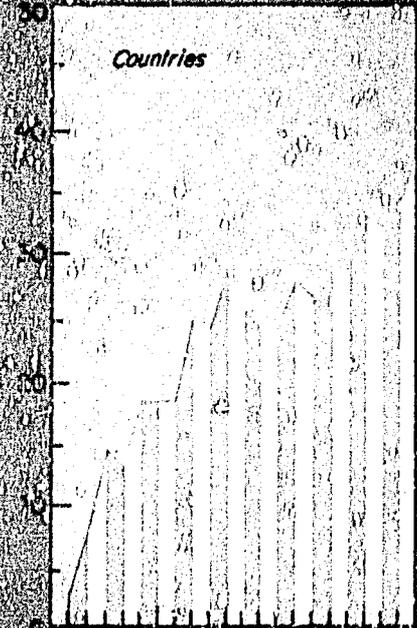


PN-ABD-74863577

# IRRI's TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS



INTERNATIONAL RICE RESEARCH INSTITUTE

**IRRI's TRAINING  
AND PROFESSIONAL  
ADVANCEMENT  
PROGRAMS**

**1983**

**INTERNATIONAL RICE RESEARCH INSTITUTE  
LOS BAÑOS, LAGUNA, PHILIPPINES  
P.O. BOX 933, MANILA, PHILIPPINES**

10

The International Rice Research Institute (IRRI) was established in 1962 by the Ford and Rockefeller Foundations with the help and approval of the Government of the Philippines. Today IRRI is one of 13 nonprofit international research and training centers supported by the Consultative Group for International Agricultural Research (CGIAR). The CGIAR is sponsored by the Food and Agriculture Organization (FAO) of the United Nations, the International Bank for Reconstruction and Development (World Bank), and the United Nations Development Programme (UNDP). The CGIAR consists of 50 donor countries, international and regional organizations, and private foundations.

IRRI receives support, through the CGIAR, from a number of donors including:

the Asian Development Bank  
the European Economic Community  
the Ford Foundation  
the International Fund for Agricultural Development  
the OPEC Special Fund  
the Rockefeller Foundation  
the United Nations Development Programme

and the international aid agencies of the following governments:

Australia  
Belgium  
Brazil  
Canada  
Denmark  
Fed. Rep. Germany  
India  
Japan  
Mexico  
Netherlands  
New Zealand  
Philippines  
Spain  
Sweden  
Switzerland  
United Kingdom  
United States

The responsibility for this publication rests with the International Rice Research Institute.

ISBN 971-104-112-X

b'

# Contents

|  |    |
|--|----|
| FOREWORD   | v  |
| INTRODUCTION   | 1  |
| THE TRAINING PROGRAMS  | 1  |
| Research-oriented programs   | 1  |
| Postdoctoral fellows   | 2  |
| Degree programs  | 2  |
| Nondegree research fellows   | 3  |
| Short-term courses   | 3  |
| Agricultural Engineering Training Course (AEC)   | 3  |
| Agroeconomic Research Methodology Training Course  | 3  |
| Cropping Systems Training Program (CSTP)   | 3  |
| Genetic Evaluation and Utilization (GEU)   | 4  |
| Integrated Pest Management Training Course (IPM)   | 4  |
| Irrigation Water Management Training Course (IWMT)   | 4  |
| International Network on Soil Fertility and Fertilizer Evaluation in Rice                                      | 4  |
| Rice Production Training Program (RPTP)  | 4  |
| Upland Rice Training Course  | 5  |
| Special training courses   | 5  |
| AT IRRI  | 5  |
| <sup>15</sup> N studies  | 5  |
| Varietal improvement for upland crops  | 5  |
| Entomology of cropping systems   | 5  |
| Disease control on cropping systems  | 5  |
| Library and documentation  | 5  |
| Statistical methods and procedures   | 6  |
| COURSES OFFERED ABROAD   | 6  |
| SPECIAL ORIENTATION PROGRAMS FOR POLICY MAKERS AND RESEARCH MANAGERS   | 6  |
| NUMBER OF PARTICIPANTS IN THE VARIOUS TRAINING PROGRAMS  | 7  |
| Analysis of program participation  | 7  |
| THE ROLE AND IMPACT OF IRRI-TRAINED SCIENTISTS IN THEIR HOME COUNTRIES   | 10 |
| Follow-up survey to increase response from IRRI alumni in Bangladesh, Indonesia, Thailand, and the Philippines | 17 |
| Survey of national program leaders regarding the relevance of IRRI's training program                          | 20 |
| Survey of IRRI scientists regarding the short-term courses   | 22 |
| CONCLUSIONS  | 24 |
| APPENDICES   |    |
| 1. Survey of IRRI alumni, 1962-80  | 28 |
| 2. Survey of supervisors of IRRI alumni  | 34 |

# Foreword

A key to the success of agricultural research programs is the availability of well-trained and dedicated scientists. Training rice scientists in different aspects of rice research and extension as well as in rice-based cropping systems has been one of IRRI's major activities since its establishment in 1960. IRRI's training programs complement the efforts of national rice research organizations in human resource development and help them to organize similar courses. Thus, a multiplier effect is generated with regard to the number of persons trained each year. More than 3,000 rice scientists from 63 countries have participated in IRRI training programs since 1962.

We surveyed IRRI alumni and their supervisors to determine the relevance of IRRI training programs and to obtain information on their posttraining career. The data provide valuable information on the impact of IRRI training programs, as measured by the role IRRI-trained scientists are playing in their countries. The survey provides guidelines for the future direction of IRRI training programs.

This report presents a comprehensive analysis of the data obtained from the survey. It was prepared by Dr. M. D. Pathak, director for Research and Training, and Violet B. Valdez, research fellow.

I wish to thank IRRI alumni and their supervisors who completed the questionnaires, and the national program leaders and IRRI liaison scientists who helped in the distribution and collection of the questionnaires.

**M. S. Swaminathan**  
Director General

## INTRODUCTION

IRRI's main objective is to assist developing countries produce more and better-quality rice. To accomplish that objective, IRRI conducts research at its main research center in the Philippines; collaborates with national scientists throughout the world to develop crop production technology designed to elevate and stabilize rice yields; and, through a resident training program under the guidance of its senior scientific staff, trains a cadre of young scientists, primarily from South and Southeast Asia, committed to relevance and excellence in rice research.

Training of national scientists is an integral part of IRRI's continuing research effort. It is based on the concept that any sustained increase in food production results primarily from the concerted efforts of national scientists working within the country. Agriculture is largely a location-specific vocation, and a dynamic rice production program can be sustained only by a dynamic national rice research and extension program. When change is introduced into traditional and static agricultural systems, new problems such as pest and disease outbreaks and soil constraints usually arise. The responsibility for solving such problems lies in national institutions.

Through its training and professional advancement programs, IRRI helps national rice research organizations upgrade the scientific proficiency of staff. The individuals it selects for the professional advancement programs are generally associated with rice research in the national programs of the developing countries. However, it also accepts from developed countries a small number of scientists interested in working on problems of mutual interest. Their expertise in more specialized areas supplements that available at IRRI.

## THE TRAINING PROGRAMS

The various professional advancement programs at IRRI are broadly categorized into three: 1) research-oriented programs, 2) short-term courses, and 3) special training programs (Table 1).

### **Research-oriented programs**

The research-oriented training programs comprise the postdoctoral fellowship program, the MS and Ph D degree programs, and the special nondegree research programs. They contribute greatly to the research programs at IRRI and at various national research institutes.

