

RESHAPING

The National Agriculture
and Natural Resources
R & D System

*A Compendium of Speeches
by Dr. William D. Dar
(July 1994-June 1995)*

PHILIPPINE COUNCIL FOR AGRICULTURE, FORESTRY AND
NATURAL RESOURCES RESEARCH AND DEVELOPMENT
Department of Science and Technology

63(914) PHI95 R



BR 61850



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Los Baños, Laguna
1995

First Printing 1995

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Bibliographic citation:

Philippine Council for Agriculture, Forestry and Natural Resources Research and Development. Reshaping the National Agriculture and Natural Resources R & D System: A compendium of speeches by Dr. William D. Dar (July 1994-June 1995). Los Baños, Laguna: PCARRD, 1995. 130 p.

Volume editor:

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Foreword

When Dr. William D. Dar assumed the position of Executive Director of PCARRD on July 1, 1994, he brought with him an infusion of youthful vision and fresh leadership into DOST's pioneering Council. Dr. Dar came to PCARRD amid the great expectation placed on agriculture, forestry, and natural resources to jump-start the nation on the race to industrialization by the turn of the century. The challenge to take the lead in the modernization of Philippine agriculture through research and development is certainly enormous, but with Dr. Dar at the helm, a firm foothold has been achieved.

Reshaping the National Agriculture and Natural Resources R & D System records Dr. Dar's thoughts about running the very same system that nurtured him in his early years as a research manager. It gathers the discourse of the man who wants to steer the system into the 21st century, to rationalize the national R & D efforts, and promote sustainable agriculture, food security, and technology transfer. In a way, this publication is about coming home to begin a new generation.

It is said that there are three kinds of people in this world: those who make things happen, those who watch things happen, and those who don't know what hit them. We hope this volume will serve as a source of ideas and a wellspring of inspiration to those who would, like Dr. Dar, rather make things happen.



WILLIAM G. PADOLINA
Secretary
Department of Science and
Technology

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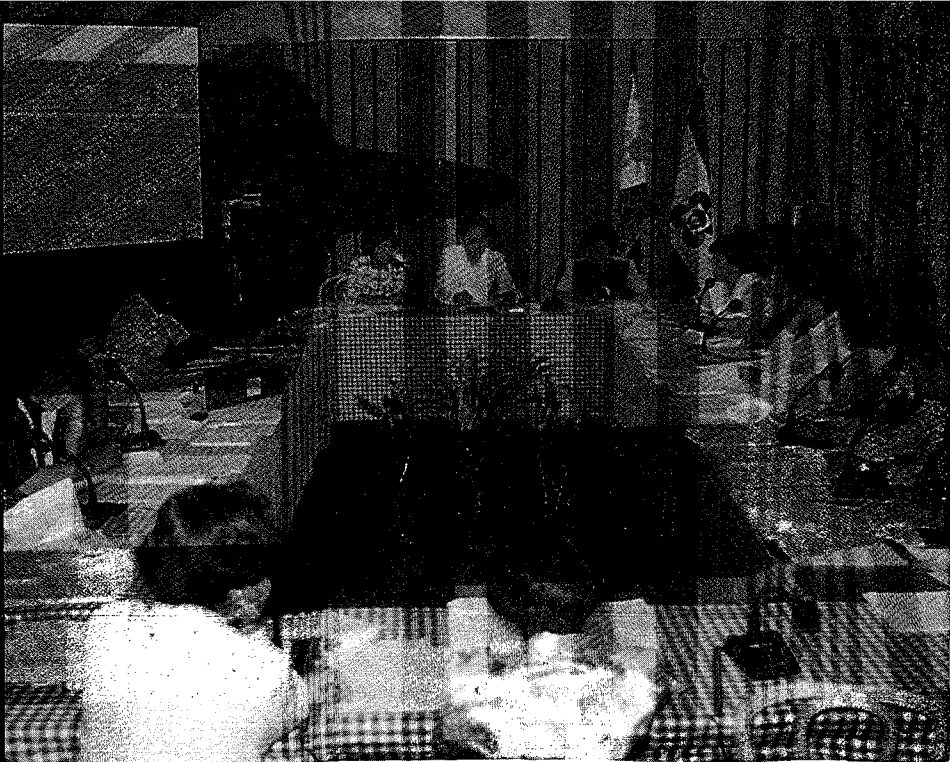
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Agriculture and Natural Resources R & D Management

*Within the
borderless
economy ushered
in by GATT, the
rule of the game
is competition.
The inefficient will
have reason to
fear but it is the
daring, the
innovative, and
the informed --
those who will
make use of the
right technology
at the right time --
who will win the
trophy for our
country and our
people.*



Toward a Continuing Excellence in the 21st Century

This occasion is, to me, more of a homecoming rather than the arrival of an outsider. This is indeed an honor for a former PCARRD scholar who has come full circle to the very institution that nurtured him in his early years as a research manager and who now takes charge of the Council's development.

This changing of the guard in PCARRD becomes all the more significant given the sentiment of the times, specifically the great expectation placed on agriculture, forestry, and natural resources to jumpstart the economy and the country to NIChood by the turn of the century. Industry has not exactly delivered, and the ball is now in our court. This is the challenge that we must face together. We must modernize Philippine agriculture, as well as develop, utilize, and manage our natural endowments toward sustainability.

In the 1980s, PCARRD was the envy of other countries which were still struggling to emerge from the backwaters that characterized much of the region then. Today, PCARRD continues as a model for emulation or comparison of other national research systems. That PCARRD remains as the team to beat is no small accomplishment. All the men and women who have ever had the privilege of working here would know that excellence is a byword in PCARRD.

The institution's breakthroughs and accomplishments bespeak well of the high level of achievement that PCARRD has always sought to maintain. Your successes in the implementation of the program thrusts of the NARRDN's R & D activities show only too clearly of the strong individual and collective effort in PCARRD.

As I have mentioned, we live in a time of great expectations. Under this setting, the usual best

We have to respond to strategic concerns in agriculture, forestry, and natural resources if the Philippines is to sustain global competitiveness, especially in the light of the recently concluded GATT Uruguay round. We have to refocus R & D and identify areas where we have comparative advantage and take the lead and invest in these in the form of higher level research.

Address delivered during the turnover ceremonies marking the inauguration of Dr. William D. Dar as the 5th Executive Director of PCARRD, 1 July 1994, PCARRD, Los Baños, Laguna, Philippines.

may not be good enough. PCARRD will have to chart its course anew. We must win the future!

We have to respond to strategic concerns in agriculture, forestry, and natural resources if the Philippines is to sustain global competitiveness, especially in the light of the recently concluded GATT Uruguay round. We have to refocus R & D and identify areas where we have comparative advantage and take the lead and invest in these in the form of higher level research.

I personally began to be involved with PCARRD in mid-1977 when it granted me the means for getting a PhD degree from UPLB. Since then, I have been an avid PCARRD watcher, seeing it grow into what it is today. It was also fortunate that I was given tasks which entailed close work with PCARRD beginning at the Benguet State University and continuing at the Bureau of Agricultural Research of the Department of Agriculture. Over the years, I have come to certain conclusions about PCARRD, particularly in what else it ought to do. And now that I am a full-time servant of the secretariat and the network, I feel obliged to share these thoughts with you.

First is the need for a second rationalization of the NARRDN. The first rationalization was the prime reason for creating PCARRD in the 1970s. Research then was carried out by a wide array of institutions with practically no coordination and common concerns. Today, thanks to PCARRD, the situation is much better. Still, there remain too many institutions doing research and the capability of a good number of these is questionable.

The proliferation of research institutions makes for tight competition for and dispersion of already limited resources. We shall have to say goodbye to those institutions that will not be able to deliver. This would not only make available more resources to the competent but also help eliminate the accumulation of research results that are of no use to the final recipients of technology.

The second is the strengthening of the working relationship and partnership with the private sector, nongovernment organizations (NGOs), state colleges and universities (SCUs), Department of Agriculture (DA), Department of Environment and Natural Resources (DENR), and the local government units (LGUs) to include Congress. The contribution of the private sector to the furtherance of R & D has not been given as much emphasis as those of the government agencies. We should now look into the direct participation of the private sector as members of the NARRDN.

The SCUs are the network's indispensable component. I believe that the stronger SCUs must be further capacitated to handle maintenance/fundamental research for strategic concerns in agriculture, forestry, and natural resources because these are the best constituted among the network institutions to provide the technology edge that we need for Philippine products and services to be competitive.

The SCUs' importance has also been increasing in their respective localities in the light of changes in the locus of decision-making brought about by the local government code. They can be instrumental in the setting of local policy, a factor that will be advantageous in our efforts to bring the information that the network has generated to play a bigger role in local economies. Our relationship with the SCUs should be seen through new perspectives which we should be quick to discern given the realignments among the forces at play in the countryside.

The local government code has empowered the provincial and municipal governments to assume greater authority for their development. With the

devolution of the extension function of the DA, the LGUs will require intensive information backstopping. This presents DOST, PCARRD, and the R & D network with the opportunity to be more instrumental in rural development by placing the information that it has accumulated at the disposal of the LGUs.

We have to give more attention to the development of the capabilities of line agencies, particularly in the areas where they are strongest: applied and adaptive research, including technology transfer. PCARRD must always be ready to service the requirements of these partners. As a further improvement, I plan to establish PCARRD liaison desks in the DA and the DENR which shall facilitate technical assistance and the exchange of information with these agencies. In the same vein, the DA and DENR are most welcome to set up their respective liaison desks at PCARRD.

PCARRD must now also refashion its role as an information broker. It must establish a unified data and information system for better decision-making. The information that it gives out should also be proactive and anticipative of needs. We shall certainly undertake policy advocacy for areas where we are authoritative.

The third is the strengthening of the regional R & D consortia. With the LGC now in place, more responsibility should be shifted to the regional consortia to provide close support to the LGUs. We shall consider the deployment of some of the PCARRD staff to the regional consortia to strengthen the secretariat at that level. This should eliminate some of the administrative problems of the base agencies such as personnel. With stronger regional consortia, PCARRD would be free to focus on national and inter-country or regional concerns.

The fourth would be balanced institution building. PCARRD has to strengthen the adaptive research component of the national R & D system which is assumed largely by the DA and DENR. Future institution building efforts to be undertaken by the NARRDN should not only enhance these line agencies' current capabilities but should also develop their potential to undertake technology generation and commercialization activities.

I would like to see greater emphasis on human resource development. We should have a continuing training program on research management which would complement existing degree-oriented activities. As R & D activities intensify in this decade, the quality of the management of research should improve correspondingly.

PCARRD should enhance the technology transfer activities of the network but at the same time we must move away from direct implementation of extension-type programs and focus on the more strategic concerns to include technotransfer modelling and the conceptualization of future technology transfer programs. It would be best to leave the downstream activities to the LGUs, the DA, DENR, the DOST regional/provincial offices, some SCUs, and the private sector.

The fifth would be more effective research priority setting in the network. This includes strengthening the PCARRD governance. Let's modernize research management in this country. The hard reality is that government allocations for research is decreasing. Adjustments will have to be undertaken and our future R & D activities shall have to be refocused and be limited to only those commodities and problem areas that will be meaningful to the economy in the short to medium-term. In this, we can draw guidance from the goals set in the Philippines 2000, the STAND of DOST, the Medium-Term Agricultural Development Plan of the DA, the Thrusts and Priorities of DENR, the policies initiated by the Philippine Council for Sustainable Development, and others. At the same time, PCARRD should pay attention to anticipatory research activities or maintenance

research for those commodities and problem areas that are expected to become significant in the medium- to long-term.

The sixth is increased research investments by government and other sources. I personally feel that we deserve a budget commensurate to the contribution of agriculture and natural resources to the economy. PCARRD will have to lobby hard to convince the government that for agriculture, forestry, and natural resources to progress, it has to give more consideration and financial support to R & D. Other sources such as donor agencies will be tapped to generate the needed resources.

Finally, we need to enhance linkages with international research institutions and networks. The Philippines must expand its participation in the global scientific community. Growth in scientific discoveries is increasing at an exponential rate throughout the world and much of the time required by our basic research could be shortened with the sharing of technologies, information, and experiences with other countries. Conversely, we must also initiate R & D support to subregional and regional inter-country initiatives.

The previous administrations have made their respective imprints in Philippine Agriculture and Natural Resources and we recognize their contributions. They have paved the way to what PCARRD has become today. That I have been entrusted with the secretariat's leadership also poses a challenge on my part to be as good as the previous PCARRD Executive Directors have been.

As with any organization, the results of performance can swing either upwards or downwards. The first years of PCARRD can be described as an upcurve. While we have been experiencing reversals before owing to many reasons, I am certain that it is well within our capability to bring about another upcurve, possibly peaking in the next century. I strongly believe that together we can bring PCARRD to even greater heights. PCARRD is here to stay! This much I am certain for I would not be joining this prestigious institution if I knew that it had no future.

With a better definition of our tasks under Philippines 2000, we should be able to move forward more aggressively. Let's build up the team anew to meet the challenges of the present and respond to the requirements of the future.

My administration shall be characterized by openness, transparency, relevance, and objectiveness. Rest assured that individual initiatives, ideas, and resourcefulness shall be recognized. Emphasis shall be placed on teamwork and collective approaches.

You, the PCARRD staff, have been a great service to your country. The challenges of the future are great and require nothing less than exceptional performance from you. Nonetheless, further successes can be reached if we remain open to innovations, improvements, and other people's initiatives. Through positive and forward thinking, PCARRD shall continue to be relevant and important well into the next century.

New Thrusts in Agriculture and Natural Resources Research and Development

R & D in the country is generally guided by a vision of agri-industrialization spurred by science and technology through the acquisition, generation, promotion, and application of knowledge, information, and technologies in agriculture, environment, and natural resources.

A formidable force of highly competent and technically capable R & D workers – extension workers, researchers, scientists, research managers, and others – will see to the realization of this vision. PCARRD, on the other hand, will provide stewardship functions of organizing, managing, coordinating, and monitoring activities of the national R & D network member-institutions, as well as the members of the national R & D consortium in each of the 13 regions. Specifically, PCARRD will continue to lead in the generation, acquisition, and organization of technologies and information for the production of specific agriculture- and natural resource-based industrial products; in the promotion of the transfer and utilization of knowledge and technology; in enhancing a policy environment supportive of R & D; in improving R & D management capability; and in seeking better partnership strategies between the government and the private sector.

Sectoral Integrated R & D Programs

The Medium-Term Research and Development Plan centers on sectoral and integrated R & D programs supportive of the Department of Science and Technology (DOST) Master Plan as spelled out in the Science and Technology Agenda for National Development (STAND). Its guiding principles

The task ahead is great. Our dream of becoming an agri-industrializing country like our neighboring countries by the turn of the century will only be realized if we will keep our efforts coherent and focused.

Presented during the Annual National Convention of the Association of Colleges of Agriculture in the Philippines (ACAP), 9 November 1994, Bureau of Plant Industry, San Andres, Manila, Philippines.

emphasize the development and utilization of superior technologies to achieve a more competitive edge in the world market. Both the MTRDP and the STAND are demand-driven, market-oriented, private sector-led, short- to medium-term action agenda.

Specifically, under the MTRDP, sectoral and integrated R & D programs shall adopt the following strategies:

- modernization of the production sectors through massive technology transfer and commercialization through strong linkages and collaborative work with industry and academe;
- improved R & D management capability;
- institution building through the development of infrastructure and manpower; and
- policy advocacy.

Sectoral programs will cover the following: crops, livestock, forestry, environment, farm resources and systems, and socioeconomics. In each sector, the focus will be on sources of seeds and planting materials, postharvest technology, biotechnology, integrated pest management, development of higher value-added products, land and soil management, environment, water resources, new materials as substitute, livestock health management and feed, impact analysis, policy advocacy, institution development, information technology, and applied communication.

Crops Sector

For the crops sector, priority commodities are those with export potentials such as mango, banana, papaya, pineapple, and durian. Domestic production of these commodities is expected to increase for higher level of efficiency as well as better product quality to compete in the world market. The bulk of R & D funds is channelled to these commodities to boost the country's export earnings. R & D areas include varietal improvement, nursery/orchard management, integrated pest management, cropping patterns, and socioeconomics.

The coconut industry is another export winner that will be attended to. As a major crop involving about three million hectares of arable land, the R & D move is to add vigor to an already dwindling industry through focused activities on improvement of productivity of coconut trees; alternative processing methods; and development of improved and new products such as oleochemicals.

Other commodities that show high potentials for world trade will also be developed. These are ornamentals, rubber, ubi (yam), abaca, pili, and cashew. Emerging technologies that will create demand for products and by-products of these commodities will be supported and disseminated.

There will also be support, though limited, to basic domestic commodities such as rice, corn, vegetables, rootcrops, legumes, and sugarcane. Efforts will be geared at lowering the production costs through the development and use of improved varieties. Inasmuch as there is already a great accumulation of technologies in these commodities, PCARRD and the network shall vigorously pursue technology transfer and commercialization. The development component will deal mainly on demonstrating the technical feasibility and viability of adopting available and improved technologies on production and post-production aspects.

Livestock Sector

The livestock sector aims to increase the productivity of carabao, cattle, goats, sheep, swine, chicken, and ducks through proper selection, breeding, nutrition, health care, and management. It is hoped that by the year 2000 as part of the country's basic domestic needs, every Filipino family will be able to buy the recommended amount of meat, eggs, and milk for proper nutrition.

To achieve this, the R & D agenda in livestock include the following:

- breed improvement;
- performance evaluation of livestock and poultry with different genetic make-up;
- development of bio-products and application of biotechnologies in animal production and health;
- development strategies for sustained and economical feeding for livestock and poultry; and
- development of effective and economical postharvest technologies.

Forestry Sector

As the population grows and the economy expands, so does the demand for forestry products and by-products and the clamor to protect and rehabilitate our limited forest resources. Thus, within the MTRDP period, the sector primarily envisions to close the gap between addressing sustained raw materials supply and improving production technology to meet product demand and the stark necessity of conserving the biological diversity of our natural resources.

Again, the sector emphasizes on technology promotion on such areas as availability of planting materials, plantation development in degraded and grassland areas, regeneration techniques for natural resources, management of diversity and protected areas, and stockfarming and processing of wildlife products.

The R & D agenda for the forestry sector include the following:

- scientific basis for actual delineation on the ground of the production and protection of forests;
- rehabilitation of degraded areas, timber stand improvement, and assisted natural regeneration of residual forests;
- piloting of community forest management technologies;
- upgrading forest-based industries' machineries, manpower capability, specialization, and complementation;
- improvement of industrial tree plantation establishment practices and nursery techniques;
- development and design of products from plantation-sourced timber;
- development of forestry seed program and application of biotechnology in hastening the growth and improvement of quality planting stocks;
- determination of harvest cycles for sustained production and development of growth/yield projections for profitable harvest;
- development of soil fertility management technologies; and
- scientific management of protected areas, wildlife stock farming.

Environment

The emphasis on the protection of the environment is seen in all sectors of the society. Globally, concerned sectors have been adopting strategies and mechanisms toward sustainable development in agriculture and natural resources, which takes up environment issues and concerns. This emanates from the fact that resources are limited while the need for their utilization is ever increasing.

In the environment R & D sector, the overall aim is to support the government's productivity program while meeting the society's increasing demand for ecological balance that enhances the sustainability of various life support systems in the environment.

The Environment R & D Program has two components, namely: agricultural resource ecosystem and natural resource ecosystem.

For the agricultural resource base, the R & D agenda shall cover the following:

- strengthening the development of environmental – friendly and culturally appropriate technologies through sustainable agriculture;
- assessment studies on the effect of agrochemical and biological inputs used in crops and livestock production on consumers, workers, and the ecosystem;
- promotion of environmental biotechnology for treatment of wastes from animals and agro-based industries;
- assessment of the effects of geothermal emissions and waste on crop productivity, on environment, and the community;
- rehabilitating agro-ecosystems that have been adversely affected by air, water and soil pollution;
- piloting economic valuation of land conservation and conversion of agricultural land;
- pursuing environmental monitoring and evaluation indicator system for the NARRDN; and
- conduct of environmental education, especially on the safe handling, disposal, and effects of pesticides and hazardous waste materials.

For the natural resource ecosystem, the following R & D agenda shall be addressed:

- rehabilitation and protection of degraded and high risk areas/ecosystems;
- disaster/hazard mitigation to minimize damage to crops, lives, and properties;
- documentation, evaluation, and application of indigenous resource management practices/technologies;
- protection, conservation, and management of biodiversity;
- waste utilization and management;
- ecosystems modelling to predict and characterize impact of perturbations and alterations;
- environmental resource accounting system to account for tangible and intangible goods and services;
- studies on tenure and stewardship as tools for natural resources management and development;
- studies on ecological tourism to promote appreciation and conservation of environmental and natural resources.

Farm Resources and Systems

The rate at which man is extracting our scarce natural resources, like soil and water, has reached a critical point. For instance, because of the rapid population growth, large and fertile agricultural lands are converted into non-agriculture land uses such as subdivision establishment. If one travels along the South Superhighway, this point is very evident with the mushrooming of low-cost housing facilities.

The sector covers four commodities/disciplines, namely: soil resources, water resources, agricultural engineering, and farm resources and systems. Providing support systems to crops, livestock, forestry, and environment, the sector hopes to attain an effective and efficient management of farm resources for an improved agricultural productivity and sustainability.

Managing our natural resources ranks high in our priorities. Technologies and information to safeguard our various agro-ecological systems need to be continually generated and properly disseminated. Along this line, the R & D agenda for the farm resources and systems sector shall focus on the following:

Soil resources

- updating of soil classification of each province;
- determination of chemical properties and productivity of wetland soils, pasture lands, soils grown to sugarcane/orchard mine tailings and acidic soils;
- assessment of surface and groundwater contamination, especially nitrate and P as affected by fertilizers, cropping patterns and management;
- improvement of soil quality in terms of chemical and organic components;
- development and identification of cost - efficient and quality fertilizers and proper timing of applications;
- identification, evaluation, and development of adapted and efficient strains of N-fixing and P-solubilizing microorganisms; and
- management studies for problem soils, soil nutrient deficiencies, fertilization, liming, crop tolerance to acidity, and salinity.

Water resources

- promotion and development of effective, small water resource projects applicable to rice-based diversified cropping system with emphasis on high-value crops.

Agricultural engineering

- determination of the needs of farmers in various farming systems, assessment of machine utilization and costs, mechanization impact, and standardization and quality control of machinery components; and
- development of local engine and other prime movers.

Farming system

- assessment of the various post-production and marketing requirements and systems.

Socio-Economics

Socioeconomic researches generally aim to provide information base to influence policymaking and program development by making available answers about man's frailties, human realities, and explaining cost and effects of various socioeconomic movements. As a vision in socioeconomic R & D, the MTRDP aims to support and strengthen the generation and commercialization of technologies and other innovations for global competitiveness, rural entrepreneurship, and self-sufficiency.

To achieve this, there are four major strategies that the sector can deal with: (1) **evaluation researches** which will determine and assess the impact of all major development programs introduced; (2) **anticipatory approaches** to socioeconomic R & D; (3) **advocacy role** that will strengthen PCARRD and the network's role in formulating legislative agenda and ultimately providing reforms in agriculture and natural resources; and (4) **data consolidation** which will unify data set to present a composite picture of issues and thereby provide alternatives to problems and constraints.

