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RICE RESEARCH PROJECT

2 YEAR REVIEW

MAY 21 - 25, 1979

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I. Summary and Recommendations

A. Summary:

The review team met from 21 to 25 May for the purpose of reviewing the project on Rice Research of the Department of Agriculture, financed by USAID under loan No. 383-T-016 and implemented by IRRI through an agreement between GSL and the International Rice Research Institute. The project has completed 2 years of a 5 year period. The review team was requested to review the work that had been underway during this period; assess the progress made; modifications that that might be needed to achieve objectives; and consider new directions that might be pursued in order to more rapidly or more effectively increase rice production in Sri Lanka.

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The team strongly endorsed the project and proposed that the project be continued essentially in its present scope. Deficiencies and delays in implementation of the project were recognized especially in technical assistance to the Field Trials program, degree training, staff recruitment, and equipment procurement. Appropriate corrections and actions and appointments have been made and it would appear achievement of project objectives can be realized. The team considered the various inputs to the project and suggested that some minor modifications would be desirable in technical assistance, training and commodities. These modifications would need to be reflected in allocating funds for the remainder of the project period.

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The team feels that the project has made substantial progress in Rice Research. The problems farmers have had with insects like brown plant hopper require the development of varieties with built-in plant protection to these insects. The team observed materials in the final stages of testing that would offer farmers an opportunity to reduce costs of insect control by combining insect resistance with other pest control measures.

The Resource Capability Survey program has made substantial and significant progress in developing land characterizations that will enable the varietal improvement group to more effectively tailor varieties to fit specific conditions, by utilizing these classifications in the process of varietal identification. Such classifications will also be useful to the Cropping Systems research team as they conduct research in farmers' fields to identify new patterns to increase production through new crops and greater cropping intensity. The system will be of tremendous assistance to the extension personnel as they can relate recommendations to the capabilities of a farmer's lands.

Cropping Systems research on rice-based cropping systems has made an excellent beginning in generating information which could be of value in increasing cropping intensity by the introduction of new crops

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in cropping patterns or by increasing production of existing patterns. Constraints to production have been reported back to research stations where problem-oriented research can seek solutions to these problems. Whenever possible the Cropping Systems program as well as extension should be used as a primary resource in identifying the kinds of varieties needed.

The team recognized a need to involve rural sociologists and economists in identifying constraints to rice production and the exploitation of new cropping systems. Means to implement these studies should be explored and linkages with IRRI's network on agro-economic research should be made.

Decentralization of Field Trials and linking them to regional stations seeks to relate such trials to more location-specific environments in the process of identifying varieties for farmers' use. "These trials form an important component in the evaluation process for the identification of varieties and develop packages of practices to exploit their potential."

Lack of sufficient staffing of posts for the project have been a factor to slow the research effort of the project. This has been true of resident specialists to be supplied by IRRI as well as local staff where suitable personnel could not be identified for a number of posts and locations. Nevertheless, the research program as conceptualized has made significant progress in implementing the work plans developed for the four research areas. Appropriate expansion in staffing should be made to provide for a concentrated breeding effort in the Eastern rice growing region and a better balance to the program at Maha Illuppallana.

The technical assistance for Rice Research as projected for the balance of the contract should be continued as originally planned. Technical assistance to the Field Trials program should be extended for 36 person months which will require an extension of 12 person months for this position.

Procurement of commodities have been delayed for various reasons, but the team was gratified to note that most of the funds available had been committed and orders placed for the equipment.

The long term training component has been slow to be implemented and consideration needs to be made to possibly extend the period in order to fit the long term training into the contract period.

The team views with sympathy the question of support to dependents to enable them to accompany staff members on long term study programs. USAID should seriously consider means of providing support for this purpose.

Short term training is well on schedule and even more funds could be utilized in this activity.

The team visited research stations at Bombuwela, Batalagoda, Maha Illuppallama and the Central Agricultural Research Institute at Peradeniya. The team observed Field Trials plots in the wet zone and had an opportunity to be briefed on land classifications as we travelled from one place to another.

The team was briefed by staff at the various locations and at Maha Illuppallama they had an opportunity to get reports from the site coordinators from the cropping systems sites.

Important discussions were held with the Director of Agriculture, Mr. Earl Jayasekera, on May 24 regarding project activities and achievements related to projects and programs of the Department of Agriculture.

How and when these recommendations will be re-assessed

B. Recommendations:

From these observations, discussions and study of reports provided to the team, the team has made the following recommendations.