## 2 IRRI'S TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS

**Table 1. Training programs at IRRI, 1962-82.**

| Training program   | Total number of participants (1962-82) |
|--|--|
| • <i>Research oriented</i>   |  |
| — Postdoctoral fellowships   | 153                                    |
| — Degree programs (MS and Ph D)  | 596                                    |
| — Nondegree training   | 478                                    |
| • <i>Short-term courses</i>  |  |
| — Agricultural Engineering (farm machinery)                                      | 199                                    |
| — Agroecconomics   | 25                                     |
| — Cropping Systems Training Program  | 374                                    |
| — Genetic Evaluation and Utilization   | 321                                    |
| — Integrated Pest Management   | 57                                     |
| — Irrigation Water Management  | 113                                    |
| — Soil Fertility and Fertilizer Evaluation                                       | 113                                    |
| — Rice Production (5 months)   | 563                                    |
| — Upland Rice Training Program*  | —                                      |
| • <i>Special purpose</i> (designed to meet the needs of employing organizations) | 15                                     |
| <b>Total</b>   | <b>3,007</b>                           |

\*Starting date: May 1983

*Postdoctoral fellows.* Postdoctoral fellows make important contributions to IRRI's research objectives, and work on specialized projects directly relevant to the problems in their home countries. Usually they receive minimal guidance or assistance from IRRI senior scientists. The postdoctoral program provides competent scientists from national programs with opportunities to enrich and enlarge their research experience, thereby helping prevent permanent "brain drain."

*Degree programs.* The degree programs include the MS and Ph D studies. In general, scholars working for the MS complete their degree programs in developing countries. Most of them work under the joint IRRI-University of the Philippines at Los Baños (UPLB) system, in which they take courses at the UPLB and conduct thesis research at IRRI under the direction of IRRI scientists. However, similar arrangements with several other universities in developing countries enable scholars to take courses in their home countries and conduct thesis research at IRRI. These universities are the Post-Graduate Institute of Agriculture, Sri Lanka; Universiti Pertanian Malaysia, and Central Luzon State University, Philippines. Similar arrangements are being formalized with Kasetsart University, Thailand; University of Faizalabad, Pakistan; Universidad Federal de Vicosa, Brazil; University of Cairo, Egypt, and a few others. In certain cases, the scholar also completes either part of or the entire thesis research in his own country. The "mix" is determined by the nature of the problem the student is working on and the availability of qualified personnel to serve as his coadviser along with the IRRI staff.

The arrangement generally is the same for students working for the Ph D. But when more specialized studies require a broader curriculum than is usually offered at universities in developing countries, the students complete part of or all course

requirements of a university in a developed country. In every case, thesis research is done at IRRI. After completing the thesis research, either the scholar returns to the university abroad to take the final examination, or the chairman of the Academic Committee of the student is invited to IRRI to conduct the final examination with a locally reconstituted examination committee. The latter arrangement is generally encouraged because it helps the university professor from abroad become better acquainted with IRRI research programs and facilities, thereby encouraging collaboration between his university and IRRI. In addition, it is often more convenient for the student to prepare his thesis at IRRI and to defend it in an environment with which he is more acquainted.

A limited number of select students who have completed their course work elsewhere but are interested in doing thesis research at IRRI on problems of mutual interest are also accepted. They often have their own source of funding for the course work but lack adequate facilities for their thesis research. They conduct their thesis research at IRRI, guided by IRRI scientists, and are provided appropriate research support and use of the Library and Documentation facilities, but receive no stipend and other allowances from IRRI.

*Nondegree research fellows.* The participants in nondegree training programs come to IRRI to work on special problems, usually for 6 months to 1 year. The duration of this apprenticeship-type of training is based on the time needed to enable the trainees to conduct at least one well-planned experiment developed under the direction of a senior IRRI staff member, analyze the data, and write a scientific report on it.

### Short-term courses

The short-term courses are highly oriented to research methodology and production. Participants spend about half of their time in classrooms, learning the basic aspects of the problem and the other half in the field or laboratory. They plan and conduct experiments with minimum supervision from instructors. Such programs emphasize the integration of formal and nonformal methods of curriculum organizations, giving equal importance to learning through classroom lectures and learning through work experience.

*Agricultural Engineering Training Course (AEC) — 2 weeks.* The AEC, offered to cooperators in IRRI's farm machinery program, includes all aspects of design, manufacture, and field evaluation of IRRI-designed machines. It consists of classroom lectures, practical shop work such as the assembly of IRRI farm machines, and field work to develop competence in the operation and maintenance of appropriate machines.

*Agroeconomic Research Methodology Training Course — 2 months.* Participants learn to handle the economic component of multidisciplinary research in rice and rice-based cropping systems. The role of economists working with biological scientists in the development of technology is emphasized.

In the first 2 weeks of the training, the participants attend a rice production course, which is followed by 6 weeks of lectures, discussions, and field and classroom exercises on the methodology and procedures of economic research.

*Cropping Systems Training Program (CSTP) — 5 months.* Participants are

#### 4 IRRI'S TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS

trained to design and conduct applied and adaptive research for rice-based cropping systems in their own regions, identify and solve production constraints in various crops and cropping systems, and apply important crop science concepts to improve the use of farmers' resources. They study site description and selection, design of cropping systems, testing of cropping patterns, appropriate techniques for crop production and protection, and profitability analysis of introduced cropping patterns. Every scholar participates in the design and completion of two rice-based cropping systems trials.

*Genetic Evaluation and Utilization (GEU) — 4 months.* The GEU training program, built around the IRRI's GEU program, was initiated in 1975. The participants study the various types of rice culture, and the GEU pest and agroecologic problem areas. They learn techniques of screening for varietal resistance or tolerance, as well as hybridization methods and evaluation of progenies. They are encouraged to produce  $F_1$  seeds using the most promising varieties from their countries, and to take the  $F_1$  seed, along with other selected breeding materials, to their home countries for evaluation and appropriate use. Thus, each GEU scholar becomes an important agent in accelerating the pace of plant breeding work in his country. He works on a special project under the direction of a GEU scientist and presents a seminar on his accomplishments at IRRI and on problems and progress in the varietal improvement program in his home country.

*Integrated Pest Management Training Course (IPM) — 3½ months.* Plant protection staff are trained to design and implement integrated pest management programs that reduce crop damage, maximize profits, and protect the environment.

The course covers basic rice production; principles, economics, and ecology of rice pest management; identification, biology, and integrated control of rice pests; monitoring techniques and economic thresholds to be used in decision making; and development and implementation of pest management programs. It emphasizes practical field training.

*Irrigation Water Management Training Course (IWMT) — 6 weeks.* The IWMT course emphasizes factors important in improving the performance of irrigation systems. Such factors include irrigation water management and related soil, agronomic, socioeconomic, and communication factors. A 10-day field exercise in a Philippine irrigation project provides first-hand experience in the application of improved management concepts.

*International Network on Soil Fertility and Fertilizer Evaluation in Rice (INSFFER) — 4 months.* The INSFFER training course complements the applied aspect of the INSFFER program — a collaborative project among national programs, IRRI, and the International Fertilizer Development Center. The objective is to strengthen the scholars' capabilities in theoretical and practical aspects of fertilizer use, biological nitrogen fixation, and experimental techniques.

The participants train in soil fertility and fertilizer experiments for rice, and in the factors that affect crop responses; they also take an intensive short course on azolla and soil microbiology. Total soil health care and integrated nutrient supply are emphasized.

*Rice Production Training Program (RPTP) — 5 months.* Rice production and extension specialists learn applied research techniques and methods of dissemina-

ting new rice technology in a course that covers soil and water management, pest management, and socioeconomic factors; statistical procedures for research analysis; and communication skills — factors that affect rice production.

Scholars help design and conduct at least two applied research trials and participate in a field day. They organize a 2-week rice production course to gain practical experience in training others.

*Rice Production Training Program (RPTP) — 2 weeks.* The 2-week RPTP course, a condensed version of the 5-month RPTP course, is designed primarily for junior researchers and extension workers. There have been frequent requests for participation from expatriate scientists working in developing countries. A few selected farmers are also accepted for training depending on the availability of classroom space and other facilities.

