IEC materials



2005 BAR R&D Digest Issues

Library Services

The Bureau's library continues to improve and expand its services to clients, with 2,658 library materials sorted, catalogued, indexed, and filed. The Library Services Section also encoded 2,175 bibliographic data of library materials, and maintained an electronic-format of the catalogue for more efficiency. The Section provided 725 R&D and other agricultural-related information materials to walk-in clients, and assisted 155 walk-in users of BAR's internet kiosk located in the library.



INTELLECTUAL PROPERTY RIGHTS OFFICE

*T*he Intellectual Property Code mandates the protection and management of Intellectual Property, which refers to any creation of the mind or intellect. This includes inventions, literary and artistic creations, designs, trademarks, among others. An effective IP management promotes business enterprises, encourages market access, attracts foreign investments, and possibly promotes fund feedback to R & D.

BAR being the central coordinating agency for R & D within the DA and the NaRDSAF, ensures that prosecutable IPs generated within the system through BAR funds are given proper IP protection through registration with the Intellectual Property Office (now Intellectual Property

The DA-BAR Intellectual Property Rights Office:

- Defines ownership of intellectual properties generated as a result of DA-BAR funded Or partly-funded agricultural research and development activities.
- Ensures the protection of intellectual properties generated by direct assistance to the IP right-holder in the preparation and submission of all the necessary supporting documents for IPR applications with the IPO and in enforcing IPR protection in the Philippines and selected foreign countries.
- Formulates guidelines regulating confidentiality and disclosure of IP-related information and the direct or indirect engagement by scientists and researchers employed within the BAR or those undertaking BAR-funded research activities, with external private institutions in substantially the same work.
- Sets-up measurable indicators for the valuation of technologies and inventions eligible for IPR protection.
- Determines whether a particular technology can be transferred either through bidding or negotiated contract and attends to negotiations for technology transfer and commercialization.
- Formulates guidelines and action plan for the implementation of the BAR IPR Policy.
- Maintains a database on IPR applications, patents and copyrights obtained, and technology transfer transactions completed by BAR.
- Coordinates and provides assistance to all the offices within BAR as well as to other partner institutions and agencies engaged in BAR funded R & D activities as regards the implementation of the IP Action Plan and in the identification of patentable technologies and research outputs.

IPRO reviewed 20 terminal reports of completed projects composed of seven regular projects, five postdoctoral projects and eight theses/dissertations. The seven regular projects are among those included in technology commercialization by the Technology Commercialization Unit.

Using the criteria for patentability, the IPRO thoroughly reviewed the report. The criteria include novelty, inventive steps, and commercial application.

Two patent applications were filed with the IPO. These are on the: **"Production of silica gel from rice hull ash"**, a postdoctoral study of Dr. Leni Quirit; and **"Process and formulation of Ichthyocides from derris plants"** by Dr. Florentino Sumera, both of the Natural Sciences Research Institute in the University of the Philippines Diliman. Both studies were funded by BAR.

BAR- Initiated Trainings

BAR conducted trainings on IPR for DA regional offices, staff bureaus, attached agencies and other partner institutions for them to be aware of the purposes and advantages of IP protection. IP Awareness training which started in 2004 was continued in February 2005. The trainees were two IP focal persons from each bureau, attached agency, and DA central office, RIARC and RFRDC Managers, DA central and regional offices lawyers, and BAR staff.

The Awareness Training Workshop for the Regional RD/E Networks was started in Region 11, Davao City in December 5-6, 2005. RRDEN is composed of regional member agencies; i.e. DA RFU, BFAR Regional Network, SUCs, LGUs, NGO and other regional government agencies, chaired by the Regional Executive Director of DA in the region. Two IPRO staff, one TCU staff and an invited IPO staff composed the training team.

Trainings for IPRO Staff

Three foreign trainings on IPR were attended by the IPRO staff. These were:

Genetic Resources and IP (GRIP) held in Svalov, Sweden on 19 May to 26 June 2005. This training was sponsored by the Swedish International Development Cooperation Agency (SIDA), Swedish Biodiversity Centre, Stockholm Environment Institute, and Svalov Weibull AB. Twenty six participants came from twenty three countries of Asia, Africa, and Latin America. This training provided assistance for developing countries to make their own IPR policies and in negotiating appropriate agreements based on thorough studies of existing international laws on genetic resources and traditional knowledge. It enhanced the participants' managerial efficiency to handle, address and deal with genetic resources and IPR issues.

Intellectual Property Management and Agricultural Technology held in Strasbourg, France on 19-23 September 2005. This training was jointly organized by the European Patent Academy, European Patent Office, Munich, Germany, Institut Européen Enterprise et Propriété Intellectuelle (IEEPI), Strasbourg, and Institut National de la Propriété Industrielle (INPI), France. The seminar venue was at the IEEPI in the International Space University, Illkirch-Graffenstaden, France. The training was participated in by twenty representatives from 16 countries. One participant came from the Philippines, specifically from BAR.

DL 101 General Course in Intellectual Property Rights (WIPO on-line training). This training was attended by one IPRO staff on October 1 to November 15, 2005. DL 101 serves as prerequisite for all training courses in WIPO and serves as an awareness course on IPR. It also gives certificates to participants who pass all the modules tests and the final course examination.

The local training our staff attended was the Brands and Branding Management (Designs and Trademarks) Training held at the New World Hotel sponsored by the Philippine Intellectual Property Office, European Union, and ECAP II. This was a 2-day training seminar for IP practitioners both from public and private agencies.



Dr. Andrea Agillon (first row, 2nd from right) and her classmates in one of her trainings held in Europe

The NRS action

Director Eleazar welcomes the guests.



Asst. Director Teodoro Solsoly and Sen. Magsaysay listen to Dir. Eleazar's welcome piece.



L-R Sen. Magsaysay, Dir. Eleazar, Usec. Segfredo Serrano, Usec. Salvador Salacop hand the plaques to the winners.



The poster exhibit.



The Senator talks to a researcher.



A presenter expounds on an idea.



Senator Ramon Magsaysay and Dir. Eleazar shake hands.



It is Sen. Magsaysay's third time to grace the NRS.



Sen. Magsaysay, Dir. Eleazar, and RCD Chief Labios tour the exhibits.



Judges listen to a presenter during the paper competition.



A judge inquires.

INTERNATIONAL RELATIONS UNIT

BAR continues to build important linkages with international institutions through International Relations Unit (IRU).

As the Philippines' apex institution in the coordination of agricultural and fisheries research and development (R&D), the Bureau is actively promoting partnership activities on agricultural research between the Philippines and international organizations.

Before and during the Senior Officials Meeting of ASEAN Ministers on Agriculture and Forestry (SOM-AMAF) in Tagaytay City, senior BAR officials participated in multi-country discussions on AVRDC's entry as ASEAN partner and the presentation of a workshop proposal establishing the ASEAN CARD K-Net database system.

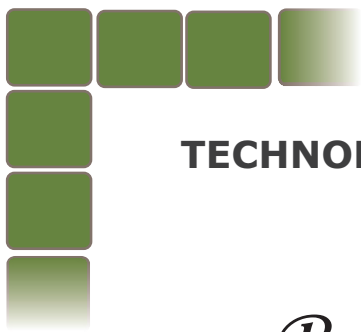
In a similar undertaking, three international events of regional R&D organizations were held in the Philippines during the latter part of 2005 with BAR playing the lead role in organizing these events. These were the International Network for the Improvement of Banana and Plantain-Banana Asia Pacific Network (INIBAP/BAPNET) Conference; the Asia Pacific Association of Agricultural Research Institutions (APAARI) Research Needs Assessment Workshop; and the International Rubber Symposium of the Philippine Rubber Board, Inc.

Through the International Relations Unit (IRU), BAR continued to strengthen its commitment to existing bilateral and multilateral commitments as well as paving new avenues for collaborative undertaking in agricultural R&D.



Southeast Asian representatives pose with Philippine organizers at the APAARI Research Needs Assessment Workshop

IRU facilitated the payment of contributions to CAB International and APAARI and worked for the retention of the contributions to the Consultative Group on International Agricultural Research (CGIAR), Center for the Alleviation of Poverty in the Asia Pacific (CAPSA) and the AVRDC in the 2006 International Commitments Fund managed by the Department of Foreign Affairs. The Unit also assisted the International Relations Division of the DA in negotiating for possible bilateral agricultural relations with Egypt and Iran.



TECHNOLOGY COMMERCIALIZATION UNIT

*B*AR's commitment to fully coordinate and manage the implementation National Technology Commercialization Program (NTCP) led to the creation of the Technology Commercialization Unit (TCU) in September 2005. The ground work started in April, and took several months of conceptualization, preparation, consultations, meetings, and briefings to finalize along the Unit's operational guidelines.

TCU is mandated to provide the overall coordination of the NTCP. It serves as the focal unit in the management, implementation, monitoring and evaluation of technology commercialization plans, programs, and activities of DA-NaRDSAF member-agencies; provides technical assistance in the development and management of R&D projects and technology commercialization activities supportive to the thrusts, themes and goals of the Department of Agriculture; assists in the preparation and packaging of R&D and NTCP training modules for the efficient and effective human resource development and management in the NaRDSAF; and serves as liaison to and between research partners under the National Research and Development System for Agriculture and Fisheries (NaRDSAF) such as DA staff bureaus and attached agencies, state colleges and universities, research institutions and other government organizations.

The TCU is directly under the Office of the Director so it supports the general programs of the Bureau together with the different technical divisions and units.

To the NTCP, field validations were conducted in Regions I, CAR, III, IV, X, XI and XII to search and identify mature technologies for commercialization. Several mature technologies on crops, livestock and fisheries were identified. All these were presented in the TechCom forum.

Simultaneously, TCU conducted an inventory of mature technologies from the different DA units. There were about 120 mature technologies submitted and still piling up to the present. These were categorized according to sector, commodity and industry support. The information received were synthesized and disseminated through BAR AgriTech On-line.

Technology Assessment and Packaging

In support to the identified and sourced out mature technologies, some BAR staff attended a basic training course on technology assessment. The training was held in July 2005, at the Agricultural Training Institute (ATI), Diliman, Quezon City. It was jointly sponsored by ATI, BAR and the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD).

The training included basic concepts and activities on technology assessment and packaging. The trainees prepared information, education and communication materials. These were distributed during the technology forums. The activity also led to the preparation of technology promotion plan for technology acceptability, utilization, and application by the key players, stakeholders, and technology users.

