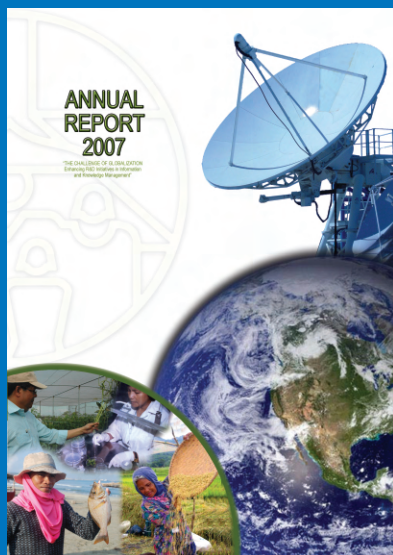


ANNUAL REPORT 2007

"THE CHALLENGE OF GLOBALIZATION
Enhancing R&D Initiatives in Information
and Knowledge Management"



About the Cover:



The response of the Bureau of Agricultural Research (BAR) to the challenge of globalization is captured in the presentation and design of the 2007 Annual Report. It depicts *inputs*, *processes*, and *outputs* for effective and efficient use and application of information and knowledge management in agriculture and fisheries research and development (R&D).

The *half-shape BAR logo* represents the corporate image of the institution being the lead institution in the agriculture and fisheries R&D in the country showing its dynamic and responsive role as it glows from the background. The *satellite dish* signifies BAR's response to cyber technology and development highlighting the role of information and communications technology (ICT) and knowledge management (KM) as key strategies leading to the timely and effective delivery of the R&D outputs. The *four people* inside the quarter loop represent vital roles in the overall mandate of BAR. The R&D *manager* who provides leadership to ensure research excellence; the *researcher* who develops technologies and protocols for R&D efficiency and effectiveness; the *farmer* and *fisherfolk* who are the beneficiaries of research providing information for better feedback and exchange to improve production management systems and product development. The globe in between the loop and the satellite signifies the *end-users* of R&D outputs who define trends and directions for relevant undertakings. As long as global people and its communities are accountable and responsible on the use and application of R&D outputs, it results to a balance, competitive, and sustainable agricultural R&D initiatives.

Cover concept: Marlowe U. Aquino

Cover design: Anthony A. Constantino

Correct Citation:

Bureau of Agricultural Research. (2008). BAR Annual Report 2007. Quezon City, Philippines: BAR.

ISSN: 1655-3950

© Bureau of Agricultural Research, Department of Agriculture

Contents

5

MESSAGE

6

RESPONDING TO THE CHALLENGE
OF AGRICULTURAL COMPETITIVENESS
AND GLOBALIZATION

13

BAR'S OPERATIONAL SYSTEMS IN
SUPPORT OF THE BANNER
PROGRAMS

Enhancing the Community-based Participatory Action Research Program
Sustaining the commercial value of technologies for people and
industries in agriculture and fisheries
Strengthening support to basic and strategic research
Intensifying institutional capabilities and human resource
Improving resource generation through project packaging
Funding RDE projects with direct impact on the industry
Bringing technologies closer to the people
Making information ready through effective knowledge management
Revolutionizing the agriculture and fisheries sector through ICT
Enhancing policy research in agriculture and fisheries
Protecting research products through intellectual property rights

52

SUPPORT TO NATIONAL
AGRICULTURE AND FISHERIES PROGRAMS

55

HUMAN RESOURCE CAPABILITY BUILDING
OF EMPLOYEES

61

RECOGNITIONS AND AWARDS

67

ANNEXES

BAR's Profile
Staff List
Acronyms

MESSAGE

It can be said that 2007 is the landmark turnaround in BAR's overall organization and management of research and development. It critically responded to the MTPDP pronouncement of agribusiness development as the main thrust of agriculture and fisheries development. It also took advantage of the positive AFMA evaluation of research and development (R&D), especially the adoption of its CPAR project as model farm and its technology commercialization project as the key to ensure the technology support to agricultural development. Hence, BAR took these two projects and made them its banner programs.



This reformatted BAR's research and development agenda since these programs are, in reality, interconnected. These are very well reflected in the various accomplishments of the different units of BAR.

BAR focused its major efforts on the management of resources through information and knowledge management. In fact, with the pronouncement of Secretary Arthur C. Yap that agriculture is business, information became the centerpiece of agriculture because of its recognition that no business will succeed without access to information. Hence, BAR became a premier line agency of the Department of Agriculture.

Its major activities for 2007 reflected the major theme of information management. BAR's activities highlight the role of information, communication, and technology. It is here where BAR won two prestigious BINHI awards for its Chronicle and R&D Digest. BAR has invested substantially in the computerization of information and ensuring that this reaches our users as needed. The role of information in decision making was institutionalized.

Our investment in the development of research facilities is in line with supporting information-driven agriculture. Our scholarship program and continuing education for our staff are geared to making BAR manpower information sensitive. Our relations with the state colleges and universities are being strengthened especially in the field of innovation. BAR, therefore, is committed to the principle that agriculture can only be competitive through continuous innovations.

This **Annual Report** is a testimony to that commitment.

A handwritten signature in black ink, appearing to read 'N. Eleazar'.

Nicomedes P. Eleazar CESO IV
Director

RESPONDING TO THE CHALLENGE OF AGRICULTURAL COMPETITIVENESS AND GLOBALIZATION



The Bureau of Agricultural Research (BAR) response to agriculture and fisheries globalization and competitiveness is anchored on dynamic, responsive, and iterative programs. These are the Community-based Participatory Action Research (CPAR) Program and the National Technology Commercialization Program (NTCP). Like any development programs, the CPAR and NTCP were conceptualized to support and enhance the capability of people and their communities in using information and technologies to bring about location-specific development. At the same time, commodities are produced and processed based on their economic importance and social relevance to people, markets, and industries. Their implementation is constituted by a systematic process flow including stages of operation supported by appropriate production and processing management systems.

Today, CPAR and NTCP are focused on the processes built in each program which are given attention to trigger agriculture and fishery product development -- good quality, address the market needs, reasonable pricing, satisfy consumers, and ultimately stable and sustainable products.

Within the report period covered, BAR concentrated its efforts in developing, utilizing, and applying agriculture and fisheries (A/F) research and development (R&D) results and breakthroughs to institutionalize information-sensitive, output-oriented, and community-driven initiatives with particular emphasis on people's participation. These efforts highlighted different national and regional priority commodities identified under the Department of Agriculture (DA) *Ginintuang Masaganang*

Ani Banner Programs and DA goal pillars. BAR being the DA's focal agency on research, development, extension, and education (RDE/E), together with the Agricultural Training Institute (ATI), developed modalities and strategies to institute unified programs at all levels.

BAR's regular formulation and preparation of RDE/E agenda/programs incorporate community-based initiatives on enterprise development, organizational development and management, and agribusiness ventures. While detailed activities could be traced from these specific initiatives, it has instituted social interactions and relationships that foster strong partnership between national and regional research institutions, local government units, communities, and industries, including

non-government organizations for more relevant programs.

The majority of the program activities support the pronouncement of DA Secretary Arthur C. Yap in making agriculture business. The programs are BAR's contribution to attaining and making this goal a reality. BAR's initiatives are focused on the generation of appropriate information and knowledge management in agriculture and fisheries through research and development.

While working on food security, sustainability, social and economic development, and strong partnership between and among DA units, SUCs, industries, and communities, BAR continues to address people's participation, empower the community to ensure commodity competitiveness.

Community-based Participatory Action Research

Over the years, BAR has been continuously in search of development modalities and strategies for effective and efficient R&D management. Since its creation in 1987, BAR has instituted a mechanism that addresses the overly discussed weak research and extension linkage. It was because of this that BAR guaranteed the inclusion of people and communities until such became stakeholders in all R&D projects. This move led to the conceptualization and formulation of the community-based initiatives, specifically participatory action research. The evolving process of constant improvement started from technology adaptation, verification, and dissemination. Owing to its unique operational characteristics, BAR gradually provided strong emphasis on social dimension as equally important as the technical aspect. This shift led BAR programs to be people-centered, which includes the culture of farming and fishing operations for more relevant research outputs.

A closely knit implementation strategy was adopted by BAR, including monitoring and evaluation in the different regional agriculture and fisheries research centers and local government units (provincial, municipal, and barangay). Included were the farmers' and fisherfolk organizations with specific goals of improved and increased production and better farm productivity. As a result, making people participate in all levels of action research was realized and indeed research outputs became real and people, including their communities, are now in the front line of action.

The CPAR made a mark when it considered the characteristics and unique features of its sites and farmer/fisherfolk profiles. This was done through the use of participatory rural appraisal (PRA). The PRA is the best tool to get the benchmark data of the people and their communities before the introduction of any intervention in the area. It is done through observations, interviews, focus group

discussions, and even historical analysis for a more detailed community profiling on resources, production and processing management systems, family structure and characteristics, including cultural practices, farming and fishing practices, local governance, services, and activities, among other things. All these pieces of information are used in the formulation of CPAR programs and activities in the area. The issues and concerns in agriculture and fisheries development were identified through the visioning exercises and action planning.

Each identified CPAR site (barangay) undergoes the PRA process to determine its preparedness in operating and implementing the CPAR program based on the agreed intervention and activities. When parties involved come to an agreement, the CPAR program is proposed and technical and financial supports are provided to support its activities.

CPAR projects are heavily anchored on people's determination to be socially independent, economically stable, politically-motivated, technically capable, and based on sound cultural practices. If these processes are followed, the CPAR site becomes a community of practice through community participation and empowerment using action research. In the end, the results of CPAR will be the gains of the community because of self-reliance, self-motivation, and empowerment. In the end, the sustainability of the CPAR project is realized. Gradually, communities will be integrated and form clusters to address the commodity with significance derived from the interventions introduced during the CPAR implementation. Productive and profitable commodities in the clustered communities are elevated and supported through the technology commercialization program, particularly on promotion, upscaling, and joint ventures in enterprises and agribusiness ventures.

Banner programs in brief

“
CPAR projects are heavily anchored on people's determination to be socially independent, economically stable, politically-motivated, technically capable, and based on sound cultural practices.
”



National Technology Commercialization Program

Since the establishment and approval of the Department of Agriculture (DA) National Technology Commercialization Program (NTCP) per Department Order No. 3, Series of 2006 on 6 February 2006 through the Bureau of Agricultural Research (BAR), NTCP has made a mark on the research outputs with maximum utility to agriculture and fishery communities.

The NTCP utilized a framework and support mechanism that expanded the utilization and application of technologies with commercial value to encourage the full participation of key players and stakeholders to increased production and profit. Communities and industries capable of commercializing technologies were provided with technical and financial support by BAR to initiate an enterprise or agribusiness venture.

The need to understand research and development in the context of technology commercialization has been the concern of experts and implementers involved in agriculture and fisheries development. Many believe that technology commercialization (Tech Com) does not require further research because its basic premise is technology utilization and dissemination or technology transfer, in general. This matter became the much thought concern of social scientists and development workers. They believe that it is the challenge in agriculture and fisheries development that emphasizes the role of the sociocultural factors on matters related to the



acceptability, utilization, application, and adoption of the technologies.

In order for researchers to effectively develop technologies according to users' needs, these issues on people's lives, community development, socio-technological interactions, and community changes must be addressed. These must be focused and highlighted in the whole arena of technology management, including technology development and commercialization.

The introduction of this paradigm makes the use of agriculture and fisheries technologies to address commodity needs, community and social change, and the development of commodity-specific industries. Given these realities, the acceptability, utility, and

applicability of technologies are taken as the key features of technology commercialization. R&D provides the direction to better outcomes and outputs. It also illustrates the complementation and linkage of different processes or stages within the technology management (development and commercialization) framework.

It is undeniable that even with concrete justifications, the limited understanding and question still holds true – Where is research and development in the technology commercialization framework? Based on this, the role of R&D in technology commercialization needs to be described exhaustively to address the pressing concern and claim that R&D is not within the technology commercialization framework.

The process and activities

Over the years, technology management has been straddling over different reference points in terms of context and strategies. Originally, technology management was focused on areas in the fields of agriculture and fisheries, electronics and communications, information technology and knowledge management, pharmaceutical and health sciences, and now biotechnology. Through the dynamic and continuous process of change and development, technology management shifted to incorporate the socio-cultural as well as technological aspect of human interventions. With this, it is but fitting to look closer at agriculture and fishery technologies in the different stages and processes of development.

Technology management is the art of handling technologies for proper and appropriate transfer, commercialization, acceptance, utilization, and development. It involves two major processes, namely: technology development and technology commercialization.

Technology development starts with the conceptualization and organization of ideas to generate a specific technology. It includes generation, adaptation, verification, and dissemination. Although these are basic processes in technology development, it should not limit its concern on technology maturation only. It must include aspects of information and knowledge exchange to define and improve the nature and

characteristics of technology, including its physical and social relevance.

If taken in its literal context, technology commercialization is a process of marketing or selling a technology. For instance, a researcher has developed an improved process of food preservation. If he is university-based, the university can create a mechanism to circulate and promote his improved process to potential users who are likely to obtain better product and derive more profit from its use. In other words, the university will assist the researcher market his technology. In general, two mechanisms are used for this purpose, namely: *Technology Incubator*, an environment and program that offers a full array of business assistance

services tailored to the client companies; and *Technology Park*, a mechanism designed to stimulate the development of entrepreneurial, knowledge-based micro to small and medium

enterprises. On a smaller scale, the University can set up regular technology forum for the researcher and the users to meet. Announcement through the media is likewise

done by the University. This idea of selling/marketing a technology must be clarified and put in its most appropriate context.

Stages and agricultural production

There are four stages of agricultural production focused on growth performance for agribusiness systems development. It must be noted that the technology intervention strategies for Stages I and II will be technology *transfer/infusion*. The intervention will specifically address the needs of small to medium-scale farming. The infusion process

will be directed at improving the performance of the production toward enterprise development. This activity will require mobilizing and organizing the farmers/fisherfolk and their production systems towards a market-oriented production management system.

Technology commercialization as technology mediation will be applied to Stages III and IV. The basic assumption is that the current production system is already supported with technologies. The commercialized technologies will perform the mediating role for intermediate and advanced cycles of production to enhance agribusiness performance and competitiveness.

Stage I (Social Preparation for Enterprise Development-Community Mobilization, Organization, and Development)

Goal – Initiate and/or revitalize farmer and fisherfolk organizations to raise the consciousness of farmers and fisherfolk on the importance of organizing production and livelihood activities.

It is at this stage that the interaction of research, extension, and farmers will be enhanced. Attention will be given to the current state of production in the community. The tacit production knowledge will be placed in its most appropriate structure. This will be enhanced/improved through participatory research and extension. The inherent organization of production will be developed through organizational development and value orientation. Through information, education, and training, the farm and enterprise management skills of farmer and the community will be developed. They will be sensitized to the innovative mode of production activities leading to the management of micro enterprises. The role of women will be enhanced in livelihood-related activities.

Activities

- Community appraisal
- Community mobilization and organization
- Characterization and profiling
- Technology and training needs assessment

Outputs

- Instituted farm resources management skills
- Designed information, communication, and training with focus on the importance of participatory management, leadership, and decision making
- Mobilized and motivated community participates in organized livelihood activities
- Raised the consciousness of the community to the value of sustainable environment management
- Enhanced the structure of production and livelihood activities through new value orientation, role, and control system management
- Revitalized and enhanced primary cooperatives for livelihood development

Stage II (Organizational Development-Organized Production Management Systems for Micro Enterprise Development)

Goal – Increase the efficiency of farmers' organization in managing production and micro enterprises for productivity and profit.

Activities

- Identification, selection, and application of technologies
- Coordination with institutions for support services
- Organization of cluster producers and technology users
- Strengthening of local linkage and networking
- Establishment and/or identification of markets

Outputs

- Instituted new value orientation and production standards for managing production and micro enterprise
- Focused work orientation on responsibility, accountability, and trust
- Institutionalized and unified approach to livelihood
- Enhanced and institutionalized teamwork between research, extension, and farmers
- Encouraged and supported organization differentiation
- Instituted multipurpose cooperatives with focus on micro-enterprise development
- Developed information management for effective decision-making
- Developed marketing skills through effective access to proximate or nearby markets

Stage III (Intermediate Enterprise Development-Enhancing Agribusiness Initiatives)

Goal – This is a transcendence stage where the multipurpose cooperative is transformed into a full-fledged special purpose engaged in full commercial ventures.

Activities

- Tie-up with private sector or industry for a particular commodity
- Strengthening regional linkage and networking
- Establishment of partnership for fresh and processed products
- Establishment and/or identification of other markets

Outputs

- Organized core requirements for enterprise development focused on domestic and international markets
- Enhanced attention to the management of business activities
- Conducted market analysis for more effective consumers' orientation
- Developed new products for new market
- Strengthened production management system
- Increased higher level management skills for competitiveness
- Enhanced production planning and quality control
- Instituted management control systems for accountability, responsibility, and trust
- Instituted high performance skills training
- Instituted new mode of product development

Stage IV (Advanced Agribusiness Systems Development (ASD) for Global Competitiveness)

Goal – This is the stage where the competitive status of the cooperative is fully instituted. Niches both at the domestic and export markets enhanced. Higher level professionalism in the organization instituted.

Activities

- Establishment of worldwide market
- Tie-up with international markets
- Coordination with international market support, linkage, and network
- Expansion of other areas for commodity or product development

Outputs

- Encouraged and supported creative management
- Operational collaboration and coordination with research agencies, state colleges and universities on technology commercialization and product innovation
- Instituted product development and innovation
- Supported and enhanced production diversification
- Advanced training in product value-adding and packaging enhanced
- Operational management control system responsive to the challenges of the market situation
- Instituted joint venture schemes

Technology commercialization framework and process

Process Flow

Entry Point	Identification of Mature Technologies <ul style="list-style-type: none"> • products • process
Process I	TECHNOLOGY SOURCING <ul style="list-style-type: none"> • technology identification • technology synthesis
Outputs	List of mature technologies by sectors
Process II	TECHNOLOGY PACKAGING
Tools	Technology Assessment/Valuation <ul style="list-style-type: none"> • feasibility studies • investment analysis
Outputs	Packages of technologies Investment packages
Process III	TECHNOLOGY PROMOTION
Tools	Technology Demonstration Technology Forum Technology Fairs Information, Education, and Communication Trainings
Outputs :	Technology/knowledge/products and services
Process IV	TECHNOLOGY UPSCALING (Enterprise Initiative and Management)
Tools	Enterprise Management Cooperative Development Training
Outputs :	Markets Small-scale/medium-scale enterprises Large-scale enterprises
Process V	ENTERPRISE INTEGRATION AND EXPANSION
Tools	Successive Technology Application <ul style="list-style-type: none"> • technology mapping • spatio-temporal information system analysis
Outputs :	Expanded technology demonstration farms Village site profiles
End Result	WIDE-SCALE ADOPTION <ul style="list-style-type: none"> • technology application • technology utilization

The research agenda

It is quite explicit in the Agriculture and Fisheries Modernization Act of 1997 (Republic Act 8435) that the development of agriculture and fisheries must be technology-driven rather than resource-driven. This pronouncement is based on the recognition of the dominant role of technology as a key driver of development. It is a fact that both industries have a lot of catching up to do to be globally competitive. To attain this, *research* will certainly play a paramount role. It is tasked with generating technologies that will allow both industries to improve, innovate, and change their overall structures and processes

for production and competitive positioning in the local and international markets.

