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REPORT OF THE EXTERNAL EVALUATION
OF AGRICULTURAL RESEARCH
DEVELOPMENT PROJECT II
(February 3, 1984)

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PCARRD

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OF THE
EXTERNAL EVALUATION
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**PHILIPPINE COUNCIL FOR AGRICULTURE AND RESOURCES RESEARCH
AND DEVELOPMENT**
Los Baños, Laguna

TABLE OF CONTENTS

Objectives 1

Performance/Achievements 2

Highlights of Project II 3

Main Issues 5

Recommendations 7

Organization of the Report 9

Research Capabilities in Regional Research Centers 9

1. Responsiveness to Regional Problems 10

2. Regional Institutional Cooperation 12

3. Research Leadership and Management 19

4. Diffusion and Feedback 23

5. Infrastructure and Equipment 27

PCARRD's Leadership Role in the Administration and Management of Agriculture and Resources Research and Development 30

1. Research Priorities 30

2. PCARRD's Influence in Implementing Research Priorities 36

3. National Research and Development Programs 39

4. Manpower Development 41

5. Research Constituencies 48

What Next? 51

Annex: Review Team

**Annex: PCARRD-USAID Agricultural Research
Project II Evaluation**

February 3, 1984

EXTERNAL EVALUATION OF AGRICULTURAL RESEARCH DEVELOPMENT PROJECT II
January 16 to February 4, 1984

Has PCARRD made a difference in more effectively mobilizing agricultural and natural resources research to contribute to Philippine economic development? The answer is yes. The purpose of this report is to suggest ways to make PCARRD even more effective in the future.

Objectives

The task of: Defining research goals,
Translating goals into research programs,
Matching programs to research agencies,
Mobilizing resources to support research,
Evaluating research results, and
Translating results into progress

is enormous.

This is what PCARRD was created to do.

Performance/Accomplishments

In the 11 short years of its existence, PCARRD has made significant progress in achieving its objectives. In addition to improving the planning and management of research, it has provided leadership in strengthening the capability of the Philippines to

implement research. The national agricultural and natural resources research system can now show:

- 1. A nationwide system of national, regional and cooperating research stations, with multi-commodity and single - commodity responsibilities, organized into regional research centers/consortia.**
- 2. A system of research priorities related to national development goals, with PCARRD supporting or withholding support to research agencies to ensure that the priorities are followed.**
- 3. Improved research management practices and policies which reduce duplication of research projects, improve accountability, and encourage dissemination and utilization of results.**
- 4. Improved research environment whereby research is now appreciated by a wider audience. As one university administrator and research director stated: "The Ph.D. is equated with research. At a time when student enrollment is declining, research is what will keep the university alive for agriculture".**
- 5. Improved linkages with extension, farming, forestry, and fishing communities, among research and development agencies within the country, and with the international development community.**

6. Improved packaging and dissemination of research results.
7. Growth in research support.
8. Accountable impact in terms of increased yield and production of commodities and incomes of farmers^{*}

Highlights of Project II

The Review Team feels that PCARRD has utilized Project II funds effectively to achieve the goals of improving the research capability in the Philippines:

1. Agricultural Research Development Projects I and II provided the equivalent of \$20.0 million in new infrastructure. As of December 31, 1983, with six months remaining in the project, 58% of total infrastructure in Project II was completed, 30% ongoing, and only 12% to be implemented or in bidding/designing/awarding stage.
2. Since 1976, equipment and library materials worth \$ 4.4 million have been added to agricultural research centers/stations to the PCARRD Secretariat. As of December 31, 1983, 84% of the equipment in Project II had been procured.

^{*} Impact information will be collected and analyzed by a USAID evaluation team, tentatively scheduled to visit the Philippines in late February 1984.

3. Since 1973, when PCARRD started its manpower development program, PCARRD has awarded a total of 820 grants for Philippine degree training - 75 B.S., 645 M.S. and 100 Ph.D./DBA. Two thirds of these were awarded to institutions outside the Manila/Los Baños area. Fifty six percent of the recipients have graduated and 20 percent are continuing; only 12 per cent terminated due to failure to meet standards. International training grants were awarded to 195 researchers and support staff 9 PhD, 113 non-degree short-term training, and 73 travel grants for participation in scientific conferences, meetings, and study tours.
4. The percent of PCARRD-funded research projects outside the Manila/Los Baños area under Project II increased from 23 percent in 1981 to 32 percent in 1982 and to 50 percent in 1983. And the corresponding amount of funds for these projects went from 11 percent in 1981 to 41 percent in 1982 and 40 percent in 1983.
5. Total GOP budgetary support to agriculture and resources research has grown as follows:

1973	-----	₱	83.2 million
1976	-----		96.8 million
1979	-----		152.4 million
1982	-----		266.8 million
1983	-----		280.9 million

The Philippine 5-Year Development Plan calls for significantly higher support for science and technology development. Substantial financial support has been given by external assistance agencies.

The evidence cited above is reinforced by comments given to Review Team members by researchers at 7 of the regional consortia/centers which were visited (see Annex for itinerary). The researchers repeatedly recalled the period before PCARRD was created when similar research was done by numerous different researchers who published few results. The present system, responding to national development objectives and providing financial and professional incentives for excellence, is viewed as a significant, positive change by almost all researchers. It is also evident that there has been a spillover strengthening effect on the academic (instruction and extension) programs of the participating colleges and universities. PCARRD, widely viewed as a threat by many researchers and research institutions ten years ago, is now a respected member of the Philippine research and development community. PCARRD serves as a model research coordinating council for other research councils on health sciences, industry, and energy organized lately under the National Science and Technology Authority (NSTA).

Main Issues

The Philippine agricultural research system is facing a transition as it moves through adolescence toward maturity.

Inopportunately, the country is undergoing a financial crisis in the 1980s. The productivity of agriculture and natural resources is critical in the country's efforts to overcome this crisis. And the role of research is critical in increasing the productivity of the agricultural and natural resources sectors. The main focus of our report is on:

1. The need to continue developing research capability with emphasis on institutions outside Manila/Los Baños.
 - a. Research manpower development - a critical mass (in terms of numbers), range of disciplines, and quality have been achieved at some centers, but availability is still short of needs at most. Leadership is a crucial factor.
 - b. Equipment and library resources -- although increasing, will need to be augmented even more rapidly in order to facilitate work of increasing numbers of trained researchers.
 - c. Infrastructure -- although significantly greater than 11 years ago, there is a need to balance infrastructure with programs.
 - d. Cooperation -- the regional consortia/centers have shown some successes, but others have not worked well. A sharper focus on important regional (as well as national) needs is desirable.

2. The need to continue to support and develop the capacity of PCARRD in coordinating research to contribute to national development goals. One source of influence is that research funding by the Government of the Philippines (GOP) is released by the Office of Budget and Management (OBM) based on PCARRD recommendations. If PCARRD is to have effective influence to direct research to priority needs, a large portion of GOP financial support for research must be provided to PCARRD for allocation.

Recommendations

The Review Team recommends that PCARRD should:

1. Assist the regional consortia/centers make a critical review of national, regional, and cooperating station commodity assignments to better match current needs/goals with research and development capabilities.
2. Continue to assist in strengthening key national and regional research centers and focus particular attention on improving the centers' capacity to maintain meaningful regional institutional cooperation through consortia and programs.
3. Assist the different consortia/centers improve research leadership and management capabilities.
4. Continue to explore, refine and expand technology dissemination within the comprehensive framework which has been so innovatively developed.

5. Take immediate steps to complete construction and procurement of equipment for all research facilities at its regional research centers, to assist the regional research centers in securing GOP support for their proper maintenance and use, and request USAID to extend Research Loan II to December 31, 1984.
6. Review and clarify its system of research priorities, program thrusts, and major research thrusts with the objective of developing a simpler, more obvious allocation system, clearly corresponding to national development objectives and taking into consideration regional needs and potentials.
7. Take steps to significantly increase its total GIA budget, particularly the regular GIA components from the Philippine government. This is consistent with national policy as embodied in the NEDA Five Year Development Plan, to increase R & D investment from 0.45% of GDP in 1981 to 2% of GDP by 1987.
8. Take the lead in organizing comprehensive national commodity research and development programs, beginning with two or three key commodities which might give relatively quick results.
9. Give greater attention to manpower development through an aggressive action program, including the use of innovative schemes and through assistance to the institutions which are a part of its research network. It should continue its efforts to secure a regular GOP appropriation or funds from other sources for this purpose.
10. Make concerted effort to document the impacts of the research output of its cooperating institutions and then to publicize these findings among the users of such technology with a view toward developing a strong and supportive constituency.

