BAR Chronicle
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PHILIPPINE CORN COMPETITIVE IN WORLD MARKET

In 1995, international trade agreements, specifically the GATT under the WTO, exposed the Philippine Maize industry to more external competition. It was predicted that corn production would be reduced considerably in ten years should major breakthroughs in corn production technology and marketing efficiency improvements fail to surface.

The Bureau of Agricultural Research (BAR) and the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA) embarked a two-year collaborative project on *Technology, Trade and Policy Imperatives for International Competitiveness in Corn*. The study evaluated the current and potential state of productivity and international competitiveness of the Philippine corn industry and recommended technology, trade, and policy entry points to achieve a more efficient resource allocation for the sector.

In the assessment of the state of technology and performance of the top corn-producing provinces Isabela, Bukidnon, and South Cotabato, it was seen that hybrid seed adoption rates were high compared to the adoption of improved open-pollinated varieties (OPV's). However, it was found that maize hybrid technology is practiced in only about 20-25% of the maize area planted, with traditional varieties still dominating the corn landscape.

In the costs and returns comparison, it was found that hybrid farms required a larger amount of capital than OPV farms. Although net income per unit of output was higher for OPV technology, net income per hectare basis was higher for hybrid system due to much higher yields. Moreover, it was found that performing ☞ page 3

TECHNICAL BUDGET HEARING

BAR SPEARHEADS 2001 AF R&D BUDGET REVIEW

Pursuant to Section 5.2 of the National Budget Memorandum No. 90 of the Department of Budget and Management (DBM), the Bureau of Agricultural Research (BAR) being the coordinating body for research of the Department of Agriculture (DA) will endorse the agency FY 2001 budget proposals for agriculture and fisheries R&D of the NaRDSAF member agencies. This was made possible by a technical budget hearing held last 5-7 April 2000 at Hotel Rembrandt, Quezon City.

BAR will review these proposals in accordance with the goals and thrusts of AFMA, and make sure that these R&D projects are in line with the Integrated RDE programs at the national and regional levels. This is also to avoid duplication or overlapping of R&D activities as well as to maximize the use of resources.

The three-day event was conducted by BAR in collaboration with PCARRD and PCAMRD. Convened during this activity were participants from the Regional Integrated Agricultural Research Centers (RIARCs) and the Regional Integrated Fisheries Research Centers (RIFRCs); DA Staff Bureaus and Attached Agencies; and State Colleges and Universities (SCUs) to submit their respective R&D programs with the corresponding budget proposals. The activity was officiated by BAR Director, Eliseo R. Ponce. ☞ page 3

RESEARCH TRENDS

ASEAN IPM Knowledge Network

The ASEAN Integrated Pest Management Knowledge Network (ASEAN IPM) was created in 1998 as a joint project of BAR and SEARCA. It is an electronic, Internet-like, wide area network composed of ASEAN member-countries created to accumulate a vast collection of IPM knowledge capital that can be reused and shared by national IPM programs in the ASEAN region.

The ASEAN IPM established a Regional IPM Knowledge Center and country hubs that organize and consolidate all IPM knowledge capital for human resource development and policy advocacy programs in the region. Its mission is to assist government and non-government organizations in improving the effectiveness of IPM program implementation by making IPM knowledge accessible among national IPM programs in ASEAN.

The project management of the ASEAN IPM is categorized into three major functions: knowledge management; program development support; and program clientele services.

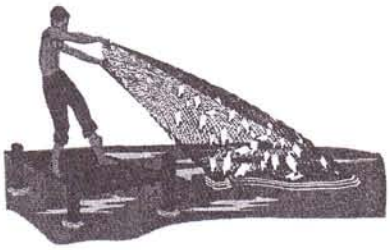
Under its Knowledge Management Activities, the ASEAN IPM established its Regional Center at SEARCA, Philippines and the five Country Knowledge Hubs in Indonesia, Philippines, Malaysia, Thailand, and Vietnam. The Regional Center acts as the Database and Network Administrator and implements the knowledge management strategy and the regional standards of the network. On the other hand, the Country Knowledge Hubs gather and collect available IPM practices in their respective countries and send these to the Regional Center. In each country, database and operating systems have been installed, and almost all of these countries have Intranet and Internet accesses. In August 1999, the ASEAN IPM Web Page was launched.

Three regional workshops have been conducted by the ASEAN Regional Center. These included the Regional Planning Workshop (June 1998), the Regional Technical Workshop (July 1999), and an On-site Training Workshop (March-April 2000).

Under its Program Development Support Activities, the ASEAN IPM developed the IPM curricula. Training manuals and handbooks were made. Project specialists of the center participated in: National Program Management Conference of the Philippine IPM Program in Surigao City last September 21-23 1999; Technical Training and Planning Workshop; and Training on IPM of Rice in Malaysia last October 17-28, 1999.

As part of IPM Policy and Program Advocacy, the ASEAN IPM collaborated with PMForum, SEARCA, the International Institute of Rural Reconstruction (IIRR), and the FAO Programme for Community IPM in Asia in the conduct of an NGO-GO Dialogue on IPM in Asia. This was held in the Philippines from 29 November to 5 December 1999.

In accordance to its Program Clientele Activities, the ASEAN IPM Regional Center's physical library proudly harbors more than 4,500 hard copies and over 4,000 documents in database electronic format which includes a wide range of literature on plant protection and pest disease management. Catalogue library procedures and standards have also been developed in-line with the categories based on the ASEAN IPM database standards. *(Thea Kristina M. Pabuayon)*



EMPOWERING FISHERY COOPS

To aid the development and empowerment of our country's small fishermen, the Agricultural Credit and Cooperatives Institute of UPLB and BAR embarked on a two-year *Fishery Cooperatives Development Research Program (FCDRP).*

Specifically, the project was aimed at "assessing the current status and financial conditions of the fishery coops in the Philippines, and gathering additional information critical to the design and implementation of an effective fishery coops development program for the country." These entailed research and identification of the fishery cooperatives directory for local and national planning purposes, fishery coops' capital formation process, linkages, training needs, policy recommendations, and exploring the possibility of the establishment of a national fishery coops network.

The preliminary results of the project were discussed by Dr. Leandro Rola of ACCI, UPLB, in a seminar held last 7 April 2000 at BAR. In attendance were representatives of DA Attached Agencies and Staff Bureaus, the private sector, and fishery cooperatives.