*Upland Rice Training Course — 4 months.* The Upland Rice Training Course, initiated in 1983, is designed to provide training on the principles of rice production in rainfed upland conditions. It deals with the crop ecology and physiology of dryland rice; understanding and management of problem soils; crop management in major upland rice areas, including weed control, soil and water conservation, harvesting mechanization, pest management, and varietal improvement, with emphasis on resistance to the blast disease of rice, drought, and problem soils.

### **Special training courses**

*AT IRRI. Farm managers' course — 3 weeks.* The course was offered in 1980, 1981, and 1982. It will be offered in 1984 and every 2 years thereafter. It deals primarily with the practical aspects of farm management — seedbed and land preparation, fertilizer application, planting, weed control, insect and rat control, rice production and seed multiplication, seed drying, processing and storing, water management, installation of underground irrigation systems, labor distribution and management, care and maintenance of the experimental farm, and record keeping.

*<sup>15</sup>N studies.* The first course was offered to five Indonesians working on <sup>15</sup>N studies in collaboration with the International Fertilizer Development Center. The special course covered experimental sampling and analytical techniques involved in field research on <sup>15</sup>N in rice.

*Varietal improvement for upland crops.* With the increasing importance of upland crop production, IRRI occasionally offers special courses on breeding techniques and procedures for developing improved varieties of upland crops, with emphasis on the grain legumes commonly grown after rice throughout Asia.

*Entomology of cropping systems.* IRRI also offers a special course on pest control systems relevant to cropping systems environment. The course includes field and laboratory training on entomological theories and field practices, and visits to outreach sites in the Philippines where entomological studies are conducted by IRRI scientists.

*Disease control on cropping systems.* Courses on disease control in cropping systems environment include lectures on theories in disease control and field practices, and a visit to Philippine outreach sites where disease control studies are conducted.

*Library and documentation.* Occasionally, IRRI in response to requests from

## 6 IRRIS TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS

national organizations, accepts one or two staff members engaged in library and documentation work to participate in a 1-month on-the-job type of training. Because of staff constraints, however, only a limited number of candidates can be accepted at a time.

*Statistical methods and procedures.* With the increasing use of computers for research and administrative work, IRRI is often requested to offer special courses on statistical analysis of research data. Because the Statistics Department is fully occupied throughout the year, only a limited number of candidates can be accommodated for a maximum period of 3 months.

**COURSES OFFERED ABROAD.** In selected cases, IRRI offers, in collaboration with the national rice research programs, certain short-term courses outside IRRI. These are offered to impart knowledge and experience on certain biological or physical constraints that do not occur in the Philippines such as deepwater rice, or on such areas of research as hybrid rice on which national programs have better expertise and facilities than IRRI. Also, in certain cases, IRRI scientists help organize and offer a series of lectures, generally on a methodology course at national programs. Some of the courses are listed below.

| Course                                      | Place                                  | Date                         | No. of participants |
|---|--|------------------------------|---------------------|
| Hybrid Rice Training Course                 | Hunan Academy of Agricultural Sciences | 8 September-7 October 1980   | 7                   |
|   | Changsa, China                         | 14 September-9 October 1981  | 14                  |
| Tissue Culture                              | Beijing, China                         | 28 September-17 October 1981 | 13                  |
| Deepwater Rice Training Course              | Huntra, Thailand                       | April-June 1979              | 3                   |
| Agricultural Economics Research Methodology | Bangladesh Rice Research Institute     | 27 November-2 December 1982  | 12                  |

### SPECIAL ORIENTATION PROGRAMS FOR POLICY MAKERS AND RESEARCH MANAGERS

From time to time, special orientation programs are organized upon request. IRRI organized a 1-month study tour on agricultural research management for six senior officials of the Agency for Agricultural Research and Development of Indonesia. They spent 2-3 days studying the various aspects of research management in key agricultural institutions in the Philippines, Taiwan, Malaysia, and India. A similar 2-week program is being arranged for senior officials of USAID in Thailand, Indonesia, and the Philippines on 7-11 May 1983 at IRRI.

## NUMBER OF PARTICIPANTS IN THE VARIOUS TRAINING PROGRAMS

There is a heavy demand for participation in IRRI's training programs. The requests originate from rice research and extension programs, other research and production programs, various bilateral and multilateral agricultural development programs, and self-sponsored individuals. However, IRRI is able to meet only a part of this request. Priority in selection is given to persons from national rice programs, with emphasis on the "training the trainers" concept.

The dormitories at IRRI can accommodate about 200 persons at any one time: 100 bed spaces are allocated to research-oriented trainees and the other 100 to participants in the formal training courses. The courses are scheduled to obtain optimum use of research and dormitory facilities. At about the middle of the year, allotments to various national programs of the number of participants in each of the next year's courses are finalized. This information, along with the schedule of the short-term courses, is sent to the national program leaders and liaison scientists from whom nominations are invited.

*Analysis of program participation.* About 91% of the participants in the training and various professional advancement programs from 1962 to 1982 were from Asia (Table 2), where 90% of the world's rice is grown. Figure 1 shows the distribution

**Table 2. Total number<sup>a</sup> of IRRI trainees from different countries, 1962-82.**

| Country          | Post-Ph D fellows | Degree programs |      | Nondegree programs | Short-term courses | Total |
|------------------|-------------------|-----------------|------|--------------------|--------------------|-------|
|                  |                   | MS              | Ph D |                    |                    |       |
| <i>Asia</i>      |                   |                 |      |                    |                    |       |
| Philippines      | 15                | 103             | 51   | 60                 | 261                | 490   |
| Indonesia        | 1                 | 32              | 20   | 41                 | 307                | 401   |
| Thailand         | 4                 | 51              | 12   | 39                 | 199                | 305   |
| India            | 61                | 8               | 19   | 30                 | 185                | 303   |
| Bangladesh       | 7                 | 61              | 23   | 19                 | 159                | 269   |
| Sri Lanka        | 4                 | 25              | 8    | 33                 | 146                | 216   |
| Burma            | 1                 | 14              | 0    | 13                 | 90                 | 118   |
| Pakistan         | 5                 | 13              | 5    | 18                 | 72                 | 113   |
| China (Mainland) | 2                 | 15              | —    | 18                 | 67                 | 102   |
| Korea            | 11                | 11              | 8    | 42                 | 21                 | 93    |
| Malaysia         | 2                 | 2               | 1    | 14                 | 65                 | 84    |
| Japan            | 18                | 2               | 7    | 38                 | 3                  | 68    |
| Vietnam          | 3                 | 3               | 4    | 16                 | 36                 | 62    |
| Nepal            | 1                 | 13              | 1    | 2                  | 34                 | 51    |
| China (Taiwan)   | —                 | 28              | 1    | 11                 | —                  | 40    |
| Laos             | —                 | —               | —    | 7                  | 17                 | 24    |
| Khmer Republic   | —                 | —               | —    | 1                  | 5                  | 6     |
| Afghanistan      | —                 | —               | —    | —                  | 1                  | 1     |
| Subtotal         | 135               | 381             | 160  | 402                | 1668               | 2746  |
| <i>Africa</i>    |                   |                 |      |                    |                    |       |
| Nigeria          | 2                 | 5               | 1    | 3                  | 17                 | 28    |
| Egypt            | —                 | —               | 1    | 7                  | 10                 | 18    |
| Sierra Leone     | —                 | —               | —    | 3                  | 7                  | 10    |
| Senegal          | —                 | 1               | —    | 5                  | 4                  | 10    |