Following the above strategies, socioeconomic researches will address the following concerns:

- evaluation of technologies and technology commercialization programs of the NARRDN;
- market potentials, rural industrialization, entrepreneurship, and industry analysis for flagship commodities;
- socioeconomic dimensions of sustainable resource management; and
- evaluation of macro and sectoral policies and support services related to the development of relevant industries of flagship commodities.

Conclusion

The foregoing is a brief presentation of what the R & D sector will aim to achieve for the medium term (1995-2000). As a result of consultations with other government agencies like the Department of Agriculture, Department of Environment and Natural Resources, Department of Education, Culture and Sports, Department of Science and Technology, Department of Trade and Industry, and the private sector, among others, these R & D thrusts will be our guide in promoting countryside development through S & T initiatives. The task ahead is great. Our dream of becoming an agri-industrializing country like our neighboring countries by the turn of the century will only be realized if we will keep our efforts coherent and focused.

The role of the state colleges and universities cannot be overemphasized. The manpower resources, the financial support from the government, the basic mandates of research, extension and instruction, and the political will to make a substantial contribution to our development efforts ought to be, by now, the hallmarks of these institutions. PCARRD has always had a mutually reinforcing relationship with ACAP's member institutions. Ahead, we shall seek to strengthen this relationship even more and make the imperatives of relevance, excellence, and cooperation bear even more fruit for the country and our people.

Global Competitiveness: A Challenge to the NARRDN

An ancient Roman once said, "Anyone can steer the ship when the sea is calm." After 134 days at the helm of PCARRD, I am inclined to make PCARRD an exception to this observation. Not just anybody can steer the vessel that is PCARRD - either because of the magnitude of the task of keeping up with its hallmarks of commitment, excellence and relevance, or because for PCARRD and its network, the sea will never be quite calm enough. For one, this year's anniversary theme should make the entire National Agriculture and Resources Research and Development Network (NARRDN) lurch in the sea of global competitiveness.

I wish to take this opportunity to honor the men who preceded me at the helm, those men of vision and daring who built PCARRD into the magnificent ship it is today. I have accepted this privilege with a dogged determination to take charge of the Council's development.

As a consequence, I have put in place certain initiatives which, with your indulgence, I would like to be the focus of this report.

Initiatives for Competitiveness

Setting the Course

Upon assumption of my office at PCARRD, I launched a series of dialogues with key figures in agriculture, forestry, and natural resources to touch base with the creative will for R & D in the country. The goodwill and support were unanimous but ideas to direct the R & D system were proverbially as many as the stars in heaven. A planning activity that would crystallize the best ideas and yet harness the latent goodwill was therefore necessary.

Executive report delivered during the PCARRD 22nd Anniversary Celebration, 11 November 1994, PCARRD, Los Baños, Laguna, Philippines.

Let me honor the men and women of PCARRD who have made it possible for me and the entire NARRDN to achieve a few things of significance in an improbably short period of time. They are a cadre of some of the finest, most committed civil servants I have ever known. They make leading PCARRD less daunting as it is.

From August 29 to 31, practically the entire NARRDN, including a good number of our partners in the private sector, came and participated in the Medium-Term Planning and Consultation Workshop and Joint Meeting of RRDC Chairmen and Regional Consortium Directors at the Development Academy of the Philippines (DAP) in Tagaytay City. Barely a month and a half later, we launch today the blueprint for the network: the Medium Term Research and Development Plan (1995-2000) for Philippine Agriculture and Natural Resources.

The MTRDP is a strategic plan to support the government's call for improving the people's quality of life and rapid agri-industrialization. The plan shall enable PCARRD to take the lead in the modernization of the production sector, particularly in response to the recent developments in international trade relations brought about by the General Agreement on Tariffs and Trade (GATT) and the formation of free trade areas and blocs. It has become an imperative for PCARRD to take initiatives toward an era of trade liberalism within the framework of a borderless economy.

The MTRDP provides the blueprint for R & D priorities to increase export and export earnings, open new international markets, and create a multiplier effect in the domestic economy.

The Integrated Research and Development Program (IRDP) to be pursued over the plan period specifically identifies commodities and products that have high potential in capturing a substantial share in the export market. The vanguard program of DOST called STAND for Philippines 2000 sets the framework for the MTRDP to aggressively pursue R & D intervention on various sectors: crops, livestock, forestry, environment, farming systems, and socioeconomics. The MTRDP also addresses the R & D needs of the key programs of the Department of Agriculture (DA), the Department of Environment and Natural Resources (DENR), and the Department of Education, Culture and Sports (DECS).

To accelerate technology packaging and delivery, the MTRDP outlines strategic efforts to undertake technology identification and area positioning, gap/risk factor analysis, technology promotion, enterprise building, networking, and advocacy. PCARRD will enhance assistance in rural entrepreneurship through trainings on management, leadership, and value orientation. The technology potential and its managerial, financial, and marketing requirements will be given impetus to underscore the "business" nature of technology application. Technology transfer will be pursued through the principle of networking/forging linkages with the private sector, relevant agencies, local financing institutions, or cooperatives to trail the inroads of support services such as credit, market assistance, and infrastructure.

This six-year plan assumes both gradual strengthening of PCARRD's research capability at the headquarters and phased expansion of work in the regions. Many of the research buildings and laboratory facilities require major rehabilitation. Likewise, there is an urgent need to upgrade the skills of more scientists along specialized areas such as crop improvement and biotechnology. Nevertheless, PCARRD will further encourage resource sharing and cross posting of scientists among member agencies in the network. Procedures and guidelines for operational activities will be continually reviewed/updated to further streamline the headquarter's operation and to address the special needs of the regions.

PCARRD will respond to specific requests from individual local/international partners based on the perception of opportunities through collaborative and bilateral modes. The network members will be encouraged to plan by themselves

and assume management responsibilities. To this end, PCARRD will recognize active and performing members, mobilize support and incentives.

Realizing the Potential of the Consortium Arrangement

The MTRDP may be likened to a sea chart, setting the direction we have set out to follow in the medium-term. Nearer home, we have initiated some housekeeping measures to ensure that our ship remains seaworthy and in top shape.

We recognize that the management of the R & D consortia needs to be addressed. We have piloted the Regional R & D Information Service in three consortia, but more than that we realize that the consortium arrangement must now be put to the task. The formulation of Integrated R & D Programs at the regional level is but a kick-off to greater assignments. The consortia should now become a catalyst for technology transfer and commercialization as well.

As an exercise in healthy competition where only the strong and efficient obtain the prize, we have initiated at PCARRD the Outstanding Consortium of the Year Award to recognize excellence in R & D management and service delivery in the regions. The award will carry a grant amount of P1,000,000 – 80% of which will fund the projects and 20% for operations of the consortium. The most outstanding of the 13 consortia will enjoy this distinction and bonanza beginning next year.

Recognizing Techno-Transfer

This year we have added another award to match the prestigious Pantas and Tanglaw Awards of PCARRD. This will recognize outstanding contribution to the transfer and commercialization of technologies generated by the NARRDN. Following a nationwide search for a name, the Award will be called 'Sinag' Award, after the Tagalog word for 'a ray of light', 'a beam' that will show us the way to national development. Unless technologies generated by the NARRDN are transferred and adopted then all our efforts result to naught. The winner for the 1995 Sinag Award will receive a P50,000 cash incentive and P500,000 R & D grant.

Producing High-Calibre R & D Manpower

We have supported the strategy to increase and upgrade our national storehouse of knowledge and skills necessary to meet the present and future needs. Under this strategy, PCARRD has taken concrete steps to match vision with resources.

This year we have awarded 9 thesis grants and 28 scholarship grants (22 PhD and 6 MS) to NARRDN researchers. In addition, four slots (two PhD and two MS) are being enjoyed by PCARRD staff members under the DOST's Staff Development Program.

To sustain the learning drive and research interest of returning scholars, PCARRD has established mechanisms to extend financial assistance to beneficiaries in amounts up to P250,000 for PhD and P150,000 for MS graduates to support research to be undertaken by the scholars upon their return to work within the priorities set by PCARRD and the thrusts of the DA, DENR, and DOST. This will be in effect beginning this school year 1994-1995.

To correct the imbalance in the distribution of scholarship slots in the past, the PCARRD Scholarship Program will now be guided by the following schedule: 40% of available slots will be awarded to researchers from DA, another 40% to DENR, and 20% to SCUs. This scheme will also be in effect beginning this year.

We have signed a Memorandum of Agreement with the Technical Panel for Agricultural Education (TPAE) for the conduct of a joint PCARRD-TPAE evaluation of SCUs with graduate programs in agriculture, forestry, and related fields. The Panel has developed the minimum criteria for accreditation of graduate programs in these fields, and so far, only UPLB has been granted accreditation. We have expanded the accreditation process to include four more SCUs, namely: the Central Luzon State University (CLSU), Visayas State College of Agriculture (VISCA), University of Southern Mindanao (USM), and Central Mindanao University (CMU), so that beginning next year, grantees may take up graduate studies in institutions of their choice, possibly closer to their places of work or residence. We are open to the possibility of accrediting even private agricultural schools through TPAE recommendation.

We have set in motion the process of adjusting the monthly stipends for scholars to befit their status in the following rates: P5,000/month for PhD students and P4,000/month for MS students beginning August of 1994.

Providing for Emergency R & D

The emergency situations presented this year by the locust infestation in Central Luzon, the outbreaks of cattle diseases in the Visayas, and the outcry over formalin use in vegetables brought to the fore the need to identify emergency R & D fund sources. In response, we have singled out the President's Calamity Fund and have secured the approval of the Governing Council to set aside 10% of PCARRD-GIA funds for emergency projects. We have already responded to the formalin and locust emergencies.

An emergency situation must be certified by the President or Vice-President of the Philippines or the Secretary of the DA, DENR, or DOST. R & D proposals to respond to certified emergency situations, however, do not go through the usual evaluation procedures. The Executive Director of PCARRD may set up quick response procedures to evaluate proposals and implement and monitor emergency projects. Requirements for training and retooling of expertise and for rehabilitation/ upgrading of facilities may be funded out of emergency R & D grants. It is expected that quick-response projects produce useful results in three to six months.

Other PCARRD Accomplishments

Notwithstanding resource limitations, PCARRD harvested from November 1993 to November 1994 a significant crop of accomplishments.

Technology transfer and commercialization, one of the key factors in agri-industrialization and sustainable development in the countryside, made commendable headway. A total of 14 technologies were commercialized involving 4,042 adopters. Ninety-five other technologies were diffused. A total of 1,570 potential adopters have been identified. To boost its science and technology promotion activities, PCARRD participated in a number of national and regional technology fairs, fora, exhibits, demonstration trials, and field days. In its commitment to equip the farmers with technological and entrepreneurial skills, PCARRD supported the training of 6,712 potential technology adopters.

The past year also saw the integration and realignment of PCARRD's R & D program to support the agri-industrialization and sustainable development thrusts of the government. Considering the emphasis on development or generation of technologies on such areas as nontraditional commodities, production and

processing of high value-added products, biotechnology, and environmental management, PCARRD evaluated 33 R & D project proposals. It also monitored 2,691 projects and supported or assisted 162 projects.

Through the NARRDN, PCARRD conducts policy-related studies to come up with relevant policy recommendations. Four policy papers were prepared and defended by PCARRD this year. PCARRD also reviewed and provided comments and recommendations on 14 House Bills related to agriculture and natural resources. Consultancy services totalled 157, and 1,699 clients were served.

Through its applied communication services, PCARRD disseminates technologies and information to the regions, potential beneficiaries, and users of these technologies. Among 15 publication lines featuring varied technologies or information in agriculture, forestry, and natural resources, PCARRD developed 235 print and nonprint materials and disseminated 83,282 copies. Twenty-five broadcasts and 9 audiovisual materials were produced and presented, and 84 workshops and conferences were supported. PCARRD also distributed 101 press releases featuring technologies generated by the NARRDN. These were published in community and daily newspapers and in agricultural magazines as well.

PCARRD embarked on an aggressive human resources development at the headquarters and in the regions. It supported 101 formal and conducted 181 nonformal training programs. A total of 86 trainer's trainings were held involving 6,626 participants. Presently, the PCARRD scholarship program supports 45 graduate students.

To promote interagency linkages and collaboration, PCARRD entered into Memoranda of Agreement with seven foreign and seven local agencies, while existing agreements with seven institutions were sustained and enhanced. It also coordinated a number of foreign scientific missions, notably the French and Malaysian delegations.

As we reflect on the many challenges we faced and the strides we took, let us also look forward to advance our goals in the days ahead.

Directions for 1995

When I assumed the leadership of PCARRD in July, I proposed a number of areas of organizational development for the Council and the NARRDN. I expect these to continue to guide us in the coming year:

Providing a continuous rationalization of the NARRDN The establishment of the NARRDN is the first wave of rationalization of the national R & D effort. It need not be the last. PCARRD has established the minimum criteria for R & D capability. We will pursue the center reviews to ensure that our R & D manpower, infrastructure, and equipment are at par with the better systems in the world. We will also cooperate with the Ad-hoc Committee created by President Ramos by virtue of Administrative Order 151 to focus and rationalize the national R & D efforts, especially in the agriculture sector.

Strengthening the partnership with the private sector, nongovernment organizations (NGOs), State Colleges and Universities (SCUs), Department of Agriculture (DA), Department of Environment and Natural Resources (DENR), Local Government Units (LGUs), and Congress. We will translate the MTRDP to reflect the requirements of NICHood and to make R & D market-led and

demand-driven. To this end we will link up with the private sectors, involving them in all our development projects. We will strengthen our working relationship with our partners in the line agencies, the academe, the NGOs, the empowered local governments, and the powerful chambers of Congress. The liaison officers between PCARRD and DENR have been identified. We will pursue this with the DA and wherever necessary. Moreover, PCARRD will be a significant player in the GATT-related adjustment mechanisms and in more aggressive policy advocacy.

Strengthening the regional R & D consortia. Following the initial success of the piloting of the Regional R & D Information Service in the Central Luzon Agriculture and Resources Research and Development Consortium (CLARRDEC), Western Visayas Agriculture and Resources Research and Development Consortium (WESVARRDEC), and Central Mindanao Agriculture and Resources Research and Development Consortium (CEMARRDEC), we have provided six other consortia with top-of-the-line computer systems for the "one-stop-shop" in the regions. The other four consortia will receive theirs next year. The one-stop-shops institutionalize the information highway for R & D to traffic technologies/information from the national hub to the regions and to feed the national system with ready, updated information for better decision-making. They will give teeth to the technology transfer and commercialization of the consortia. We are drawing up training plans for the management of R & D in the regions to enable the consortia to forge their own integrated R & D plans relevant to regional needs and opportunities.

Balance institution building. We will continue to build the capability of our member-agencies for superior R & D. PCARRD resources for support to stations will be used more judiciously to keep a balance in the development of member-agencies. The 40-40-20 scheme for manpower development is a guide to the general institution development program we seek to pursue.

Providing more effective management of research and priority setting for focused R & D programs. We will hasten the data banking of usable technologies and information for decision-making to influence the development of management and to support our advocacy role. In the year ahead, we will tap into mechanisms already in place to assist us in more effective management of research and priority setting. We will work with the Science Watch Action Team and the Global Technology Search program of DOST even as we put to task the Technology Transfer Advisory Committee of PCARRD. Our aim is to achieve an organizational culture that is truly responsive to national development imperatives.

Increasing R & D investments from government and other sources. We have begun to link better with the Department of Budget and Management (DBM). In fact, Secretary Salvador M. Enriquez of DBM came to keynote yesterday's National Symposium here at PCARRD. We will continue to strengthen institutional linkages with traditional and nontraditional donors to increase R & D investments from government and other sources. Moreover, we will work to implement the upgrading of S & T plantilla positions to get more benefits for workers in our system.

Enhancing linkages with international research institutions and networks. I will use my representation to enhance our role in the international

R & D community. To this end we will bolster our membership in international organizations and tap the resources and channels of foreign embassies in the Philippines. Creating goodwill for PCARRD is a potent competitive strategy that will reap for us more for what we invest.

Conclusion

In conclusion, let me honor the men and women of PCARRD who have made it possible for me and the entire NARRDN to achieve a few things of significance in an improbably short period of time. They are a cadre of some of the finest, most committed civil servants I have ever known. They make leading PCARRD less daunting as it is. Someone on this very stage last year said these people "work as if there were no tomorrow." I vouch that these dedicated colleagues consecrate themselves to work so that our tomorrow will come as a blessing for all.

Let me also thank all the members of the network for their support and cooperation. I must admit that it takes more than patience to extend our vision and involvement beyond our agency mandates. It must be this extended effort that makes PCARRD tick - to transform it into a workable model for other national research systems in Asia and in the rest of the developing world. I count on their commitment as well.

Within the borderless economy ushered in by GATT, the rule of the game is competition. The inefficient will have reason to fear but it is the daring, the innovative, and the informed - those who will make use of the right technology at the right time - who will win the trophy for our country and our people.

Perhaps not everybody will welcome the change and rise to the call for competition. There is no way we can make people like change. We can only institute some foundational initiatives and make them feel less threatened by change.

For PCARRD on its anniversary, let me use the words of Robert Herrick who said: "If well thou hast begun, go on foreright. It is the end that crowns us, not the fight."

And so even if the sea be stormy and dark, the twin harbor of global competitiveness and people empowerment will see us through the night.

PCARRD's R & D Thrusts in Environment and Natural Resources

Almost a hundred days ago, when I assumed the leadership of the DOST Council with the mandate to provide central direction and coordination of scientific and technological efforts in agriculture, environment, and natural resources, I immediately embarked upon a series of consultations with various leaders in the sectors. We move this consulting phase a concrete step forward today by meeting together in this workshop.

The results of the workshop will enable PCARRD to finetune on the drawing board its Medium Term Research and Development Plan (MTRDP). The PCARRD MTRDP aims to enhance R & D contribution to achieve global competitiveness, self-sufficiency, resources conservation, rural entrepreneurship, and agri-industrialization guided by sustainable development.

The MTRDP is envisioned to reinforce collaborative relationships among R & D institutions, multiply its effectiveness by pooling efforts with other agencies in networking activities to avoid duplication and waste of resources, and broadening linkages with the private sector.

The MTRDP provides the blueprint for R & D priorities to increase export and export earnings, open new international markets, and create a multiplier effect in the domestic company.

Through the Plan, PCARRD pledges support to the various policy reforms in the forestry and environment sector, to enhance the environmental consciousness of the general public, and to address the major causes of environmental degradation and wanton destruction of natural resources.

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Delivered during the DENR-PCARRD Consultation Workshop,
14 October 1994, OSEC Conference Room, DENR Building,
Visayas Ave., Diliman, Quezon City, Philippines.

The Plan embodies the strategic R & D response to DENR's needs for the following:

- generation of information/technologies on sustainable management and development of natural and plantation forests;
- generation of information/technologies and formulation of strategies to evolve environmentally sound management approaches that promote production and resource use of grasslands;
- generation of socioeconomically and environmentally viable technologies that would uplift/improve the quality of life of upland dwellers; and
- policy advocacy on environmental issues and rehabilitation of the country's watersheds.

Let me simply say that PCARRD and myself look forward to the results of the workshop with excitement and some apprehension. The excitement is due to the rising expectations that NiChood and the atmosphere of free trading bring to bear upon us in the science and technology world of our country. We either deliver the goods or bungle it. Then we can be blessed or blamed therefore. You will agree with me that we are certainly in the most challenging of all possible times.

The apprehension is born out of the experience that many meetings and consultations end up as a lot of talk and a waste of taxpayers' money. We can, however, decide just now to do it right, to be partners, to work together. Partnership for us can mean that PCARRD must provide a framework for R & D consistent with the paradigm shift at DENR from resource exploitation to ecosystems sustainability. It can also mean that DENR will accord its partners in government similar if not better treatment than private consulting firms.

Let us be partners and together we will compete and win!

Our Unequal Dream

After a decade of watching its neighbors zoom ahead on the economic road, the Philippines looks set to begin catching up. This assessment of our country's economic performance comes from the issue of Asiaweek dated 20 July 1994. However, unlike other tiger economies in Southeast Asia which "have raced to prosperity under the tight reins of authoritarian governments," our country "is galloping forward with free-wheeling democracy dancing on its back." The two-year old Ramos Administration has shown that democracy is not a hindrance to development as Singapore Leader Lee Kuan Yew had warned us a few years ago. In the case of the Philippines, democracy and prosperity are certainly not strange bedfellows.

There are a number of encouraging signs to substantiate our bullish outlook: economic growth of nearly 5% in the first quarter, international reserves at an all-time high of US\$ 7.3 billion, rising foreign investments, single-digit inflation rate and a strong peso. Could it be that we are, at last, emerging to be a tiger of Southeast Asia, albeit of a different coat?

In the agricultural scene, the perspective is no less positive. There are reports from the Center for Research and Communication that the agriculture sector is expected to grow this year at a moderate 3.1% to 3.6% up from last year's 2%. In 1995 the sector is expected to grow 4.4%, and given the increasingly better weather, even more in the years to come.

This is the setting and mood of this year's celebration of the National Science and Technology Week by the Los Baños Science Community (LBSC). As we close this week's celebration, let me congratulate the recipients of the Elvira O. Tan Memorial Award for Fisheries Research and take

As we move on to fashion technologies that are demand-driven and readily absorbable by end-users, I am inspired to build upon a dream that parallels that of our farmers and ultimate beneficiaries: to win the game of agri-industrialization with a trophy to be shared by all.

Closing remarks during the National Science and Technology Week celebration of the Los Baños Science Community, 20 July 1994, E.O. Tan Hall, PCARRD, Los Baños, Laguna, Philippines.

this occasion to express my appreciation to all the 11 member agencies of the LBSC, as well as our friends and partners from industry, the financial sector, other government instrumentalities, and most especially the farmers – for making our science and technology celebration an exercise in relevance toward Philippines 2000.

I also wish to acknowledge the efforts of the LBSC Steering Committee under the leadership of Dr. Emmanuel D. Bello. The Los Baños science village, if I may call it so, stands out once again as an example in cooperation, creating an environment conducive to productive scientific endeavors and maximum interaction among members.

With your cooperation and given our upbeat outlook, I would like to think that my recent assumption of the leadership of PCARRD and the National Agriculture and Resources Research and Development Network (NARRDN) is well-augured. I had occasion then to enunciate seven points for revitalizing the network. With your indulgence I shall again briefly underscore that PCARRD will intimately influence, now and in the coming years, the charting of a new course in the development of agriculture and natural resources in the country through relevant research and development policies and objectives.

Our celebration this week is truly a very good beginning. It is launched with a vision for progress and an atmosphere of growth and optimism. But it is by no means the end. As we move on to fashion technologies that are demand-driven and readily absorbable by end-users, I am inspired to build upon a dream that parallels that of our farmers and ultimate beneficiaries: to win the game of agri-industrialization with a trophy to be shared by all. Already this dream is half-won, with the support of the new breed of national leaders who consider Los Baños as their home. Their moral support is assured and their financial largesse is, hopefully, forthcoming.

It was T.E. Lawrence who wrote:

*All men dream but not equally.
They who dream by night wake in the day
to find that it is vanity;
But the dreamers of the day are dangerous men,
For they act their dream,
With eyes open to make it possible.*

I have shared with you my dream and the danger is we can make it possible.

New Directions in Agriculture and Natural Resources R & D

I take pride in welcoming Secretary William G. Padolina and members of the DOST Executive Committee to PCARRD. On many occasions and at different settings, we have shared views and opinions toward our common vision of improved quality of life for our people and rapid agri-industrialization. In these kinds of meetings we find strength, knowing that we are many in this struggle. Hence, we are very grateful for your presence here today.

