



Bureau
of Agricultural
Research

2009 ANNUAL REPORT

*innovations in management
of research and development*



Mailing Address	BUREAU OF AGRICULTURAL RESEARCH RDMIC Building, Visayas Avenue, corner Elliptical Road, Diliman, Quezon City Philippines 1104
Telephone	+63 (2) 9288624, 9288505, 9200231, 9284907
Fax	+63 (2) 9275691
Email	rd@bar.gov.ph
Website	http://www.bar.gov.ph

BAR ANNUAL REPORT 2009



One of the most alarming threats to tomato production industry in the Philippines is the tomato leaf curl (ToLC), locally referred to as “kulot”. It is considered to be the most destructive virus disease of tomato resulting from reduced crop yield to almost complete yield loss under severe infections.

Unfortunately, no varieties have been developed to be resistant to this disease. Researchers and breeders from the Northern Foods Corporation (NFC) has collaborated with the Bureau of Agricultural Research (BAR) to address the problem on ToLC and consequently resolve the supply need for quality and high-yielding processing tomato variety.

One of the beneficiaries is the parents of this young boy (see photo) who is helping his parents pick fresh tomatoes in Sarrat, Ilocos Norte which are delivered in a nearby tomato paste processing plant.



*BAR assures the
future of the
Filipino people
through research
excellence
in AGRICULTURE
and FISHERIES*



One will easily notice that a key feature of our activities in 2009 is our active engagement in the field of climate change. We are underscoring pro-active action in our R & D activities to mitigate its ill-effects and develop adaptation schemes. ~ Dr. Eleazar

innovations in management of R&D

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message from the director

A TESTIMONY OF DEEP COMMITMENT



BAR Director Nick Eleazar

It is with a deep sense of humility to present the accomplishment report of the Bureau of Agricultural Research (BAR) for the year 2010.

I am, indeed, very proud of its overall performance. While there is no question about our mandate to be in the forefront of applied research and development, we, however, took a different perspective in doing our job. We had a very clear vision of what research and development must accomplish. Several themes are embedded in the different sections of the report. In order to institutionalize the right modality in the conduct of research and development, BAR adopted the resource management framework as advocated in the AFMA Review. Its adoption became all the more relevant when Secretary Yap made a pronouncement that agriculture is business.

We became very aware of the context of such pronouncement which is agribusiness as the specified goal of agriculture in the Medium Term Philippine Development Plan (MTPDP). Our two banner programs, CPAR and NTCP were designed and are being implemented with this in mind.

One will readily recognize the inter-related themes reflected in this Annual Report. From our perspective, these are addressing

the fundamental issue of institutionalizing an innovative way of doing agriculture. The importance of the community-based approach is central to our concept of how to effectively use the results of research. Without exception, we are well on our way to institutionalize the central role of organization in the new agriculture. Our approach facilitated the process flow of agribusiness development which requires the support of enterprise and integration of enterprise which we take as the real foundation of agribusiness development. The key to our approach highlighted the critical importance of management and therefore, decision making is central.

With this, BAR, in its major activities highlighted the key role of information. This theme can be seen as the cutting-edge of the different reports. We are pleased with the steps we are taking toward instituting information-driven agriculture. Global corporations engaged in agriculture as business have the comparative advantage in instituting management schemes which are focused on information management. They know that their competitive advantage is in the management and control of information.

We are now fully cognizant that the role of R&D is to generate the right information at the right time for profitable management decision in agriculture. This is the over-riding

theme that cut across the reports. Through our R&D programs, we are in the process of creating an information sensitive community of farmers. Hence, our approach begins where the farmers. We would be remiss in our work if we fail to link knowledge to information. These are complementary! As information becomes the basis of new knowledge, issues and concerns generated by it leads to the creation of challenges -- new information. We take it that managerial innovation and change is the key to successful agribusiness development.

Support to technology transfer and commercialization through community-based initiatives was also reinforced in last year's initiatives giving emphasis on strategic alliances among concerned R&D stakeholders.


One will easily notice that a key feature of our activities in 2009 is our active engagement in the field of climate change. We are underscoring pro-active action in our R&D activities to mitigate its ill-effects and develop adaptation schemes. This, to our mind, is the key role of R&D. It must not only subscribe to a particular agenda but it must always take a critical stand. This is evident in our agenda for alternative agriculture. In view of our emphasis on information, we are fully cognizant of the key to its success is to highlight the need to design strategies that are focused on alternative management of agriculture.

Finally, we feel that we have successfully instituted the true meaning of information-driven agriculture through

our major support to collaborative research and extension service. In 2008, we supported the conduct for the setting up of collaborative RDE nationwide. Its initial implementation was executed with UPLB for Regions 4a, 4b, and Region 5 in 2009.

As part of our report, we have become very conscious of the role of DA and, specifically, BAR as a support system. This conceptualization has been muted in our development agenda as seen in the pronouncement of Secretary Yap on F I E L D S. To remedy this situation, we are now moving into developing an integrated support system. Again, through our critical perspective, we are insuring that the connection between partnership, cooperation and collaboration is well-delineated.

We are, therefore, submitting our 2009 Annual Report as testimony of our deep commitment to insure that our R and D are responsive to shortening the trajectory of agriculture towards agribusiness development. We are confident that this can be achieved through the effective adoption of integrated support systems whose main goal is the development of an integrated and unified information system to propel the comparative advantage of Philippine agriculture and fisheries industries in the global arena.


DR. NICOMEDES R. ELEAZAR, CESO IV
Director, BAR

introduction

BAR AT THE FOREFRONT OF R&D

Since its birth in 1987, BAR has been at the forefront of research and development. Through the years it has been fighting for increased funding. Despite its importance, its activities were always under funded. To the credit of the bureau, even with this severe handicap, it never wavered and has relentlessly taken great strides to institutionalize the real essence of research and development.

It must be admitted that, to a substantial degree, development management in the Philippines has not been an active user of research results. Through the years development plans simply followed the development thrust as stated by NEDA. In fact, in the AFMA evaluation, it was noted that there were some local government units which did not see the value of research.

BAR can say it with pride, that the year 2009, was a major turning point in the institutionalization of research and development in agriculture. It was able to show that it is not only a generator of research results – it is itself, in reality, a user of research results.

BAR's adoption of CPAR and NTCP as its banner programs was a logical outcome borne out of research results. This was complemented by the policy pronouncements of DA. It was during this time that BAR institutionalized a critical perspective in its research and development agenda. It saw the value of adopting a framework in designing and implementing its research agenda. It

adopted a community-based resource management framework. This is the underlying framework of its two banner programs.

In its critical stand, it did not fail to see the far reaching consequences of the pronouncement of Secretary Yap that agriculture is business. In adopting this orientation, it took cognizance of the MTPDP for agriculture whose main feature is agribusiness development. BAR saw the connection between the two. However, it realized that there are three earlier processes that must be met which are income generation, enterprise development, and integration of enterprises. It also adopted DA's pronouncement that agriculture must be information driven. These major developments became the core of BAR's research and development agenda on which its divisions' activities were patterned.

This is the thematic core of BAR's Annual Report for 2009. Its major activities gave particular emphasis to the generation and application of information in agriculture and fishery. It set the tempo for making the stakeholders sensitive to the value of information for action. This was facilitated through the national implementation of monitoring and evaluation system. This was instituted not simply for tracking project activities but as aid to decision making.

BAR has institutionalized team-based management and this is being shown in



the complementation of the activities of its Divisions. The excitement that has been generated by its major activities in 2009, led to three major innovations, and these are: 1) the emphasis it places on ICT especially in the use of the internet as a key modality for transmitting information and the uses of GIS; 2) the substantial attention it is currently giving to indigenous / alternative agriculture; and 3) collaborative research and extension management system.

As can be gleaned from our Report, BAR took to heart the meaning and context of management as reflected in information management. Its coordination and information dissemination activities underscored the importance of management, not only in development planning, but also in program design and implementation.

As shown in the Report, BAR has also been giving substantial attention to emerging issues and trends in the fields of agriculture and fisheries. The issues related to alternative agriculture and climate change are in the forefront of BAR's research and development agenda. The protection of the generators of technology is duly attended to by BAR through intellectual protection.

The latest innovation adopted by BAR as shown in the Report which has far reaching effect on R and D, is its recognition of its key role as a support service. This is well acknowledged but was never made explicit. With the globalization of agriculture, it has become more complex and no single agency can provide its clients all the necessary support services. A support system based on collaboration is needed and BAR is supporting the management and institutionalization of a unified support system. Collaboration has become a hallmark of BAR and has brought in an increasing number of local and even international activities.

The great turn-around of research and development programming is in the making and BAR will not renege in its responsibility in generating the right information at the right time to guarantee that its stakeholders in agriculture and fishery are duly sensitized to information in order for them to choose the right options so that they can make profitable decisions. The smart management of community resources is the key to agribusiness development. This is the cutting-edge of BAR's recent engagements and is the high point of its 2009 Annual Report.

Farmers in Pangasinan doubled their incomes and increase their yields by planting hybrid *palay* seeds.



program development

ATTUNED TO THE CHALLENGES OF THE INDUSTRY

The program and project activities of the Program Development Division (PDD) have consistently been at the forefront of innovation and change at BAR. It has developed a proactive orientation focused on ensuring that it is supporting research and development attuned to the major challenges of agriculture and fishery industries. Three major concerns were on top of its agenda in 2009 namely:

Climate Change – The PDD is not only supporting studies but, at the same time, has given much attention to advocacy by supporting the conduct of workshop, dialogues and scientific exchange among the stakeholders on mitigating and designing adaptation measures to combat the ill effects of climate change.

Indigenous Agriculture – PDD is adhering to the policy pronouncement of CGIAR that the competitiveness of developing countries like the Philippines in the field of agriculture lies in the support to encourage and promote unique commodities that could be developed for global competitiveness. Its support to this endeavor is complemented by a strong social component which encourages the organization of farmers for efficient production performance. More attention is being given not only to meet the requirements of social enterprises but

agribusiness development as well.

Collaborative research and extension network PDD took a bold step to develop an integrated support system in agriculture and fishery. The lessons learned from the implementation of Community Participatory Action Research (CPAR) were translated into a new research agenda giving attention to an integrated support system. It is now clear that with climate change the issues in agriculture and fishery development have become far more complex and the design of interventions is beyond the capability and capacity of any single organization.

Wary that some past partnerships failed due to insufficiency of design, the PDD has focused on joint activities in agriculture and fishery aimed at developing integrated support systems, with special attention to the role of information as a way to promote sustainable development.

On the whole, in view of the need to design efficient and effective resources management systems in agriculture and fishery industries, PDD is supporting and is pushing for major transformation in agricultural information and knowledge systems. It is in the midst of institutionalizing an information-driven production management system.

RESEARCH, DEVELOPMENT & EXTENSION PROGRAM ON CLIMATE CHANGE



Climate change is one of the major concerns of the country today as Philippine agriculture and fisheries sectors remain highly vulnerable to its effects and of the changing climate posing great threat to the country's food security.

Recognizing its seriousness, BAR through PDD, started development of BAR Research, Development and Extension Program on Climate Change that would strategically target issues connected with climate change. These include climate change mitigation and adaptation research initiatives.

The program aims to contribute to the country's efforts to combat the impacts of climate change to the agriculture and fisheries sectors through research and development. It includes among others the enhancement of the adaptive capacity of the agricultural sector in coping with the threats brought by climate change.

The new RDE program was presented during the Research Development and Extension Agenda and Program (RDEAP) consultation workshop in 2009 and it consists of three components: 1) Climate Change Adaptation -Short Term; 2) Climate Change Adaptation - Long Term; 3) Climate Change - Mitigation

INDIGENOUS PLANTS FOR HEALTH AND WELLNESS



Aimed at a more in-depth study of the country's indigenous plants for various purposes such as functional food, herbal medicine, and as raw material for pharmaceutical and cosmeceutical products, BAR crafted the Indigenous Plants for Health and

Wellness RDE Program in partnership with experts from University of the Philippines Los Baños (UPLB) and Bureau of Plant Industry (BPI).

The new RDE program for Indigenous Plants Health and Wellness was also presented

during the RDEAP consultation workshop in October 2009 and the NAFC sub-committee



COLLABORATIVE RESEARCH, DEVELOPMENT AND EXTENSION SERVICES FOR FOOD SECURITY

Launched in 2008, DA forged ties with the State Colleges and Universities (SUCs) and the Local Government Units (LGUs) in the country for a collaborative extension service. BAR, as the lead agency for R&D was tasked to coordinate the DA-SUC-LGU Cooperative Extension Service Program at the national level and with the DA-Regional Field Units at the regional level.

As an offshoot activity, DA, through BAR, funded the UPLB project titled “Collaborative Research, Development and Extension Services for Food Security (CRDES): The Case of Regions 4a, 4b and 5” in 2009.

The project aimed to ensure and sustain food self sufficiency in Regions 4A, 4B and 5 by fostering RDE partnership among the DA-LGU-SUC-CSOs in selected study provinces; strengthening capacities of partner institutions for quick response studies, with application to the FIELDS program of the Department of Agriculture; and enlarging capacities of partners for food

security planning, local policy formulation and agricultural governance.

The project is anchored on four key components: 1) Quick Response Studies/Mechanisms/Actions, 2) Capacity Building of and Partnerships with Local Government Units (LGUs), State Universities and Colleges (SUCs) and Civil Society Organizations (CSOs), 3) Functional FIELDS – Diagnostics, Seeds and Soil Fertility, and 4) Collaborative Field Researches (Socio Economics Research). The study sites include Quezon and Laguna for Region IV-A, Mindoro Oriental, Mindoro Occidental and Romblon for Region IV-B, and Camarines Sur, Albay, Camarines Norte and Sorsogon for Region 5.

The project has already conducted baseline studies, key informant interviews and focus group discussions in the project/study sites for data collection and has started formalizing the arrangements for the establishment of technology demonstration farms in the selected sites.