Organization of the Report

This report is relatively brief because much background information is available in other sources -- The Project I Review, the Project II USAID Project Paper, the Internal Evaluation of Agricultural Research Development Project II (December 31, 1983), The Report on the Performance Evaluation of PCARRD Research Centers/Consortia (August 1, 1983), and the PCARRD Corplan 1984-1988.

The report is related to issues and is divided into three sections:

- . Research capability in regional research centers
- . PCARRD's leadership role
- . What next?

RESEARCH CAPABILITIES IN REGIONAL RESEARCH CENTERS

The Philippines is a very heterogeneous country in terms of agro-climatic, physical, and socio-economic conditions. Yet in 1975 approximately 85 percent of the Ph.D. and 66 percent of the M.S. degree-holders in agriculture and related disciplines were concentrated in the Manila/Los Baños region. Research stations were located throughout the country, but they were inadequately staffed, widely scattered, and poorly funded. The strategy to

improve agricultural and natural resources research focused on bringing together selected stations with certain degrees of research capability and developing them into a national system of research consortia/centers.

The main issues facing the system are:

1. Responsiveness to Regional Problems

PCARRD's system of allocating Grants-in-Aid (GIA) support to commodity researchers gives preference to research staff at institutions with national responsibility or regional responsibility. In other words, a researcher who is located at an institution with designated responsibility for corn has an advantage over a researcher at an institution without designated responsibility in receiving PCARRD GIA support for corn research.

PCARRD established the present commodity assignments in 1978, five years ago. Since then, perceptions of problems have improved. And capabilities have changed, with many institutions having more staff with higher qualifications. The time is appropriate to rethink commodity assignments for regions and among institutions within regions. In doing so, however, it should be borne in mind that few of the regions are yet able to

take care of all research needs within their respective boundaries. It is advisable to assign a limited number of commodities within regions to assure that at least critical minimum regional efforts are applied to the most pressing problems first. At almost every research center that the Review Teams visited, the researchers requested reevaluation of CARRD national, regional, and cooperating station commodity assignments. These reactions reiterate the first recommendation of the August 1, 1983 Report of the Performance Evaluation of PCARRD Research Centers/Consortia which states that "There is an urgent need for an in-depth review of the commodity assignments per consortia".

Recommendation

PCARRD should assist the regional consortia/centers to make a critical review of national, regional, and cooperating station commodity assignments to better match current needs/goals with research and development capabilities.

The Review Team suggests:

- a. That the regional consortia/centers take the lead in identifying regional priorities. In addition to PCARRD, National Economic Development Authority (NEDA), and Ministry of Agriculture (MA) staff should be active participants.

- b. That position papers be developed, based on prior analysis, to specifically identify regional needs, potentials, and capabilities. PCARRD should provide technical assistance to develop position papers, if needed and requested.
- c. That the recommended regional commodities and assignments of commodities among institutions within regions, ranked in order of priority, be forwarded to the PCARRD Technical Advisory Committee (TAC) for review and recommendation and then to the Governing Council (GC) for action.
- d. That the TAC and GC take the regional commodity recommendations into account in assigning national leadership responsibility and cooperative program development. The result will be national program planning with recognition of regional problems and capabilities.

2. Regional Institutional Cooperation

PCARRD has developed a system of agricultural research centers serving major ecological/regional areas. These centers attempt to elicit the cooperation of other institutions which are or could be involved in the research process as members of regional consortia. Some of these consortia (LGARC, for example) are functioning well with a regional director, a research coordinating committee, and

regional commodity teams for planning, project approval, training, and other activities. Many consortia/centers have not yet become effective. Some lead institutions, such as USM, are not yet coordinating with other institutions. The recent establishment of the Regional Integrated Agricultural Research System (RIARS) in MA presents an opportunity for greater research coordination at the regional level.

Recommendation

PCARRD should continue to assist in strengthening key national and regional research centers and focus particular attention on improving the centers' capacity to maintain meaningful regional institutional cooperation through consortia and programs.

The Review Team suggests:

- a. That more emphasis be given to institutional cooperation by which the cooperators' involvement is defined in terms of specific roles in the R & D process. The R & D process requires the involvement of a wide range of institutions for training professionals, conducting research, testing and evaluating technologies including on-farm verification, disseminating information, training farmers, and reassessing (feedback) for further research and development. No one institution has all these capabilities, hence the need for institutional cooperation. With the

establishment of regional colleges and decentralization of Ministry functions, including development of RIARS, regional consortia have become both feasible and necessary to ensure that the clientele in each region receive full benefits from the considerable investment in regional institutions.

Some institutions are uniquely qualified to handle a range of crops, livestock, and other commodities. Others are better able to deal with specific functions in the research process. For example, those institutions whose manpower, facilities, and mandates involve technology dissemination should be members of the consortia for that purpose and should collaborate with regional researchers in carrying out these responsibilities.

- b. That PCARRD encourage and assist the RIARS and regional consortia/centers to jointly develop proposals where RIARS roles are clearly spelled out so that they are included in regional priority projects from the beginning.

A memorandum of agreement between MA and PCARRD dated August 9, 1982 contains the following two provisions to ensure cooperative efforts of RIARS with the regional research consortia/centers:

- "B6. Formulation of the agricultural research programs by RRC of the Ministry in the regions shall be undertaken in coordination with the ARO and the national and regional research centers/consortia of PCARRD".
- "B7. As a policy, the RIARS of the MA and other agencies in the national research system shall provide the mechanism through which the technologies generated from the researches within the PCARRD network could be verified and tested in farmers' fields. The researchers concerned should be involved in the verification and on-farm testing of the technologies they have generated in order to sustain the continuum of activities from technology generation, packaging, verification and dissemination for utilization".

This agreement has not yet been implemented fully at the field level. The Review Team, during its field visits, found that confusion exists among RIARS and regional consortia/center staff regarding their respective roles and responsibilities vis-a-vis each other. It appears that regional research institutions and RIARS do not as yet coordinate their respective programs in the region in a way that is meaningful to the present capability and output of the research centers/consortia. Some RIARS units at least partially duplicate regional research institutions and fail to consult the latter in verifying and packaging technologies. While PCARRD must eventually approve the research/technology verification activities of RIARS, there is a

need for joint planning and cooperation between regional staff of RIARS and consortia/centers.

- c. That regional research consortia include national institutions which can contribute to the research process, like IPB, as well as public and private agencies consistent with regional priorities. Membership, however, should be based on specific roles in the research process built around defined research and development programs.
- d. That in order to accomplish certain tasks more rapidly and efficiently, FORI work in close collaboration with the regional consortia/centers particularly in agro-forestry, range management, and wild life because these topics involve the agricultural sector. FORI research centers/stations are located in the various agro-climatic regions in the country to facilitate research programs that are of national and regional importance and thus make such cooperation possible. In building its regional research capability, FCRI would do well to consider concentrating its efforts, at least initially, on developing four or five of its strong research centers, and of locating them, when possible, in close association with the regional universities/consortia. The benefits of interaction

and focus are obvious both in terms of material resources, communication facilities, and supportive manpower which could be shared as well as the physical and intellectual community environment already in place.

- e. That although the consortia/center are organized in many different ways due to physical distance, historical relationships, and personalities, the following common elements must exist to ensure effective collaboration:
- o identifying a lead institution by PCARRD,
 - o employing a full-time research coordinator and assistant coordinator under PCARRD guidelines,
 - o holding quarterly coordination and planning meetings,
 - o holding annual research reviews and planning sessions, and
 - o sharing facilities and undertaking joint research projects.
- f. That mandates are only a partial solution, at best, for achieving regional cooperation; to be lasting, regional cooperation must be based on mutual advantage for all participating institutions. Mutual advantage might be fostered by several practices:

- o A wide range of institutions regularly participate in the annual research reviews and planning sessions, quarterly coordination and planning meetings, and periodic technical committee meetings and, in turn, consortia leadership regularly attend meetings of other research and development institutions, for example, the meetings of the Regional Research Committee of the RIARS, in the region. Distance among institutions should be no hindrance as meeting sites can be rotated among members to equalize travel.
- o Consortia be encouraged, when feasible, to develop proposals in which a wider range of institutions participate, thereby encouraging more comprehensive research as well as full involvement of qualified staff from among members of the consortia. For example, a project on white corn in a region should include cooperation by IPB, RIARS, and BAEx, particularly where verification may be appropriate.
- o A range of institutions (as opposed to the research coordinator only or members of one institution only) make recommendations on projects proposed from the region to be submitted to PCARRD for funding.

- o The projects actually approved for funding by PCARRD be distributed among several institutions within each region.

PCARRD can help bring about mutual advantage by monitoring consortia and by adjusting project approval procedures. A manual of operational procedures for consortia would help assure that they are involving all appropriate institutions in their region and taking advantage of all resources.