According to Dr. Rola, the government's support to the fishery cooperatives has lacked for the past years. Unlike other sectors such as small farmers, transport, market vendors, consumers, and credit, they "... were not provided with systematic and continuing education and training, sustained financing, skills/capability building or marketing/processing assistance programs." As a result, lack of data and information on the current situation of our fishery coops, specifically on the present socio-economic conditions, nature of businesses, and conditions/knowledge of the members of the cooperatives became evident. These factors hampered the drafting of effective and appropriate government programs that should develop and strengthen the coops.

To render government programs more effective in empowering the coops, focus should be on facility provision and technology enforcement. These involve support and assistance to other fishing activities as potential sources of funds like deep-sea fishing, transport system, and oil and gasoline distribution which they can import tax free. Moreover, comparison of data between existing and

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GMO DEBATE HEATS UP!

GMOs or genetically modified organisms, products of modern biotechnology, have been lately receiving aspersions from the press and other interest groups because of its alluded health and environmental risks. Concerned with this biased information being given to the public, the Bureau of Agricultural Research (BAR) and the Women Association of Scientists in the Philippines (WASP) conducted a workshop last 24 March 2000 at ATI/BAR Board Room. Gathered in this activity were leading Filipino scientists in modern biotechnology from PhilRice, UPLB, NIMBB-UP Diliman, NIMBB-UP Manila, BPI, and PCARRD. In attendance were scientist-administrators: Dr. Nina Barzaga, Director, NIMBB-UPManila, Dr. Leocadio Sebastian, Deputy-Director, PhilRice, Dr. Virginia Monje, Director, NIMBB-UPDiliman and other biotechnology scientists: Dr. Amuerfina Santos, Dr. Cynthia Hedreyda, Dr.Albert Aquino, Dr. Mariechel Navarro, and Dr. Vivencio Mamaril. Facilitating the workshop was Dr. Saturnina Halos, Agricultural Policy Consultant on Biotechnology at BAR, Head of UPNSRI DNA Analysis Laboratory and President of WASP.

The scientists noted that the issues raised against GMOs were merely products of misinterpreted scientific reports selected from a literature that abounds with contrary observations. Furthermore, continuous dissemination of such misinformation has consigned the public and policy makers to ignorance and manipulation by foreign interest groups that are providing the funds and information for this campaign.

With this wide problem in mind, the group (of scientists) has conceded to formulate an information campaign to promote proper interpretation of scientific findings about GMOs. The public information campaign will be funded by BAR which will consist of scientists delivering lectures in public meetings/symposia, preparation of radio plugs, TV ads, popular publications, and various media forms such as radio/TV talk shows to disseminate the correct information about GMOs. The information campaign will dovetail the program of the Secretary's Advisory Group-Information, Communication, Extension Cluster (DA-STAG-ICE) to disseminate information on DA programs of delivering appropriate technologies for agricultural modernization. (*Rita T. dela Cruz*)

BUDGET ...

Procedures for Endorsement

The review and approval of R&D programs and budget proposals is split into two phases. The first phase is the budget proposal preparation and review process of the agency involved. The proponent of the project will have to submit capsule proposal for initial review and prioritization by their respective agencies for inclusion to the 2001 funding. The preparation of their R&D program and budget proposal should be based on the institution's mandate and should cohere to the Integrated RDE Agenda and Program. Also, their proposal must be endorsed by the agency head before its final submission to BAR. BAR will then review these proposals with the help of RDE Networks. After issuance of certification, BAR will endorse the approved R&D program and budget to the DA Secretary and thereafter endorse it to DBM. DBM will notify the agency regarding the approved project and budget amount.

The second phase will cover the R&D project review and funding process, starting July. At this stage, the proponent prepares the proposal of their R&D projects included in the agency's approved R&D budget. A Technical Group will review these proposals for its technical acceptability and appropriateness of methods used. The reviewer must be collegial in character but preferably outside of the institution involved to ensure check and balance. For the DA, review is conducted by SCUs while for SCUs, reviewers will come from DA and NERT (National External Review Team). If the proposal passed the review, the agency will then prepare the final detailed proposal and proceed to its project implementation. BAR will be responsible for monitoring the status and output of these agency-funded projects.

Issues and Concerns

Several issues and concerns encountered by different agencies in the submission of their R&D program and budget proposal were raised during the budget hearing. In the regional level, it was stressed that on-going projects should be continued and be given appropriate funding. In the same manner, participants questioned the need for other potential funding sources for their research cost in case their agency budget is inadequate.

DA Staff Bureaus and Attached Agencies addressed the issue of allocating the appropriate core funds for each agency as well as the different types of cost needed to establish their core budget. It was also suggested that a separate budget hearing for the attached agency and bureau be conducted with the DBM to address related problems. For SCUs, their main concern focused on how to qualify for other grants and funding provided by the DA-BAR i.e., IDG, MakaMASA fund, etc. Other concerns include the problem on overspending resources to PS rather than the activities conducted inside research; issue of plantilla item of researchers inside the universities; allocation of funds to non-agricultural projects; and budget limitations set by DBM. *(Rita T. dela Cruz)*

CORN ...

conditions in both OPV and hybrid systems, our local maize producers can compete in both import and export regimes.Five major activities were undertaken in order to achieve the aforementioned objectives. These activities were: comprehensive literature review on the Philippine corn sector during the periods of 1986 to 1996; data gathering and generation on corn production and competitiveness using rapid rural appraisal and BAS cost returns surveys and studies; estimation of technical efficiency and international competitiveness parameters in major corn producing regions; a rigidly focused study tour with researchers, farmers, private sector, and policy makers in current potential competitors or partners in corn, specifically Thailand, Argentina, and Indonesia; and policy analysis simulation of specific technology, trade, and policy interventions in the corn sector.

As an output of the study, several suggestions and policy recommendations were given. First, maize-concerned agencies should collaborate with the private sector for the efficient marketing and distribution of new maize seed varieties. Second, development of parent materials and population improvement should be the focus of public funds. Third, investment should be made to improve transport infrastructure and irrigation systems. Finally, liberalization/deregulation of the maize sector should be done to eliminate inefficient producers and further reduce cost for it to effectively compete in the world market. *(Thea Kristina M. Pabuayon)*

Web NEWS

Visit the following sites for more information:

Scientists achieve major breakthrough in rice ***(http://www. monsanto.com)***
Rice genome sequencing project ***(http://www. monsanto.com)***
New rice for Africa ***(http://www.futureharvest.org)***
Hernaez discovers new plant species ***(http://www.r&dnews@uplb.edu.ph)***
EU rejects GMO liability rules ***(http://ww.agrinews@agriculture.com)***
GO slow on GMs, says Oz farm leader ***(http://www.agriculture.com/worldwide/index.html)***
New crop CD gives volumes of searchable info ***(http://www.purdue.edu/UNS/html4ever)***
La Niña follows El Niño ***(http://www.purdue.edu/UNS/html4ever)***

EMPOWERING ...

defunct coops should be a factor in drafting effective policies and programs. These information are expected to guide future government interventions.