STRENGTHENED INTERNATIONAL PROGRAMS

Completed initiatives

ICRISAT-BAR project titled “Introduction, Promotion and Efficient Seed Support System of ICRISAT Asha Peanut Variety in Region 2, Philippines”

A Package of Technology (POT) for the production of Asha peanut variety is now available to improve the productivity of local peanut farmers in the country. The POT was developed by the Department of Agriculture-Cagayan Valley Integrated Agricultural Research Center (DA-CVIARC) through a three-year project on the production and promotion of Asha peanut.

Initiated in April 2005, Asha was field tested in pilot areas in Cagayan including Ilagan, Isabela and Iguig. The project aimed to evaluate and compare the adaptability and agronomic performance of Asha with locally grown peanut varieties. DA-CVIARC has produced 11,353 kg of seeds using its five hectare production area in Ilagan, Isabela, and farms of DA-assisted seed growers.

The seeds were distributed for planting purposes to initial farmer-producers and government accredited seed-centers.

To further promote the suitable use of Asha in the country, CVIARC produced and distributed Information Education Communication (IEC) materials. The center also conducted five batches of Asha production training in the provinces of Isabela, Cagayan, Nueva Vizcaya, and Batanes wherein a total of 333 stakeholders participated and were provided with technically skills. Field days and television programs were also aired to promote the POT for Asha. The National Seed Industry Council (NSIC) awarded the Certificate of Registration for Asha under the Registry Number NSIC 2009 Pn 15.



The introduced cultivars were evaluated based on their agronomic and yield performance through on station trials in UPLB and the results were published in a catalogue.”



Biodiversity International-BAR project titled “Introduction, Evaluation, and Adoption of Improved and Superior Land Races of Banana for Food and Income Alleviation”

Two National Repository, Multiplication and Distribution Centers (NRMDC) were established in UPLB and in the Bureau of Plant Industry-Davao National Crop Research Development Centre (BPI-DNCRDC) under the project. These centers were used to maintain (in vitro conservation and in vivo maintenance) the 7 local hybrids and the 23 cultivars from the Musa Germplasm International Transit Center in the University of Louvain in Belgium that were introduced and evaluated through the project.

The introduced cultivars were evaluated based on their agronomic and yield performance through on station trials in UPLB and the results were published in a catalogue. Also conducted were assessment for their resistance to major diseases such as banana bunchy top, black sigatoka, Fusarium wilt and

nematodes. Sensory evaluation to determine their acceptability was also done.

Based on the mentioned activities, FHIA 17 and FHIA 21 cultivars were identified with good potential in terms of processing them into banana chips and cake, while FHIA 03 and FHIA 23 cultivars were recommended for planting in Mindanao due to its high yield and acceptable taste. To promote the utilization of these introduced cultivars, farmers' field trials were set up in areas in Luzon and Mindanao and four training courses on the nursery and field management were conducted. The project was commended for the linkages it has established with other agencies and for overcoming the barriers of the cultural preferences and practices in the banana industry.



IRRI-PhilRice-BAR project titled “Improving Knowledge Exchange and Decision Making Among Rice Stakeholders Through ICT-based Technology Promotion and Delivery Systems”

Through the project, 3,185 participants (725 agricultural extension workers (AEWs), 1,932 farmers and 528 youths) were introduced and trained on the maintenance and use of the cyber units, the internet and IRRI's Rice Knowledge Bank (RKB) and a total of 5 Tagalog, 43 in Pampango, 30 in Hiligaynon/Ilonggo and 30 in Cebuano RKB Fact Sheets were translated and produced for the promotion/dissemination of agricultural technologies to farmers in the rural areas.

As reported by IRRI and PhilRice, the installed cyber units with access to the internet and RKB helped rice farmers in the project sites to easily and immediately access the information they need on rice farming and the AEWs to have a reliable reference material in providing agricultural information and answering farmer queries in trainings, texts and radio.

Based on the results of impact evaluation studies done for the project, farmer-respondents had higher yield, better quality of harvest, decrease in the amount of fertilizers and pesticides used, and immediate diagnosis/solution to field problems as a result of their access to RKB.



ICRISAT-BAR-BSWM project titled “Community-based Watershed Management Approach in Improving Livelihood Opportunities in Selected Areas”

The activities under the project generated employment and became a source of income for the communities. For the information dissemination component, the project has produced brochures, flyers and posters and has conducted exhibits. According to BSWM, the project has provided significant impacts to the communities in terms of social, economic and environmental contributions. The members of the community became aware of the need to protect, conserve, and manage watershed resource in a more sustainable manner. The ICRISAT provide some of the technology inputs.



STRENGTHENED INTERNATIONAL PROGRAMS

Multi-year initiatives

Implementation of Field Testing of ICRISAT Legumes Varieties and Technologies in Selected Regions of the Philippines



In line with President Gloria Macapagal-Arroyo's Comprehensive Livelihood and Emergency Employment Program (CLEEP) and to disseminate suitable technologies that will provide rural farmers higher income while addressing food inadequacy, BAR, in collaboration with ICRISAT, took the lead in supporting a Research and Development/Extension endeavor focusing on peanut, pigeon pea and chickpea variety for suitability in local conditions.

The project aimed at assessing the crops' adaptability and the development of appropriate production package of technology (POT), seed multiplication, and technology promotion in selected regions in the country. It also sought to increase and diversify food production by introducing new peanut, pigeon pea and chickpea varieties, dissemination of

technologies to farmers and strengthening institutional capacity. The pilot regions identified in implementing the project were those covered by Department of Agriculture-Regional Field Units (DA-RFUs) I, V, VI, VII, VIII, IX, and X.

BAR coordinated the setting-up of on-farm trials in seven pilot regions. Based on the results of the first cropping trial, the ICRISAT varieties such as ICGV 00350, ICGV 01376 and ICGV 99046 are the dominating breeding lines identified for peanut while chickpea and pigeon pea have no results yet because harvesting season is still on-going. The identified potential breeding lines can already be included in the national screening as test entries in 2010 if found stable in producing high yield in the second yield trials to be conducted in six test-sites in the country.

Bioversity International (IPGRI-COAGENT) project titled “Coconut-based Product Diversification to Reduce Poverty in Coconut-Growing Communities”

The project of IPGRI-COAGENT titled “Coconut-Based Product Diversification to Reduce Poverty in Coconut-growing Communities” completed its 2nd year of implementation. The project's accomplishments and impact on the coconut farmers in communities in Regions IV-A, IV-B, VIII and XII were presented during the 2nd annual review conducted for the project on February 12, 2009. Now on its third year of implementation, the project has conducted and organized capacity building activities such as establishment and strengthening of community-based organizations (CBOs), microcredit system, and training of CBO officers, farmers, women, researchers and extension workers.

Also featured in the study are the production trials in the communities of the marketable high-value coconut products such as virgin coconut oil, nata de coco, bucuayo, pacumbo, tuba/vinegar, macapuno candies, bionets, doormats, handicrafts such as bags, sheet liners, and hats that eventually became an income generating activity for them. Community-managed nurseries were established by the CBOs in which informal seed systems for growing and selling recommended farmers' coconut varieties developed. From these nurseries, CBO members purchased or loaned out coconut seedlings which they planted. These components served as the income generating activities for the communities which contributed to the project's success and sustainability.



Now on its third year of implementation, the project has conducted and organized capacity building activities such as establishment and strengthening of community-based organizations.

Bioversity International (IPGRI-APO) project titled, “Conservation and Use of Tropical Fruit Species Diversity in the Philippines”

Since very few tropical fruits are cultivated on a plantation scale and most are grown in small-scale such as home gardens or small plots, valuable diversity that is represented by the collected varieties are rarely conserved and utilized. Thus, a project, “Conservation and Use of Tropical Fruits Diversity in the Philippines,” was proposed to systematically conserve and utilize the tropical fruit species diversity in the country.

The Bioversity International (IPGRI-APO), a nonprofit international research organization dedicated solely to the conservation and use of agricultural biodiversity, has been working closely with its local partners, including the Philippines in improving the conservation and use of tropical fruit species. Since its implementation in 2004, continuous collection, conservation, characterization and utilization of the tropical fruit species in the country were done. For Durian and other Durio species, inventory and morphological characterization (using the developed Descriptors) of the existing collections at BPI-Davao National Crops Research and Development Center (DNCRDC) was done. Collecting missions were also conducted wherein 87 accessions were obtained from Mindanao and 2

accessions from Western Philippines University (WPU) in Luzon. These are now planted in the established Durian Field Genebank in which their vegetative characters, including growth increments were gathered.

In the DA-Albay Experiment Station, draft pili descriptors developed were used in characterization and evaluation of 34 strains. Leaves, flowers, and fruits were collected for evaluation and the scions were used for grafting. Pili pulp oil extractions obtained 125-150 ml oil for every 200 pieces of pili pulp added with 2 cups of distilled water. For the Jackfruit and other *Artocarpus* species (DA-RFU 8-EVIARC), collection trips were conducted in selected areas in Eastern Visayas. As of the latest count, 157 jackfruit accessions and 6 *Artocarpus* species were maintained in the established genebank in which 46 were fully characterized. For the Mangosteen and other *Garcinia* species (WPU and UPLB), a catalogue containing photographs and description of the surveyed and collected materials was drafted.

Nurseries and Fruit Collection Orchard were established at WPU Aborlan, Palawan and in UPLB for the maintenance of the collected accessions. Grafting trials involving mangosteen scion and different *Garcinia sp.* as rootstocks and characterization and propagation of 4 *Garcinia* collections at the Makiling Botanical Garden are being conducted.



The WorldFish Center project titled, “Strengthening Governance and Sustainability of Small-Scale Fisheries Management in the Philippines: An Eco-System-based Fisheries Management Approach “

To identify successful governance arrangements for small-scale fisheries management in the Philippines using an ecosystem-based management approach, BAR, in collaboration with the WorldFish Center forged ties for a project on “Strengthening Governance and Sustainability of Small-Scale Fisheries Management in the Philippines: An Eco-System-based Fisheries Management Approach. “

The WorldFish Center is an international, non-profit organization with a mission of reducing poverty and hunger through research-for-development initiatives to improve the small-scale fisheries and aquaculture sector. During its implementation in its sites in the Babuyan Channel, San Miguel Bay, Sogod Bay and Lanuza Bay, the project implementation conducted data/information collection, site visits/diagnosis and consultation meetings/workshops with the key

partners and stakeholders and rapid appraisals conducted to assess the current fisheries management practices at different levels of governance in the country. From the data collected, a prototype of bibliographic database and the customized National Aquatic Ecosystems Information System (NAEIS) to organize and store raw data were developed, and the fishery resources and coastal habitats and the governance institutional dimensions of fisheries management were obtained. Also prepared were preliminary analysis based on the literatures, four technical reports for each of the study sites and 17 research papers as synthesis papers of the experiences and lessons learned on the management of small scale fisheries. From the identified fisheries management and governance issues, potential policy recommendations were identified during the stakeholder validation workshop.



STRENGTHENED INTERNATIONAL PROGRAMS

Improved R&D management

Impact Assessment of ACIAR's Grain Storage Pest Control Research in the Philippines

“Results of the study showed that the benefits realized from the adoption of ACIAR technologies on stored grain pest management were quite substantial.”



The Australian Centre for International Agricultural Research (ACIAR) and DA-BAR forged ties for the research project, “Impact Assessment of ACIAR's Grain Storage Pest Control Research in the Philippines”. This project was jointly implemented by other research organizations such as the Philippine Philippine Rice Research Institute, Bureau of Agricultural Statistics and Agricultural Policy Credit Council.

ACIAR, as the lead agency in undertaking detailed impact assessments provided useful inputs in selecting, designing, and developing new projects. For BAR, as a funding and coordinating body for agriculture and fisheries R&D in the Philippines, impact assessment studies are crucial in demonstrating that all its R&D endeavors are effective and their impacts are being felt at the ground level.

The DA-BAR-ACIAR study was specifically aimed at assessing the impacts of the series of pesticide research as a follow through of earlier assessment studies.

This is based on the guidelines on impact assessment recently developed by ACIAR. Results of the study showed that the benefits realized from the adoption of ACIAR technologies on stored grain pest management were quite substantial. In the order of the magnitude of sharing the benefits, the consumers have the largest share, this is followed by the farmers who are the supplier of the paddy to be stored and treated. The benefit cost ratio is large and the international rate of return (IRR) is higher than the opportunity cost of money. Similarly, for the NPVs the benefits are large and positive.

As a major output of the project, the “Integrated Management of Insect Pests of Stored Grain in the Philippines” had been published in ACIAR's impact assessment series in 2009. DA researchers including BAR staff also gained knowledge and skills in assessing the social and economic impact of completed agricultural research projects.

Diversified Farm Income and Market Development Project (DFIMDP)

Diversified Farm Income and Market Development Project (DFIMDP), a World Bank-supported project, is designed to stimulate rural development and growth of farmers' incomes by enhancing the competitiveness of Philippine agriculture and fisheries through market-oriented private sector-led investments.

An impact assessment to the projects supported by BAR under DFIMDP was conducted as part of the pre-closing activities of the DFIMDP which closed in June 2009.

The College of Public Affairs of UPLB was contracted to conduct the "Impact Evaluation of R&D Projects Supported under the Diversified Farm Income and Market Development Project." A series of interviews and site visits was conducted wherein 48 projects were selected to be assessed in the macro and micro level.

The assessment followed BAR's Competitive Research Grants (CRG) manual procedures. Project proponents mentioned their appreciation of the monitoring and evaluation conducted by BAR because according to them, this has improved their project conceptualization and outcomes.

In general, the sampled projects in the study exhibited strong contributions to the objectives of enhancing market competitiveness of the Philippine agriculture and fishery sectors. Evidences of significant contribution of the projects were seen in terms of increase in farm incomes, increase in business opportunities for investors and increase in non-farm jobs. Secondary effects were shown to be benefits for the environment and human health.



INTENSIFIED LOCAL FUNDING

BAR continuously receives, accepts, and evaluates proposals in accordance with the Agriculture and Fisheries Research and Development Agenda and Programs, 2006-2010.

In 2009, the BAR In-House R&D Proposals Screening and Review Committee received 203 proposals which included 30 CPAR proposals from DA RFUs/ROs, 12 CPAR proposals from the LGUs, four PRA proposals, two ADP and 154 Applied and one Basic R&D proposals.