1. A closer linkage between breeders and the regional adaptive trials agronomists should be developed and the lines of operation and responsibility clearly defined in order to identify varieties for unstable environments of bog soils, half bog soils, rainfed chena and rainfed uplands.
2. In order to increase the effectiveness of the varietal improvement team, provision should be made to provide adequate and appropriate facilities at CARI for mass rearing of gall midge.
3. Because of the great potential for increasing rice production in the dry zone through improved agronomic crop management, the department should intensify its research efforts by the identification of strong leaders and new additional personnel in agronomic research. More agronomic assistance is needed in the varietal improvement program. A stronger agronomic program is needed to better utilize and maximize the efforts of the varietal improvement program.
4. The Field Trials program is an integral part of the process of developing recommended practices for the use of new varieties on specific land elements as identified by the Resource Capability Survey. To more effectively utilize these trials it is recommended that the policy decisions taken in August 1978 should be implemented to make Field Trials the responsibility of each regional station on a phased basis beginning with Bombuwela, Batalagoda, Maha Illuppallama and CARI in the Maha season 1979/80. In order to implement this change, present staff, vehicles and equipment would be reassigned, new staff needs assessed and

recruited, and an agronomist assigned to work with the IRRI resident specialist.

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5. The project is generating an abundance of valuable research information that needs to be analyzed, summarized and presented in literature of use to extension personnel and farmers. It is recommended that the project provide for the design, programming and implementation of a system of disseminating this information. The information system should also include audio-visual facilities and activities. IRRI should supply a communications specialist on a consultancy basis to develop these plans.
6. The revised approach to Field Trials coupled with the expanded adaptive research program envisioned in the World Bank Agricultural Extension and Adaptive Research Project provides an opportunity for developing more effective linkage between GSL/IRRI and the GSL extension program. Similarly, linkages and research support should be developed with the integrated water management projects being sponsored by AID.
7. The team endorses the training schedule which has been developed. It does however recommend that appropriate budget arrangements be made to accommodate additional training.
 - a. In view of the experience obtained during the first two year of the project and of other changes which provided opportunities not existing at the time the project was developed and signed, the team recommends that the GSL/IRRI contract be amended to permit MS as well as Ph.D candidates to pursue their degree training in Western or Asian universities. Selection of personnel for degree training and choices of institutions and courses of study will be the mutual responsibility of the Project Director and the IRRI Team Leader. Special consideration should be provided to staff in leadership roles. In the meantime, however, in keep with IRRI's current policy, MS degree training to be done in developed countries will be removed from IRRI's responsibilities. It is recommended that GSL employ other avenues to utilize AID funds for MS degree students already identified for training in countries outside of Asia.
 - b. In order to more effectively support the research efforts it is recommended that non-degree training should be provided to lower level staff such as farm superintendents, farm manager, agricultural instructors, research assistants, laboratory technicians and statistical assistants. Because of additional efforts in adaptive research additional short term training is required for the Field Trials personnel. Extension personnel should be among this group to receive training so that linkages with extension may more easily be

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established and implemented.

8. The review team noted the need for additional clerical, secretarial and accounting assistance in the office of the Project Manager in order to insure smooth management of the project. Provision for such was not anticipated when the original budget was prepared. The committee recognized the need for consideration of such support staffing. It is recommended that those responsible for the project management take into account this need when evaluating the mid project budgeting and priorities.
9. It is recommended that the technical assistance as projected and budgeted be continued. The above recommendations will require modifications and re-allocation of funds to provide for the extension by one person year the Field Trials consultant, additional staff assistance for the Project Director, commodities and additional training.
10. Rural sociologists can significantly contribute to the Rice Research and Cropping Systems program. It is suggested that consideration be given by the project to utilize rural sociologists as part of the research team in support of the constraints studies program and in identification of technological packages desired by farmers.

II. Rice Situation in Sri Lanka

Rice is the single most important crop under production in Sri Lanka occupying a third of the cultivated area. The cultivation of this crop also provides employment to nearly one half of all engaged in agricultural pursuits. Domestic production is inadequate to meet the nation's needs. The production figures for 1978 indicate a shortfall of nearly 20 million bushels to meet current domestic demand.

Production of this crop in Sri Lanka is strongly influenced by topography and climatic factors. For a small country, rice is produced here under exceptionally wide range of physical conditions. The country is divided into three geographic elevation regions.