Continued on next page

8 IRRI'S TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS

Table 2 continued

| Country                            | Post-Ph D fellows | Degree programs |      | Nondegree programs | Short-term courses | Total |
|------------------------------------|-------------------|-----------------|------|--------------------|--------------------|-------|
|                                    |                   | M.S.            | Ph D |                    |                    |       |
| Mali                               | —                 | —               | —    | 3                  | 5                  | 8     |
| Ghana                              | —                 | 1               | —    | 2                  | 4                  | 7     |
| Liberia                            | —                 | 1               | —    | —                  | 5                  | 6     |
| Sudan                              | —                 | —               | —    | 1                  | 5                  | 6     |
| Tanzania                           | —                 | —               | —    | 1                  | 4                  | 5     |
| Kenya                              | —                 | —               | —    | 1                  | 4                  | 5     |
| Uganda                             | —                 | —               | —    | —                  | 2                  | 2     |
| Ivory Coast                        | —                 | —               | —    | 1                  | —                  | 1     |
| Morocco                            | —                 | —               | —    | 1                  | —                  | 1     |
| Upper Volta                        | —                 | —               | —    | —                  | 1                  | 1     |
| Subtotal                           | 2                 | 8               | 2    | 28                 | 68                 | 108   |
| <i>Central &amp; South America</i> |                   |                 |      |                    |                    |       |
| Colombia                           | 3                 | 5               | 1    | 3                  | 3                  | 15    |
| Cuba                               | —                 | —               | —    | 5                  | 4                  | 9     |
| Mexico                             | —                 | 2               | 1    | 2                  | 1                  | 6     |
| Dominican Republic                 | —                 | —               | 1    | —                  | 1                  | 2     |
| Panama                             | —                 | —               | 1    | 1                  | —                  | 2     |
| Paraguay                           | —                 | —               | —    | —                  | 2                  | 2     |
| Venezuela                          | —                 | —               | —    | 2                  | —                  | 2     |
| Brazil                             | —                 | —               | —    | —                  | 2                  | 2     |
| Costa Rica                         | —                 | —               | —    | 1                  | —                  | 1     |
| Guyana                             | —                 | 1               | —    | —                  | 1                  | 2     |
| Peru                               | 1                 | —               | —    | —                  | —                  | 1     |
| Trinidad                           | —                 | —               | —    | —                  | 1                  | 1     |
| Ecuador                            | —                 | 1               | —    | —                  | —                  | 1     |
| Subtotal                           | 4                 | 9               | 4    | 14                 | 15                 | 46    |
| <i>North America</i>               |                   |                 |      |                    |                    |       |
| United States                      | 2                 | 7               | 10   | 8                  | 12                 | 39    |
| Canada                             | —                 | —               | 1    | —                  | —                  | 1     |
| Subtotal                           | 2                 | 7               | 11   | 8                  | 12                 | 40    |
| <i>Europe</i>                      |                   |                 |      |                    |                    |       |
| Germany                            | 5                 | —               | 5    | 4                  | —                  | 14    |
| United Kingdom                     | 2                 | 1               | 3    | 6                  | —                  | 12    |
| Netherlands                        | 1                 | 1               | 2    | 5                  | —                  | 9     |
| France                             | 1                 | —               | —    | 1                  | —                  | 2     |
| Switzerland                        | —                 | —               | —    | 1                  | —                  | 1     |
| Italy                              | 1                 | —               | —    | —                  | —                  | 1     |
| Subtotal                           | 10                | 2               | 10   | 17                 | —                  | 39    |
| <i>Oceania</i>                     |                   |                 |      |                    |                    |       |
| Fiji                               | —                 | —               | —    | 1                  | 7                  | 8     |
| Australia                          | —                 | 1               | 1    | 1                  | —                  | 3     |
| British Solomon Is.                | —                 | —               | —    | —                  | 2                  | 2     |
| New Guinea                         | —                 | —               | —    | 1                  | 1                  | 2     |
| Subtotal                           | —                 | 1               | 1    | 3                  | 10                 | 15    |

Continued on oppos

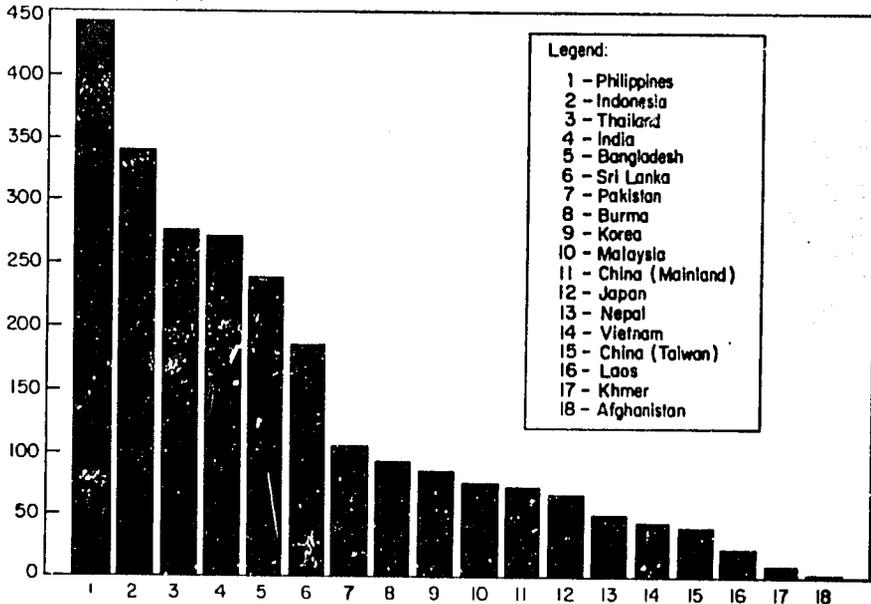
Table 2 continued

| Country        | Post-Ph D fellows | Degree programs |            | Nondegree programs | Short-term courses | Total       |
|----------------|-------------------|-----------------|------------|--------------------|--------------------|-------------|
|                |                   | MS              | Ph D       |                    |                    |             |
| <i>Eurasia</i> |                   |                 |            |                    |                    |             |
| Iran           | —                 | —               | —          | 5                  | 3                  | 8           |
| Iraq           | —                 | —               | —          | 1                  | 1                  | 2           |
| Turkey         | —                 | —               | —          | —                  | 2                  | 2           |
| Israel         | —                 | —               | —          | —                  | 1                  | 1           |
| Subtotal       | —                 | —               | —          | 6                  | 7                  | 13          |
| <b>Total</b>   | <b>153</b>        | <b>408</b>      | <b>188</b> | <b>478</b>         | <b>1780</b>        | <b>3007</b> |

<sup>a</sup>Excludes the 2-week rice production training course and other special short-term training programs.