The overall process of technology commercialization is a complex process that would require the design and development of systematic, yet critical research agenda centered on poverty alleviation, global competitiveness, environment-friendly, sustainability, and social justice.

More than anything else, technology commercialization is taken as the engine that will drive enterprise development and

integration to attain the goals of agribusiness development. Also, it considers the holistic community development perspective where R&D has an important role. This includes community studies, development studies emphasizing the qualitative approach (community as a place to live), ecological approach (community as a spatial unit), ethnographic approach (community as a way of life), and sociological approach (community as an arena of social interactions). In addition, it deals with the study of the whole supply chain (production, postproduction and processing, and marketing).

On this basis of the foregoing, below is a list of issues and concerns that must be addressed in technology commercialization research:

1. Technology assessment, development, and impact
 - a. Technology management and impact
 - b. Production and postproduction
 - c. Standards and safety
2. Environment and social impact analysis (EIA and SIA)
3. Risk analysis
4. Organization and management
 - a. Organization development and impact of technology
5. Building technology-based core competencies
6. Socio-economic analysis
7. Market analysis
 - a. Product development and innovation
8. Enterprise development and management
9. Agribusiness initiatives and management
 - a. Enterprise integration
10. Agribusiness development
11. Installing decision support system, networking, and linkages
 - a. Information and knowledge management
 - b. Information management and decision-making
 - c. Business planning and management
 - d. Joint venture and new business opportunities
12. Manpower development and training
13. Multi-disciplinary research agenda and activities

Agriculture and fisheries research and development activities are interactive, responsive, and implemented through a dynamic process. These characteristics are also the features of an effective and efficient community-based initiatives and technology commercialization program. Technology

commercialization activities utilize community-based approaches and strategies that complement the results of R&D derived from program planning, implementation, and monitoring and evaluation. These activities are supportive of the technological and

sociocultural aspects, which include technology refinement for better acceptability, utility, and adoption. It also explores and works on the different areas of community development with agriculture and fishery technology as entry points for development studies.

BAR'S OPERATIONAL SYSTEMS IN SUPPORT OF THE BANNER PROGRAMS



Enhancing the Community-based Participatory Action Research Program

In 2007, the Bureau of Agricultural Research made an important decision when it refocused one of its major programs – the coordination and management of the Community-based Participatory Action Research (CPAR). This move was based on the goal setting and direction of the Department of Agriculture to make agriculture more productive, profitable, and sustainable.

Since BAR is the national coordinating agency for agricultural research and development, its contribution to development was heightened with the inclusion of participatory action research. This is implemented in selected barangays that have passed the criteria of site selection and have strong capability for

community cohesiveness and belongingness to implement an agricultural or fishery development project. In addition, this was complemented by the result of the barangay visioning and action planning that formulated a workable and attainable project. The project is evaluated based on the merits of technical feasibility, economic viability, and social relevance for community development, especially in making agriculture as a business enterprise.

In response to this, BAR made sure that all strategies and mechanisms complement and adhere to enhance and support the key players and stakeholders of the CPAR

program. People and their communities were given importance because of their specific roles in the operationalization and implementation of CPAR. Furthermore, local government units, particularly the provincial and municipal levels, were given the needed boost to encourage and establish the strong participation of their farmers and communities, including the different associations and organizations.

Based on these, BAR was instrumental in contributing a high degree of confidence in the implementation of CPAR in the country's 10 poorest provinces. This was BAR's share to alleviate the pressing need to overcome rural poverty.

What have we done so far?

Within the report period, the enhanced CPAR program was introduced in all existing and expanded CPAR sites. This gave the different regional integrated agricultural and fishery research centers the flexibility and authority to implement the projects based on their strengths and capabilities.

This year, 233 sites in 102 municipalities and 58 provinces were monitored. Out of this, 206 were project sites in agriculture covering various farming systems such as rice-based, corn-based, rootcrop-based, rubber-based, coconut-based, and banana-based. These systems integrated small ruminants and poultry to augment the income of farmers.

On the other hand, 27 project sites in fisheries showcased seaweed farming, floating fish cages, and some aquaculture activities of



milkfish, tilapia, and mudfish. Both sectors underscored the importance of social aspect and this resulted in the success of these projects for expansion. Based on this, 2280 farmer-cooperators were implementing the

different projects. Out of this number, 844 farmer-adopters opted to accept the technology interventions and applied them in their respective fields for increased farm production.

Successful CPAR projects



Successful CPAR projects implemented by the different regions included the ubi production in Ubay, Bohol; intensified vegetable production in Dalagit, Cebu; cassava integrated with corn in Siquijor which are all coordinated by the DA-Central Visayas Integrated Agricultural Research Center (DA-CENVIARC) in collaboration with the provincial and municipal government units in Region 7; the mango-based CPAR project in Sta. Maria, Davao del Sur coordinated by the DA-Southern Mindanao Integrated Agricultural Research Center (DA-SMIARC); corn-based farming system integrated with peanut in DA-Cagayan Valley Integrated Agricultural Research Center (DA-CVIARC); rubber-based farming system in Zamboanga coordinated by DA-Western Mindanao Integrated Agricultural Research Center (DA-WESMIARC); integrated goat production system in Pangasinan coordinated by DA-Ilocos Integrated Agricultural Research Center (DA-ILIARC); and vegetable production

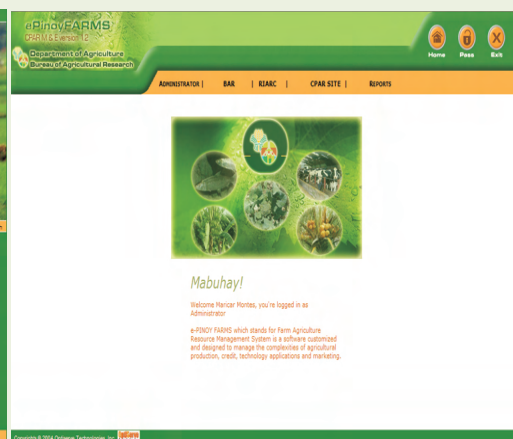
system in Northern Mindanao coordinated by the DA-Northern Mindanao Integrated Agricultural Research Center (DA-NOMIARC).

These successful CPAR projects enhanced the preparation and development of the refocused CPAR program of BAR. These highlighted the factors needed in implementing CPAR which included key indicators for further research, especially items on the social, economic, technical, and political aspects. It was noted, however, that the majority of the successful CPAR projects relied on strong partnership with local institutions in the area such as provincial research and extension teams, provincial institutes on agriculture and fisheries, or state universities and colleges which provided additional technical assistance in technology refinement, process documentation, participatory monitoring and evaluation activities, and coordination and management among key players and stakeholders.

“These successful CPAR projects enhanced the preparation and development of the refocused CPAR program of BAR.”



The CPAR M&E system was developed through a project with the Optiserve Technologies, Inc. which is assisting BAR in the conceptualization of a unified and operational monitoring and evaluation (M&E) system. The system, which is called e-Pinoy FARMS, is an electronic Farm Resource



Management Systems, an Enterprise Resource Planning (ERP) solution with built-in capability to integrate all data and processes of an organization into a unified system. The system was particularly designed for community-based projects and other initiatives for appropriate program management.

The pilot regions for the installation and operationalization of the e-Pinoy FARMS are in DA-WESMIARC in Region IX and DA-BIARC in Region V. These were selected based on

their experiences in the implementation of the CPAR program. DA-WESMIARC included areas and data fields related to new CPAR parameters within the 10 poorest provinces and DA-BIARC for existing CPAR projects implemented 2006 backwards. However, because of the need to look at CPAR expansion sites, DA-ILIARC was included in August 2007. These regions provided the working data fields which were used in developing the systems for installation and implementation nationwide in 2008.

Future undertakings

To sustain its efforts in implementing CPAR program in all regions, BAR conducted consultation-workshops in August 2007 and November 2007 to determine the influencing, as well as contributory and limiting, factors in the success and failure of CPAR. These factors were critically analyzed to support the experiences and lessons learned by the different regional centers in improving program management on specific regional priority commodities. Furthermore, these were used to prepare operational plans for calendar year 2008.

The following are the plans lined up for implementation:

- Refinement and redirection of CPAR program based on operating and implementing guidelines. Thus, there should be one CPAR project per province in one municipality in at least two barangays.
- Adoption of the new nomenclature of new CPAR projects to be implemented in 2008 as – CPAR + technology + specific site (e.g., CPAR on corn-based farming system in Rizal, Kalinga).
- Expansion to all regions on the installation and operation of the e-Pinoy FARMS. This will be supported by orientation-briefing, including hands-on training for the CPAR Regional Team and key players at the provincial and municipal levels.
- Continuous capability-building activities supportive of the CPAR program such as community mobilization and organization, organizational development, process documentation, enterprise and agribusiness development.
- Enhancement and development of CPAR performance indicators for efficient and effective monitoring and evaluation system in support of e-Pinoy FARMS.
- Regular documentation of successful CPAR projects in agriculture and fisheries.
- Project impact evaluation of CPAR projects in selected regions.



Sustaining the Commercial Value of Technologies for People and Industries in Agriculture and Fisheries

Inasmuch as the vision of the agriculture and fisheries sectors is to be productive, profitable, and sustainable in the coming years, the Bureau of Agricultural Research continuously delivered its services by sustaining the commercial value of technologies through the National Technology Commercialization Program (NTCP).

The NTCP was instrumental in promoting and commercializing technologies of agriculture and fishery commodities through three major clustered technology commercialization fora and exhibitions. These were conducted in Naga City on 30 May 2007 for the Luzon Cluster B (Regions III, IVa, IVb, and V); Baguio City on 27 June 2008 for Luzon Cluster A (Regions I, II, and CAR); and in Davao City on 19 July 2007 for Mindanao Cluster (Regions IX, X, XII, XIII, ARMM, and CARAGA). Visayas Cluster was not conducted in 2007 because of some administrative

arrangements. However, the Visayas forum will be conducted during the first quarter of CY 2008.

Thirty-three technologies were presented and promoted for commercialization in the identified cluster venues. In Luzon B Cluster, nine technologies were highlighted, particularly on pineapple as hand-woven piña cloth; use of tobacco dust for milkfish aquaculture; village-level cashew apple processing; enhanced lanzones products using improved production management technologies; production and processing of tamarind wine; oil-based waxing protocol for “Queen” pineapple and “Satsuma” Mandarin; SCV fish egg artificial incubation for intensive tilapia hatchery system; and private-led community-based mushroom production.

Ten technologies were presented and promoted in the Luzon A Cluster, specifically

on Arabica coffee production under improved agroforestry system; production of yam (*ubi*) through minisett technology; seed production system of Asha peanut variety; improved multiple handline catching efficiency of fishes; processing of seaweed pickles; production of *bagoong* cubes of fish paste cubes for competitiveness; and improved small ruminant production techniques.

Moreover, 14 technologies were presented and promoted in the Mindanao Cluster. These included floating rope seaweed culture method; low-intensity tapping technology of rubber; processing of tilapia and shrimp nuggets; wine production using coconut water; modified atmosphere packaging for broccoli; and village-level banana chip processing.

Based on these technologies, comprehensive profiling and characterization were done to identify their potentials for commercialization

and to encourage investors to use the technologies which were subjected for enterprise development in specific areas in the country.

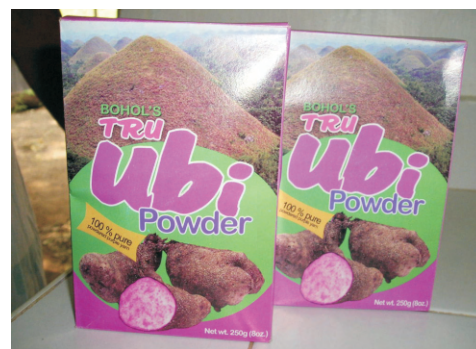
In addition to the zonal technology fora, three national activities were coordinated by the Technology Commercialization Unit (TCU) for more relevant and responsive DA-initiated activities. These are the Technology Investment Forum on Sweet Sorghum for Ethanol Production on 19 January 2007 and National Technology Forum/Exhibitions *cum* BAR Anniversary on 24 May 2007 and on 7 August 2007, respectively. Investors, researchers, extension workers, academe, development practitioners, local government executives of different government units, non-government organizations, private sector, and prospective industry takers participated in all the activities.

Aside from these zonal and national technology fora, the Bureau, through the TCU and its partner-agency, conducted the technology management training courses in two venues in the country. These training courses specifically supported the operationalization of evaluation and assessment, promotion and enterprise management, and management of technologies for enterprise and industry development.

The training courses were attended by the focal persons of the DA-RIARCs assigned to oversee the overall CPAR and NTCP programs of their respective regions which have bearing on the agriculture and fisheries commercialization, enterprise development, and agribusiness activities.

In line with these initiatives, DA-BAR continuously develops and conducts activities in making and sustaining agriculture and fishery technologies work for people, communities, and industries in an orderly, productive, profitable, and sustainable program management.

Developed A/F products from R&D activities supported by BAR through NTCP.





Strengthening Support to Basic and Strategic Research

One of the most dramatic changes observed today is the interest to build a strong foundation for basic research to ensure the country's global competitiveness. There is considerable wisdom in this approach because it could be argued that strategically important to a country's overall economic development is the nature and pace of R&D. It determines the level of competency and the intensity of the Philippines to contend with the various challenges of the times. Unproductive researches could result in a destabilized economy.

One of the most dramatic changes observed today is the interest to build a strong foundation for basic research to ensure the country's global competitiveness. There is considerable wisdom in this approach because it could be argued that strategically important to a country's overall economic development is the nature and pace of R&D. It determines the level of competency and the intensity of the Philippines to contend with the various challenges of the times. Unproductive researches could result in a destabilized economy.

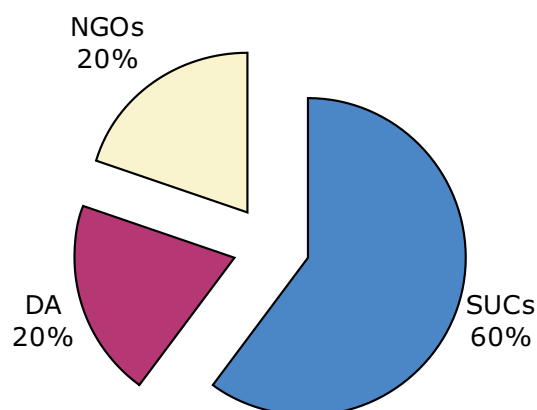
Inasmuch as BAR is an advocate of the implementation of applied researches which has direct impact on the lives of farmers and fisherfolk, it never fails to recognize the importance of basic or upstream research. It contributes new knowledge and insights that may lead to breakthroughs and the development and enhancement of generating new technologies.

Although basic research results may not immediately find their way to adoption and utilization, the Bureau believes that

conducting basic and strategic research is an investment for the future. The underlying principle is to increase their research applications which are vital to technology generation.

With the new direction and priorities set by the Department of Agriculture, the bureau has strengthened its support in the conduct of basic research aimed at addressing the emerging issues and concerns that beset the agriculture and fishery R&D. In particular, researches on agricultural biotechnology covering both modern and traditional biotech.

Basic and strategic researches supported by BAR in 2007



In 2007, BAR funded five basic researches, which were implemented by SUCs, namely: UPLB, UP Mindanao, and UP Visayas. The other two are being implemented by a DA staff bureau (BPRE) and an NGO (STRIVE/SIKAP Foundation).

These basic researches are:

1. Investigation on the potential of *Choetosiphila elegans* (Westwood) (*Hymenoptera pteromalidae*), a parasitoid of stored grain beetles
2. Comparative biology and ecology of economically important species of fruit fly in the Philippines, *Bactrocera occipitalis* (Bezzi) and *B. philippinensis* Drew and Hancock (Tephritidae: Diptera)
3. Postharvest responses of durian, mangosteen and papaya to 1-methylcyclopropene
4. Monograph series - Crisis in fisheries development: Views from the social sciences – Year 1
5. Assessing the efficiency of the corn sector: Implications to technology, trade and infrastructure policy, food security, employment and global competitiveness





Intensifying Institutional and Human Resources Capabilities

The strength of any R&D institution lies in its capability to maintain the right people with the right skills to handle a particular job. More than the amount of resources that an institution can marshal, building and strengthening its human resource capability are endeavors worth investing in.

BAR, being the national coordinating body for agriculture and fishery R&D, recognizes such a need to ensure that the research community has the qualified and highly trained people to do the job both internally and those who work in the DA units. A strong human resource development must be complemented by relevant and modern R&D facilities for them to be able to conduct their research and technology promotion activities.

A. Human Resource Development

Aimed at supporting the training and development of the research staff in the DA and the NaRDSAF-partner institutions, the HRD Program of BAR consists of three components: DA-BAR NaRDSAF Degree Scholarship and Thesis/Dissertation Assistance Program, Non-Degree Assistance Program, and Productivity Enhancement Program.

Degree Scholarship and Thesis/Dissertation Assistance Program

Under the **DA-BAR NaRDSAF Degree Scholarship Program**, the bureau provides financial support to a member of the R&D staff who wants to pursue an MS or PhD degree in accredited universities.

To date, the Evaluation Committee has 11 accredited universities/colleges around the country. These are UP Diliman, UP Los Baños, UP Visayas, Central Luzon State University, University of Southern

Mindanao, Mindanao State University-Naawan, De La Salle University, Ateneo de Manila University, Silliman University, Visayas State University, and University of San Carlos-Cebu City.

In 2007, five DA-BAR NaRDSAF scholars finished their PhD degrees in the fields of crop protection, agricultural economics, crop science, and plant pathology.

Name	Agency/Institution	Course/School
1. Juanito P. Marcelino	SKPSC	PhD Crop Protection/USM
2. Susan M. Rivera	PCA	PhD Agricultural Economics/ UPLB
3. Juliet Cristina M. Zambrano	LGU-Davao del Norte	PhD Crop Science/CLSU
4. Norma U. Gomez	USM	PhD Agricultural Economics/ UPLB
5. Marissa N. Estrella	BU	PhD Plant Pathology/UPLB

Meanwhile, BAR awarded four new scholarships to NaRDSAF member-agencies, two from DA-RFU, NFRDI, BAI, and Marinduque State College. Two of the scholarship grants are PhDs in agricultural engineering and animal science and two MS degrees in veterinary pathology and aquaculture.