- g. That PCARRD make every effort to assist the lead institutions obtain the necessary budget to maintain the consortia beyond June 30, 1984 when funding becomes a problem. Minimum core support should be defined and assistance provided until regular funding can be obtained.
- h. That PCARRD develop a support unit to assist staff in the consortia to develop institutions into effective regional organizations and to plan annual programs.

3. Research Leadership and Management

The PCARRD research network has reached the stage of maturity where special attention must be given to professional performance, particularly in top positions in the regions.

The Review Team observed various leadership styles and effectiveness in regional research centers. Leadership is a sensitive matter to discuss but the review team felt that

Leadership is the most important factor determining the success of organized human endeavor. Research, being a highly specialized form of creativity, requires a special kind of leadership. The most important qualifications to look for in the selection of leaders for research organizations are:

- o Interest in and demonstrated capability to undertake scientific research or technology development.
- o Capacity to provide intellectual leadership, particularly in top priority research areas.
- o Appreciation of the systems-approach to problem-solving and of the importance of interdisciplinary approach and interagency collaboration in R & D.
- o Ability to make plans, raise funds, harness existing manpower, and focus energies and resources of the research organization to achieve the goals.
- o Ability to inspire, motivate, develop, and challenge the research staff as well as delegate responsibility to research project directors and researchers.
- o Ability to communicate effectively with staff and others in the PCARRD system.

These prescriptions make for an almost perfect leader for any research institution. Anyone who meets all these qualifications

is a rare breed, indeed. While not many have all these qualifications, research leaders in the PCARRD system should be selected and evaluated on the basis of these criteria and should seek to correct whatever deficiencies they may have. As research managers, they should exert all efforts to get deputies to complement their strengths or make up for their weaknesses. This combination is lacking in several regional consortia/centers.

There also is a need to develop or further sharpen research management skills. Some of the skills that need further development are planning research, organizing action-cum-research projects, preparing budgets for projects and centers, monitoring, evaluating performance, and developing management information systems.

Recommendation

PCARRD should assist the different consortia/centers improve research leadership and management capabilities.

The Review Team suggests:

- a. That in addition to the Job Enrichment Seminar for Research Executives (JESRE), a special seminar-workshop on research leadership and management be organized for the benefit of the top consortia/center leadership and their deputies. This should be a travelling seminar-workshop to provide an opportunity to observe different styles of leadership and management policies and practices

in different research institutions. This seminar would also serve to build the PCARRD network through development of a common understanding of policies and procedures, problem areas within PCARRD, new directions, and relations with other government agencies like NEDA, OBM, NSTA, etc. and international organization.

- b. That PCARRD assist the consortia/centers in determining staff requirements (staffing pattern and minimum number) and qualifications of regional research consortia/centers for research management. The requirements for research management in a consortium would be greater than those in a single regional research center.
- c. That PCARRD help the consortia/centers in taking full advantage of PCARRD's Research Management Capability Program (non-degree training courses) at UPLB for both in-service and pre-service training of research management staff. It may be necessary to assist the consortia/centers in securing funds from GCF or other sources for this purpose.
- d. That PCARRD plan and monitor a reentry program for returning scholars and perform follow-up training activities by undertaking on-the-job performance evaluation and determining problems of other additional training needs.

- e. That PCARRD organize the above activities in the same unit referred to in the last suggestion under the previous recommendation (a h).

4. Diffusion and Feedback

Every research project is justified in terms of noble objectives such as "to increase productivity and income which will eventually improve the quality of life of the small farmer and the rural poor". From identification-definition of a researchable problem to production of scientifically-derived research results is a long, tedious, expensive process. The procedures for research are, by and large, well-established, available, and can be learned. But the process of translating research results to human welfare requires a far greater measure of commitment because "translation" is not as well established as the research process. It is still mostly art".

PCARRD in its research utilization thrust, via the establishment of Applied Communication Units and Technology Packaging for Countryside Development Project, has produced research results which are field-verified and packaged into viable and usable technology in the form of the Philippines Recommends series (national technology recommendations), the Technoguide series (provincial and barangay-level technology recommendations), Radio Farm News (farm-level technology recommendations), the Technology

series (advance technology recommendations), the PCARRD MONITOR (general research information), the Scientific Literature Service, and others.

But for anyone who believes that farmer wisdom should be captured rather than ignored, the Team was most impressed with the different ways in which research centers have actually incorporated existing and workable farmer practices into the local technoguide recommendations which are regarded as situation- and location-specific. Nowhere is this more aptly illustrated than in the case of PTRTC where the interaction and feedback process takes place in the farmers' fields; in the training center where farmers are both trainees and trainers; in the field experiments; and in the accompanying socio-economic studies which document farmer practices, including costs and returns, which provide basic data to convince policy-makers that tobacco deserves a better price. The research system has gone a long way from the elitist days of one-way top-down diffusion from experiment station to farmer.

What is also encouraging is the variety of ways in which the technology diffusion and feedback process has evolved in the different research centers. Each one carries a unique imprint of the leader's own philosophy and style of operations; nature of the technology, and the agro-climatic circumstances. Except in one or two places, it is evident that the researchers are in touch,

and in several cases very much involved, with farmers and farm-level problems which feed into the research process. In other words there is substantial research activity in farmer's fields and in general, researchers are knowledgeable about farmer problems in the area. Several times farmers were referred to as "stubborn" only to have the researchers admit later on that the farmers were "stubborn" with good reasons especially where the vagaries of weather pose tremendous risks.

Preparation of the provincial technoguides by regional consortia have provided opportunities for purposeful and output-oriented interagency collaboration both in research planning and technology packaging. To PCARRD's credit, instead of prescribing standardized procedures, it has wisely left room for regional and provincial peculiarities and local initiatives.

One weakness the review team found in most places is the lack of hard data to substantiate claims of impact. "Don't Know" answers to questions on how many farmers have adopted technologies introduced, in how big an area, and with what yield differences were quite common. Some of the centers, however, have better-informed answers than others because they have the accompanying socio-economic studies.

Recommendation

PCARRD should continue to explore, refine, and expand technology dissemination within the comprehensive framework which has been so innovatively developed.

The Review Team suggests:

- a. That because of the creativity with which the diffusion and feedback schemes have evolved, nationally and regionally, a systematic documentation of these strategies be carried out. There is a need to share experiences across regions and commodities to stimulate further thinking on the difficult problem of research-extension-farmer interaction.
- b. That follow-up studies on how the technoguides are doing; who uses them; how and with what effects, be carried out.
- c. That socio-economic studies accompany the technologies being diffused so that questions on impact can be more adequately answered.
- d. That socio-economic research results be organized, synthesized, and published in a form which will enable them to become part of the body of knowledge for understanding and action. There is a wealth of research-based information from PCARRD-supported projects which has to be analyzed. This information is valuable for

benchmark, policy, planning, and action purposes and as basis for defining agricultural and natural resources research and development problems and for assessing impact.

5. Infrastructure and Equipment

Successful generation of research capability hinges on the balanced development of infrastructure, equipment, support services, and qualified personnel. Once available, the physical structures and equipment must be properly used and maintained and a work environment created to ensure the retention of capable personnel.

PCARRD has done an excellent job in working with the consortia/centers to plan, construct, and equip infrastructure. However, in a few of the research institutions supported by PCARRD, physical facilities stand idle or are only partially used because of incomplete construction, inadequate or unworkable utilities, and/or equipment that is out of order or unused for lack of qualified personnel to install, operate, or maintain it. An example is the slaughter house constructed at LGARC. This unit though 90 percent complete, has remained unfinished and unused for at least the past three years. This case at LGARC, the best example of a working regional consortia in the national agricultural system, is significant not so much because of the failure to complete the slaughter house, but because there is no evidence that the Bureau of Animal

Industry has plans to use the facility for research. Less serious but similar situations exist at USM, ISU, and MMSU. The Review Team emphasizes that these cases are the exceptions rather than the rule. However, they highlight the need for integrated research facilities - staff development research program planning. PCARRD has undertaken a comprehensive review of infrastructure development in regional centers and has identified many of these problems. The Review Team commends PCARRD for this close monitoring.

Recommendation

PCARRD should take immediate steps to complete construction and procurement of equipment for all research facilities at its regional research centers, to assist the regional research centers in securing GOP support for their proper maintenance and use, and request USAID to extend Research Loan II to December 31, 1984.

This action will help to demonstrate the capacity of PCARRD to successfully manage external support and justify further investments by both foreign and domestic funding agencies.

The Review Team suggests:

- a. That with Loan II funds scheduled to terminate effective June 30, 1984, it is of critical importance that PCARRD devise a means for obtaining additional funding to provide the essential facilities, equipment, and support

services including provisions for water and electric power plus a qualified staff of specialists to use them fully, at its cooperating research institutions.