Loan assistance/ lending programs should be left to the private sector. Research results indicated that majority of the existing fishery cooperatives have no loans. Serious problems on credit collection seem non-existent since members acquire credit from their own funds or from grants. This is a clear indication that government intervention in terms of credit programs should be reduced to a minimum.

To handle the efficient evaluation and monitoring of projects, a national network for fishery cooperatives was proposed. Loan assistance would be handled by various financing institutions such as LBP, DBP, and ACPC.

One area that needs attention is the education and training of coop members on the philosophies, principles, and practices of cooperativism, cooperative business management, and orientation on the provisions of the country's cooperative laws. *(Thea Kristina M. Pabuayon)*

MANAGING ACIDIC SOILS FOR IMPROVED SOIL FERTILITY

About 17 million hectares of the Philippine land area are acid upland soils. In Southeast Asia, about 188 million hectares are acidic soils – of which 118.4 million hectares have a pH of less than 5.0 and 69.6 million hectares with a pH of 5-5.5 (IRRI Annual Report, 1985).

These vast areas of acidic soil have the potential to contribute greatly because of its expanse for the production of food and raw materials from both annual and perennial crops. Should these be utilized effectively and efficiently, livelihood programs and an agro-industrial economy would bloom and prosper.

To exploit the potential of these acidic soils for sustained and increased agricultural production, the technical knowledge and competence of scientists and researchers in diagnosing soil acidity problems and managing acidic soils for improved fertility and high yield should be upgraded and developed. This was addressed through a training on "Environmentally Sound Management for Sustained Productive Use of Acidic Upland Soils" held last 2-9 April 2000 in Bogor, Indonesia. Ms. Cecille Baquireza of BAR attended the activity.

According to Ms. Baquireza, our local researchers' normal practice, especially in the regions is through varietal trials which involves matching the crop that can tolerate soil acidity. While this approach can be appropriate, the root cause (soil acidity) is not dealt with (properly), hence, sustained production is not ensured.

The training workshop involved lectures and discussions on the principles of acidity and its management, laboratory determinations, field works/visits, and discussion of country experiences on acid soil management. As an output, the participants prepared and discussed their individual plans/research for specific acid soil management in their respective countries.

Ms. Baquireza highly recommends that similar training be conducted of which participants should include DA-RIARC researchers from the Mindanao regions as priorities where problem on soil acidity persists. This regional training is managed and sponsored by SEARCA planned to be conducted in a rotational basis among SEARCA consortium countries. *(Thea Kristina Pabuayon)*

Who's New at BAR

Junelyn de la Rosa (*June*) is 24 years old and hails from Baybay, Leyte. She graduated *magna cum laude* from the Visayas State College of Agriculture (ViSCA) with a degree in DevCom. She took another course, Tourism at the International College of Tourism in Tokyo, Japan right after graduation. This well-rounded gal is a voracious reader of medical-thriller books, loves playing the piano, singing, dancing, and cooking foreign dishes. At BAR, she expects to gain lots of friends and have a harmonious relationship with her colleagues.

Josephine Pingco, who describes herself as the silent-type, more of a listener, sweet and sensitive is a product of UPLB. She has a degree in Applied Math. Joie spends her spare time reading pocketbooks, listening to love songs and cross-stitching. She is happily married and blessed with three children. Working at BAR, she wants to take things as they come and enjoy whatever comes her way.

A new face in KPSD is **Karen Zafaralla**, former editor of Financial Times Electronic Publishing in Makati. Karen is originally from Los Baños, Laguna but obtained a degree in A.B. English in UP Diliman. She loves to read and collect *Tom Clancy* novels as well as engage in sports like swimming and billiards. According to her, she preferred working in BAR basically because she wants to "know how it feels working in a government agency after five dreary years of working in a private sector."

Chronicle
BUREAU OF AGRICULTURAL RESEARCH

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R&D Agencies Reorient To Increase Effectiveness

Twelve R&D institutions participated in a three-day reorientation seminar with the aim of increasing effectiveness in providing technology and information needs of the agriculture and fisheries sectors. The Reorientation Seminar, facilitated by the Bureau of Agricultural Research (BAR), was held on 5-7 April 2000 at Rembrandt Hotel, Quezon City.

The participants in the seminar were representatives from: the Bureau of Soils and Water Management (BSWM)), Bureau of Animal Industry (BAI), Bureau of Plant Industry (BPI), and Bureau of Postharvest Research and Extension (BPRE), Philippine Rice Research Institute (PhilRice), National Fisheries Research and Development Institute (NFRDI), Cotton Development Authority (CODA), Fiber Industry Development Authority (FIDA), National Tobacco Administration (NTA), National Dairy Authority (NDA), Philippine Carabao Center (PCC), and the Philippine Coconut Authority (PCA).

An expert panel, composed of internationally and nationally known research scientists, was formed to review the organizational setup, vision, mission and function of individual agencies. The members were: Dr. Fernando Bernardo, former Deputy Director General of IRRI; Dr. Tito Contado, former Service Chief, Extension and Research Division, FAO-Rome; Dr. Cecilio Arboleda, former Dean, College of Agriculture, UPLB; and PhilRice Executive Director Dr. Santiago Obien.

After consultations were made, major revisions were proposed for each agency. For BSWM, it was renamed Soils and Water Management Institute. It will be headed by an Executive Director assisted by a Deputy Executive Director and three Service Directors for R & D, technology utilization and administrative, and finance.