Moreover, a total of 125 projects were funded for the year. Majority (81) were new Community-based Participatory Action Research (CPAR) projects. It is important to note that the numbers of funded CPAR projects is higher because it is one of the priority programs of BAR. Thirteen projects funded were continuing-Applied, 24 new-Applied, two new-Basic, one new-ADP, and four PRA (see Figure 1).

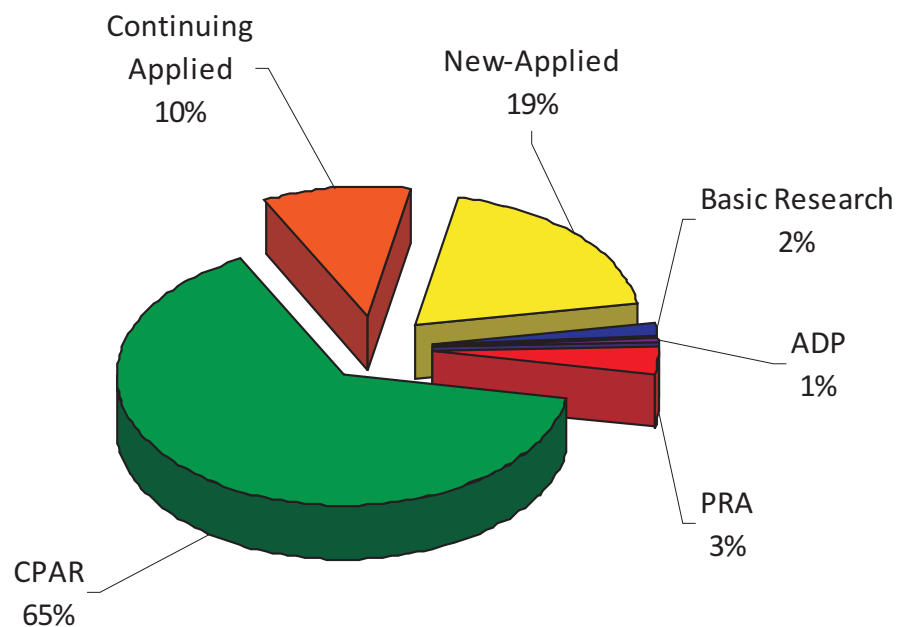


Figure 1. New projects funded for 2009

ENHANCING HUMAN AND INSTITUTIONAL CAPACITIES

HRD-Degree and Non-degree, participation in foreign scientific fora



BAR implements a human resource development program and a R&D development and maintenance program in order to strengthen the R&D capability in agriculture and fisheries. BAR, through its Human resource Development Program, has been continuously supporting the critical mass of research staff of the Department and partner institutions under the National Research and Development Systems for Agriculture and Fishery (NaRDSAF).

For the year 2009, three new scholarships for Masters Degree programs were awarded under the DA-BAR NaRDSAF Degree Scholarship Program. This year's scholars are in the fields of Plant Pathology, Rural Sociology and Environmental Science. The Program is a facility that may be tapped by R&D staff to pursue higher studies,

providing financial support for the pursuit of MS or PhD degrees in accredited universities.

Assistance was also provided to scholars related to their requests for renewal of contracts of service, scholarship extension, change of course, thesis/dissertation allowance, budget realignment, refund payment of scholarship expenses of delinquent scholars, evaluation of thesis proposal, and liquidation of book allowance.

Under the Thesis/Dissertation Assistance Program (TDAP), eight applications (SUCs - 5; DA-3) were approved, processed and provided assistance for funding releases. Technical assistance was also provided to grantees' requests for liquidation of thesis/dissertation support.

Institutional development

The Institutional Development Grant Program is a flexible funding facility under R&D Facility Development and Maintenance Program of BAR. The IDG Program aims to strengthen the institutional capacities of members of the national, regional, and provincial RDE networks under the NaRDSAF through upgrading and acquisition of scientific equipment, renovation and construction of priority research facilities and equipment and other critical needs.

Twenty-two projects were funded within the year. These projects were distributed among the DA-RIARCS (DA-ILIARC, CVIARC, CLIARC, STIARC, DA-V Sorsogon Dairy Farm, WESVIARC, CENVIARC, EVIARC, CEMIARC), SUCs (ASCOT, CNSC Main and Fishery-Mercedes Campus, SLSU, USM, NEUST), LGUs (Municipality of Castilla, Sorsogon and Remedios T. Romualdez Agusan del Norte), and Private sectors (Kawiagan sa Ranao Livelihood Training Center, and CLSUFI).

BAR also approved the master station development plans of DA-ILIARC, WESMIARC, BFAR-CARAGA and -CEMIARC.



Thesis/Dissertation topics are listed below:

1. Growth and Survival of Grouper, *Epinephelus* sp. Larvae: a Bioenergetic Approach
2. Nutrient Use Efficiency and Energy Utilization of Yam Bean
3. Growth and Reproductive Performance of Quail Fed Varying Levels of *Trichantera gigantea* Leaf Meal Supplemented with Aloe vera Extract and Fermented Cheese Whey in Drinking Water
4. Environmental Performance of Rice-Waste By-Product Utilization in Selected Farms in Pangasinan
5. Modelling of Biomass Potential of Cagayan Valley Region for Biofuel Feedstock Production
6. The Effectiveness of Corn Research and Development Project in Autonomous region in Muslim Mindanao
7. *Ginintuang Masaganang Ani* (GMA) Rice Program in Autonomous Region in Muslim Mindanao
8. Managerial Skills of the Municipal Agriculturists in the Province of Albay



TDAP awards support the conduct of thesis or dissertation studies that address major problems and concerns in agriculture and fisheries. The program aims to support students without the financial resources to carry out their research or has minimal support from their mother institutions/agencies.

In 2009, BAR's Non-Degree Program which provides financial assistance to NaRDSAFA researchers and scientists to participate in specialized training (locally or abroad) and represent the country in collaborative R&D undertakings or present research papers in international scientific fora (conferences, seminars, or symposia) increased to 87 grantees (80 foreign, 7 local). Stipend for the grantees increased in this year.

For the conduct of three local activities, DA-BAR provided support for registration fees for 27 participants of one national convention, and food and accommodation for one regional training, and one provincial farmers' forum attended by 2,000 farmer-participants. Technical assistance was also provided to 19 participants of one international study tour and capability building and enhancement program for DA-BFAR and DA-BAR Central Office staff.

Financial assistance is also granted to scientists or research personnel 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.

“Financial assistance is also granted to scientists or research personnel to engage in short-term basic research through post-doctoral or fellowship awards.”



Moreover, BAR, under the Productivity Enhancement Program, actively participated as coordinator and secretariat in the selection of Outstanding Agricultural Scientist (OAS) under the DA Annual Search for Achievers in Agriculture and Fisheries. For the year 2009, seven applications were evaluated and field evaluation, validations and documentation of research works for top three nominees were conducted.

Dr. Marie Antonette Juinio Meñez, Professor IX, Marine Science Institute, UP Diliman, received the Presidential Award for the Outstanding Agricultural Scientist Category in recognition of her outstanding contributions in basic and applied sciences in the field of marine biology. Her most notable research works on technology development of high value marine invertebrates has resulted to the salvation and rehabilitation of these almost extinct species, and provided sustainable source of livelihood among the poorest coastal families.

BAR also facilitated the initial evaluation of two applications (1-NFRDI; 1-BPRE) for scientist rank in the DOST Scientific Career System (SCS). Towards the end of the fourth quarter, one applicant was finally endorsed by the DA-SCEC for the Secretary's final recommendation for a scientist rank in the DOST SCS.

The Productivity Enhancement Program provides assistance for corporate planning workshops and incentives for researchers. The program also aims to promote the DA's scientists and recognize their outstanding achievements through incentives. It also supports policy studies related to position, salary and other benefits of research staff or research institutions.



Dr. Marie Antonette Juinio Meñez of MSI-UP Diliman receives recognition from BAR during the NRS Awarding Ceremony for her outstanding contributions in basic and applied sciences in the field of marine biology.



OTHER ACTIVITIES

21st National Research Symposium (NRS)



2009
NRS Winners



21st NATIONAL RESEARCH SYMPOSIUM

8 October 2009

4/F RDMIC Building, Visayas Avenue, Diliman, Quezon City



Dr. Carlos S. dela Cruz of DA-EVIARC wins the "AFMA Best R&D Paper (Technology Adaptation/Verification-Agriculture Category)" for the study, "Adaptability Test of Available Technologies for the Management of Jackfruit Fruit fly (*Bactrocera umbrosa* Fabr.) in Region 8".

The National Research Symposium (NRS) is conducted annually by BAR to promote R&D excellence and to give due recognition to the accomplishments of agriculture and fisheries researchers for their notable achievements. The symposium also serves as a venue for disseminating new technologies and knowledge, useful to agriculture and fisheries modernization.

The number of entries submitted were 95 R&D papers. Thirty-four papers entered as qualifiers from the total number of entries. From the qualifiers, 20 were again selected as finalists, which were presented to a panel of experts during the final evaluation.

3rd O! May Gulay Cooking (OMG) Contest



1st

Adrian Caseñas and Rommel Albano of Dalandanan National High School with their winning recipe, "Veggie Dynamite".



2nd

Students from Doña Teodora Alonzo High School, Angelito Irorita Jr. and Rhea Jane Alano with their winning recipe, "Eggplant Lasagna".



3rd

Students from Dr. Josefa Jara Martinez High School, Shiela Mae Palacio and Shiela Marie Cesario with their winning recipe, "Pechay Relleno in Coconut Sauce".

BAR, through PDD, coordinated the 3rd O! May Gulay Cooking Contest, a vegetable consumption awareness initiative of the Department of Agriculture for public schools in Metro Manila. 67 schools from the National Capital Region participated from which six entered the final round held during 2009 AgriLink, FoodLink, AquaLink Expo at the World Trade Center, Pasay City. The recipe "Veggie Dynamite" prepared by the students of Dalandanan National High School won the grand prize of the 3rd O! May Gulay Cooking Contest.

Also, BAR assisted in the O! May Gulay Cooking Contests held in Bohol and Cebu. The recipe Buttered Vegetable Rolled w/ Camote Tops of Southern Inabanga High School in the District 2 of Bohol and Kangkong Salad in Cucumber Cups of Mambaling Night National High School in Cebu City emerged as winners.



A happy farmer shows a healthy ear which he harvested from his field. He is one of the farmer-cooperators of the SSNM Upscaling Project in Isabela that was badly affected by the El Nino phenomenon.

research coordination

BRINGING TECHNOLOGIES TO THE FARM

Innovation is defined as the act of starting something for the first time or introducing something new in response to a need. The Research Coordination Division (RCD) saw several innovations in the year 2009 specifically in implementing and coordinating Community-based Participatory Action Research (CPAR) projects. CPAR, one of the banner programs of BAR, is already proving to be of great help to farmer-beneficiaries in terms of increased income and the changes in their lifestyle. Due to its participatory nature, CPAR and its implementation is a fertile ground for new ideas.

In 2009, BAR coordinated 86 CPAR projects in 134 sites nationwide, involving 8,958 farmer-beneficiaries. Out of the total number of farmer-beneficiaries, 5,210 are farmer-cooperators and some 3,748 are adopters who are indirect beneficiaries of CPAR grants. This year also marked the highest number of newly-funded CPAR projects which reached up to 104, proving the interest of the people in CPAR and that its potentials is growing. With this development, it can be foreseen that CPAR will stay and continue to bring about positive effects on the lives of the farmers and fisherfolk.



IMPROVED FARMING TECHNOLOGIES THROUGH CPAR IMPLEMENTATION

Undoubtedly, CPAR has already made its impact clear in encouraging farmers and fisherfolk as active participants in the planning of action research. In the course of doing so, different farming technologies have been refined and are now being practiced by farmer-beneficiaries nationwide. In 2009, the major technology innovations adopted were: 1) increased coconut yield through pineapple intercropping in Jaro, Leyte; 2) improved gabi production technologies in Liloan, Southern Leyte; and 3) reduced cost of input costs on fungicide, insecticide, and pesticide on organic vegetable production in Kiangan, Ifugao.

To fully monitor the progress and success stories generated out of the implementation of various CPAR projects, RCD conducted separate CPAR reviews for Visayas (Tacloban City) and Mindanao clusters (Dipolog City). During the conduct of these reviews, CPAR evaluators, composed of Dr. Roberto Rañola and Dr. Enrico Supangco of the University of the Philippines Los Baños (UPLB), Dr. Liza Battad of the Philippine Carabao Center (PCC), Dr. Teotimo Aganon of Central Luzon State University (CLSU), Dr. Zosimo Battad of Pampanga Agricultural College (PAC), and Dr. Catalino dela Cruz of BAR, made some significant recommendations based on the CPAR projects reviewed. Their recommendations will serve as guide for the farmers and research coordinators to further improve implementation of the CPAR projects.

OPERATIONALIZATION OF E-PINOY FARMS

The CPAR e-Pinoy FARMS Monitoring and Evaluation System was developed out of the need to optimize the use of data generated from the field particularly through the BAR-funded CPAR projects implemented by the different Regional Integrated Agricultural Research Centers (RIARCs) and the local government units (LGUs).

It is “designed to streamline redundant procedures in data management; it also serves as a repository of mission-critical information to support planning; and, decision-making and policy formulation for agriculture and fisheries development.”

BAR monitored and assisted the Regional CPAR Agriculture Teams in building up data fields for the e-Pinoy FARMS M&E System. As of December 2009, the RIARCs had encoded a total of 83 CPAR projects, 81 CPAR sites, and 822 farmer profiles.

In line with the smooth operation of e-Pinoy FARMS, the RCD took part in a seminar on “Strengthening Interconnection of Community-based Participatory Action Research (CPAR) for Effective Delivery of Agriculture and Fishery Services.” Aside from this, the division also assisted in the hands-on trainings conducted by BAR's ICT partner, Optiserve Technologies, Inc. during the deployment of the e-Pinoy FARMS servers for fisheries.





MONITORING OF RDE PROJECTS

A total of 165 projects were closely monitored by BAR as of December 2009. These projects are being implemented by different state universities and colleges (SUCs), staff bureaus, and attached agencies including the different DA regional field units (RFUs).