- b. That since failure to complete construction of facilities is the direct consequence, in many instances, of rapidly rising costs brought on by inflation causing construction firms to default on their contracts, PCARRD make adequate provision in its budget requests for funds to cover the costs of inflation.
- c. That in view of the high cost and complexity of scientific instruments and equipment, PCARRD diligently pursue efforts to assist the research centers secure GOP funds in their yearly appropriations for the proper maintenance and use of these items.
- d. That PCARRD make an assessment of the extent of utilization of all important scientific equipment acquired under Projects I and II with the intention of reassigning un- and underutilized equipment to others in the national research systems who could fully utilize them.
- e. That PCARRD request an extension of USAID Research Loan II for its research and development program at least through calendar year 1984 to enable it to complete construction of infrastructure which has been delayed due to inflation and other uncontrollable forces.

PCARRD'S LEADERSHIP ROLE IN THE ADMINISTRATION
AND MANAGEMENT OF AGRICULTURE AND RESOURCES RESEARCH AND DEVELOPMENT

PCARRD was established in order to develop a coordinated, intensified and more relevant agricultural research system that would be responsive to the needs of farmers while maximizing the benefits from limited resources. The main issues facing PCARRD in further strengthening its leadership role are:

1. Research Priorities.

The system by which PCARRD allocates research support, although administratively operable, is not easily understandable.

The present system consists of thirty six commodity groupings arranged in three priority rankings, I - III, plus a special category for socio-economic research and emergencies. Funding targets are set by dividing equally among the commodity groupings within each priority:

<u>Priority</u>	<u>Number Commodities</u>	<u>Total Funds</u>	<u>% Funds per Commodity</u>
I	19	80	4.2%
II	10	10	1.0%
III	9	3	0.3%
	2 + 1	7	1.5 + 4

In practice, the targets are applied much more closely to GIA-financed projects than to agency research projects. And

discretion is used in making actual allocations. For example, if a higher-than-target allocation is recommended for a well-run research agency, for example, tobacco, PCARRD is likely to concur. On the other hand, if the recommendation is lower than target, PCARRD attempts to increase resources. Because of this, actual allocations differ from targets.

In order to focus research more specifically on identifiable achievements, PCARRD recently identified 14 major research thrusts in its Corplan 1984-1988, for special emphasis. Seventy percent of funds are to be allocated according to the previous system (I - III above) and 30 to the 14 major research thrusts, in effect reinforcing particular components of the previous system.

PCARRD is in transition between the two systems. Research allocation cannot be exercised like a faucet -- PCARRD does not want to (and probably could not) suddenly cease research funding for a commodity. Yet it wishes to move toward the new system. Recommended allocations in the COPPLAN 1964-1988 more closely approximate results from the second as opposed to the first system. While the Review Team recognizes the need to maintain flexibility and exercise judgment, it favors a more explicit basis for research funding allocations.

Recommendation

PCARRD should review and clarify its system of research priorities, program thrusts, and major research thrusts with the

objective of developing a simpler , more obvious allocation system, clearly corresponding to national development objectives and taking into consideration regional needs and potentials.

Establishing priorities is only one way to have impact from research; the quality of research output and the effectiveness of dissemination and utilization have equal importance. The basic reasons for setting priorities are to influence researchers and institutions to be responsive to national and regional needs and to ensure that appropriate funding is channeled to meet those needs where capacity exists. The current system partially does this but tends to be confusing and cumbersome. What is needed is a system which communicates both to government agencies and to researchers in the system. No single best way of developing priorities has been developed. PCARRD will have to devise a mechanism which best suits its needs. While the Review Team is not in a position to suggest priorities per se, the following is suggested as a means of initiating an interval review of the priority system set out in the Corplan. Figures are arbitrary and illustrative of directions proposed. The key points are:

- a. Priorities would be organized in terms of commodities, under each of which would be listed:
 - (1) Major national problems and needs
 - (2) Special regional and farm-level problems and needs

- b. High priority commodities should be few in number to enhance the possibility of real impact. For example:

<u>Category</u>	<u># Commodities</u>	<u>% Total Fund</u>	<u>% Funds per Commodity</u>
I	5	-	-
II	10	50	5
III	25	30	1.2
IV	special	20	-

- c. The criteria for placing commodities in the first three categories would include:
- Importance of the commodity to the Philippines for local consumption and export
 - The potential contribution of research and development to increased production or better utilization
 - Institutional capacity (trained manpower and facilities) to handle research and development activities
- d. Category I commodities would be prime candidates for R & D programs involving a program manager, lead institution, and relevant public and private agencies. These commodities would be financed by separate PCARRD-administered KBIs for each respective commodity. Categories II, III, and IV would be administered through a general PCARRD GIA fund.
- Category IV would provide 20% for emergency research, long shots, and discretionary research in promising areas.

Socio-economic research would be integrated into the commodities in Categories I, II, and III but a separate allocation would be included in Category IV.

- e. A series of working papers be prepared to present analytic background information on needs and potentials and researcher capabilities, nationally and by regions, for various commodities.
- f. The National Commodity Teams (including sociologists and economists), based on explicit analysis, recommend goals for the nation and for key regions for respective commodities (for example, a production goal for white corn in regions, X, Y, and Z) and identify key problems (for example, corn borer), with analysis of prospects, including capabilities, for research.
- g. A Working Group - composed of regional research directors, senior PCARRD staff, and representative from MA, MNR, NEDA, OBM, outside experts, and private industry - be convened to review background information (from d and e above) and recommend commodity allocation.
- h. The PCARRD Governing Council make final decisions on the priorities; however any adjustments made must be explained to the research community.

- i. The publication of priorities would include a statement of general goals for agriculture and natural resources research and development reflective of or matching the NEDA plans if possible.
- j. The major problem areas for the Category I commodities would be listed as featured research thrusts of PCARRD for discussions with GOP agencies responsible for support and guidance such as NSTA, OBM, NEDA and MA (taking the place of the current 14 major research thrusts).
- k. Initially, commodities would not be assigned a specific percentage of funds within a category, but would expand or contract from existing levels based on priorities.
- l. Funding of any commodity would take into account all sources of GOP funds, with GIA funds providing the balance as deemed desirable. A determination of whether or not non-GOP support (for example, international agricultural research centers) are meeting full needs should be considered in assigning GIA funds or approving other GOP support.
- m. The priorities would be reviewed by periodic conferences involving commodity team leaders, regional network leaders, and national government agencies and private organizations.

2. PCARRD's Influence in Implementing Research Priorities

PCARRD has a mandate to rationalize research in agriculture and natural resources to achieve development goals more effectively. However, the extent of its influence over research varies among agencies. PCARRD has greatest influence over research in those institutions where research is funded through its GIA budget. In other institutions, for example, MA, PCARRD can influence research to the extent that it endorses the institution's R & D budget and monitors research performance. In some research institutions, such as PCA and PHILSUCOM, PCARRD has little influence over research allocations. In some other cases, for example, projects funded by international agencies, PCARRD has little knowledge of the research activities taking place because these are not always referred to PCARRD.

During the four-year period, 1980-1983, PCARRD's total GIA budget declined from P36.3 million to P22.8 million. Its regular GIA budget from the government decreased from P10.0 M in 1981 to P2.4 M in 1983, in part because of the transfer of GIA funding to agency budgets after the first year of research projects. The bulk of the GIA budget in recent years has come in the form of GOP counterpart funds and actual loan proceeds from agreements. PCARRD's success in generating GOP support through external agreements has enabled it to continue operating effectively. However, some of the agreements will expire in the near future or are

committed to specific research purposes (e.g. RRDP). While the Review Team commends PCARRD's ability to attract external support, this is an uncertain source of funds.

Summary Table of PCARRD's GIA SOURCES
1980 - 1983
(million pesos)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
A. Regular GIA	-	10	11.2	2.4
B. Loan Related GIA (mainly GOP counterpart)				
Loan I	14.8	-	-	-
Loan II	20	6	6	5.4 ^b
ASSP	-	-	2.6 ^a	6.5 ^b
RRDP	-	-	-	1.0 ^c
C. Other GOP				
UNDP (counterpart)	-	2.9	1.8	2.4
NSTA	-	-	1.0	2.0
D. Non GOP (Domestic and Foreign)	<u>1.5</u>	<u>1.2</u>	<u>2.5</u>	<u>4.1</u>
TOTAL	36.3	20.1	25.1	23.8

Recommendation

PCARRD should take steps to significantly increase its total GIA budget, particularly the regular GIA components from the Philippine government. This is consistent with national policy as embodied in the NEDA Five Year Development Plan, to increase R & D investment from 0.45 of GDP in 1981 to 2 of GDP by 1987.