In contrast, ☞page 2

Info Made Available In Real Time Through IT

The Bureau of Agricultural Research (BAR), in cooperation with the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA), organized a seminar on the latest trends in Information Technology (IT) on 14-15 April 2000 at the BAR-CERDAF Conference Room. Decision-makers of different R&D institutions attended the event. The participants learned of technologies available in the market, and what suits their needs. Also, interaction with the resource speakers enabled the participants to know what structure to implement to connect them with other agencies

The two-day activity is in connection with the expanded mandate of BAR to initiate moves to encourage sharing of information among R&D units, and disseminate information and technology to its intended users. Moreover, the Bureau will be in charge of establishing the R&D National Information Network (NIN). NIN aims to link all offices and levels of the Department of Agriculture (DA) with other research institutions and local users, providing them easy access to information and marketing services related to agriculture and fisheries ☞page 3

Decrease In Paddy Soil: A Threat To Food Security

The decline in paddy soils, especially irrigated rice lands, has caused a stir in the agricultural community in the last few decades. The rapid forest degradation, which led to the destruction of watersheds, and population boom in Asia have caused the loss of significant paddy soils planted to staple food such as rice. Developing countries are responsible for feeding an estimated 2.31 billion people in the next 30 years. This means they have to produce almost 880 million tons of rice. This would entail increasing the current rice production to more than 10 tons per hectare. This is not an easy feat because the rate of land conversion has increased in the the past recent years. In the Philippines alone, 4,950 hectares of paddy soil are being converted yearly for commercial or residential use.

In order to address this concern, BAR Director Dr. Eliseo R. Ponce has challenged policy makers, soil scientists and concerned agencies to find new ways to increase agricultural production, particularly rice, without further depleting our land resource. This he expressed in a speech during the *International Conference on Paddy Soil Fertility* held on 24-27 April 2000 at the Shangri-La Hotel, Makati. The conference was sponsored by the Paddy Soils Working Group of the International Union of Soil Science (IUSS) in colaboration with the Philippine Soil Science Society and Technology (PSSST). The conference discussed the issues and concerns on sustainable rice production vis-a-vis the current industrial development.

Dr. Ponce reiterated that the Philippine government is addressing this concern through the AFMA. Under this law, agriculture and fisheries problems and concerns are addressed in an environmental- and socially-friendly manner. There were three major areas highlighted by AFMA related to modernizing agriculture and fisheries, namely R&D, Strategic Agriculture and Fisheries Development Zones (SAFDZ), and Extension. The SAFDZ has several components that include production, marketing, processing, investment, marketing, human resource development, and environmental protection. With the enactment of AFMA in 1997, the SAFDZ was mandated to impose a five-year moratorium on prime agricultural land conversion.

The government is also prioritizing agriculture and fishery R & D and is looking to increase its current 0.3% budgetary allocation to 1% of the GVA. Under the R & D component, the DA through the Bureau of Agricultural Research organized the National Research and Development System in Agriculture and Fisheries (NaRDSAF) and took initiatives to impose the "one system, one program" approach, and establish the National/Regional RDE Networks. One of the Networks, the National Network for Soil and Water Resources, aims to lead in the utilization of the country's natural resource to sustain long-term development and develop appropriate water and soil technologies to bring about land productivity, water security and soil resilience.

Also, the DA is establishing the principle of decentralization through the National Extension System for Agriculture and Fisheries (NESAF) under the extension component of AFMA. NESAF recognizes the critical role of the LGUs and the multi-agency participation in the delivery of services. Like the R&D component, extension is proposed to receive 1% of the country's GVA.

The reality is that the world's population is increasing. And with this comes a decrease in paddy soil area. Unless scientists find new ways to produce more food with less land, hunger will persist. *(Thea Kristina M. Pabuayon)*

Reorientation...

PhilRice will expand its area of responsibility beyond rice. It will include other cereals, except corn. The creation of a new research institute for corn was proposed. It will be known as PhilCorn, with its base located in USM.

As for CODA, it will be renamed Institute for Dryland Agriculture. Dynamic interfacing shall be done with other institutions to make it the equivalent of ICRISAT. Research will also focus on cotton and other crops with minimal requirements for water supply. Furthermore, FIDA was renamed Philippine Fiber Institute. Its R&D shall focus on three major fibers - abaca, silk, piña - and nontraditional fibers, fiber utilization and product development. It should also incorporate SUCs' R&D units programmatically and financially. But it will leave direct management to SUCs.

As for NTA, proposed revisions included:

- an increase in investment in R&D;
- focus on native tobacco; and
- prepare farmers to shift to other crops.

On the other hand, BPRE was renamed Postharvest and Food Technology Research Institute. It will focus on R&D including postharvest and food technology and promote commercialization. It will also coordinate with SUCs and other R&D units of BPI, BAI and BFAR.

Proposed revisions in PCA called for the creation of an autonomous institute for coconut research that will be attached to PCA. The PCA board shall include a representative from R&D organizations.

In the livestock sector, NDA will shift its resources to increase support for research. It will review dairy research agenda and the relative cost of alternative technologies. As for PCC, major revision involved the inclusion of dairy in its research coverage.

The following are the proposed revisions for BAI:

- regulatory functions will be transferred to the Bureau of Quarantine and Inspection Service once it is created;
- R & D shall focus on beef and cattle, small ruminants, swine, and poultry; it shall have an advisory board composed of representatives from all sectors of animal industry; and it shall have a coordinative function with LDC, NDA, PCC, NMIC (National Meat Inspection Council, and NSF (National Stud Farm), and
- BAI shall coordinate the animal protection and early warning system.

In the same manner, BPI has the following proposed revisions:

- quarantine functions shall be transferred to the Bureau of Quarantine and Inspection Service once it is created;
- R&D focus on legumes and fruit crops;
- coordinate germplasm and seed system of the country; integrate NPGR (National Pant Genetic Resources) of UPLB functionally and programmatically;
- coordinate plant protection and early warning system; programmatically and functionally integrate NCPC (National Crop Protection Centers) of UPLB and RCPC(Regional Crop Protection Centers) under BPI; and
- BPI shall have an advisory board composed of representatives from all sectors of the plant industry.

In the fisheries sector, NFRDI shall:

- focus its research activities on ecological zones;
- show strong linkages with SCUs particularly UPV and UP-MSI; and
- study the possibility of integration of SEAFDEC (Southeast Asia Fisheries Development Center) to NFRDI. *(Junelyn dela Rosa)*

IT: a solution...

The first day of the seminar kicked off with five presentations giving an overview of the latest information technologies (IT) available in the market. The resource speakers were from IT vendor-companies, namely Cabletron Philippines, Tetra Technologies Distribution Inc., Silicon Valley, Banawe Computer Square, and Teledata Com.