In the year under review, BAR facilitated the conduct of eight semi-annual and nine terminal reviews across the country. Significant findings were noted in the reviews.

SITE-SPECIFIC NUTRIENT MANAGEMENT FOR MAIZE IN THE PHILIPPINES (SSNM)

SSNM is a collaborative project between the Southeast Asia Program (SEAP) of the International Plant Nutrition Institute (IPNI) and DA-BAR in partnership with UPLB, GMA-Corn Program and the Bureau of Soils and Water Management (BSWM). It aims to increase the productivity and profitability of corn farming in the Philippines through site-specific, integrated crop and nutrient management. In 2009, one of the reported major impacts of SSNM was the upscaling of SSNM technologies in 30 hectares of corn in Jones, Isabela with 42 farmer recipients in the province.

Adding to this accomplishment is the establishment of 16 2008-2009 Dry Season and 16 2009 Wet Season SSNM trials nationwide, each with at least five strategic farm sites. SSNM National Reviews for both dry and wet seasons were conducted on different occasions. One SSNM database staff was sent for training in Malaysia on how to consolidate, process, and analyze raw data using the SSNM template provided by IPNI.



RUBBER RDE PROGRAM

As the lead agency in coordinating the research and development component of the National Rubber Development Program of the DA, BAR spearheaded the conduct of a national review and consultation workshop on rubber research, development and extension (RDE) agenda and programs.

The Rubber RDE program aims to increase the number of rubber plantations in the country for livelihood development and employment opportunities for small farmers. Aside from the conduct of the Rubber RDE Workshop, BAR also updated the inventory of on-going BAR-funded rubber RDE and technology commercialization projects. The Bureau also reviewed and facilitated the submission of the requirements of six RDE proposals.

BAR through RCD staff coordinated Philippine participation in various rubber activities, conferences and seminars abroad to fully capacitate the frontrunners of different rubber RDE endeavors in the Philippines. Among these activities were the “IRRDB Workshop and Meetings on Hevea Genome and Transcriptome,” in France; “Training Course on Natural Rubber Production and Processing Technology for ASEAN and African Countries” in China; the “IRRDB Fellowship” in Malaysia and Indonesia; and the “ASEAN Rubber Conference” in Laos.



BIO-ORGANIC FERTILIZER PRODUCTION PROJECT (BOFPP)

The BOFPP, which falls under the Agribusiness Development Project (ADP) of the Bureau, serves as a support activity for the implementation of CPAR in all DA-RIARC stations with the aim of producing organic fertilizers for CPAR farmer-beneficiaries.

In 2009, BAR coordinated a total of 19 BOFPP projects being implemented in the 16 DA-RIARCs. Various stakeholders of the project, including the implementing units, farmer-beneficiaries, and private entrepreneurs have begun to realize the importance of this technology in increasing the productivity and profitability of different agricultural commodities.

With the different RIARCs implementing this project, they now have an additional source of income for the maintenance and other operation of their stations.





A booth visitor looks at a brochure on the various processed food products developed by UPLB such as *ubi* powder and fruit wine. The development of these products was funded by BAR through its National Technology Commercialization Program.

technology commercialization

TRANSFORMING R&D INTO TANGIBLE WEALTH

The Technology Commercialization Unit (TCU) spearheads the commercialization of appropriate technologies on agriculture and fisheries to meet the needs of its varying beneficiaries. It implements the National Technology Commercialization Program (NTCP) which is one of the banner programs of BAR. The program ensures the maximum utility of agriculture and fishery technologies through technology promotion, transfer, application, and adoption. It helps assure that the wealth of technology already available gets transformed into tangible wealth for the agri-entrepreneurs such as profit.

As a funding and coordinating agency for R&D, BAR created TCU as the principal coordinator of projects funded under the NTCP. In the year under review, BAR projects on technology commercialization encompassed technologies on crops, livestock, fisheries, and other sub-sectors in agriculture and fisheries. Other important concerns also include good agricultural practice, organic agriculture, sustainable bio-fuel production systems, climate change, and health and wellness.



FUNDED PROJECTS

To promote technology commercialization, and spur agribusiness development, TCU conducted project technical reviews of project proposals submitted to the unit for financial assistance. These proposals are evaluated in-house and if deemed appropriate, are passed to technical and subject matter experts within and outside BAR for initial evaluation.

For 2009, TCU received and processed 97 project proposals on technology commercialization. Of this number, 47 were approved for funding under the following funding sources: AFMA (16 projects), 2KR-NAFC (22 projects), and DA-HVCC Program (9 projects).



MONITORING AND EVALUATION OF FUNDED PROJECTS

TCU, together with project evaluators from DA-NAFC, also spearheaded the on-site monitoring and evaluation of 12 existing projects funded under the 2KR-NAFC Project.

Another 12 existing projects funded through TCU were monitored and evaluated by the unit during the year.

NATIONAL REVIEW OF SWEET SORGHUM PROJECTS

Biofuels R&D is one of the priority programs on crop development supported by TCU in compliance with the Biofuels Act of 2006, where DA is mandated to spearhead feedstock development. Sweet sorghum, an important cereal crop introduced by ICRISAT to the Philippines, has been identified by BAR as an inexpensive and eco-friendly source of both biofuel and food products. Hence, TCU has pro-actively supported projects on its feasibility and development in the country since 2005.

To evaluate the results of R&D projects on sweet sorghum four years after it was first introduced, TCU convened BAR's partners and project proponents on October 6-7, 2009 at the Fernando Lopez Hall, Bureau of Soils and

Water Management (BSWM). The string of researches conducted yielded top five varieties that showed adaptability to local conditions, specifically, in the Ilocos region. These were used as basis for the adaptability trials nationwide including Regions 1, 2, 4A, 4B, 5, 7, 9, 10, 11, 12, 13, and ARMM. Encouraged by the positive results,, the stakeholders agreed to align their output with the national thrusts of the government for food security and energy sustainability.

Recommendations gathered from the review include other researchable areas on sweet sorghum such as timely planting to increase the harvest window of the crop, and implementation of large scale adaptability trials.





ESTABLISHING THE TECHNOLOGY COMMERCIALIZATION CENTER

In order to showcase the technologies generated from the projects funded through the NTCP, TCU, in coordination with the Applied Communications Division of BAR, was tasked to put up a walk-in showroom at the BAR Lobby.

Inaugurated in August 7, 2009, the Tech Comm Center displays a variety of products developed by project proponents from the different parts of the country. The center also serves as a repository of information and business center for the benefit of all interested stakeholders.

Some of the products generated by project proponents on technology commercialization are on display such as: Acapulco and pili oil soap, *yacon* concentrate, sweet potato wine, seaweed pickles, candied dried seaweed, sweet sorghum cookies, syrup and noodles, *tilapia longganisa*, garlic chips, *banaba* and *Moringa* tea.

The center received more than 200 walk-in visitors since it was opened in August, 2009. Most of the visitors were interested in inquiring about planting procedures and pesticide management; and acquiring publications such as brochures and other communication materials on the production and processing of different agricultural and fishery commodities.



LINKAGES AND TECHNOLOGY PROMOTION ACTIVITIES

DA-BAR-UPLB Business Meeting and Technology Fair

BAR, through TCU, initiated a consultative forum and dialogue dubbed as “2009 Technology Fair: Opportunities for the Private Sector”.

The event was held on July 10, 2009 at the BSWM Auditorium in Quezon City to showcase viable and commerciable technologies developed by the University of the Philippines Los Baños (UPLB). The activity was aimed to strengthen the partnership between research organizations and the private sector towards a progressive and more sustainable agriculture. The fair was also a venue for government agencies and the private sector such as food manufacturers to determine strategies on how to create market demand for agriculture- and fishery-generated products.

Among the technologies showcased and developed by UPLB and other technology generators include food crop varieties, ornamental plants, dairy products, diagnostic kits, biofertilizers, postharvest technologies and machinery, biotech products, and alternative energy sources.

Some of the local food processors and manufacturers represented in the event include members of the Philippine Food Processors and Exporters, Inc. (PHILFOODEX); Philippine Chamber of Commerce and Industry (PCCI); and Philippine Chamber of Food Manufacturers.





Food Industry Summit

As an offshoot of the technology fair organized by BAR with UPLB, TCU facilitated and joined UPLB's participation at the Food Industry Summit held on July 28-29, 2009 at the Dusit Thani Hotel, Makati City. With the theme "Food Security at the Forefront", the event was the first-ever Food Industry Summit organized by the Philippine Chamber of Food Manufacturers, Inc. (PCFMI) or the Food Makers Chamber.

With financial support given by BAR under its National Technology Commercialization Program (NTCP), TCU assisted the University of the Philippines Los Baños (UPLB) showcased some of its products

In the summit, the role of DA as the supplier of raw materials/inputs to food manufacturers and in technological development was emphasized. The chamber was urged to offer more contract growing agreements with farmers and fisherfolk and strengthen cooperation with government agencies to attain competitiveness in the global market.

The food summit was participated in by other attached agencies and offices of the DA as well as top corporations in the food industry such as Nestle, Unilever, Jollibee, Kraft, RFM Corporation, Fonterra, Universal Robina Corporation, Dole, Del Monte, and Wyeth.



National Technology Commercialization Forum and Exhibit



True to its desire to provide awareness to the public on the commercial potentials of technologies and products generated from research and development (R&D), the 5th Agriculture and Fisheries Technology Forum and Product Exhibition, was organized by TCU on August 27-30, 2009 at the SM Megatrade Hall 3, SM Megamall, Mandaluyong City. The activity carried the theme, “Enhancing Entrepreneurship in Agriculture and Fisheries through Technology Commercialization”.

The event was a success as it attracted more than 7,000

visitors during its four-day duration. Seventy-eight percent of the attendees this year were walk-ins with the rest coming from the private/business sector, the regions, and state universities and colleges (SUCs).

The SM Megatrade Hall has been used as a venue of TCU since 2008. The event easily attracted visitors since the venue is strategically located and is easily accessible from all points of the metropolis. Much of the success of this year's event was due to the intensified promotion through

multi-media exposures in television, print, and radio and an increase in invited exhibitors. This year's attendance is 42 percent higher compared to last year's. In fact, according to its summary report, the event averaged 1,225 visitors everyday and there were still guests who were unaccounted for.

Most of the exhibitors, especially those coming from SUCs, highlighted issues on pressing world challenges such as climate change, food security, people empowerment, and global competitiveness.



FINANCIAL VIABILITY OF AGRICULTURAL COMMODITIES

Published by BAR and Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), the book, “Financial Viability of Agricultural Commodities” was prepared as an offshoot of a series of training courses on “Enhancing the Capability of the Bureau of Agricultural Research in Supporting Sustainable Management of Technologies for Development: Financial Viability Assessment” funded by BAR and implemented by SEARCA. The training was designed for researchers to equip them with the financial tools for determining the profitability of technologies being generated in their institutions.

The book serves as a guide not only for agricultural researchers and scientists but also for farmer-entrepreneurs and potential investors who are interested in processing technologies and those interested in engaging in micro and small enterprises.

The book contains technology profiles and financial viability scenarios of various agricultural crop productions and processing technologies supported under the National Technology Commercialization Program (NTCP) of BAR. Among the agricultural commodities featured in the book are: mango (tart), fruit wine, strawberry (jam and wine), oregano (wine, juice, vinegar, and tea), purple yam (powder), cacao, garlic, citrus, sweet tamarind, organic vegetables, squash hybrid seed, and lettuce.



For each agricultural commodity includes a technology profile, technology source, proponent(s), funding, location, intended users, objectives, production/processing technology description, and financial analysis. The results of the financial analyses for both production and processing technologies of agricultural commodities as highlighted in this book are helpful to determine the return on investment in these particular ventures.

Through this publication, readers are given, not only a complete perspective of various agricultural commodities that have the potential for commercialization, but also help in establishing new enterprises and agribusinesses. Likewise, this book serves as a vital tool for decision-making as financial viability and profitability is one of the measures considered in investment.





REVITALIZING PHILIPPINE RUBBER PRODUCTION

As the only commercial source of natural rubber, rubber trees have a lucrative market in the international rubber industry. The DA, therefore, aims to improve the country's natural rubber production and to increase its export output by 2020.

The unit participated in the conduct of the first national review and consultation workshop on rubber RDE agenda and programs held on 6-7 May 2009 at BAR. The activity was aimed at convening rubber stakeholders from the public and private sector for a common understanding of the goals and objectives of the national RDE program on rubber.

Specifically, the activity was focused on the following issues and concerns : 1) plan for future activities and identify better coordination/collaboration activities amongst participating agencies implementing rubber projects in selected areas in the Philippines; 2) document and assess the status and accomplishments of the BAR-funded rubber RDE projects, including benchmark data on production, processing and marketing aspects; 3) document and assess manpower factor of the national rubber RDE program; and, 4) document and assess the technical, economic and policy requirements needed to implement rubber RDE projects.





The second volume of the book is already on the drawing board while the Tagalog and Visayan versions of the first volume are being finalized for release.

The successful agri-entrepreneurs featured in the book come from different parts of the country and are engaged in diverse agricultural sectors including crops, livestock and poultry, and fisheries. Among them are Philfoodex President Roberto Amores (Hi-Las Marketing, mango and okra export), Lyndon Tan (Basic Necessity, fresh culinary herbs and vegetables), Ruben See (See's International, banana chips export), Edgar Sia II (Mang Inasal), Lolita Hizon (Pampanga's Best), Tennyson Chen (Bounty Fresh), and Roger Rivera (RDEX, tuna processing) just to name a few.

The book is edited by award-winning journalist Tina Arceo-Dumlao, business editor of the Philippine Daily Inquirer. Professional photographers and layout artists were also hired to bring in fresh perspectives and skilled experience in producing a high-quality book. The book is distributed in partnership with Anvil Publishing and is initially available in the top 50 National Bookstore, Bestsellers, and Powerbooks outlets in the National Capital Region.

Joey Concepcion of Go Negosyo and the Philippine Center for Entrepreneurship gave the foreword in the book, as Go Negosyo shares in the DA's vision to promote entrepreneurship in the Philippines. He was likewise present during the book launching and gave a short message to encourage more enterprising Filipinos to become negosyantes.