PCARRD has just entered its 23rd year. We can still recall the many challenges that PCARRD has faced in the past, as well as the great strides it has achieved. But we continue to search for answers to some vital questions? Given present realities, where do we, in the research and development (R & D) sector, position ourselves. What is our goal for the coming decades? How can we contribute to the realization of our common vision?

When I assumed office about six months ago, I put in place certain initiatives in response to these questions. The clamor for the modernization of the production sector is great in view of recent developments in international trade relations. Hence, it has become imperative for PCARRD to come up with a blueprint for R & D priorities to increase export earnings, open new international markets, and create a multiplier effect in the domestic economy of agricultural commodities and products. Our response to the country's need to achieve global competitiveness is the Medium-Term Research and Development Plan (1995-2000) for Philippine agriculture and natural resources.

The MTRDP is anchored heavily on DOST's vanguard program - STAND for Philippines 2000. It sets the framework for PCARRD to aggressively pursue R & D intervention on various sectors such as crops, livestock, forestry, environment, farming

Presented during the PCARRD Directorate Meeting with the DOST Execom, 5 January 1995, PCARRD, Los Baños, Laguna, Philippines.

systems, and socioeconomics. The MTRDP also addresses the R & D needs of the key programs of the Department of Agriculture (DA) and the Department of Environment and Natural Resources (DENR). Through the MTRDP, PCARRD and the NARRDN will continually generate, promote, and transfer production technologies that will lead to higher rural incomes from increased farm productivity and improved raw material quality. To help the country achieve global competitiveness, R & D priorities are being geared toward providing the industry with processing technologies that would make Philippine products world-class.

An urgent task that we need to address is the acceleration of technology promotion and commercialization. The MTRDP outlines strategic efforts to undertake technology identification and area positioning, gap/risk factor analysis, technology promotion, enterprise building, networking, and advocacy. PCARRD will enhance assistance in rural entrepreneurship through trainings on management, leadership, and value orientation. The technology potential and its managerial, financial, and marketing requirements will be given emphasis to underscore the "business" nature of technology application. Technology transfer will be pursued through the principle of networking/forging linkages with the private sector, relevant agencies, local financing institutions or cooperatives to train the inroads of support services such as credit, market assistance, and infrastructure.

PCARRD has not wavered in its commitment to build a strong and effective national research and development system, and toward ensuring that R & D programs are responsive to the current needs of the country. With the nation's steady movement toward social and economic progress, we at PCARRD cannot help but feel that somehow, we have contributed to this achievement. In keeping with the tradition of priority, relevance, excellence, and cooperation in the R & D system, we are pursuing the Integrated Research and Development Program (IRDP) over the MTRDP plan period, a program that specifically seeks to identify commodities and products that have high potential in capturing a substantial share in the export market. The formulation of integrated R & D programs at the regional level is a kick-off to greater responsibilities for the regional R & D consortia. And as part of the program to enhance the role of these consortia under our research management service, we have piloted the Regional R & D Information Services (RRDIS) or one-stop-shop in three pilot sites. RRDIS envisions to institutionalize regional data gathering, processing, synthesis, and integration in support of the implementation of regional IRDPs and technology dissemination activities. In general, RRDIS hopes to hasten technology transfer and improve the overall management of regional development programs and projects for global competitiveness and people empowerment.

Relative to our mission to aggressively pursue R & D intervention to achieve global competitiveness, we have supported the strategy to increase and upgrade our national storehouse of knowledge and skills to meet present and future needs. Producing high-caliber R & D manpower through scholarship grants is among our top priorities.

PCARRD's technology transfer and commercialization activity, a key factor in agro-industrialization and sustainable development in the countryside, has likewise made commendable headways, with a number of technologies commercialized and diffused. PCARRD disseminates technologies and information to the regions, potential beneficiaries, and users of these technologies. Through the NARRDN, PCARRD conducts policy-related studies to come up with relevant policy recommendations on issues related to the agriculture sector.

Taking into account the imperatives of the times, I proposed a number of areas for consideration in the organizational development of PCARRD and the NARRDN when I assumed office five months ago. Among these is a continuous rationalization of national R & D efforts. We will ensure that our R & D manpower, infrastructure, and equipment are at par with the better systems of the world. Likewise, we will strengthen partnership with the private sector NGOs, SCUs, LGUs, and other government agencies to make R & D market-led and demand-driven. PCARRD will also be a significant player in GATT-related adjustment mechanisms and in more policy advocacy.

Following the initial success of the RRDIS in the three pilot sites, we have provided six other consortia with top-of-the-line computer systems for the one-stop-shop in the regions. The other consortia will receive theirs this year. Through these one-stop-shops, we seek to institutionalize the information highway for R & D to traffic technologies/information from the national hub to the regions and to feed the national system with ready, updated information for better decision-making.

We will continue to build the capability of our member agencies to relevant R & D. PCARRD support to stations will be used more judiciously to keep a balance in the development of member agencies.

For a more effective management of research and priority setting for focused R & D programs, we will hasten the data banking of usable technologies and information for decision-making. In the years ahead, we will tap mechanisms already in place to assist us in more effective management of research and priority setting.

To increase management in R & D, we have intensified our link with the Department of Budget and Management and Congress. We will likewise continue to strengthen institutional linkages with traditional and nontraditional donors.

Enhancing linkages with international research institutions is also one of our top priorities. I will use my representation to enhance PCARRD's role in the international R & D community.

Given these thrusts and activities, we are actually ushering in a new era in R & D, the rule of which is competition. After laying the groundwork for the effective conduct of R & D geared toward global competitiveness and people empowerment through the MTRDP, what counts next is our commitment and dedication. With this, we call for your pledge of continuous support and cooperation in steering the present and the future of this nation.

Responding to Global Concerns Through Research Management

In meeting the challenges and uncertainties of the times, research managers are faced with an enormous task. For more than anyone else, they are the ones to take the lead in the introduction of new order of events. In view of the government's vision of Philippines 2000, our role as research managers is to establish the bases for our hope and confidence that this vision will be realized. In a time like this, our role is to clear the path through which people may find refuge and security.

Once again, the Philippine Association of Research Managers (PHILARM) has demonstrated its commitment to national development goals by choosing the theme "Responding to Global Concerns Through Research and Technology Management" for this convention. As we press forward toward Philippines 2000 to attain rapid agri-industrialization, self-reliance, and global competitiveness for the country, the competence as well as the dedication of research managers nationwide becomes very crucial. For they will be in the forefront of continuing efforts to modernize the production sector and to promote industry-responsive research and development.

Philippines 2000 is a shared vision and an inspirational call to unity, a call for a strategic alliance among the key development actors of the country to rally behind the central goal of "improved quality of life for all Filipinos". The attainment of this central goal is anchored on people empowerment – on creating conditions to "enable ordinary Filipinos to take control over every aspect of their lives." This call for a better Philippines demands an aggressive response and a proactive posture from each and every Filipino, especially from us, the research managers of this country.

In meeting the challenges and uncertainties of the times, research managers are faced with an enormous task. For more than anyone else, they are the ones to take the lead in the introduction of new order of events. In view of the government's vision of Philippines 2000, our role as research managers is to establish the bases for our hope and confidence that this vision will be realized.

Welcome remarks delivered during the Fifth Annual PHILARM Convention, 6 April 1995, E.O. Tan Hall, PCARRD, Los Baños, Laguna, Philippines.

Our response must go beyond the traditional role of a "manager". A paradigm shift is necessary for us to realize that the power is in the people and not just among our ranks. In setting the course for our future actions, let us empower the people by enhancing their capabilities to participate in the development process, giving them access to development and productive resources, and allowing them ownership of enterprises. Our policy directions in R & D and technology management must be geared toward "giving the ordinary people more control and responsibility over their own lives, their livelihood, and their future".

At our end, we at PCARRD have been taking concrete steps toward people empowerment. We have been vigorously pursuing a strategic human resource development program to upgrade and strengthen the capabilities of the national agriculture and resources research and development system. In the immediate future, you will witness the birth of a Human Resource Management Center here at the PCARRD headquarters complete with training facilities such as a dormitory, conference and workshop halls. The Center shall offer nondegree training courses on research and technology management in agriculture and natural resources to cater to the need to promote people's participation in the pursuance of national development goals. For as people are trained, they become more confident participants in the development process.

Through our active involvement as research managers, Philippines 2000 is not a far vision. Let us promote research management as a field, as a profession, and most important, as a tool for national development.

To Protect our Cutting Edge

Among the marks of true ownership figure prominently the right to use what is owned and the right to dispose of it as one sees fit. These twin rights are known in legal parlance as *jus utendi* and *jus disponendi*, respectively. So that if Mang Pandoy owns a carabao but he is impeded from plowing his field with his animal because his neighbor has carted it off to the next barangay then we have a situation where Mang Pandoy's proprietary rights are impaired. He will need the cover of legal protection to correct a wrong and to restore what is rightfully his.

Today the protection of proprietary rights extends beyond such an overly simplified situation. Certainly, intangible goods may be objects of ownership. It poses many difficulties, however, to establish how one can claim original proprietorship over a product of the mind, or a new technology. The case of the AIDS virus identification protocol has been a hotly controverted issue until lately between the U.S. and France. And then again, who can claim ownership of genetic materials which are God-given for all of humanity to enjoy? A relevant concern for the National Agriculture and Resources Research and Development Network (NARRDN) is who should enjoy the legal protection for technologies generated – the researcher, his institution, or the funding agency? Perhaps the question is not who but how.

This Seminar on Intellectual Property Rights hopefully will provide a means by which the expertise available from the Technology Application and Promotion Institute of the Department of Science and Technology; from the Bureau of Patents, Trademarks and Technology Transfer of the Department of Trade and Industry;

Who can claim ownership of genetic materials which are God-given for all of humanity to enjoy? A relevant concern for the NARRDN is who should enjoy the legal protection for technologies generated -- the researcher, his institution, or the funding agency? Perhaps the question is not who but how.

Welcome remarks delivered during the Seminar on Intellectual Property Rights, PCARRD Main Conference Room, Los Baños, Laguna, Philippines, 18 July 1994, in celebration of the National Science and Technology Week by the Los Baños Science Community.

as well as from other member agencies in the network may shed light on our concerns in the area of establishing and protecting intellectual property rights. If technology be the cutting edge in the modernization of Philippine agriculture and in sustainably developing, utilizing, and managing our natural resources, then we must learn to protect it and nurture it.

This seminar is also a propitious occasion for many people from the member agencies in the Los Baños Science Community to gather to celebrate the National Science and Technology Week and for me, as your new servant leader at PCARRD, to welcome you all to the Council where a new beginning is underway.

With the help of all the members of LBSC, of the whole NARRDN, and of God Almighty we will win the future for ourselves, and our posterity and NICHood by the year 2000 will be a blessing for all.

Why and Why Not

John F. Kennedy said these lines many years ago, "Some dream of things and ask why. I dream of things and ask why not." They speak ponderously of the vision and leadership of a man who had led his country through some of the most difficult times in modern history.

I believe there is in everyone's heart a child of innocence who pesters us with questions of why and a child of adventure who insists in asking why not. Both questions are relevant to the exercise we are about to undertake today. Only those with ears of innocence and adventure can capture the import of this moment when we will have to fashion a new mold, a new game to adjust our research and development efforts in agriculture, forestry and natural resources to the signs of our times.

I warmly welcome the children in each of you to this Medium-Term Planning and Consultation Workshop and Joint Meeting of the RRDCC Chairmen and Regional Consortium Directors.

For 22 years now, PCARRD has been at the forefront of the country's R & D efforts. We have been consistently hailed as the model Council for the DOST system, and occasionally as a model apex organization for National Agricultural Research Systems (NARS) in other developing countries. Yet even as a lean and dynamic organization, we cannot afford to rest on our laurels. Out there is cutthroat competition and that means we either constantly shape up or ship out.

New developments, in fact, have materialized to dictate the terms of international relations with consequent effects on domestic policy and the well-being of our people. I refer to the formation of free-trade areas such as in Asia and in North America, as well as to the operationalization of the Uruguay

We need to think "world class" and that means doing our job well here-and-now to prepare for what will come then-and-there. We need to compete and win.

Welcome remarks delivered during the Medium-Term Planning and Consultation Workshop and Joint Meeting of the RRDCC Chairmen and Regional Consortium Directors, 29-31 August 1994, Development Academy of the Philippines, Tagaytay City, Philippines.

Round of the General Agreement on Tariffs and Trade (GATT). It will not be sufficient for us in R & D to think only in terms of safety nets against the adverse impacts of these developments to our predominantly agricultural economy. It will be vital to extend our vision-setting and program planning even beyond the 10-year grace period the GATT has conceded to developing countries. We need to think "world class" and that means doing our job well here-and-now to prepare for what will come then-and-there. We need to compete and win!

When I assumed the leadership of PCARRD barely two months ago, I outlined a seven-point statement that adventurously asked a number of why nots. I continue to ask similar questions. Why not, indeed, an incentive for the most outstanding consortium? For a start, a million pesos can create an itch that we hope all 13 consortia will scratch. And if PCARRD has recognized, with prestigious awards, outstanding contributions in science and technology as well as in research management, why can we not recognize the efforts of those who move technologies from our laboratories to the end-users? Or why not recognize research management service teams of reference? Why not, indeed? And why not indeed harmonize the efforts of all the line agencies and departments of the government so that R & D will be a synergistic, cooperative effort instead of duplicative and antagonistic?

This planning workshop will give us time and space to dream and ask our questions. But it must also challenge all of us, young and old, to provide some answers. Let not the conducive ambiance of this mountain top hideaway induce you to slumber in the sleep of your dreams, for over there, in the valley of our harsh reality, our people and government are waiting for their turn to ask us why and why not.

Toward a More Responsive Financial Management System

For 23 years now, PCARRD has been at the forefront of the country's R & D efforts, making sure that such activities are responsive to the needs of the nation. We have committed ourselves to the attainment of social and economic progress through a well-coordinated, intensified, and relevant research and development.

True enough, the impact of R & D on agriculture, which is the lifeblood of Philippine economy, has been significant in recent years. Technological breakthroughs generated through research have contributed to increase in productivity attributed to the use of improved varieties, farm management, and land/resource use.

And while investments in R & D have been limited, this did not stifle our initiative and creativity. We have established the National Agriculture and Resources Research and Development Network (NARRDN) as a scheme for the efficient use of limited resources, so that high rates of return to R & D investments have been achieved.

But lessons and experiences of the past have shown us that we could have accomplished more. Serious setbacks in the productivity and efficiency of the research community have been attributed not only to underinvestment but to the stringent administrative constraints hampering R & D activities. The regulatory, rather than facilitative ways in which government institutions have been handling finances have been causing so much frustrations for our scientists.

These setbacks became the bases for PCARRD's perseverance to come up with the Accounting and Auditing Manual for Research Operations (AAMRO). The AAMRO represents the long-sought solution for

Welcome remarks delivered during the Orientation Seminar on the Accounting and Auditing Manual for Research Operations and Financial Management Dialogue, 15-16 June 1995, PCARRD, Los Baños, Laguna, Philippines.

administrative reforms and a system for incentives that will encourage and stimulate researchers to undertake more relevant and quality R & D programs and activities vital to national development. With this Manual, we hope to see our researchers and scientists given more flexibility as well incentives to strive for more significant endeavors.

New developments have materialized to dictate the terms of international relations with consequent effects on our R & D programs. As well, with the government's Philippines 2000 vision of global competitiveness and rapid agri-industrialization, it will be vital for us in the R & D to think of more relevant and effective technology development and transfer programs for us to gain a "world class" standard. Once again, this points to the pivotal role of R & D in the effort to push national progress and development to a higher level.

This workshop will give us the time and space to reflect on our institutions' financial problems and consequently to find solutions to these constraints toward better productivity and efficiency. Through the more liberal guidelines contained in the AAMRO, we hope to encourage more fruitful endeavors and significant results in the field of R & D.

Sustainable Agriculture and Food Security

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Unless
sustainable food
security is
achieved.*



More Food for the Hungry

The vision of a better, more prosperous world for all is tempered by the reality of acute poverty that persists in many developing countries today. The threat of hunger looms over millions of people worldwide, killing thousands of human beings – mostly children – daily. Today and everyday, the deaths mount, not from famine or disaster but from a “silent” assault that claims its victims just as relentlessly.

To allow such deprivation and suffering is intolerable, especially in a world where potential food sources abound. While having enough food is a fundamental concern, 20% of the global population today are too poor to obtain sufficient food to sustain normal work.

A much larger failure looms in the future. In the middle of the next century, the world will have to feed 10 billion people or more, half of them in Asia. World food output must triple over the next 50 years if the people are to have nutritionally adequate diet. And not only must people be fed; they must have gainful employment opportunities to ensure a life of dignity.

However, at today's rate of consumption of our natural resources, and with our generation's reckless, irresponsible attitude toward its environment, the world is not prepared for such a challenge. Our generation will be held responsible for literally eating up what Nature has developed over millions of years.

Today's failure to feed the people may be but a prologue to a much intense failure in the future. Amid the erosion and depletion of soil and water resources and the loss of croplands and forest cover, man's dream of a dignified existence free of hunger may remain only as that – a dream. Unless sustainable food security is achieved.

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Message delivered during the National Rice R & D Program Review and Planning Workshop, 1 March 1995, PhilRice, Muñoz, Nueva Ecija, Philippines.

Sustainable Food Security

The challenge of sustainable food security is immense. Population growth and rising incomes will continue to fuel increases in the demand for food. Our immediate response is to fuse the goals of household food security with sustainable agriculture. Our development efforts must be a concern with food, people, and agriculture. Sustainable food security banks on the human-development perspective. It explores the interface between people living from the land and the technology most appropriate for sustainable and efficient production.

In most poor countries, increased agricultural production translates to rapid economic growth. In the attainment of sustainable food security, the challenge is to increase agricultural production in a way that meshes with the overall sustainable development objectives of the country. Sustained growth in agricultural production must likewise be accompanied by improved productivity. A basic development task is to increase the number of jobs in the agricultural sector while continuing to improve labor productivity.

Any attempt toward sustainable food security must include strenuous efforts to preempt the growing population and to increase the opportunities and choices offered to women. With world population expected to double in some 50 years, the pressure continues to constrain the goal to feed most of humanity. Another concern has to do with secure access to land and capital, particularly by vulnerable groups – the poor.

In the past, the main response to the need for more food was to put more land into agriculture. This, however, has dissipated and ravaged the croplands of the world. Today, the consequent need is to strike a trade-off between higher productivity and protection of the environment. Increasing agricultural production while simultaneously safeguarding the environment is perhaps the most fundamental challenge for development. Feeding the world will require new sources of energy, energy-efficient technologies that avoid pollution and environmental degradation, and more investment in infrastructure that will last.

Revitalizing Rice Production

Globally, people have come to realize that one concrete entry to sustainable food security is to put cereal production growth back on track. A call for a "second green revolution" has been resounding.

Against a backdrop of slowing food security improvements, efficient resource planning and management to provide a comprehensive, adequate support for producers in selected "rice bowl" areas have been spun. Here in the Philippines, our response to this resounding call to revitalize rice production and hence, win the battle against hunger and malnutrition is the establishment of PhilRice.

Within the country's agricultural sector and the whole economy in general, rice is the most important and dominant commodity. Rice is the staple food of more than 80% of the population. In addition, 70% of the population, mostly small farmers and rural landless, depend on rice farming and marketing for their livelihood. Being the staple food, rice is thus the Filipino's main source of carbohydrates and protein, contributing 35% of the total calorie intake.

The establishment of PhilRice in 1985 changed the face of Philippine agriculture. For one, it underscored the strategic importance of rice to Filipinos. It is by far the most concrete step that the government has ever taken in ensuring sustainable food security for the country, and in eliminating hunger and poverty among its people. PhilRice has placed the country in a better position to solve its food problems.

We have been witness to PhilRice's achievements not only in revitalizing rice production but also in upholding the principles of sustainable agriculture in aiming for the country's food security. You have developed, improved, and stabilized yields of location-specific varieties. You have worked toward improved and sustained soil productivity and efficient planting methods. Through integrated nutrient management, you have identified organic fertilizers and developed planting methods that bring about substantial yields and savings to farmers.

Through your integrated pest management program you have developed and adapted practical and cost-efficient pest management approaches that maintain environmental balance. Profitable cropping systems and low-cost management practices have been developed. Farm mechanization and better use of land and water resources have been important concerns.

Emerging Challenges

You may have accomplished a lot in just a decade of existence, but the challenge is far too great to be met. In your deliberations during this National Rice R & D Program Review and Planning Workshop, let me pose to you some areas for consideration.

Make the people the ultimate focus for rice research. Understand them better – how households and communities manage their resources – for a more people-oriented research priorities and policies. Make extra effort in sustaining the natural resource base in rice farming. Preserve and conserve the genetic diversity of rice, as well as soil, water, and biological activity. Increase the land's productivity through the adoption of modern high-yielding varieties. Protect the environment and human health, while helping poor farmers improve the profitability of their rice-based systems. Lastly, take advantage of the synergistic benefits from working in collaboration or in partnership with other research institutions.

A good deal has been said on how to eliminate hunger and malnutrition and on how to attain sustainable food security for the benefit of the people – that development efforts must encompass not only food production but also socioeconomic factors such as sustainable livelihoods, implications of population growth, and environmental degradation; that economic growth is a necessary, though not sufficient, condition for eradicating hunger; that food security must be fused with labor productivity.

Words are not enough, though. Before it becomes irreversible, let us not waste time in marshalling our political will to achieve our vision of a hunger-free nation.

Sustainable Agriculture and Global Competitiveness Toward Philippines 2000

By the turn of the century, the persistent and dominant image of the country is a nation empowered, its resources stretched and sustained to optimal capacity, and its industries, products, and services of world-class standard. Under the government's vision of Philippines 2000, we see the science and technology sector as taking an active role in the attainment of the central goal of "improved quality of life for all Filipinos".

Philippines 2000 is an inspirational call to unity, a call for a strategic alliance among the key development actors of the country to rally behind the dream of self-reliance, modernization, and global competitiveness for the nation. The attainment of this vision is anchored on people empowerment – of creating conditions to "enable ordinary Filipinos to take control over every aspect of their lives – their livelihood, their politics, and their culture". This call for a better Philippines demands an aggressive response from each and everyone of us, especially from you, the youth.

Over the years, the S & T sector has persevered to illustrate that technology generation through research and development is the principal instrument in solving a number of the country's ills. Some words of caution, though, must be said in this regard.

The challenges that face us in the realization of Philippines 2000 in which you, the youth, will have an enormous task to pursue, are complicated by development implications growing out of recent trends in the global scene.

Global excellence or world competitiveness is one objective of Philippines 2000. This calls for a situation in which Filipinos are able to produce world-class products for the world market and are able to compete against imports in the domestic market on an even footing.

Over the years, the S & T sector has persevered to illustrate that technology generation through research and development is the principal instrument in solving a number of the country's ills.

It seems apparent though that we must first face a host of critical questions that relate to finding a balance between the provision of an adequate supply of locally produced critical commodities through research and development, and of maintaining a balance in our ecosystem. While aiming for global competitiveness, another battle has to be won – that against the intolerable demands that humanity is making on the the environment that may eventually cause the natural systems to break down.

Under the Philippines 2000, our twin goal in the S & T sector is sustainable agriculture and global competitiveness.