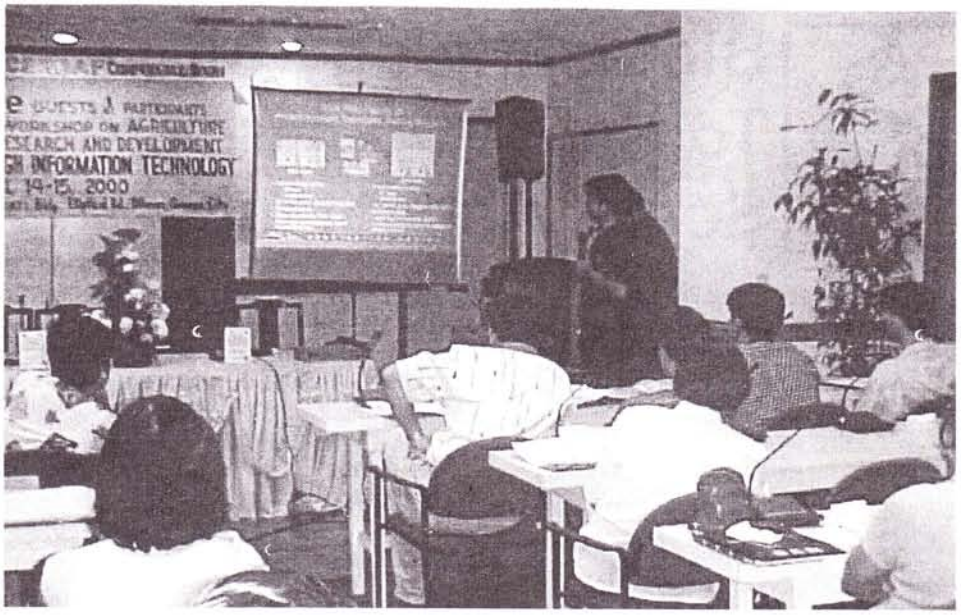
On the second day, three presentations were made: Dir. Roberto Villa of ITCAF on *Agriculture and Fisheries National Information Network (NIN)*; Ms. Ana Abejuela of SEARCA on *Knowledge Management Project*; and Dir. Eliseo Ponce of BAR on the *Principles of Partnership, and its Proposed Institutional Responsibilities and Conditionalities*

Other than getting to know the latest technologies, participants were able to view and handle computers during IT exhibits. Participants toured of the exhibit, and interacted with the vendors. Taking part in this activity were participants from State Colleges and Universities, DA-Attached Agencies and DA-Staff Bureaus.

Establishing a Partnership

BAR NIN envisions that R&D information is made available and accessible to all through IT. To achieve this, BAR will confer with R&D institutions on a framework of partnership that will cover the scope, financial scheme, and appointment of IT teams that will work hand in hand with BAR. And that with this partnership, these R&D institutions will pledge to share the cost of acquiring infrastructure needed to manage intra-agency and interagency information-sharing.

BAR shall act as the gateway or the "national reference center" of the R&D NIN, while the R&D institutions shall serve as "information producers and consumers". In terms of cost-sharing between BAR and R&D Institutions, the ratio would be 1:2. BAR will also provide technical assistance in terms of acquiring the hardware and technologies through its IT Division (ITD). Another premise in the said partnership is to ensure that each institution shall appoint an IT counterpart team (minimum of three full-time staff) with one licensed ECE (Electronic Communication Engineer). This team will be responsible for assessing the needed resources in the institution; form part of the core team to



do the infrastructure design and plan; will implement the plan; and will be responsible for operating and maintaining the Local Area Network (LAN) and other facilities

Emphasizing more on this aspect of partnership, Dr. Ponce stressed that, "productivity should increase tremendously!" According to him, IT will allow us to do that by sharing knowledge with other institutions to bolster information capacity and then connect to other R&D institutions. Furthermore, he pointed out that through easy access to information within and outside the institution, BAR will be able to improve the capability and productivity of the people as well as improve the quality of service.

Issues and Concerns

In the hope of establishing, in the next five years, an R&D NIN which connects 52 R&D institutions, we must address several issues and concerns. The issues and concerns raised during the two-day activities were:

- configuration and availability of these technologies to the market;
- limitations and interference of these technologies;
- distance, topography, peripheral devices and other considerations in the installation;
- licensing;
- ensure a knowledge management within institution first before info-sharing with other agencies;
- item position for IT personnel;
- computerization not only of IT R&D NIN but the whole system as well (payroll, accounting, library, supplies, finance, administrative, properties, etc.);
- basic requirements of the staff for the IT position.

The next step is to convene all the heads of different R&D Institutions to set up an IT counterpart team as well as determine a cost-sharing scheme among the institutions in the partnership. *(Rita T. dela Cruz)*

Natural Remedy...

encourage farmers to plant it on their plots."

ICRAF scientists are working to establish a sustainable source of *Prunus africana* by conserving the wild tree population and instigating sustainable harvesting of bark for poor farmers who were encouraged to plant prunus trees. They have also been conducting on-farm research to map the strategies on encouraging farmers to adopt the tree on their farms as a cash crop and for their own use. Moreover, scientists have adapted a technology mainly used for fruit trees to shorten the time for seed production from 15 to only three years. Aside from these, ICRAF has developed a program to produce shortcuts for propagating this tree, one of which is through the use of marcoting. This approach has been proven to reduce the time it takes to produce seed.

(Adapted from SAVANNA Press Release, posted on http://www.futureharvest.org

Biotechnology Strives To Gain Popularity, Social Acceptance

The debate on biotechnology has gone beyond the ricefields, scientific laboratories and government halls.

Society and consumers have jumped into the fray.

At the dawn of the new millennium, majority of the consuming public is still in the dark as to the benefits of biotechnology.

This is the conclusion of a 10-year study titled "Social Acceptance of Agricultural Biotechnology" conducted by Dr. Thomas Hobar, a professor of Sociology in North Carolina State University. It mapped the social acceptance of biotechnology in the US and some countries in Europe.

Among its findings, the study found that social acceptance varies according to the application of biotechnology. Consumers in some countries are nearly as receptive to the role of biotechnology in agricultural crops and medicine. In the US, 87% of respondents favor biotechnology in modified medicine, 78% in crop improvement.

Successful genetic modification has been conducted on agricultural crops, such as corn and soybean. Insulin, prescribed for diabetics, is actually produced by a genetically modified bacterium.

At the same time, consumers are more likely to accept biotechnology applied to agricultural crops than to food products. In France, for example, 67% of respondents favor biotechnology applied to agricultural products, while only 36% are for food processing.