Technology Promotion

As part of the technology commercialization process, BAR coordinated the conduct of three national technology forums to coincide with the major events of the Bureau. In May, eight technologies were presented and promoted. These were supported by policy papers supportive to technology commercialization. The forum was held at the BSWM Convention Hall, Elliptical Road, corner Visayas Avenue, Diliman, Quezon City. The activity coincided with the Farmers' and Fisherfolk Month celebration.

In August, seven technologies were presented and promoted during the 18th BAR Anniversary held at the RDMIC Building, Elliptical Road, Diliman, Quezon City. A poster making contest was held to draw interest on technology commercialization interpretation by elementary pupils. Cash awards and trophies were given to the top winners of the contest. Incidentally, the winning entry became the illustration for the 2006 BAR Techno-Calendar.

Lastly, in October, the technology forum highlighted nine technologies responsive to the needs of the clientele. This was during the celebration of the 7th National Agriculture and Fishery R&D Week Celebration.

The technology forums were participated in by representatives of the different DA units including staff bureaus, attached agencies and regional field units, private companies, local government units, selected state universities and colleges, non-government organizations, people's organizations and the media.

Technologies for commercialization presented in 2005



Improvement of potato seed system using disease-free and true potato seed tubers by Mr. Luis Pacana and Dr. Susan Razo, SMIARC, Davao City.



Organically-grown vegetables in Northern Mindanao by Mr. Carlos Osip and Mrs. Carlota Madriaga, NOMIARC, Bukidnon.

Energy and protein requirements of starting, growing, and laying Philippine Mallard ducks by Dr. Jovita Datuin, ILIARC, La Union.

Breeding management of Philippine Mallard ducks raised under intensive and modified extensive management system by Dr. Jovita Datuin, ILIARC, La Union.

Production of quality salted eggs by Dr. Jovita Datuin, ILIARC, La Union.



Protein-enriched sweetpotato pulp as feed for broilers by Dr. Maria Teresa Demo-os, Camiling, Tarlac.

Process of extraction and formulation of ichthyocides from Derris plant by Dr. Florentino Sumera, NSRI, University of the Philippines Diliman.



Seaweed culture using triangular method by Mr. Saib Kalbi, DA-BFAR XI, Zamboanga City.

Silica gel from rice hull by Dr. Leni Quirit, NSRI, University of the Philippines Diliman.

Bugtok disease management for banana by Dr. Rafael Espino and Dr. Rafael T. Candelacion, University of the Philippines Los Banos.



Banana bunchy top disease management by Dr. Rafael Espino and Dr. Rafael T. Candelacion, University of the Philippines Los Banos.

Tomato production technology, DA-RFU X, NOMIARC, Misamis Oriental.



Bio-N fertilizer by Dr. Mercedes Umali-Garcia, BIOTECH, UPLB.

Giberellic acid for garlic production by Ms. Wilhemina Castañeda, DA-RFU 1, Ilocos Norte.

Organic production of organic chicken by Dr. Angel Lambio, Dr. Orville Bondoc, and Mr. Recotorino P. Escobin, UPLB.

Grow-out farming of freshwater prawn by Mr. Hermogenes Tambalque III, DA-BFAR II .

Technologies for commercialization presented in 2005, cont'd.

Production of quality coir dust-based organic fertilizer through window composting technology by Ms. Marianita Eroy, Philippine Coconut Authority.

Multi-fiber extracting machine Dr. Aurora Peralta and Engr. Adiano Valenzuela, Fiber Industry Development Authority.

Formulation of investment policy report and indicative investment plan for agriculture and fisheries research and development and extension for 2005-2020 by Dr. Ponciano Intal, Dela Salle University.

Ornamental fish breeding production technology by Dr. Aida Palma, Bureau of Fisheries and Aquatic Resources.

Production of high genetics water buffaloes through use of recent reproductive biotechniques by Ms. Danila Hufana-Duran, Philippine Carabao Center.

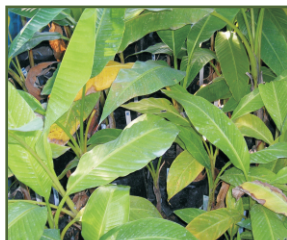
BAI tubular polyethylene digester by Mr. Hernando Avila, Bureau of Animal Industry.

Bio-pesticide from *Jathropa curcas* for cotton and other major crops by Dr. Aida Solsoloy, Cotton Development Authority.

Soil-less production technology for high-value commercial crops under greenhouse conditions by Ms. Lorna Javier, Bureau of Plant Industry.

Small hybrid seed cleaner technology by Dr. Eulito Bautista, Philippine Rice Research Institute.

Commercialization of multi-commodity solar tunnel dryer by Ms. Helen Martinez, Bureau of Postharvest Research and Extension .



Program Coordination and Management

The Unit conducted initial evaluation of project proposals submitted by institutions supportive to the development of agriculture and fishery. These were further evaluated by the Technology Expert Team (TET). The TET is composed of experts on agribusiness, marketing, development and commodity specific industries.

A total of Php 15.8 million was allocated, approved and released to fund 13 technology commercialization projects of partner agencies in agriculture and fisheries. All projects focused on enhancing the development of communities, establishment of small-scale enterprises, and encouraging partnerships with different agencies at the national, regional and levels.

Establishment and Strengthening of Partnerships and Networks

BAR worked with the Office of Senator Ramon B. Magsaysay through the Young Farmers Program, national and regional research institutions, and AVRDC for vegetable evaluation and commercialization activities. It also worked with ICRISAT in identifying pigeon pea and sweet sorghum as priority commodities to address poverty and production of bio-diesel, respectively.



FINANCIAL REPORT

Table1. Comparative budget from CY 2001-2005 (in millions)

	2001	2002	2003	2004	2005
GAA (Regular, Livestock, and AFMA)	401.59	401.13	176.94	173.91	155.00
Allotment Received	363.35	306.13	161.69	149.39	118,180
NCA / NTA Received	262.88	171.71	95.07	128.13	137,355

The Bureau appropriated P10.2 M of its budget for its General Administrative Support (GAS). The GAS was divided between Personal Services (PS), which was allocated P6.62M, and the rest was spent under BAR's Maintenance and Other Operating Expenses (MOOE). The Bureau also spent P9.74M of its Support To Operations, which was also divided between the PS and MOOE. The General Appropriations Act fund was spent in support of its plantilla and operating expenses.

Table2. Appropriation, Allotment, Obligation for 2005

	Appropriations	Allotment	Obligation
GASS	10,200,000	10,200,000	10,185,553.14
STO	9,741,000	9,741,000	9,740,942.13
AFMA	155,000,000	118,180,000	115,533,721.35
RLIP	1,177,000	1,177,000	1,138,108.20

Table of Contents

Introduction, I

From the Director, II

Project Development, 1

Research Coordination, 9

Management Information Systems, 15

Intellectual Property Rights Office, 20

Agriculture and Fisheries Policy Research Unit, 23

International Relations Unit, 27

Technology Commercialization Unit, 28

Financial Report, 33

BAR Staff, appendix

Partners' Directory, appendix



*From
the
Director*

The key to good working relationship with our various stakeholders is to constantly deliver results that contribute to food sufficiency by improving the farmers' and fisherfolk's productivity and profitability.

For the year 2005, we humbly report that BAR's accomplishments have made us closer to our mission. This year, we focused our resources on major R&D priority areas that eventually led us to the much-needed initiatives for agriculture and fisheries.

Our National Technology Commercialization Program (NTCP) delivers technologies that could spur the development of enterprises in agriculture and fisheries.

Our Community-based Participatory Action Research (CPAR) addresses local farming issues through site-specific research.

Moreover, DA-BAR also supported the establishment of agribusiness development projects (ADPs) at the Regional Integrated Agricultural Centers (RIARCs) and other R&D stations to support DA Goal 1, which is to develop at least 2M hectares of new land for agribusiness and contribute about two million jobs by 2010.

DA-BAR's intellectual property management defines ownership of intellectual properties to assist the brilliant minds of our R&D community in protecting their rights, putting the Philippines' intellectual property system management in agriculture and fisheries at par with other developing countries.

DA-BAR has also focused on its human resource and R&D facilities programs through the provision of scholarship grants and financial assistance, training funds for local and abroad, and research facilities upgrading and construction. This has been in consonance with the increasing demand to "modernize" institutional capabilities and facilities that affect the conduct of research.

We also focused on interconnectivity of stakeholders through the Knowledge and Service Program and the Information and Communication Technology Program. Thus, BAR Online and Agritech Online can now be accessed by interested parties.

We are mandated to act with efficiency and accuracy and be able to effect change through R&D. And we have to do this fast. While DA aims to be competitive in terms of stable supply, jobs creation, and enterprise development, the DA-BAR functions as facilitator in identifying priority commodities in the national and the regional network prioritization activities to address the needs of each Filipino. We are proud to report that we have done this again this year.

It is my belief that the success of the DA-BAR programs is set forth by the men and women who raise the bar of excellence to yet another level. I congratulate everybody who contributed in making lives better for our Filipino farmers and fisherfolk.

NICOMEDES P. ELEAZAR, CESO IV

Introduction

Director Nicomedes P. Eleazar, upon taking over the helm of the Bureau of Agricultural Research, revisited the vision, philosophy and institutional value of the Bureau. Three major divisions, the Programs Development Division, Research Coordination Division, and Management Information Systems Division, are now working hand-in-hand with different units to facilitate the attainment of the Director's 8-point agenda that was inspired by the Twin Goals of the Department of Agriculture.

The Bureau focused on bridging the gap between research and technology-utilization through its National Technology Commercialization Program, now being handled by newly-formed Technology Commercialization Unit.

We focused on our on-farm research through the Community-based Participatory Action Research. This program has been one of our most effective tools to respond to the research needs of our clients at the community-level. A simplified CPAR Manual is being prepared to serve as a ready guide in the implementation of the program.

We have been given the responsibility to protect the intellectual property rights of our researchers, scientists, and technicians by instituting procedures to recognize their work through our Intellectual Property Rights Office.

Our knowledge management efforts are steeped on the provision of knowledge to our clientele because we believe that "information is power". Our quarterly magazine now concentrates on a specific industry per issue to further help our readers get a bigger picture of the industry they wish to involve themselves into.

Our databases are only their way to becoming operational for easier access by our clients via the Internet.

We are also inching closer to our goal of becoming ISO certified. We never rest on our laurels, so we are ready to be considered among world-class institutions, and thereby become better and more effective servants of the public.

Like a curve down the road that we have successfully negotiated, we are upbeat about what 2005 meant to us and to achieving our mandate, and what opportunities are in store for 2006.