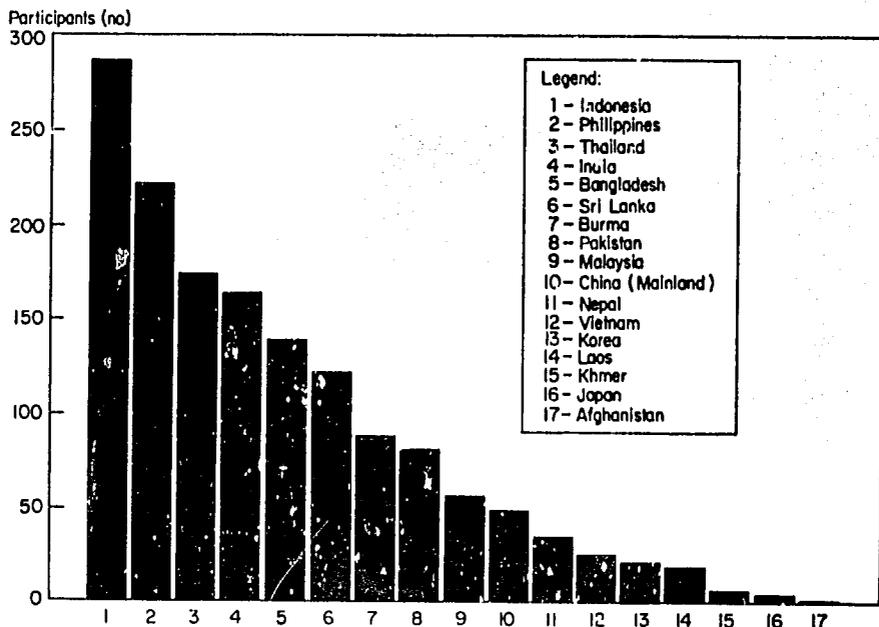
of scholars and fellows in various research-oriented programs; Figure 2, the further categorization of the participants in short-term courses. The departments most involved in production had the largest number of participants in research-oriented programs (Fig. 3). Similarly, the short-term courses most related to production had the most participants (Fig. 4). The first 22 largest rice-growing countries and the total number of participants they sent to the training programs are listed in Table 3. Although such major rice-growing countries as the Philippines, Indonesia, Thailand, Bangladesh, Pakistan, and Sri Lanka sent a good number of participants, several other major rice-growing countries sent relatively

Scholars and fellows (no)



1. Distribution of Asian scholars and fellows at IRRI, by country and training program, 1962-81.

## 10 IRRI'S TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS



2. Distribution of Asian participants in formal training courses at IRRI, by country and training course, 1962-81.

small numbers. The extent of participation reflected the existence in these countries of IRRI collaborative programs and other collaborative projects as well as the strength of national research systems and the indigenous capability in the organization of such training courses. Trainees from Africa and Latin America are fewer because of agreements with IITA, WARDA, and CIAT deputing participants from their respective regions for certain training programs.

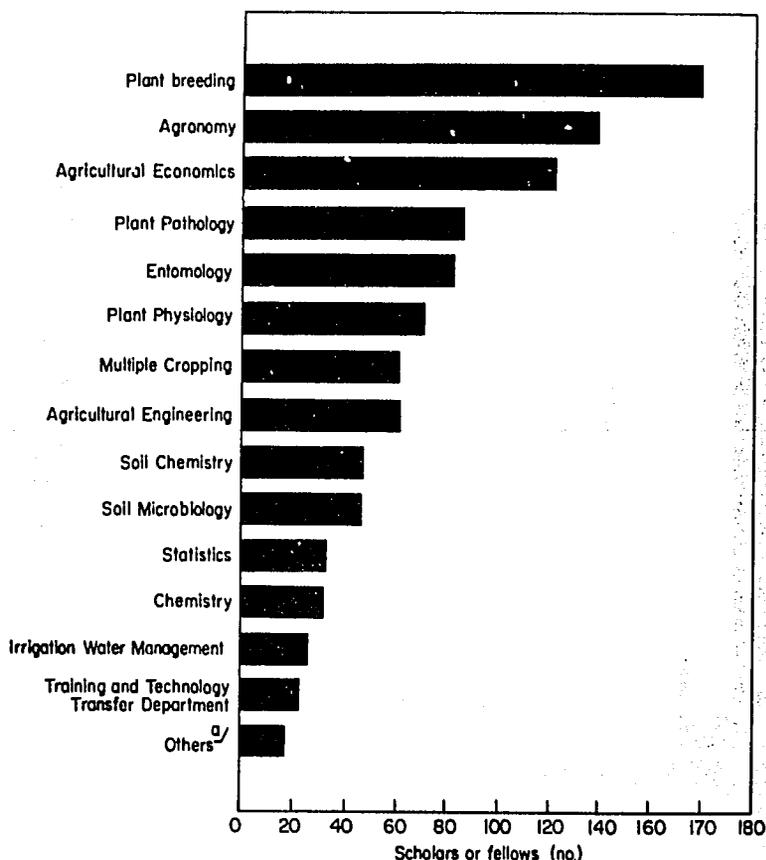
About 60-70% of all the personnel of the prime rice research institutes of Bangladesh, Indonesia, and Thailand trained at IRRI (Table 4). Similarly, a large proportion of rice scientists and extension specialists in many Asian countries trained at IRRI. Thus, IRRI plays a major role in the scientific manpower development programs of these countries.

### THE ROLE AND IMPACT OF IRRI-TRAINED SCIENTISTS IN THEIR HOME COUNTRIES

A 6-page questionnaire (Appendix 1) was mailed to each IRRI alumnus to determine

1. his current role in the national programs;
2. the relevance of his training at IRRI to his work in national programs;
3. the impact of the IRRI training on his subsequent professional advancement;
4. comments on the usefulness of his stay at IRRI.

The questionnaire also sought the alumnus' comments about the adequacy and relevance of IRRI's training programs, and his suggestions for improvement.



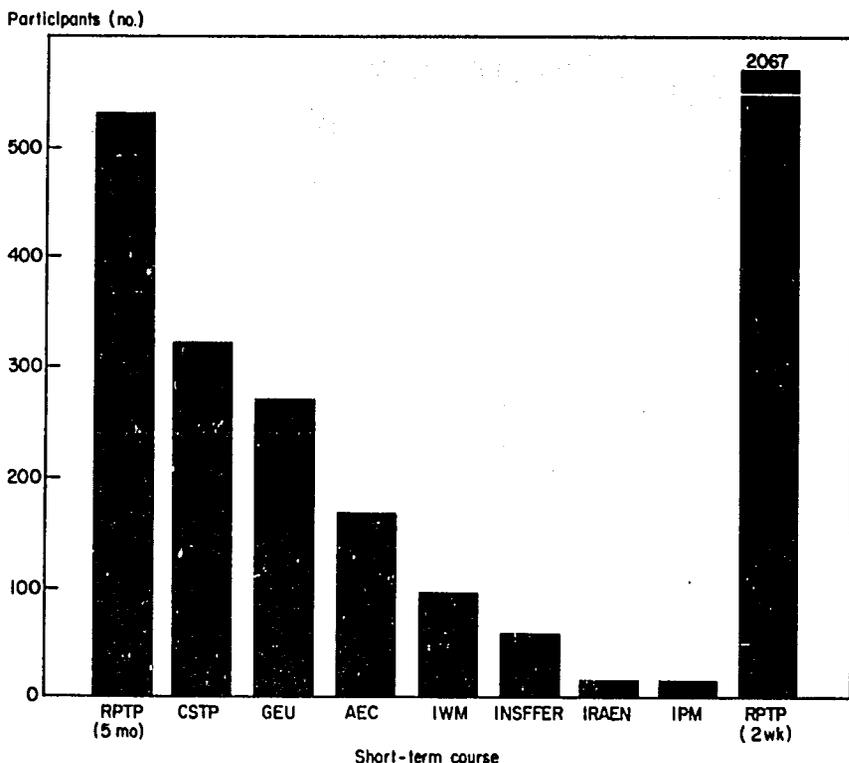
3. Distribution of IRRI scholars and fellows by field of specialization, 1962-81. <sup>a</sup>Includes International Rice Testing Program, Experimental Farm, and Library and Documentation.

The first responses were received from about 30% of those surveyed; with further follow-up by mail and personal approach through IRRI liaison scientists and national program leaders, the responses increased to about 50% (Table 5). Efforts are being made to increase to at least 70% the response from Indonesia, Thailand, Bangladesh, and the Philippines to help determine whether the nonrespondents have shifted from rice research and associated programs. The following are some of the major inferences drawn from the responses:

1. The average age of the trainees in both the research-oriented and short-term courses was about 32 years. Ninety-two percent of the trainees were males, most of them occupying assistant-scientist-level or equivalent positions in their respective countries. Most of the participants in the short-term courses had a BS, but a comparatively larger number of trainees in research-oriented programs were MS and Ph D holders.