In the US, the study found out that farmers believe agricultural biotechnology benefits them in terms of improved quality and quantity or production (35%).

Consumers are not as optimistic (17%). Likewise, 76% of farmers surveyed believe there are beneficial effects of technology on health, while only 41% of consumers believe the same way.

Farmers are more receptive to agricultural biotechnology than consumers.

Demographics show that gender plays a hand on the acceptance of biotechnology. Men are more receptive than women, at 75% to 67%.

Furthermore, educational attainment makes a difference. Eight percent (80%) of college graduates support biotechnology, while 63% of those without high school education support biotechnology.

But figures show that, on the whole, more people are against and even fearful of genetic modification of food (47% negative sentiments, 41% positive).

The study traces the causes of this non-acceptance of biotechnology. Largely, it is caused by a lack of awareness, knowledge and understanding.

A mere 39% of US consumers is aware of biotechnology.

Respondents from Switzerland rate the highest at 78% in terms of knowledge about biotechnology, Italy lags behind at 41%. With lack of awareness comes a lack of knowledge and accurate understanding. Thirty-nine percent (39%) of respondents in Austria actually believe that eating genetically modified food could alter a person's genes.

But given the right dissemination of information on biotechnology, confidence and trust are the key influences in the acceptance of biotechnology in society.

There are several sources of information on food biotechnology. But, the study says, environmental organizations are the most trusted to tell the truth about food technology.

In Europe, media - both print and broadcast - surprisingly rate low at 1% in consumer confidence and trust. But in the US, the American Medical Association rates a high 35%, followed by other institutions and university findings. Food manufacturers register a mere 4% in consumer trust.

Labeling as a tool in information campaign

Labeling foods as biotech products has been devised as a form of information campaign to let people in on what constitutes the food they buy. This strategy is believed to help in the dissemination of knowledge on biotechnology. At the same time, labeling is hoped to be able to allay fears consumers have over genetically modified foods.

This tactic could be tricky though. The survey shows that consumers are adverse to the mere use of the words "genetically engineered animals/plants", "transgenic animals/plants", and "genetically modified organisms (GMOs)".

Terminology alone is critical.

Furthermore, segregation and certification of products that are to be labeled present logistical and expenditure problems for everyone.

These are but peripheral problems encountered in the campaign to promote social acceptance of biotechnology.

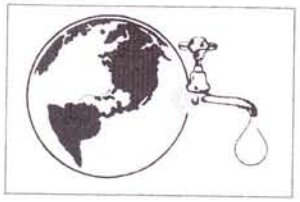
Future prospects for biotechnology in Europe look dim. Complex issues involving diverse cultural, economic and politics scenarios hinder wide acceptance social acceptance.

The study acknowledges these factors. It has also looked into the platform and propaganda tactics of groups in opposition to the spread of biotechnology. It has made several recommendations. Educating the public on biotechnology its benefits and scope - is important. It stresses that building public confidence and trust is still the key.

(Adapted from the study titled "Social Acceptance of Agricultural Biotechnology" by Thomas Hoban, Ph.D, a professor of Sociology in North Carolina State University)

Organizing Ace...

ABARE held a meeting at the ATI-BAR Conference Room. Included in the agenda is to push for the formation of ACE-BAR. ABARE members and project-based employees participated in the meeting. The activity was presided by Mr. Morcozo and other members of the Board of Trustees. Several issues and concerns were raised. One such issue is the absence of an Employer-Employee relationship. Although BAR is not the actual employer, the existence of such a relationship is valid. "... BAR still has the moral obligation because these people work directly for BAR and their physical presence in the office for the duration of their detail order, could lead to harmonious and productive...relationships," Mr. Morcozo explained. (*Rita T. dela Cruz*)



Severe Water Scarcity To Strike One-Third Of World's Population by 2025

Within the next 25 years, 2.7 billion people will experience severe water scarcity, according to a study conducted by the International Water Management Institute, a research center of the Consultative Group on International Agricultural Research (CGIAR). This study, which also appeared on the March issue of a leading journal on global water resources, studied the amount of water consumed and the amount that returns to the ground to recharge groundwater supplies. According to the study, the water sources that supply the world's wells, lakes and rivers are disappearing. Consequently, less water is available to recharge the groundwater supplies.

To determine which part of the world will be affected by this situation, the study categorized the affected countries into four groups. The first category classifies countries as facing *absolute water scarcity*. They will experience the severest water scarcity by 2025. These countries will have inadequate water supply for agriculture, industry, household and environmental needs. Countries under the second category will experience sufficient water resources but will have to exert extra effort to extract water to sustain their supply. They are classified as having *economic water scarcity* since these countries will have difficulty finding financial resources to build water development projects, i.e., dams and irrigation systems.

The study suggested some solutions to solve or at least ease the problem of water scarcity for the next 25 years, which will impact the most on the food supplies of the poor. With regard to the groundwater problem, the study suggests that groundwater aquifers be replenished, and not to reduce irrigation. This way, more above-the-ground water will be captured during wet season, allowing the aquifer to percolate down and later pump water during dry season. Another approach is to increase rice paddy irrigation during wet season. The idea is that the deep percolation losses of paddy irrigation recharge aquifers and replenish stream flows.

(Adapted from SAVANNA Press Release, posted on http://www.futureharvest.org)

20th CENTURY WATER SCARCITY SITUATION BY COUNTRY GROUPS

Category I (absolute water scarcity)	*Category II* (economic water scarcity)	*Category III*	*Category IV*
Afghanistan	Angola	Albania	Argentina
Egypt	Benin	Algeria	Austria
Iran	Botswana	Australia	Bangladesh
Iraq	Burkina Faso	Belize	Belgium
Israel	Burundi	Bolivia	Bulgaria
Jordan	Cameroon	Brazil	Canada
Kuwait	Chad	Cambodia	(China)*
Libya	Congo	Central African Republic	Costa Rica
Oman	Cote d'Ivoire	Chile	Cuba
Pakistan	Ethiopia	Colombia	Denmark
Saudi Arabia	Gabon	El Salvador	Dominican Republic
Singapore	Ghana	Gambia	Ecuador
South Africa	Guinea-Bissau	Guatemala	Finland
Syria	Haiti	Guinea	France
Tunisia	Lesotho	Honduras	Germany
United Arab Emirates	Liberia	Indonesia	Greece
Yemen	Mozambique	Kenya	Guyana
(China)*	Niger	Lebanon	Hungary
(India)*	Nigeria	Madagascar	(India)*
	Paraguay	Malaysia	Italy
	Somalia	Mali	Jamaica
	Sudan	Mauritania	Japan
	Uganda	Morocco	Mexico
	Zaire	Myanmar	Netherlands
		Namibia	North Korea
		Nepal	Norway
		New Zealand	Panama
		Nicaragua	Philippines
		Peru	Poland
		Senegal	Portugal
		Tanzania	Romania
		Turkey	South Korea
		Venezuela	Spain
		Zambia	Sri Lanka
		Zimbabwe	Surinam
			Sweden
			Switzerland
			Thailand
			UK
			Uruguay
			USA
			Vietnam