AGRICULTURE AND FISHERIES POLICY RESEARCH UNIT

*T*he Agriculture and Fisheries Policy Research Unit (AFPRU): a) implements and coordinates the conduct of research impact assessments and policy research pertaining to agriculture and fisheries; b) gives recommendations on the development of comprehensive strategies addressing emerging problems and concerns; c) formulates policy recommendations on scientific innovations and technology use; d) provides data, information and knowledge as decision-support in strengthening research impact; e) reviews, identifies, and analyzes problems/weaknesses of relevant national policies and gives recommendations on how to take advantage of opportunities; f) serves as the Secretariat to the Council for Extension and Research, and Development for Agriculture and Fisheries (CERDAF) and to the Research and Development Management Committee (RDMC).

Last year, the Unit prepared 23 position/reaction papers covering the following topics: "Impact of increased value added tax on agriculture and fisheries sector"; "Overview of the Philippine mango industry and recommendations"; "Exemption from international travel ban contained in A.O. 103"; "Joint resolution No.2 (S2005) urging the DA to regulate the application of chlorpyrifos on mango and conduct a serious study on its negative effects on mangoes and other crops"; and "Proposed conduct of the Philippine Rural Growth and Development Revisited Study: Agricultural Research, Development, and Extension".

The Unit also prepared proposals on the following:

- Proposed House Bill, "An Act Providing for a Magna Carta for Scientists, Researchers, Extension Service Personnel in the Department of Agriculture" (Submitted to Congressional Committee on Agriculture, Food, and Fisheries)
- Commercialization of Selected Technologies for the Improvement of Agricultural Productivity and Profitability (Submitted to Senator Ramon Magsaysay, Jr., Chair, Senate Committee on Agriculture, Food and Fisheries for funding)
- Expanding Community-based Participatory Action Research (CPAR) for Selected Crop-Based Farming Systems", for NAFC funding (Prepared in cooperation with Technology Commercialization Unit).

The Unit also developed two technical papers namely, "Gap Analysis and Research Priorities in the Philippine National Research System" and "Impact of the Farmer-Scientists Training Program for Corn-Based Farmers in Selected Sites in Central Visayas, Philippines".

National Research Symposium

The Bureau of Agricultural Research's major annual activity is the National Research Symposium (NRS). This event gives recognition to outstanding researchers in the field of agriculture and fisheries.

The NRS aims to enhance exchange of information and knowledge among agriculture and fisheries R&D workers toward promoting awareness on technological breakthroughs. This is to magnify the professional stature of R&D workers by providing a forum for presenting notable research accomplishments. This also gives due recognition to research and development efforts of the researchers and member institutions of the National Research and Development System for Agriculture and Fisheries (NARDSAF).

The generation, development, and transfer of modern technologies in agriculture provide a strong agricultural foundation for industrialization, as had been empirically shown in other countries. It is in this essence that the Agriculture and Fisheries Modernization Act (AFMA) was passed and enacted in 1997. The Act provides for the transformation of agriculture and fisheries from resource-based to technology-based industries, in order to promote growth and development in the countryside.

This year's symposium was held on October 4-7 at the Research and Development Management Information Center (RDMIC), with the theme, "Agriculture and Fisheries R&D: Key to Rural Progress". The theme emphasized the significant contribution of research in advancing rural economy through the attainment of production and post production efficiencies. As had been experienced in developed countries, the adoption of appropriate technologies served as the launching pad for progress in the country side.

In this year's NRS, a total of 111 entry papers was submitted to BAR. Forty-two of these garnered scores of 80% and above and were automatically adjudged winners during the paper pre-evaluation. Twelve papers were given the grand prize awards (first, second, and third prize winners) under each of the four major categories, namely: Basic Research, Applied Research, Adaptive/Verification Research, and Socio-Economics.

The Unit prepared the MOAs and vouchers of 4 projects. Two of these projects are on the Impact Assessment of CPAR in Regions 2, 4A, and 10 and in Regions 6, 8, and 11. The other two projects were the "Analysis of Agriculture and Fisheries Household Survey Data" conducted by the Bureau of Agricultural Statistics (BAS), and "Updating of Nutritional Status of Filipino Children and Selected Population Groups" of the Food and Nutrition Research Institute (FNRI).

The impact assesment of CPAR in Regions 2, 4a, and 10 was completed in December.

The head of the Unit prepared and presented a paper during the United Nations-Economic and Social Commission in Asia and the Pacific (UNESCAP)-Centre for Alleviation of Poverty through Secondary Crops' Development in Asia and the Pacific (CAPSA). The paper presented by the BAR representative, who was also the Philippine participant was, "Impact of the Farmer-Scientists Training Program for Corn-Based Farmers in Selected Sites in Central Visayas, Philippines.

AFPRU staff participated in the gathering of data for the project, "Impact Assessment of CPAR in Regions 2, and 4a", and also attended training courses on "News and Feature Writing Training Workshop" sponsored by the Management Information Systems Division, and "Rural Agribusiness Development and Management" at the Asian Institute of Technology (AIT), Klong Luang, Pathumthani, Thailand, sponsored by the International Society for Southeast Asian Agricultural Sciences (ISSAAS) from November 21 to December 2, 2005.

OFFICE OF THE DIRECTOR
Nicomedes P. Eleazar, CESO IV

Executive Support Staff

Joell H. Lales
Jose Ira Archimedes D. Borrromeo
Angela E. Obnial
Ma. Louella S. Dejelo
Teresita S. Añonuevo
Gretel F. Rivera
Josefina G. Barleta
Fransisco J. Grettchin
Jojit V. Velasquez

Coordinator for Administration

Hamlet T. Dala

INTERNATIONAL RELATIONS UNIT

Victoriano B. Guiam
Rudyard R. Roxas
Jennifer T. Alianza

INTERNAL CONTROL UNIT

Erlinda M. Agustin

PLANNING UNIT

Braulio B. Tamayo
Rodolfo L. Galang
Ferdinand Dax C. Lorena
Paolo Neil S. Navata

AGRICULTURE AND FISHERIES

POLICY RESEARCH UNIT

Josefina M. Lantican
Jude Ray P. Laguna
Debra E. Tamani
Benjamin S. Gerodias

INTELLECTUAL PROPERTY RIGHTS OFFICE

Dr. Andrea B. Agillon
Jayson O. Villamor

LEGAL OFFICE

Atty. James Dennis C. Gumpal

TECHNOLOGY

COMMERCIALIZATION UNIT

Dr. Marlowe C. Aquino
Digna L. Sandoval
Jennilyn C. Razonable
Anthony B. Obligado

PROGRAMS DEVELOPMENT

DIVISION

Dr. Carmencita V. Kagaoan
Salvacion M. Ritual
Frederic B. Brugada

Project Packaging Section

Salvacion M. Ritual
Mariko M. Ramos
Carmela B. Brion
Brenda Y. Bautista
Connie R. Fernando

Project Evaluation Section

Leoncia B. Del Mar
Ethyl G. Bulao
Rodolfo F. Fernandez

Institutional Development Section

Iluminada M. Ching
Almira G. Magcawas
Marina Ribunal-Caddawan
Dorina R. Roxas
Elvira S. Rapada
Rogelio B. Mercado

TECHNICAL ADVISORY GROUP

Dr. Catalino dela Cruz
Dr. Santiago Obien
Dr. Manuel Bonifacio
Dr. Ireneo Ramat

OFFICE OF THE ASSISTANT

DIRECTOR

Dr. Teodoro S. Solsoloy

Support Staff

Jude Ray P. Laguna
Evelyn H. Juanillo
Loricel M. Sambio
Ligaya V. Santolices

RESEARCH COORDINATION

DIVISION

Rolando V. Labios
Tito Z. Arevalo
Girlye M. Mendoza
Myra Anson R. Pablo

Crops Section

Amador C. Macabeo
Domingo S. Caliwag
Alexander G. Arizabal
Allan L. Aquino
Apolonia A. Mendoza

Livestock and Poultry Section

Dr. Rolando V. Kintana
Angel S. Morcozo
Anna Ruth C. Mercado

Fisheries and Aquatic Resources
Section

Ligaya C. Santos
Andressa D. Gutierrez

Products, Resources, and Systems
Section

Aurora F. Pecson
Ricarte V. Castro
Casey Lou D. Duran

**MANAGEMENT INFORMATION
SYSTEMS DIVISION**

Alvin V. Divinagracia
Julia A. Lapitan
Cynthia S. Mamawag

Information and Communication
Technology Section

Herminigildo S. Quibuyen

Melissa A. Resma
Bernardo S. Manuel
Jerson C. Cruz
Sheridean A. Navarro
Arlene A. Balagot
Danilo C. Santos

Geographic Information System

Dr. Esteban Godilano
Joel B. Abunda

Applied Communication Section

Julia A. Lapitan
Rita T. dela Cruz
Ma. Lizbeth J. Baroña
Miko Jazmine J. Mojica
Victoria G. Ramos
Anthony A. Constantino
Ricardo G. Bernardo
Nicanor B. del Rosario III

Library Services Section

Lalaine A. Perlawan
Lyn D. Pardilla

ADMINISTRATIVE

Julietta SD. Yonzon
Merlinda S. Martinez

Property and Supplies Section

Rosalia G. Maranan
Alexces P. Tolentino
Rhea Aileen Neo

Personnel Section

Ludivina M. Pelayo

Records Section

Melody T. Memita
Reynoso L. Catalan

General Services Section

Corazon L. Barretto
Christopher F. Lazaro
Augusto M. Lesaca
Eduardo T. Manalo
Elec I. Yadao
Kenneth D. Nayga
Jerome SJ. Stevens
Ernesto Cruz Jr.
Alfonso E. Nidoy
Ronnie V. Rosales