-
- a/ Loan proceeds
- b/ Includes loan proceeds of P1.3 million
- c/ Includes loan proceeds of P0.9 million

The Review Team strongly supports the following related initiatives of PCARRD:

- a. OBM require PCARRD's endorsement after the 1st year of a project before transferring GIA budget to an agency's budget. This will enable PCARRD to be more selective in transferring control over GIA funds to research institutions.
- b. A proposed modified budgeting scheme which involves the submission to OBM of a GIA budget divided into major commodity programs with a corresponding listing of research titles. The calling for detailed research proposals from the research agencies would be done after the GIA budget is approved. This will shorten the approval process for research proposals (14-16 months at present) to about 6 months, and will better assure research proponents that funding is available when research proposals are called.
- c. A continuing effort to diversify funding sources which has resulted in a significant non-GOP component in the GIA budget. PCARRD should continue this in the future.

3. National Research and Development Programs

While significant increases in production have been made through R & D activities in some commodities, R & D success is elusive in others. How can the Philippines improve performance in strategic but lagging commodities?

Three examples, based on the Review Team's observations during the field trips, illustrate the issue:

- * Tobacco appears to be moving well. The PTRTC implements a comprehensive R & D program covering technology development, research on farmer's fields, evaluation, monitoring, and feedback. Price is set at a very favorable level and tobacco farmers are making an average net income of P12,000/ha.
- * Cotton had a short-lived success. The main factors which caused the production set-back are pest control problems, depressed prices, and competition from tobacco. Nevertheless, the CRDI continues to pursue a productive research program and has shifted some of its efforts to Mindanao where cotton does not have to compete with tobacco.
- * Corn, despite the Maisagana program emphasizing extension and credit, continues to have low yields, even by Asian comparisons. Based on current trends, self-sufficiency

in corn does not seem feasible in the near future. Meanwhile corn importation is uncertain due to large balance of payments deficits; reducing importation would jeopardize the poultry and swine industries.

Recommendation

PCARRD should take the lead in organizing comprehensive national commodity research and development programs, beginning with two or three key commodities which might give relatively quick results.

The Review Team suggests:

- a. That yellow corn and soybeans, which have high production potential and which are significant import items for animal feed, and upland rice and white corn, which are important staple crops, should receive first attention.
- b. That an R & D program manager, preferably located at the designated national research center, be appointed and given salary/honorarium and a program budget to provide full time activity.
- c. That national commodity workshops -- consisting (as needed) of researchers, RIARS, credit, extension, farmers, industry agri-business, PCARRD, NEDA, NFA, and NFAC -- review current status and prospects,

identify missing/weak elements, and plan annual programs. IPB/UPLC probably should take a major role in varietal development. Subsequently, All-Philippines Coordinated R & D Workshops should be held annually to review progress and plan activities for succeeding years.

- d. That the research program be comprehensive, coordinating relevant geographical locations in varietal and agronomic development, protection, field-testing, communication, and evaluation/feedback including socio-economic research to identify social and economic needs such as price, credit, input availability, market access, etc.
- e. That National centers for respective commodity adjust their programs to assume the role and responsibility of developing a national comprehensive research and development program.
- f. That outside funding be sought to supplement GOP sources.

4. Manpower Development

The most critical input in research is well-trained and highly motivated manpower. The Review Team, after visiting the regional consortia/centers identified some serious problems with respect to scientific manpower. These include need for:

- o A critical mass of highly trained manpower in research
- o A proper mix or balancing of manpower development to suit R and D needs in a region

- o Appropriate phasing of staff development with the completion of facilities
- o A more favorable research environment for staff
- o Systematic up-grading of all staff in the research process, and
- o Bright scholars to be attracted into the research system.

These problems are not unexpected at this stage of the development of the research system. However, PCARRD and the institutions in the network have reached a stage of maturity (including the development of substantial infrastructures) whereby it is appropriate to focus heavily on manpower development.

Recommendation

PCARRD should give greater attention to manpower development through an aggressive action program, including the use of innovative training schemes and through assistance to the institutions which are a part of its research network. It should continue its efforts to secure a regular GOP appropriation or funds from other sources for this purpose.

The Review Team suggests:

- a. That critical masses of highly trained research manpower be developed. In some research centers it is very evident that a critical mass of highly trained research manpower (MS and PhD holders) is already in place. In others this is far from being realized within the next few years. Just what is the critical mass requirement

for each research center must be jointly determined by the regional research centers and PCARRD. New plans for a more accelerated manpower development for a number of key regional research centers that are lagging behind have to be formulated and implemented as soon as possible. PCARRD must assist particularly the weaker research centers in getting GOP and non-GOP support for research manpower development.

- b. That a proper mix or balancing of manpower development to suit R & D priority needs be achieved. In a few of regional research centers most of the doctorate degree holders have specialized in education or agricultural education. Too few, have their PhDs in technical fields such as agronomy and soil science, water management, plant physiology, and plant breeding. Under this situation, research leadership lacks the training to provide technical guidance to the more junior staff. PCARRD and the research consortia/centers concerned must give this serious problem closer attention in the implementation of manpower development programs. The Review Team notes an especially critical shortage of economists in the research system. Socio-economics from non-agricultural colleges and universities in the region might be enlisted to participate with the consortia/centers.

- c. That manpower development consistent with research facilities development be properly phased. Some research infrastructure and equipment acquired under Projects I and II are not fully utilized because of lack of qualified research staff. In some cases, previously acquired scientific equipment, in the judgment of newly trained research staff, are not suitable for their purposes. This highlights the problems of phasing research manpower development, constructing research buildings and facilities, and acquiring scientific equipment to meet the user's preferences or needs. Construction of buildings and acquisitions of equipment can be done in a year, but manpower training requires much longer time. It is therefore logical to give manpower development top priority in the time horizon of any institution-building program.
- d. That a favorable research environment including better remuneration and reward system, for the retention of trained manpower be created. Some regional research centers suffer from serious turnover of highly trained research manpower, not to mention weak ability to attract or recruit additional research staff of high caliber. There are several main reasons for these, including: competing agencies, in most cases, have greener pastures

compared to those of regional research centers and the research environment in the regional research centers needs improvement. To help solve these problems, the Review Team suggests:

- (1) PCARRD and the regional research consortia/centers make strong representations for immediate approval of the NSTA Science Career Service and the inclusion of members of the national network of agricultural and natural resources research consortia/centers, including senior scientists in MA, in this system. Hopefully, the implementation of the NSTA Science Career Service can minimize, if not entirely eliminate, the need for the system of supplemental compensation through honoraria. The present system does not foster desirable values among scientists. Many undertake research for monetary gains rather than altruistic motives and psychic rewards, thereby maximizing the number of projects they participate in. The effect on quality of research output is becoming alarming.
- (2) An R & D performance evaluation and reward system be implemented throughout the research system to accomplish two things:

- (a) Establish a basis for instituting positive measures to correct weaknesses or improve research capabilities.
 - (b) Publicly recognize outstanding performance in R & D to boost the morale of deserving scientists as well as highlight shining examples to be emulated by others.
- (3) Teaching loads in colleges/universities be reduced to enable competent academic staff to participate in R & D activities of the regional research consortia/centers. This should not only strengthen R & D programs/projects, but also should add vitality to, and enhance relevance of instruction programs. New and existing research problems and research findings could be brought into the classrooms and teaching laboratories through professors participating in the R & D activities.
- (4) Reentry problems of returning scholars be minimized through a program of helping them establish their position in the research community. This should include a clear definition of role and responsibility in the organization to utilize their recently acquired expertise as well as provision

for immediate support to get them started. For this purpose, the research center and/or PCARRD must have some discretionary research funds. At least 5% of the total research budget should be set aside for this purpose.

- (5) Education for research personnel and support services staff be continued. Rapid developments in research and technology taking place in innumerable research centers must continue to create opportunities and provide support to research personnel to keep them abreast of new R & D developments elsewhere. This should come in various forms, such as research management apprenticeships, attendance at national and international scientific conferences, making available new publications, special seminar-workshops or training courses, and opportunities for sabbatical leave or post-doctoral studies.

One of the serious problems, particularly in the ministries, is the inability of research personnel to obtain admission to the UPLB graduate school. Regional agricultural colleges and universities could help alleviate the situation by developing special training courses to suit their needs.

- (6) Bright scholars into the PCARRD research network be attracted. PCARRD should reserve some scholarship support to be used centrally for attracting the cream in science high schools and others to pursue degrees in agriculture and related fields and to enter research. These scholarships would carry funding for thesis research support, but also an obligation to serve in the public research network of PCARRD. Perhaps 20 percent of PCARRD scholarship funds could be used for this purpose. Along with this would be the creation of a placement service in the PCARRD network which would seek to match qualified scholars (whether or not supported by PCARRD) with the manpower needs of the region.