- i. Low country - below 300 metres
- ii. Mid-country - between 300 and 1000 metres
- iii. Up-country - above 1000 metres

The locations of the central highlands in the path of rain bearing winds has a profound impact on rainfall with a bi-modal distribution. Two seasons of rice production based on the pattern of rainfall distribution are recognized. The Maha, a major season, from October to February corresponding to North East monsoon and Yala, a minor season, from April

to August corresponding to the South West monsoon. Such variations in the rainfall distribution permeated across the appropriate geographic elevation regions provide 24 agro-ecological regions in which physical environment is sufficiently different to have major impact on rice cultivation.

The dry zone accounts for about two thirds of the area under rice and produces a little over 60 percent of the domestic output. Only a third of the acreage is served by major irrigation schemes and nearly 90 percent of such lands are located in the dry zone. Stable production conditions are seen mainly on lands irrigated by major irrigation schemes. The wet zone is entirely rainfed and rice cultivation here confined to narrow tracts in the lowest portion of the landscape. Small paddy farms of less than half hectare, part time farming and high incidence of share cropping are some of the important socio-economic features observed in the wet zone. A significant portion of the rice crop in this region is grown on marginal paddy lands under adverse soil conditions to which current high yielding varieties are not adapted.

III. Programs

A. Rice Research

It is evident that solid progress has been achieved to date. It was encouraging to note that almost 82% of the rice growing acreage were using high yielding varieties and yields in farmers' fields were increasing as a result of the use of these varieties with other inputs. There are always ways in which the program can be enhanced based on experience encountered and a greater visibility of the total need and new challenges in this area of research. The interdisciplinary research team should be complimented for its approach to the location specific needs. The efforts in the wet region to develop varieties with higher yield potential without requiring expensive inputs is a good example.

Areas needing more attention in the future were identified to further accelerate the program. More attention must be given to the rainfed areas of the Eastern rice growing region. It would be well to add a breeder (MS level) and an agronomist (Ph.D level) with appropriate support staff. At Maha Illuppallama there should be additional research officers so that there would be a breeder for low-land and one for the upland including needs of the "chena culture" areas. CARI has excellent capability in the support of scientific disciplines of Entomology, Plant Pathology, Physiology, Soil Science, Genetics, etc. These scientists should be used more intensively and extensively by the scientists at the regional research centers. The Resource Capability program has had both a positive direct and indirect impact. The manner in which this program is progressing is providing maximum benefit and should be encouraged to continue on the current schedule.

B. Cropping Systems

The Cropping Systems program has moved forward in many respects in relation to its objectives and work plan (reference the IRRI/GSL contract objectives and program of work page 2 and 6). The project has been very active and has begun work at five sites after initial training of site coordinators at Maha Illuppallama.

As reported by the national coordinator and his staff, the program did not start from scratch but built on the IDRC program which used the same model which began work at 2 sites, one year previous. Today, considerable agro-economic work is in progress at all sites at the same time there is recognition of a need for more socio-economic studies with a closer coordination between agronomic and economic phases of the program.

Thinking of the next three years, the Cropping Systems approach as visualized in the original project objectives and work plans have been established during the first two years. Cropping Systems should be identified as a discreet program particularly for the life of this project since it is relating a new concept and just off to a good start. At the same time the Cropping Systems program should be integrated into the overall program of the regional stations with which they are associated.

C. Field Trials

The Project Paper and GSL/IRRI contract (page 6) described the thinking related to Field Trials activities at the time the project was planned. The initial phase of the project implementation followed these guidelines. During the first year, little progress was achieved.

On August 24, 1978 (end of the first year) in a meeting of department staff working in rice, the Field Trials work plan of the GSL/IRRI team was discussed. Certain changes were recommended: 1) strengthen and expand field trials activities, 2) decentralize to regional station, 3) national coordination to be transferred to Regional Officers in Charge.

Based on the policy decisions made at the August 1978 department meeting and with concurrence of other consultants. It is now planned: 1) to make field trials the responsibility of the Research Officers in charge of each research station. This to be carried out in stages, the first phase would be Maha 1979/80 at Bomuwela, Batalagoda, Maha Illuppallama and CARI, 2) present Field Trials staff, vehicle and equipment to be reassigned to these stations, 3) additional staffing needs of the regional stations will be determined by the regional stations in consultation with the DDR and IRRI specialist, 4) a senior agronomist will be assigned to work with the IRRI specialist in supporting and expediting this project. Considering the long term plans within the department, especially in relation to the World Bank Agricultural Extension and Adaptive Research Project, the on-farm research activities at the regional stations could be better described as "adaptive research" rather than "field trials".