Name	Agency/Institution	Course/School
1. Maricel R. Francia	DA-RFU II	MS Veterinary Pathology
2. Frederick B. Muyot	NFRDI	MS Aquaculture
3. Marivic M. de Vera	BAI	PhD Animal Science
4. Alexander M. Pascua	Marinduque State College	PhD Agricultural Engineering

The bureau also provides financial support for the conduct of thesis or dissertation studies that address major problems and concerns in agriculture and fisheries through its **Thesis/Dissertation Assistance Program**. The program provides support to students who need financial assistance for the conduct of their research or who have minimal support from their mother institutions/agencies. Out of the seven applications received and evaluated in 2007, three were approved for the thesis/dissertation assistance program. Technical assistance was also provided to scholars' request for liquidation of thesis/dissertation support.

Non-Degree Program

The **DA-BAR Non-Degree Assistance Program** provides financial assistance to NaRDSAF 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). Financial assistance is also awarded to scientists or research personnel members who wish to engage in short-term basic research through postdoctoral or fellowship awards. The program aims to enhance the skills and update the knowledge of R&D personnel members in specific professional, technical, and scientific areas in agriculture and fisheries, locally and abroad.

For 2007, 45 grantees (5 local and 40 foreign) were provided financial assistance for their attendance to trainings, seminars, conferences, and study tours abroad. Expenses granted included airfare, registration fees, and daily subsistence allowances.

The bureau conducted two training courses with two batches each on research project management in collaboration with the Office of the Vice Chancellor for Research and Extension of UPLB. The training program on "Goal-Oriented Program Preparation and Training Program on Research Project Implementation and Management", conducted from July to October 2007, was attended by 100 participants from different DA-RFUs,



GOPP Batch 2



GOPP Batch 1



Productivity Enhancement Program

In recognition of the DA scientists and their outstanding achievements and contributions, BAR provides incentives through its **Productivity Enhancement Program**. It provides assistance for corporate planning workshops and incentives for researchers and supports policy studies related to position, salary, and other benefits of research staff or research institutions.

This year, BAR 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 2006-2007, the award was given to Ms Erlinda P. Rillo of the Albay Research Center, Philippine Coconut

Authority (PCA), in recognition of her significant contributions to the Philippine coconut industry, specifically the tissue and embryo culture of *makapuno*.

Under this Productivity and Enhancement Program is the **Post-Doctoral and Senior Scientist Research Fellowship in Basic Research for Agriculture and Fisheries** which provides opportunities for local scientists and researchers to conduct basic researches in natural sciences. Financial assistance is provided by BAR and the use of facilities at the Natural Science Research Institute in UP Diliman in the conduct of their researches.

Under this program, Dr. Leon M. Payawan, UP Diliman Institute of Chemistry, was awarded the fellowship in 2007 for his approved project titled "Transesterification of Oil Extract from Locally Cultivated *Jatropha curcas* and Determination of its Properties as a Viable Biodiesel".

Under the program, the grantee shall receive financial assistance with a maximum total amount of Php500,000.00 for a period of one to two years and an opportunity to use the facilities of the Natural Sciences and Research Institute, UP Diliman, for research.

B. R&D Facility Development and Maintenance

The program provides support to the national, regional, and provincial RDE centers through the **Institutional Development Grant** (IDG) to strengthen their institutional capacities. Specifically, the grant provides support for the acquisition of scientific equipment, renovation and construction of research facilities, preparation of the master station development plan, and other critical needs of R&D centers. Likewise, BAR facilitates the updating of the **R&D Database** to have an efficient tracking system of the infrastructure profiles of the DA-NaRDSAF R&D centers.

Institutional Development Grant

During the first quarter of 2007, BAR proposed an IDG budget allocation of P54,477,473.07 for the 23 projects of the R&D centers of the DA, including staff bureaus, attached agencies, and RIARCs/ROSeS; and 10 Non-DA, including SUCs and private institutions in the upgrading and improvement of their facilities.

Out of the proposed IDG budget, P40.31 million or 73.96 percent of the 26 approved projects was released to support the R&D facilities upgrading and improvement

projects of DA (CVIARC, BIARC, CENVIARC, EVIARC, SMIARC, and CARIARC), DA-5 ROSs (Sorsogon, Albay, and Soils Lab), BPI NCRDCs (La Granja, Manila, Los Baños, Guimaras, Davao, and Baguio) UPLB, CLSU, and CLSUFI.

The bureau screened and reviewed 38 proposals based on guidelines and approved master station development plan. MOAs following with vouchers were prepared and processed in coordination with concerned divisions/unit.

Site inspection and assessment of the proposed renovation and upgrading of the centers (UPLB, BFAR-RFRDC 4A, and DA-5 RIARCs/ROSeS) damaged by typhoons "Milenyo" and "Reming" during the first and second quarters of the year were conducted and facilitated. In this connection, their completed projects were successfully validated in cooperation with staff from PCC, PCA, Vegetable Seed Center, DA-BIARC, BFAR RFRDC-5, and Bicol University.



CENVIARC



SMIARC



EVIARC



R&D Facilities Database

BAR maintains a tracking system of the IDG projects and the updating of the infrastructure data of the R&D centers. The infrastructure data include the laboratory/farm equipment prices and inventories based on the submitted terminal reports.

To date, infrastructure data submitted by 25 DA-RIARC's/RFRDCs have been encoded and updated.



Improving Resource Generation through Project Packaging

BAR, through its Project Development Section (PDS), intensified its focus on resource generation by packaging project proposals for fund sourcing both from local and foreign institutions. This is to compensate for the critical lack of resources to fund more researches. The bureau coordinated with funding institutions regarding priority program areas for collaboration.

In 2007, BAR packaged nine projects and nine training proposals. From the nine project proposals, seven were submitted for foreign funding and cooperation and two for local support. Most of the projects proposed were in line with the priority areas of the collaborating agencies.

Meanwhile, the 11 training proposals were submitted to USDA for consideration, through the Cochran Fellowship, in collaboration with other DA units. Among the training topics were: research management in agriculture, IP management and

technology transfer, biotechnology, knowledge management, animal management, agriculture entrepreneurship, seafood safety, agricultural postharvest, and plant genetics.

PROJECT PROPOSAL

AGENCY/INSTITUTION

For foreign funding/
collaboration

For local funding/
collaboration

1. Capability Building in Intellectual Property (IP)-based Technology Transfer of Research Result through Promotion and Commercialization	Korea-AFTA	
2. GIS and Decision Support System on Fisheries		
3. Sustainable Conservation and Utilization of Philippine Indigenous Crop Species	AUSAID and NEDA-KR2	
4. Unified Information Management System for Research and Development in Agriculture and Fisheries in the Philippines (with MISD)	KOICA	
5. Strengthening Governance and Sustainability of Small-scale Fisheries Management in the Philippines	WorldFish	
6. Rice-Maize Production System in Selected Areas in Luzon Island, Philippines	IRRI-CIMMYT	
7. Enhancing Adaptation and Utilization of Corn and Corn-based Technologies	CIMMYT	
8. Impact Assessment of ACIAR's Grain Storage Pest Control Research in the Philippines	ACIAR	
9. Building Development-Oriented Community of Practice: The Making of the New Philippine Agriculture		
10. CPAR Projects for the 10 Poorest Provinces (with RCD)		DA and LGUs
11. Work and Financial Plan for GMA Corn Program		GMA- Corn Program

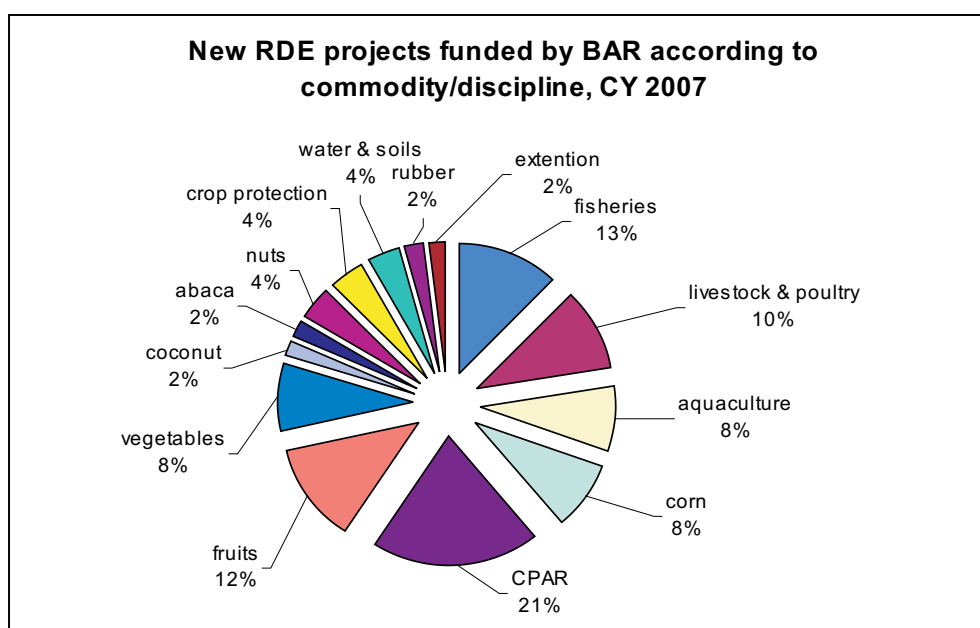
Funding RDE Projects with Direct Impact on the Industry

Being a funding and a coordinating body of the agriculture and fisheries R&D of DA, BAR answers to its commitment to support the implementation of specific projects with major impact on the farmers and fisherfolk based on a unified national R&D agenda.

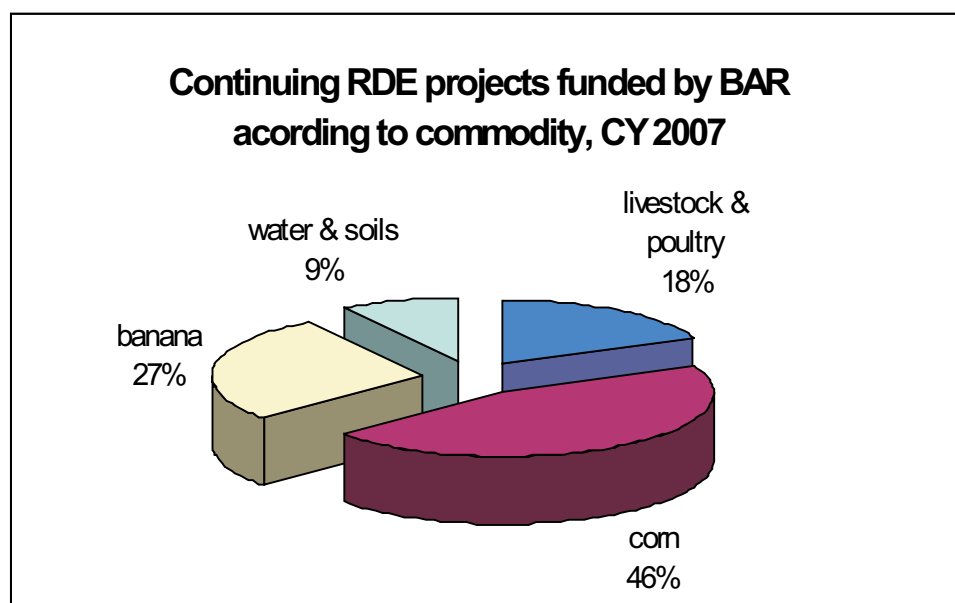
In 2007, the bureau funded 60 RDE projects, 49 new and 11 continuing. A big chunk of the

new projects approved for funding were CPAR (21%) owing to the pursuit of BAR to allocate more resources for the conduct of applied and on-farm researches. This follows the farming systems perspective to fast-track technology promotion and adoption to create immediate impact on the lives of small farmers and fisherfolk.

Other priority commodities such as fruits (12%), livestock and poultry (10%), and vegetables (8%) were also heavily assisted in support of the DA's twin goals as stated in the Medium-Term Philippine Development Plan (2004-2010). This is in consonance with the Secretary's programs on making food plentiful at competitive prices where the costs of priority wage foods are affordably reduced.

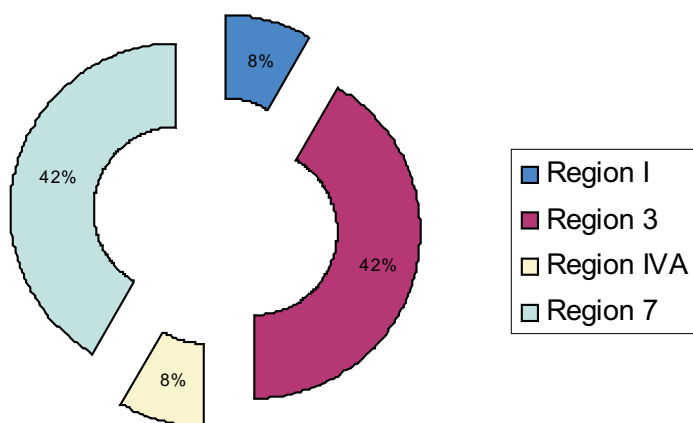


Included in the funding are 11 continuing projects which were reviewed and recommended for funding during the previous years but funds were only released in 2007. A big portion of these projects was dedicated for funding corn (46%), followed by the high value crop, banana (27%).



In the hope of properly addressing the identified needs, gaps, and issues necessary for a holistic community development plan through a localized strategy called Participatory Rural Appraisal (PRA), BAR received 29 PRA designs for funding approval. From the 29 PRA designs, 28 were recommended for funding but only 12 were approved. Sharing a big chunk of the pie were Regions 3 and 7 with five approved PRA each.

Approved PRA according to regions, CY 2007



Participatory Rural Appraisal Activities

Monitoring and Evaluation of Foreign-Assisted Projects (FAPs)

In 2007, the bureau coordinated the implementation of six ongoing foreign-assisted projects through various technical reviews and on-site monitoring.

Milkfish aquaculture technology

With BAR as the coordinating body for the project, “Dissemination and Adoption of Milkfish Aquaculture Technology in the Philippines”, the WorldFish Center collaborated with agencies such as the Bureau of Fisheries and Aquatic Resources (BFAR), University of the Philippines Visayas (UPV), and Southeast Asian Fisheries Development Center-Aquaculture Department (SEAFDEC-AQD).

The three-year project (2004-2007) was conducted in Dasol, Pangasinan and Aringay, La Union with the objective of analyzing the production, market, and policy structures of the milkfish industry in the Philippines. This is to identify the constraints and opportunities for the future growth of the industry with emphasis on the adoption and impact of technological development using case studies in hatchery and grow-out production systems that can be transferred or replicated in other parts of the Philippines.



Indigenous vegetables

To promote food security and improved nutrition in selected rural households in the Philippines, a project on the “Promotion of Indigenous Vegetables for Poverty Alleviation and Nutrition Improvement of Rural Households in the Philippines” was undertaken from February 2006 to January 2007.

Implemented by the AVRDC – The World Vegetable Center with DA-RFUs 5, 8, and 10, the project was conducted specifically to gather information on existing indigenous vegetables and their utilization and introduce to at least 20% of the farmers and rural households to potential income opportunities offered by indigenous vegetable cultivation. Introduction of indigenous vegetable varieties contributed to improved nutrition of resource-poor households in the target areas through increased consumption of indigenous vegetables and technologies for their production.



Seed support system for Asha peanut variety



The project, "Introduction, Promotion and Efficient Seed Support System of ICRISAT Asha Peanut Variety in Region 2, Philippines", is implemented by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in cooperation with DA-Cagayan Valley Integrated Agricultural Research Center (CVIARC) and DA-Cagayan Valley Lowland Marine Research Outreach Station (CVLMROS). The project, which was initiated in 2005, was completed in 2007 with project sites in Isabela province (Ilagan, Echague, San Isidro, Sta. Maria, Jones, Angadanan, Sto. Tomas) and Cagayan province (Alcala, Iguig, Lallo, Gattaran).

The project aimed to develop a package of technologies (POT) appropriate for the production of India's Asha peanut variety in the Philippines and ensure availability of high quality seed materials in support of certified seed production of accredited seed growers in Region 2 and seed centers in Regions 1, 3, 4, 10, and 11.



Community-based watershed management

The two-year (2005-2007) project, "Community-Based Watershed Management Approach in Improving Livelihood Opportunities in Selected Areas," was implemented by the Bureau of Soils and Water Management (BSWM) in cooperation with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Federation of Free Farmers (FFF), DA-RFUs I, III, VII, and Local Government Units (LGUs).

The project sought to improve the livelihood opportunities of the communities in Sta. Maria, Ilocos Sur; San Clemente, Tarlac; Doña Remedios Trinidad, Bulacan; and Talibon, Bohol through community-based watershed management. This project will likewise promote sound soil and water conservation and management technologies and minimize land degradation through community participation.



Coconut-based product diversification



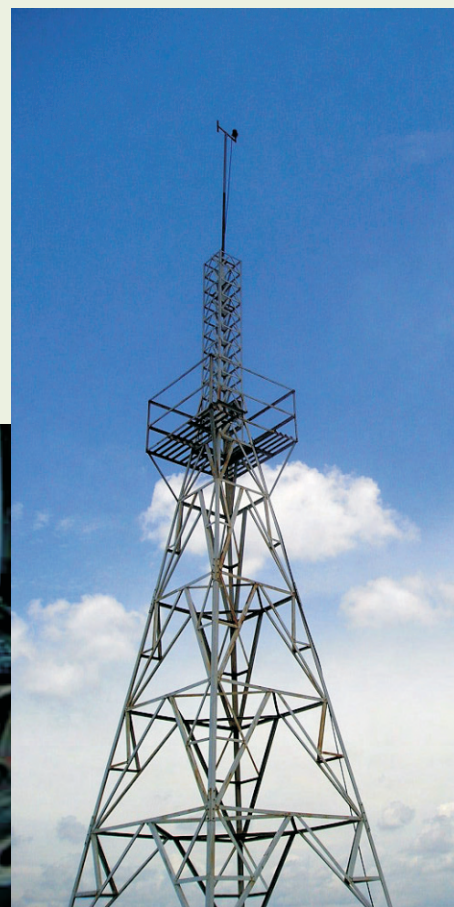
This Bioversity International-proposed project, titled “Coconut-based Product Diversification to Reduce Poverty in Coconut-growing Communities”, is being implemented together with the Philippine Coconut Authority (PCA). The project, which started in 2005, will be completed in 2008 with sites in Region II (Brgy. Santor, Sanchez Mira, Cagayan); Region IV-A (Brgy. Bulihan, San Antonio, Quezon); Region VIII (Brgy. Burabod, Biliran, Biliran); and Region XII (Brgy. Old Poblacion, Maitum, Sarangani).