There were wide differences in English proficiency level among trainees within a class. Although efforts are made to select candidates found proficient in English, by the TOEFL or other appropriate tests, candidates who are the

## 12 IRRIS TRAINING AND PROFESSIONAL ADVANCEMENT PROGRAMS



### 4. Distribution of participants in formal training courses, 1962-81.

key personnel in their countries are accepted despite their lower English proficiency. Also, in certain countries only a few rice scientists are highly proficient in English. For the same reason, IRRI occasionally accepts a number of trainees who do not have a BS. The problem of heterogeneity in both language and subject matter competence among the trainees in a class, has therefore become a constraint in the conduct of the short-term courses.

2. Almost 90% of the alumni are employed by government research institutes or agricultural universities (Fig. 5). About 55% of them are directly involved in research, and 14% in administration. A greater number of the alumni of the short-term courses are engaged in extension, while a larger number of the graduates of the research-oriented programs have instruction responsibilities (Fig. 6).
3. Almost all the trainees have remained associated with rice research and production; many have been promoted to higher positions. Several alumni now head rice research institutes in their countries (Table 6). In a number of these countries, the production of rice and associated crops have increased remarkably during the past few years. Although the contributions being made by the IRRI trainees cannot be assessed quantitatively, it is obvious from the positions they occupy that they are playing major roles in the overall rice development effort of their countries.

**Table 3. Number of IRRI-trained scientists from the main rice-growing countries.**

| Country          | Total rice area<br>(thousand ha) | Trainees at<br>IRRI<br>(no.) |
|------------------|----------------------------------|------------------------------|
| India            | 39,800                           | 303                          |
| China (Mainland) | 33,200                           | 102                          |
| Bangladesh       | 10,500                           | 269                          |
| Indonesia        | 9,400                            | 401                          |
| Thailand         | 6,854                            | 305                          |
| Brazil           | 6,000                            | 2                            |
| Burma            | 4,800                            | 118                          |
| Vietnam          | 4,631                            | 62                           |
| Philippines      | 3,112                            | 490                          |
| Japan            | 2,278                            | 68                           |
| Pakistan         | 1,503                            | 113                          |
| Malagasy         | 1,200                            | —                            |
| Korea, South     | 1,203                            | 93                           |
| Nepal            | 1,182                            | 51                           |
| China (Taiwan)   | 776                              | 40                           |
| Sri Lanka        | 719                              | 216                          |
| Malaysia         | 697                              | 84                           |
| Nigeria          | 600                              | 28                           |
| Egypt            | 425                              | 18                           |
| Colombia         | 413                              | 15                           |
| Cuba             | 210                              | 9                            |
| Senegal          | 81                               | 10                           |

**Table 4. Number of IRRI alumni in select institutes, November 1980.**

| Training program   | IRRI alumni (no.)    |                    |  |
|--|----------------------|--------------------|--|
|  | BIRRI,<br>Bangladesh | CRIA,<br>Indonesia | Rice Research<br>Institute, <sup>a</sup><br>Thailand |
| <i>Research oriented</i>   |                      |                    |  |
| Agronomy   | 12                   | 9                  | 9  |
| Plant breeding   | 8                    | 11                 | 7  |
| Multiple cropping  | 7                    | 7                  | 1  |
| Entomology   | 7                    | 9                  | 4  |
| Agricultural engineering   | 5                    | 0                  | 5  |
| Agricultural economics   | 6                    | 5                  | 1  |
| Plant pathology  | 5                    | 4                  | 5  |
| Others (Chemistry, Water<br>management, Plant<br>physiology, Soil chemistry,<br>Statistics, Rice Production<br>Training) | 16                   | 11                 | 24   |
| Subtotal   | 66                   | 56                 | 56   |
| <i>Short-term courses</i>  |                      |                    |  |
| Genetic Evaluation and<br>Utilization  | 32                   | 37                 | 28   |
| Rice Production Training<br>Program  | 24                   | 11                 | 34   |
| Cropping Systems Training<br>Program   | 20                   | 25                 | 25   |

Continued on next page

Table 4 continued

| Training program  | IRRI alumni (no.)    |                    |  |
|---|----------------------|--------------------|--|
|   | BIRRI,<br>Bangladesh | CRIA,<br>Indonesia | Rice Research<br>Institute, <sup>a</sup><br>Thailand |
| Agricultural Engineering<br>Course                                      | 1                    | 2                  | 5  |
| Irrigation Water Management<br>Course                                   | 5                    | 1                  | 0  |
| International Network on Soil<br>Fertility and Fertilizer<br>Evaluation | 4                    | 2                  | 7  |
| Integrated Pest Management  | 3                    | 3                  | 7  |
| Subtotal  | 91                   | 82                 | 110  |
| Grand total   | 157                  | 138                | 166  |

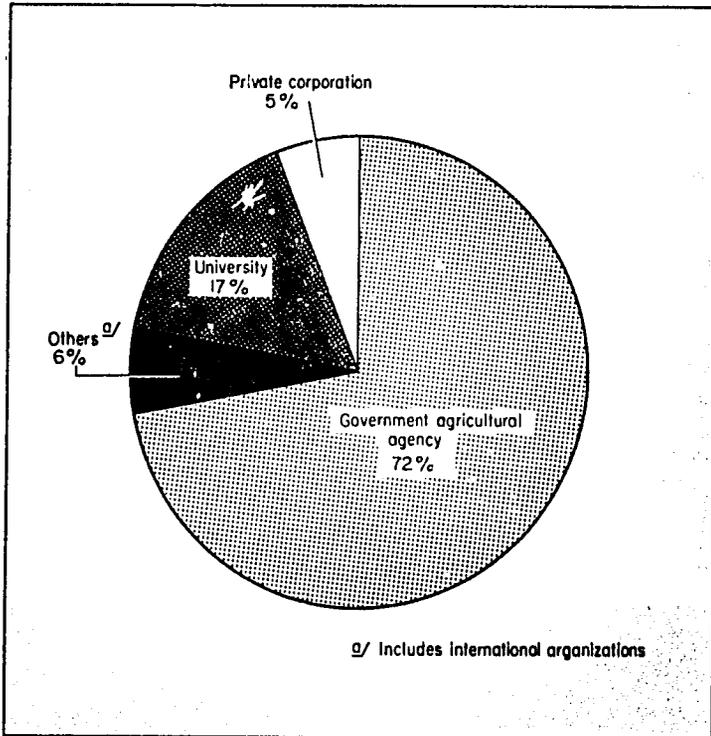
<sup>a</sup>Formally organized in 1982; previously known as the Rice Division.

Table 5. Distribution of Asian respondents to the alumni survey,<sup>a</sup> by country.