The book would not possibly become a successful project if not for the support and invaluable inputs of other DA agencies in the national and regional offices as well as the private firms, entrepreneurs, farmers, and fisherfolk who welcomed the team in their place to conduct the interviews and photo shoot for the book.



Dr. Agustin Molina (right) of Bioversity International and Dr. Heraldo Layaoen (left) of Mariano Marcos Memorial State University inspect a bunch of banana grown inside a demonstration project, “Plantation Management of Tissue-Cultured Banana” funded by MMSU, Bioversity, PCARRD and DA-BAR.

international relations

REACHING NEW HIGH

Partnerships with international organizations have become part of BAR's history particularly with International Agricultural Research Centers (IARCs). These partnerships have yielded many benefits to Philippine agriculture.

The relationships reached a new high with the establishment in 2003 of BAR's program on restricted grants to the IARCs, specially the CGIAR centers. By 2009, the Bioversity International (through its INIBAP, COGENT and APO units), IRRI, ICRISAT and the World Fish Center were in collaborative projects with BAR. The ACIAR also partnered with BAR for an impact assessment study. Such partnerships have resulted in the country getting access to new genetic materials essential to breeding, skills development for R&D workers, access to cutting-edge information resources, and the experience of working at the international level. The BAR units that have been involved in these partnerships are the PDD, RCD and the offices of the BAR Director and the Assistant Director aside from the IRU. Particular DA units and agencies under the National R&D System for Agriculture and Fisheries (NaRDSAF) were involved in project implementation.

Basically, the International Relations Unit provides assistance to the bureau management and other BAR units in relating with international organizations. It also coordinates with other Philippine agencies on international agricultural research concerns.

INTERACTION WITH INTERNATIONAL AGENCIES

IRU was involved in the bureau's interaction with IARCs particularly in the partnership projects with five CGIAR centers. It joined the BAR-PDD in the review of on-going projects of Bioversity International (Bioversity): "Coconut-Based Product Diversification to Reduce Poverty in Coconut-growing Communities" (through the International Coconut Genetic Resources Network or COGENT) and "Conservation and Use of Tropical Fruit Species Diversity in the Philippines"; and the terminal review of "Introduction, Evaluation and Adoption of Improved Landraces of Banana for Food and Income Alleviation" (through Bioversity – Banana Programme). The IRU also took part in the terminal reviews of the International Rice Research Institute's "Improving Knowledge Exchange and Decision Making Among Rice Stakeholders through ICT-based Technology Promotion and Delivery" project, the International Centre for Research in the Semi-Arid Tropics' (ICRISAT) "Seed Support System of ICRISAT 'Asha' Peanut Variety and Conservation Management in Watersheds", and the World Fish Center's "Strengthening Governance and Sustainability of Small-Scale Fisheries Management in the Philippines: An Ecosystem-based Fisheries Management Approach".

The unit was also involved in preliminary negotiations for a BAR-CIMMYT project on drought-tolerant corn and the preparation of IRRI proposals to be funded under restricted grants from the DFA under its International Commitments Fund.

Other interactions with international organizations included a consultation with UNDP representatives on the integration of poverty reduction and environmental management initiatives; the ADB-APAARI sponsored regional consultation on Agricultural Research for Development in Asia-Pacific held in Bangkok that prepared inputs for a 2010 meeting on global agricultural R&D setting; meetings of the National Steering Committee of the UNDP-GEF Small Grants Programme; and participation in a seminar, "Liability and Redress under the Cartagena Protocol on Biosafety" sponsored by CropLife that dealt with compensation on damages caused by the transit of GMOs through countries.



IN-HOUSE ACTIVITIES

On behalf of BAR, the IRU prepared various papers that included inputs to the proposed MOU on agriculture and trade with Papua New Guinea, the RP-EU Trade-Related Technical Assistance study, and the proposed bilateral S&T agreement with the USA.

Through the unit, BAR assisted other agencies such as PCARRD on the new CABI requirements on project proposals; the DFA on BAR's perspective on the Philippines' membership in the Centre for Agri-Biosciences, International (CABI), and the justification for continuing the country's contributions to the CGIAR and to IRRI; the DA on the distribution of the Philippine contribution to the CGIAR by research center, the ASEAN TWG on agricultural R&D (ATWGARD), and the draft DA-USDA workplan for agricultural cooperation; the DA-RFU 4a on the participation of its staff in the International Conference on Biological Invasives held in China; and the DENR on the development of BAR's project component in the Philippine Biodiversity Programme proposed for foreign funding.

The unit was also involved in the BAR initiative on climate change beginning with an interagency brainstorming meeting for an

R&D agenda for addressing climate change, and BAR's participation in the international exhibit in connection with the UNESCO "International Conference on Green Industry in Asia".

The IRU facilitated the payment of BAR's member contributions to the Asia-Pacific Association of Agricultural Research Institutions (APAARI), CABI, and the International Rubber Research & Development Board (IRRDB). On the Philippine contribution to AVRDC, the IRU coordinated with BPI which worked out the payment of the 2009 contribution by the Manila Economic & Cultural Office (MECO) in Taiwan.

Liaison with DFA was done to facilitate the release to IRRI of the ICF restricted grants for special projects. The unit also prepared the DA's notice to CGIAR on the distribution of the 2009 DFA-ICF unrestricted grant to CGIAR to selected CGIAR centers.

The unit continued its regular monitoring for relevant information from the CGIAR centers, APAARI, donor organizations & other international organizations. It shared with BAR technical staff 28 R&D news and announcements gathered from this search.





A farmer in Ilocos Norte looks hopelessly at the tilted land which he needs to plant corn. The soil has dried up due to the El Nino phenomenon that hit the region.

agriculture & fisheries policy research

ADDRESSING THE CHALLENGES OF THE TIME

The AFPRU's work has always dealt with fresh issues and challenges. It is tasked with monitoring and evaluating the latest trends and events in relation to agriculture and fisheries research and development and drafts policies and pertinent documents addressing emerging issues and concerns in the agriculture and fisheries sector. From the latest and relevant empirical data and statistics from the sector, the unit processes and analyzes this information to craft policy recommendations for BAR management and the Department of Agriculture.

AFPRU also coordinates the conduct of impact assessment studies and socio-economics research on agriculture and fisheries. The outputs of these studies serve as aid in public expenditure prioritization for agricultural research and in the modification of development program implementation processes in order to achieve targets and objectives.

The Unit is likewise responsible for implementing/coordinating with researchers/scientists of leading state universities and colleges (SUCs) and other relevant institutions in the conduct of policy research relevant to agriculture and fisheries. It also collects and processes primary/secondary data and information, monitors and evaluates the country's agriculture/fisheries situation, including market issues, and gives recommendations on the development of comprehensive strategies addressing present and emerging problems and concerns.

MAJOR ACTIVITIES AND ACCOMPLISHMENTS

The activities of AFPRU focus on three major areas of concern, a) impact assessment and focus - deals with research and study on the impact of major R&D programs of the Department of Agriculture on farming and fishing communities and on other stakeholders; b) policy research and analysis – focuses on special studies and continuous research and gathering of information on the latest trends in agriculture and fisheries R&D, including developments in the global market, and providing other valuable inputs to the BAR and the Department of Agriculture; and c) R&D Governance and Quality of Science – ensures that agriculture and fisheries R&D is aimed at the intended beneficiaries that would benefit most in terms of poverty alleviation; and at overall increased productivity, for the achievement of the national food security goal. R&D prioritization is necessary in order to maximize the use of limited research resources.

IMPACT ASSESSMENT AND FOCUS

One of the major activities of AFPRU is geared towards the generation of a decision-support system for the crafting of development strategies for the use of BAR in managing R&D programs. One of the means by which an effective system is devised is through the use of the results of impact assessment of R&D projects. Of note is the conduct of impact assessment of the Community-based Participatory Action Research (CPAR) program. The data, information, and knowledge generated by the impact assessments are useful to BAR management in fine-tuning the processes involved in CPAR implementation so as to obtain the desired results. The coordination of impact assessment projects was turned over to the Research Coordinating Division (RCD), the division that manages the country-wide CPAR program implementation.

Allied research conducted within BAR or by external research institutions enabled AFPRU to formulate policy recommendations on scientific innovations and technology use. The information generated from this research helped the Unit in making objective recommendations towards promoting the goals of DA.



POLICY RESEARCH AND ANALYSIS

As a technical arm of the Department of Agriculture, BAR also reviews, identifies, and analyzes problems and weaknesses of national policies relevant to R&D and gives recommendations on how farmers and fisherfolk can take advantage of opportunities. In 2009, AFPRU facilitated and coordinated the conduct of the project, “Productivity Growth in Philippine Agriculture (PGPA) Year II”. Started in 2008, the project was funded by SEARCA, PhilRice, and BAR. The study examined the performance of the Philippine agricultural sector through quantitative measurement of productivity growth using total factor productivity indices (i.e. output per unit of input or the efficiency with which resources are utilized). The study examined the determinants of productivity change in the sector over time and identified policy investment levers relevant for the formulation of development strategies. The result of the study is vital in prioritizing public investments in agriculture, without which,

decision –making is done, based on judgment which is subject to biases or vested interests. In relation to this project, the AFPRU convened meetings and attended workshops. Serving as the secretariat, the Unit facilitated the conduct of the national forum and dialogue where the results of the study were presented and discussed among the various agency representatives.

The AFPRU also gathered and compiled sub-sector data in agriculture and fisheries. These information were used in the preparation of position papers and analyses of technological, production and marketing trends. It compiled the latest news in R&D, which in 2009 covered information on biotechnology. These were gathered from various sources, the SEARCA website, CBU (Crop Biotech Update), Global Knowledge Center on Crop Biotechnology and from the International Service for the Acquisition of Agro-biotech Applications SEAsiaCenter (ISAAA).



R&D GOVERNANCE AND QUALITY OF SCIENCE

AFPRU, in collaboration with other BAR divisions, was involved in the conduct of the project, “Gap Analysis on the R&D of Organic Agriculture: Focus on Organic Fertilizer”. The project was undertaken with the aim of promoting organic agriculture in the country in order to take advantage of the growing consumers' preference for chemical-free produce, as well as of the expanding foreign market for safe food. With other participating BAR staff, AFPRU, under the leadership of the Assistant Director, prepared and pre-tested the questionnaire for the project. The activities of the Unit included the conduct of meetings in the regions (Region 1, 2, 3, 4A, 4B, 5, and CAR) to brief Research Managers and research assistants involved in the project.

Preliminary activities included survey of organic farmers, with the use of structured questionnaires. Pertinent literature on organic fertilizers research done by state colleges and universities and other research institutions were compiled. The compiled literature and the issues and concerns gathered from the organic agriculture practitioners interviewed will be the basis in identifying the gaps in organic fertilizers research. The compiled research literature will be transformed into a compendium for reference purposes. AFPRU revisited three regions for validation. The project covers all regions of the Philippines and will be concluded in 2010.



OTHER ACTIVITIES

The Unit facilitated the release of the balance of the fund for the completion of the “2008 National Nutrition Survey: Individual Food Consumption” by the Food and Nutrition Research Institute (FNRI). In view of the implications of the survey to agriculture and fisheries R&D, the project was funded by BAR, on the ground that the data generated are vital in projecting national and regional food requirements which are necessary information in crafting production strategies attendant to the goal of food security.

AFPRU was also involved in the preparation

of a manual on product certification in the Philippines for the use of policy-makers, farmers and other stakeholders. The preparation of the manual is an off-shoot of the project, “Adding Value to Fresh and Processed Produce through Product Certification”, a collaborative undertaking with the United Nations – Centre for the Alleviation of Poverty through Secondary Crops Development in Asia and the Pacific (UN-CAPSA), based in Bogor, Indonesia. The manual is a handy reference for farmers who intend to apply for Good Agricultural Practices (GAP) and organic farming certification.

AFPRU's other activities include (among others) the following:

1. Review of the proposed House/Senate Bills related to agriculture and fisheries and preparation of position papers/comments on various Bills referred to BAR by the DA, congress, or senate. AFPRU provided comments on SB 2545 or An Act Rationalizing the Agriculture and Fisheries Bureaucracy Redefining the Functions of the Department of Agriculture and Various Agencies to bring About Agriculture and Fisheries Modernization, Appropriating Funds Therefor, and for Other Purposes, authored by Sen. Antonio Trillanes, III.
2. Provision of comments on the DA-RFU VII proposal, Farmers Field School (FFS) Training Program on Vegetables and drafting of the Memorandum of Agreement between BAR and DA-RFU VII.
3. Participation in the drafting of the National R&D Priorities Plan for Research and Development (NRDPP) for the Presidential Coordinating Council for Research and Development (PCCRD), specifically, for the Agriculture and Food Cluster. AFPRU served as the secretariat of the Agriculture and Food Technical Working Group (TWG). The Unit convened the members of the TWG in a series of inter-agency meetings (12 meetings). The TWG was composed of DA-BAR (Chair), PCARRD-DOST (Co-Chair) and representatives from PCAMRD-DOST, PAGASA-DOST, NRCP-DOST, DENR-ERDB, PhilRice, UPLB, PCA, CHED, COMSTE and NAST-DOST.
6. Supported the Gawad Saka 2008-2009 Search for Outstanding Agricultural Scientist. Activities included conduct of meetings for preliminary and post evaluation of nominees, provision of technical support for desk evaluation of nominees, attendance to National Executive Committee meeting for the 2008-2009 Gawad Saka Search for Outstanding Achievers in Agriculture and Fisheries. The unit also participated in the conduct of field validation of the Gawad Saka Outstanding Agricultural Scientist finalists. The Unit provided technical support during the presentation of the top three finalists for the Outstanding Agricultural Scientist Category and for the 2008-2009 Search for Outstanding Achievers in Agriculture and Fisheries during the National Executive Committee Meeting. The activities under the Search were undertaken during the course of six months, covering January – June, 2009.