Through research, the project hopes to prove or disprove that coconut farmers can improve their livelihood with appropriate technology and capital to support their income-generating activities, specifically to identify the factors affecting the adoption of a strategy in reducing poverty and determine the effects of coconut-based product diversification on the coconut farmers' incomes.

ICT-based technology promotion

Implemented by the International Rice Research Institute (IRRI), the project, “Improving Knowledge Exchange and Decision Making Among Rice Stakeholders Through ICT-based Technology Promotion and Delivery Systems”, sought to improve farmers' productivity by improving their access to and application of rice and other related knowledge, through the use of alternative models of technology transfer combined with relevant ICT.

Together with the Philippine Rice Research Institute (PhilRice) and ICRISAT, the project started in 2006 and will be completed in 2008 with project sites in Bay and Victoria, Laguna; Infanta, Quezon; Pampanga; Nueva Ecija; Leyte or Bohol; Davao del Sur; and North Cotabato.



Bringing Technologies Closer to the People



19th National Research Symposium

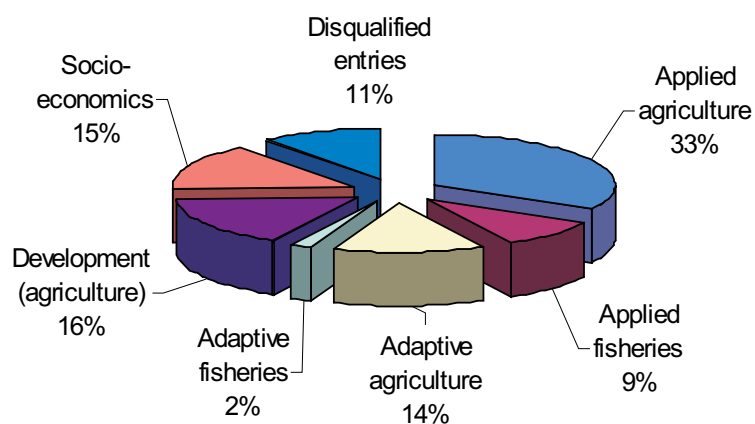
The National Research Symposium (NRS) is an annual event organized and spearheaded by BAR's Program Development Division (PDD) to promote R&D excellence and to give due recognition to the notable accomplishments of agriculture and fisheries researchers. The symposium serves as a venue for disseminating new technologies and knowledge useful to agriculture and fisheries modernization.

The 2007 activity, which had as its theme "Agriculture and Fisheries R&D Toward Agribusiness Development and Agro-Industrialization," aimed to intensify the important roles of agribusiness and agro-industrialization in improving the Philippine economy through a focused effort in upgrading technologies and production practices in agriculture. Specifically, the theme underscored a paradigm shift to become more resource-driven rather than technology-driven. With this kind of mindset, a more entrepreneurial approach to farming is being introduced emphasizing more on the process rather than the output. This is in line with the current policy orientation of DA, which is focused on "making business out of agriculture".

In 2007, BAR received 111 entries for NRS. The number of entries was 11% higher than the 100 in 2006. Among the categories, applied

agriculture had the most entries (37), specifically crop science, postharvest, crop protection, animal science, engineering, and soils and water science.

No. of entries submitted per category, NRS 2007

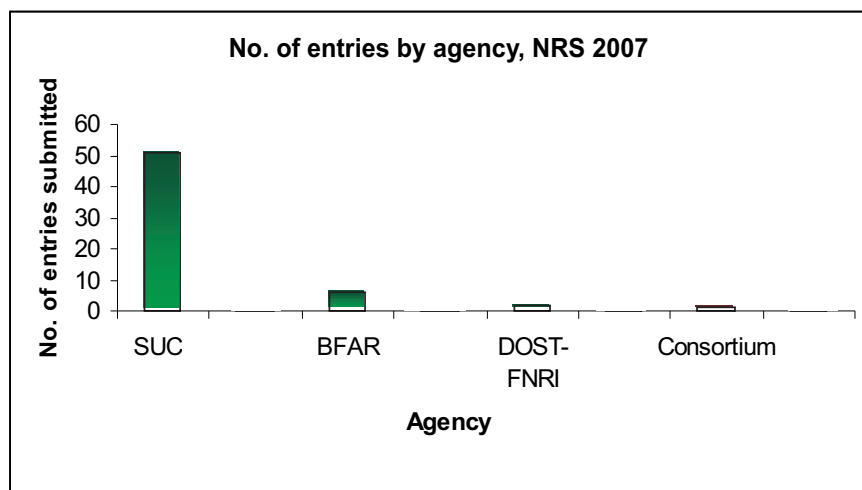


SUCs had the most number of entries (45%), followed by the RFUs (31%), emphasizing further the crucial role of SUC being the oasis of research and development.

Winners were awarded based on the six research paper categories –applied research (agriculture), adaptive/verification research (agriculture and fisheries), socioeconomics, and development (agriculture and fisheries).

BAR awarded 16 researchers and their outstanding researches in the fields of agriculture and fisheries during the awarding ceremony on 6 October 2007 at the Manila Hotel.

Winners in the applied researches and socioeconomics categories mostly came from the SUCs while the DA and RFUs won most of the awards from the adaptive and development categories.



Agency	Applied agriculture/ fisheries	Adaptive agriculture/ fisheries	Development	Socio-economics
SUC	86%	25%	0%	67%
DA and RFU	4%	75%	100%	33%
Total	100%	100%	100%	100%



Dr Kevin F. Yaptenco of UPLB (left)
Dr. Roberto C. Guarte of VSU (right)



Dr Apolinario V. Yambot of VSU (left)
Mr. Mario N. Ruinata of BFAR VIII (right)



Mr. Elmer R. Esplana of BAI (left)
Ms. Lorna V. Sancha of PCA (right)

19th NRS Presenters

19th NRS OPENING CEREMONY



BAR Dir. Nicomedes P. Eleazar welcomes participants and attendees.



(L-R) BAR Asst. Dir. Teodoro S. Solsoloy, DA Usec Segfredo R. Serrano, and BAR Dir. Nicomedes P. Eleazar



VIPs browsing through the program of activities and some of BAR's publications included in the briefing kit.



Dr. Marlowe Aquino acknowledges the attendees and participants.



DA Undersecretary Segfredo R. Serrano delivers his keynote address.



Participants during the opening program.



Usec Serrano and Dir Eleazar chat at the VIP table.



At the VIP table (L-R) are BAR Director Nicomedes P. Eleazar, Secretary Arthur C. Yap, and UPLB Chancellor Luis Rey I. Velasco.



Secretary Yap delivers his impromptu keynote address to the attendees giving emphasis on why the agriculture and fishery sector must invest and must give due importance to research.



Dr. Kevin F. Yaptenco (right) wins the AFMA Best R&D Paper (applied research, agriculture category).



BAR Director Nicomedes P. Eleazar delivers his welcome address.



Ms. Lorna V. Sancha of PCA (right) takes home the Best R&D Paper (development category) and Best R&D Poster Award.



Mr. Elmer R. Esplana of BAI receives (right) the AFMA Best R&D Paper (socio-economics category)

O! My Gulay Cooking Contest

DEPARTMENT OF AGRICULTURE

INVITES YOU TO JOIN

O! MAY GULAY
COOKING CONTEST

OCTOBER 6, 2007, WORLD TRADE CENTER, PASAY CITY

OPEN TO ALL PUBLIC HIGHSCHOOL STUDENTS IN THE NATIONAL CAPITAL REGION

FIRST PRIZE
Cash prize + exposure trip to Baguio for the whole class (maximum of 50 persons) and trophy + special prize for the school

INTERESTED STUDENTS MAY CONSULT THE PRINCIPAL'S OFFICE FOR CONTEST MECHANICS ENTRIES MUST BE SUBMITTED ON OR BEFORE SEPTEMBER 19, 2007

Salit na sa
PINAKA-MASARAP
na Lalong Gulay Contest!

visit www.bar.gov.ph or call tel. no. 928-8505 loc 1813 for more details

“This is in support to DA's activity that aims to encourage households in the urban areas to cook affordable and nutritious food using local agriculture products.”

BAR, through the PDD, coordinated the O! May Gulay Cooking Contest. This is in support to DA's activity that aims to encourage households in the urban areas to cook affordable and nutritious food using local agriculture products. It was designed to develop vegetable recipes that are easy to prepare, affordable, and delicious.

The contest was opened to all public high schools in the National Capital Region (NCR) represented by two students from their school. Contestants from each school were grouped into six, namely: PaMaMariSan (Pasig, San Juan, Mandaluyong, Marikina), MuntiParLas-TaPat (Muntinlupa, Parañaque, Las Piñas, Taguig, and Pateros), CaMaNaVa (Caloocan, Malabon, Navotas, and Valenzuela), Manila, PaMa (Pasay and Makati), and Quezon City.

After the initial screening of recipe entries, 75 public high schools (out of 179 secondary public schools from the NCR) participated in the contest. Eighteen entries were chosen to proceed to the semi-final round out of which six were requested to do the actual cooking demonstration at the World Trade Center, Pasay City, Manila.

The final round and awarding ceremonies were held during the 2007 Agrilink/Aqualink/Foodlink activities wherein Secretary Yap, along with Mr. Dennis Voboril of the US Embassy, Ms. Christine Dayrit of Philippine Star, Ms. Judy Lao, owner of JuD Fruitcakes and author of two vegetarian cookbooks, and Mr. Lyndon Tan of the Vegetable Industry Council selected the top three winners.

Students Nieva Josefina M. Marcelino and Jonnah Laine V. Toy from the Florentino Torres High School in Tondo, Manila, won the contest with their nutritious recipe, malunggay combo with malunggay and carrot juice. It included malunggay leaves and fruit as main ingredients together with sweet potato, carrot pulp and milk, butter, onions, garlic and sugar to taste. For the juice, a combination of malunggay, carrot juice, and calamansi with sugar was blended to complement the combo.

The vegetable jardenera recipe prepared by Joanne Cammille De Luna and Ma. Vanilyn Bilbao of Pasay South High School was adjudged as the first runner-up while the malunggay California maki recipe of Rowena M. Anislagon and Edgelyn M. Garcia of the Holy Spirit National High School of Quezon City was declared second runner-up.

The grand winner received Php 20,000 plus an exposure trip to Baguio for the whole class, a trophy, and some special awards. The first and second runners-up received Php 15,000 plus an exposure trip to Tagaytay for the whole class, and a trophy; and Php 10,000 and a trophy, respectively.

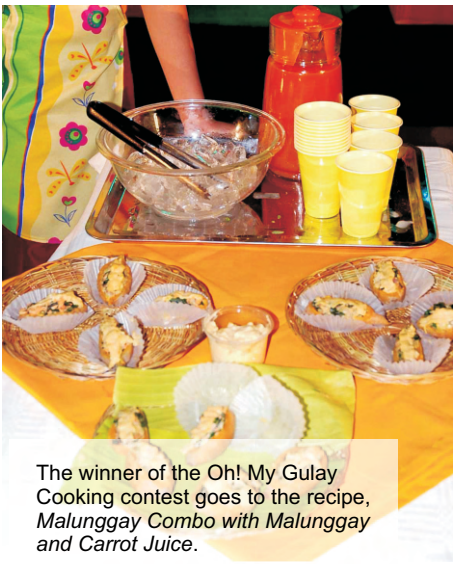
O! MAY GULAY COOKING CONTEST



Students register during the O! May Gulay Contest.



Judges for the cooking contest include (L-R) Judy Lao of Asian Cuisine Taiwan, Agriculture Secretary Yap, Christine Dayrit of Philippine Star, and Lyndon Tan of the Vegetable Industry Council.



The winner of the Oh! My Gulay Cooking contest goes to the recipe, *Malunggay Combo with Malunggay and Carrot Juice*.



This year's grand prize winner goes to the tandem from Florentino Torres High School with their winning combo recipe.



Students and teachers from Florentino High School jump with joy as the winner was announced. Finalists take their final pose with the Secretary, Jose and Wally, and celebrity guest, Rachel Alejandro.

Search for PINAKA-BEST Agricultural Harvest

BAR, through PDD, was tapped to handle the Search for Pinaka-Best Agricultural Harvest, sponsored by DA in cooperation with DA-OSEC. It was a search for outstanding agricultural and fishery products that exemplified exceptional features as to size, weight, and physical appearance. This contest is intended to reward farmers/fisherfolk who have dedicated much of their efforts to produce and raise extraordinary agricultural crops and fisheries.

The contest was a showcase of the best harvests from all the regions of the country. It was divided into categories such as Fruits (mango, banana, papaya, pineapple, corn), Vegetables (ampalaya, eggplant, squash, cabbage, sweet potato) and Fisheries (milkfish, tilapia, grouper, carp, black tiger shrimp, white shrimp, freshwater shrimp).

The national judging was held at BAR while all entry winners were displayed during the Agrilink/ Aqualink/ Foodlink 2007 Exhibit at the World Trade Center on 4-6 October 2007. DA Secretary Arthur C. Yap led the awarding of the grand winners.

A heavy pumpkin weighing 72 kilograms was hailed as People's Choice and grand-prize winner for the squash category in the search for the Pinaka-BEST Agricultural Harvest. A crowd-drawer, the pumpkin was brought all the way from Davao City as an entry of the Puentespina Orchids and Tropical Plants, Inc. to the contest.

The Pinaka-BEST Agricultural Harvests were judged per commodity based on its weight (45%), length (45%), and overall appearance (10%). When compared to the usual size of the commodities, the exhibited commodity exemplified size, weight, length, and visual quality that were grown in the normal production of the crop and developed within the culture period in enclosed or developed aquaculture facilities.

The grand-prize winners for each commodity received a cash-award of PhP 10,000 while a consolation prize of PhP1,000 was given to the runners-up. The commodities include mango,



DEPARTMENT OF AGRICULTURE
INVITES YOU TO JOIN
Search for the
PINAKA-BEST
AGRICULTURAL HARVEST

OCTOBER 4-6, 2007
WORLD TRADE CENTER
PASAY CITY

Sec. Arthur C. Yap
DEPARTMENT OF AGRICULTURE

IN COOPERATION WITH
REGION 4-A VEGETABLE INDUSTRY COUNCIL INC.
CAREING FOR THE FUTURE
VEGETABLE INDUSTRY COUNCIL INC.

visit www.bar.gov.ph
or call tel. no. 928-8505
loc 1520 for more details

Cardaba banana, pineapple, papaya, and yellow corn for the crops category; bitter gourd, eggplant, squash, cabbage, and sweet potato for the vegetable category; and tilapia, milkfish, lapu-lapu, carp, black tiger shrimp (sugpo), white shrimp, and fresh water shrimp (ulang) for the fisheries category.

Winning commodities came from Region 11 (Davao del Sur, Davao Oriental, and Davao City), Region 1 (Sto. Tomas, Pangasinan, and Dagupan City), Region 4A (Rizal, Quezon, and Cavite), Region 5 (Camarines Norte), Region 7 (Cebu City and Negros Oriental), and Region 2 (Isabela).

“ This contest is intended to reward farmers/fisherfolk who have dedicated much of their efforts to produce and raise extraordinary agricultural crops and fisheries.”



Finalists for the PINAKA-Best Agricultural Harvest are displayed at the DA's booth as part of its participation in the 2007 Agrilink/Foodlink/Aqualink Exhibit.



Entries for the best fishery products on display at the exhibit.



Grand winner for the kalabasa category which also bags the "People's Choice Award".



The huge bangus entry from Region 1 (Dagupan City) is the longest and heaviest.



Secretary Yap poses with grand prize winners for PINAKA-Best agricultural harvest.



Grand winners for the fishery products (carp, lapu-lapu, and bangus).



The 72-kilo squash is a favorite among the exhibit visitors.

Launching of “Indigenous Plants for Health and Wellness RDE Program”



Proclamation No. 1280 declared October as National Health and Wellness Tourism Month. In response to this, the “Indigenous Plants for Health and Wellness RDE Program” was launched in October, coinciding with BAR’s 19th National Research Symposium awarding ceremonies. Two seminar series on various topics concerning indigenous plants for health and wellness were conducted. An exhibit on indigenous plants and products was also held. The BAR-BPI-UPLB booth displayed live indigenous plants and plant-based products with medicinal, aromatherapy, and therapeutic properties. Handbooks and brochures on medicinal plants were also displayed in the booth.



Launching of the Indigenous Plants for Health and Wellness RDE Program at the Manila Hotel with DA Secretary Arthur C. Yap gracing the activity. Indigenous plants are displayed at the 2007 Agrilink/Foodlink/Aqualink Exhibit, World Trade Center.



Seminars on indigenous plants are held at BAR with Drs. Evelyn Rodriguez (left photo), Lourdes Cardenas (middle), and Estela Taño (right) as resource speakers.



Making Information Available through Effective Knowledge Management

As the agriculture world becomes more scientific and technologically advanced, more information, knowledge, and services deemed beneficial are disseminated and transferred. With the growing population in the Philippines, access to these advances is imperative. Globally, information sharing can create a wide range of opportunities in the agriculture and fisheries (A/F) sector.

However, one of the concerns raised by the agriculture public is how agricultural information will reach the end-users effectively. How could these be used to improve research and development activities beneficial to the end-users?

In response to these concerns, the Bureau of Agricultural Research, has established one priority program in knowledge management. The program is responsible for research and development (R&D) information sharing, exchange, and management of A/F R&D. In particular, the A/F R&D plays a crucial role in promoting a nation's economic growth and development in line with issues and concerns that affect people's lives.

The Knowledge Management Program is being facilitated by the Management Information Systems Division-Applied Communication Section (ACS). The section handling this program also gathers,

packages, and disseminates R&D/E information and technologies through its regular and special publications and other multi-media means. Furthermore, this unit strengthens the regional capability in the management of knowledge, products, and services.

Information materials produced and packaged under the program are disseminated to members of the National Research and Development System for Agriculture and Fisheries (NaRDSAF) and its clientele, thereby bridging the gap between information and knowledge sharing among people.



Some of BAR clients reading through its publications and other information materials.

Production of BAR regular and special publications

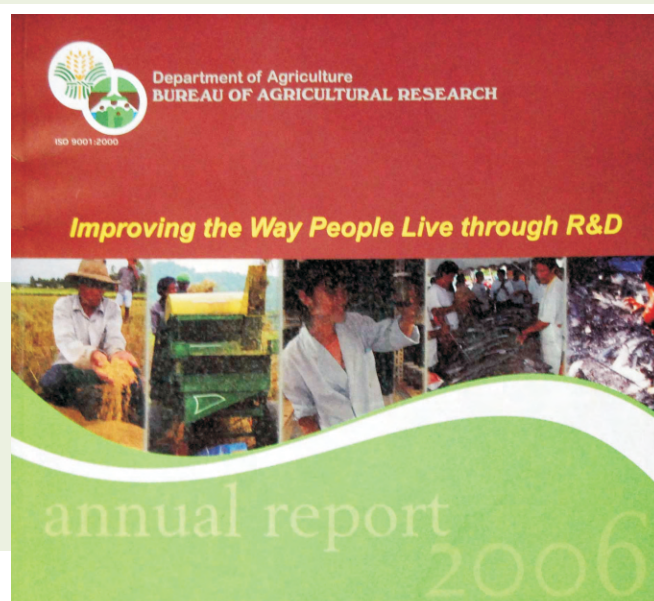
A total of 17,178 information, education, and communication (IEC) materials were produced in 2007 both in-house and contracted out. IEC materials included the BAR Chronicle, BAR Digest, Annual Report, BAR Techno Calendar, Research Highlights, and National Research Symposium (NRS) Proceedings. Seventeen new subscribers were added to its list of regular subscribers of the BAR regular and special publications.