5. Research Constituencies

In a democratic society, the process of generating and maintaining broad acceptance and support of a national program of agriculture and resources research and development, or any major public undertaking, is doomed to failure without the understanding and supportive action of a substantial segment of the lay public. Most essential is the active backing of individuals and groups who stand to benefit most immediately and directly from the outputs of research; namely, those who earn their livelihood through the

production and/or processing of the products of agricultural and forest lands, or who benefit in other diverse ways from the many goods and services derived from these basic resources.

One might ask: "If PCARRD and the rest of the agricultural and natural resources research community were to be abolished tomorrow, would anyone outside its immediate family of employees step forth to lead a protest or demonstration, write a letter to a newspaper editor, or march to the Batasan Pambansa in an effort to get it reinstated?" Perhaps, so, but the chances are the outcry might be largely ignored and cause little or no stir across the land.

The PCARRD research system has many achievements that are not immediately known to the average observer. It is especially urgent, therefore, that a major effort be made throughout the PCARRD research community to publicize its accomplishments to make them widely known to farmers, forest industries, conservation and professional organizations, community leaders, and most especially to the political and governmental communities, both national and provincial, upon whom PCARRD's existence depends. PCARRD must develop a supportive clientele, first among the users of its research findings, who will actively lend a hand in obtaining adequate funding for its research program and cooperating institutions.

Recommendation

PCARRD should make a concerted effort to document the impacts of the research output of its cooperating institutions, and then to publicize these findings among the users of such technology with a view toward developing a strong and supportive constituency.

The Review Team suggests:

- a. That judicious involvement of development journalists and science writers in seminars, field trips, and direct interaction with beneficiaries be used as a means of highlighting and publicizing important research findings. The present practice of user-group participation in the different stages of research planning, implementation, and technology-packaging is a significant step in the right direction.
- b. That in view of the fundamental importance of documenting research impact and of publicizing these findings widely, PCARRD allocate resources specifically for this purpose throughout its cooperating institutions.
- c. That PCARRD provide financial support to scientific societies for publication of their respective professional journals in order to encourage and facilitate dissemination of PCARRD-financed research and gain the respect of the research community.

- d. That PCARRD identify and rank the various beneficiaries of agricultural and resources research and development and devise a strategy for cultivating their active participation and support in furthering the funding and conduct of its overall program.

WHAT NEXT?

How should PCARRD- and the regional consortia/centers - organize themselves and strengthen their capabilities to implement the various recommendations and suggestions in this report?

Research will continue to be the "rice and fish" of PCARRD. While considerable progress has been achieved in spreading research capability beyond Manila/Los Baños, the effort to consolidate past gains and move onward to a truly strong system which can respond to regional as well as national needs must be continued.

PCARRD also recognizes the importance of Development in its acronym and has in fact translated this into R & D plans and programs. This is quite evident in the PCARRD CORPLAN, the Philippine Farming Systems Research and Development Program 1984-1988, the various projects approved under ASSP and RRDP,

and the Technology Packaging for Countryside Development Project, to name only a few. Research and Development is the theme of the recommendations made by the Review Team.

Beyond present projects and program development efforts, there is a critical need for PCARRD to use its good offices to promote better relationships among its cooperating member organizations and between these institutions and outside agencies. There must be a clear understanding and acceptance by all participants of their respective roles in research, verification, and development and, above all, of the fundamental interrelatedness of managing, improving, using, and protecting agricultural and natural resources. This demands an interdisciplinary approach to problem-solving. The realization of such an approach on the part agricultural and research agencies is a foremost next step of PCARRD.

PCARRD should serve as a catalyst in bringing the several agriculture and natural resources organizations together. It should also assist the regional consortia/centers in developing meaningful regional R & D programs and in strengthening their organizational and research management capabilities. Furthermore, PCARRD has to continue generating more resources to implement high priority impact R & D programs, assist the different consortia in obtaining funds to support regional development activities, and enhance research leadership and management capacities in the regions. To accomplish all of these, the Review Team suggests the following:

1. In view of the heavy work load carried by the two existing Deputy Executive Directors of PCARRD, create in PCARRD a new Office of the Deputy Executive Director for Regional R & D Cooperation which will:
 - a. Assist the consortia/centers to develop regional programs which will extend the results of research to verification, dissemination, and utilization phases.
 - b. Promote and strengthen linkages among institutions involved to implement different components of R & D programs.
 - c. Assist the consortia/centers to develop R & D organizational management capabilities.
 - d. Document and evaluate various schemes to link the different groups (researchers, technologists, users) involved in commodity and regional programs.
 - e. Assess and document the socio-economic impact of such R & D programs in agriculture and natural resources.
2. The new office should have the following units:
 - a. Management and Training
 - o Scholarships/fellowship for degree and non-degree training including post-doctoral and sabbatical leaves.
 - o Recruitment/placement
 - o Internship/apprenticeship

- o Research leadership and management training
 - o Conferences, workshops, seminars, consultations, field days
 - b. Technology Utilization
 - o Sourcing and packaging
 - o Testing/piloting
 - o Farmers organizations/cooperatives
 - o Production/marketing schemes
 - o Socio-economic analysis and impact studies
 - c. Program Planning and Monitoring
 - o Stimulate common interests in joint projects
 - o Develop R & D programs
 - o Monitor and evaluate regional R & D activities (to be done jointly with the Deputy Executive Director for Research)
- 3. Appoint the best person available on a full-time basis, for the position of Deputy Executive Director for Regional R & D Cooperation. He must have ample experience in organizing and managing field-oriented training programs and in dealing problems of interdisciplinary and inter-agency collaboration in R & D activities, projects, and programs.

4. Strengthen the existing consortia/centers in key regions by creating an office of Regional R & D Coordinator to:
 - a. Promote and strengthen linkages among institutions involved in R & D programs, including RIARS, farmers, and the private sector.
 - b. Organize and implement research and management training programs for the benefit of all consortia/center members.
 - c. Provide leadership to plan and implement interdisciplinary and interagency technology packaging, dissemination, and utilization projects for the region.
 - d. Catalyze, facilitate, and provide support for socio-economic impact studies.
 - e. Serve as a liason between the consortia/center member and PCARRD
5. Utilize the Rainfed Resources Research and Development Project (RRRDP) and the ASSP funds to implement development projects. The RRRDP alone provides the PCARRD network with \$10 million from USAID and \$4 million from GOP to "meet the needs of small producers in rainfed areas in Regions I, II, V, VI and VIII". While funds have been allocated for applied and basic research

on settled rainfed forest, agricultural, and coastal zone lands, training, facilities, equipment and technical assistance, the rolling design approach provides flexibility for PCARRD in utilizing the funds. On the other hand, ASSP funds both for technology generation in the research consortia/centers and technology verification, packaging and dissemination activities in RIARS units must be utilized for implementing integrated and interagency production, systems development programs. This point only stresses once more the need for strong linkages between regional consortia/centers and RIARS.

6. Make strong representations to the OBM for separate KEIs for major program thrusts and development activities yearly appropriations. The yearly budget for development should provide support for new R & D management units at PCARRD and the regional consortia/centers as well as operational expenses to implement action projects in different impact areas around the country.

The following are illustrative examples:

<u>KBI No.</u>	<u>Description</u>
KBI - 1	R & D Program - Yellow Corn
KBI - 2	R & D Program - Soybeans
KBI - 3	R & D Program - Upland Rice
KBI - 4	R & D Program - White Corn
KBI - 5	R & D Program - Agroforestry
KBI - 6	General GIA for priority commodity R & D projects
KBI - 7	National and regional development activities (management and training, technology utilization, socio- economic analysis and impact studies, etc.)

7. Organize and man the proposed PCARRD units for Management and Training, Technology Utilization, and Program Planning and Monitoring to be equal to their training task. Experience has shown that the farming systems approach which is emphasized in RRRDP will require a substantial investment in local training particularly for junior staff and extension workers. Moreover, there is a need to train research administrators who have to be reoriented toward interagency development projects or action programs. These new demands for training will require greater attention from PCARRD to gear up for greater volume in the immediate future.

ANNEX

REVIEW TEAM

Fernando A. Bernardo - President, Visayas State College of
Agriculture, Baybay, Leyte 7217-A

Gelia Castillo - Professor of Rural Sociology, University
of the Philippines at Los Baños

Ralph W. Cummings, Jr. - Senior Agricultural Economist, Directorate
of Food and Agriculture, Bureau of Science and Technology,
A.I.D., Washington, D.C.

Charles C. Larson - Professor Emeritus, State University of
New York, College of Environmental Science and Forestry,
Syracuse, New York

Santiago R. Obien - Director, Philippine Tobacco Research and
Training Center, Mariano Marcos State University, Batac,
Ilocos Norte

Rafael Rodriguez - Associate, Emmanuel V. Soriano and Associates,
Makati, Metro Manila

Emmanuel V. Soriano - Managing Director, Emmanuel V. Soriano
and Associates, Makati, Metro Manila

Larry Zuidema - Associate Director, International Agricultural
Program, Cornell University, Ithaca, New York.