Sweet leaf or sugar leaf (*Stevia rebaudiana*) grown through SNAP hydroponics— a technology developed by Dr. Primitivo Santos of IPB-UPLB and funded by DA-BAR. The trademark for SNAP hydroponics has been approved in 2009 through BAR's IPRO.



intellectual property rights

PROTECTING R&D OUTPUTS

Intellectual Property Rights (IPR) is of fundamental importance in the agriculture sector as we are both producers and users of R and D results some of which protected works. The underlying objective of Intellectual Property Rights (IPR) is to protect the innovators' right to be appropriately acknowledged for his or her work, be it in the form of an invention, technology, information, process, or method or brand. Through IPR, the innovators are acknowledged, rewarded, and protected for their innovations.

The Intellectual Property Rights Office (IPRO) of BAR is an important arm of DA in its effort to reach out to partner agencies in highlighting the importance of protecting the outstanding results of R&D.

The IPRO has been continuously working on IP Management catering to the needs, not only of the BAR funded research outputs, but also for public and private agencies that seek IPR assistance. In 2009, it negotiated for IP protection of several R&D innovations.

The year 2009 is considered a milestone for BAR's IPRO as four IPs, two Trademarks and two Utility Models (UM), completed their examination and registration processes at the IP Philippines.

Title	IPR	Filing Date	Registration Date	Received at BAR ¹
SNAP Hydroponics and device	Trademark	21 June 2009	15 Sept 2008	Feb 2009
Salted Eggs using autoclaved clay	Utility Model	23 Sept 2009	26 Jan 2009	June 2009
Coconut oil as biofuel	Utility Model	27 Sep 2009	12 Jan 2009	August 2009
<i>Gourmet (Stylized) logo *</i>	<i>Trademark</i>	<i>20 Jan 2009</i>	<i>14 May 2009</i>	<i>Nov 2009</i>

¹ IP Registration becomes fully effective once notice is received by the applicant.

* Trademark for Gourmet (Stylized) was denied application and was reapplied in 2010.



TRADEMARK FOR SNAP

The approval of the SNAP Hydroponics trademark is considered a milestone for BAR's IPRO. This is the first certificate awarded to BAR by IP Philippines from among the IPRs applied for and processed.

The Simple Nutrient Addition Program (SNAP) Hydroponics is a technology on soil less crop production developed by the University of the Philippines Los Baños (UPLB) led by Dr. Primitivo Jose A. Santos and Dr. Eureka Teresa M. Ocampo under a project funded by BAR. The SNAP hydroponics meets the need for a low-cost system of vegetable production, specially on lettuce production, and is widely adopted by vegetable farmers in the Tagaytay area.

The IPRO applied for trademark registration for the SNAP Hydroponics at the IP Philippines in June 2007. The trademark was officially registered on 15 September 2008. Owners (BAR and UPLB co-ownership) will have the exclusive right to use the trademark of SNAP Hydroponics for 10 years or until September 15, 2018, and is renewable thereafter.



UMS APPROVED FOR SALTED EGGS AND COCONUT OIL AS BIOFUEL

Another Intellectual Property (IP) registration was issued to BAR. This time, it's the Utility Model (UM) on the production of salted eggs using autoclaved clay. The production of salted egg using autoclaved clay is a research initiative of the Department of Agriculture-Regional Field Unit (DA-RFU 1) through its lead researcher, Dr. Jovita M. Datuin.

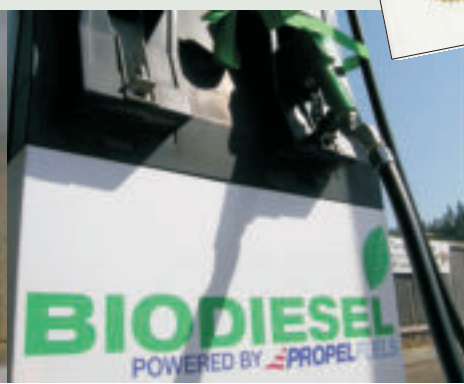
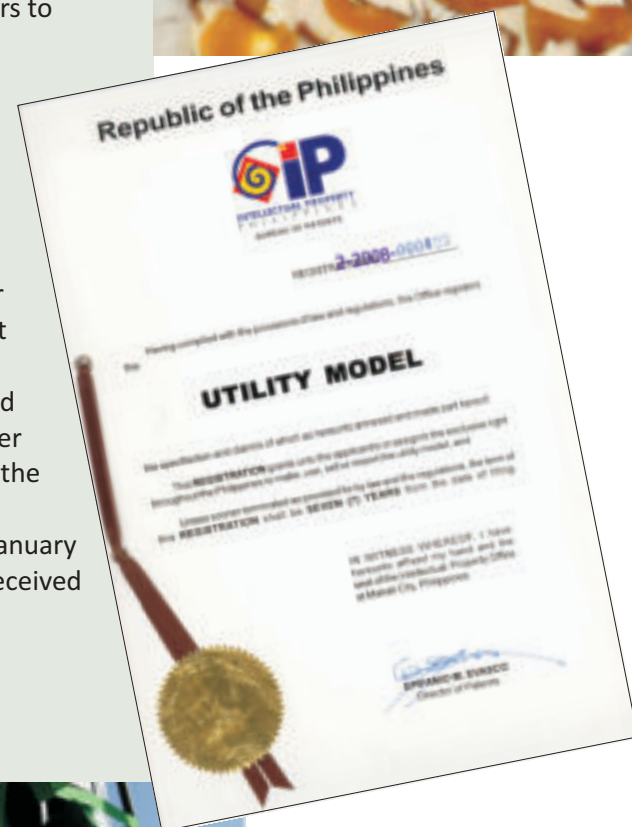
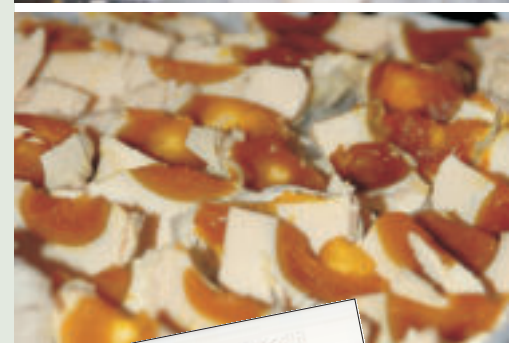
Production of salted eggs using autoclaved clay is a local innovation seen to upgrade the selling price of salted eggs because of longer shelf life and increase the Philippines' chances of penetrating more international markets. The application of this technology in processing salted eggs proved superior to other local methods being practiced in the country. In terms of yolk color, yolk texture, yolk consistency, and acceptability after eight weeks of storage, salted eggs in autoclaved clay yielded favorable results.

Since the technology uses an already existing or known method with autoclaving as a new component, a UM was applied. Utility models supplement the patent system by providing protection for innovations which are not regarded as inventive enough to warrant a patent grant. They are subjected to a state-of-the-art search but not full substantive examination. A utility model is an exclusive right granted for an

invention which allows the right holder to prevent others from commercially using the protected invention without his/her authorization for a limited period of time which is seven years from the date of filing.

The UM for production of salted eggs using autoclaved clay was applied for by Intellectual Property Rights (IPRO) of BAR on 23 September 2008 and was issued a Certificate of Registration from the Intellectual Property Philippines (IPP) on 4 June 2009. With the certificate of registration for the production of salted eggs using autoclaved clay, Dr. Datuin will now be able to negotiate with potential business partners to commercialize her technology. It is the interest of BAR to accord the researcher the maximum protection it can get for the generated technology.

Meanwhile, the application for UM of "Filtered Crude Coconut Oil as Biofuel" was referred to IPRO in June 2008 and was filed for application on 27 September 2006. Finally after six months, the UM Registration for this PCA technology was issued on 12 January 2009 and the certificate was received at BAR in August 2009.





BAR's role in IP Management does not end with the registration of IPRs. The bureau also provides assistance for the successful commercialization and transfer of technologies generated by research."

R&D RESULTS WITH POTENTIAL FOR IPR

BAR's role in IP Management does not end with the registration of IPRs. The bureau also provides assistance for the successful commercialization and transfer of technologies generated by research. The IPRO also supports public and private agencies that seek for IPR assistance.

One of the major programs and activities of BAR-IPRO is the review of patentable inventions, technologies, processes, products of completed and ongoing projects and new proposals from BAR funded or partly funded R&D activities to determine potential for IPR. In 2009, IPRO reviewed 16 projects for possible IP potentials from which five research outputs were found to be patentable or can be applied for IPR. These were:

1. Digital image processing system for corn- BPRE
2. Rapid drying of mango slices thru combination FR-IR and convective heating system – BPRE
3. *Galactomannans* from makapuno – Dr Judith Rodriguez, PCA-Albay
4. Trichoderma gel for organic fertilizer for UM-Benedicto Batiles of Occidental Mindoro State College
5. *Molluscicidal Oosporein* from *Beauveria bassiana* (Bals.) Vuillemin by Florecita de Guzman et al.

The identified R&D results with IP potentials were evaluated using the criteria for the IP classification concerned. To qualify for patent, the IP must be new and has inventive step not obvious to people skilled in the art. Novelty means all prior arts related to it are gathered from the worldwide databases and none of them resembles the IP in question.



IP AWARENESS

Given the relevance and importance of IPR, BAR through its IPRO, continued to conduct IP awareness training activities and seminars. In 2009, five IP awareness trainings were conducted.

- DA-BFAR Reg 1 IPR awareness training June 30-July 3, 2009
- Advocacy for agencies and universities
- Nueva Viscaya State University – July 29 to 30
- Sultan Kudarat Polytechnique State College – Aug 12 to 15
- University of Southern Mindanao
- Occidental Mindoro National College IPR awareness training workshop – 17-18 September 2009



ASSISTANCE TO IP RIGHTHOLDERS

In 2009, 60 transactions were conducted by BAR-IPRO directly with the IPO Philippines representing the IP holders and directly with the IP holders including 12 transactions with IPO Philippines for compliance and coordination purposes.

Direct assistance was also provided to IP right holders including 60 meetings and consultations with them. The IP Right holders came from various agencies including DA, private institutions, and SUCs.

OTHER ACTIVITIES

IPRO staff represented DA in the Technology Working Group and contributed to the creation of the Technology Transfer Bill. Refinements were still being made on the bill in June and July 2009.

The bill was initiated by DOST and joined by all Departments and Universities. The House Bill (HBN 5208) was endorsed by Cong Abaya, while the Senate versions (SBN 1721 and 2595, respectively) were endorsed by Senators Edgardo Angara and Loren Legarda.

applied communication

COMMUNICATING SIGNIFICANT R&D RESULTS

The Applied Communication Division supports and reinforces the relevance of BAR by continuously communicating significant research results helpful to farmers and fisherfolk implement best practices to increase their production and incomes.

Being in a position to prepare, process, package, and disseminate relevant R&D results to the public, ACD considers information and knowledge as the most powerful tool useful in the various processes of change. ACD is not only about communicating research results wherein “success stories” in the farming and fishing fields are highlighted. More than ever, it now sees itself as a powerful catalyst for change, and an influential agent to spur a transformation.

BAR, being the national coordinating body for the agri-fishery R&D sector cannot be satisfied in just knowing that it has produced knowledge products from funded researches. It is essential that these outputs are communicated and put to use at the grassroot level. In this effort,, ACD continues to strive for improvement and innovation.

The year 2009 was a high point for ACD as it developed strategic approaches to its

communications work—both quantity- and quality-wise. Aside from strengthening its capacities in the field of knowledge management, one important innovation that ACD employed was increased media mileage of BAR making it more visible through multimedia exposures, i.e., radio, print, television, and the Internet. BAR sees wisdom in “mainstreaming” the results of R&D, as a wider spectrum of audience can be reached.

This year, 40 percent of BAR's media mileage was via the Internet through article links and syndicated articles posted in various websites (government and non-government organizations, agriculture blogs, and private sites) and 30 percent for television exposure. The TV exposure was made possible through a regular segment in Mag-Agri Tayo program (NBN Channel 4) featuring technologies derived from CPAR and NTCP programs and episodes/features in Negosyong Swak na Swak (ABS-CBN Channel 2) and Maunlad na Agrikultura (IBC Channel 13). Twenty percent for print (major dailies and agriculture magazines) and the minimal 10 percent for radio (DZRH and DZRB).



PRESENTING KNOWLEDGE PRODUCTS IN POPULAR FORM

To keep the stakeholders abreast with the latest agriculture and fisheries information generated by R&D results, BAR maintains regular and special publications. For its regular publications, the bureau prepared, processed, packaged and disseminated 13 issues of the BAR Chronicle (monthly including a Special Issue) and 4 issues of the BAR R&D Digest (quarterly). Also produced were the 2008 BAR Annual Report and 21st National Research Symposium Proceedings. ACD, being the hub of agriculture and fishery information, also provided the regular updates for the bureau's website, BAR Online, that included news items, announcements, and photo releases.

On special publications, BAR, in collaboration with other partner-institutions, published and launched

books, proceedings and manuals. These included: PAC Sweet Sorghum Food Products: A Compendium; CAPSA-BAR Workshop Proceedings on Product Certification; SEARCA-BAR Financial Viability of Agricultural Commodities; O! May Gulay Recipe Book 2 (with DA, OPAJ, NVIC); Popong Eats Brown Rice (with IRR); and The Art of Agribusiness: 111 and more success stories in agri-entrepreneurship (with DA).

Other special publications disseminated in 2009 were a technology calendar, from brochures and flyers featuring priority commodities, and R&D results from the CPAR and NTCP programs of BAR.

These publications were either in-house or contracted to outside printers for production. For in-house publications, BAR produced 62,576 printed materials

(12,700 regular and 49,876 special). For contracted printing, BAR published 11,500 IEC materials (5,000 regular and 6,500 special).

BAR's publications were distributed free of charge to various R&D partner institutions including DA staff bureaus and attached agencies, state universities and colleges (SUCs), government and non-government organizations, civic organizations, private institutions and (approved) individual subscriptions. Publications were also distributed during seminars, fora, conferences and other BAR-initiated events/activities. In 2009, BAR distributed 14,667 regular publications and 63,136 special publications including books funded under the BAR's Scientific Publication Grant (SPG).