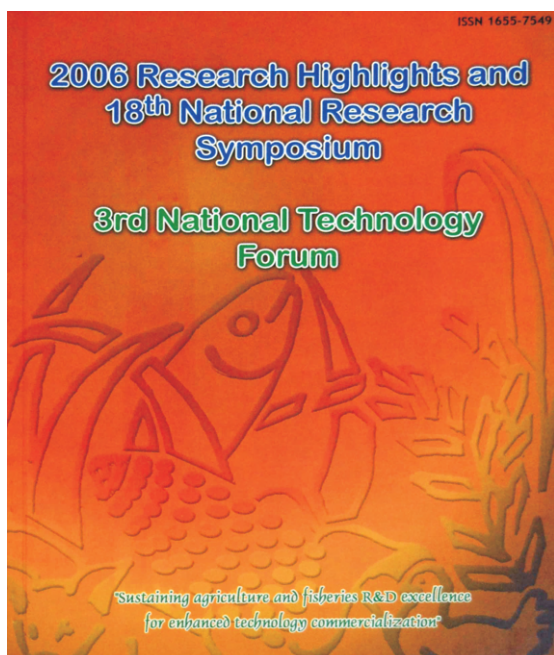
BAR Chronicle. The official monthly newsletter of the Bureau has been repackaged with pictures and illustrations in color, thereby creating a more effective visual presentation of the information reported. The newsletter contains regular updates and news on BAR's and activities of NaRDSAF member-agencies. Also, it features articles on the latest information, technologies, and researches funded by BAR or other R&D institutions that have direct and significant impact on the farmers, fisherfolk, and A/F stakeholders within the major DA-GMA Banner programs. For this year, 13 issues of the newsletter were disseminated with 12,200 copies. These included a special issue released during the R&D week celebration. A total of 96 articles were written for BAR Chronicle.



BAR Digest. This quarterly publication contains feature articles on the latest trends in A/F R&D direction, technologies, and breakthroughs in agriculture and fisheries R&D. Exactly 4,000 copies were printed and released covering three quarters including the 2006 fourth quarter issue that features indigenous vegetables, the ornamental sector, and on agricultural engineering with 87 articles/technologies.

Annual Report. This highlights the accomplishments of the Bureau for the year reflecting transparency, commitment and advocacy in the whole R&D community.





Research Highlights and 2006 National Research Symposium Proceedings.

A publication containing a compilation of abstracts of award-winning agriculture and fisheries researches generated by NaRDSAF member-institutions was produced. These were presented at the annual National Research Symposium (NRS) conducted every October in time for the National A/F R&D Week Celebration. Exactly 500 copies of the publication were reproduced.

2008 BAR Techno Calendar. The Bureau released its 2008 Indigenous Vegetables for Health and Wellness (IVHW) Calendar featuring 12 of the country's indigenous vegetables. This is in support of the IVHW Program tasked with addressing poverty, malnutrition, food security, and sustainability through propagation and utilization of indigenous vegetables other than the conventional food crops. A total of 1,500 copies were distributed to NaRDSAF members and its clientele.



Special Publications. Four e-Learning modules on tilapia, prawn, and seaweeds were developed. Flyers for the *Technology Investment Forum* were also prepared. In support of the Planning Unit, ACS finalized the cover and proceedings of the *RDE Agenda and Program (2006-2010)*. Another accomplishment for the year was the development of the *O May Gulay* Recipe book. BAR, through ACS, facilitated the translation and evaluation of CPAR Manual in three languages (Iloko, Visaya-Cebuano, and Tagalog).

Scientific Publication Grant

The Scientific Publication Grant (SPG) is a financial support provided for the publication of books, journals, pamphlets, technical papers, proceedings, and the like in the fields of agriculture and fisheries related to research, development, and extension. For the year, 30 SPG proposals were approved.

Some of the publications supported under SPG include:

- ✓ Journal for Nature Studies (PSSN)
- ✓ Book on collection of research work of the returning FPASP scholars
- ✓ 2006 and 2007 Proceedings of the 8th and 9th MSP Annual Scientific Meeting and Symposia
- ✓ Handbook on Vegetable and Diseases in Benguet (BSU)
- ✓ Techno-guide on diseases of rubber and their management (USM)
- ✓ Philippine Journal of Veterinary and Animal Science (PJVAS) number 34, issues 1 and 2 (PSAS)
- ✓ The Invasive Rice Black Bugs (RBB) of the World: Identification, Bio-ecology, and Management

Conduct of A/F R&D seminar series and technology forum



Dr. Aida D. Solsoloy on modern biotechnology during the 3rd BAR Seminar Series.



Dr. Heraldo L. Layaoen on sweet sorghum during the 4th BAR Seminar Series.

The seminar series is regularly conducted by BAR to give way to the exchange of information and knowledge, trends, challenges, and opportunities in the A/F. It serves as an important venue for information sharing and exchange on the latest trends, direction, issues and concerns, and challenges in A/F R&D is facing today.

Three seminar series and technology forum were coordinated and implemented. These were attended by 450 participants from the DA family, state colleges and universities, private sector, and partner institutions.

Resource persons were invited to the seminar series to discuss topics on key elements to establish successful research organization, management of modern biotechnology, and updates on sweet sorghum for ethanol production.





2007 Foodlink/Agrilink/Aqualink



2007 Asia Food Expo

Library Services

BAR continuously intensifies its library services through collection and identification of monographs, journals, and other publications for the library, gathering list of publications of other offices, subscription, and sourcing of funds.

A total of 45 serials, 60 books, eight theses/dissertations, and 309 research papers and terminal reports were acquired for the year through gifts and donations from other partner-institutions. All library materials are maintained and organized through sorting and cataloguing. BAR enhanced its automated library system to maintain its Electronic Catalogue System.



Participation in exhibits and fairs

With its mandate to develop partnership toward an improved agriculture and fishery sector, BAR participated in various trade fairs and exhibits. Some of these were the 6th Agraryo Trade Fair at SM, 2007 Foodlink/Agrilink/Aqualink, 5th National Vegetable Congress, and Asia Food Expo.



5th National Vegetable Congress



6th Agraryo Trade Fair



Revolutionizing the agriculture and fisheries sector through ICT

In this fast-phased modern world, people have recognized the importance of these three words—information, communication, and technology. These have been perceived as valuable tools in the daily lives of people in this global age.

The Filipinos are fortunate to have easily adapted to the technologies and interventions to provide an easy way of life for themselves, seeing its significance in knowledge sharing, and in saving time and resources.

These revolutionize the Philippines into a high-technology and electronically enabled society that promotes access to information, knowledge, and technologies. Easy and fast access to information and knowledge is deemed important in responding to the challenges of food security, poverty

eradication, and sustainable development, particularly for the agriculture and fisheries (A/F) sector.

As per the Agriculture and Fisheries Modernization Act (AFMA), the Bureau of Agricultural Research (BAR) coordinates the establishment and maintenance of a strong and responsive R&D information system for agriculture and fishery.

BAR, through its Management Information Systems Division-Information Communication

and Technology Section (MISD-ICTS), takes the lead in the Information, Communication and Technology Program. BAR continuously develops strategies to enhance an efficient, effective, and smooth flow of the operation of agriculture and fishery programs.

MISD is the central and integrating unit for program management in the bureau. It develops and manages a computerized information system for monitoring and evaluation of agriculture and fisheries R&D projects. It also provides technical and financial assistance for the improvement and upgrading of ICT facilities and equipment of the National Research and Development System for Agriculture and Fisheries (NaRDSAF) member-institutions.

Its ICT Program establishes linkage with other government agencies, partner-institutions, private sector, and state colleges and universities, setting up a venue for an exchange of valuable information in A/F R&D.

For 2007, the bureau continuously maintained its website through A/F R&D knowledge management primarily focused on web-enabled databases on national and regional A/F R&D.



Systems administration, development, and maintenance

To further enhance the A/F R&D, the ICTS operates and manages a computerized system for monitoring and evaluation of 16 Information Systems utilized by BAR's different divisions and units.

Under the program, web-bases of the Research and Development Management and Information System (RDMIS) are updated together with the BAR Online and AgriTech Online. The latter serves as a knowledge and information portal for farmer, fisherfolk, and other agriculture and fishery stakeholders.

The **BAR Online** serves as the official website of the bureau. Regularly, it is being maintained, updated, and archived, including BAR regular publications (e.g., BAR Chronicle, BAR R&D Digest) and posting of photo releases. It was in this year that BAR repackaged and enhanced its website for a more user-friendly information portal. This provides easy and accessible information materials on the latest trends in A/F R&D.

A total of 66 news and events were posted with 115 photos and images releases on BAR Online.

Other databases include are the ICT Tracking system, Intellectual Property MIS, Proposal Tracking MIS, and Library Information System. On the other hand, the Scholarship Monitoring System was restructured and enhanced.

Four users' manuals have been prepared: Payroll System, Electronic Daily Time Record System (EDTRS), Research and Development MIS, Infrastructure & Human Resources MIS with four other user's manual drafted for comments and editing.

ICTS staff has maintained smooth operation of 140 user accounts in the Local Area Network (LAN). The functioning of nine servers within 24 x 7 operations was also maintained and operated.

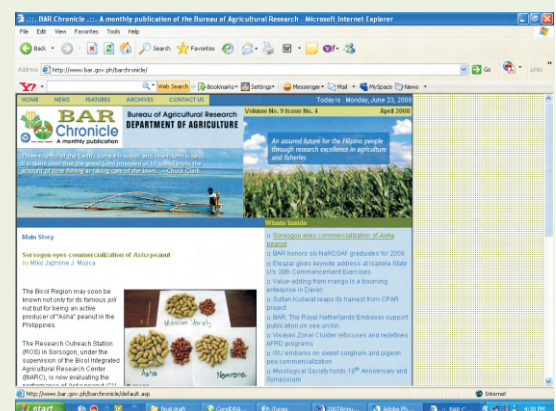
In 2007, BAR inaugurated its RDMIC Roofdeck serving as venue for meeting, seminars, and workshops. ICTS staff coordinated and provided technical support in the design and layout of the Local Area Network (LAN), telephone lines, and electric power distribution and consumption with 14 cable lines for ICT equipment and four cable lines for telephone operation.



Updating the server



BAR Online



BAR Chronicle

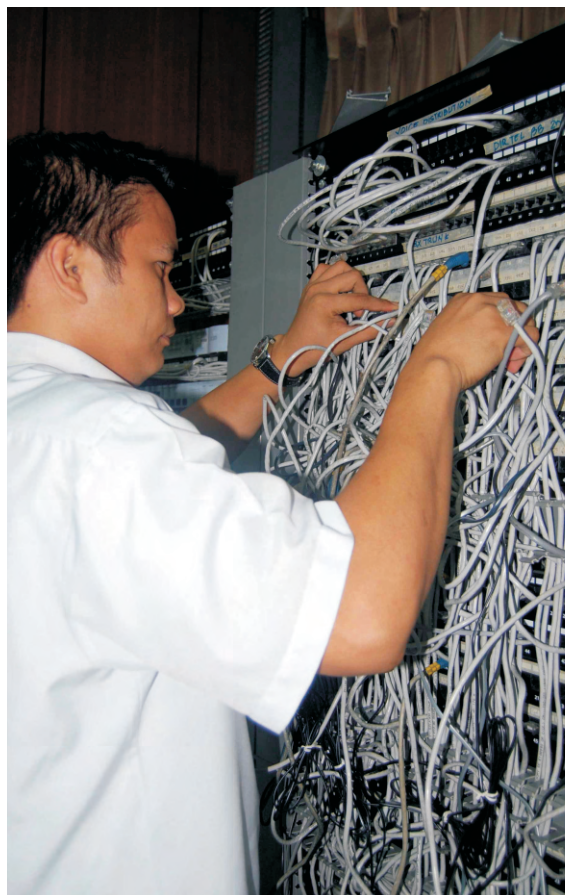


BAR R&D Digest



AgriTech Online

Intensifying ICT program through strengthened collaborative works



Maintenance of BAR's Local Area Network

In its commitment to strengthen the knowledge management capability of the NaRDSAF member-institutions, BAR launched various ICT programs through strengthened collaborative works with other private entities.

The Optiserve Technologies, Inc. has assisted BAR through a developed information systems, the e-Pinoy FARMS© (Farm Resource Management System) and the Onion Production Research Management Systems (OPREMS). *e-Pinoy Farms*© is a unified farm management system designed for the country's stakeholders for efficient and effective recording of baseline data, business transactions, and operations aimed at improving the documentation process of CPAR, as BAR's Banner Program focused primarily on the monitoring and evaluation (M&E). MISD, with the Research Coordination Division (RCD), and Program Development Division (PDD), conducted orientation and briefing for the e-Pinoy Farms © on the identified pilot sites (Region V and IX). A consultation-workshop for the enhancement and improvement of the project for CPAR was also organized.

The year 2007 was also the year of the OPREMS, a unified information system for onions. OPREMS was presented to DA Secretary Arthur C. Yap. Ilocos Sur, Nueva Ecija, and Pangasinan were among the pilot areas visited. The Agriculture and Fisheries Research and Development Information System (AFRDIS) is one program component of BAR's ICT program. For Phase II, BAR approved the implementation of the project. AFRDIS is a comprehensive information system for R&D, through partnership among institutions for easy information exchange and immediate technology sharing and transfer. It's a virtual repository of knowledge that serves as gateway of information among coordinated networks of institutions and systems. ICT assessment forms were distributed to the Regional Integrated Agricultural Research Centers (RIARCs) for the conduct of ICT assessment for 2008. Also, regular monitoring and evaluation of the institutions connected with the different zonal cluster networks in North-Central Luzon, Visayas, and Mindanao were conducted.

GIS Development

BAR, through its BARSAIL, has further intensified the Geographic Information Systems (GIS) development in the form of developing digitized maps (e.g., thematic and base maps and also refined spatial database). The GIS team prepared and packaged three project proposals to support the DA program on the enhancement of the utilization and application of ICT, particularly GIS for A/F R&D. For foreign funding, three more GIS proposals were submitted. To date, these proposals are still on evaluation for possible grant.

In the middle of 2007, the Bureau of Soils and Water Management (BSWM) was tasked to lead the overall coordination and implementation of GIS at the national level. Meanwhile, BAR was tasked to coordinate GIS at the regions in complementation with that of the BSWM.



Checking the coordinates of GIS enabled maps prior to encoding and digitization.



Strengthening Policy Research in Agriculture and Fisheries

Policies may be referred to as “standing plans.” They are guides to future decision-making that are intended to shape decisions and the subsequent actions. Decisions must be consistent with a goal, an integral part of the policy documentation. In other words, a policy is a general guide to action, an overarching statement which includes a goal and guiding principles for an intervention.

The Agriculture and Fisheries Policy Research Unit (AFPRU) of the Bureau of Agricultural Research is directed to draft policies and pertinent documents

addressing emerging issues and concerns in the agriculture and fisheries (A&F) sector. Tasked with monitoring and evaluating the latest trends and events in relation to A&F research and development (R&D), the unit thus acquires empirical data and statistics and analyzes them to produce policy recommendations, not only for the Bureau but for the Department of Agriculture as well.

In addition to its role as a policy-recommending unit, AFRU coordinates the conduct of impact assessment and

socioeconomic studies on A&F. Results of which aid in public expenditure for agricultural research, bringing about better R&D programs.

AFPRU also serves as Secretariat to the Council on Extension, Research and Development in Agriculture and Fisheries (CERDAF) and to the Research and Development Management Committee (RDMC). Hence, it is responsible for assisting the management in ensuring that all agricultural researches are coordinated and complementary.

In 2007, the unit prepared and drafted various reports, policy documents, key recommendations, and revisions which are indicated as follows:

- Research, Development and Extension (RDE) policy issues related to poverty alleviation in the poorest provinces of the Philippines
- Policy paper assessing the programs of the DA vis-à-vis the United Nations Millennium Development Goals
- Comments on the “Compilation of Laws, Rules and Regulations on Trade Fiscal and Investment Incentives for Agriculture and Fisheries Enterprises”
- Comments on the Intergovernmental Assessment on Agricultural Science and Technology for Development (IAASTD) draft report
- Comments/suggestions on the project proposal “The National Science and Technology Program for a Competitive Agriculture Through the Nine Priority Commodities”
- Report on Climate Changes and Effects on Agricultural Production and Productivity
- Report on four global recommendations towards the alleviation of poverty and hunger in agriculture
- Drafts and revisions of the ACIAR proposal “Impact Assessment of ACIAR-funded Research on Pesticide Use in Grain Storage in the Philippines”

AFRU also conducted research and analysis on the following:

- International Seed Treaty
- Seed Development Act of 1992 or R.A. 7308 and its Implementing Rules and Regulations
- Laws on Bio-prospecting
- Rural Growth and Development

AFPRU also coordinated and took part in the following activities:

- Management Review Meeting (January 16, 2007)
- Strengthening Growth Linkages Towards Competitive Philippine Agriculture: MOA Signing Among BAR, PhilRice and SEARCA (February 27, 2008. Bureau of Agricultural Research, RDMIC Building, Diliman, Quezon City)
- Follow-up Meeting regarding Nature, Sources and Causes of Productivity Growth in Philippine Agriculture (6 March 2007. Bureau of Agricultural Research, RDMIC Building, Diliman, Quezon City)
- Special Meeting in Preparation for the 7th National Nutrition Survey in 2008 (6 June 2007. FNRI, DOST Compound, Bicutan, Taguig)
- Meeting of the Core Group for the Philippines-ACIAR Collaborative Impact Assessment of ACIAR-funded Projects in the Philippines (22 June 2007. Bureau of Agricultural Research, RDMIC Building, Diliman, Quezon City)
- 1st Steering Committee Meeting: "Nature, Sources and Causes of Productivity Growth in Philippine Agriculture" (27 June 2007. Bureau of Agricultural Research, RDMIC Building, Diliman, Quezon City)
- 1st BAR ISO Surveillance Audit conducted by TUV Philippines, Inc. (22 August 2007)
- Evaluator (Development Category) and member of the Papers Committee for the Pre-Screening of NRS Entry Papers (28 August 2007. Bureau of Agricultural Research, RDMIC Building, Diliman, Quezon City)
- Facilitator during the Pre-Screening of NRS entry papers (Socio-Economics Category)
- Evaluator and Facilitator for the Development Category and Socio-Economics Category, respectively, during the 2007 National Research Symposium
- Moderator for the workshop on Laws, Prices and Agreements Governing Plant Genetic Resources for Food and Agriculture (18-19 October 2007. Astoria Plaza, Ortigas Center, Pasig City)
- Survey on Homestead Food Production and Nutrition/Health projects/programs being conducted by the STRIVE Foundation
- Evaluation of applicants to the BAR Non-Degree Assistance Program and Thesis/Dissertation Assistance Program
- Assessing the Efficiency of the Corn Sector: Implications to Technology, Trade and Infrastructure, Policy, Food Security, Employment and Global Competitiveness by the STRIVE/SIKAP Foundation (P 3,863,200)
- Meeting with Dr. Jeom Sig-Lee of the Research Policy and Planning Division, Research Development Bureau, Rural Development Administration of Korea (23 November 2007. Bureau of Agricultural Research, RDMIC Building, Diliman, Quezon City)
- Meeting with Mr. Paul Yeo and Ms. Hooi Sook Mei of Next View SDN BHD of Malaysia in relation to the upcoming 4th ASEAN Rubber Conference and Exhibition in 2008 from June 5 to 7 to be held in Manila (28 November 2007)

(L-R, front row) SEARCA Dir. Arsenio M. Balisacan, BAR Dir. Nicomedes P. Eleazar, and PhilRice Exec. Dir. Leocadio S. Sebastian sign the MOA of the three-year project, "Nature, Sources, and Causes of Productivity Growth in Philippine Agriculture" held on 27 February 2008 at the RDMIC Building, Diliman, Quezon City. Serving as witnesses are BAR, PhilRice and SEARCA key officials.