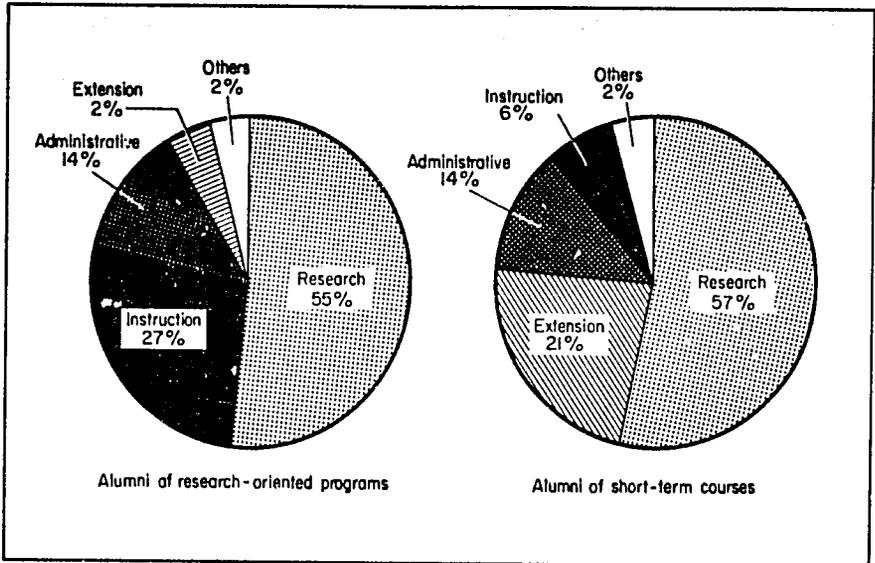
| Country        | Respondents<br>(no.) | % of total<br>per country |
|----------------|----------------------|---------------------------|
| Bangladesh     | 92                   | 57                        |
| Burma          | 24                   | 38                        |
| China-Mainland | 28                   | 90                        |
| Taiwan         | 12                   | 41                        |
| India          | 71                   | 31                        |
| Indonesia      | 136                  | 50                        |
| Japan          | 36                   | 77                        |
| Korea          | 27                   | 34                        |
| Malaysia       | 23                   | 46                        |
| Nepal          | 9                    | 24                        |
| Pakistan       | 23                   | 32                        |
| Philippines    | 225                  | 82                        |
| Sri Lanka      | 43                   | 32                        |
| Thailand       | 101                  | 45                        |
| Total          | 850                  | 50                        |

<sup>a</sup>The survey population comprised all training participants from 1962 to November 1980. Only those who had completed their training by November 1980 qualified as respondents.

4. Many IRRI alumni have received national awards and citations for their contributions to agricultural research and extension (Table 7). The prestigious awards include medals and citations from their kings, presidents, or prime ministers. The awardees were recognized for
- developing improved rice varieties (total, 27),
  - developing the GEU system for the country,
  - evolving improved rice production technology,
  - developing a strategy to combat brown planthopper problems in Mekong Delta,
  - developing and releasing rice ratoon cropping patterns,



5. Distribution of Asian IRRI alumni by type of employer.



6. Current assignments of IRRI-trained Asian scientists in their respective countries, December 1982.

**Table 6. Number of alumni working as heads of rice research institutes,<sup>a</sup> November 1980.**

| Country     | Alumni<br>(no.) |
|-------------|-----------------|
| Philippines | 5               |
| Thailand    | 5               |
| India       | 4               |
| Indonesia   | 4               |
| Sri Lanka   | 3               |
| Burma       | 2               |
| Korea       | 2               |
| Japan       | 1               |
| Pakistan    | 1               |
| Total       | 27              |

<sup>a</sup>Based on information provided by respondents.

**Table 7. Number of IRRI alumni recipients of national recognition awards,<sup>a</sup> November 1980.**

| Country     | Alumni<br>(no.) |
|-------------|-----------------|
| Philippines | 49              |
| Bangladesh  | 11              |
| South Korea | 11              |
| India       | 7               |
| China       | 4               |
| Indonesia   | 4               |
| Others      | 12              |
| Total       | 98              |

<sup>a</sup>Include presidential medals, and recognition for outstanding researchers, teachers, extension workers, and scientists.

- developing Masagana 99 and Kabsaka programs,
- helping develop the UPLB flatbed grain dryer, and
- designing a 10-hp, 4-wheel tractor.

Many of the awardees have been involved in the development of high-yielding and pest-resistant rice varieties, the organization of the GEU system of research, and the organization of rice production programs in their countries. Almost 70% of them have been involved in training programs.

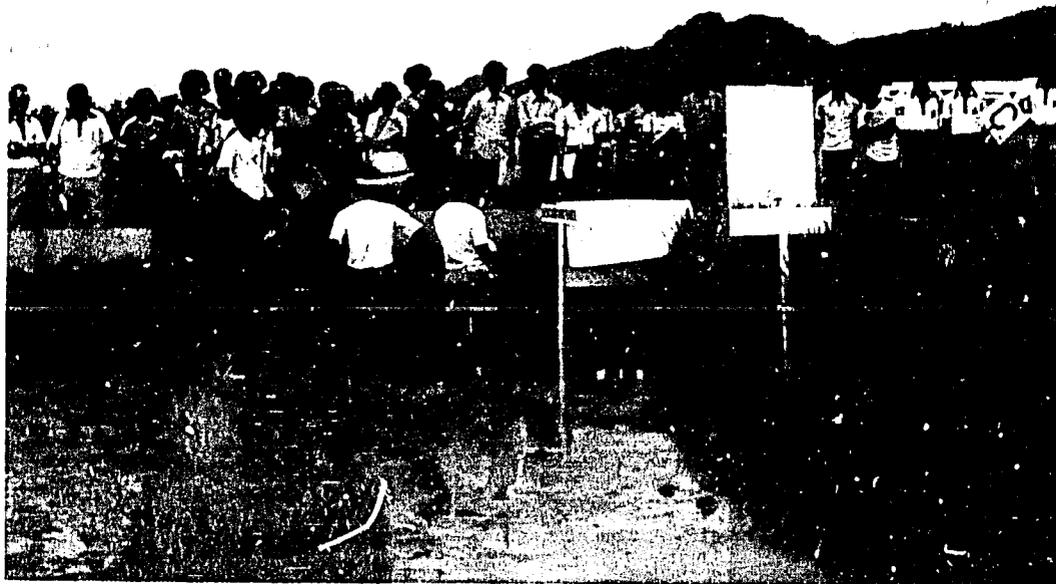
5. Many IRRI alumni have maintained contact with IRRI staff; about 40% of them are involved in collaborative research projects. About 70% maintain communication with IRRI scientists and receive copies of publications for their libraries and for personal use (Table 8).
6. The professional advancement of IRRI trainees who have returned to their home countries, is shown in Figure 7 and Tables 9 and 10. In general, the professional careers of both the research-oriented and short-term course work-oriented trainees advanced significantly after leaving IRRI but the change was more marked in the case of research-oriented trainees, most of whom eventually obtained their graduate degrees (MS and Ph D).



Ranjani Peiris and Chu-Chi-ren, MS students, study the root developments of selected varieties in nutrient solution.



Irrigation water management trainees adjust the turnout valve to deliver a predetermined flow of water to evaluate the efficiency of rotational system of irrigation water management.



Participants in the rice production training program conduct a field tour of their various experiments on rice production as part of their training program.



Trainees in agricultural engineering course assemble an IRR1-designed rice thresher.



INSFFER trainees harvest azolla as a part of their experiment on biological nitrogen fixation in rice fields.



Genetic evaluation and utilization trainees practice rice hybridization (left) and greenhouse screening of rice accessions and breeding lines for resistance to the brown planthopper (below).





In 1968, IRRI Rice Production Specialist William Golden (extreme right) helped Indonesia to conduct its first Rice Production Training course in Bogor, Indonesia.



IRRI is a warm setting for cultural encounters. Scholars and fellows ensure that the encounter is lively and enriching through shows featuring cultural heritage.