STRENGTHENING IMAGE-BUILDING OF BAR AND RDE SYSTEM

A key innovation employed by ACD to enhance the image of BAR in the public's eye was partnership and constant linkage with partners from the media making available ready-to-publish news items/articles that are deemed beneficial for the stakeholders. Regular submission of press and photo releases was employed.

For 2009, the ACD prepared and submitted 148 news items/articles for press release. Out of these, 59 percent were published through online news ((UPLB RDE News, DA-RFU 9, UP

Diliman Carillon Online, EntrePinoy, Agribusinessweek.com, DA Online, BIC-SEARCA, Agriculture.ph), 25 percent in major dailies (Manila Bulletin, Philippine Star, Inquirer, Manila Standard, Business Mirror, Business World, Philippine Journal, Balita, Tempo), 10 percent in DA's Aggie Trends (the official publication of DA), and 6 percent in major agriculture magazines (Manila Bulletin's Agriculture, Growth, Greenfields).

This is a major big leap forward for BAR since most of its image-building activities the previous years were done

online with very minimal print exposure.

To allow a greater outflow of R&D breakthroughs and technologies in agriculture and fisheries from R&D, BAR is co-producing segments for the Mag-Agri Tayo television program featuring BAR's CPAR and NTCP programs. In 2009, 45 BAR-funded projects and 17 BAR activities/events were covered for tv presentations. This included 10 promotional AV materials consisting of BAR plugs, announcements, news clips and bulletins.



BAR Seminar Series highlighting relevant topics in agriculture and fisheries R&D.

BAR Exhibits in major national and regional events

MAINSTREAMING BAR'S VISIBILITY

To ensure added visibility of BAR-funded research and R&D in general, the bureau regularly conducts seminars and joins agriculture and fisheries exhibits.

In 2009, BAR conducted 14 seminar series highlighting relevant topics in the agri-fishery arena. Conducted either at BAR or on-location, the seminar topics included health and wellness program (32 percent), climate change (27 percent), output of BAR-funded R&D (20 percent), food security (7 percent), biofuel (7 percent), and bovine (7 percent).

For the exhibits, BAR participated in 7 national and regional events. These included: A/F R&D

Technology Commercialization Center Launch, 4th National Goat and Sheep Congress in Tuguegarao City, 5th Bicol Business Week and 18th SouthLuzon Area Business Conference, 48th PAFT Annual Convention, National Science and Technology Week, 5th A/F Techno Forum, and 2009 AGRLINK/FOODLINK/AQUALINK.

BAR's information dissemination campaign also extends to other forms of media such as the production of promotional materials. In 2009, the ACD prepared and packaged 15 promotional materials including streamers, signages and other info materials to promote BAR-supported technologies.

SERVICES PROVIDED

BAR, through ACD, extends its services in three forms, which are Scientific Publication Grants (SPG), Scientific Literature Services, and a R&D Technology Commercialization (TechCom) Center.

Aside from employing various media to facilitate knowledge and information transfer, BAR also provides support to its clients through publication grants on R&D. SPG is a grant provided to various scientific institutions and organizations which covers the cost of publication of scientific journals, proceedings, and books; and provides financial assistance to scientific conferences and seminars.

For 2009, ACD facilitated various requests for SPG funding of which six were approved for scientific publications and 15 for conferences and seminars.

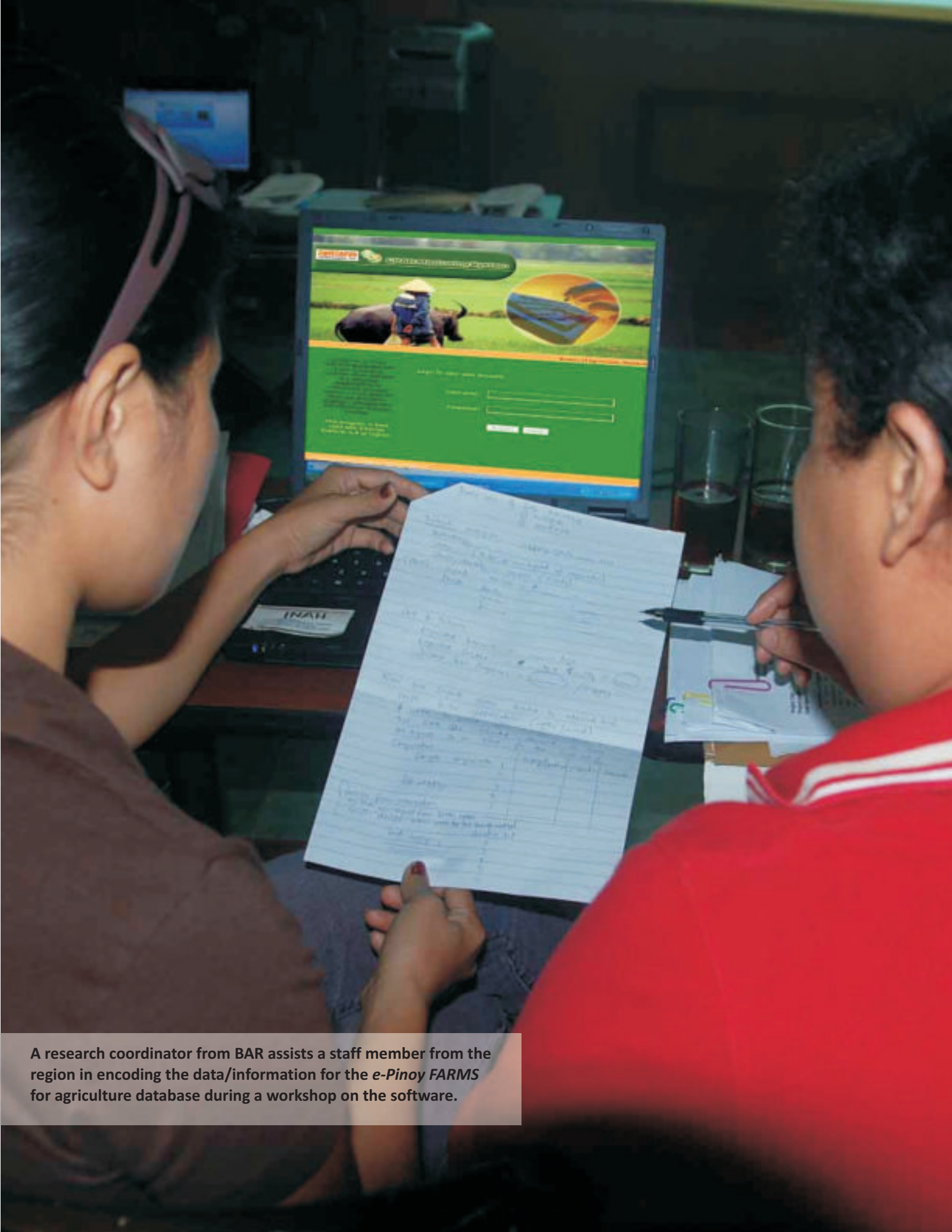
Another service provided by ACD to RDE workers and the public is its Scientific Literature Services which serves as the repository of knowledge database and acquisitions from BAR supported researches as well as from other institutions and partner-agencies. In 2009, to better build up its database and acquisitions, BAR collected and sourced out 374 information and knowledge products including materials and documents from partners. These included: 155 books, 110 serials, 16 theses, 8 CDs of various topics, 15 terminal reports/research papers, and 70 vertical files.

Together with BAR's TCU, one of ACD's most recently developed services is the R&D Technology Center which serves as a venue to showcase and disseminate R&D technologies and breakthroughs generated by BAR, particularly from its two major programs, Community-based participatory Action Research (CPAR) and the National Technology Commercialization Program (NTCP).

Inaugurated on 7 August 2009, this facility is intended for information dissemination purposes and was borne out of the need to showcase research results that can generate high impact technologies to boost entrepreneurship in the agriculture sector.

Since its inauguration, 225 walk-in visitors have been assisted either through phone and email inquiries, or through 13 reference materials distributed books, newsletters, magazines, techno-brochures and posters.





A research coordinator from BAR assists a staff member from the region in encoding the data/information for the *e-Pinoy FARMS* for agriculture database during a workshop on the software.

information communication technology

EFFECTIVE TOOL FOR DEVELOPMENT

According to MTPDP 2004-2010, more than one-third of the Philippine population is employed in agriculture or agriculture-related industries where the majority of the rural poor belong. In most cases, the rural poor are the least equipped with proper tools and knowledge to carry-out successful farming and fishing endeavors. This inspires BAR to intensify its information communication technology (ICT) programs to reach out to its clients all over the country and even in other parts of the world. In so doing, it provides access to necessary information and or technologies that would help farmers, fisherfolk and other individuals who are in the business of agriculture.

BAR believes that through ICT, the sharing and dissemination of knowledge derived from R&D results and activities becomes more efficient – leading to greater impact on development and in the lives of farmers and fisherfolk. ICT offers a variety of tools that helps BAR develop the information products and services to effectively support its projects, programs and activities geared toward sustainable and globally competitive agriculture and fisheries sector.

Thus, the Information Management Unit (IMU) of BAR is has ventured into ground-breaking ICT efforts that further improve and widen the capacity of the bureau to serve more Filipino fisherfolk, farmers, academicians, stakeholders, other government agencies.

BAR'S TWO NEW WEBSITES

IMU created two new portals to effectively disseminate useful information on agriculture and fisheries. These are: the Biofuel Portal features relevant information about the National Biofuels Feedstock Program of the Department of Agriculture (DA) in support of the implementation of the BIOFUELS Act of 2006 and the AGFISH TECH Portal that features concise and updated information and technologies on the production of agriculture and fisheries commodities being commercialized in the country.

BIOFUEL Portal is an online knowledge based resource for farmers, researchers, investors, and the general public on the latest developments on biofuel feedstocks in the Philippines. This biofuel portal features the latest “know-how” in the industry, the cultural management and the innovative practices in the

processing of feedstocks into biofuel. It also features the different programs of DA that support the government's goal of reducing the country's dependence on imported fuels for the protection of the environment and the natural resources.

AGFISHTECH Portal supports the extension component of the DA's FIELDS program (Fertilizer, Irrigation, Extension, Loans, Dryers and other postharvest facilities, seeds and other genetic materials). It is a web-based knowledge portal that contains relevant information on the production of the DA's flagship commodities including crops, livestock and poultry, and fisheries. This portal is dubbed as “virtual-one-stop-shop” because it contains almost all the needed information for a particular agricultural production. The portal is also beneficial to those with an interest in agribusiness and other related activities.



IMU AND FULL OPERATIONALIZATION OF EPINOY FARMS



As the ICT arm of the bureau, IMU in partnership with the Optiserve Technologies, Inc. (OPTISERVE) created the e-Pinoy FARMS to systematize the management and coordination of rural development projects anchored on research, development and extension (RDE).

e -Pinoy FARMS is a web-based system that can generate, send, receive, store and process electronic data. It allows farmers, researchers and, extension workers to interact with each other to identify farm-

specific production problems and solutions, document practical knowledge, access market-related data and share relevant information to support decision-making.

Through this computer-based decision support system, BAR can now develop its information-driven and knowledge-based resource management to more effectively address R&D needs, hence, enabling BAR and the DA's research system meet the challenges of innovation and technology commercialization in agribusiness in the present and also in the future.



The deployment of e-Pinoy FARMS for agriculture was completed in all the 16 Regional Integrated Agricultural Research Centers (RIARCs) nationwide. It now complements the coordination, monitoring and evaluation requirements of the Community-based Participatory Action Research (CPAR) and the National Technology Commercialization Program (NTCP) of BAR. With advances in its development and an improved database system, the e-Pinoy FARMS which was launched late in 2009 and is on its second phase which with focused on fisheries is expected to be completed early in 2010.

The e-Pinoy FARMS for fisheries aims to operationalize research-extension linkages among the major stakeholders - fisherfolk, local government units (LGUs), private sectors, and the non government organizations (NGO) - through the active partnership among regional fisheries research and development centers (RFRDCs), and eventually with the regional fisheries training centers (RFTC). It also enabled RFRDCs to document and process CPAR project management, including fisherfolk/cooperators' registration into the development of research program; keep track of their technology application and production practices.



It will likewise, monitor the progress/implementation throughout a project's life cycle, keep records of transactions every quarter to determine enterprise/agribusiness development, and store all sorts of information related to community-based resource management.

The key result areas (KRA) for e-Pinoy FARMS in fisheries include: the establishment of a data repository on community-based coastal and inland resources and fisherfolk production-related activities that will be available to organizations, community-based associations, LGUs, field workers, and other government agencies in support of result-

oriented decisions; the collection and submission of accurate data at ground level to aid BAR and partners in planning and budgeting; and improvement of the data gathering methodologies and processes of BAR by establishing electronic communication protocols and standards to allow verification of information anytime.

Through these innovations in data gathering and processing of information through ICT, BAR believes that this system will result to an increase in efficiency of attaining the goals of agribusiness development and improve the national performance of agriculture and fisheries in the country.



Appendices



*As a research arm of the Department of Agriculture, the **Bureau of Agricultural Research** is at the forefront of ensuring that the results from R&D activities are relevant to the needs of the industry. With the rise of global competitiveness in the agriculture and fisheries sectors, BAR supports the generation of information for cost-effective decisions facilitative of profitable investment in agriculture.*



ESTABLISHMENT OF BAR





Created in 1987 through Executive Order 116, BAR ensures that agricultural research is coordinated and undertaken for maximum utility to agriculture. It is mandated to tap farmers, farmers' organizations, and research institutions, including state universities and colleges in the conduct of research for the use of the Department of Agriculture particularly, the farmers and fisherfolk. As the lead funding and coordinating government agency for agriculture and fisheries R&D, the Bureau is committed to consolidate, strengthen, and develop the agriculture and fisheries R&D system for the purpose of improving its effectiveness and efficiency, ensuring customer satisfaction and sustained improvement through work excellence, teamwork and networking, accountability and innovation.

MANDATE, MISSION, VISSION

BAR envisions a stable and progressive future for the Filipinos through excellence in research and development - specifically to transform the agriculture and fishery industries into a technology-based enterprise that is focused on information development and management. To achieve this, BAR must be able to develop strategies, methods, and technologies that can make the sector competitive and efficient.