Research staff and IPRO representatives discuss relevant issues and concerns related to IP and technology management during one of the IPR Awareness trainings conducted by BAR in 2007.

Protecting Research Products through Intellectual Property Rights

Unlike tangible assets vital to a globalizing R&D industry such as computers and other equipment, intellectual property (IP) is a collection of ideas and concepts. It is coupled with the ownership of ideas through Intellectual Property Rights (IPR). There are three ways to protect IP – by means of patents, trademarks, or copyrights. A patent applies to a specific product design; a trademark to a name, phrase, or symbol; and a copyright to a written document. However, all three methods may perhaps have limitation.

There's no perfect way to protect an idea. Any printed or electronic data can be disseminated irreversibly and instantly. Hence, the Intellectual Property Rights Office (IPRO) of BAR, through its Intellectual Property Management (IPM) Program, makes sure that intellectual properties (IPs) are given proper protection. It acknowledges and gives due recognition to authors or creators of technologies and arts that would eventually benefit the society through the results yielded by R&D.

Generally, effective IPM strengthens the R&D system in producing further creativity, facilitating transfer of technology, promoting business enterprises and livelihood

opportunities, encouraging market access, attracting foreign and local investments, and promoting fund backflow to R&D.

In 2007, IPRO performed creditably in addressing the need for an effective IPM. It tracked 10 research outputs with potential IP, reviewed 29 terminal reports and five special reports, and attended two project reviews (VSU and UPLB completed projects). In addition, direct assistance to IP right holders in preparation and submission of all necessary supporting documents of IPR application was initiated by the unit.

Eight scientist-researchers were assisted, namely: Dr. Renato Reyes of Central Luzon State University (CLSU), Dr. Rodolfo Demos of the Tarlac College of Agriculture (TCA), Dr. Primitivo Jose Santos of University of the Philippines Los Baños (UPLB), Dr. Edralina Serrano (UPLB), Dr. Judith Rodriguez of Philippine Coconut Authority in Albay (PCA-Albay), Dr. Estela Taño of DA-Regional Field Unit (DA-FRU) IVA, Dr. Suzanne Mingoa-Licuanan of University of the Philippines Marine Science Institute (UP MSI), and Dr. Pablito Pamplona of University of Southern Mindanao (USM).

As continuing advocacy to comply with the request of scientist-researchers and other agencies for IP awareness training and policy formulation, the unit made possible the drafting and finalization of IPRO policies of the Bureau of Postharvest Research and Extension (BPRE) and Tarlac College of Agriculture.

Also, six BAR-initiated trainings on IPR were conducted in different regions and bureaus/attached agencies of DA. In the first quarter of 2007, IPR trainings were held in CAR (Baguio City) and Region IVB (Lipa City). It was then followed by trainings in Region IVA, also done in Lipa City, and ARMM (Cotabato City). Trainings set in the second quarter of 2007 were allotted to DA bureaus/attached agencies as provision of legal and technical assistance to staff. In response to an invitation, IPR training was also held in SEAFDEC-AQD, Tigbauan, Iloilo.

The role of the unit was extended to establish a repository of all patentable technologies. It has developed five information files from research outputs good as databases. Moreover, the project "Intellectual Property Management Capability of BAR in Agriculture and Fisheries" was facilitated for funding.

The following were other activities carried out by IPRO in 2007:

- Commented on the proposed Commercialization Framework for DA of PhilRice
- Initial plans for the establishment of the Science Foundation
- Commented and improved the IP Policy of TCA
- Advised DA-CARAGA to get the Deed of Assignment from the NORMISIST staff they commissioned to develop 'Banana blossom bagger' (who inadvertently employed it as his own)



IPR Training in ARMM (May 9-10, Cotabato City)



IPR Training in Region IVB (March 28-29, Lipa City)



Dr. Andrea Agillon (right)



IPR Training in Region IVA (April 18-19, Lipa City)



IPR Training at SEAFDEC (September 20, Iloilo)



Atty. James Gumpal (right)

SUPPORT TO NATIONAL AND FISHERIES PROGRAM

In 2007, the Department of Agriculture, through the Bureau of Agricultural Research, launched several programs supportive of agriculture and fisheries development. BAR's role in the area of coordination and implementation made an impact on researchers, extension workers, development practitioners, policymakers, and other stakeholders when it strengthened the agriculture sector, by making it relevant, meaningful, and profit-driven.

The programs that were launched addressed priority commodities and special concerns that have immediate effect on research institutions, academic institutions, industries, and communities. These showed interest and commitment of individuals who wanted to change and improve the living conditions of rural and urban people. Excitement and challenges engulfed these institutions and individuals to be part of these activities. As a result, BAR intensified its role and commitment to make these programs adhere to DA's goal of making agriculture business as productive, profitable, and sustainable through participation, complementation, and collaboration.

Biofuel Feedstock Program

The enactment and approval of Republic Act 9367, otherwise known as the Biofuels Act of 2006, on 12 January 2007 led the Department of Agriculture to support the government's goal in reducing dependence on imported fuels with due regard to protection of health, the environment, and natural resources.

The law focuses on finding alternative sources of renewable fuel and energy. A major focus is on the growing concern towards cleaner and greener environment.

“ The law focuses on finding alternative sources of renewable fuel and energy. A major focus is on the growing concern towards cleaner and greener environment. ”

In coordination with the Philippine Agribusiness Development Corporation (PADC) and other interest groups, the DA, through BAR, developed and launched the National Biofuel Feedstock (NBF) Program highlighting the importance of research, development, and extension on alternative commodities for biofuels, particularly, on feedstock production and processing.

The implementation and operationalization of the NBF Program focuses on DA's strong leadership in instituting and providing of a

guarantee of sufficient and reliable supply of feedstocks for biofuel production. This is supported by specific activities on the identification and development of viable and quality feedstock, including production and primary postharvest processing for biofuels in coordination with the Department of Science and Technology (DOST); publish information on available and suitable areas for cultivation and production of biofuel crops; available and accessible technologies, sources of planting materials, and financial assistance for increased productivity and profitability; and undertake biofuel feedstock research and development which include identifying new feedstock, developing high-yielding varieties, and developing new processing technologies in cooperation with public and private research agencies and international research institutes.



Engr. Samuel S. Franco of MMSU demonstrates the village-level sweet sorghum feedstock processing as BAR Dir. Nicomedes P. Eleazar looks on from back.

Indigenous Plants for Health and Wellness RDE Program

The concern with people's health has been one of the important areas that need to be addressed in relation to people's well-being and welfare. Through research and development, the BAR responded to the call of utilizing Philippine indigenous plants not only for food but for health, including pharmaceutical, cosmeceutical, and nutraceutical activities towards the promotion of health and wellness of people.

In October 2007, the DA, through BAR, launched the National Indigenous Plants for Health and Wellness RDE Program during the celebration of the 7th National Agriculture and Fisheries R&D week at the Manila Hotel, Manila, Philippines. Although the program was launched on this significant activity, preliminary activities such as RDE agenda setting and program formulation were undertaken for more than three months ago. The activities were participated in by researchers, scientists, technical experts, development practitioners, health and wellness advocates, and other stakeholders. Based on these, prioritization of projects and activities were prioritized with the allocation of financial support from all sectors.



DA Sec. Arthur C. Yap and BAR Dir. Nicomedes P. Eleazar present the Indigenous Plant and Health and Wellness Program publications to the SPA Association of the Philippines during its launching at the Manila Hotel.

The national program is jointly orchestrated and coordinated by DA-BAR, Bureau of Plant Industry, Spa Association of the Philippines, and University of the Philippines Los Banos to support the DA's overall umbrella on the protection, conservation, and preservation of Philippine biodiversity. The program highlights the documentation, production, and product development (including processing, promotion, and application) of indigenous plants.

In addition to the activity, the program supported the information exchange initiative of different agencies such as the Guide to Popular Culinary Herbs and Spices, Handbook of Philippine Medicinal Plants; Volumes 1, 3, and 4, Some Indigenous Medicinal Plants for Health and Wellness, and 10 Medicinal Plants. Today, BAR has set the priority areas for the implementation of RDE activities which encourage institutional development, complementation, and collaboration to solve the issues and concerns to make the Filipino people and communities healthy.

National Rubber RDE Program



A skilled rubber tapper at work in one of the rubber plantations in North Cotabato.

Since the price of rubber products increased considerably in late 2006, the Philippine Department of Agriculture responded to the call of support for the plight of rubber farmers. Rubber being one of the high value commercial crops, the DA-GMA HVCC program included the commodity to address productivity, profitability, and sustainability. Emphasis was given to approaches and technologies that are readily available for utilization and application.

Through the Bureau of Agricultural Research's continuous development of national and regional RDE programs, the National Rubber RDE Program covering CY 2006 to 2010 was formulated. The program highlights cultural management and diversification, production of rubber-based products, enterprise and marketing activities, including agribusiness, social science researches which focus on people and community relationship, interactions and development using the appropriate technologies, and management of relevant information and knowledge related to rubber-based farming.

The project is jointly funded and coordinated by DA-BAR and the DA-GMA HVCC Program. Through the program, regional integrated agricultural research centers and partner-agencies envisioned that there will be a sustainable activity that would improve the condition of rubber farmers, including those that produce other agricultural commodities within the rubber-based farming system.

Farmer-Scientist Training Program for Community Development

The success of the farmer-scientist approach to research and development for agricultural production led the Bureau of Agricultural Research to incorporate the approach as a national program in the implementation of different community-based initiatives. Originally conceptualized and operationalized under the corn-based farming system project funded by DA-BAR in 1994 in Argao, Cebu, under the leadership of Dr. Romulo Davide, the farmer-scientist approach was identified as the best alternative to strengthen farmer's capability.

Elevated as the Farmer-Scientist Training Program (FSTP) for community development, the program will be implemented in two pilot municipalities in Region 8. The project is funded by BAR in collaboration with the DA-Agricultural Training Institute (ATI), University of



DA-CVIARC staff during an extension work.

the Philippines Los Banos (UPLB), and DA-GMA Corn Program. The FSTP is an agricultural RDE strategy designed to adopt the scientific methods of farming through

mentoring and apprenticeship that primarily aims to change and improve the knowledge, skills, and attitudes of farmers in a corn-based production system.

Support to Food Security and Sustainability Program

It was a positive response of BAR to coordinate the DA Secretary-initiated national activity on food promotion, development, and utilization. The activities support the food security and sustainability program of the Philippine government and DA in particular - the PINAKA-BEST Agricultural Harvest and the O! May Gulay Cookfest. These activities were conducted during the International Exhibition during the AgriLink, AquaLink, and FoodLink Celebration at the World Trade Center, Pasay City, Philippines.

The preliminary activities of the PINAKA-BEST Agricultural Harvest were done by the different regions to identify, select, and endorse the best agriculture and fishery produce to compete at the national level. The evaluation was based on size, color, quality, and relevance to domestic and international markets. Also, the crop harvest must be produced within the normal or recommended culture period while the fish must be harvested by farmers within legally constituted or developed aquaculture facilities.

The products included fruits such as mango, banana (Cardava variety), papaya, pineapple and corn; vegetables included bittergourd (*ampalaya*), eggplant, squash, cabbage, and sweet potato; and fisheries such as milkfish (*bangus*), tilapia, grouper (*lapu-lapu*), and carp, black tiger prawn (*sugpo*), white shrimp (*vannamei*), and freshwater shrimp (*ulang*).

The final judging resulted in the identification of lead producers of agricultural and fishery products throughout the country which in turn was the basis for DA's support for a year-round financial and technical assistance to farmers and fisherfolk who boost the productivity, profitability, and sustainability of agriculture and fisheries products.

Seventeen grand winners were selected from the submitted entries. Each winner was awarded with a cash prize and a certificate duly signed and handed by the Agriculture Secretary Arthur C. Yap during the awarding ceremony.

On the other hand, the O! May Gulay Cookfest was well attended with active audience participation. Vegetable-based cuisine discoveries were artfully displayed by students. The activity was opened to all public secondary schools in the National Capital Region. The schools were grouped into six representing Quezon City, Manila, Pasay and Paranaque, Marikina, Taguig and Pateros, Valenzuela and Caloocan, and Muntinlupa.

The preliminary evaluation included a prejudging of submitted entries through table evaluation and later a prepared dish for sensory evaluation. The selected and evaluated entry, which included actual food preparation and demonstration, was recommended for the final judging.

Based on the cuisine preparations, the majority included moringa (*malunggay*), squash, sweet potato, carrots, and young coconut in their entries. The preparations were evaluated based on affordability, nutritional value, presentation and taste, and ease of preparation. The winner was awarded cash prize, a trophy and an educational tour of the whole class of the winning school. This year's winner was from the Jose Torres High School of the Manila group.



People have become the most important factor in achieving an organization's success, so that the quality of its human resource is competitive.

Human resource capability building of employees

Human resource capability building is considered the framework for helping BAR staff members develop their personal and organizational skills, knowledge, and abilities. It includes such opportunities as workshop and seminars, training, performance management and development, and other forms of assistance. It is one important aspect of an organization because people, being the main component of a company's successes, continuously seek for individual improvement. Thus, BAR believes that uplifting the potentials of its constituents is very vital.

Under Institutional Development Section (IDS), BAR provides institutional development support to its staff through the Non-Degree Assistance Program, which is integrated in the umbrella program Institutional Development Program (IDP) subdivided into Human Resource Development (HRD) and R&D Facilities Development.

Focusing on human resource capability building of BAR staff, the Non-Degree Assistance Program provides financial assistance for attendance in specialized trainings (local or abroad). In this regard, it is an opportunity given to staff member to be able to gain knowledge and represent the country in collaborative R&D undertakings such as international research symposiums and scientific fora.



Ms. Wilhelmina P. Castañeda with AVRDC experts during their field visits at DA-ILIARC, Batac, Ilocos Norte.

In 2007, various BAR-supported local training and seminars contributed to the development of capabilities of the staff. These trainings, categorized and presented by subject matter, are tabulated as follows:

Summary of local training and seminars (categorized by subject matter) participated in by BAR staff members in 2007.

General Subject Matter	Frequency of Participation
Organizational Management/Internal Quality Audit/Government and Administration	11
Information Technology (IT)/Information Communication Technology (ICT)/Geographic Information System (GIS)	79
Biofuels	22
Bio-Organic Fertilizer Production	10
Records/Database Management/Library and Information Science	4
Animal Science/Livestock Industry	6
Crops/Vegetable Industry	6
Economics and Development	5
Engineering/Industrial Design	3
Agroforestry	1
Rubber Industry	1
Agricultural Extension	2
Agricultural/Natural Products/Food Technology	7
Use of Weather/Climate Information	1
Fisheries/Aquaculture/ Marine Protected Areas	8
International Agribusiness	12
Research Management/Technical Management	14



Local training on agricultural extension in Echague, Isabela with Ms. Lovelyn A. Gaspar of DA-CVIARC.

Meanwhile, 15 BAR key officials and staff members participated in trainings abroad, as follows:

- 5th BAPNET Steering Committee Meeting in Cambodia (Victoriano B. Guiam)
- Visit to AVRDC in Taiwan (Carmencita V. Kagaoan)
- International Rubber Plant Breeding Workshop and Rubber Expedition 2007 in Indonesia (Rodolfo L. Galang)
- Executive Forum on "Natural Resources Management in a Globalizing Asia" in Indonesia (Teodoro S. Solsoloy)
- Annual Meeting of the Canadian Sociological Association in Canada (Marlowe U. Aquino)
- Study Meeting on Knowledge Management Tools for Strengthening Agricultural Research and Extension Systems in Iran (Marlowe U. Aquino and Salvacion M. Ritual)
- 3rd meeting of the ASEAN Technical Working Group on Agriculture Research and Dev't (ATWGARD) in Malaysia (Victoriano B. Guiam)
- 2nd RP Taiwan Technical Working Group Meeting on Agriculture and Fisheries in Taipei (Julia A. Lapitan)
- Workshop for Project Coordinators of all Participating Agencies of Linking Extension and Research Needs Through Information Technology (IT) in Vietnam (Bernardo T. Manuel)
- 2nd Global Forum of Leaders for Agricultural Science and Technology in China (Teodoro S. Solsoloy)
- Expert Consultations on Agricultural Research Networks and Consortia in India (Teodoro S. Solsoloy)
- Rehovot Conference on Regional Development 2007 in Israel (Joell H. Lales)
- Regional Meeting of the Center for Alleviation of Poverty Through Development of Secondary Crops (CAPSA) in Thailand (Nicomedes P. Eleazar)
- Consultation Meeting of the Centre of Agriculture and BioSciences in China (Victoriano B. Guiam)
- JICA Training Programme for Young Leaders (Ferdinand Dax S. Lorena)
- Technology Search and Academic Networking Visit to South Korea (Nicomedes P. Eleazar)
- 2007 CGIAR Annual General Meeting (Nicomedes P. Eleazar)



5th Banana Asia Pacific Network
22-25 January 2007 Phnom Penh, CAMBODIA

Gathered in Phnom Penh on 22-25 January 2007 were 18 top banana experts and authorities from 12 countries in the region (Vietnam, Thailand, Taiwan, Sri Lanka, Philippines, Papua New Guinea, Malaysia, Indonesia, India, China, Cambodia, and Australia). The Cambodian Agricultural Research and Development Institute (CARDI) headed by its director, Dr. Men Sarom, was the host of the 5th Meeting of the BAPNET Steering Committee. The BAPNET Steering Committee is composed of representatives from 15 countries and Dr. Agustin Molina, regional coordinator for Asia-Pacific of the International Network for the improvement of Banana and Plantain (INIBAP). The Philippines had two representatives from the Bureau of Agricultural Research (BAR) and the Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD). BAR was represented by Mr. Victoriano B. Guiam (left, back row) of the International Relations Unit (IRU).