The challenge of sustainable agriculture is immense. At today's rate of consumption of our natural resources, and with our generation's reckless, irresponsible attitude toward the environment, we will be held responsible for literally eating up what Nature has developed over millions of years. Amid the erosion and depletion of soil and water resources and the loss of croplands and forest cover, our dream of becoming a newly industrializing country through global excellence may remain only as that – a dream.

Agricultural sustainability is the continuing productivity of agriculture while maintaining the resource base and minimizing adverse environmental effects from farming activities. In the past, man's main response to the ever-increasing demand for food and to the pressure of global competitiveness in agriculture was to put more land into production. This, in effect, has led to the global dissipation and ravaging of croplands and forest covers. Hence, you, the new generation, must redeem what past generations have done. Your vital role as the nation's partners in the attainment of its vision is to strike a balance between increasing quality and quantity of produce and safeguarding the environment.

In your search for new directions, new trajectories of change will open as you usher in a new era of technology generation. In the context of Philippines 2000, you have to respond by being actively involved in effecting rapid agri-industrialization, self-reliance, and modernization of the production sector. Our strategy in the S & T sector is to promote the development and use of technologies for sustainable agriculture and to achieve competitiveness in a global market. As we envision a more open economy in the near future, let us harness S & T toward the improvement of the quality and productivity, and toward the use of least-cost components and advanced technologies in agriculture and natural resources.

With this, I would like to extend my warmest greetings to all the graduates. Today marks another big step toward your struggle for a brighter tomorrow. I hope that somehow, the vision of a Philippines 2000 will guide you in your career path.

As alumni of the Cotabato Foundation College of Science and Technology, you are expected to carry on the standards of excellence that this institute of learning has instilled in you in your quest for a better life. As young, enlightened persons, you shall be greatly instrumental in the realization of the country's development goals.

I call on you to respond to the needs of the times. This is a hard life for most of us. So much so that you should make the best of whatever opportunity that comes your way.

Even during hard, troubled times when Mindanao was known only to many as a seething area of discontent, this land has remained resilient. From this knowledge stems my confidence that the youth of this region will remain undaunted in the face of new challenges and opportunities of the times. On your shoulders rest the fate of this promised land which, true to its form, is now considered a growth area

where meaningful programs are harnessed in response to the imperatives of national development.

Your battle has just begun, for you still have a long way to go. Always be armed with perseverance. Maintain excellence and productivity in your work. Be guided by truth and service to people. Confront every blow with integrity, honesty, and discipline. Most important, harness a genuine commitment to God and your country.

The air is full of speculations on what lies ahead. Though this College has persevered in molding you through the years, today is only an entry point to a bigger, more challenging world. In your search for new directions, may you reflect on your significant role amid the vision of a Philippines 2000 – of improved quality of life for all Filipinos. Bear in your hearts and minds that sustainable agriculture and global competitiveness are the key toward the realization of the dream of abundance for the majority of our people.

My warmest congratulations to the graduates and their parents.

A Vision of Sustainable Agriculture Through the Farming Systems Approach

The threat of hunger looms over millions of people worldwide, killing thousands of human beings – mostly children – daily. Today and everyday, the deaths mount not from famine nor disaster but from a “silent” assault that claims its victims just as relentlessly. To allow such deprivation and suffering is intolerable, especially in a world where potential food sources abound.

Today’s failure to feed the people may be but a prologue to a much intense failure in the future. Amid the erosion and depletion of soil and water resources and the loss of croplands and forest cover, man’s dream of a dignified existence free from hunger may remain only as that – a dream. Unless sustainable agriculture is achieved.

Friends and colleagues in the Association, I welcome you to this visioning workshop with an immense challenge – a call for us to address the alarming implications of a rapidly growing population, the unabated dissipation of the world’s resources, and the fueling increases in the demand for food.

In this visioning workshop, our immediate task is to set the course for the farming systems approach to effect sustained growth in agricultural production. With world population expected to double in the next decades, the pressure continues to constrain the goal to feed most of humanity.

In the past, man’s main response to the ever-increasing need for food was to put more land into agriculture. This, in effect, has led to the global dissipation and ravaging of croplands and forest covers. Hence, as we set the direction of farming systems for the next decade, let us consider bringing back to productive use the vast resource-

Opening remarks delivered during the Asian Farming Systems Visioning Workshop, 3 April 1995, PCARRD, Los Baños, Laguna, Philippines.

poor environments of Asia, and not just focus our efforts on the favorable environments of the region.

Feeding the world will require new sources of energy, as well as energy-efficient farming technologies. Today, the consequent need is to strike a balance between higher productivity and environmental protection. Increasing agricultural productivity while simultaneously safeguarding the environment is perhaps the most fundamental challenge for us in the field of farming systems.

This two-day visioning workshop brings us to performing tremendous yet fruitful tasks. I am confident that with our common commitment, significant results will be arrived at. Let us be reminded of the long-term good that this workshop will bring not only to us but also to the generation to come.

May this event turn out to be truly rewarding.

The Asian Vegetable Network: A Masterplan Toward the Attainment of Food Security in Asia

The problem of hunger manifests itself not only in terms of starvation and death, but also in mental deprivation as a result of protein, vitamin, and mineral deficiencies. Among the poor population of Southeast Asia, far too many children suffer from malnutrition and ill health. Malnutrition takes several forms and has many causes, but with only one cure – an adequate and well-balanced diet.

The Asian Vegetable Network or AVNET is one big step toward the attainment of food security in Asia through the increased production of protein, minerals, and vitamin-rich vegetable foods. While in the past the production and consumption of vegetables have suffered serious setbacks, the situation is now changing. Globally, people have come to realize that increased vegetable production and consumption are the key toward winning the battle against hunger and malnutrition.

We are thus very proud to be a part of AVNET in pursuing its commitment to improve the Asian diets. We are as well honored to host this important event – an interlocking of efforts to secure the nutritional well-being of the Asian people.

AVNET has really come a long way. The first vegetable network ever established by the Asian Vegetable Research and Development Center (AVRDC), it has given birth to a new strategy that banks on the sharing of resources and improved vegetable germplasm and technology among participating countries. Triggered by the valuable lessons and experiences gained in the first phase of AVNET's implementation, similar vegetable networks have been established in South Asia, Africa, and Latin America. It was as well due to the

Globally, people have come to realize that increased vegetable production and consumption are the key toward winning the battle against hunger and malnutrition.

Welcome address delivered during the AVNET Midterm Workshop, 21 February 1995, PCARRD, Los Baños, Laguna, Philippines.

first phase's success that AVNET-II came into being, primarily aimed to sustain the momentum gained from AVNET-I.

Indeed, we have all been witness to the strength of the network strategy. Through AVNET, the stage was set for a close cooperation among the national agricultural research systems (NARS) in the region in terms of vegetable research and development. The research capabilities of the participating NARS are enhanced through complementation in skills training and infrastructure development, and through the exchange and sharing of germplasm, valuable technology, and research information. The network likewise facilitates the transfer of mature technologies generated by research to the farmers. More important, AVNET encourages farmers to grow more vegetables by making available to them improved varieties and technologies.

The continuing population growth in the 1990s is expected to increase the demand for all foods, including vegetables. With AVNET, we hope to be able to meet this demand. This mid-term workshop will give us time and space to assess our strength and prepare us for the challenges ahead. It is a perfect venue for us to review our existing programs and incorporate appropriate features and changes to further improve vegetable production in the region and, thus, win the battle against hunger and malnutrition.

In Winning the Battle Against Hunger and Malnutrition

The threat of poverty and hunger continues to haunt millions of people in the developing world. In many countries, this threat is compounded by malnutrition, particularly among children, for lack of vitamins and minerals and other essential nutrients. Aggravating the problem is the increasing demand that the continuing population growth is extolling on food supply. Unless intensive efforts are undertaken to improve production, this pressing demand may soon put most food products, particularly food crops, out of reach of poor consumers.

Food legumes and coarse grains are vital components of the diet of many Asian countries. They are an important source of protein and fat, especially of people in low-income areas. Likewise, these crops are a valuable supplement to the cereal-based diets of people in places where animal protein such as milk, meat, and fish are less available. Such is the case that an increased production and improved handling of food legumes and coarse grains have great potential to enhance the nutrition of urban and rural poor families in developing countries, and may yet be the key to the attainment of their food security.

Food legumes and coarse grains also play a valuable role in increasing farmers' income and in providing greater opportunities for employment. In Asia alone, these crops are prominent in the rice-based farming system. They are cultivated over a wide range of environments from semi-arid to humid tropics – mostly as rainfed crops on a small scale by smallholder farmers – and are grown in rotation with rice, usually following the rice crop. Food legumes and coarse grains are also important as a component of animal feeds and as major source of biological nitrogen.

PCARRD takes pride in being a part of this international initiative to promote the production and consumption of food legumes and coarse grains in Asia. These kinds of efforts are what give us hope that someday, the fight against hunger and malnutrition shall be won.

Welcome address delivered during the Fourth Regional Coordination Committee Meeting of RAS/89/040, 23-24 January 1994, PCARRD Headquarters, Los Baños, Laguna, Philippines.

It is unfortunate to note, hence, that despite their significant importance, food legumes and coarse grains are still considered as minor crops in most developing countries. From among the reasons that contribute to the low status of this group of food crops, one immediate concern is the limited capacity of national institutions to solve the problems and accelerate progress in research and production. And what better way to resolve this issue than through international and regional collaboration.

Consequently, there is tremendous scope for collaboration to meet the R & D needs for food legumes and coarse grains in Asia. I therefore commend the participants in this Fourth Regional Coordination Committee Meeting of the RAS/89/040 Project for taking advantage of the opportune time to build upon your experiences to push for the establishment of the Food Legume and Coarse Grain Network (FLCGNET) for Asia-Pacific Region. Collaborative research, technology transfer, and institution building are mutually reinforcing activities. You can exploit the special strengths of networking to accelerate capacity building and to promote synergy and complementation among national partners. Networking will move you progressively toward greater emphasis on strategic research, and toward forging new linkages and keeping abreast with the rapidly advancing technological changes.

May this gathering facilitate the formal and complete establishment of the FLCGNET for Asia-Pacific Region. I pray that you be equipped with all the energy, dedication, and sense of mission to be able to come up with ways to speed up the realization of the FLCGNET. Once this network is in place and operational, differences in needs and capabilities among national partners can be addressed more effectively, while your collective capacity to solve problems of common interest can be mobilized more actively.

PCARRD takes pride in being a part of this international initiative to promote the production and consumption of food legumes and coarse grains in Asia. These kinds of efforts are what give us hope that someday, the fight against hunger and malnutrition shall be won.

Toward Philippines 2000

Philippines 2000 is an inspirational call for unity, a call for a strategic alliance among the key development actors of the country to rally behind the dream of self-reliance, modernization, and global competitiveness for the nation. The attainment of this vision is anchored on the twin strategy of people empowerment and global excellence.



A Globally Competitive Philippine Crops Industry

The persistent and dominant image of the country by the turn of the century is a nation empowered, its resources stretched and sustained to optimal capacity, and its industries, products, and services of world-class standard. Under the government's vision of Philippines 2000, the science and technology sector takes an active role in the attainment of the central goal of "improved quality of life for all Filipinos".

Philippines 2000 is an inspirational call for unity, a call for a strategic alliance among the key development actors of the country to rally behind the dream of self-reliance, modernization, and global competitiveness for the nation. The attainment of this vision is anchored on the twin strategy of people empowerment and global excellence.

People empowerment banks on creating conditions to "enable ordinary Filipinos to take control over every aspect of their lives – their livelihood, their politics, and their culture". Empowerment consists of three aspects: enhancing the capabilities of the people to participate in the development process; giving them access to development and productive resources; and allowing them ownership of enterprises.

Global excellence or world competitiveness, on the other hand, calls for a situation in which Filipinos are able to produce world-class products for the world market and are able to compete against imports in the domestic market on an even footing. This strategy is prompted by recent developments in international trade relations such as the country's participation in the Asian Free Trade Agreement (AFTA) and the General Agreement on Tariffs and Trade (GATT). Where global interdependence is increasing, a country's capacity to produce a wider range of products and

*Through the
STAND, we share
the conviction of
the government to
touch upon the
corporate
consciousness of
the Filipinos on
quality and
productivity. Our
R & D agenda for
crops address
opportunities for
our products to
gain global
competitiveness.*

Delivered during the Federation of Crop Science Societies of the Philippines (FCSSP) 11th Annual Scientific Conference, 24 April 1995, Siliman University, Dumaguete City, Philippines.

offer opportunities comparable to those in the rest of the world is a test of national viability and world competitiveness.

To be internationally competitive, however, some preconditions must be met. For one, in a more open economy, there is a need for entrepreneurs to improve productivity, use least-cost components, newer technologies, and advanced managerial knowhow. This is the enormous challenge that we in the S & T sector have to face.

Over the years, the S & T sector has persevered to illustrate that technology generation through research and development is the principal instrument in responding to most of the country's development goals. Once again, we at DOST seek to pursue this line of commitment through the Science & Technology Agenda for National Development or the STAND Philippines 2000.

In line with the vision of a newly industrializing country by the turn of the century, the STAND spells out the areas that will be the focus of national scientific and technological efforts under Philippines 2000. It emphasizes the development and utilization of superior technologies to a level of competitive advantage. At the same time, the STAND rallies behind the concept of people empowerment as it seeks to teach the ordinary Filipinos the use of technology to enhance their skills and optimize their productivity and to promote self-reliance in the modernization of the production sector.

The realization of the STAND's objectives is dependent on six major strategies. In order to cope with modern market forces, we shall work toward the mastery and application of emerging technologies such as microelectronics, biotechnology, materials science, and information technology. We shall also seek to increase private sector participation in the identification, selection, and utilization of technologies to improve productivity. The STAND shall likewise promote the networking approach, tapping institutions from the private industry, other line agencies, the academe, and NGOs in its implementation. Meanwhile, to meet present and future needs, the STAND shall simultaneously increase and upgrade the country's S & T manpower. A continuing review of policy-related impediments to S & T development shall be undertaken, while global developments and technology advances relevant to Philippine needs shall be actively monitored.

The STAND's priority areas include the export winners, basic domestic needs, support industries, and the coconut industry. From among these priority areas, the crops industry takes a prominent position. Thus, I take this opportunity to call on you, the top crops scientists of the country, to be one with us in our efforts to make the crops industry globally competitive.

As part of our commitment to the development of the crops industry, we at the National Agriculture and Resources Research and Development Network (NARRDN) have outlined strategic efforts to undertake R & D program for major commodities. We shall seek to address the goals of export generation and self-sufficiency. Our major strategies shall include increasing production and stabilizing supply for basic commodities; improving quality of products and by-products as well as increasing hectareage and productivity for export-led commodities; developing new products with competitive advantage; and increasing utilization of cost-effective technologies under local conditions.

Under the STAND, we have identified mango, banana, papaya, pineapple, and durian as the major export winners. The R & D program for these major fruit crops shall support and complement the various technology transfer activities on varietal improvement, nursery management, integrated pest management (IPM), cropping patterns, and socioeconomics.

Ornamental horticultural crops likewise hold potential as emerging export winners. On cutflowers and foliage, R & D intervention shall include sustained breeding program, pest and farm management, postharvest handling and packaging, and socioeconomics.

Basic crop commodities under the STAND include rice, corn, vegetables, legumes, and sugarcane. R & D intervention on these crops shall aim to lower production costs through the development of suitable varieties that could be profitably grown in key production areas. Likewise, research shall focus on biotechnology, integrated pest management (IPM), soil and water management, postharvest handling and processing, and seed production.

On coconut, the R & D program to revitalize the industry, where one-third of the country's population depends on, shall focus on the generation and transfer of appropriate production and processing technologies, products for domestic and export markets, and sufficient information for proper technology utilization.

Our ultimate goal in all these R & D efforts is to assure that by the turn of the century, we shall witness the availability of technologies, products, services, and information needed for sustaining the country's competitive advantage and self-sufficiency in crops. For the export winners, we expect that export earnings are maintained to increase by 10% yearly, postharvest losses are reduced to 5%, and tree productivity for each fruit commodity has increased to the desired level. For the basic commodities, a significant increase in productivity, hectarage, and consumption is expected. On coconut, more dollar earnings by at least 37% is targetted. For ornamentals, an earning of about \$10 million by the year 2000, assuming an annual growth rate of 34%, is envisioned.

Through the STAND, we share the conviction of the government to touch upon the corporate consciousness of the Filipinos on quality and productivity. Our R & D agenda for crops address opportunities for our products to gain global competitiveness.

On this note, we enjoin you to also share with us this conviction. Let us be one in nursing our country's economy back to health and in propelling it to a sustained growth.

The Philippine Mango: A Globally Competitive Commodity

Mango is not the Philippines' national fruit for nothing. One of the first fruits known to mankind, mango is relished by Filipinos for its superior taste and unique flavor. Philippine mango is considered to be the world's best in terms of sweetness and quality. Anyone who has tasted Philippine mangoes is bound to agree with this. Mango has also been a source of pride for millions of Filipinos as it earns dollars for the country and provides livelihood to thousands of families.

The Philippines is now the seventh leading producer of mango in the world. From a simple backyard income-generating venture, mango has become a major foreign exchange earner for the country. The Philippines' fresh mango export volume has more than tripled in the past eight years. Processed products are likewise major sources of revenue.

The potentials of the booming mango industry is endless. It presents an array of business opportunities for budding entrepreneurs. The strategic location and proximity of the Philippines to major importing countries place the country in favorable position to trade both fresh and processed mangoes in the world market.

It is, thus, disheartening to note that despite the country's comparative advantage in mango production, it has not yet fully developed its domestic market, while vast exports still have to be tapped.

As a commodity with a great commercial value, stirring the commercial interest and aggressively pursuing R & D intervention on the fruit could yet be the key to the full realization of mango's commercial potential. Within the framework of the STAND for Philippines 2000, the

With many of the major cultural problems in mango now rendered manageable, mango's potential in contributing to the country's economic take-off by the turn of the century is enormous.

Delivered in behalf of Dr. W. D. Dar by Dr. Ester L. Lopez, Director, Crops Research Division of PCARRD, during the opening ceremonies of the First Mango Forum and Exhibit, 9 March 1995, Department of Horticulture, University of the Philippines Los Baños (UPLB), College, Laguna, Philippines.

vanguard program of DOST, we have identified mango as an export winner – as one among products and commodities that have high chances of capturing a substantial share in the export market.

As part of PCARRD's commitment to the development of mango as a globally competitive commodity, we at the National Agriculture and Resources Research and Development Network (NARRDN) have outlined strategic efforts to undertake an R & D program for major export winners such as mango. This R & D program supports and complements various technology transfer activities on varietal improvement, nursery/orchard management, integrated pest management, cropping patterns, and socioeconomic. Through this R & D support to export winners it is expected that by the year 2000, export earnings are maintained to increase by 10% yearly, postharvest losses are reduced to 5%, and tree productivity has increased to the desired level. Specifically for mango, the target output of R & D intervention in support of the General Agreement on Tariffs and Trade (GATT) is an increased hectareage and tree productivity from 200 to 500 kg/tree.

The key to all this is global competitiveness. With mango's enormous potentials, we should be able to come up with world-class products for the world market that offer opportunities comparable to those in the rest of the world. In view of recent developments in international trade relations, the country could take advantage of the lower tariff in the export market. Upon implementation of the GATT-UR agreement, Japan is expected to reduce its tariff on fresh and dried mangoes from 6% to 3%, and offer GSP privileges that will allow Philippine mango to enter the country duty-free. This may yet be the opportunity that will revolutionize the Philippine mango industry.

We commend your efforts in bringing together various sectors in a forum to thresh out the impediments to the growth of the Philippine mango industry. Given the changing times, the local industry must quickly take a positive direction to enable it to regain its lead in the world market.

With many of the major cultural problems in mango now rendered manageable, mango's potential in contributing to the country's economic take-off by the turn of the century is enormous.

Responding to Global Challenges Through Pest Management

Growing enough food to feed the nation's ever-rising number of hungry mouths is putting great pressure on the country's fragile environment. At the current rate of consumption of our natural resources, and with our reckless, irresponsible attitude toward the environment, our generation will be held liable for literally eating up what Nature has developed over millions of years.

For us in the research and development sector, sustainable food production translates into ways to protect the environment and human health while helping poor farmers improve the profitability of their crop-based systems. Our concern includes environmental and health problems resulting from unsafe use of pesticides, and the need to find less expensive methods of pest control. This concern impels us to reevaluate pesticide use as a way to increase production in meeting the growing demand for food, and instead turn to integrated pest management.

The development of an IPM strategy requires knowledge based on a combination of strategic and applied research. It necessitates the investigation of the ecological factors that affect pests, and the designing and evaluation of new control methods. It also depends on farmer participation, and most especially, on changes in public policy.

In view of the government's vision of Philippines 2000, pest management will play a much more demanding and critical role – one that goes beyond the issue of increased food production to feed the people, but takes into account the current trend in international trade relations. Pest management, more than anything else, will take a prominent spot as the nation thrives toward global excellence.

Global excellence or world competitiveness as a strategy to realize the vision of Philippines 2000

For us in the R & D sector, sustainable food production translates into ways to protect the environment and human health while helping poor farmers improve the profitability of their crop-based systems. Our concern includes environmental and health problems resulting from unsafe use of pesticides, and the need to find less expensive methods of pest control.

Message delivered during the Weed Science Society of the Philippines (WSSF) fellowship night, 26th Annual Scientific Conference of the Pest Management Council of the Philippines, 3 May 1995, La Trinidad, Benguet, Philippines.

calls for a situation in which Filipinos are able to produce world-class products for the world market and are able to compete against imports in the domestic market on an even footing. This strategy is prompted by recent world market developments such as the country's participation in the Asian Free Trade Agreement (AFTA) and the General Agreement on Tariffs and Trade (GATT). Where global interdependence is increasing, a country's capacity to produce a wider range of products and offer opportunities comparable to those in the rest of the world is a test of national viability and world competitiveness.

To be internationally competitive, however, some preconditions must be met. For one, in a more open economy, there is a need for entrepreneurs to improve productivity, use least-cost components, newer technologies, and advanced managerial know-how. This is the enormous challenge that you in the pest management sector have to face.

Over the years, national research and development efforts have illustrated that technology development and generation is the principal instrument in realizing most of the country's development goals. In pursuance of this line of commitment, I call on you once again to respond to the challenge of Philippines 2000 for the country to achieve the twin goal of global competitiveness and sustainable food production by the turn of the century.

We take active part in this national call for unity under the Philippines 2000 vision through the Science and Technology Agenda for National Development or STAND. The STAND spells out the areas which will be the focus of national scientific and technological efforts. It emphasizes on the development and utilization of superior technologies to a level of competitive advantage. At the same time, the STAND rallies behind the concept of people empowerment as it seeks to teach the ordinary Filipinos the use of technology to enhance their skills and optimize their productivity and to promote self-reliance in the modernization of the production sector.

Once again, we knock on the doors of the pest management experts in our pursuance of the STAND, with its priority areas to include export winners, basic domestic needs, support industries, and the coconut industry.

At the National Agriculture and Resources Research and Development Network (NARRDN) we have outlined strategic efforts to undertake R & D program for major commodities, a major component of which is pest management. We shall seek to address the goals of export generation and self-sufficiency. Our major strategies shall include increasing production and stabilizing supply for basic commodities; improving quality of products and by-products as well as increasing hectareage and productivity for export-led commodities; developing new products with competitive advantage; and increasing utilization of cost-effective technologies under local conditions.