ANNEX

PCARRD-USAID AGRICULTURAL RESEARCH PROJECT II EVALUATION

Rationale:

As part of the process to determine the effect of PCARRD/USAID assistance to the national research system in particular and to the development of Philippine agriculture in general, an evaluation of the Philippine Agricultural Research Project II will be undertaken in January 1984. While the main focus of the effort will be the assessment of the effectiveness of the project, the team will also evaluate the overall effects of Projects I and II and the effectiveness of PCARRD as an instrument for national development.

The evaluation team is expected to evaluate the Philippine Council for Agriculture and Resources Research and Development (PCARRD) in terms: (1) effectiveness of Project II implementation, (2) overall performance in research capability development, (3) program orientation and output, and (4) organizational and operational set-up for generation and utilization of research results.

Methodology:

PCARRD will commission a team of seven (7) top-calibre research and development experts consisting of the following:

From the J.S.A.:

1. Dr. Ralph Cummings, Jr. - Senior Agricultural Economist, Directorate of Food and Agriculture, Bureau of Science and Technology, A.I.D., Washington, D.C.

51

2. Dr. Larry Zuidema - Associate Director, International Agricultural Program, Cornell University, Ithaca, New York
3. Dr. Charles Larson - Professor Emeritus, State University of New York, College of Environmental Science and Forestry, Syracuse, New York

From the Philippines:

4. Dr. Gelia Castillo - Professor of Rural Sociology, University of the Philippines at Los Baños and current chairman of the Board of the International Potato Center and Board Member of ISNAR and IDRC.
5. Dr. Emmanuel V. Soriano - Managing, Director, Emmanuel V. Soriano and Associates, Makati, Metro Manila and former President of the University of the Philippines System
6. Dr. Fernando A. Bernardo - President, Visayas State College of Agriculture, Baybay, Leyte and former PCARRD Deputy Director General.
7. Dr. Santiago R. Obien - Director, Philippine Tobacco Research and Training Center, Mariano Marcos State University, Batac, Ilocos Norte
8. Dr. Rafael Rodriguez - Associate, Emmanuel V. Soriano and Associates, Makati, Metro Manila

The evaluation will be conducted within a period of 21 working days and will involve visits to representative research stations and dialogues with researchers and administrators, policy makers and research clientele. To ensure that the works will be completed within the period, PCARRD will conduct an in-house review to gather all pertinent data which

may be needed by the team so that the team can devote its time to data validation, analysis and recommendations. In addition, PCARRD will create a Coordinating Committee consisting of:

1. The Executive Director
2. Deputy Executive Director for Research
3. Deputy Executive Director for Development and Financial Management
4. Director, Planning and Development Office
5. Chairman of Agricultural Research Project II Evaluation
6. Dr. Edward Rice, USAID

PCARRD will likewise designate appropriate support staff consisting of the following:

1. Engr. Joel V. Martinez - Infrastructure
2. Engr. Dellenu G. Alagcan - Equipment
3. Ms. Yolanda F. Lanto - Finance
4. Ms. Nora M. Valera - Manpower Development
5. Ms. Teresita A. Abella - Budgets
6. Ms. Concepcion E. Magboo - Research
7. Ms. Leah B. Javier - Technical Assistance
8. Ms. Araceli O. Umali - Monitoring
9. Ms. Ligaya Bautista
10. Ms. Cecille Faicol

Resource Person:

Ms. Marietta S. Adriano/Dr. Manuel S. de Leon - NEDA
 Ms. Raymundo Tomas - OEM

Over-all Coordinator:

Dr. Ponciano A. Batugal
 Dr. Ramon V. Valmayor

The above technical staff and two clerk/typists will be made available to the team on a first priority basis for the duration of the review board.

The proposed schedule of activities of the team is shown in Attachment 1.

Expected Output:

The team is expected to produce a report containing its assessment of PCARRD on the following: (1) Effectiveness of Project II implementation, (2) Effectiveness in research capability development (including infrastructure, manpower, equipment, (3) Program orientation and output (problems of farmers and low income people and results which are technically feasible, economically viable, socially acceptable and environmentally safe), and (4) Organizational and operational set-up for generation and utilization of research results (within PCARRD and its operational linkages at the national, regional and provincial/barangay levels), and (5) Recommendations on PCARRD's direction in the next 5 years.

66

Composition of the Evaluation Teams:

Team I (for Luzon):

4 Consultants - both local and foreign

Dr. Ralph W. Cummings, Jr.
Dr. Gelia Castillo
Dr. Fernando Bernardo
Dr. Rafael Rodriguez

2 Technical Support Staff from PCARRD

Engr. Joel V. Martinez
Ms. Concepcion E. Magboo

Team II (for Visayas and Mindanao):

3 Consultants - both local and foreign

Dr. Lawrence Zuidema
Dr. Charles Larson
Dr. Santiago Obien

2. Technical Support Staff from PCARRD

Ms. Leah B. Javier
Ms. Dellena G. Alagcan

AGENCY/CENTERS TO BE VISITED

TEAM I

1. Isabela State University (ISU) - lead agency of the Cagayan Valley Integrated Agricultural Research System (CVIARS), Echague, Isabela
2. Central Luzon State University (CLSU) - lead agency of the Central Luzon Agricultural Research Consortium (CLARC), Muñoz, Nueva Ecija
3. Bureau of Plant Industry - Maligaya Rice Research and Training Center (BPI-MRRTC) - cooperating agency of CLARC, Muñoz, Nueva Ecija
4. Mariano Marcos State University (MMSU) - lead agency of the Ilocos Agricultural Research Center (ILARC), Batac, Ilocos Norte
5. Philippine Tobacco Research and Training Center (PTRTC) - cooperating agency of ILARC, MMSU Campus, Batac, Ilocos Norte
6. Cotton Research and Development Institute (CRDI) - cooperating agency of ILARC, MMSU Campus, Batac, Ilocos Norte

TEAM II

1. Visayas State College of Agriculture (ViSCA) - lead agency of Visayas Coordinated Agricultural Research Program (ViCARP), Baybay, Leyte
2. La Granja Agricultural Research Center (LGARC), La Carlota City, Negros Occidental
3. University of Southern Mindanao (USM) - lead agency of the Southern Mindanao Agricultural Research Center (SMARC), Kabacan, North Cotabato

4. University of the Philippines at Los Baños - Institute of Plant Breeding (UPLB/IPB), College, Laguna
5. Forest Research Institute (FORI), College, Laguna

TEAMS I and II

Ministry of Agriculture (MA), Diliman, Metro Manila

ARRIVAL - 15 JANUARY - MANILA

- 1430 Consultants met at Silahis Hotel
by Miss Leah B. Javier
- PCARRD van available at the hotel
- 1500 Leave Manila for Los Baños, Laguna
- 1630 Check in at SEARCA Guesthouse,
Los Baños, Laguna

MONDAY - 16 JANUARY - LOS BAÑOS

- 0800 PCARRD van to fetch evaluation team
at SEARCA Guesthouse
- 0630 Courtesy call on Minister Emil Q. Javier
Chairman PCARRD Governing Council and
Dr. Ramon V. Valmayor, PCARRD
Executive Director at UPLB
- 0915 Leave for PCARRD
- 0930 Orientation on team office space/facilities
and introduction to the technical working
committee and support staff by Dr. P.A.
Batugal
- 1000 Meeting with Coordinating Committee
to discuss TOR and overview of PCARRD
CORPLAN and Projects I and II
- 1100 Briefing on PCARRD activities by the
PCARRD Directors and slide showing at
Main Conference Room
- 1200 Lunch at the PCARRD Executive Lounge
with the PCARRD Coordinating Committee
- 1330 Continuation of meeting with Directors
- 1430 Presentation of in-house report to the
Evaluation Team

1730 Cocktails/dinner at PCARRD Executive Lounge
with the PCARRD Directorate (Bienvenida/Despedida
Party for Drs. E.O. Tan and F.S. Pollisco,
respectively)

Overnight at SEARCA Guesthouse

TUESDAY - 17 JANUARY - LOS BAÑOS/MANILA

0800 - In-house presentation
1000

1000 - Getting-your-act-together day at PCARRD
1200 Headquarters (Brainstorming by the team on
evaluation strategies to be used)

1200 Lunch at PCARRD

1500 Meeting with USAID Officials at Manila

Overnight at Silahis Hotel

SCHEDULE OF TRIPS

TEAM I (For Luzon)