Considering 1) non-availability of service of the Field Trials specialist for the past one year and 2) during major analysis of field trials activities, it is suggested that the project re-budget an additional 12 months to provide 36 person months of technical assistance for adaptive research. This specialist is expected on board late June 1979 and will also be designated as the the IRRI Team Leader. (Note this position requires considerable administrative time).

D. Resource Capability Survey

The objectives of the Resource Capability Survey as described in the USAID project paper and the GSL/IRRI plan of work were designed to develop a well-defined understanding of the different rice land units in Sri Lanka. The major objectives were planned to include: 1) the definition of the specific characteristics of the different systems of paddy lands and to determine a set of management practices needed for each system, 2) to develop indepth understanding of the variability and potential of the different types of paddy land within each system, and 3) to translate the research information on land resource capability into simple charts, diagrams, and schedules that are easily comprehended.

Excellent progress has been made in fulfilling all three of these objectives during the first two years of the project.

Field studies in the demarcation and characterization of the land systems led to the completion of the field studies in the Kandy district. Significant progress was made on the field studies in Kalutara, Kurunegala and Matale districts. Work is currently in progress in Colombo, Kegalle and Badulla districts. It is expected to complete these studies on the entire wet zone rice lands by the end of 1979. In spite of restriction in mobility due to a delay in delivery of vehicles the Resource Capability Survey program has made excellent progress in the past two years.

Detailed study of the evaluation of the rice land elements in different land systems is the next phase of the Resource Capability Survey effort. The resulting information will be transferred to Research and Extension Divisions through demonstrations and publications. Two months of short term technical assistance was provided to the Resource Capability Survey program during the past year.

IV. Technical Assistance

A. Rice Breeding

To date the project has supplied 24 person months of an IRRI rice breeding specialist. (The technical assistance as currently projected for the remainder of the contract should be continued. By the end of this period there should be a strong viable interdisciplinary and well integrated program for rice varietal improvement and development)

B. Cropping Systems

A major input to Cropping Systems from this project has been 24 person months of technical assistance from IRRI as planned. There does not appear to be a need for further full time expatriate staffing. Instead

the technical assistance to Cropping Systems for the remaining three years of this project can best be supplied through short term consultants, dealing with specific areas, as identified by the national coordinator and his staff in consultation with the IRRI Team Leader

C. Field Trials

IRRI provided a Field Trials specialist to this program for 12 person months during October 1977 to September 1978. Twenty four person months remain of the 36 months budgeted for the first three years of the project. It is recommended that considerations be given to rebudgeting to provide a total of 36 person months beginning late June 1979.

V. Training

A. Rice Research

The proposed training schedule for the post graduate studies should be expanded. There is need for two more plant breeders with M.S. level training. It is suggested there be two more agronomists one at the Ph.D level and one at the M.Sc level. The importance of adding to the varietal improvement team the expertise of the discipline of social science in the field of rural sociology is recognized. It was felt that there should be a minimum of two persons trained with an M.S. in this field. It was not felt that the momentum now being experienced would be slackened over the next two to three years as several of the scientists would be on leave pursuing their post graduate studies. The general organization of the varietal improvement team along with the assistance of the consultant will keep to a minimum any loss in positive progress in this research program. It was felt that provision should be made to have middle support staff sent to IFRI to participate in the GEU short term training. This would further enhance the productivity of the Senior Research Officers.

B. Cropping Systems

One Ph.D degree program (departure June 1978) for three years at North Carolina State University and 8 short term trainees (of 11 budgeted over five years) and 6 scientists participated in foreign workshops (regional site coordinators tour). Unfortunately, of the 12 person years of degree training planned for the first two years of this project, only one person year has been used. Eight people were sent on short term training as compared to seven budgeted for the first two years.

The degree training plan (mainly 1974) in Cropping Systems proposes

3 scientists for M.S. training at UPLB and is considered adequate. Short course training at IPRI could be utilized more during the next three years. Presently only three trainees more are budgeted. It would be advisable to budget for 4 per year (a total of 12) which would provide opportunities for newer staff.

As pointed out by the Project Director and Cropping Systems national coordinator, there is a need for more technical training of non-degree technical staff. This staff is vital to support research activities (experimental officers, farm managers, laboratory assistants, etc.) This should be planned as 2 - 3 short courses and to provide at least two persons from 5 sites (total 10) over two years.