Dr. Carmencita V. Kagaoan (middle), head of the Program Development Division (PDD) of the Bureau of Agricultural Research (BAR) attended the meeting at the AVRDC-The World Vegetable Center to discuss strategies to strengthen research collaboration between the AVRDC through its Genetic Resources and Seed Unit and the Philippines through BAR. Joining her in this study visit were Maria Concepcion I. Amat of the Quezon Agricultural Experiment Station, DA-RFU IVA and Josephine T. Garcia of the Bureau of Plant Industry (BPI). AVRDC-The World Vegetable Center is one of the international research institutions that collaborates with BAR in the conduct of R&D. Currently, the Center is implementing a project, "Promotion and Utilization of Indigenous Vegetables in the Philippines" providing support to the promotion of indigenous vegetables in the country particularly in the rural areas of regions 5, 8, and 10. Various DA regional staff members have already been sent to AVRDC for training through this project.



Visit to the Asian Vegetable Research and Development Center
8-15 May 2007 AVRDC, TAIWAN



International Congress of Humanities and Social Sciences
28 May-2 June 2007 University of Saskatchewan, CANADA

Dr. Marlowe U. Aquino, head of the Management Information System Division (MISD) attended the 2007 International Congress of Humanities and Social Sciences at the University of Saskatchewan, Saskatoon, Saskatchewan from 28 May to 2 June 2008. He presented two papers on: 1) Community-based Livelihood of Galang Manok for Smallholder Productivity and Profitability; and 2) *Pinakbet*: A cultural symbol of Filipino traits and values in support to the DA-GMA banner programs that give emphasis on cultural studies and community-based initiatives. The Congress is a gathering of sociologists, philosophers, development practitioners, researchers, policymakers and advocates in the field of humanities and social sciences. It is conducted annually in different internationally-recognized Canadian universities. This year's theme was "Sociology: Bridging Communities of Place." wherein the University of Saskatchewan played host coinciding with their centennial celebration as a premier university. Over 2500 participants presented and discussed their research works and concerns in the field of sociology.

Mr. Rodolfo L. Galang (center) of the Technology Commercialization Unit of BAR and Dr. Eugenio A. Alcala (left) of the University of Southern Mindanao attended the International Rubber Conference and Exhibition on 13-15 June 2007, Bali, Indonesia. Including the Philippines, the conference was participated in by rubber-producing countries like Indonesia, Malaysia, Thailand, India, Vietnam, Cambodia, Sri Lanka, China and France. Dr Abdul Aziz S.A. Kadir is the secretary-general of International Rubber Research Development Board (IRRDB). BAR represents the Philippines as a member institute in IRRDB. The conference is aimed at discussing the economic and commercial aspects of rubber as a commodity and serving as a venue for different research institutions to network and integrate developments in the rubber industry.



International Rubber Conference and Exhibition 2007
13-15 June 2007 Bali, INDONESIA



2nd RP-Taiwan Technical Working Group Meeting on Agriculture and Fisheries
23-27 July 2007 Taipei, TAIWAN

MISD Assistant Head Julia A. Lapitan (center, back row) attended the 2nd Taiwan-Philippines Agricultural Cooperation Meeting being one of the members of the Philippine Technical Working Group for the collaborative project. The meeting was held in Taipei, Taiwan on 23-27 July 2007 with DA Undersecretary Bernie Fondevilla heading the Philippine 10-member delegation. Meanwhile, the Taiwan delegation was headed by Deputy Minister Jen-chyuan Lee of the Council of Agriculture. The meeting tackled significant and relevant issues besetting the agriculture and fisheries sector with hope of finding collaborative projects to work on in the future.



3rd ASEAN Technical Working Group on Agricultural R&D Meeting
24-25 July 2007 Kuala Lumpur, MALAYSIA

The 3rd Meeting of the ASEAN Technical Working Group on Agricultural Research & Development (ATWGARD) was held on 25-26 July 2007 at the Royal Adelphi Hotel in Seremban, Negeri Sembilan, on the outskirts of Kuala Lumpur, Malaysia. Delegations were sent by Brunei, Indonesia, Malaysia, Singapore and the Philippines with Mr. Victoriano B. Guiam of BAR as the country representative. The discussions took direction from the ATWGARD Strategic Plan of Action. Specifically, ATWGARD aims to provide policy inputs for decision-making in agricultural research; provide a framework for agricultural research prioritization, and facilitate close collaboration in agricultural R&D among ASEAN countries.

The study meeting on Knowledge Management Tools in Strengthening Agriculture Research and Extension (ARE) Systems is the first of its kind organized by the Asian Productivity Organization (APO) on 4-9 August at the Grand Tehran Hotel in Tehran, Islamic Republic of Iran. The meeting focused on agriculture research and extension using knowledge management (KM) tools in the Asian Region. It was participated in by 11 countries, namely: Bangladesh, Cambodia, India, Iran, Korea, Nepal, Pakistan, Sri Lanka, Taiwan, Thailand, and the Philippines. The Filipino participants included Dr. Marlowe U. Aquino (4th from left, back row), head of the Management Information Systems Division (MISD) and Ms. Salvacion M. Ritual (3rd from right, front row), assistant head of the Programs Development Division (PDD) of the Department of Agriculture-Bureau of Agricultural Research (DA-BAR); and Mr. Ronan G. Zagado, project coordinator for Content Development of the Open Academy for Philippine Agriculture (OPAPA) coordinated by the Philippine Rice Research Institute (PhilRice).



Study Meeting on Knowledge Management Tools for Strengthening Agricultural Research and Extension Systems
4-9 August 2007 Tehran, IRAN



2nd Learning Extension and Research Needs Through Information Technology (LEARN-IT) Annual Project Workshop
20-25 August 2007 Hanoi, VIETNAM

Hanoi, Vietnam played host at the recently concluded "2nd Learning Extension and Research Needs through Information Technology (LEARN-IT) Annual Project Workshop" held on 22-23 August 2007. LEARN-IT is a regional technical assistance project that makes use of information and communication technology (ICT) as a tool to support extension and training in agriculture. Cambodia, Thailand, and Vietnam are the pilot countries for the project, which runs for three years. This year, five non-LEARN-IT participants were invited as guests to provide valuable insights for the workshop participants on Knowledge Banking experiences. They came from China, Nepal, the Philippines and LAO PDR-- most of whom are management top officials and/or ICT practitioners. Mr. Bernardo S. Manuel (2nd from left) of the Bureau of Agricultural Research's (BAR) Information and Communication Technology Section (ICTS) was invited to represent the Philippines.

On 12-29 September 2007, a group of 17 Filipinos from the Department of Agriculture (DA) and state colleges and universities (SCUs) attended a "Training Programme for Young Leaders" sponsored by the Japanese International Cooperation Agency (JICA).

One of the key objectives of the program is for the participants to gain understanding about the structure, role and management systems of agricultural cooperative organizations in Japan. The training also created an opportunity to study the Japan Agricultural (JA) Cooperatives in Yamagata, Japan and see it in the perspective of a highly successful, effectively organized, and efficiently run organization.



JICA Training Programme for Young Leaders
12-29 September 2007 JAPAN



Rehovot Conference on Regional Development 2007
25 November-2 December 2007 Rehovot City, ISRAEL

The impact of globalization particularly among developing nations was the center of discussion during the recently concluded "Rehovot Conference for Regional Development 2007" held in Rehovot City, Israel on 25 November- 2 December 2007. The conference was attended by 88 participants from India, Israel, Costa Rica, Argentina, Nigeria, Peru, Benin, Mexico, Belgrade, Zambia, Tanzania, Somaliland, Palestinian Authority, Brazil, Senegal, Chile, United Kingdom, and the Philippines. Representing the Philippines and taking part in this activity was Mr. Joell H. Lales, head of the Planning Unit of the Bureau of Agricultural Research (BAR). The conference was designed to provide a comprehensive overview on the impact of globalization particularly on the growing regional disparities among the regions, and on how to go about the methods of improving both the regional and local competitiveness of participating countries.

The CABI Asian-Pacific Regional Consultation which was held on 29-30 November 2007 in Beijing, China was held primarily for member-countries in South Asia, Southeast Asia, China, and the Pacific. The consultation was attended by CABI officials from CABI HQ, incl. EXCO Chair; CABI regional officials (Southeast Asia, South Asia, and Africa); CABI Officials from China office; and representatives of members' embassies in Beijing. Other representatives came from Australia, Bangladesh, Brunei, China, India, Malaysia, Myanmar, Pakistan, Papua New Guinea, Sri Lanka, Vietnam, Indonesia, China-based donor agencies and partner organizations. Mr. Victoriano B. Guiam (left) represented the Philippines.



Consultation Meeting with Centre for Agriculture and BioSciences (CABI)
29-30 November 2007 Beijing, CHINA

Recognitions and Awards



1 BAR-funded project on goat receives CSC's Pag-asa Award



Dr. Maria Asuncion G. Beltran, project leader and dean of the Institute of Veterinary Medicine, TCA



The project "Enhancing Goat Productivity through Adoption of Technologies of FLS-IGM" received this year's Civil Service Commission (CSC) Pag-asa Award for Outstanding Work Performance (Group category). The Pag-asa Award is conferred on a group of individuals for their outstanding contributions resulting from an idea or performance that directly benefited a great number of people.

With funding support from the Bureau of Agricultural Research under its Technology Commercialization Program (TCU), the project is being implemented by the Institute of Veterinary Medicine, Tarlac College of Agriculture (TCA). According to Dr. Maria Asuncion G. Beltran, project leader and dean

of the Institute of Veterinary Medicine, out of the 30 nominees vying for the award, eight qualified as semi-finalists and only two were announced as winners, one of which is the project on enhancing goat productivity. The project was selected owing to its positive outcome to its intended farmer-beneficiaries, outstanding economic impact, and sustainability.

The project improved the quality of goats by upgrading the native stocks with Boer and Anglo Nubian breeds, making chevon well prized and highly demanded in the market. Farmers who have attended the Farmers Livestock School on Integrated Goat Management (FLS-IGM) were able to acquire new technologies in goat raising, resulting in

an immediate reduction of mortality rate to almost 85%. Beltran also said that with the variety of alternative technologies made available to the farmers, they served as "magsasakang siyentista", empowering them through participatory approach in developing appropriate technologies that would best suit their farming needs. Technologies include improvement in housing system, planting of improved forages, health management such as deworming, and appropriate feeding system.

Dr. Beltran received the Pag-asa Award along with Drs. Lordy Pagatpatan, Karen Jinna G. Ubaldo, and Mrs. Tessie Dato who were involved in the project. The group received a gilded gold medallion of honor, a plaque, and P50,000 cash prize.

Recognitions and Awards



2

Locally-developed ND vaccine wins PSAS Award



Dr. Rachel B. Cadelina, agricultural center chief of the Biologics Vaccine Production Laboratory in Region 7



Dedication, passion, and efficiency—these are the qualities that made the research on “Efficacy of Locally-developed Inactivated Oil Emulsion Newcastle Disease (ND) Vaccine in Native Chicken” to win the Philippine Society of Animal Science (PSAS) award for the health and welfare research category. The award was given at the closing ceremony of the 44th Scientific Seminar and Annual Convention on 18-19 October 2007 held at the CSB International Conference Center and Hotel, Malate, Manila.

The research is a collaborative project of the DA Regional Field Unit–VII and the Bureau of Animal Industry (BAI). The main researcher,

Dr. Rachel B. Cadelina, agricultural center chief of the Biologics Vaccine Production Laboratory in Region 7, said that her team had worked on the vaccine for two years, specifically within Region 7.

The research, including laboratory and field experiments, is supported by BAR through a research grant for poultry and livestock program. It used locally-produced vaccine through Hemagglutination Inhibition (HI) technique and challenge test. The technology on vaccine production was assisted by a Japanese volunteer together with Filipino researchers whose main goal is to produce local vaccine.

Results showed that the local vaccine can eradicate the ND even within the free range production management system of native chicken. To be successful, it is advised that native chicken raisers must strictly follow clean and sanitized management system and incorporate the use of the ND vaccine for better production efficiency.

Plans of ND vaccination in the entire Visayas zone and selected Mindanao areas are now in their final stage of preparation and are ready for expansion. Given the utility and application of the locally ND vaccine, a 100% survival rate is expected when applied properly compared to zero or unvaccinated native chicken during production.

Recognitions and Awards



3

Dir. Eleazar receives distinguished alumni award from UPLBAA

Recognizing his notable efforts and achievements in the field of research management and administration, Bureau of Agricultural Research Director Nicomedes P. Eleazar was the 2007 recipient of the distinguished alumni award from the University of the Philippines Los Baños College of Agriculture Alumni Association (UPLBCAAA) and the College of Agriculture Alumni Awards Committee.

The award was presented at the Alumni Fellowship and Awards Night in celebration of UPLB's 89th Loyalty Day and Alumni Homecoming held on 9 October 2007 at the Baker Hall, UPLB, College, Laguna.

Handing over the certificates and the trophies to the awardees were UPLB Chancellor Luis Rey I. Velasco, UPLBAA President Elpidio L. Rosario, and CA Dean Candida B. Adalla.

Dir. Eleazar was given the recognition along with other nine awardees who are also well-known in their respective fields. They were: Resurreccion Banzon-Apiras (achievement in fine arts), Eladio Baradas (rural youth development through sports), Emmanuel Cayton (public service-military), Catalino Flores (plant breeding research and agricultural entrepreneurship), Alfredo Gonzalez (public service and extension), Francisco Peñalba (swine research and industry development), Lydia Velasco-



BAR Dir. Nicomedes P. Eleazar (right) receives the UPLB Distinguished Alumni Award.

Magnaye (agricultural research), Erlinda Rillo (coconut research and development), and Violeta Villegas (science and technology).

Before the alumni award, Eleazar was also an outstanding alumnus awardee of the Lourdes Academy in 1992 and a recipient of the Gawad Saka of the Department of Agriculture (DA) in 1991. His specialization in the fields of project development and implementation; policy studies; and research management and administration is well recognized both in the Philippines and abroad.

He was a technical consultant in various international research institutions such as the Australian Centre for International Agricultural Research (ACIAR) and Food and Agriculture

Organization (FAO). He led and coordinated various development projects under the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA), FAO-United Nations Development Programme (UNDP), Japan International Cooperation Agency (JICA), Canada-International Development Research Center (IDRC), and Asian Development Bank (ADB).

Eleazar finished his Bachelor of Science in Agriculture (Animal Science) at UPLB in 1981 and his Master of Science in Management (Project Management) at Cranfield University, England, in 1993. He holds the CESO IV position in the Career Executive Service (CES) ranking structure.

Recognitions and Awards



4

Dr. Solsoloy receives Dr. Priscilla C. Sanchez Award for excellence in research



Dr. Teodoro S. Solsoloy

The year 2007 looks like a good year for the Bureau of Agricultural Research as honors and awards poured in. This time, Assistant Director Teodoro S. Solsoloy received the Dr. Priscilla C. Sanchez Award for excellence in research from the International Society of Southeast Asian Agricultural Sciences (ISSAAS)-Philippines. The award was presented at the 7th ISSAAS

National Convention held at the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA), UP Los Baños, College, Laguna.

The Dr. Priscilla C. Sanchez Award for excellence in research is bestowed on a distinguished individual in recognition of his/her contributions to agricultural research and leadership in creating a niche in the scientific community. Other sets of awards are leadership excellence and recognition of scientific cooperation. These awards are given on a biennial basis since its inception in 2005. The award was named after Dr. Priscilla C. Sanchez, founder and organizer of ISSAAS Philippines and a world-renowned expert in biological researches and famous for her discovery of two species of bacteria: *Caldivirga maquilingensis* and *Caldisphaera lagunensis*. Both inhabit the mudspring in Mount Makiling, Los Baños, Laguna.

The 2007 awardee, Dr. Solsoloy, is no greenhorn in the field of science. He holds a PhD degree in entomology with cognates in management and agronomy from the University of the Philippines Los Baños. He pioneered the research and development of the now famous *Trichogramma chilonis*, an effective biological control agent against the cotton bollworm, *Helicoverpa armigera*. The commercialization of this agent contributed to the reduction in chemical sprays and ultimately the cost in cotton production.

He developed the Insect Pest Management (IPM) package of technology that is anchored

on a sound monitoring system for utilization by cotton stakeholders. He also spearheaded the development of training manuals on IPM, cotton production and management, and technology guide on flower weevil management strategies.

Never a newcomer in terms of getting recognitions from different scientific organizations, Dr. Solsoloy has received quite a handful of them over the years. His alma mater recognized his excellence, in research by awarding him the Most Outstanding Alumnus in Research. The Batac Science Community gave him a plaque of recognition as a scientist.

In 1998, he was awarded the Outstanding DA Employee in Research and was likewise chosen as one of the three awardees of the Gawad Saka Outstanding Researchers of the year.

ISSAAS-Philippines was organized in 1994 primarily to encourage a holistic approach to problems and to promote the progress and development of science and technology related to agricultural sciences. The society is composed of scientists, technical experts, and others who shared its goals in the broad field of agricultural sciences and whose activities are within the Southeast Asian (SE) region. Among its member-countries are Indonesia, Japan, Malaysia, Thailand, Vietnam, and the Philippines. Its central office is in Vietnam, the home country of the Society's current president, Nguyen Viet Tung of the Hanoi Agricultural University.

Recognitions and Awards

5

BAR's major publications win 2007 BINHI awards

Joining the search for the first time, two major publications of the bureau, *BAR Chronicle* and *BAR R&D Digest*, won the 2007 BINHI Awards from the Philippine Agricultural Journalists, Inc. (PAJ).

BAR Chronicle, the official monthly publication of the bureau, bagged the "Agricultural Newsletter of the Year" award, while the bureau's official quarterly publication, *BAR R&D Digest* (formerly *BAR Today*), received the "Agriculture Magazine of the Year" award. *BAR Chronicle* was first published in 2000 as a bi-monthly newsletter that contains relevant agriculture and fishery R&D activities and new technologies. Also first published in 2000, the *BAR R&D Digest* is a magazine-type publication that features latest researches and technologies

generated by the National Research and Development System for Agriculture and Fisheries (NaRDSAF) member-institutions.