Under the STAND, we have identified mango, banana, papaya, pineapple, and durian as the major export winners. The R & D program for these major fruit crops shall support and complement the various technology development and transfer activities on varietal improvement, nursery management, cropping patterns, socioeconomics, and most important, integrated pest management. Specifically for mango to achieve global competitiveness, R & D intervention shall be done on the problem of high incidence of postharvest pests and disorders. For banana, pineapple, papaya, and durian, increase in quality and productivity shall be sought through pest control and proper production management, as well as studies on physiological disorder diseases.

For basic commodities such as corn, rice, and legumes, pest management intervention shall include validation and packaging of location-specific IPM technologies, and continuous search for microorganisms with high ability to control insect pests and diseases.

Meanwhile, for ornamentals, pest management with emphasis on the conservation of beneficial organisms shall be developed.

Our ultimate goal in all these R & D efforts, especially on pest management, is to ensure that by the turn of the century, we shall witness the availability of technologies, products, services, and information needed for sustaining the country's competitive advantage and self-sufficiency in crops. For the export winners, we expect that export earnings are maintained to increase by 10% yearly, postharvest losses are reduced to 5%, and tree productivity for each fruit commodity has increased to the desired level. For the basic commodities, a significant increase in productivity, hectareage, and consumption is expected.

Pest management is crucial to the realization of Philippines 2000. Development efforts, however, encompass not only food production but also socioeconomic factors such as sustainable livelihoods; that economic growth is a necessary, though not sufficient, condition for eradicating hunger; that food security must be fused with labor productivity.

Pagpapaunlad ng Agro-Industriyalisasyon

Kinagawian na natin na sa ganitong pagtitipon, ang PCARRD at ang kanyang mga kabalikat sa Los Baños Science Community ay palagiang naglulunsad ng mga makabagong teknolohiya na bunga ng masusing pananaliksik dito sa bansa upang ipaabot ang mga ito sa ating mga magsasaka at sa lahat ng makikinabang nito. Ang pagsasanay na ito ay nababatay sa ating adhikain na ang siyensiya at teknolohiya ay mai-tugma sa pangangailangan ng mga magsasaka at, gayun din po, na ang ating mga magsasaka ay mabigyan ng pagkakataong maipahayag ang kanilang mga suliranin tungkol sa pagsasaka.

Lubos po ang aming kagalakan na kayong lahat ay dumalo sa talakayang ito kasama ang mga kinatawan ng sektor ng pangangalakal at pananalapi. Ang kanilang pananaw ay makakatulong upang makamtan nating lahat ang wastong kaalaman tungkol sa potensyal ng mga teknolohiyang ito sa pamilihan at pangangalakal.

Ito rin pong ating talakayan ay bahagi ng pagdiriwang ng Linggo ng Agham at Teknolohiya ng Los Baños Science Community. Ang ating tema ay ang Pagpapaunlad ng Agro-industriyalisasyon sa Pamamagitan ng STAND 2000.

Hinggil po dito, may ulat na ang sektor ng pagsasaka ay inaasahang lumago sa may 3.1% hanggang 3.6% sa taong kasalukuyan at may 4.4% sa susunod na taon. Ang magandang panahon ang siyang nagpapatibay ng ating mabuting pagpapalagay na ang sektor ng pagsasaka ay muling babangon para sa kabutihan ng nakararami. Sa pakikipagtulungan ng lahat at sa gabay ng Maykapal, makakamit natin ang pangarap na ito.

Sa aking panunungkulan dito sa PCARRD ay nais kong bigyan ng panibagong sigla ang sistema ng pananaliksik dito sa ating bansa. Kaalinsabay

Nais kong bigyan ng panibagong sigla ang sistema ng pananaliksik dito sa ating bansa. Kaalinsabay nito ay nais ko ring maibalik ang nararapat na katayuan ng mga magsasaka bilang kaakibat ng mga siyentipiko tungo sa isang maunlad at mapayapang pamayanan.

Welcome remarks delivered during the Farmers' Forum in celebration of the National Science and Technology Week by the Los Baños Science Community, 19 July 1994, E.O. Tari Hall, PCARRD Headquarters, Los Baños, Laguna, Philippines.

nito ay nais ko ring maibalik ang nararapat na katayuan ng mga magsasaka bilang kaakibat ng mga siyentipiko tungo sa isang maunlad at mapayapang pamayanan. Ang atin pong hangarin ay ang makamit natin ang pagiging Newly Industrializing Country (NIC) sa taong 2000. Kaya natin ito. Kailangan natin ito. At gagawin natin ito.

Muli isang magandang umaga, at sana ang pagtitipong ito ay maging kapaki-pakinabang sa ating lahat.

Philippine Primates for Global Competitiveness

Global excellence and world competitiveness calls for a situation in which Filipinos are able to produce world-class products and services for the world market on an even footing. This strategy is prompted by recent developments in international trade relations such as the country's participation in the Asian Free Trade Agreement (AFTA) and the General Agreement on Tariffs and Trade (GATT). Where global interdependence is increasing, a country's capacity to produce a wider range of products and offer opportunities and services comparable to those in the rest of the world is a test of national viability.

It is in line with this vision of global excellence that the Philippines should be able to maximize utilization of its expertise, data, and services on primate breeding and care. Primates, being a key resource in biomedical research, is one area where the country could have global advantage provided the necessary infrastructure and policies are put in place. With its potential to generate large revenues through export of services, the primate industry could be a big boost to the nation's bid to become a newly industrializing country by the turn of the century.

But primate production should not only be sustained for industry alone but for conservation as well. Our efforts should not aim absolutely at industrialization at the expense of the environment and extinction of wildlife. While wildlife production should support development, their existence and productivity should also be sustained.

We at PCARRD commit ourselves to strive for excellence toward greater heights of achievements for the agriculture, natural resources, and environment sector. We pledge our all-out support

Primates, being a key resource in biomedical research, is one area where the country could have global advantage provided the necessary infrastructure and policies are put in place.

Welcome remarks delivered in behalf of Dr. W. D. Dar by Ms. Carol M. Yorobe, Deputy Executive Director for Institution Development and Resource Management of PCARRD, during the Visioning Workshop for the Conservation and Sustainable Use of Primates, 11 May 1995, PCARRD, Los Baños, Laguna, Philippines.

for various policy reforms on environment, and for the conservation and sustainable use of resources.

Hence, as we gather here today, I call on you to reflect on the oath that we, in the primate industry, are bound to trail in the light of our vision of becoming an NIC by the year 2000. Let this be the venue for us to identify areas of collaboration on primate production and conservation between government and nongovernment organizations, and define programs, policies, and strategies for the sustainable use of primates.

Let us work together toward the realization of our goal of a globally competitive and sustainable primate industry. This visioning workshop brings us to performing tremendous yet fruitful tasks. I am confident that with our common commitment, significant results will be arrived at. Let us be reminded of the long-term good that this workshop will bring not only to us but to the generation to come.

Directions of the Swine Industry in Response to Global Trends

To many people, the pig is an emblem of negative attributes. Being ill-mannered, rude, dirty, or barbaric is being a pig. To the health conscious, pig meat is heart attack or hypertension. To the environmentalist pig is pollution. To some extent these could be true, in fact, last year, the "huwag kang maging baboy" T.V. ad won an award because of the pig's perfect portraiture of what is abominable to society. However, the Filipino pig who is a major contributor to the country's economy deserves a more benignant remark.

The Philippine swine industry is the largest and the most organized among local livestock industries. It contributes not less than 50% of the total production of the livestock industry. It supplies 67% of the total animal meat consumption of every Filipino and registers a consistent positive contribution to the gross value added (GVA) in agriculture since 1985. These contributions transform the image of swine from being a disgusting beast into a winsome, curious, clever, and cuddly little pig. In line with this attitude, I welcome you to PCARRD and to this national consultation meeting on "Monitoring and Evaluation of Swine Production Performance in the Philippines."

For decades, the local swine industry has been faced with a variety of challenges: corn and soybean shortages, disease outbreaks, unavailability of essential veterinary drugs and biologics, and the unreasonably low prices of live hogs, to mention a few. But the swine industry overcame these challenges and survived. And it is because of the industry leaders working together.

Today, new challenges are threatening the industry. Tough competition is apparent among animal meat-producing countries that will be

We regard strong linkage and active partnership between government and the private sector in R & D activities, as the key that would make technology and resources available to most swine raisers, thus, modernizing pig production even in the remotest area of the country.

Welcome remarks delivered during the National Consultation Meeting on 'Monitoring and Evaluation of Swine Production Efficiency in the Philippines', 22 November 1994, PCARRD Headquarters, Los Baños, Laguna, Philippines.

brought about by the implementation of the General Agreement on Tariffs and Trade (GATT) and the Asian Free Trade Area (AFTA) agreement. Moreover, policies for the protection of the environment and the massive conversion of agricultural lands into residential, commercial, or industrial estates are slowly hurting the local swine industry.

Nevertheless, the demand for pork is still increasing and it remains to be the most preferred meat among Filipinos. Moreover, meat processors all over the world regard pork as an indispensable component of many processed meat products.

Research and development activities conducted here and abroad have produced the necessary inputs that would revolutionize pig production at the farmer level. However, most of the swine raisers in the country have limited access to these resources.

We regard strong linkage and active partnership between government and the private sector in R & D activities as the key that would make technology and resources available to most swine raisers, thus, modernizing pig production even in the remotest area of the country. We support this research cooperation which is aimed at sharing information on swine production efficiency. Hopefully, collaborative undertakings such as this will put into practice the knowledge developed in research centers to benefit the Filipino pig raiser.

We recognize the possible adverse effects that will be brought about by the GATT and the AFTA, but we also believe that active participation and sincere cooperation among the players in the industry and government will save the Philippine swine industry from these threats.

Again, I welcome you to PCARRD and to this consultation meeting. Let this be the venue for us to join forces to overcome all challenges and WIN.

Promoting Soybean Processing and Entrepreneurship

In my capacity as the Executive Director of PCARRD, I would like to say that the Accelerated Soybean Production and Utilization Programme (ASPUP) is considered to be a "banner program" of the Council. I am happy to tell you that this is our first developmental program which integrates crop production with processing, marketing, and utilization. The goals and objectives of the project fit very well with the present thrust of the government to bring about agri-industrialization to increase economic activities in the countryside which is very important in realizing our target of reaching NICHood by the year 2000.

You may be aware that, during the past years, the government through PCARRD has been very persistent in its efforts to increase soybean production in the country from more than 5,000 hectares to eventually double of this hectareage in response to a rapidly increasing domestic soybean consumption. A decade ago, PCARRD started to convince farmers that there was money in growing soybean by demonstrating on a pilot scale in Regions II and III the component technologies on soybean production. These technologies which have been generated by the R & D network were put together in a package and were taught to our farmers in order to increase their farm productivity. The initial exports have paid off. Soybean production has now gained a foothold in selected regions in our country where it is best adapted. Soybean yield per unit area has dramatically increased from less than a ton per hectare to 2-3 tons per hectare. What makes soybean growing more interesting to our farmers in Region II is the fact that they are no longer applying chemical fertilizers to the crop. The Rhizobium inoculant which they are mixing in their soybean seeds

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Delivered during the Trainers' Training on Soybean Processing and Entrepreneurship, 23 September 1994, Sta. Maria, Ilocos Sur, Philippines.

during planting sufficiently provides the nitrogen requirement of the plant. This reduces the cost of production significantly since a hectare of soybean supposedly has to be applied with four bags of complete fertilizer (14-14-14) based on the package of technology. This development also is interesting, especially with our present effort to reduce environmental pollution and promote sustainable agriculture.

Despite these achievements in the area of soybean production, most of our efforts in increasing agricultural production were not sustained over time because the approach has not been wholistic. Thus, PCARRD packaged a program which will demonstrate the benefits of vertically integrating crop production with processing and utilization. The present comprehensive program which integrates soybean production, processing, and utilization aims to demonstrate on a pilot scale its economic viability and profitability. This is going to be the most important output of the project which would be supportive of the present thrust of the Philippine government to effect agri-industrialization in the countryside. And we are starting it with soybean. Other legumes such as mungbean and peanut may follow suit.

Of course, this has been made possible because of the financial support from the United Nations Development Programme and the technical assistance from the Food and Agriculture Organization of the United Nations.

Village-level processing of soybean into some food products such as soymilk, taho, tokwa, soy ice cream, soy burger, soy lumpia, and soy embutido would provide additional employment and income opportunities in the rural areas. For example, a stick of soy ice cream costs only P0.67/piece and a street vendor who sells it at P2.00/stick has already a profit margin of 198%, as compared with a popular ice cream stick which nowadays costs around P5.00/stick. Moreover, soybean contains 40%-45% protein compared to the 3% protein content of cow's milk used in ice cream. Thus, soybean has a very high potential contribution in solving the pervasive malnutrition problems in the country.

This training that we are holding is our way of empowering our people. With the knowledge gained from this three-day activity, we are hopeful that soybean growers here can start a small income-generating project and earn more, and become more productive citizens of our country.

Marketing of Agricultural Commodities by Small Producers

Productivity improvement in Philippine agriculture is largely based on technology. Increase in yield means an increase in supply which can bring about lower prices. However, while consumer benefits are discernible, increased producers' welfare owing to technological innovations is less clear. A major reason for this is the prevailing marketing system for agricultural products.

Improving marketing efficiency must complement improved agricultural production. Without the market outlets and appropriate prices, increased production will not bring about increased income, especially for our small farmers.

After a whole day of intensive discussion on marketing of agricultural commodities by small producer groups, I hope we are able to suggest policies, programs, and strategies that will help improve the marketing system.

The papers presented brought together significant information on marketing efficiency of producer groups compared with alternative marketing channels; the different marketing services performed by these producer groups; and their marketing problems, constraints and how they cope with such problems. The impact of these groups on the social and economic well-being of the farmers was also analyzed. The workshop sessions identified policies and strategies and developed action plans that would improve the marketing of selected agricultural commodities and the performance of producer groups engaged in marketing.

It is evident from the research findings that the approach to increase farmers' income is not only through increased production but also improved marketing system.

Improving marketing efficiency must complement improved agricultural production. Without the market outlets and appropriate prices, increased production will not bring about increased income, especially for our small farmers.

Closing remarks delivered during the workshop on Marketing of Agricultural Commodity by Small Producer Groups in the Philippines, 28 February 1995, PCARRD, Los Baños, Laguna, Philippines.

Many of our farmers bewail the fact that they receive a minimum share of the marketing bill. One strategy to facilitate marketing of farm products is through cooperatives. It is through the cooperative movement that we can pool together the limited cash but abundant labor on the farm.

And no less than the President of the Republic in his speech last Saturday on the occasion of the celebration of the 9th year of EDSA Revolution that "What is necessary in attaining our goal of growth and development is teamwork."

The national vision of NIC-hood as embodied in Philippines 2000 is clear on two things: global competitiveness and people empowerment. I believe that an efficient marketing system is a major key toward global competitiveness of our agricultural products and what a better way to address the call for people empowerment than to sustain the cooperative efforts among our producer groups.

At this point, I wish to take this opportunity to thank the Land Bank of the Philippines and the Cooperative Development Authority for cosponsoring this workshop, and the International Development Research Centre (IDRC) for funding the project.

Development Communication and Technology Transfer

A major constraint in the adoption of technologies by farmers and entrepreneurs are the questions of where, how, and what appropriate technology is available to them.

Many farmers know the nature of their problems in the field, but absence of information sources stop them from pursuing solutions to their problems.



Development Support Communication: Promoting People's Participation in Development

The underlying motive that defines our country's direction in research and development is contained in the goal to enable small farmers achieve a more humane standard of living. Consistent with the government's vision of improved quality of life for all Filipinos, our immediate concern in the R & D sector is diffident and yet challenging: how to come to grips with issues of helping small farmers strengthen their purchasing power for material needs at the same time creating conditions to enable them to take control over every aspect of their lives. Hence, the value of R & D, at this stage in our history, is measured in terms of how it can contribute to the farmer's productivity, and whether the farmer's capability to participate in the development process is strengthened.

For PCARRD, the coming in of the project, Development Support Communication for Selected Technology Transfer in the Regions, is part of our coping and helping others cope with the demands of the times. Strategies such as *people empowerment, people participation, and cost-and-effort sharing* become the thread that weaves the project fabric through the lives of the typical farmers.

The concept of DSC was born out of our concern to promote people's participation in technology transfer and utilization. Through the years, significant technologies have been generated but their impact in the lives of small farmers has not been evident. At one end, there was the problem of translating the technology into practical

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Message delivered during the opening ceremony of the National Development Support Communication Symposium, 2 March 1995, PCARRD Headquarters, Los Baños, Laguna, Philippines.

peasant language. At the other end, resistance to change was met owing to a wide variety of causes which include inadequate knowledge and resources.

Through the DSC, we encouraged the systematic use of appropriate and need-based technologies packaged through appropriate communication techniques and channels. We also tried to stimulate community populations to act and decide what is best for them.

True enough, our DSC project has been quite a success. For one, the capabilities of the people involved in the project were honed, enabling them to participate in the development activities of their communities. People from PCARRD down to the community level underwent a relay of trainings addressing such areas as technical and managerial skills, organization, and communication.

And as people are trained, they become confident participants in the decision-making process. One of the many lessons we have learned with the DSC is that trained people are empowered people. This truth lives in the hearts of people in the five pilot sites that we had the opportunity of working with. Today, they are here with us, people from Tacunan, Tulungatong, Dolores, Concordia, and Nagbukel. As we acknowledge their presence, we at PCARRD continue to dedicate our efforts not only to them, but to others who feel that what we have is good for them.

As far as cost-and-effort sharing is concerned, our DSC project has achieved a significant breakthrough. Gone are the days when people look at government as the sole provider of all their needs. Gone also are the days that when project funding ends, project efforts drop dead.

Allow me to cite a few significant events in Tacunan, Davao, where the interplay of cost-and-effort sharing provide the ingredients for the DSC project sustainability. Even before the project pulled out in the area last December, government and nongovernment organizations (GOs and NGOs), and other constituents have already started sharing their resources to the populace.

Today, two months after our DSC project manager pulled out of the area, the people in the community have continued to rally onwards. This is a time for testing their wings to fly on their own. But they are not really flying alone because, side by side with them are the nurturing support of GOs, NGOs, and other committed individuals.

At present, NGOs adopting Tacunan include the Management International, the CRUST Foundation, the Soroptimist International, and the TACDRUP. SMARRDEC and the city government have also pledged continued assistance to Tacunan. Although PCARRD will not be very visible as it was at the beginning of the project, nevertheless, it will remain interested in the progress of Tacunan, Tulungatong, Concordia, Nagbukel, and Dolores – our very own pilot sites.

The DSC project is contagious and we intend that this should be its effect. Some of our visitors today come from local government units who are interested in trying the DSC in their communities.

We make it our concern that purposive communication reaches specific communities, people who have names and people who ache and wait for immediate relief. Where the mass media practitioners address its message to a faceless population, development communication workers purposively tailor all information to segmented populations, to the missed groups.

Although our concerns are myopic aimed at relieving immediate poverty and other needs, we do not lose touch with global concerns, such as that of having an environment that will nurture the full realization of the human being. Hence, it becomes a must for various disciplines hand-in-hand with Development

Communication workers to create and commit purposive information that will arrest the wanton destruction of the environment, people, and future. It will be a complementary of efforts, for a harmony of various expertise is a must if we are to ably cope with all the pressures around us.

Lastly, in behalf of all those who helped DSC become meaningful to our dear people in the five rural communities, PCARRD expresses its profound gratitude. Thank you that through you, avenues of blessings have been poured out to make lasting changes for our pilot communities. For our pilot communities who are here with us, thank you for risking yourselves to open your doors so that PCARRD could come in and help you in our own humble way. We never lost the vision that you started sketching; for where there is no vision, people and communities perish.

Enhancing Moral Recovery Through Communication Toward Philippines 2000

A decade and a half. Today marks RACO's 15 years of existence. In essence, within the span of 15 years, RACO carries a bag of commitment and experiences worth bequeathing to the would-be development communication practitioners.

Before going further, allow me to bring the hands of time back to when the year was 1979.

In Retrospect

The year 1979 was typically characterized by a newly emerging Philippine Council for Agriculture and Resources Research, then PCARR without a 'D' for the word development. PCARR at that time was a seven-year-old agency out to let the world see what it could do in terms of synchronizing the agriculture researches throughout the country. For a seven-year-old, PCARRD then had already started carving out its vision that took shape in the form of the regional consortia system. One by one, region by region, a new consortium was born. During this year too, PCARRD started organizing the Regional Applied Communication Offices (RACOs).

The vision set then was for RACO to bring about a well-informed and well-trained extension worker in relation to the delivery of farm technologies to the clientele. The well-informed, well-trained extension worker would then become the key that would unlock the farmer's door so that the farmer would become aware of what technology is in store for him, to enable him to appreciate and finally adopt the technology. One thing was clear. The objective was to improve the earning capacity of the farmer through technology adoption.

Today, 15 years after, RACO has blossomed into an organization of communication specialists

So many of our countrymen have gone astray that the issue of rebuilding the country is now heavily anchored, along with people-oriented reforms, with the basic concern to build better citizens who will become better leaders of the future. Let us make value formation a strong foundation in our development goals. Let us bring back the dignity of our people.

Message delivered during the 3rd RACO Convention and 15th RACO Annual Review, 5-9 December 1994, HARRDEC, Benguet State University, La Trinidad, Benguet, Philippines.

that includes representatives from the local government units. The original objectives of pooling scant communication resources of consortium members and cooperating agencies, developing and upgrading regional communication capability, and eventually making the regions self-reliant in meeting their communication needs have been fulfilled although not yet perfected.

The dream of establishing and promoting cooperative working relationships with and among the research-development and extension communication systems is no longer a dream but a reality.

Meeting the Imperatives of the Time

For the past years, PCARRD has seen the persevering commitment of the RACOs in the area of promoting farm technologies. But as new needs arise, the imperatives of national development call on the RACOs once again to play a more aggressive role in pushing forward the government's vision of Philippines 2000 – an urgent call to improve the people's quality of life and effect rapid agri-industrialization.

In the context of this vision, let us put a new meaning on why we are all gathered here today. Let us pause a moment to look at the future, to see what might be your role, as communicators, in shaping it. Now unfolds another chance for all of us to assess how seriously and honestly we make the effort to understand the times we live in. The present times demand changes – the resolution of old problems, on the one hand, and the emergence of new ideas, on the other hand.

Amid the clamor to realize the vision of Philippines 2000, communicators like you are bound to face a new challenge – a challenge that goes beyond your usual task of technology packaging and delivery. As communicators directly involved with people, you, more than anyone else, have the power to come to grips with the very basic issue of enhancing moral recovery among our people. For only then can this country truly attain sustainable growth and development.

Enhancing Moral Recovery

Why make moral recovery a battlecry for Philippines 2000?

Socio-political vicissitudes characterizing the country's economic landscape today tend to paint a picture of an economy experiencing record growth quite admirable for a society in the midst of a historic change. With a serious program of structural reform, the country has gained a remarkable and vigorous economic recovery. And now, with Philippines 2000, it is expected to surge forward and qualify for global competitiveness.

But what guarantee do we have that sustained and accelerated growth can be achieved? History is witness that despite the dynamism of the Philippine economy, in terms of catching up with other Asian countries, much is still left to be desired. We are still far behind countries like Taiwan, South Korea, Hongkong, and Singapore – dubbed as newly industrialized countries, nor are we in any way catching up with Asia's "tiger cubs" like Thailand and Malaysia. How far have we gone in terms of making life easier for the large portion of the population suffering from pervasive and acute poverty? To where do we owe this turtle-paced development, despite grand economic recovery designs and programs that are well-planned and conceptualized?