Cash Management Section

Edward C. Acebedo
Maricel F. Fortaleza

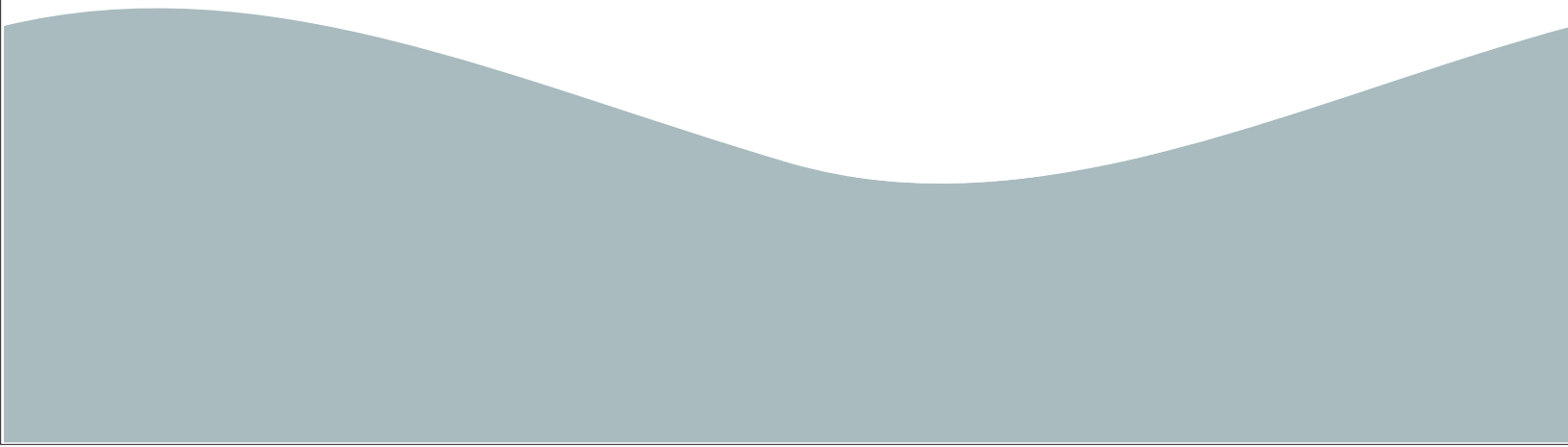
FINANCE UNIT

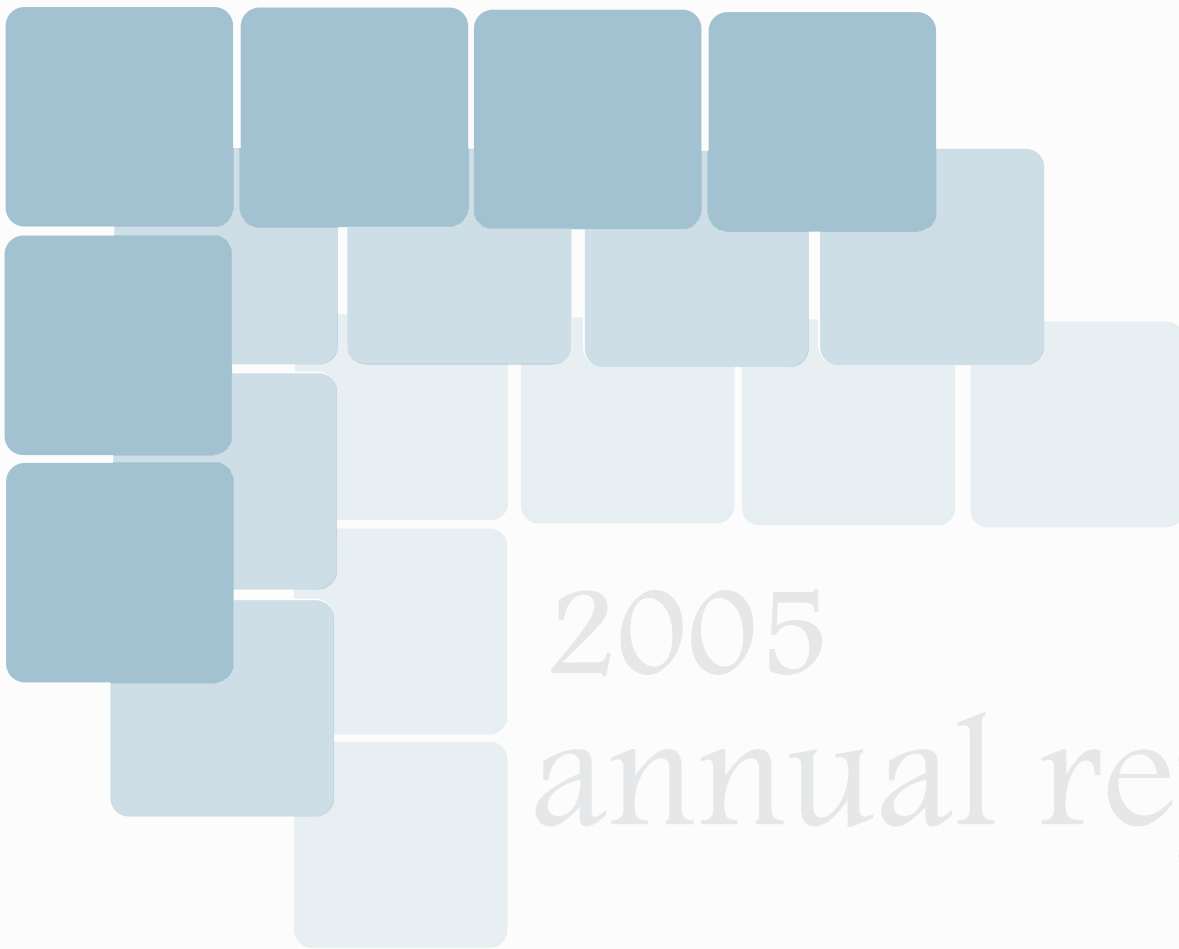
Roberto S. Quing Jr.
Judith A. Maghanoy
Ericsson F. Faeldan
Abel A. Calinasan
Dorotea D. Calica
Magdalena M. Calimutan
Anne B. Asuncion
Percival B. Gealone
Aldwin delos Santos

With the reorganization of the Bureau, new strategies were developed to render better service to its clientele. The Community-based Participatory Action Research and the National Technology Commercialization Programs, the cornerstones of the Bureau's services to the public in 2005 were intensified. Also, our bid to become ISO-certified, the establishment of the Intellectual Property Office to assist our researchers to protect their intellectual property rights, and the intensification and upgrading of our databases and web services, were just some of our efforts in a bid for more efficient and effective service.

We have shifted our priorities to researches that answer the demand of the market. We realize that market demand should propel the direction of the research and development for more efficient use of financial and human resources.

After all, every effort must be hinged on economic and livelihood incentive.



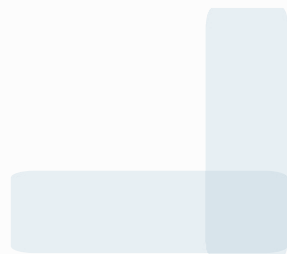


2005
annual report

**Making Technologies Work for Agriculture, Fisheries,
Industry, People and Communities**



DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Research



Managing editorMa. Lizbeth J. Baroña
LayoutMa.Lizbeth J. Baroña
Print managerAnthony A. Constantino
EditorDr. Virginia A. Duldulao

This annual report was prepared from the reports of the different divisions and units of the Bureau. ISSN 1655 3950

Regional Integrated Agricultural Research Centers

Region I

Ilocos Integrated Agricultural Research Center (ILIARC)
DMMSU Compound, Bacnotan, La Union

Mr. Edmundo Quinit (Manager)
Tel. nos. (072)888-5315; (0917)939-7582
Fax no. (072)888-5315

Region II

Cagayan Valley Integrated Agricultural Research Center (CVIARC)
San Felipe, Ilagan, Isabela

Mr. Edito Bañares (Manager)
E-mail: edito_erb@yahoo.com
Tel. nos. (078)846-3749; (0917)408-8828
Fax nos. (078)846-3749; (078)846-2526

Region III

Central Luzon Integrated Agricultural Research Center (CLIARC)
Magalang, Pampanga

Dr. Orlino Mercado (Manager)
Tel. nos. (0912)322-7419; (0918)912-2427; (0918)903-0499
Fax no. (045)961-3336

Region IVa and IVb

Southern Tagalog Integrated Agricultural Research Center (STIARC)

Lipa City, Batangas

Ms. Digna Narvacan (Region IVa Manager)

Ms. Marissa Luna (Region IVb Manager)

E-mail: dastiarc@lipa.i-next.net

Tel. no. (043)756-2521

Fax no. (043)756-4962

Region V

Bicol Integrated Agricultural Research Center (BIARC)

San Agustin, Pili, Camarines Sur

Ms. Elena De Los Santos (Manager)

Tel. no. (054)477-7266

Fax. no. (054)477-3377

Region VI

Western Visayas Integrated Agricultural Research Center (WESVIARC)

Hamungaya, Jaro, Iloilo City

Mr. Peter Sobrevega (Manager)

E-mail: wesviarc@iloilo.worldtelphil.com

Tel. no. (033)329-6210

Fax no. (033)329-0956

Region VII

Central Visayas Integrated Agricultural Research Center (CENVIARC)

M. Velez St., Cebu City

Ms. Tomasita Cadungog (Manager)

E-mail: cenviarc@cvis.net.com.ph

Tel. No. (032)256-3436

Fax no. (032)256-3436

Region VIII

Eastern Visayas Integrated Agricultural Research Center (EVIARC)

Tacloban City

Mr. Rufino Ayaso III (Manager)

E-mail: daeviarc@tac.webling.com

Tel. no. (053)321-3154

Fax no. (053)325-7242

Region IX

Western Mindanao Integrated Agricultural Research Center (WESMIARC)

Ipil, Zamboanga del Sur

Mr. Constancio Alama (Manager)

E-mail: wesmiarc@zambo.ph.net

Tel. no. (062)333-2537

Fax no. (062)333-2877

Region X

Northern Mindanao Integrated Agricultural Research Center (NOMIARC)

Dalwangan, Malaybalay, Bukidnon

Mr. Constancio Maghanoy, Jr.