*Countries whose regions fall under different categories

This chart is lifted from the press release dated March 17, 1999 posted at http://www.futureharvest.org

Natural Remedy For Prostate Disorders Threatened To Extinction

Prunus africana, a slow-growing evergreen found only in Africa, and a proven remedy for prostate disorders, could be extinct in five to 10 years' time. This, as announced on 7 April 2000 by scientists from the Nairobi-based International Centre for Research in Agroforestry (ICRAF) and the Washington-based Future Harvest.

The bark of this African medicine contains essential compounds found to benefit the prostate gland in men. Prostate disorder is common to men over the age of 50. This condition could worsen into prostate cancer. Over the years, doctors were left with only three choices in treating the swelling of the prostate gland - the *benign prostatic hyperlasia* (bph) - either through drugs, surgery, or herbal medicines.

According to Dr. Tony Simmons, principal scientist at ICRAF, results showed that resorting to synthetic drugs often cause side effects such as nausea and fatigue, while surgery causes problems like impotence and urinary incontinence. The best way however, is the use of natural alternatives through herbal medicine. In this case, they use the bark of *Prunus africana*. Prunus grows from 3,000 to 11,000 feet. It takes 15 to 20 years before it produces seed. The bark of this tree would produce the prostate remedy's active ingredient only after 12 to 15 years.

The extract or powder from the bark of this tree is sold in drugstores and health food outlets under the name "pygeum". The demand for this bark has increased and will continue to increase in the coming decades as populations in industrialized countries age. Unfortunately, the wonder of this medicinal tree may diminish unless something is done, cautioned by Dr. Simons. According to him, "the best way to ensure that this endangered tree survives is to domesticate it and

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Photo courtesy of International Centre for Research in Agroforestry (ICRAF)

Rockefeller Okay's Biotech, But...

Rockefeller Foundation is one of the institutions advocating crop biotechnology in the bid to alleviate world poverty. At the same time, Rockefeller believes the importance of conducting appropriate trials and tests which will address the public's clamor for more information on the supposed risks and benefits of this controversial technology. "Unless there is a clear public involvement in the nature and progress of biotechnology - including public investment, greater regulation, and improved public understanding - the risks are not likely to be properly addressed and assessed. The benefits will go to the rich rather than the poor," Rockefeller President Gordon Conway said in his speech entitled *Crops Biotechnology: Benefits, Risks and Ownership.*

Clearly, the debate over the benefits and risks of this technology has taken the public by storm and has generated both optimistic and pessimistic reactions. One point that Conway made in his speech was that this debate lies in the political arena. The large amounts of information provided have scientific basis while some are merely speculative. Among the benefits cited were lowered production costs for American farmers, primarily through better pest and weed control, reduction in pesticide use, and higher yields (in the case of Iowa Bt corn growers and China Bt cotton growers). However, serious potential risks were also brought up, such as the environmental risk of transgenes escaping from cultivated crops into wild relatives or even contaminating organic varieties in nearby farms, possible production of superweeds, and the potential for pests to develop resistance to the toxins produced by Bt genes. While these may lead to more tests and greater regulation, the bottom line is for governments to decide clear and effective policies for each country upon consultation with the stakeholders.

Despite the debate over risks and benefits, it is more important to note that biotechnology raises several issues regarding environment, health, consumer rights, ethics, concerns of the poor and excluded, industry/science, and sustainable vs. industrial agriculture.

"It is a new technology with which we have limited experience. While we gain experience, we need to move cautiously...we should probably be more cautious of the greater the phylogenetic difference involved in the gene transfer," Mr. Conway said.
Given these pronouncements, the only way to effectively assess these risks and benefits is the conduct of relevant trials and tests which can be independently monitored and made available for public scrutiny, Mr. Conway said. Only through such transparent information dissemination will the public's thirst for the truth on biotech be finally quenched.

(Adapted from Gordon Conway's paper on Crops Biotechnology: Benefits, Risks and Ownership)

Research Yields New Gene Sequence Tags Of Model Legume

New expressed sequence tag (EST) data of *M. truncatula,* a "model" legume used in genetic studies, have been released through a collaborative project of the National Center for Genome Resources (NCGR) and the Samuel Roberts Noble Foundation in Santa Fe, New Mexico.

This is the first in a series of data expected to be released over the next 18 months. Accordingly, further identification and analysis of these EST data may lead to improvements and developments in legumes, one of the world's major forage crops. Project leader Gregory May, from the Noble Foundation, expressed his excitement over the results of the study. He said, "Genomics programs like ours can generate information that Arabidopsis (other plant models) can't provide, because *M. truncatula*, and legumes in general, have their own unique metabolic pathways and plant-microbe interactions that warrant further study."

NCGR and Noble Foundation have been responsible for the release of 14,634 expressed gene sequences in the past. This information have been made available on their websites and were also disseminated through GenBank.

M. truncatula is a relative of alfalfa and soybean which are crucial sources of protein beneficial to humans and animals. "Unlike alfalfa, it has a relatively small genome," which allows for efficient genetic and molecular analysis.

(Adapted from "New Gene Sequence Tags of Model Legume Released", http://unisci.com/stories)

Seminar On Public Expenditure In Agriculture Held

The Secretary's Technical Advisory Group of the Department of Agriculture (STAG-DA) conducted a *Seminar on Public Expenditure in Agriculture* last 18 April 2000 at CERDAF Conference Room of the ATI Building, Quezon City. The seminar was highlighted by the paper presentation of Dr. Cristina David, STAG Member and PIDS Senior Research Fellow on the "Key Indicators of Public Expenditure in Agriculture, Natural Resources and Environment"

The paper presentation was divided into four sections. The first part of the presentation focused on the institutional structure governing the sector and the nature and sources of public expenditure data. The second part tackled the historical trends and patterns of public expenditure allocation as well as the analysis of its efficiency and effectivity. The third part identified the different strategic directions for public expenditure and related reforms. The fourth and last section of the presentation cited different indicators for monitoring and evaluating the progress of the Medium Term Plan and Development Program.