The bottomline is a lack of dignified existence among our people, a question of overcoming the very low self-worth brought about by years of a bedraggled life. In many ways, the past regime that trampled upon the dignity of its constituency by promoting graft and corruption, self-glorification, disrespect to human rights, and

low regard for morals is to blame. That while fool-proof programs of reforms are introduced, the people's greediness and self-interest are overpowering.

So many of our countrymen have gone astray that the issue of rebuilding the country is now heavily anchored, along with people-oriented reforms, with the basic concern to build better citizens who will become better leaders of the future. Let us make value formation a strong foundation in our development goals. Let us bring back the dignity of our people.

Let us fortify our Philippines 2000 vision of global competitiveness through science and technology with values that will give us the right direction – values such as being “makadiyos, makatao, makakalikasan, at makabayan.” Values that, more than anything else, will bring about quality performance in all of us, and which will remind us that we are public servants.

The Role of Communicators

They say that communication is the cement that welds society together – society being people talking, working, living together. Communication is the carrier of the social process. By communication, man maintains his social institutions, each with its values and norms.

This brings to focus your critical role as communicators, in enhancing moral recovery toward the country's sustainable economic growth through Philippines 2000.

Conventionally, you in the RACOs are tasked with accelerating technology packaging and delivery premised on the recognition that the application of these technologies will eliminate widespread poverty by putting the people in the countryside to productive works that will pay them a decent livelihood. But think again. Your role, in the light of current trends and issues, goes far beyond that.

More than anyone else, you have the power to advocate, not just communicate, moral recovery toward the realization of our vision of improved quality of life for our people. The urgent task is for you in the RACOs to advocate bringing back the dignity of our small farmers who, for so long have suffered from acute poverty. As well, you are in the position to revive and reawaken our policymakers to work for the people, and not for their self-interest. It is a tough job, but it has to be done.

In our day-to-day task of promoting the widespread adoption of useful research-based technology among the greater number of small farmer-producers in the country, let us take on the added task to promote respect and confidence with each other. Let us nurture mutual cooperation and wholehearted support to any endeavor. As communicators, let us serve us role models in instilling initiative, ingenuity, and enthusiasm in our work. Let us give quality performance in any task we do. Most important, let us work together as a team with high spirit, morale, and esprit, and with purpose and direction toward a common goal. Let us make everyone feel that they belong.

In enhancing moral recovery toward Philippines 2000, be reminded of the credo of applied communication “to reach, to touch, to instruct, to serve.”

Reach the intended audience wherever they are and whenever they need information. **Touch** the audiences' sensitivities and motivations with values and information they need principally for their livelihood. **Instruct** and enlighten them, and enrich and broaden their options. And, commit yourselves to **serve** them to enable them to improve their self-worth, and increase their productivity, income and welfare. Your profession, talents, and dedication should be focused on, more than anything else, making them better citizens of this country.

Moving On

The same positive outlook, the same drive for action, and the same commitment and dedication which saw the RACOs for 15 years can now be brought to forge a course of action that will enable this country to produce human resource for global competitiveness.

PCARRD recognizes the tall order. Thus, although budget has always been a problem from the very beginning, PCARRD has exerted a lot of efforts so that the RACOs can continue to perform their role.

In terms of upgrading the capability and capacity of our RACOs, PCARRD for this year released funds and sent out its applied communication staff to effect the conduct of communication-related training in the regions.

Another move that PCARRD has done to further hone the capability of the RACOs is the implementation of the Regional R & D Information Service (RRDIS) popularly known as the one-stop-shop. Under this program, the RACOs, together with the Research Management System group in the first three sites, namely: CLARRDEC, WESVARRDEC, and CEMARRDEC have been trained on the nuances of communication planning and the application of information systems. RRDIS is implemented by batches so that the rest of the consortia are scheduled within the next five years. Slowly but surely, with consideration of limited resources, PCARRD is doing its best to improve the operations of the RACOs so that they are able to cope with new needs that arise with time.

For this year, PCARRD has observed significant learnings from the Development Support Communication Pilot Sites. For one, PCARRD has learned that for farm technologies to get through the adoption stage, farmers or potential clientele should first be socially prepared. In simple terms, awareness from both sides of where the farmer's needs lie and how the farmers themselves hand-in-hand with the researchers and development communicators could address such technological needs and deliver with the right communication strategies need to be taken seriously. In here, value formation is again a critical issue.

Lately, we have been receiving invitations from local government units for us to inform them on how to establish the Community Audio Tower System that has been a tangible part of the DSC project. PCARRD is working things out so that the fruits of the DSC project can further be multiplied and shared.

I understand that many of you here have given an extra mile to promote agricultural technologies, particularly to our extension offices and radiating even to the local government units. It has been reported to my office that in Region 8, particularly in Southern Leyte, the RACO is instrumental in promoting the abaca industry with very positive response from the local government in terms of financial pledge to support this commodity. This is a very positive development and PCARRD commends not only Region 8 but the rest of the RACOs in all the consortia that have actively pushed for technology promotion and adoption.

As a parting message, our role as development communication practitioners can well be likened to that of a gardener. The gardener daily takes care of his plants. He takes time to water, to apply fertilizer, to kill destructive insects, and to pull the weeds that rob the plants of nutrients. Sometimes strong winds, rains or drought come. Despite these, the gardener remains faithful to his undertaking. He perseveres to take care of his plants. And someday, he looks forward to reaping a bountiful harvest. Like us, our role in development communication, particularly in technology promotion, dissemination and transfer, and now in moral recovery, is not an overnight affair. Like the typical gardener, we find along our path problems of different shapes and sizes. But always, if we remain faithful to our calling, we

will someday look forward to reaping a bountiful harvest, harvest in terms of improved well-being of the farmers through their application of farm technologies derived from R & D network, dignified, God-fearing citizens who are the foundation of a bright future of this nation, and eventually, a progressive and peace-loving country.

Finally, I hope, in behalf of PCARRD, that as you take the days ahead to review and to plan, whatever you have learned, may you bring this with you to guide you as you perform multifaceted roles in your respective consortia. And may you find strength in knowing that you are not alone in this struggle. There are many of us.

Regional Information Management for Sustainable Agri-Industrialization

The government's vision of Philippines 2000 seeks for a strategic alliance among key development actors of the country to rally behind the central objective of "improved quality of life for all Filipinos through global competitiveness and people empowerment". It is an inspirational call for unity among all sectors of the society to collectively address and necessarily relate, adjust, and focus their programs toward the attainment of this central objective.

PCARRD recognizes that it is only one actor among many, and that it must choose programs that have the maximum chance of being widely beneficial to others. Our role at PCARRD is that of a catalyst, influencing and assisting others in the R & D sector, particularly the various consortia member agencies, in ways that enable them to contribute to the central objective of Philippines 2000.

In view of this, a new research and development approach is deemed inevitable – one that puts emphasis on enhancing the role of regional R & D consortia for sustainable agri-industrialization. Coming to grips with the issue of positioning our agricultural products in the world market for competitiveness and profit, at the same time enabling the ordinary people to participate in the development process, necessitates a regional integrated R & D program to focus on efforts that promote global excellence and people empowerment. In such a program, the region, with its developed capabilities, can contribute substantially to the realization of socioeconomic progress with its concerns directed to few but very strategic programs in areas along the national agenda of agri-industrialization.

Message delivered during the launching of the WESVARRDEC One-Stop Information Shop, 11 May 1995, WESVIARC, Hamungaya, Jaro, Iloilo City, Philippines.

At this point, let me commend the men and women of WESVARRDEC for their sense of urgency in meeting the imperatives of the time – for topping all efforts in coming up with an integrated regional R & D program in support of flagship programs for sustainable agri-industrialization. Most of all, allow me to express my deep pride in knowing that somehow, we at PCARRD have been instrumental in the realization of a dream project in support of this integrated R & D program – the WESVARRDEC one-stop information shop.

The concept of a one-stop information shop, as introduced by PCARRD, was born out of a need to upgrade and enhance the capabilities of the different regional R & D consortia in effectively utilizing research results in support of the integrated R & D program. Our main objective in aggressively seeking the establishment of the Regional R & D Information Services (RRDIS) in the 13 consortia nationwide is to hasten the transfer of technologies and at the same time improve the overall management of regional development programs and projects to attain the twin goal of global competitiveness and people empowerment. Through the one-stop-shops, timely, relevant, and organized body of information will be made available in one office to different user groups in the consortium.

For us at PCARRD, the one-stop-shop is a bold strategy to institutionalize regional data gathering, processing, and synthesis and integration of information in support of the implementation of the regional R & D program. In effect, this is an outcome of the clamor for the effective use of information in decision-making in agriculture and natural resources. The success of the one-stop-shop is anchored on the integration of efforts and cooperation between the Regional Applied Communication Office (RACO) and the regional management information service.

In coming up with one of the very first one-stop information shops in the country, yours is a tall order – that of serving as a model to other consortia in an effort that puts information at the center stage. As a commitment to this critical role, I therefore call on you to make people participation and cost-and-effort sharing the thread that weaves the fabric of this endeavor through the lives of the intended information users.

While through the years, significant technologies have been generated by various research institutions nationwide, it is now time that their impact on the lives of small farmers, as well as of other users such as decision-makers, be felt. At one end, the one-stop-shop will resolve the problem of translating the technology into practical peasant language. At the other end, resistance to change owing to a wide variety of causes that include inadequate information management, knowledge, and resources will be resolved.

Through the one-stop-shop, we encourage you to promote the systematic use of appropriate and need-based technologies packaged through appropriate communication techniques and channels. We hope to bring to the regions knowledge and tools in R & D management for quick information dispatch in agriculture, forestry, and natural resources. We shall seek to equip the consortia members with the necessary skills for the implementation of information management and data conversion strategies for sustained technology transfer activities, as well as cost-effective decision-making. Finally, through the one-stop-shop, we hope to stimulate the R & D sector as well as community populations to act and decide on what is best for them.

We are optimistic that as people in the agriculture R & D sector are trained, and as information are made readily available to them, they become confident participants in the decision-making and development process. This is so because

the highly complex nature of agriculture and resources research and development in the country requires an up-to-date information base.

As you test your wings in operationalizing this one-stop-shop, let me assure you that you are not flying alone. Side by side with you are the nurturing support of PCARRD and the whole R & D community, as well as other committed organizations and individuals.

Let us make it our concern that information reaches and is utilized by the target users. In doing so, let us not lose touch with our twin goal of attaining global competitiveness and people empowerment. Bear in mind that our vision of Philippines 2000 is only realizable when a multi-disciplinary perspective is brought to bear on issues related to sustainable agri-industrialization.

Lastly, in behalf of all those who have helped WESVARRDEC in making possible this one-stop information shop, thank you that through you, avenues of blessings have been poured unto this significant undertaking.

Assessing the Impact of the Development Support Communication Project

The book of Ecclesiastes points to us that "there is a time for everything, and a season for every activity under heaven."

This gathering today serves as a time for us to detach ourselves from the webs of too much work. Away from the maddening crowd, now is the time for us to reflect on the fruits of our labor if these have been worth the efforts and the budget we have sown.

Since this is a time for reflection, we must gear ourselves with utmost honesty to look at how the Development Support Communication Project has benefitted the pilot sites, the RACOs, the Consortia, PCARRD, and the entire NARRDN. If at some point of our evaluation, we find that there were some things in the past which posed as baggages, we remove these so that as we pass the DSC baton from our hand to the next relay runner, our footsteps and that of our receiver would be lighter. This activity would require you to sieve the lessons learned – what to include and exclude for DSC to be more viable in the years to come.

FAO-funded projects in the African countries show that communication stands as the key factor – the essence of any successful human development undertaking.

A synthesis of all these projects' learnings display that teaching a community member the art and confidence of communicating with the environment empower him to be deeply and meaningfully involved in the life of the community.

The DSC project in the Philippines is the first of its kind and we are all privileged to be involved. All learnings that shall be gleaned today will set the record for us that we have been the first to explore this area. Although Thailand has navigated way

Message delivered in behalf of Dr. W. D. Dar by Ms. Cecilia M. Lantican, Acting Director of Applied Communication Division, PCARRD, during the DSC Project Impact Evaluation, 9-12 August 1994, White Rocks Hotel, Zambales, Philippines.

ahead of us, ours is a unique one since we have used the bottom-up approach – we empower the participants with communication skills so that they can responsibly take hold of the reins after DSC funding from us is ended.

At PCARRD, what would be our role given the above positive and healthy developments?

First, we intend to pass the whole DSC process or a portion of it that is doable to the municipal/provincial government units.

We pass this tool to the different line agencies with the ultimate goal and a definite will to influence the extension system through the DSC process. We make a deliberate attempt to promote the results of this process to the press and the different media sectors.

Second, we intend to develop a proposal that would incorporate the DSC process. Partially this has been done and the World Bank has had meetings with us in this regard, although nothing definite has yet been agreed.

Third, we intend to recommend to our Governing Council the move for PCARRD and the respective consortia to adopt the pilot sites. By adoption, we mean that in any undertaking addressed to the regions, be it on basic or applied research or technology piloting or transfer, these five sites should be given top priority. We recommend that these five sites serve as our field laboratories. We try not to lose contact with these sites and not to stop what has been started so that after perhaps five to ten years from now, we can really determine the impact of the technologies on these communities. We do these not for the sake of an exercise on research alone but for humanitarian reasons as government servants to serve the least privileged.

Fourth, we intend to publish a book on the experiences of the DSC field staff. This would help us disseminate further the valuable results of this project.

The well-meaning intentions that we have in mind are many. We hope that in the days to come we shall by God's grace accomplish all these things. Ahead of us are tough days with resources getting meager, competition for these resources getting stiffer. Nevertheless, these things should not overwhelm us for as we plow with pure motives in our minds and sincere service through our hands, in the end, the Lord Almighty will surely reward the sweat of our brows.

The Research and Extension Continuum in Technology Transfer and Promotion

The primary purpose of research is to develop technology for use in a given environment.

On the other hand, the main objective of extension is to transfer such a technology to users. It is, therefore, not amiss to assume that both functions are closely linked together.

As tools of national development, the research and extension systems in this country should operate as an integral whole, for development and transfer of technology to move in continuum. Our efficiency in the research sector depends largely on the degree to which we are informed of the problems facing the extension personnel, the farmers, and the country. Meanwhile, you in extension are effective only to the extent that you are professionally prepared and equipped to transfer proven technologies to potential users, to monitor the results of the transfer, and to feed back to research the relevant information you have collected.

It only shows that we in the research and extension sectors share a common mission, the realization of which is anchored heavily on our interdependency. This event, hence, is a propitious occasion for us to renew our commitment to work hand in hand toward our common goal.

Our battlecry is people empowerment. The underlying motives that define our direction must be contained in our pursuit to come to grips with the issue of how to help small farmers achieve a more humane standard of living. Let us underscore the "business" nature of technology application through technology promotion, enterprise building, networking, and advocacy. Our concern is diffident, yet challenging: to enable small farmers to increase

As tools of national development, the research and extension systems in this country should operate as an integral whole, for development and transfer of technology to move in continuum.

Welcome remarks delivered during the PCARRD/STARRDEC-LGU Dialogue, 20 January 1995, PCARRD Headquarters, Los Baños, Laguna, Philippines.

their income, strengthen their purchasing power for material needs, and attain a truly dignified existence.

Today, as we reflect on our roles in the research-extension continuum, let us not forget about the farmer. To uproot something deeply ingrained by custom and tradition requires a lot of spadework. Hence, let us see change and problems through the farmer's eyes. Let us have more farmer input in program planning and policy decisions. Let us listen to him more.

This dialogue comes at a very opportune time – at a time that the clamor for the modernization of the production sector is great in view of recent developments in international trade relations, and given the local government units' bigger responsibility in responding to the development imperatives of the country. Let us, together, explore possible areas of collaboration to push for the upliftment of our people here in Laguna.

In a more enduring way of welcoming you, we at PCARRD pledge our all-out support to all your initiatives. May this day formally seal our mutual cooperation and fruitful linkage.

Developing Tools for the Exchange and Transfer of Technological Information and Expertise

Science and technology (S & T), throughout the world, has been considered as a major foundation in the economic growth of developed and developing countries. In the Philippines, S & T plays a major role in the economic program of making the country a newly industrializing country (NIC) by the year 2000. Various R & D agencies and institutions are working toward this common thrust. But lamentably, experience has shown us that most of the research results/technologies remained in the confines of laboratories.

In the agricultural sector, in particular, the low agricultural productivity of our rural communities reflects the low adoption and utilization of research-based technologies generated. This is attributed to the lack of capital and other support services for the rural population, which is further aggravated by inefficiency and constraints affecting the national research and development, and technology transfer systems. Mature technologies and research results intended to benefit rural communities have not reached the direct users, and therefore, have remained unused.

Through the years, this has remained one of the major concerns of R & D institutions in the country, including PCARRD.

Issues and Concerns

Based on our experience at PCARRD, we have identified major issues and concerns that hamper

The lessons we have learned from the DSC process model is that as people are trained, they become confident participants in the decision-making process. Trained people are empowered people.

Delivered in behalf of Dr. W. D. Dar by Ms. Cecilia M. Lantican, Acting Director of Applied Communication Division PCARRD, during the Second ATEAP National Convention, 23-24 February 1995 at the Central Luzon State University (CLSU), Muñoz, Nueva Ecija, Philippines.

the dissemination and commercialization of technologies generated by research institutions. These are the needs that we should address:

1. Generation of technologies relevant and appropriate to the needs of farmers and entrepreneurs

Most end-users perceive research as merely providing pieces of information that have not been organized with a body of usable information. This is further compounded by the fact that research is limited by theoretical and methodological vigor. Thus, many times, end-users claim that research results are not applicable to the problems and needs of the farmers (Bonifacio, 1993). This shows the urgent need to shift to a need-based approach to technology generation and dissemination to really work on technologies appropriate to the needs of the end-users.

2. Bringing technologies and technology support closer to the end-user

A major constraint in the adoption of technologies by farmers and entrepreneurs are the questions of where, how, and what appropriate technology is available to them. Many farmers know the nature of their problems in the field, but absence of information sources stop them from pursuing solutions to their problems.

We at PCARRD, are working to remedy this problem. Recently, PCARRD launched its flagship program attuned to Philippines 2000 and the Science and Technology Agenda (STAND) of DOST. Thus, PCARRD will approve R & D proposals based on support and response to sustainable development, global competitiveness, and provision of basic domestic needs, among other things. To operationalize the program, it piloted the regional research and development information service (RRDIS) or the one-stop information shop. This is a move to hasten the transfer of technologies and improve the overall management of regional development programs and projects by making available, relevant and organized body of information to the user groups in one office in the regional consortium.

This is a bold strategy conceptualized by PCARRD to institutionalize regional data gathering, processing, synthesis, and integration of information in support of the flagship program. The success of the RRDIS is anchored on the integration of efforts and cooperation between and among the Regional Applied Communication Office (RACO) and the Management Information Service (MIS) and the technical people/experts in the region.

3. Establishing linkages to increase effectiveness and efficiency of technology transfer and dissemination

In consideration of the inherent weakness of the technology transfer system in the country, there is a need to establish cooperation with relevant institutions/ organizations, local government units (LGUs), and the private sectors for complementation of efforts and to overcome shortcomings.

PCARRD's vision of the future is based on mutually reinforcing, collaborative relationships among a wide range of institutions. It intends to

multiply its effectiveness by pooling efforts with other agencies under networking arrangements that exploit synergy of resources and capability and avoid duplication.

It pursues an aggressive strategy of research collaboration with national counterparts and international agricultural research centers with similar objectives. The substance of such linkages is attuned to their respective development programs or thrusts. Collaborative arrangement is covered by formal memoranda of agreement, if appropriate. International linkages include sourcing out of R & D funds, collaborative research projects, technical assistance, exchange of scientists/information, and others.

In particular, PCARRD nurtures partnership with the Department of Agriculture (DA), Department of Environment and Natural Resources (DENR), Department of Science and Technology (DOST) and its Councils, Department of Trade and Industry (DTI), Department of Education, Culture and Sports (DECS), and LGUs. Opportunities for collaboration with the Commission on Higher Education (CHED), the private sector and the non-government organizations (NGOs) are actively pursued, exploring possibilities of contract research with advanced laboratories and biotechnology companies on biotechnology, seed technology, postharvest handling, and marketing. PCARRD takes initial move to collaborate with the Department of Health (DOH) along areas of herbal medicine and impact of better health on agriculture and natural resource productivity.

The key to people empowerment in the agriculture sector is farmers' control over the resources required to make farming profitable. The most essential of these resources is land. Since land ownership is necessary to secure credit, production inputs, political patronage, and other means to make land productive, PCARRD initiates collaboration with the Department of Agrarian Reform (DAR) along areas of policies, assessment on land use, technology transfer, and training of farmer beneficiaries.

To pursue massive information and communication campaign in the promotion of technological information, existing agreements with the Philippine Information Agency (PIA) are enhanced. PCARRD takes advantage of PIA's clout in the campaign for the promotion of Philippines 2000.

4. Increasing communication and promotion support

The growing recognition of the need to step up the rate of technology transfer and development participation by the end-users has led to the realization that communication should be used more intensively and extensively than they have been used in the past. This requires the efficient use of all forms of communication with adequate improvement of communication support to speed up the dissemination of mature technologies generated by various research institutions.

To address such concern, PCARRD implemented the Development Support Communication (DSC) Project in 1992-1994. The project aimed to bridge the "gap between farmers' needs, research generation and technology transfer and utilization" with the purpose of accelerating countryside development.

In its three-year implementation in five pilot barangays, DSC has effected significant changes in the communities and touched the lives of the people in the villages. Through the use of the community audio-tower

system (CATS) supported by other communication media the project achieved a notable increase in the level of awareness, knowledge, and adoption of technologies extended among farmers in the barangay. All communication campaigns focused on technologies identified by the community during the needs assessment phase of the project.

The DSC project has chosen the CATS to be the lead medium in a multi-media communication campaign. The CATS is a community-based communication facility managed and controlled by a community broadcasters' association organized in each barangay. The CATS serves as a medium to deliver timely information to the farmers. Forms of technology transfer through the facility include school-on-the-air, jingles, news briefs, radio plugs, and panel discussions.

Regular broadcast programs are supported by posters, illustrated prints, flipcharts, bulletin boards, wall news, video, and farmer's training/classes produced and facilitated by government extension and communication experts.

Through the Rural Enterprise Development (RED) approach, PCARRD provides assistance in enterprise building in terms of trainings on technology, entrepreneurship, management, leadership, and value orientation. The potential and managerial, financial, and marketing requirements of the technology are given impetus in orientation trainings to underscore the business nature of technologies. Assistance is extended up to packaging of business plans and feasibility studies and initial managerial start-up of the enterprise.

Conclusion

I would like to quote Michael Laflin, "the days of the gifted amateur, the genuinely talented but largely untrained dilettante are passing. They are being replaced by people who have been trained as communication researchers, community development specialists, communication planners and so on."

This statement holds true for PCARRD ... its experience to train down to the community level and beneficiaries alike, the relay of trainings that honed their communication as well as their technology application skills.

The lessons we have learned from the DSC process model is that as people are trained, they become confident participants in the decision-making process. Trained people are empowered people. This truth lives in the hearts of people in the five DSC pilot sites that we had the opportunity of working with.