(Manager)

E-mail: nomiarc@eudoramail.com;

Tel. nos. (088-22)726-564; (0918)472-

3800; (0918)472-2603; (0918)900-

2574

Region XI

Southern Mindanao Integrated Agricultural Research Center (SMIARC)

Bago Shiro, Davao City

Dr. Alfredo Cayabyab (Manager)

E-mail: smiarc@smarrdec.com.ph;

smarrdec@smarrdec.com.ph

Tel. nos. (082)293-0109; (082)293-

0136; (0917)701-2955

Fax no. (082)293-0109

Region XII

Central Mindanao Integrated Agricultural Research Center (CEMIARC)

Amas, Kidapawan, North Cotabato

Mr. Niceto Agduyeng Jr. (Manager)

Tel. nos. (064)421-3789; (064)288-

5350; (0917)701-2955

Fax no. (064)421-3789

CARAGA
CARAGA Integrated Agricultural
Research Center (CARIARC)
Trento, Agusan del Sur
Ms. Wilfreda Maslog (Manager)
E-mail: wm_caragariarc@yahoo.com
Tel. no. (085)255-2325

ARMM
Autonomous Region of Muslim Mindanao
Integrated Agricultural Research Center
(ARMMIARC) Cotabato City
Mr. Daud Lagasi (Manager)
Tel. nos. (064)421-1248; (0918)530-2942
Fax no. (064)421-1234

CAR
Cordillera Autonomous Region
Sagada, Mountain Province
Dr. Magdalena Wanawan (Manager)
Tel: 074 444-8986/ 444 - 5144
Fax: 444 8986

Regional Fisheries Research and Development Centers

Region I
BFAR Regional Director: **Mr. Nestor D.
Domenden**
RFRDC Manager: **Ms. Segundina
Gearlan**
BFAR 1, Pagdalagan, Sevilla Norte, San
Fernando, La Union
E-mail: bfarnest@digitel1.com; [nsaprfo1-
dina@digitelone.com](mailto:nsaprfo1-dina@digitelone.com)
Tel. nos.: (072)242-1559/242-1045/243-
1046; (0917)357-9761
Fax no.: (072)242-1559/242-6112

Region II
BFAR Reg'l Director: **Ms. Jovita P. Ayson**
RFRDC Manager: **Ms. Evelyn C. Ame**
Office add.: BFAR 2, Nursery Compound,
San Gabriel, Tuguegarao, Cagayan
E-mail: Bfar_r2@it-links.com.ph or
eame_ph@yahoo.com
Tel. nos.: (0917)979-9322; (078)844-
5331/844-4261/844-5832
Fax no.: (078)844-5331/846-3661

Region III
BFAR Reg'l Director: **Ms. Remedios E.
Ongtangco**
RFRDC Manager: **Mr. Felix A. Terrado, Jr.**
BFAR 3, Berzon Bldg. San Agustin, San
Fernando, Pampanga; ROSBW/RIFRC,
Hanga, Hagonoy, Bulacan
E-mail: bfar3@comclark.com
Tel. nos.: (0919)262-7071, (045)961-
3472/963-5515; (044)667-0525
Fax no.: (045)961-2784/961-3472

Region IVa
BFAR Reg'l Director: **Ms. Rosa P. Macas**
RFRDC Manager: **Mr. Hannibal Chavez**
BFAR 4, 2/F, ICC Bldg., NIA Comp, EDSA,
Quezon City
E-mail: Ord_bfar4@pacific.net.ph;
bfarrfrdc@yahoo.com
Tel. nos.: (02)926-8714/926-1901/926-
8616/ 929-6071 loc. 192/193; (049)249-
5208
Fax no.: (02)926-8616

Region IVb
BFAR Reg'l Director: **Ms. Azucena A.
Inguilio**
RFRDC Manager: **Mr. Roberto R. Abrera**
2/F, ICC Bldg., NIA Comp, EDSA, QC
Tel. No.: (02)926-8714/926-1901

Region V
BFAR Reg'l Director: **Dr. Jaime de la Vega**
RFRDC Manager: **Ms. Aida S. Andayog**
Office add.: BFAR 5, Sn. Agustin, Pili,
Camarines Sur
E-mail: Bfar5@yahoo.com
Tel. nos.: (054)477-7365/477-3741/477-
7443/477-3517
Fax nos.: (054)361-23-25/361-23-26

Region VI
BFAR Reg'l Director:
Ms. Drusila Esther E. Ong
RFRDC Manager:
Ms. Drusila Esther E. Ong
BFAR 6, M.H. del Pilar St., Molo, Iloilo City
E-mail: da6@I-iloilo.com.ph
Tel. nos.: (0917)619-49-02; (033)336-9432/336-6748/336-9878
Fax nos.: (033)336-9432/336-4221

Region VII
BFAR Reg'l Director:
Mr. Dionisio B. de la Peña
RFRDC Manager:
Ms. Gamelba V. Dumadag
BFAR 7, Arellano Blvd., Cebu City; BFAR 7, Calape Fishery Complex, Calape, Bohol
E-mail: bfar7@cebu.nexmil.com
Tel. nos.: (032)256-2772/256-2774/256-1666; (038)507-9263
Fax no.: (032)256-2773/256-2772; (038)256-2773

Region VIII
BFAR Reg'l Director: **Mr. Gil A. Adora**
RFRDC Manager: **Ms. Justerie M. Granali**
Barangay Diit, Tacloban City
E-mail: dabfar8@tac.weblinq.com
Tel. nos.: (053)321-3152/321-4801/321-1732
Fax nos.: (053)321-1732

Region IX
BFAR Reg'l Director:
Mr. Abdulgafor N. Abdua
Asst. Reg'l Director:
Ms. Estellita P. Pacardo
RFRDC Manager: **Mr. Ahadulla S. Sajili**
Office add.: BFAR 9, R.T. Lim Kawa-Kawa, Zamboanga
Cibfarix@zambonet.adzu.edu.ph
Tel. nos.: (062)991-8192/992-4239/991-1140 (0919)756-9835
Fax nos.: (062)993-2046/991-8192

Region X
BFAR Reg'l Director:
Ms. Arlene B. Pantanos
RFRDC Manager: **Ms. Gigi C. Albor**
BFAR 10, Macabalan, Cagayan de Oro City
E-mail: Arlenebp@ eudoramail.com; ebyasay@yahoo.com
Tel. nos.: (088(22))856-9593/856-9610/710-345; (0919)546-6078
Fax no.: (088(22))856-9593

Region XI
BFAR Reg'l Director:
Mr. George Campeon
RFRDC Manager: **Mr. Jaime S. Fernandez**
BFAR 11s, Uyanguren St., Davao City
E-mail: bfar-x1 @interasia.com.ph
Tel. nos.: (082)227-1539/227-1538/224-0827
Fax nos.: (082)227-1539

Region XII
BFAR Reg'l Director:
Mr. Sani A. Macabalang
RFRDC Manager: **Mr. Ambutong Pautong**
Office add.: BFAR 12, Bonifacio St., Cotabato City
Tel. nos.: (0919)273-9322; (064)421-44-64/421-3789/
421-1831/421-7893/421-1592/421-7572
Fax nos.: (064)421-9367/421-8931/421-2775

ARMM
BFAR Reg'l Director: **Mr. Kiese Tan Usman**
RFRDC Manager:
Mr. Macmod Mamalangkap
Office add.: DAF-ARMMIARC Station, ORG Complex, Cotabato City
Tel. nos.: (0916)307-0758; (064)421-1234/421-1248
Fax no.: (064)421-1234

CAR
BFAR Reg'l Director:
Ms. Rebecca Dang-awan
RFRDC Manager: **Ms. Lois June B. Fermin**
BFAR-CAR-BPI Compound, Guisad, Baguio
City
E-mail: Bfar-car@mozcom.com
Tel. nos.: (0918)916-8416; (074)445-
8499/443-6716/443-6717
Fax nos.:(074)443-6716/443-6717/445-
8499

CARAGA
BFAR Reg'l Director:
Mr. Alauya R. Olama Al Hadj
RFRDC Manager: **Mr. Miguel O. Baay**
Office add.: BFAR Caraga, Butuan City;
CIFRC, Masao, Butuan City
E-mail: Bfar@skynet.net
Tel. nos.: (085)815-7478/826-5538/826-
8193/815-1048
Fax nos.: (085)341-2044/342-7445/341-
2114

Regional Executive Directors

Region I
Mr. Nestor Domenden, CESO V
San Fernando, La Union
Tel. no.: (072) 888-2045
Fax no.: (072) 888-2085
E-mail: rarego1@digitel1.com

Region II
Dr. Gumersindo D. Lasam
Tuguegarao, Cagayan
Tel. no.:(078) 844-1312
Fax no.: (078) 844-1031
E-mail: rarfu2@cag.pworld.net.ph

Region III
Engr. Renato Manantan
San Fernando, Pampanga
Tel. no.: (045) 961-3472
Fax no.: (045) 961-3336

CAR
Mr. Cesar D. Rodriguez
Guisad Road, Baguio City
Tel. nos.: (074) 443-4621/445-
2532
Fax no.: (074) 443-4621
E-mail: da_rfu_car@skynet.net

Region IVA
Mr. Dennis B. Araullo
4F ATI Bldg., Elliptical Road, Diliman, Q.C.
Tel. no.: (02) 920-0384
Fax no.: (02) 920-2018

Region IVB
Mr. Rodolfo M. Guieb
4F ATI Bldg., Elliptical Road, Diliman, Q.C.
Tel. no.: (02) 920-0384
Fax no.: (02) 920-2018

Region V
Mr. Balagtas Torres
San Agustin, Pili, Camarines Sur
Tel. nos.: (054)361-1264/361-1690
Fax no.: (054) 477-3377
E-mail: darafid5@yahoo.com

Region VI
Ms. Jindra Linda L. Demeterio
San Pedro, Iloilo City
Tel. no.: (033) 329-6210
Fax no.: (033) 336-4221

Region VI
Mr. Eduardo Lecciones
M. Velez St., Cebu City
Tel. no.: (032) 254-5187
Fax no.: (032) 256-3062
E-mail: da-rfu7@cvis.net.ph

Region VIII
Mr. Leo Cañeda
Tacloban City
Tel. no.: (053) 321-2024
Fax no.: (053) 325-7242
E-mail: aaeviarc@tac.weblinq.com

Region IX
Mr. Oscar Parawan
Gen. V. Alvarez St. Zamboanga City
Tel. no.: (062) 991-2594
Fax no.: (062) 992-1485

Region X
Mr. Joel S. Rudinas
A. Luna St., Cagayan de Oro City
Tel. nos.: (08822) 726-564/728-236
Fax nos.: (08822) 725-725/856-2754
E-mailsrcchan@cdo.weblinq.com

Region XI
Mr. Roger C. Chio
Bago Oshiro, Davao City
Tel. no.: (082)221-9697
Fax no.: (082) 226-3625

Region XII

Mr. Abusama M. Alid

PC Hill, Cotabato City
Tel. nos.: (064) 421-3789/421-3299
Fax no.: (064) 421-3789

CARAGA

Mr. Ricardo C. Regis

Capitol Compound, Butuan City
Tel. Nos.: (085) 341-2045;
(0919)8767847
Fax no.: (085) 341-2114

ARMM

Mr. Nasar A. Salmani

Cotabato City
Tel. no.: (064) 421-3789
Fax no.: (064) 421-3789

Regional Technical Directors for R&D

Region I

Dr. Benjamin O. Ronduen

San Fernando, La Union
Tel. no.: (072)888-2045
Fax no.: (072)888-2085

Region II

Mr. Lucrecio R. Alviar, Jr.