The bureau's Applied Communication Section-Management Information and Systems Division under the supervision of Dr. Marlowe Aquino and Ms. Julia Lapitan with Dr. Manuel Bonifacio as its editorial consultant, produce the award-winning publications.

The BINHI Awards were instituted by PAJ to give due recognition to journalists who have shown exemplary performance in promoting agricultural development through media advocacy and excellence in journalism.



(L-R) MISD writers, Elaine Grace L. Nagpala, Ma. Eloisa E. Hernandez, and Rita T. dela Cruz with MISD Head Marlowe U. Aquino and BAR Asst. Dir. Teodoro S. Solsoloy during the 2007 BINHI Awards Night.

Recognitions and Awards

6

MISD's senior writer is BINHI's Photojournalist of the Year

Ms. Rita dela Cruz, senior writer at the Applied Communication Section-Management Information System Division (ACS-MISD) and managing editor of BAR's publications, was the recipient of the BINHI's "Agricultural Photojournalist of the Year" (2007) award from the Philippine Agricultural Journalists, Inc. (PAJ). PAJ is an organization founded in 1976 to unify agricultural writers and communicators to strengthen the journalism profession and at the same time promote agriculture through the dissemination of vital, timely, and relevant information. It also aims to promote an atmosphere for better and effective understanding among stakeholders in the agriculture sector.

Dela Cruz' photo entries included 10 photos published from various publications, including BAR's major publications. Among the published photos she entered included:

1. There is money in rubber!
2. Rubber production is not all tears
3. Amused by the young Secretary
4. Yap is back!
5. Let's smile for research
6. From China with love
7. The sweetest of them all
8. It pays to listen
9. A first of kind farmers' market in the North
10. Farming is not a lone job!

Dela Cruz is a graduate of Development Communication (major in journalism) from the University of the Philippines Los Baños. Currently, she is finishing her MA in Filipino (Creative Writing) from UP Diliman.



MISD Writer Rita T. dela Cruz (middle) receives her trophy during the BINHI awarding ceremony.



WINNING ENTRIES

Agriculture and fishery research and development plays a crucial role in promoting a nation's economic growth, improving environmental quality, and ensuring innovative scientific research. The role that R&D plays affects the lives of people across the country. Far from simply transforming a theoretical idea into adoptable technologies, R&D has taken the lead in helping people improve the way they live.

In the Philippines, performance of this task is the full responsibility of the Bureau of Agricultural Research, one of the staff bureaus of the Department of Agriculture.



Mandate, Mission, and Vision

BAR was created in 1987 through Executive Order (EO) 116 to ensure that all agricultural research is coordinated and undertaken for maximum utility to agriculture. It is mandated to tap farmers, farmers' organizations and research institutions, especially the State Colleges and Universities, in the conduct of research for the use of DA and its clientele, particularly the farmers and fisherfolk.

In 1997, BAR's role in agriculture and fisheries R&D management was strengthened and affirmed through the enactment of the Agriculture and Fisheries Modernization Act of 1997 or AFMA (Republic Act 8435), a landmark law that tasked BAR with orchestrating the National Research and Development System in Agriculture and Fisheries (NaRDSAF) and developing new modalities in R&D. NaRDSAF was envisioned as a system that is strengthened through an organized partnership and collaboration among government agencies, state colleges and universities, the private sector, and industry. Further, Executive Orders 127 (1999) and 338 (2000) reinforced and expanded the functions of BAR in the central coordination and management of agriculture and fisheries R&D programs. The objective is to help bring about an optimized R&D system, manned by adequate and trained scientists who will enable the agriculture and fisheries sectors to compete in the global market.

As the lead 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 by ensuring customer satisfaction and continuous improvement through work excellence, teamwork and networking, accountability, and innovation. BAR envisions a stable and progressive future for the Filipinos through excellence in R&D in agriculture and fisheries, specifically to transform the agriculture and fishery industries from a resource-based to a technology-based industry. In doing so, BAR must be able to develop knowledge, methods, and technologies that can make the sector competitive and efficient.

BAR adopts the following R&D thrusts:

Expand the production base and enhance productivity and profitability in agriculture and fisheries

The Bureau shall enhance productivity and profitability in agriculture and fisheries through research and development, particularly in the generation of information and technologies on genetic improvements in crops, livestock, and fisheries, as well as better production and management practices, market accessibility, and marketing efficiency.



Resource sustainability and protecting biodiversity

The Bureau shall support innovative agricultural and fisheries research programs by tapping the full potential of the natural resources while promoting sustainability from these environmental gains. The Bureau shall work for the conservation and protection of the country's plant and animal germplasms, biodiversity, and other natural resources in agriculture and fisheries.



Global competitiveness

The Bureau shall support research and development programs on export crops and products from agriculture and fisheries while at the same time improving on existing products for global markets. Such programs shall include establishing and improving quality standards.



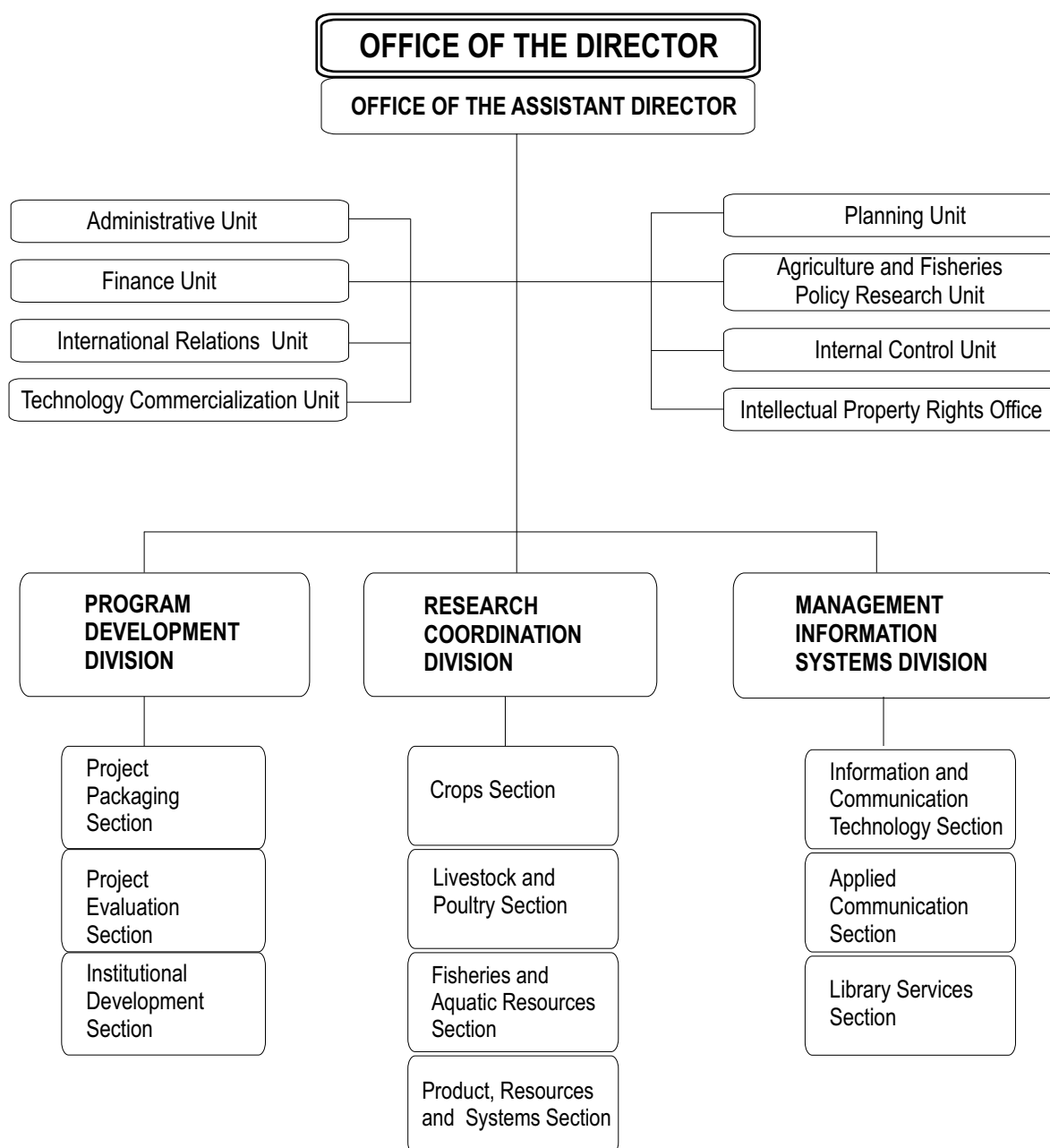
Poverty alleviation and people empowerment

The Bureau shall support R&D programs that will generate investments for agribusiness ventures, thereby generating employment in the rural areas. The Bureau shall also support programs on improving agricultural and fisheries supply chains to assure lower costs and lower prices. Moreover, the Bureau shall nurture a knowledge and information system to promote people empowerment through accelerating the use of productivity-enhancing and sustainable technologies in agriculture and fisheries and providing easy access to technology and information on agribusiness, and at the same time encouraging utmost participation of stakeholders.



The Bureau is directly under the Office of the Undersecretary for Research and Development of the Department of Agriculture. A director heads the Bureau and is assisted by the assistant director who is mostly concerned with the organization's research support services.

The Bureau is functionally structured into eight units, one office, and three divisions. The eight units are: Administrative, Finance, Legal, International Relations, Planning, Agriculture/Fisheries Policy, Internal Control, and Technology Commercialization. The one office is allotted for the national R&D's intellectual property rights. The three technical divisions are: Program Development, Research Coordination, and Management Information Systems.





2007 STAFF List

OFFICE OF THE DIRECTOR

Nicomedes P. Eleazar, CESO IV

Executive Support Staff

Joell H. Lales
Jose Ira Archimedes D. Borromeo
Ma. Louella S. Dejelo
Gretel F. Rivera
Teresita S. Añonuevo
Rhea Aileen D. Neo
Francisco J. Grettchin
Jojit V. Velasquez

Coordinator for R&D

Rolando V. Labios

Coordinator for Administrative Matters

Hamlet T. Dala, PhD

Technical Advisers (TA)

Santiago R. Obien, PhD (Institutional Development)
Manuel F. Bonifacio, PhD (Knowledge Management)
Catalino R. dela Cruz, PhD (Fisheries)
Josefina M. Lantican (Policy Research Advocacy)

OFFICE OF THE ASSISTANT DIRECTOR

Teodoro S. Solsoloy, PhD

Support Staff

Jude Ray P. Laguna
Mark M. dela Serna
Leonard Wyngard G. Sanidad

ADMINISTRATIVE UNIT

Rosalia G. Maranan

Personnel

Ludivina M. Pelayo
Ma. Angeline E. San Diego

Records

Melody T. Memita - Head

Property and Supply

Rosalia G. Maranan
Alexces P. Tolentino
German L. Reyes Jr.

Cashier

Edward C. Acebedo
Aileen Jimenez

General Services

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

FINANCE UNIT

Roberto S. Quing, Jr., CPA

Budget

Judith A. Maghanoy
Ericson F. Faeldan
Abel Calanasan

2007 STAFF List

Accounting

Roberto S. Quing, Jr., CPA
Dorotea B. Calica
Magdalena M. Calimutan
Jovencio G. Lim
Julieta SD. Yonzon
Christopher F. Francisco

INTERNATIONAL RELATIONS UNIT

Victoriano B. Guiam
Rudyard R. Roxas
Jennifer Alianza

PLANNING UNIT

Joell H. Lales
Ferdinand Dax C. Lorena
Debra E. Tamani
Ligaya V. Santolices

AGRICULTURE AND FISHERY POLICY RESEARCH UNIT

Braulio B. Tamayo
Jude Ray P. Laguna
Benjamin Gerodias

INTERNAL CONTROL UNIT

Erlinda M. Agustin

INTELLECTUAL PROPERTY RIGHTS OFFICE

Andrea B. Agillon, PhD
Atty. James Dennis C. Gumpal
Leilani D. Pelegrina
Merlinda S. Martinez

TECHNOLOGY COMMERCIALIZATION UNIT

Anthony Obligado
Digna L. Sandoval
Rodolfo L. Galang
Ma. Elena M. Garces
Judyann H. Guevarra
Gladys B. Gammad
Jennilyn Razonable

PROGRAM DEVELOPMENT DIVISION

Carmencita V. Kagaoan, PhD
Salvacion M. Ritual
Christie Q. Lales

Project Packaging Section

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

Project Evaluation Section

Leoncia B. del Mar
Ethyl G. Bulao
Raymond Patrick L. Cabrera

Human Resource Development

Illuminada M. Ching
Dorina S. Rojas

Infrastructure Development

Elvira S. Rapada
Rogelio B. Mercado

RESEARCH COORDINATION DIVISION

Tito Z. Arevalo
Jefa S. Malana

Crop Section

Amador C. Macabeo
Apolonia Mendoza
Alexander G. Arizabal

Livestock and Poultry Section

Rolando V. Kintana
Angel S. Morcozo, Jr.
Anna Ruth C. Mercado

Fisheries and Aquatic Resources Section

Ligaya C. Santos

Products, Resources and Systems Section

Aurora F. Pecson
Ricarte V. Castro
Casey Lou Duran

2007 STAFF List

MANAGEMENT INFORMATION SYSTEMS DIVISION

Marlowe U. Aquino, PhD
Julia A. Lapitan
Raquel M. Flores

Information and Communication Technology Section

Melissa A. Resma
Bernardo S. Manuel
Herminigildo S. Quibuyen
Lalaine A. Perlawan
Rafael S. Umbrero
Rueth T. Cabral
Danilo C. Santos
Edmund S. Aquino

Applied Communication Section

Julia A. Lapitan
Rita T. dela Cruz
Ma. Eloisa E. Hernandez
Ellaine Grace L. Nagpala
Nicanor B. del Rosario III
Anthony A. Constantino
Ricardo G. Bernardo
Victoria G. Ramos

Library Services Section

Lyn D. Pardia
Maricel F. Fortaleza
Cynthia S. Mamawag

ADB	Asian Development Bank
ACIAR	Australian Centre for International Agricultural Research
ACS	Applied Communication Section
AVRDC	The World Vegetable Center
ADP	Agribusiness Development Projects
AFRDIS	Agriculture and Fisheries Research and Development Information System
AFMA	Agriculture and Fisheries Modernization Act
AFPRU	Agriculture and Fisheries Policy Research Unit
ATI	Agricultural Training Institute
BAI	Bureau of Animal Industry
BAR	Bureau of Agricultural Research
BPRE	Bureau of Postharvest Research and Extension
BFAR	Bureau of Fisheries and Aquatic Resources
BSWM	Bureau of Soils and Water Management
CGIAR	Consultative Group on International Agricultural Research
CLSU	Central Luzon State University
COGENT	Coconut Genetics Resources Network
CPAR	Community-based Participatory Action Research
CRGM	Competitive Research Grant Manual
CSSP	Crop Science Society of the Philippines
DA	Department of Agriculture
DFIMP	Diversified Farm Income Market Development Project
DOST	Department of Science and Technology
DTRS	Document Recording and Tracking System
EDTRS	Employee's Daily Time Recording System
EO	Executive Order
FIDA	Fiber Industry Development Authority
GEF	Global Environment Facility
GIS	Geographic Information System
GMA	Ginintuang Masaganang Ani
HIP	High Impact Projects
HRDP	Human Resource Development Program
HVCC	High-value Commercial Crops
ICRISAT	International Crops Research Institute for the Semi-arid Tropics
ICT	Information and Communication Technology
ICTS	Information Communication Technology Section
IDG	Institutional Development Grant
IDU	Infrastructure Development Unit
IHRMIS	Infrastructure and Human Resource Monitoring Information System
INIBAP	International Network for the Improvement of Banana and Plantain
IP	Intellectual Property
IPO	Intellectual Property Office
IPGRI	International Plant Genetic Resources Institute
IPMIS	Intellectual Property Management Information System
IRRDB	International Rubber Research and Development Board
ISO	International Standards Organization
JICA	Japan International Cooperation Agency
LDC	Livestock Development Council
LGU	Local Government Units
LSU	Leyte State University
MISD	Management Information System Division
MMSU	Mariano Marcos State University
MOA	Memorandum of Agreement
MSI	Marine Science Institute
MTA	Material Transfer Agreement
M&E	Monitoring and Evaluation
NAFC	National Agricultural and Fisheries Council
NBN	National Broadcasting Network

NNC	National Nutrition Council
NaRDSAF	National Research and Development System for Agriculture and Fisheries
NIRDEAP	National Integrated Research and Development Extension Agenda and Programs
NGO	Non-government Organization
NRC	National Research Centers
NRS	National Research Symposium
NTCP	National Technology Commercialization Program
OAS	Outstanding Agricultural Scientist
OFR	On-farm Researchers
PCA	Philippine Coconut Authority
PCC	Philippine Carabao Center
PIM	Pre-implementation Meeting
PRA	Participatory Rural Appraisal
PO	Private Organization
PTMIS	Proposal Tracking Monitoring Information System
RCD	Research Coordination Division
RDMIS	Research and Development Management Information System
RFRDC	Regional Fisheries Research and Development Center
RFU	Regional Field Unit
RIARC	Regional Integrated Agricultural Research Centers
RRDEN	Regional Research and Development Network
ROS	Research Outreach Station
R&D	Research and Development
SEMS	Scholarship Evaluation and Monitoring System
SNAP	Simple Nutrient Addition Program
SPG	Special Publication Grants
SUCs	State Universities and Colleges
SPPEMS	Supplies, Property, Plant and Equipment Monitoring System
UNDP	United Nations Development Programme
UPD	University of the Philippines Diliman
UPLB	University of the Philippines Los Baños
UPV	University of the Philippines Visayas
USM	University of Southern Mindanao
VDTMS	Vehicle Dispatching and Trip Monitoring System
ZRCAF	Zonal Research Centers for Agriculture and Fisheries

S
M
Y
N
O
R
C
A

Credits

Managing editor/layout/design: Rita T. dela Cruz

Consulting editor: Manuel F. Bonifacio *PhD*

Writers: Marlowe U. Aquino *PhD*, Manuel F. Bonifacio *PhD*, Rita T. dela Cruz,
Christmas B. de Guzman, Ma. Eloisa E. Hernandez

Photos: Marlowe U. Aquino, Anthony A. Constantino, Ricardo G. Bernardo,
Nicanor B. del Rosario, Rita T. dela Cruz, Julia A. Lapitan
Edmund S. Aquino

Print Manager: Anthony A. Constantino

Circulation: Julia A. Lapitan, Victoria G. Ramos

Adviser: Nicomedes P. Eleazar, *CESO IV*



Bureau of Agricultural Research
DEPARTMENT OF AGRICULTURE

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

E-mail: rd@bar.gov.ph Website: www.bar.gov.ph