R&D THRUSTS

To make R&D responsive to the needs of the agriculture and fisheries sectors, BAR adopts the following R&D thrusts:

-  *Productivity and profitability through production base enhancement*
-  *Resource sustainability and protecting biodiversity*
-  *Global competitiveness*
-  *Poverty alleviation and people empowerment*

ABOUT BAR

BAR'S FIRST IP APPROVED

The approval of the SNAP Hydroponics trademark is considered a milestone for the Intellectual Property Rights Office of the Bureau of Agricultural Research (IPRO-BAR). This is the first certificate awarded to BAR by the IP Philippines from among the IPRs applied for and processed. The certificate bears the Registration Number: 4-2007-006385 and Registration Date: September 15, 2008.

The Simple Nutrient Addition Program (SNAP) Hydroponics is a technology developed by the University of the Philippines Los Baños (UPLB) with funding support from BAR. The SNAP hydroponics is a low-cost system of vegetable production without soil.



RMTU CONFERS ELEAZAR HONORARY DOCTORATE IN AGRICULTURAL SCIENCE

The Ramon Magsaysay Technological University (RMTU) conferred BAR Director Nicomedes P. Eleazar a doctorate degree in agricultural science (*honoris causa*) for his outstanding accomplishments and contributions in the field of agricultural sciences particularly on research and development.

The conferment was made during the RMTU South Campuses 9th Commencement Exercises on April 2, 2009 in its San Marcelino Campus, Zambales wherein Dir. Eleazar also served as the commencement speaker.

Past recipients of RMTU honorary doctorate degrees include high-ranking and well-respected government officials such as former Agriculture Secretary Luis P. Lorenzo and Sen. Ramon B. Magsaysay Jr.





2009 OUTSTANDING BAR EMPLOYEES AWARDED

Eight employees of the Bureau of Agricultural Research (BAR) were announced as recipients of the 2009 Outstanding BAR Employees Award on 7 August 2009 during the 22nd Anniversary of the Bureau.

The Outstanding Employee Awards is an annual tradition at the BAR wherein the Secretary of the Department of Agriculture (DA) recognizes the employees who have shown highest degree of professionalism and commitment to work excellence in the performance of their duties and responsibilities at the Bureau.

Sec. Arthur C. Yap gave the award to: 1) Mark M. dela Serna of OAD (non-technical project-based), 2) Ferdinand Dax C. Lorena of PU (technical project-based), 3) Francisco J. Grettchin of OD (support service), 4) Nicanor B. del Rosario III of ACD (non-technical non-supervisory), 5) Judith A. Maghanoy of Finance (non-technical supervisory), 6) Mariko M. Ramos of PDD (technical non-supervisory), 7) Julia A. Lapitan of ACD (technical supervisory), and 8) Dr. Marlowe U. Aquino from ACD (division/unit head).

These employees have demonstrated consistency in achieving service above and beyond the call of duty with unrelenting observance to work ethics worthy of emulation.



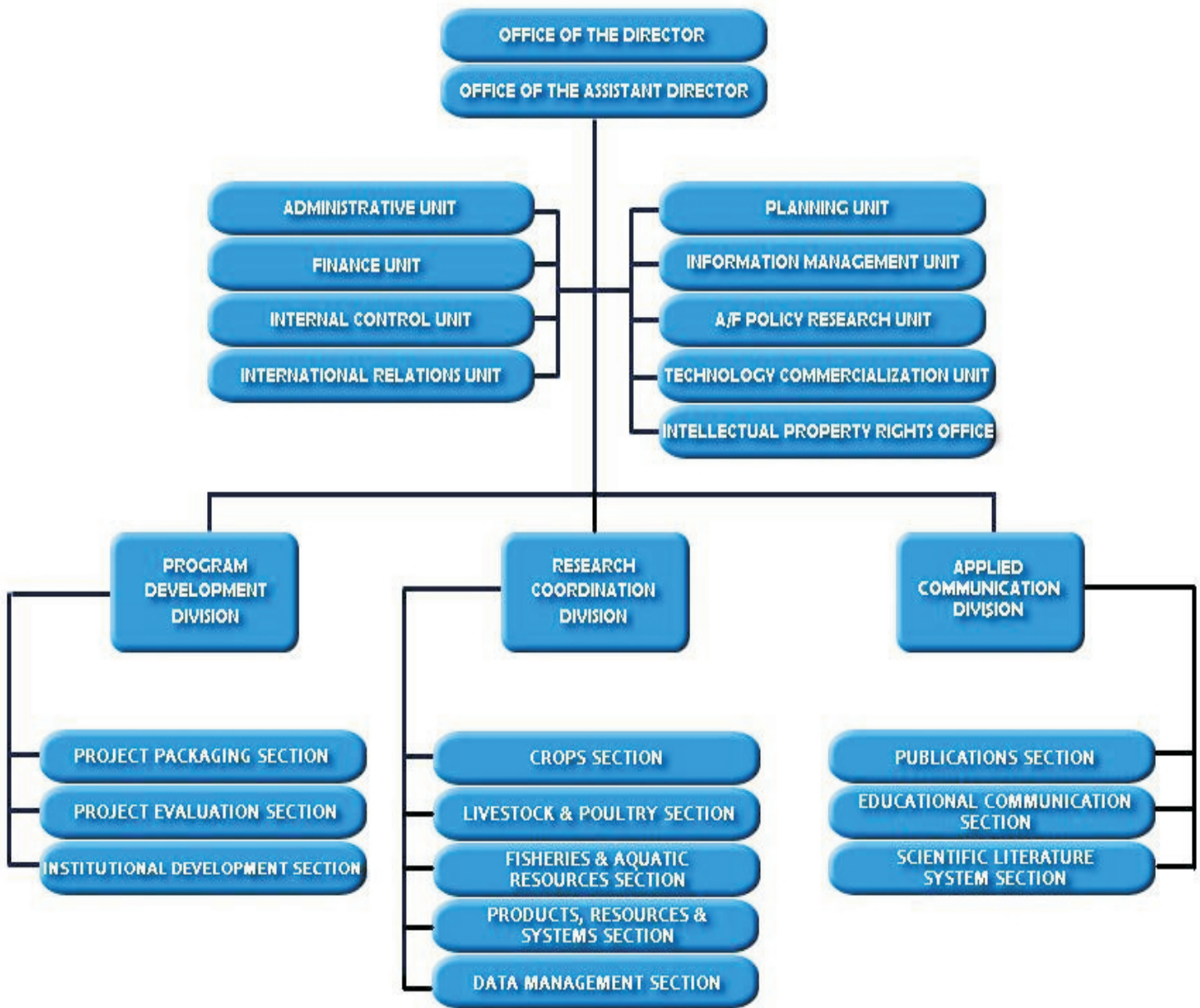
BAR WRITER'S PIECE ON CLIMATE CHANGE WINS BRIGHT LEAF'S BEST FEATURE STORY

Miko Jazmine Mojica, one of the writers of the Bureau of Agricultural Research (BAR), won in the best agriculture feature story category (national level) in the recently concluded 3rd Bright Leaf Agriculture Journalism Awards. Her winning piece, "When Fish Catch a Cold, the Rest of the World Sneezes" was published in the third quarter issue (July-September 2008) of the BAR R&D Digest, the official quarterly publication of BAR.

The awarding ceremony, which was held on 11 September 2009 at the Hyatt Hotel and Casino, Manila, was graced by Department of Agriculture (DA) Secretary Arthur C. Yap who served as guest of honor. BAR officials and staffs, headed by Dir. Nicomedes P. Eleazar, were present to give support to Mojica.

The Bright Leaf Agriculture Journalism Awards, sponsored by Phillip Morris Philippines, is an annual competition which aims to give due recognition and honor to journalists whose works are geared towards the development of sustainable agriculture in the Philippines.

Recognitions and Awards



BAR's Organizational Structure

NICOMEDES P. ELEAZAR, PhD, CESO IV
Director

TEODORO S. SOLSOLOY, PhD
Assistant Director

CARMENCITA V. KAGAOAN, PhD
Head, Programs Development Division (PDD)
SALVACION M. RITUAL
Assistant Head, PDD

TITO Z. AREVALO
Head, Research Coordination Division (RCD)
LIGAYA C. SANTOS
Assistant Head, RCD

MARLOWE U. AQUINO, PhD (January - June 2009)
JULIA A. LAPITAN (July - Dec 2009)
Head, Applied Communication Division (ACD)

JULIA A. LAPITAN (January - June 2009)
RITA T. DELA CRUZ (July - Dec 2009)
Assistant Head, ACD

ANTHONY B. OBLIGADO
Head, Technology Commercialization Unit

VICTORIANO B. GUIAM
Head, International Relations Unit

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Head, Planning Unit

MELISSA A. RESMA
Head, Information Management Unit

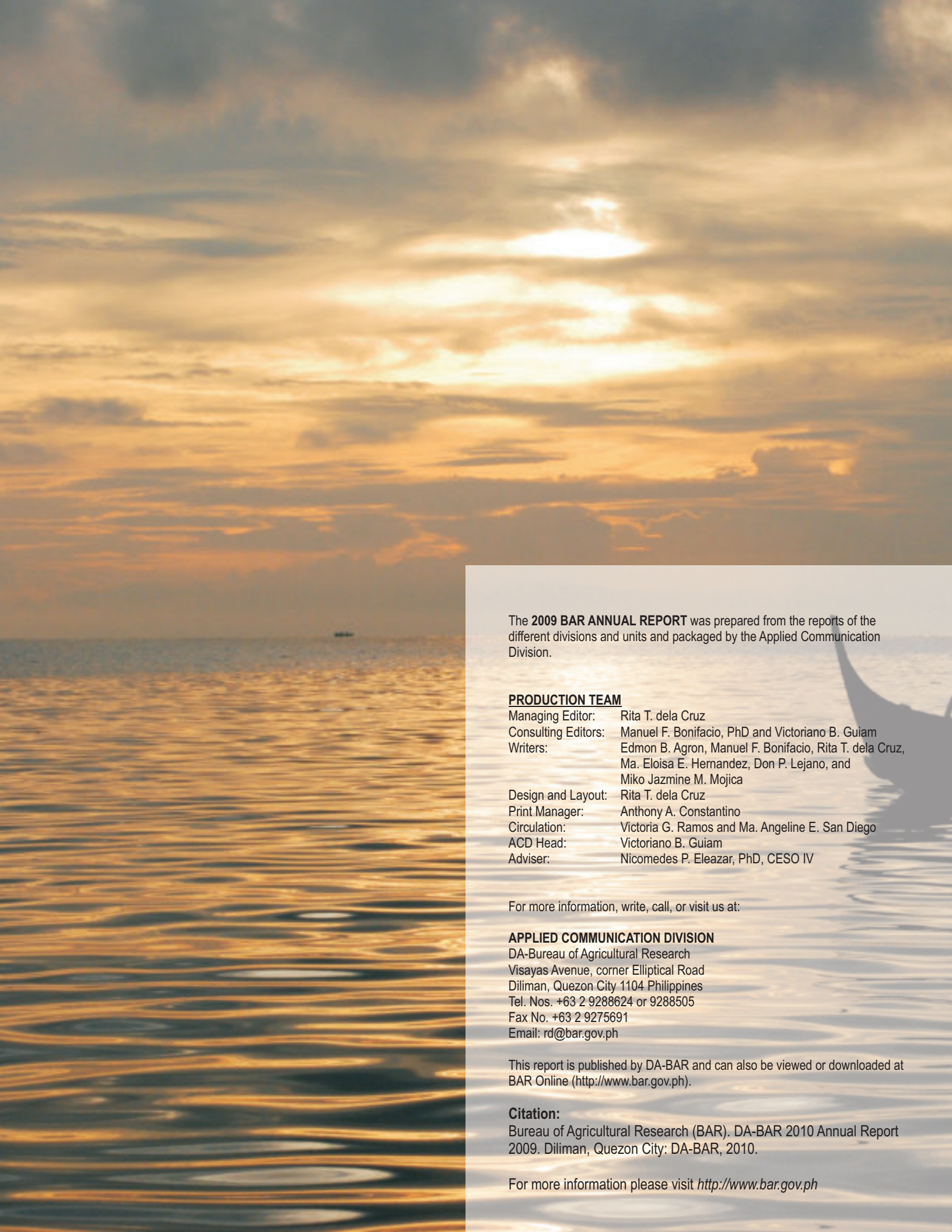
BRAULIO B. TAMAYO
Head, Agriculture and Fishery Policy Research Unit

ANDREA B. AGILLON, PhD
Head, Intellectual Property Rights Office

ROSALIA G. MARANAN
Head, Administrative Unit

ROBERTO S. QUING, JR., CPA
Head, Finance Unit

BAR's Officials



The **2009 BAR ANNUAL REPORT** was prepared from the reports of the different divisions and units and packaged by the Applied Communication Division.

PRODUCTION TEAM

Managing Editor: Rita T. dela Cruz
Consulting Editors: Manuel F. Bonifacio, PhD and Victoriano B. Guiam
Writers: Edmon B. Agron, Manuel F. Bonifacio, Rita T. dela Cruz, Ma. Eloisa E. Hernandez, Don P. Lejano, and Miko Jazmine M. Mojica
Design and Layout: Rita T. dela Cruz
Print Manager: Anthony A. Constantino
Circulation: Victoria G. Ramos and Ma. Angeline E. San Diego
ACD Head: Victoriano B. Guiam
Adviser: Nicomedes P. Eleazar, PhD, CESO IV

For more information, write, call, or visit us at:

APPLIED COMMUNICATION DIVISION

DA-Bureau of Agricultural Research
Visayas Avenue, corner Elliptical Road
Diliman, Quezon City 1104 Philippines
Tel. Nos. +63 2 9288624 or 9288505
Fax No. +63 2 9275691
Email: rd@bar.gov.ph

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BAR

BUREAU OF AGRICULTURAL RESEARCH
Department of Agriculture

RDMIC Building, Visayas Avenue, corner Elliptical Road, Diliman,
Quezon City, Philippines 1104

Telephone: +63 (2) 9288624, 9288505, 9200231

Fax: +63 (2) 9275691

Email: rd@bar.gov.ph