Tuguegarao, Cagayan
Tel. no.: (078)846-9131
Fax no.: (078)844-1031
E-mail: darfu2@cag.pworld.net.ph

Region III

Mr. Cesar Rodriguez

San Fernando, Pampanga
Tel. no.: (045)961-3472
Fax no.: (045)961-3336

Region IVa

Ms. Aida P. Cariño

Region IVb
Yvonne Viñas
4F ATI Bldg., Elliptical Road, Diliman, Q.C.
Tel. no.: (02)920-0384
Fax no.: (02)920-2018

CAR

Mr. Cameron P. Odsey

Guisad Road, Baguio City
Tel. no.: (074)443-4621
Fax no.: (074)422-2375
E-mail: ati.ntc@skynet.net

Region V

Mr. Pedro A. Oco Jr.

San Agustin, Pili, Camarines Sur
Tel. no.: (054)361-1264

Region VI

Mr. Sofronio A. Parohinog

San Pedro, Iloilo City
Tel. no.: (033)377-8812
Fax no.: (033)336-4221

Region VII

Mr. Eduardo Alama

M. Velez St., Cebu City
Tel. no.: (032)254-5187
Fax no.: (032)256-3062

Region VIII

Mr. Wilson A. Cerbito

Tacloban City
Tel. no.: (053)321-2024
Fax no.: (053)325-7242

Region IX

Dr. Fransisco Geromo

Gen. V. Alvarez St. Zamboanga City
Tel. nos.: (062)991-2594/333-2537;
(0919)552-4186
Fax no.: (062)992-1485
E-mail: wesmiarc@zambo.i-next.net

Region X

Ms. Roxana H. Hojas

A. Luna St., Cagayan de Oro City
Tel. nos.: (08822)726-564/728-236
Fax nos.: (08822)726-564/856-2754

Region XI

Mr. Romulo Palcon

Bago Oshiro, Davao City
Tel. Nos.: (082)221-9697; (0917)701-
2955
Fax no.: (082)226-3625
E-mail: rmis11@smarrdec.com.ph;
smiarc@smarrdec.com.ph

Region XII

Mr. Mustapha G. Ismail

PC Hill, Cotabato City
Tel. Nos.: (064)421-3789/421-3299
Fax no.: (064)421-3789

CARAGA

Mr. Edgardo Dahino

Capitol Compound, Butuan City
Tel. no.: (085)341-2045; 0919-3527736
Fax no.: (085)341-2114

DA Bureaus and Attached Agencies

Agricultural Training Institute
Mr. Asterio Saliot
2/F ATI Bldg., Elliptical Road, Diliman,
Quezon City
Tel. nos.: 928-7397 ; 929-8541 loc. 220
to 22
Fax no.: 920-9792
E-mail: atida@l_next.net

Bureau of Animal Industry
Dr. Davinio Catbagan
Director
Visayas Avenue, Diliman, Quezon City
Tel. nos.: 927-0971 ; 926-6883
Fax no.: 928-2429
E-mail: dir.bai@manila-online.net

Bureau of Agricultural Statistics
Dr. Romeo S. Recide
Director
1184 Ben-lor Building, Quezon Avenue,
Quezon City
Tel. nos.: 371-2050 ; 372-3801 ; 372-
3822
Fax no.: 371-2086
E-mail:
dapsyl@epic.net;rrecide@da.gov.ph

Bureau of Agriculture and Fisheries
Product Standards
Dr. Gilberto F. Layese
OIC-Director
BPI Compd., Visayas Ave., Diliman, Q.C.
Tel. no.: 920-6131 to 34
Fax no.: 920-6734
E-mail: bafps@pacific.net.ph

Bureau of Fisheries & Aquatic Resources
Dr. Malcolm Sarmiento
Director
Arcadia Building, Quezon Avenue,
Quezon City
Tel. nos.: 372-5043 ; 372-50-57 ; 373-
7452
E-mail: fped_bfar@yahoo.com

Bureau of Plant Industry
Ms. Lealyn Ramos
Director
San Andres, Malate, Manila
Tel. nos.: 525-7857 ; 525-7909 ; 521-
9291 ; 521-9135 ; 525-2987
Fax no.: 521-7650

Bureau of Postharvest Research and
Extension

Engr. Ricardo L. Cachuela
Executive Director
CLSU Compound Muñoz,
Nueva Ecija, Philippines, 3120
Tel. no.: (044)456-0213
Fax no.: (044)456-0110

Bureau of Soils And Water Management
Dr. Rogelio N. Concepcion
Director
Visayas Avenue, Elliptical Rd., Diliman,
Quezon City
Tel. nos.: 920-4382 ; 920-4318
Fax no.: 923-0454
E-mail: bswm@pworld.net.ph

Agricultural Credit And Policy Council
Ms. Jovita Corpuz
Executive Director
3F Agustin I, Bldg., Emerald Ave,
Ortigas Complex, Pasig City
Tel. nos.: 634-3320; 634-3321; 634-
3326; 634-3319
E-mail: acpc@manila-online.net

Cotton Development Authority
Dr. Eugenio P. Orpia, Jr
Administrator
4/F JJACCIS Bldg
31 Shaw Boulevard, Pasig City
Tel. nos.: 631-2106; 631-2104
Fax no.: 631-2113
E-mail: cotton@pworld.net.ph

Fertilizer And Pesticide Authority
Mr. Norlito Gicana
Executive Director
4/F, Building B. Nia Complex, Edsa,
Quezon City
Tel. nos.:922-336 4; 926-5877; 922-
3771 loc. 15
E-mail: fpa_77@yahoo.com

Fiber Industry Development Authority
Dr. Cecilia Gloria J. Soriano
Administrator
Asiatrust Bank Annex Building
1424 Quezon Avenue, Quezon City
Tel. nos.: 373-9239; 373-9236; 373-
9240; 373-7489
Fax no.: 373-7494
E-mail: fida@pacific.net.ph

National Dairy Authority
Mrs. Salvacion M. Bulatao
Administrator
NDA Bldg., Bai Compound, Visayas
Avenue, Quezon City
Tel. nos.: 929-0253; 929-6755
Fax no.: 928-8847
E-mail: fbulatao@mozcom.com

National Irrigation Administration
Engr. Baltazar Usis
Administrator
Edsa, Quezon City
Tel. nos.: 922-2795; 928-4501
Fax no.: 926-2846
E-mail: administrator@nia.gov.ph

National Agriculture And Fishery Council
Mr. Bernie Fontevilla
Executive Director
4/F DA Compound
Elliptical Rd., Diliman, Quezon City
Tel. nos.: 926-2706; 920-4096; 920-4309

National Meat Inspection Service
Ms. Minda Manantan
Executive Director
BAI Compound, Visayas Avenue, Quezon
City
Tel. no.: 924-3119
Fax no.: 924-7973
E-mail: ec_nuestro@hotmail.com

Philippine Carabao Center (PCC)
Dr. Libertado C. Cruz
Executive Director
Marharlika Highway, Clsu, Munoz, Nueva
Ecija
Tel. nos.: (044)456-0735; 456-0730 to
31 Loc. 202
Fax no.: (044)456-0730

National Nutrition Council (NNC)
Dr. Elsa M. Bayani
Executive Director
National Int., South Superhighway,
Makati City
Tel. nos.: (02)818-7398; 892-4271;
896-4211
Fax no.: (02) 819-4280

National Tobacco Administration (NTA)
Atty. Carlitos S. Encarnacion
Administrator
Panay Avenue Cor. Scout Reyes St.,
Quezon City
02) 374-3987
(02) 374-2505 (Fax)
E-mail: nta_miscsd@pacific.net.ph

Philippine Coconut Authority (PCA)
Mr. Jesus Emmanuel Paras
Administrator
PCA Bldg., Commonwealth Ave., Cor.
Elliptical Rd. Diliman, Quezon City
(02)927-8706;928-4501 To 09 Loc. 200
And 300
(02) 921-6173 (Fax)
E-mail: pca_ofad@mozcom.com

Philippine Rice Research Institute
(Philrice)
Dr. Leocadio S. Sebastian
Executive Director
Maligaya, Munoz, Nueva Ecija
(044) 456-0354
(044) 456-0112; 843-5122 (Fax)

Sugar Regulatory Administration (Sra)
Dr. James C. Ledesma
Administrator
Philippine Sugar Center Bldg. North
Ave., Quezon City
02) 920-2416;920-4367
(02) 920-4325 (Fax)
E-mail: sraadm@info.com.ph

National Fisheries Research
Development Institute
Dr. Noel C. Barut
Chief (NFRDI)

State colleges and universities

Pangasinan State University
Dr. Rodolfo V. Asanion
President
Alvear St., Lingayen, Pangasinan
Tel. nos.: (075)542-6464; 542-6103
Fax no.: (075)542-8694

Ilocos Sur Polytechnic State
College
Dr. Alejandro V. Directo
President
Sta Maria, Ilocos sur
Tel. nos.: (077)732-5549; 732-
5512
Telefax: (077)732-5512

Don Mariano Marcos Memorial State
University
Dr. Ernesto R. Gapasin
President
Bacnotan, La Union
Tel. nos.: (072)242-5641; 888-5677;
888-5354
Fax no.: (072)888-3191

Mariano Marcos State University
Dr. Miriam Pascua
President
Batac, Ilocos Norte
Tel. nos.: (077) 792-3191; 792-
3925
Fax no.: (077) 792-3507

Cagayan State University
Dr. Eleuterio de Leon
OIC
Tuguegarao, Cagayan
Tel. nos.: (078)846-7455; 844-
1093
Fax no.: (078)844-1534

Isabela State University
Dr. Miguel P. Ramos
President
Echague, Isabela
Tel. no.: (078) 672-2013
Fax no.: (078) 672-2029

Quirino State College
Dr. Edgar M. Ricamonte
President
A. Bonifacio, Diffun, Quirino
Tel. no.: (074)694-7056
Fax no.: (074)694-7057

Nueva Viscaya State Institute of
Technology
Dr. Marcel M. Roquel
President
Bayombong, Nueva Viscaya
Tel. no.: (078)321-2080

Pampanga Agricultural College
Dr. Zosimo M. Battad
President
Magalang, Pampanga
Telefax: (045)866-0800

Nueva Ecija University of Science &
Technology
Dr. Gemiliano C. Calling
President
Gen. Tinio St., Cabanatuan City
Tel. no.: (044)463-1201
Fax no.: (044) 463-0227
E-mail: neust.edu.ph;
president@neust.edu.ph