According to the report of Dr. David, agricultural, natural resource and environment (ANRE) sectors are governed both by the national and local levels which include front-line support services related to municipalities, cities, and provincial government units related to ANRE. At the national level, the total available budget of different government unit for a given year consists of new appropriations, automatic and continuing appropriations, and net transfers from special funds and government agencies. On the other hand, the actual public expenditures during the year are approximated by obligated funds, which is used to represent aggregate trends and patterns of public expenditure by departments and its attached agencies. For local government units, actual public expenditures for agriculture and natural resources are based on the reports submitted by the Commission on Audit (COA).

For the historical trends and patterns of public expenditures, Dr David reported that, over the past three and a half decades, public expenditures for ANRE in real terms and as a ratio to gross value added and total government expenditures fluctuated widely. Between 1973 to 1983, public expenditures increased sharply due to high world commodity prices, shortfalls of rice production, and introduction of modern rice varieties.

To determine the strategic directions and priorities for ANRE sector, Dr David inferred the detailed analysis of budgetary allocations using three dimensions: policy instruments, commodities, and regions. Though this is the case, she stressed that empirically, only the budgetary allocation by policy instruments covered the whole ANRE sector while the appropriation by commodity was limited to DA and the regional analysis for the expenditures of LGU, and regional offices of DA, DAR, and DENR.

To monitor and evaluate as to what extent the public expenditure program is consistent with the attainment of those targets, Dr. David proposed key indicators. These are:

- trends in overall public expenditures for ANRE in real terms;
- trends and distribution for ANRE by major government units;
- trends and distribution of overall expenditures by policy instruments, commodity groups, and objectives;
- trends and distribution of overall expenditures in absolute terms;
- degree of decentralization of public expenditures by national government and LGU;
- degree of fund utilization;
- degree of utilization of public funds;
- distribution of budgetary allocation by project versus program or regular funding; and
- distribution of budgetary allocation by type of expenditures.

During the open forum, several issues were addressed. Among these are: basis of prioritizing a commodity for funding support; appropriate ratio for project-based allocation and regular funded programs; relationship between core budget and project fund according to the type of agency being supported; institutional constraints in allocating budget for core programs; expenditures for extension by national government units and LGUs; and the improper allocation of funds and untimely released of budget. *(Rita T. dela Cruz)*

Web NEWS

Visit the following sites for more information:

Arizona's super cotton
http://www.azstarnet.com/public/dnews

Gov't Approves Protein As Pestcide
http://dailynews.yahoo.com

Bt Found to Reduce Toxin in Corn
http://enn.com/news/enn-stories

Voters Nix Altered Crops at Kellogg
http://dailynews.yahoo.com

McDonald's to Bar GMO Fries
http://cnnfn.com

IPB Embarks on Bold Cloning and Genetic Engineering Projects

Despite financial constraints, the Institute of Plant Breeding (IPB) in UP Los Baños continues to develop its capability in the utilization of biotechnology as a tool for plant breeding. IPB has embarked on five genetic engineering projects with the help and financial aid of the Department of Agriculture and the Department of Science and Technolcgy. These projects are:

- Delayed ripening in papaya and mango by genetic engineering;
- Development of ringspot virus (PRSV)-resistant-papaya by genetic engineering;
- Development of bunchy top virus (BBTV)-resistant banana by genetic engineering;
- Modification of fatty acid composition of coconut oil using molecular techniques; and,
- Development of Asiatic corn borer-resistant corn by genetic engineering.

The projects involve cloning of important genes, development of molecular markers, genome mapping, genetic engineering, plant disease diagnostics, and tissue culture.

Several developments have already been achieved. For the papaya and mango project, IPB has been successful in cloning ripening-related ACC synthase gene from solo papaya and carabao mango, transforming papaya with delayed ripening gene using anti-sense technology, successful rendering of somatic embryogenesis in mango, and developing the regeneration system preparatory to genetic transformation. For the papaya project, the coat protein gene from the Philippine isolate of PRSV has been cloned. Moreover, the genetic diversity of papaya germplasm and PRSV is being studied using molecular techniques.

In banana, researchers have already cloned the coat protein, replicase and movement protein genes from the Philippine isolate of BBTV and is now developing and optimizing somatic embryogenesis and genetic diversity of BBTV.

Other developments include cloning of genes for several key enzymes for modifying fatty acid composition and tissue culture regeneration for coconut oil and development of corn borer resistance strategies and private sector cooperation for field testing of Bt corn.

In a letter to BAR Director Eliseo Ponce, IPB Director Violeta Villegas has again stressed the importance of additional research funds and the upgrading of their instrumentation and manpower. Director Villegas reiterated that the country should take advantage of modern scientific tools to improve agricultural productivity. *(Thea Kristina M. Pabuayon)*

Organizing ACE-BAR To Unify Contractuals & Project-based Employees

Almost every month, the Bureau of Agricultural Research (BAR) hires contractual staff, including project-based employees from the Network and other agencies but are detailed at BAR, to strengthen its workforce. The Bureau currently employs more or less 30 contractuals. The Association of BAR Employees (ABARE) said that plans are underway to form the Association of Contractual Employees of BAR (ACE-BAR) to unify these contractual and detailed employees. This association aims to uphold the rights and privileges of contractuals as well as protect them from inequalities. Moreover, this association will consolidate resources that would qualify contractual employees to benefits from the programs of ABARE such as the DAMAYAN Fund, Savings and Loan program, and if possible, the Group Insurance and Health Care programs.

According to Mr. Angel S. Morcozo, ABARE president, the idea of forming ACE-BAR came as an offshoot of their discussion during the 6th National COURAGE Congress held in Baguio on 13-17 March 2000. He explained that there are two possible options for forming the ACE-BAR. First is for ABARE to amend the constitution to include contractual and detailed employees as affiliate members. But the participation of contractuals and detailed employees in loan programs would prove to be difficult. The wages of the said employees are not subject to salary deductions. The second option is for ACE to have its own by-laws as an affiliate organization of ABARE. This will make them semi-autonomous and able to elect their own officers. They can also plan and implement their own projects with the assistance from ABARE Board of Trustees.

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Chronicle
BUREAU OF AGRICULTURAL RESEARCH

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