Quality Education

We at PCARRD believe that quality and value-oriented education is not only the function of teachers, parents, and students -- it is the responsibility of the whole community. Hence, in the development and upliftment of education, each and everyone of us has a moral responsibility.



“Adopt a School Program”: Toward a Shared Vision of Quality Education

This event is an unfolding of a conscious and concerted effort to weave instruction, research, and extension in the academic experience of our students to ensure a relevant and holistic education for them. PCARRD and the Department of Education, Culture and Sports (DECS) are now moving toward a shared vision to meet the challenge of quality education by the year 2000.

The “Adopt a School Program” is a simple concept with a noble goal. The idea is for us in research and instruction to work hand in hand in molding the youth of this community to become better citizens and leaders of the future.

Our battlecry is to harness Science and Technology (S & T) in the development and upliftment of education in this school. We would like to see that the assistance we have extended you are able to transform students to become more problem-solving oriented. We envision the students of this community to become part of PCARRD, for us to be able to acquaint them with our S & T programs and activities, and thereby merit their support and understanding toward them. It will be a great joy for us to know that with the students’ association with us, they are able to appreciate the potentials of S & T in remedying most of the country’s ills.

It is disheartening to note that many of our youth have become wasted human resources when they could have been a potent force in the development of this nation. Let us now intervene to prevent this from happening. Let us tap the youth toward more productive activities. At this very

This event is an unfolding of a conscious and concerted effort to weave instruction, research, and extension in the academic experience of our students to ensure a relevant and holistic education for them. PCARRD and DECS are now moving toward a shared vision to meet the challenge of quality education by the year 2000.

Message delivered during the signing of the Memorandum of Agreement between PCARRD and the Los Baños Science Community High School, 9 February 1995, Los Baños, Laguna, Philippines.

critical stage of their lives, what they need are motivation and encouragement to pursue more relevant endeavors.

It is within this line that we welcome the Los Baños Community High School to our fold. From this day on, let us be one in our efforts to give more meaning to the lives of our students. For quality and value-oriented education is not only the function of students and teachers – it is the responsibility of the whole community.

Finally, let me thank the DECS for this noble undertaking – for reminding us of our responsibility to the community that has hosted us all these years. To DECS, we pledge our continuing support in all your endeavors.

Challenges and Opportunities for the Youth

Barely a month ago, we at PCARRD committed ourselves, under the "Adopt-A-School Program", to work hand in hand with you in molding the youth of this community to become better citizens and leaders of the future. For that, I am teeming with pride as I stand here before you today, knowing that somehow we at PCARRD are now a part of the existence and traditions of this school. Seeing you, the graduates, as you sit there eager and excited to receive your high school diplomas, makes me realize that indeed, the task ahead is great. I see so much hope in your faces, signalling the need for us in the community to intervene in ensuring that these hopes flourish into realities.

Like time, this world does not stand still. Change is inevitable. Societies change, perceptions change, even relationships change. Some changes are accompanied by upheavals; others happen quietly. After your high school graduation, as you prepare to go into another phase of your life, start planning for your future very seriously. For only then will you be prepared to face the challenges that may cross your path. Today is a very important day of your lives.

It is disheartening to note that in many places all over our country, many young people have become wasted human resources when they could have been a potent force in society. This is a hard life that we are living, so that children taste bitterness and hardships at a very early age. You are lucky to have parents who can provide you with good education, comfortable homes, and care and affection. But you should remember that not every child has the same opportunities.

My message to you today is clear and brief. As you continue on to college, work harder, study harder. For hardwork, bold ideas, and a genuine

Speech delivered during the Los Baños Community High School 13th Commencement Exercises, 1 April 1995, Los Baños, Laguna, Philippines.

desire to be of service to others are some of the key ingredients to a successful life. Do not demand too much from your parents, for they have already been working hard all these years to meet your needs. Material things are not the answer to success and fulfillment – for success and fulfillment comes from within.

And to you the parents of these graduates, continue to guide your children. At this very critical stage of their lives, what they need are motivation and encouragement to pursue more relevant endeavors. Show them the way to success and to the fulfillment of your dreams for them. You may have to continue to sacrifice for another four or more years to send them to college, but I'm sure you will be properly rewarded.

To the teachers and officials of this school, make quality education as your guiding principle in all your endeavors. Let us continue to guide these young people toward more productive activities. Let us be one in giving more meaning to their lives.

You can rest assured that we at PCARRD will stand committed in weaving science and technology into the academic experience of your students to ensure them a relevant and holistic education. In the context of the government's vision of Philippines 2000, we would like to see that the assistance we have extended you are able to make these students appreciate the potentials of science and technology in remedying most of the country's ills. We envision that our modest contributions in terms of equipment, books, and other information materials, training on technology information dissemination and transfer, and initiating community outreach programs are able to transform these students into problem-solving, science and technology - oriented future leaders of this nation.

We at PCARRD believe that quality and value-oriented education is not only the function of teachers, parents, and students – it is the responsibility of the whole community. Hence, in the development and upliftment of education in this school, each and everyone of us has a moral responsibility.

Again, I wish to address the graduates. What lies ahead? The prospect of a bright future for each and everyone of you is not a far vision. Just be guided by a consistent set of direction – hard work, service to the people, commitment to the community, and faith in the Lord.

My warmest congratulations to the graduates and their parents.

Biodiversity and Plant Genetic Resources

*Everywhere,
locally grown
varieties of all
kinds of crops
and their wild
relatives are
dying under the
pressure of
development.*



Exploring Biological Diversity: Development or Destruction?

Plant genetic resources constitute a unique global heritage. However, everyday all across the world, more plant species and varieties slip into extinction in a phenomenon known as universal genetic destruction.

It is a potential natural disaster unfolding at a frightening speed. The process is dramatically at work in the destruction of the world's rainforest – but not only there. Everywhere, locally grown varieties of all kinds of crops and their wild relatives are dying under the pressure of development.

It is ironic to note that a key factor in this destruction is the very success of agricultural and industrial programs of developed countries. As new high-yielding varieties and medicinal plants for pharmaceutical uses become available, local, indigenous strains which have thrived for generations become extinct.

And for whose benefit?

The potential value of plant genetic resources for the current and future needs of mankind is continuously exploited. While this cannot be helped, emerging concerns have gone beyond destruction and extinction. Today, there is a slow, but growing recognition worldwide that the benefits of such genetic resource explorations have not gone back to the poor, developing world who have nurtured, selected, and bred these agricultural and medicinal plant species for generations. Instead, they have become tools of monopoly and dominance by the developed countries.

It is in this context that the piracy of biological diversity has become a contentious issue worldwide. Scientists of transnational corporations and academic and research institutions have been unabatedly ravaging the forests, soils, and seas of

Today, there is a slow, but growing recognition worldwide that the benefits of genetic resource explorations have not gone back to the poor, developing world who have nurtured, selected, and bred these agricultural and medicinal plant species for generations. Instead, they have become tools of monopoly and dominance by the developed countries.

Welcome remarks delivered during the Round Table Discussion on Biodiversity, International Trade and Bio-Industry and Implications to National Policies, 9 March 1995, DA-NAFC Conference Room, Diliman, Quezon City, Philippines.

developing countries, particularly in Asia, Latin America, and Africa, in search of raw materials for use in biotechnology experiments. And while rural and indigenous communities have been too willing to share these valuable resources for the benefit of mankind, their rights are not recognized, much more compensated. It is likewise unjust that these genetic materials, after being studied, dabbled with, and patented, are sold back to the poor people who have nurtured and conserved them.

It is an alarming trend. And this round table discussion is an opportune time for us to reflect on this concern. Your policy inputs will be highly valuable in the formulation of proposed legislations related to intellectual property rights, biotechnology, biodiversity conservation, and issues related to national policies and positions in view of recent trends in international trade relations. Through this discussion, we hope to be able to come up with a clear national position on plant genetic resources.

With this, I thank you for finding time to participate with us today in this effort to raise public awareness and effect policy changes to protect our rich biological diversity from further exploitation and destruction.

Sharing Coconut Genetic Resources

Filipinos are sometimes disparagingly compared with the coconut: brown outside, white inside. This obviously alludes to a certain 'colonial mentality' with a low self-regard and a hankering penchant for what is foreign and imported. And yet as a major supplier of coconut products accounting for 70% of aggregate world exports, our people deserve a more positive similitude with the fruit of what is truly, for us, the tree of life. The coconut industry is, in fact, a major pillar in the Philippine economy and roughly one-third of the country's population is directly or indirectly dependent on the industry.

I wish to think, therefore, that Filipinos are like the coconut in the sense that we, as a people, are strong, hard, and resilient on the outside but sweet, tender, and joyful on the inside. It is with this interior sweetness, tenderness, and joy that I welcome you all to PCARRD and to this project inception meeting of the Coconut Genetic Resources Network for the Asia Pacific Region.

New realities are challenging the coconut industry worldwide. International trade arrangements will be freed up under the General Agreement on Tariffs and Trade and competition will be sharp not only among coconut-producing countries but also between these and the producers of other vegetable oils and comparable products. The policies protecting the environment and promoting the conservation of forest resources have directed attention to the ubiquitous coconut as a source of materials for housing and handicrafts.

On the other hand, the old realities remain. Coconut productivity globally is on the decline. Coconut continues to be a smallholder crop and 50 million people of the world's poorer farmers stand to lose or gain from the industry. Many more take coconut as an important component of the daily diet.

We look to research and development, therefore, to provide the key to enhancing coconut productivity and generate benefits for the society, industry, and the environment. We support this international collaborative initiative to share coconut genetic resources which puts our science and technology at the service of humankind and of the earth.

Welcome remarks delivered during the COGENT/IPGRI-ADB Inception Meeting, 5 September 1994, PCARRD Headquarters, Los Baños, Laguna, Philippines.

We look to research and development, therefore, to provide the key to enhancing coconut productivity and generate benefits for the society, industry and the environment. We support this international collaborative initiative to share coconut genetic resources which puts our science and technology at the service of humankind and of the earth.

Moreover, we welcome this exercise in networking, strengthening partners by building on existing strengths and by sharing of resources and expertise. Since 1975, PCARRD has successfully experimented on this networking strategy to manage the national agriculture and resources research and development system and we wish even greater success to both the regional and global Coconut Genetic Resources Networks (COGENT), and to the International Plant Genetic Resources Institute (IPGRI).

We are grateful that the Asian Development Bank has seized this opportunity to support this R & D collaboration. In doing so it lives up to its name as the premier development-oriented financial institution for Asia.

Let me simply reiterate our welcome to all of you by saying "Mabuhay". In the local language this means welcome, with all the sweetness, tenderness, and joy of the Filipinos.

Conserving the Philippine Biodiversity

Two years ago, a symposium/workshop on the conservation of biological diversity in the Philippines was conducted here at PCARRD. The output of that seminar/workshop is now being used as the framework for the Philippines biodiversity program. To sum up these outputs, three major areas of concern on biodiversity were given emphasis: 1) policy, management, and legal measures; 2) research and development; and 3) people's participation. The common issue raised was a lack of basic information and public awareness on biodiversity. Proposed strategies to solve these problems include the gathering of basic data through research, conduct of massive information and education campaign, and institution building and networking. On policies of legal measures, problems include the inadequacy of Philippine policies on protection, comprehensive land-use, conservation, and the poor implementation of existing policies. Conflicting laws on environmental management, conservation, and development also exist. Hence, there is a need to formulate new policies, review the outdated ones, and revise and rationalize the workable but hardly implemented laws.

On research and development, problems identified are the nonexistence of a coordinating body, the lack of research on aspects such as identification of endangered species, bioecology, habitat distribution, and habitat requirements. There is also a need to avail ourselves of advanced research facilities. Expertise on biodiversity must also be tapped, and socio-anthropological concerns must be properly addressed.

On people's participation, government support to private groups is the major issue. Bureaucracy must be lessened and incentives must be provided.

Opening remarks delivered during the Forum on GO-NGO Partnership for the Conservation of Philippine Biodiversity, 6 October 1994, PCARRD Headquarters, Los Baños, Laguna, Philippines.

Moreover, at the grass roots level, their economic needs must be reconciled along with biodiversity conservation. Cultural diversity must also be preserved and respected as long as these are environmentally sound and sustainable.

In all these problems, government undertakings alone cannot suffice for the magnitude of the crisis. Efforts on biodiversity must be consolidated and coordinated by various sectors of the country. PCARRD acknowledges the efforts of nongovernment organizations in all R & D undertakings. We consider capable private sector groups, community organizations, entrepreneurs, and individual families as valuable partners in conducting R & D. The NGOs can easily establish linkage with the grass roots and can encourage better participation from the people. We should harness this opportunity in bringing research-generated information into a greater role in the local economy by involving the private sector. PCARRD encourages the support and commitment of the private sectors in the implementation of R & D activities and the management of our natural resources.

This is basically the reason why the Protected Areas and Wildlife Commodity Team called for this forum. I wish to commend the efforts of the Team in making this worthwhile gathering possible. I know all of you have come here today with a committed spirit to aim for and ultimately achieve the high ideals of preserving/conserving the Philippine biodiversity. We believe that our biodiversity is highly important basically for these main reasons: 1) direct economic benefits in the form of food, medicine, and industrial raw materials; 2) aesthetic and symbolic values; 3) ethical right to existence; 4) indirect functional services to the ecosystems and to humanity; and 5) as the storehouse of genetic source materials for greater technological advances. However, it is also a known fact to us that the Philippine biodiversity is being degraded. Numerous species of plant and animal life forms are now endangered because of various threats to their survival and habitat. This is now a major global concern, and it is high time for us to act now and do our part in conserving nature's precious gift of flora and fauna.

With these, I hope I have inspired you to work out things in the best way you can. I am one with you in striving to build a better future for the generations to come.

Preserving our Plant Genetic Resources

We sincerely appreciate your unwavering support and interest in actively participating in this very significant gathering, with the eagerness to exchange ideas and formulate our stand on important issues and concerns on Plant Genetic Resources. This is in response to the rapid pace of scientific advancement, industrialization, and proprietorship of knowledge in agriculture under the General Agreement on Tariffs and Trade (GATT).

Plant Genetic Resources (PGR) constitute the basic raw materials required essentially for crop improvement programs. Their collection and conservation obviously assume importance in the national, regional, and global context. The PGR of potential value for current and future needs of humankind are increasingly being exploited and some of them, because of their over-exploitation, are in danger of extinction. Thus, genetic resources constitute a unique global heritage and their collection, utilization, and conservation are of immediate concern to human welfare.

In this context, the Philippines, which hold a rich reservoir of genetic diversity must preserve the genetic wealth which provides valuable genes for crop improvement.

This meeting covers major concerns on Plant Genetic Resources. The discussion will address strategic issues on conservation, use, exchange, policies, and collaborations. I sincerely hope that you will be able to achieve the objectives of this gathering. With a genuine collaboration effort like this, it should not be difficult to achieve our goals.

I wish you all success and fruitful deliberations.

Environment and Farm Resources and Systems Management

In terms of its natural resources, the Philippines is a rich and beautiful country, but with its archipelagic lands with rugged terrain, ours is also a fragile life support system.

Thus, while exploiting our ecosystems as production base and enjoying its beauty and bounty, we need to be ever conscious of its limits and proper care.



Agroforestry Toward Sustainable Development

This affair is highly relevant and very timely. Timely because this activity is focused on arresting the pressing and persistent problems of environmental degradation, socioeconomic-political equity in resource use, and the provision of food and livelihood for the greater majority. It has been 15 years since we last held a similar symposium/workshop on agroforestry here at PCARRD. Through these years, various agencies and institutions have conducted researches/studies on agroforestry and have developed various technologies and socioeconomic programs for upland development. It is about time that we convene all the agroforestry enthusiasts, advocates, researchers, and concerned citizens and work together on a more integrated agenda on agroforestry. This symposium is likewise relevant because we foresee agroforestry as the basic approach to the provision of food and alternative livelihood for upland farmers in the light of global competition. The symposium/workshop aims to consolidate research outputs and highlights, as well as to discuss policies, strategies, technologies, and to identify gaps in agroforestry research and development. In behalf of PCARRD, we highly appreciate your presence and contribution to this affair.

Through the years, agroforestry has evolved from mere crop combinations of agriculture and forestry to the generation of various technologies and to the development of programs for upland dwellers. Originally intended for soil and water conservation and food production, agroforestry unfolded to address basic issues of poverty,

The goal of sustainable development is to achieve and maintain economic growth without depleting the stock of natural resources and degrading environmental quality. The Philippine Strategy for Sustainable Development is the basis for government efforts aimed at coming to grips with the country's environmental crisis.

Keynote address delivered during the Symposium/Workshop on Recent Developments in Agroforestry Researches, 19-20 September 1994, E.O. Tan Hall, PCARRD Headquarters, Los Baños, Laguna, Philippines.

resource use and equity, livelihood, ecological restoration, and the improvement of the upland dwellers' general welfare.

At present, the Philippines is inhabited by more than 67 million Filipinos. All these people have to make a living in only 30 million hectares of land. This increasing population exerts heavy pressures on our natural resources, thereby, degrading its state. From 17 million hectares of virgin forests a few decades ago, only 0.8 million hectares of forestlands remain. This translates to an average rate of 100,000-hectare deforestation per year. Moreover, satellite images show that there are more than 4 million hectares of sloping lands under cultivation supporting an estimated 9 million Filipinos.

These overpopulation problems and environmental degradation have prompted the government to formulate development programs addressing both concerns. The DENR has been actively implementing various environmental and social programs. Among these major programs are the Integrated Social Forestry Program (ISF) in noncritical areas of the public domain that are under various forms of cultivation, the National Forestation Program (NFP). The DOST Operational Plan for 1994-1998 cited the impact of science and technology on relevant environmental forces. As to environmental degradation and depletion of resources, S & T is needed in the utilization of renewable sources of energy, development of environment-friendly technologies, and design of effective environment conservation programs. The high population growth rate, expected to increase to 68 million in 1994 and 75 million by 2000, increases expenditures for S & T education and training. The larger part of the population living in poverty means a need to continually transfer technology to the countryside and provide employment and discourage migration to the urban centers. Directly and indirectly stated, the overlying principle in all these programs is sustainable development. The goal of sustainable development is to achieve and maintain economic growth without depleting the stock of natural resources and degrading environmental quality. The Philippine Strategy for Sustainable Development is the basis for government efforts aimed at coming to grips with the country's environmental crisis. There are 10 general strategies for sustainable development, as follows:

1. Integration of environmental considerations in decision-making.
2. Proper pricing of natural resources.
3. Property rights reform.
4. Establishment of an integrated protected areas system.
5. Rehabilitation of degraded ecosystem.
6. Strengthening of residuals management in industry (pollution control).
7. Integration of population concerns and social welfare in development planning.
8. Including growth in rural areas.
9. Promotion of environmental education.
10. Strengthening of citizen's participation and constituency building.

In this light, being guided by all these government efforts and guidelines, I wish to emphasize the following concerns for agroforestry:

First, formulate an integrated and coordinated research and development agenda for agroforestry. Researches on agroforestry are fragmented and compartmentalized. There is a need for a closer collaboration and coordination among all agencies and institutions concerned in agroforestry. For agroforestry to

head toward a direct and integrated direction, the agenda could serve as the framework for all agroforestry efforts.

Second, design and develop sustainable agroforestry systems. A sustainable agroforestry system is ecologically and socioeconomically sound. The technologies generated must be environment-friendly, appropriate with the site, acceptable by the intended adopters, and should satisfy current and future needs of the upland farmers.

Third, establish a closer tie-up/linkage with the private industries and the non-government organizations. These groups are valuable partners in development, implementation, and promotion of technologies and systems. There is a need to widen linkages with these groups and associations to facilitate technology transfer and commercialization, as well as hasten adoption of technologies.

Fourth, enhance upland farmers' capability in livelihood development and management. This can be realized by conducting trainings and seminars to educate them on the various aspects of agroforestry. Demonstrations, cross-visits, and technical assistance are needed. Learning laboratories, training centers, and model farm development are essential tools for effective technology transfer.

Fifth, focus policies on the promotion of upland development and environmental rehabilitation. Policy researches should focus on providing easy access to technical and financial assistance like markets, credit, infrastructure, and other support services.

With these, I hope I lead you to your take-off until you reach greater heights. It is hoped that outputs of R & D will redound to the development of viable, sustainable, profitable, and culturally acceptable agroforestry production systems. The results of this activity are very necessary in the formulation and implementation of effective agroforestry programs, catering to the thrusts of our present government systems, and adhering to the needs of the poorest sector of Philippine society.

Let us work harmoniously together in bringing about change for the upliftment of our people, the society, the environment, and the nation as a whole. I am one with you in pursuing this good cause.

PCARRD's Commitment and Support for New and Renewable Energy

Energy is one of the most vital resources for enhancing and sustaining development, especially under the vision of Philippines 2000. Too much reliance on conventional energy sources has taught us a lesson in the past. Likewise, the cost of generating power from these traditional sources is draining a significant share of our country's financial resources.

It is in this context that we have to look at other alternatives – the new and renewable energy sources. New, renewable, or nonconventional sources, when enhanced, will supplement the conventional energy systems used in our country to meet our energy demands to attain sustainable development. Actually, most of these have been existing since time immemorial. What we need is only to tap their inexhaustible potentials.

These sources can be utilized by the agriculture and natural resources sector to support increased production at relatively low cost to meet the needs of our growing population.

Role of PCARRD in NRE

PCARRD, since its creation in 1972, has already been doing R & D activities on this concern. However, with PCARRD's complementation of functions of another DOST council, the Philippine Council for Industry and Energy Research and Development (PCIERD), we concentrated most of our coordination and monitoring activities on those energy-related R & D activities focused mainly on agriculture and natural resources such as agrowaste utilization from crops and forest resources.

New, renewable, or non-conventional sources, when enhanced, will supplement the conventional energy systems used in our country to meet our energy demands to attain sustainable development.

Delivered during the National Workshop on New and Renewable Energy Sources 1995-2000, 26-27 January 1995, Hotel Niko Manila Garden, Philippines.

PCARRD conducts its R & D activities in support of NRE through:

1. Agricultural Engineering

The possibility of using agrowaste, biomass, solar and other agricultural raw materials as energy sources for various machines such as biogas digesters, solar dryers, agro-waste fueled dryers, combustors, and furnaces is being pursued.

2. Fuelwood Plantation

Studies on the efficiency of using wood and agroforestry wastes such as sawdust, ricehull, coffee hull, rattan shavings, and coconut coir dust are given priority. As early as 1985, the Council had published a book series on the *State of the Art on Agricultural Engineering Research: Renewable Energy*. This publication synthesized the status of renewable energy sources R & D in the Philippines to establish a reference point for the revision of approach, strategies, and specific research activities as needed.

PCARRD's Commitment to NRE

• **Strengthen R & D monitoring and coordination activities on NRE**

PCARRD will actively monitor and coordinate activities on energy-related R & D programs/projects in the NARRDN. Furthermore, we envision joint monitoring activities with the Department of Energy (DOE) on these projects, particularly those generated by DOE's Affiliated Non-Conventional Energy Centers (ANECs), the majority of them located in various member-state colleges and universities (SCUs) of the National Agriculture and Resources Research and Development Network (NARRDN).

In line with our Medium Term Research and Development Plan (MTRDP) for 1995-2000, PCARRD will increase the level of mechanization to facilitate agricultural production and post production operations with minimal losses and reduce operation cost for fuel and thus, save on foreign exchange. Under the plan, the NARRDN, through the subnetwork on Agricultural Engineering which is the National Agricultural Engineering Research and Development Network (NAERDN), will be encouraged to conduct more R & D on energy-related concerns. The Agricultural Engineering Team will likewise be tapped to provide the network a perspective/direction and will be encouraged to intensify R & D activities on NRE. The team's expertise in this aspect will be very much needed since the members come from both the government and the private sector.