Tarlac College of Agriculture
Dr. Phillip B. Ibarra
President
Camiling, Tarlac
Telefax: (045)934-0216
E-mail: tca@mozcom.com;
tca.edu.ph

Ramon Magsaysay Technological
University
Dr. Feliciano S. Rosete
President
Iba, Zambales
Tel. no.: (047) 811-1683

Central Luzon State University
Dr. Rodolfo C. Undan
President
Muñoz, Nueva Ecija
Telefax: (044) 456-0107
E-mail: clsu@mozcom.com;
administrator@clsu-ph.net

Aurora State College of Technology
Dr. Romeo S. Cabanilla
President
Baler, Quezon
Tel. nos.: (042)209-4354; 373-
5318
E-mail: ascot@mindgate.net

Batangas State University
Dr. Ernesto M. de Chaves
President
Batangas City
Tel. nos.: (043)433-0339; 725-5373

Southern Luzon Polytechnic College
Dr. Cornelio Esquieres
President
Lucban, Quezon
Tel. no.: (042)540-4763
Fax no.: (042)911-1252

Romblon State College
Dr. Idella G. Formilleza
President
Odiongan, Romblon
Tel no.: (042) 198-5901

Rizal State College
Dr. Heracleo Lagrada
President
Sampaloc, Tanay, Rizal
Telefax: (02)938-4159

State Polytechnic College of
Palawan
Dr. Concepto Magay
President
Aborlan, Palawan
Tel no.: (048) 433-4480

Cavite State University
Dr. Ruperto S. Sangalang
President
Indang, Cavite
Tel nos.: (046)415-0010; 415-
0011
Fax no.: (046)415-0012
E-mail: cvsu_rc@cavite.net

Marinduque State College
Dr. Isidro S. Sotto
President
Boac, Marinduque
Tel. no.: (042)332-2028
Fax no.: (042) 332-2419
E-mail: mscollege.net

Laguna State Polytechnic College
Dr. Ricardo A. Wagan
President
L. de Leon St., Siniloan, Laguna
Tel. nos.: (049) 536-1349; 536-813-
0452
Fax no.: (049) 813-0273

Bicol University
Dr. Emiliano A. Aberin
President
Legaspi City
Tel. no.: (052) 481-1400
Fax no.: (052) 481-1401
E-mail: bicol-u.edu.ph;
bumps@isp.bicol-u.edu.ph

Dr. Emilio B. Espinosa Sr. Memorial
State College of Agriculture &
Technology

Dr. Alfredo B. Atendido
President
Cabitan, Mandaon, Masbate
Tel. no.: (0912) 886-3629
Fax no.: (0912) 834-6378

Catanduanes State College
Dr. Adolfo S. Bagadiong
President
Virac, Catanduanes
Tel. no.: (052) 811-1485
Fax no.: (052) 811-1295
E-mail: csc@catnet.edu.ph

Partido State College
Dr. Modesto D. Detera
President
San Juan Bautista, Goa, Camarines
Sur
Tel. no.: (054)453-0235
Fax no.: (054)453-1083

Sorsogon State College
Dr. Augusto R. Nieves
President
Tel. nos.: (056)211-1869; 211-
1313
Fax no.: (056)211-1845

Camarines Sur State Agricultural
College
Dr. Wilfredo Olaño
President
San Jose, Pili, Camarines Sur
Tel no.: (054)357-7341
Fax no.: (054)357-7206

Camarines Norte State College
Dr. Floria P. Tagarino
President
Daet, Camarines Norte
Tel. nos.: (054)271-2151; 721-
2015
Fax no.: (054)511-2336

West Visayas State University
Dr. Lourdes C. Arañador
President
La Paz, Iloilo
Tel. no.: (033)320-0870
Telefax: (033)320-0879

Panay State Polytechnic College
Dr. Rochellir D. Dadvivas
President
Mambusao, Capiz
Tel. no.: (036) 647-0212

Iloilo State College of Fisheries
Dr. Elpidio A. Locsin, Jr
President
Tiwi, Barotac, Nuevo
Tel. no.: (033)361-2413
Fax no.: (033)361-2439
E-mail: iscof.ilo.onevirtual.com

Aklan State University
Dr. Benny A. Palma
President
Banga, Aklan
Tel. no.: (036)267-5981
Fax no.: (036)267-5801

Northern Iloilo Polytechnic State College
Dr. Wenceslao O. Sison, Jr
President
Barotac Viejo, Iloilo
Fax no.: (033)397-0314

Central Visayas Polytechnic College
Dr. Henry A. Sojor
President
Dumaguete City
Tel. no.: (035)225-4751
Fax no.: (035)225-0777
E-mail: cvpc.edu.ph;
sojor@cvpc.edu.ph

Cebu State College of Science &
Technology
Dr. Jose S. Tan
President
Cebu City
Tel. no.: (032)256-2657
Fax no.: (032)256-4169

University of Eastern Philippines
Dr. Pedro D. Destura
President
University Town, Catarman
Tel. nos.: 554-0347; 554-0414
Fax no.: 633-2353

Eastern Samar State College
Dr. Antonio B. Mendoza
President
Brgy. Maypangdan, Borongan, Eastern
Samar
Tel. no.: (055)261-2039
Fax no.: (055)261-2725

Leyte State University
Dr. Paciencia P. Milan
President
Baybay, Leyte
Tel. no.: (053)335-2601
Fax no.: (053)588-692

Palompon Institute of Technology
Dr. Juanito S. Sison
President
Palompon, Leyte
Fax no.: (053)323-8501

Leyte Institute of Technology
Dr. Leonardo V. Tanael
OIC
Salazar St., Quarry District, Tacloban
City
Tel. no.: (053)321-2185
Fax no.: (053)321-2186

Zamboanga State College of Marine
Science & Technology
Dr. Enrie Caraecle
President
Zamboanga City
Tel. no.: 991-0643 to 44
Fax no.: 991-0777
E-mail: zscmst.edu.ph

Western Mindanao State University
Dr. Eldigario D. Gonzales
President
Normal Rd., Baliwasan, Zamboanga City
Tel. no.: (062) 991-4238
Fax no.: (062) 991-3840

Basilan State College
Dr. Luningning M. Umar
President
Isabela, Basilan

Camiguin Polytechnic State College
Dr. Josefina Aves-Ebarle
President
Mambajao, Camiguin
Tel. no.: (088) 870-044
Fax no.: (088) 871-009

Central Mindanao University
Dr. Mardonio M. Lao
President
University Town, Musuan, Bukidnon
Tel. no.: (088) 356-1910
E-mail: cmu.edu.ph

Misamis Oriental State College of
Agriculture & Technology
Dr. Juan A. Nagtalon
President
Claveria, Misamis Oriental
Telefax: (0912)710-5324

Mindanao Polytechnic State College
Dr. Montano F. Salvador
President
Cagayan de Oro City
Tel. no.: (08822)727946
Telefax: (08822)726065
Region XI

Davao Oriental State College of Science
& Technology
Dr. Jonathan A. Bayogan
President
Guang-Guang, Mati, Davao
Oriental
Tel. no.: (082)388-3193
Fax no.: (087)388-3195
E-mail: rde@mtcnet.com

Southern Philippines Agriculture,
Business, Marine & Aquatic School of
Technology
Dr. Alexander M. Campañer
President
Poblacion, Malita, Davao del Sur
Telefax: (082)221-7627

University of Southeastern
Philippines
Dr. Julieta I. Ortiz
President
Davao City
Tel. no.: (082)221-7737
Fax no.: (082)221-7738
E-mail: usep.edu.ph; usep@edu.ph

Davao del Norte State College
Dr. Edgardo M. Santos
President
Panabo, Davao del Norte
Telefax: (084)628-4301

Sultan Kudarat Polytechnic State
College
Dr. Noel T. Binag
President
Tacurong, Sultan Kudarat
Tel. no.: (064)201-3175

University of Southern Mindanao
Dr. Virgilio G. Oliva
President
Kabacan, North Cotabato
Tel. no.: (064)248-2138
Fax no.: (064)248-2099
E-mail: usm.edu.phU;
usmpres@webling.com

Mindanao State University
Dr. Marcelino Tumanda, Jr
Chancellor
Naawan, Misamis Oriental
Tel. no.: (02)524-8222

Mindanao State University
Dr. Camar A. Umpa
President
Marawi City
Tel. no.: (063)520-959
Fax no.: (063)520-001

Agusan del Sur State College of
Agriculture & Technology
Dr. Doroteo E. Jaquias
President
Bunawan, Agusan del Sur

Surigao del Sur Polytechnic State
College
Dr. Remegita C. Olivia
President
Tandag, Surigao del Sur
Telefax: (086)211-3509

Northern Mindanao State Institute of
Science & Technology
Dr. Wenceslao T. Tianero
President
Ampayan, Butuan City
Tel. no.: (085)342-3047
Fax no.: (085)342-1079

Tawi-Tawi Regional Agricultural
College
Dr. Halid B. Abdurahman
President
Nalil, Bongao, Tawi-tawi
Tel. no.: (0918)416-0659

Sulu State College
Dr. Hamsali S. Jawali
President
Capitol Site, Jolo Sulu
Tel. nos.: (068)412-2871 to 72
Fax no.: (068) 558-4200

Abra State Institute of Science &
Technology
Dr. Imelda A. Buenafe
President
Lagangilang, Abra
Tel. nos.: (074)752-8414; (0917)904-
1973

Benguet State University
Dr. Rogelio Colting
President
Km. 6 La Trinidad, Benguet
Tel. no.: (074)442-2401 to 02
bsu.edu.ph
Fax No.: (074)442-2281
E-mail: cip@mailers.bsu.edu.ph