C. Field Trials

None of the four degree trainees for the Field Trials program have been sent out. Five of the 21 short course (non-degree) training program have been completed. None of the workshops and seminar funds have been used for Field Trials. In addition to the two positions presently planned for MS degree training, five positions have been kept vacant in the training schedule which could be used as individuals are identified for adaptive research programs. This is expected as the adaptive research programs are developed at the regional stations. Mainly due to the new direction for adaptive research more short course training will be required at regional stations. The balance of 16 short course training programs should be kept as budgeted. Some of these may be used for training of extension personnel who are closely involved with the adaptive research program.

Funds budgeted for workshops and seminars should be provided for adaptive research personnel.

D. Resource Capability Survey

No Resource Capability Survey scientists have participated in short course training or degree training during the first two years of the project, but scientists have been identified for two degree programs and three short course programs during the next two years.

E. Need for short term training for mid-level technicians and support staff

The effectiveness and productiveness of scientists can be multiplied by the presence of highly trained/motivated technicians and support staff. Among this group of individuals are the farm managers, lab/field assistants, and those who maintain field and laboratory equipment in good working condition. There is a need for upgrading the training of selected individuals performing such functions in the GSI/IRRI project. It is anticipated that such short courses would be available either at IPRI or in institutions in the Philippines with whom IRRI has cooperative relations, e.g. UPLB, SEANCA, Colleges of Arts and Trades. The number and selection of individuals to

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undergo such training will be mutually agreed upon by GSL and IRRI.

F. The team has carefully reviewed the proposed training schedule which was developed in January 1979. However, since professional manpower development is the key to the future success and continuity it is recommended that additional training as per other sections of this report be accommodated. It was noted that the training schedule provided for most of the training to be done in Asian universities. However in the case of some M.S. candidates the team concurs that it is more appropriate to seek admission to Western universities. This on the other hand is not compatible with IRRI's training policy which is:

1. That M.Sc degree training is undertaken in reputable agricultural institutions in rice growing countries in Asia, particularly those universities with an active rice research program, and
2. Ph.D degree training be:
 - a. program carried out completely in a developed country, or
 - b. program composed of course work in an university in a developed country and the thesis research at IRRI or in the candidate's home country.

The team recognizes merit and logic in the above kind of degree training policy, however, the team recommends and concurs that it is more appropriate for the GSL to send a number of its M.Sc. candidates to universities in developed countries. Under these circumstances, such candidates will be sent to graduate schools in developed countries under other arrangements and not through IRRI's auspices.

Selection of candidates for training, institutions, and courses of study will be the mutual responsibility of the Project Director and the IRRI Team Leader.

Appropriate adjustment will need to be made in the revised budget to accommodate the additional recommended training needs.

VI. Procurement of Commodities

After one year delay, the commodity list was completed, then after prices were secured, orders have been placed for approximately 90 percent of the budget. Most of this equipment will be received within the next few months. Since most of the funds for commodities, vehicles, etc. have been spent or committed re-allocation of funds for additional equipment and facilities may be necessary during the remaining project duration.

VII. New Directions or Emphases in the Project

The experience in the first two years of the project suggests the need for certain shifts in emphasis and the need to look into some areas of research not looked into earlier. Among these research areas are:

- A. Cultural practices/management of rice - this is particularly true for those areas where the Rice Research program has made available a good number of improved semi-dwarf varieties and old improved types for cultivation. These varieties are those for the dry zone and the intermediate zones. These two zones comprise about 82% of Sri Lanka's rice acreage. There is agreement that the full potential of these varieties have not been fully exploited and that to do so, better technology for their culture and management must be developed through appropriate agronomic research.

This will be especially true in the dry and intermediate zones where marketable surpluses can be realized. To this end it is envisaged that four regional centers and 10 adaptive research centers will carry out agronomic research for these areas. New practices could be included in management kits used in the regional Field Trials programs and extension demonstration. While agronomic practices can play an important role in this area of the country, it will be substantially less so in the wet zone. With the exception of correcting overriding soil deficiencies by fertilization or amendments the greatest contribution to rice production of subsistence farmers in this area will be through the creation of varieties with specific adaptations to the resource capability of the land itself. This should provide increases of 25 to 30 percent by change of variety alone. Stabilization of yields at this level would be a first step to increased rice production in this area.

In cropping systems research the primary discipline will be the agronomists who through the management of crops in the systems can enable greater production through greater cropping intensity or varietal substitutions within systems which have been fitted together with the help of the commodity programs, socio-economists and most important of all, the farmers themselves.

Staffing of the original project recognized the need for this important research area. However, it has not been possible to recruit staff for many of these positions.