• **Initiate policy studies of mutual interest**

It has been noted in the past that there had been no consistent policies on NRE, particularly those involving the agriculture and natural resources sectors. Recently, PCARRD created a Policy Action Group (PAG) in the Secretariat to look into policy matters that are of interest to the sector. PCARRD will tap the services of the group to formulate policy recommendations that will help DOE in formulating policies beneficial to the NRE and the agriculture and natural resources sectors.

• **Assist DOE in generating funds for R & D on NRE**

PCARRD boasts of its extensive linkages with both local and international funding agencies. We have been generating a lot of resources from these

collaborations. This time, we will explore possibilities to tap these linkages to generate resources for R & D on NRE and other related activities.

- **Assist in the promotion and commercialization of NRE-related technologies**

One of the priorities of PCARRD is technology transfer and commercialization. PCARRD, through its Technology Outreach and Promotion Division and the Technology Transfer Advisory Committee, will assist and collaborate with the DOE in promoting and commercializing NRE-related technologies, particularly those that will benefit the agriculture and natural resources sectors. Several publications and promotional materials on NRE-related technologies have been generated by PCARRD.

It is with much enthusiasm that we support and give you our commitment on this endeavor. It is an honor for PCARRD to be a part of this great undertaking. We assure you of our all-out support and commitment in the formulation of the NRE sector plan.

Conservation Farming Toward Sustainable Agriculture

Conservation farming geared toward sustainable agriculture has been widely recognized. It has, in fact, become a crying need of our times. The emerging problems in the uplands remain to be a challenge. Prospects and opportunities for economic growth brought about by conservation systems are yet to be fully realized.

These considerations call for actions. While many sectors in Southeast Asian countries have been working along this endeavor, their activities need to be sustained. It takes hundreds of years to rehabilitate degraded lands. And it may take an equal length of time for soil conservation objectives to be achieved. This is the challenge to all of us!

PCARRD for its mission seeks to exercise central leadership and coordination of R & D efforts in agriculture, environment, and natural resources and to ascertain that research results are utilized to attain optimum economic and social benefits. In line with this, PCARRD is formulating the Five-Year Medium Term Development Plan which will support the government's call for improving the people's quality of life and rapid agri-industrialization. Also, PCARRD has identified soil and water conservation as one of its 12 banner programs. At the forefront of these plans and programs are our network member-agencies.

This week-long activity brings us to a number of tasks. A review and evaluation of conservation farming technologies for Southeast Asia will enable us to identify viable technologies that might be applicable to conditions peculiar to our countries. With this, each country can learn from the experience of others. After having identified such technologies, it is best to determine and assess the socioeconomic considerations and constraints in

Welcome remarks delivered during the International Workshop on Conservation Farming: Challenges, Opportunities, and Prospects, 20-26 November 1994, Manila Pavilion Hotel, Philippines.

the adoption of these technologies and how this adoption can be accelerated. Related policies need to be reviewed. We hope to formulate an action agenda for future activities that will depend on a thorough discussion of the subject.

I hope you will be able to achieve all these tasks in the short time available. I am confident that with your commitment, significant results are forthcoming.

To those of you who are new to our shores and to our slopes, let me offer a word of welcome. In Tagalog, we say, "MABUHAY!" This is really a pledge of life, to nurture and conserve the most precious legacy we can ever leave to those who will come after us.

Land Evaluation Toward the Conservation and Sustainable Use of Natural Resources

We are all aware of the problems plaguing our natural resources. For the past 20 years, mismanagement of our soil and water resources has caused soil erosion, exhaustion, salinization, and desertification. Forests are rapidly diminishing as a result of illegal logging, slash-and-burn farming or 'kaingin' in the hilly uplands and the encroachment of urban and agricultural settlements. Population has increased rapidly and agriculture is expanding into areas of marginal productivity. All over the Philippines, rice fields are being converted into subdivisions and housing areas. These often uncontrollable human activities not only upset the ecological balance but also threaten the very existence of mankind.

In the light of the government's vision of Philippines 2000, the need for a well-balanced management of renewable land resources based on reliable data and information becomes urgent and most critical. With the advent of computers and the continuing challenge to appropriately manage our resources, experts have developed various methods and systems of handling, managing, and making useful enormous data on the environment. In the Philippines, computer-based systems have been recognized as a very useful tool in managing land resources for agriculture, forestry, and the environment.

Land evaluation is the key to the conservation and sustainable use of our natural resources. This seminar workshop on land evaluation seeks to present and describe some of the state of the art tools in evaluating soil and climate data for agricultural and forest resource management. It also aims to provide local researchers, scientists, and extension workers with opportunities to learn and appreciate the usefulness of computer-based

Welcome remarks delivered during the Land Evaluation Workshop, 16-18 May 1995, PCARRD Headquarters, Los Baños, Laguna, Philippines.

systems as an approach to solving the conflicting problems of productivity and resource conservation.

We are very grateful to have speakers who will share with us their knowledge on PLANTGRO, a software developed by CSIRO in Australia which matches environmental conditions with plant/tree requirements for efficient plant growth on particular site characteristics. We also have speakers from PAGASA, NAMRIA, and IRRI to introduce to us locally developed software tools for land evaluation.

With our competent speakers, I am sure that the objectives of this Land Evaluation Seminar/Training Workshop will be met. May this event turn out to be truly rewarding.

Environmental Protection and Conservation Through Ecotourism

Over the past few years we have seen the growing cause for the proper stewardship of the environment even as we sail further onto industrial and economic development. Ecological tourism is certainly one potent tool for promoting appreciation and care for the environment and our natural resources. For it is only when people understand and appreciate something that they meaningfully participate in its care and maintenance.

In terms of its natural resources, the Philippines is a rich and beautiful country, but with its archipelagic lands with rugged terrain, ours is also a fragile life support system. Thus, while exploiting our ecosystems as production base and enjoying its beauty and bounty, we need to be ever conscious of its limits and proper care. The experiences of some advanced countries have shown that it is possible to progress yet maintain integrity of the environment. One key is apparently an ecological conscious populace and responsible stakeholders.

To ensure effectiveness of ecotourism as a strategy for environmental appreciation and conservation, its approaches and direction have to be carefully studied and planned for. Thus, PCARRD, the Protected Areas and Wildlife Bureau (PAWB) and the Department of Tourism (DOT) have joined hands in sponsoring this symposium/workshop. It is hoped that this activity will serve as a forum for the identification of effective ecotourism strategies, as well as research and policy initiatives that will enhance ecotourism in the country. Your insights and active participation will certainly help contribute to the attainment of this goal.

In closing, let me express our gratitude to our cosponsors in this activity, PAWB of the Department of Environment and Natural Resources and DOT.

May we have a fruitful time together and a pleasant stay here at PCARRD in the course of this two-day symposium/workshop.

Delivered during the Symposium Workshop on Ecological Tourism, 6-7 December 1994, PCARRD, Los Baños, Laguna, Philippines.

To the PCARRD Staff



*I believe that
harmony and
unity are
preconditions to
outstanding
performance and
increased
productivity.
Hence, let us
work together as
a team with high
spirit and
morale, with
purpose and
direction toward
a common goal.*



A Call for Unity and Harmony

It was barely 10 months ago when I took on the enormous challenge of assuming the leadership of PCARRD. As I remember it, the initial pressure was tremendous, having to introduce new order of things to make R & D more responsive to national development goals in view of the government's vision toward a better Philippines. It didn't take me long to realize though that with a dedicated and committed cadre of high-caliber manpower, there is no way we would fail. For that, I thank you – the men and women of PCARRD – for making it possible for us to achieve a few things of significance in an improbably short period of time.

I took office equipped with a conscious, planned strategy of attaining and sustaining an optimum level of performance within the organization by promoting efficiency and effectiveness. I started by asking some basic questions: Where are we now? Where do we want to be? How do we get from where we are to where we want to be? Hence, together with the Directorate, we started introducing some planned organizational changes.

But when an organization is faced with adjusting to changes, a crisis situation often develops. During the past few weeks, emotions were high as some of you began resenting these changes. Some reacted harshly and compulsively, but I am thankful for the thoughtful judgment that ruled over the majority.

While conflict is normal as people think and behave differently from one another, I guess it's about time that we put that episode behind us and instead look at positive new opportunities that lie ahead.

There is so much we have to do as we approach the turn of the century. Philippines 2000 is a shared vision and an inspirational call to unity, a

In setting our future course of actions as an organization, we must work with initiative, ingenuity, and enthusiasm. Let us feel that we belong, that we have respect and confidence for one another.

Message delivered during the the flag ceremony on 10 April 1995, PCARRD Headquarters, Los Baños, Laguna, Philippines.

call for a strategic alliance among the key development actors of the country. This call demands an aggressive response and a proactive posture from each and everyone of us.

Hence, in setting our future course of actions as an organization, we must work with initiative, ingenuity, and enthusiasm. Let us feel that we belong, that we have respect and confidence for one another. We must bear in mind that willing obedience, cooperation, and wholehearted support is a two-way process between management and staff. Hence, while we in the management become more careful about the decisions we make, we expect you to be more rational in your judgment. Let us respect one another – respect that is not given, but earned.

Our concern is to provide you with an environment that will allow you to realize your full potential and encourage your professional growth. This is a function of the character and quality of our relationship. As we in the management become more participatory in our decision-making, we encourage you to become more willing to approach us regarding your concerns. Rest assured that we will observe flexibility and openness if organizational growth is to be achieved.

I have been trying to reach you more, so that I have made my office open not just for settling disputes and disagreements but for hearing out suggestions and new ideas from you. The foundation of a good relationship is better communication. You only need to speak out, and I will listen.

What we expect from you, in return, is a sense of professional maturity to enable you to deal with your problems objectively, and to carry out your duties and tasks competently and responsibly.

I believe that harmony and unity are preconditions to outstanding performance and increased productivity. Hence, let us work together as a team with high spirit and morale, with purpose and direction toward a common goal. Let us seek forgiveness from those whom we have hurt. Let us work with love and compassion for one another. Let us be humble as to accept the limitations of others. This we can do by working together not just as an organization but as a family.

A Recognition Day Message

I take great pride in being a part of this 1994 Recognition Day. Today is our day, our way of celebrating PCARRD's 22nd year of relevant existence with smiles and surprises, sans formalities and dignitaries. In this celebration, the spotlight is on you – the ordinary but special employees who, unknown to many, are the ones propelling the wheel that steers the Council to greater heights of achievements. You have more reasons to celebrate than anyone of us, for without you, PCARRD would be nothing. Hence, on this day, take time out to relax and let go. Take advantage of this welcome break from the demands and pressures of your job.

But before we start with the fun, let us first pause to reflect on the immediate past. We have faced many challenges but at the same time, great strides have been achieved. Let us then ensure that these lessons and experiences of the past become our guarantee for a brighter future. For while PCARRD has undergone significant changes over time, particularly over the past five months, in response to a rapidly maturing research and development system for development, it has nevertheless evolved into a center for relevance, excellence, and commitment. The need for activism persists, more so in pushing for the realization of our common vision through our banner program – the STAND Philippines 2000. Hence, the imperatives of national development call on us once again to literally advance our cause step by step, making sure that each step we take is justified by the experience of the past.

At this point, allow me to extend to you my deepest appreciation for your all-out support in my first five months in office. This has been a very challenging phase in my career life. At the same time, this has been a tough time for the Council as it shifts to a more global thrust that demands

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Message delivered during the PCARRD Staff Day,
29 November 1994, PCARRD, Los Baños, Laguna, Philippines.

doubling of the scale of its activities. I could only be thankful that I have you to backstop me all these times. Together, let us take pride in our achievements given the limited resources, and let us make ourselves ready and willing to assume a larger role amid the call for global competitiveness and self-reliance. I will have no worry, as long as all of you are with me. Again, thank you very much.

Lastly, I advocate for a more harmonious coexistence among each and everyone of us. Treat PCARRD as your second family, and as a member of this big family, take extra effort that this institution stays intact, in good times and in bad times. Find strength in harmony, for together, there is no way we will fail.

A Christmas Message

People all over the world look forward to commemorating the birth of Christ in December. Christmas has been celebrated with rejoicing and colorful festivities unequalled since time immemorial. During Christmas, people graciously become forgiving, generous, kind. The effect of Christmas on our lives is difficult to describe. It leaves a feeling of warmth and joy in the heart, that even the most miserable and destitute people who have felt rejection all their lives pause to celebrate the birth of Christ. Christmas to many is an event that opens the door of heavens to God's unconditional love and mercies.

During Christmas, we take time to give gifts to our loved ones. We send Christmas cards to our friends, we go to church, we sing carols, we anticipate "noche buena". We celebrate the season with our families.

Christmas, however, is much more than a festivity.

Written four thousand years ago, the book of Isaiah puts on record an immortal prophecy which I would like to quote and impart with you as we celebrate the Christmas season:

"For us a Child is born, to us a Son is given, and the government will be on His shoulders. And He will be called Wonderful Counselor, Mighty God, Everlasting Father, Prince of Peace."

This season, let us put a deeper meaning into our celebration by reflecting on this prophecy. Let us look at Christ as the author of our life, physically and spiritually.

Let us make Christmas a time for peace. It is the time to ask His forgiveness. It is the time to seek forgiveness to our families whom we have neglected, to our officemates whom we have hurt. It is the time for us to unite, to work with love and

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Delivered during PCARRD's Christmas Party, 22 December 1994, E. O. Tan Hall, PCARRD, Los Baños, Laguna, Philippines.

deep compassion with one another. PCARRD needs humble people, people who know how to accept the limitations of others, and people who love despite such limitations. Let us exercise the kind of love that Christ showed to us. Let us not drift apart from Him. Let us not drift apart from each other.

I find this season the most appropriate time for me to thank all of you – men and women of PCARRD – for making it possible for me to achieve a few things of significance in an improbably short period of time. I consider your commitment to your jobs as the best gift I could ever have this Christmas.

Let us likewise make Christmas a season to renew our dedication to our cause. Together, let us leap forward in stirring PCARRD to greater heights of achievements. We have committed ourselves to service so that our countrymen will experience a better tomorrow. Our farmers' backs are aching as they wallow in poverty. This season, let us give them comfort through our research and development efforts. This, we can do by striving to work together in unity, as a family.

I invite you to follow the example of our God's love for us. May you make this as the basis for celebrating the Christmas season and in looking forward to the new year with a renewed commitment and dedication.

Other Messages/ Responses



A Swarm Welcome

Who has ever been to Barangay Cawag in Subic, Zambales? Who has even heard about it? In July 1993, this small barangay became the spark that detonated the locust bomb. There and in the outlying areas locusts first ravaged some 100 hectares of agricultural lands. Southwesterly winds soon brought the dread and devastating locust to Bataan, Tarlac, and Pampanga and today we have a situation wherein more than 4,000 hectares of sugarcane and rice lands have been damaged. As if the lahar were not scourge enough, the locusts have found a good breeding place in lahar areas, further afflicting people who continue to chafe and groan under the havoc of Pinatubo's violent reawakening.

It is hardly flattering to be welcomed on such an unpleasant note. On the other hand, it would be ridiculous not to even mention locusts in a meeting such as this, convoked precisely to identify viable science and technology solutions to a pest problem we can ill allow to linger on.

It seems that the winds continue to blow southward to this very day because the locusts have arrived finally in Southern Tagalog, and specifically in PCARRD. Today, therefore, in behalf of the directors and staff of PCARRD, let me extend to all the participants and organizers of this meeting, a very "swarm welcome".

It has been a year since the locust outbreak was first reported. We have lost precious time. We have also lost an opportunity to show that science and technology can, as it must, provide quick and effective measures to at least mitigate the adverse impacts of a devastating infestation. What we have not lost, however, are our sense of public duty and our resiliency to bounce back, flex some muscle, regain our response and be on the right track.

Welcome remarks delivered during the Locust Consultation Meeting, 5 August 1994, PCARRD, Los Baños, Laguna, Philippines.

This experience has made us realize that PCARRD should be at the forefront of coordinating S & T efforts even in an emergency situation such as this. We have begun to redefine the mechanisms available to us and to oil these mechanisms with sufficient funds for emergency projects. The other tasks and strategies for this particular emergency we will leave for you to spell out. It is my hope that, like the third phase in the development of the *Locusta migratoria manilensis*, you will be gregarious with your own resources.

Let the facilities of PCARRD and the ambience and charm of Los Baños contribute so that your work and ours will contain the outbreak and prepare us for similar ones in the future.

Acceptance Remarks as President of AFSA

In his opening remarks, then President of AFSA, the eminent Dr. Nimal Ranaweera, alluded to the self-image expressed by a certain Filipino peasant who likens himself to a fish swimming in the ocean and that of the technician who is likened to a bird on the wing. Seemingly, there exists a chasm between two different, mutually exclusive worlds.

Using the same images, I wish to note that the world of the birds need not be removed from the world of the fishes. For both live in the same cosmic reality. Both share the fragility of the same environment never before more threatened by man-induced risks.

The paradigm that permits us to regard the intimate interrelationship between bird and fish, as well as man and soil and water and plants and animals, was advanced many years back by general systems theory. From this theory, we have drawn guidance in farming systems practice.

This symposium has provided us a forum for discussion and debate of the burning issues of sustainability and the environment in the Asian context and allowed us to compare theory with practice, thereby, increasing our knowledge and widening the horizons of our understanding. It has also given us a golden opportunity to make friends across the seas.

All this would not have been possible without your cooperation. I wish to acknowledge gratefully the support provided by the Department of Agriculture and the Department of Science and Technology, our donors and sponsors, the hardworking symposium secretariat, and all those who have contributed to make this symposium a success.

Delivered during the Closing Program of the Third Farming Systems Symposium of the Asian Farming Systems Association, 9 November 1994, Manila Midtown Hotel, Philippines.

While it may be difficult to equal the energy and dedication of Dr. Ranaweera, let me assure you that as the incoming President of the Asian Farming Systems Association, today I accept this privileged position of service to our Asian community with a solemn pledge to render nothing less than my best. I look forward to working with you and I also count on your continued support and cooperation.

A Message from a Past President

It is a distinct honor and privilege for me to address such a distinguished group of delegates to this FCSSP 11th Annual Scientific Conference. This group is the lifeblood of Philippine agriculture, the men and women in whose hands the lives of many Filipinos depend upon.

I stand here before you today recalling the many challenges I faced and the significant strides I have achieved as a research manager in the field of agriculture. My dominant reflection covers a time when I was constantly involved in steering agricultural R & D toward greater relevance and excellence. It covers the period that I was Director of DA-BAR, and now the man at the helm of PCARRD. As I look back, my long period of transition transcends to the time when I was President of the Federation in 1987, of CSSP in 1986-87, and of SAVI in 1985-86. This only shows that, indeed, this prestigious organization has played an active part in my transformation.

The pressure of introducing new order of things to make R & D more responsive to national development goals is enormous. With it goes hardwork and tremendous sacrifices, and the ability to relate with the "right" people who will help you in your way and who will open for you better opportunities in meeting challenges and adversities.

I am, thus, grateful to all of you for my years of fruitful association with the Federation. When I took on the enormous challenge of assuming the leadership of PCARRD, I can't help but be thankful that I grew with the Federation - with people-oriented experts and scientists who are teeming with a genuine commitment to public service. I believe that my association with the Federation is

Delivered during the Federation of Crops Science Societies of the Philippines (FCSSP) 11th Annual Scientific Conference, 24 April 1995, Siliman University, Dumaguete City, Philippines.

one among the interrelated factors that have helped me achieve a few things of significance in my professional lifetime.

At this point, I hope it won't be asking too much if I pose another call for support from the Federation – one that demands an aggressive response and a proactive posture from each and everyone of you. There is so much we, in the crops science sector, have to do as we approach the turn of the century. In view of the government's vision of Philippines 2000, I call on you once again to take an active role in the attainment of the central goal of "improved quality of life for all Filipinos". As we press forward toward the modernization of the production sector, let us rally behind the dream of self-reliance and global excellence for the nation.

In setting our future course of action as an organization, let us work with initiative, ingenuity, and enthusiasm. As the core of Philippine agriculture, let us intensify our efforts and do our share in making this nation a newly industrializing country by the turn of the century.

I am proud to be a part of this Federation, as I am proud of my commitment to a shared vision.

With this, allow me to congratulate the organizers of this conference for the resounding success of this event. May God bless us all that we may be able to use our wisdom and strength to serve our people to the fullest.

Sharing Responsibilities Toward National Food Security: The IRRI - PCARRD Collaboration

Over the past decades, when so many have failed in the struggle against hunger and poverty, there is one international organization whose dedicated work touched the lives of millions of people in the Third World, especially in the country hosting it. IRRI's steady efforts have, through the years, improved the human condition of these people in truly practical and lasting ways.

IRRI believes that to allow humanity to wallow in hunger, deprived and suffering, is intolerable, especially in a world where potential food sources abound. Thus, IRRI has been providing the world with scientific answers to winning the battle against hunger.

Men of great, bold vision have been stirring IRRI all these years toward the attainment of its goal to alleviate the pressing global concerns on availability of food, conservation of resources, and sustainability of the environment. On this note, I would like to particularly commend the untiring work and dedication of Dr. Klaus Lampe, outgoing Director General of IRRI, for his six years of quiet and persistent leadership. In his term, the excellence and relevance of IRRI's scientific contribution to the improvement of the productivity and production of rice and rice-based cropping systems worldwide have been truly outstanding.

That IRRI's contribution during Dr. Lampe's term has been the result of intensified, fruitful cooperation among scientists and experts from developed and developing countries alike is in itself exceptional and encouraging. Dr. Lampe has been a major force in forging close collaboration with national rice research programs, other advanced institutions and laboratories, sister international agricultural research centers, nongovernment organizations, and the private

Delivered during a gathering in honor of Dr. Klaus Lampe organized by PhilRice, 11 May 1995, Hotel Intercontinental, Manila, Philippines.

sector in finding the knowledge and developing the technology to address basic food problems. We at PCARRD, as the agency mandated to coordinate and monitor the Philippine R & D programs in agriculture, can attest to this.

Dr. Lampe believes that collaboration has many synergistic effects in view of the fact that scientists and research institutions worldwide are developing exciting new methodologies and expanding knowledge applicable to resolving important issues in sustainable rice production. We at the host country are fortunate to have access to such collaboration.

PCARRD is thankful to Dr. Lampe for his contribution in unifying and strengthening the efforts of various agencies and institutions in the country working on rice research and development. Through collaborative projects with IRRI, national efforts to solve present and future rice problems specific to the Philippines pose greater impact.

Through PhilRice and the national agriculture and resources research and development network, PCARRD actively collaborates with IRRI on research, training, and technology transfer activities on rice and rice-based farming systems. IRRI assists PhilRice in the massive training and retraining of Filipino rice scientists and extensionists, and makes available to them seed and information materials. Moreover, while IRRI continues to implement its programs and maintains its leadership in rice research at the international level, its activities which are considered national in nature are carried out collaboratively with PhilRice. This collaboration will certainly unify and strengthen the existing rice R & D network in the country.

To Dr. Lampe, we cannot thank you enough for reaching out to share with us IRRI's knowledge and new technologies in rice production. Your enthusiasm and love of humanity will continuously inspire and motivate our rice scientists to stand unrelentless in waging an all-out battle against hunger.