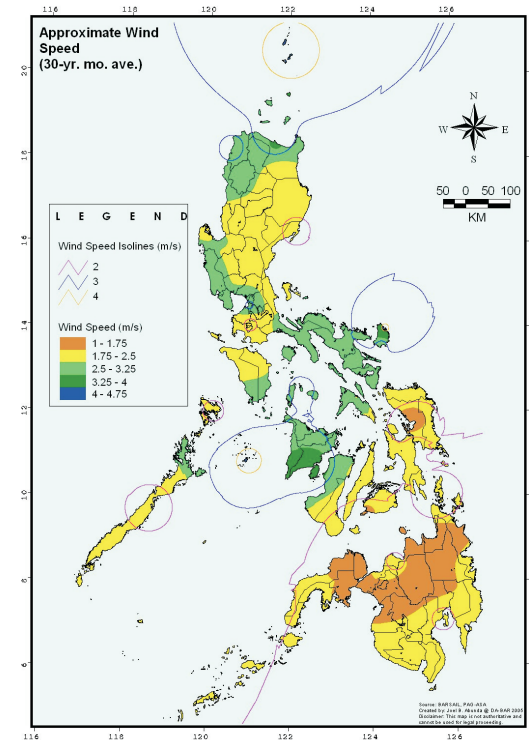
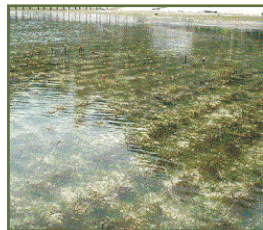
Mountain Province State Polytechnic
College-Mount Data
Dr. Marcelino T. Delson
President
Km 102, Mt. Data, Bauko, Mt. Province
Telefax: (074)602-1014

Ifugao State College of Agriculture &
Forestry
Dr. Serafin Ngohayon
President
Nayon Lamut, Ifugao
Tel. no.: (0918)387-2952
Fax no.: (0918)382-2108

Apayao State College
Dr. Lorenzo J. Tadios
President
Malama, Conner, Apayao
Tel. no.: (0918)805897
Fax no.: (074)382-2108

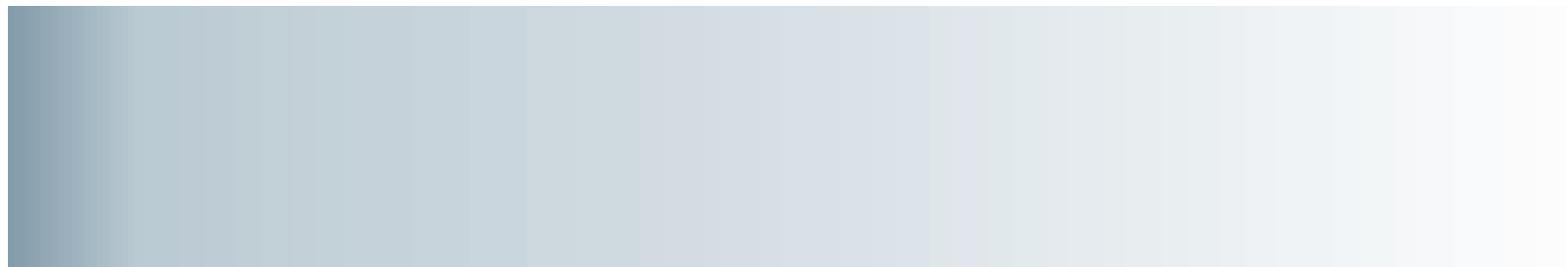
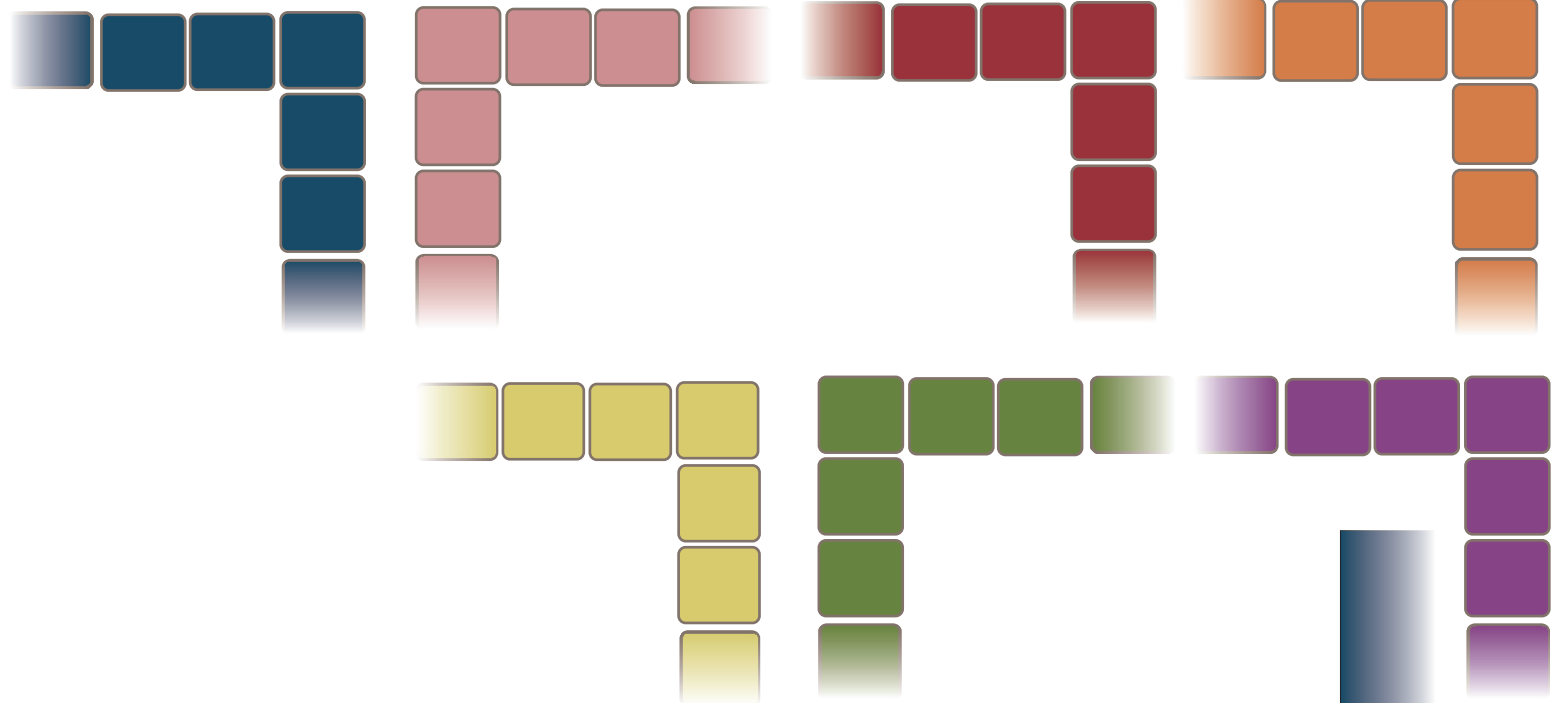


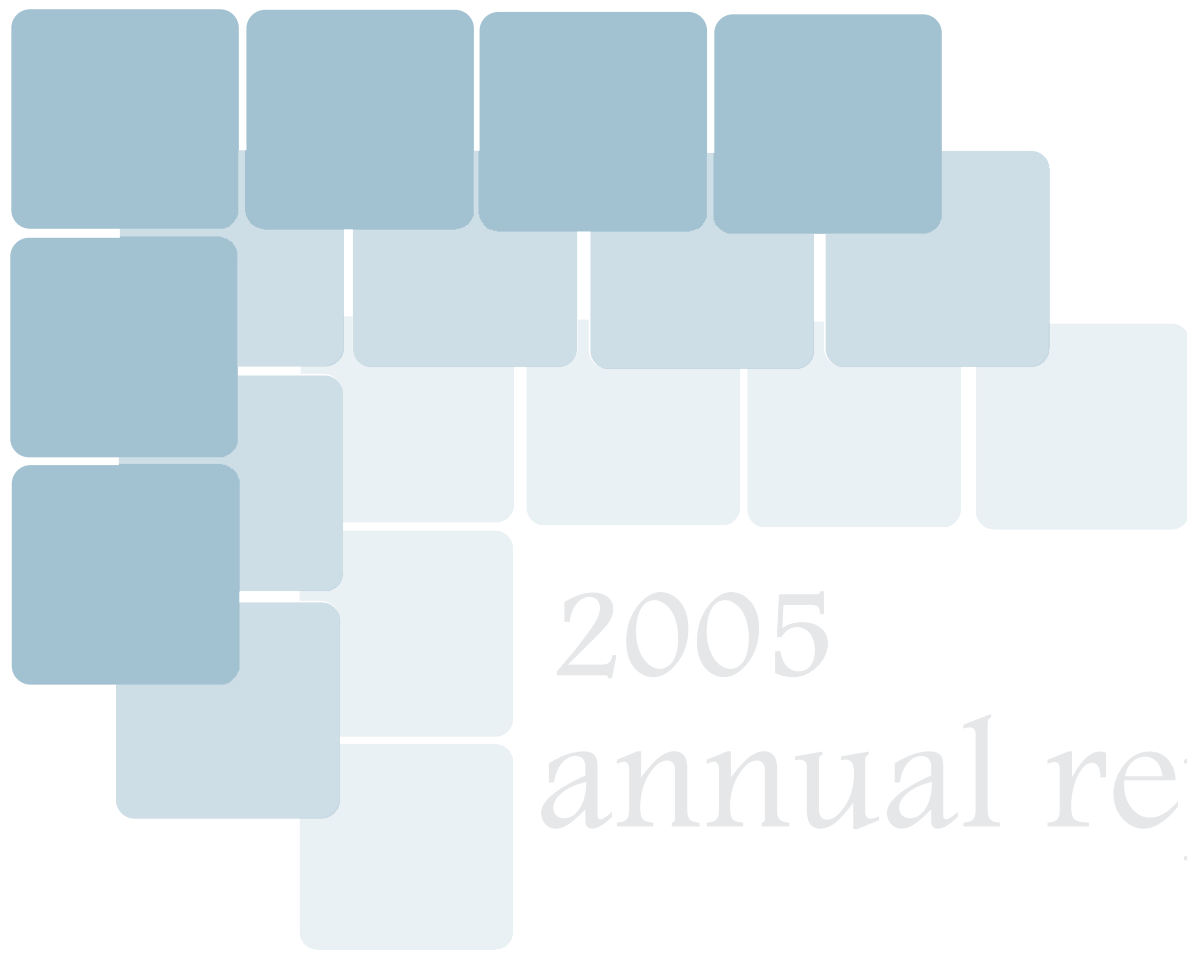
Southeast Asian representatives pose with Philippine organizers at the APAARI Research Needs Assessment Workshop



Dr. Andrea Agillon (first row, 2nd from right) and her classmates in one of her trainings held in Europe







2005
annual report



**Making Technologies Work for Agriculture, Fisheries,
Industry, People and Communities**

Managing EditorMa. Lizbeth J. Baroña
Lay-outMa. Lizbeth J. Baroña
Print managerAnthony A. Constantino
EditorDr. Virginia A. Duldulao

This annual report was prepared from the reports of the different divisions and units of the Bureau. ISSN 1655 3950



DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Research