To emphasize and supplement this phase of the project it is recommended that the department should redouble its efforts to recruit promising young scientists and identify strong leaders in agronomic research. IKRI should provide consultancy time to provide additional support and guidance to research in this area.

- B. Seed Problems -** As the breeders develop varieties for the different maturity groups adapted to the various environments of the different zones, the number of varieties could increase by 50 percent over the number presently in the seed program of the department.

The team felt that the progeny row procedures used in varietal maintenance at the stations were probably adequate. There would be a need for facilities for handling and maintaining appropriate quantities of breeder seed of increased numbers of varieties. There will be a need for trained personnel with specific responsibility for varietal maintenance and for adequate seed processing and storage facilities. The project should review staff (seed technologist) and equipment needs in this respect.

The support of the German Government in providing seed plants to handle seed multiplications beyond research stations should provide considerable strength to the advanced stages of multiplication which would enable quality seed to be made available to farmers through seed farms and hopefully commercial channels to be promoted in the private sector. This program and the rice research program must be carefully integrated.

- C. The Rice Research program** has primarily focused its attention on screening and testing the germplasm developed under the stable and moderately stable environments or the artificial stress conditions characteristic of experiment stations. It needs to expand its operations (including staffing and transportation) in such a manner so that screening and developing varieties for such unstable environments as bog soils, half bog soils in the wet zone and the rainfed "chena" and upland in the dry zone can be accommodated. The collaboration links with the extension staff and the Extension Field Trials group should also be strengthened. The experience of the Bompuwela group should be drawn upon for formulating the operational procedures in this field.

The team recommends that closer linkage between the breeders and the Field Trials agronomists should be developed and lines of operation and responsibilities be clearly defined.

- D. The proposed World Bank funded Agricultural Extension and Adaptive Research project** also includes a significant research input into the development of three further Regional Research Centers and twenty Adaptive Research Units. It is also envisaged that integrated water management projects will be taken up under USAID financing for the Galija and Uda Walawe major irrigation projects. The GSL/IRRI Rice Research Project would have to therefore link up closely with the foregoing new projects in viewing the part that rice will be the major crop in respect of both the above projects.

The team recommends that the Agriculture Department would therefore have to take early action to frame effective working methods whereby

the activities of the GSL/IRRI project enmeshes and meshes its activities to the proposed World Bank and Water Management projects. In particular, how the adaptive research activities will coordinate with the Field Trials program; and the adequacy of a supporting rice research base in the Gal Oya and Uja Walave project areas.

Dissemination of Data - Rice Research is a major and high priority program in Sri Lanka. It is a complex business involving many geographic environments, highly skilled technical staff and dealing with several functional areas. One of its principle outputs is the generation of basic and adaptive research data. Unfortunately, there does not appear to be an information system within the existing organizational structure which can deal with the increasing volume of raw data or the processing of information into a form which can be readily collated, disseminated, retrieved or published.

One of the major thrusts for dissemination of research data are the workshops. These are conducted several times of the year for the various programs and are supported by working papers, reports, and studies. The preparation of documentation for workshops is a time consuming process yet the ultimate users, the extension personnel, need the information in a form which can be utilized in their contacts with farmers. Such a form requires additional processing and summarization of data.

An important adjunct to the information system is the audio-visual program. The Rice Research project does not have an organized orientation or briefing program. There are no standard briefing papers, brochures, slide shows or formal presentation. The orientation of visitors is done on an ad-hoc basis often supported only by a few hastily prepared charts or handouts.

For example an audio-visual program could be utilized to improve the dissemination of data collected under the Resource Capability Survey to the other components of the cooperative GSL/IRRI project and low level staff on project activities - also the orientation of extension personnel and farmers could be enhanced.

The team recommends that the project provide for the design, programming and implementation of an information system capable of effectively collecting, processing, collating and disseminating the data generated by the project.

That the information system also include audio-visual facilities and activities designed to provide materials for orientation, briefing and training purposes.

F. Rural Sociology - In Sri Lanka as in many other countries of South and Southeast Asia, rice cultivation is bound to the culture of its people. The reasons for/motivations behind the adoption or non-

adoption of rice varieties and rice production technologies are very often determined by socio-economic considerations. The GSL scientists have developed improved varieties and production technologies that are now available to be evaluated by farmers in their fields. It is important that these socio-economic considerations be understood so that appropriate adjustments could be made by the biologists as they develop newer varieties and better production technologies.

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May 29, 1979