WEDNESDAY - 18 JANUARY - ECHAGUE, ISABELA

0430 Fetch consultants at Silahis Hotel

0500 Check in at Manila Domestic Airport (MDA)

0600 Plane leaves Manila for Tuguegarao, Cagayan
(Flight No. 224)

0715 Arrival at Tuguegarao Airport
CVIARS van available at the airport

0800 Leave Tuguegarao Airport for ISU, Cabagan,
Isabela

0900 Arrival at ISU-Cabagan
Tour of Cabagan Campus

1200 Lunch at Cabagan

1300 Leave Cabagan for ISU-Echague Campus

1500 Arrival at ISU-Echague
Introduction of the Evaluation Team
to the ISU officials by a PCARRD
Representative
Interaction between Team and ISU officials
Overnight at the NIA Guesthouse

THURSDAY - 19 JANUARY - ECHAGUE, ISABELA

Whole day at ISU-Echague
Overnight at Tuguegarao

FRIDAY - 20 JANUARY - MANILA

- 0800** **Arrival at Tuguegarao**
Check-in at Tuguegarao Airport
- 0835** **Plane leaves Tuguegarao for Manila**
(Flight No. 217)
- 0930** **Arrival at Manila**
PCARRD van available at Manila
Domestic Airport
- 1300** **PCARRD van ferries consultants and**
resource persons to hotel/residence

SATURDAY - 21 JANUARY - MANILA

Rest day

SUNDAY - 22 JANUARY - BATAC, ILOCOS NORTE

- 1800** **Plane leaves Manila for Laoag**
Overnight at MMSU

MONDAY - 23 JANUARY - BATAC, ILOCOS NORTE

- 0800** **Arrival at MMSU/ILARC**
Dialogues with MMSU officials and researchers
- 1200** **Lunch at MMSU**
- 1330** **Visit to CRDI**
Overnight at MMSU

TUESDAY - 24 JANUARY - BATAC/MANILA

0800 Visit to PTRTC
Interaction with PTRTC
official and researchers

1200 Lunch at PTRTC

1330 Leave Batac for Nueva Ecija

1800 Arrival at Nueva Ecija
Overnight at CLSU Guesthouse

WEDNESDAY - 25 JANUARY - MUÑOZ, NUEVA ECIIJA

0800 Arrival at CLSU
Interaction with CLSU officials and staff

1200 Lunch at CLSU
Whole afternoon at CLSU

1900 Dinner at CLSU
Overnight at CLSU Guesthouse

THURSDAY - 26 JANUARY - MUÑOZ/MANILA

Morning at CLSU

1000 Visit to BPI-MRRTC

1300 Departure for Manila

1700 Arrival at Los Baños
Overnight at SEARCA Guesthouse

TEAM !!**WEDNESDAY - 18 JANUARY - VISCA, BAYBAY, LEYTE**

0530 Fetch team at Manila

0600 Check-in at MDA

0840 Leave Manila for Tacloban (Flight No. 191 delayed)
 Arrive Tacloban Airport
 VISCA van to Baybay, Leyte

1030 Leave Tacloban airport for VISCA, Baybay, Leyte

1230 Arrival at VISCA, Baybay, Leyte
 VISCA officials welcome the team

1245 Lunch at VISCA

1400 Interaction with VISCA officials

1730 Session adjourned for next day
 Overnight at VISCA Guesthouse

THURSDAY - 19 JANUARY

 Whole morning at VISCA

1200 Lunch at VISCA
 Whole afternoon at VISCA

1600 Leave VISCA for Tacloban Airport

2010 Check-in at Tacloban Airport

2110 Leave Tacloban for Manila

2220 Arrival at Manila

FRIDAY - 20 JANUARY - USM, KABACAN, NORTH COTABATO

0700 Leave hotel for MDA
0820 Check in at MDA
0920 Leave Manila for Davao (Flight No. 113)
1100 Arrival at Davao Airport
Lunch at Davao
USM van to be available to ferry team
to USM
1300 Leave Davao for USM, Kabacan,
North Cotabato
1515 Arrival at USM
1600 Welcome by USM President
Jaman S. Imlan
Overnight at USM Guesthouse

SATURDAY - 21 JANUARY - DAVAO CITY

0800 Program continued at USM
1200 Lunch at USM
1530 Leave USM for Davao City
USM van to Davao City
1730 Arrival at Davao City
Overnight at Davao City
(Apc View Hotel)

SUNDAY - 22 JANUARY - CEBU CITY

0400 Leave Apo View Hotel for airport
0425 Check-in at Davao Airport
0525 Leave Davao Airport for Cebu City
0615 Arrival at Cebu City Airport
0630 Leave Cebu City Airport for Hotel
de Mercedes

Whole day in Cebu

Overnight at Cebu City (Hotel de Magellan)

**MONDAY - 23 JANUARY - LGARC, LA CARLOTA,
NEGROS OCCIDENTAL**

0515 Leave hotel for airport
0600 Check-in at Cebu airport
0700 Leave Cebu airport for Bacolod
0730 Arrival at Bacolod Airport

LGARC van to LGARC, La Carlota,
Negros Occidental

0800 Leave Bacolod airport for LGARC
0900 Arrival at LGARC

Welcome by Chairman Rodolfo M Medina

1330 Whole afternoon at LGARC

Overnight at LGARC/Bacolod

TUESDAY - 24 JANUARY - MANILA

0800 Whole morning at LGARC
 1100 Check-in at Airport
 1200 Leave Bacolod for Manila
 1300 Arrival at MDA
 PCARRD van to be available to ferry team
 to Los Baños, Laguna
 1530 Leave MDA for Los Baños
 1630 Arrival at Los Baños
 Check-in at SEARCA Guesthouse

WEDNESDAY - 25 JANUARY - LOS BAÑOS

0800 Whole morning at FORI
 1200 Lunch at FORI
 1300 Whole afternoon at UPLB-IPB
 2000 Dinner at SEARCA Guesthouse
 Overnight at SEARCA Guesthouse

THURSDAY - 26 JANUARY - PCARRD, LOS BAÑOS

Report preparation/discussion at
 SEARCA Guesthouse
 Overnight at SEARCA Guesthouse

FRIDAY - 27 JANUARY - PCARRD, LOS BAÑOS

0800 Discussion/interaction on findings
 during the field visits, PCARRD
 Secretariat

1200 Lunch at Cosmos Restaurant
Overnight at SEARCA Guesthouse

SATURDAY - 28 JANUARY - PCARRD, LOS BAÑOS

0900 PCARRD van fetches consultants at
SEARCA Guesthouse

0915 Arrival at PCARRD/Team discussion

1200 Lunch at Cosmos Restaurant

1330 Meeting with the OBM and NEDA
representatives

1400 Report writing

1800 PCARRD van ferries consultants
to SEARCA Guesthouse

SUNDAY - 29 JANUARY - PCARRD, LOS BAÑOS

Report writing at SEARCA

1200 Lunch at Cosmos Restaurant

1300 Team discussion/reproduction
of report at PCARRD

1900 PCARRD van ferries consultants
to SEARCA Guesthouse

MONDAY - 30 JANUARY - PCARRD, LOS BAÑOS

0730 PCARRD van fetches consultants
at SEARCA Guesthouse

0800 Arrival at PCARRD

0900 Meeting with the PCARRD Coordinating Committee and Technical Support Staff to discuss findings and perceptions of the team and solicit reactions of the Committee members

TUESDAY - 31 JANUARY - MA, METRO MANILA

0745 PCARRD van fetches consultants at SEARCA Guesthouse

1000 Meeting with Dr. Edgardo C. Qutsumbin, Director of MA - Agricultural Research Office (ARO)

1300 Lunch at Manila

1500 Leave for Los Baños

1700 Arrival at SEARCA Guesthouse

WEDNESDAY - 1 FEBRUARY - PCARRD, LOS BAÑOS

0800 Van fetches consultants at SEARCA Guesthouse

0830 Arrival at PCARRD

1200 Lunch at Cosmos Restaurant

1700 Meeting with the PCARRD Coordinating Committee to discuss report before it is finalized

THURSDAY - 2 FEBRUARY - PCARRD, LOS BAÑOS

Review and reproduction of the report

FRIDAY - 3 FEBRUARY - PCARRD, LOS BAÑOS

0830 Van fetches consultants from SEARCA Guesthouse

0900 Presentation of the final report to the
PCARRD Coordinating Committee at the
OED Conference Room

1200 Lunch at Cosmos Restaurant

1300 Presentation of the final report to the
Technical Advisory Committee

SATURDAY - 4 FEBRUARY - PCARRD, LOS BAOS

0900 Revision of the report/winding up
of activities

1200 Lunch at Dr. Batugal's residence
Continuation of the revision

1400 Drs. Cummings, Zuidema and Larson
depart for Manila
Overnight at Silahis Hotel