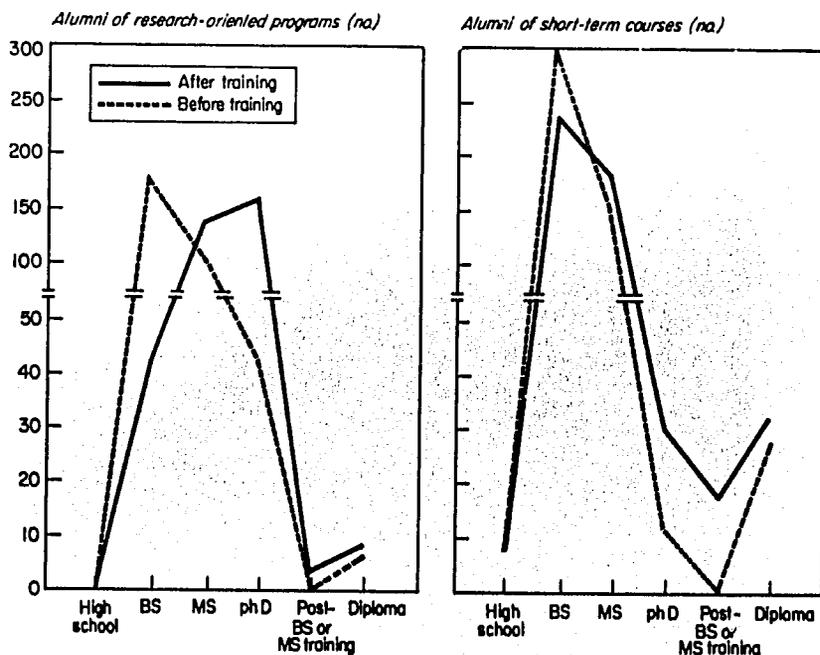
**Table 8. Various types of follow-up support reported by IRRI alumni from Asia, by training program.**

| Follow-up support                              | Alumni (%)        |                    |
|--|-------------------|--------------------|
|  | Research-oriented | Short-term courses |
| Maintaining communication with IRRI staff      | 72                | 47                 |
| Receiving personal copies of IRRI publications | 57                | 55                 |
| Receiving library copies of IRRI publications  | 72                | 58                 |
| Involved in collaborative projects with IRRI   | 42                | 37                 |

7. The aspects of the training program most liked by the trainees are listed in Table 11. About 40% of the trainees found no major constraints in their work upon returning to their parent organization (Table 12). But the major constraints encountered by some were the unavailability of funds, skilled support personnel, and laboratory and other facilities. About 10% reported that either the IRRI training was inappropriate for their subsequent jobs or some of the concepts they learned at IRRI were difficult to adapt.

**Follow-up survey to increase response from IRRI alumni in Bangladesh, Indonesia, Thailand, and the Philippines**

Among the IRRI alumni from the Philippines, 74% have sent responses. The survey data generally agree with the preceding information on the nature of



7. Highest educational attainment of Asian alumni before and after training.

**Table 9. Academic background of Asian alumni, by cohort.**

|                            | Cohorts <sup>a</sup> (%) |                    |                    |                    |
|----------------------------|--------------------------|--------------------|--------------------|--------------------|
|                            | 1962-66<br>(N-63)        | 1967-71<br>(N-175) | 1972-76<br>(N-168) | 1977-80<br>(N-436) |
| <i>At time of training</i> |                          |                    |                    |                    |
| HS                         | 0                        | 0.5                | 2.4                | 2                  |
| BS                         | 63.5                     | 63                 | 55.4               | 53                 |
| MS                         | 27                       | 26                 | 31                 | 35                 |
| Ph D                       | 8                        | 7                  | 8                  | 5                  |
| Post-BS or MS              | 0                        | 0.5                | 0                  | 0                  |
| Diploma                    | 1.5                      | 3                  | 3                  | 5                  |
| Total                      | 100                      | 100                | 99.8               | 100                |
| <i>At time of survey</i>   |                          |                    |                    |                    |
| HS                         | 0                        | 0                  | 2                  | 2                  |
| BS                         | 16                       | 26                 | 27                 | 40                 |
| MS                         | 19                       | 38                 | 39                 | 38.5               |
| Ph D                       | 57                       | 25                 | 25                 | 13.5               |
| Post-BS or MS              | 5                        | 6                  | 2                  | 1                  |
| Diploma                    | 3                        | 5                  | 5                  | 5                  |
| Total                      | 100                      | 100                | 100                | 100                |

<sup>a</sup>Based on the years of training at IRRIS.**Table 10. Occupations of Asian alumni, by cohort.**

|                                      | Cohorts (%)       |                    |                    |                    |
|--------------------------------------|-------------------|--------------------|--------------------|--------------------|
|                                      | 1962-66<br>(N-59) | 1967-71<br>(N-173) | 1972-76<br>(N-166) | 1977-80<br>(N-437) |
| <i>At time of training</i>           |                   |                    |                    |                    |
| Administrative                       | 2                 | 2                  | 4                  | 5                  |
| Research                             | 56                | 45                 | 69                 | 70                 |
| Extension                            | 10                | 29                 | 14                 | 14                 |
| Instruction                          | 32                | 23                 | 13                 | 11                 |
| Total                                | 100               | 99                 | 100                | 100                |
| <i>At time of survey<sup>a</sup></i> |                   |                    |                    |                    |
| Administrative                       | 31                | 22                 | 16.6               | 8                  |
| Research                             | 34                | 45                 | 54.8               | 68                 |
| Extension                            | 8                 | 15                 | 13.7               | 13                 |
| Instruction                          | 27                | 18                 | 14.8               | 11                 |
| Total                                | 100               | 100                | 99.9               | 100                |

<sup>a</sup>N includes those who were studying and were out of work at pretraining.

assignments, work conditions, and professional contributions. They also reveal an interesting pattern in the personal advancement of the alumni-trainees. Those who came to IRRIS during the periods 1962-66 and 1967-71 have substantially improved their academic qualifications and professional status compared with the 1977-80 alumni (Table 13, 14). Also, with the increasing number of years of service, many alumni working on research and instruction were promoted to administrative responsibilities. Interestingly, however, very few of them left

**Table 11. Aspects of training most useful to job of alumni respondents from Asia, by training program.**

| Useful aspect   | Alumni (%)                |                            |
|---|---------------------------|----------------------------|
|   | Research-oriented (N-230) | Short-term courses (N-409) |
| Research experience   | 46                        | 30                         |
| Lectures and discussions including seminars and coursework      | 21                        | 32                         |
| Practicum including fieldwork and special projects              | 10                        | 15                         |
| Training in production of rice and other crops                  | 4                         | 11                         |
| Others, including acquaintance with peers and senior scientists | 7                         | 1                          |
| All aspects   | 9                         | 10                         |
| No useful aspect  | 2                         | .5                         |
| <b>Total</b>  | <b>99</b>                 | <b>99.5</b>                |

**Table 12. Constraints encountered by alumni on return to their home countries.**

| Response                                   | Alumni (%)                |                            |
|--|---------------------------|----------------------------|
|  | Research-oriented (N-209) | Short-term courses (N-346) |
| No constraints encountered                 | 36                        | 39                         |
| Constraints due to                         |                           |                            |
| Inadequate facilities                      | 28                        | 22                         |
| Inadequate budget and skilled manpower     | 18                        | 15                         |
| Inadequate support of agency or superior   | 9                         | 12                         |
| Training not appropriate to subsequent job | 6                         | 5                          |
| Concepts learned were difficult to adapt   | 3                         | 7                          |
| <b>Total</b>                               | <b>100</b>                | <b>100</b>                 |

**Table 13. Academic background of Filipino alumni by cohort.**

| Academic background             | Filipino alumni (%) |                |                |                |
|---------------------------------|---------------------|----------------|----------------|----------------|
|                                 | 1962-66 (N-33)      | 1967-71 (N-70) | 1972-76 (N-45) | 1977-80 (N-77) |
| <i>At time of training</i>      |                     |                |                |                |
| BS                              | 88                  | 90             | 80             | 83             |
| MS                              | 9                   | 9              | 9              | 14             |
| Ph D                            | 3                   | 1              | 11             | 3              |
| Post-BS/MS training (nondegree) | 0                   | 0              | 0              | 0              |
|                                 | 100                 | 100            | 100            | 100            |
| <i>At time of survey (1982)</i> |                     |                |                |                |
| BS                              | 21                  | 41             | 49             | 61             |
| MS                              | 27                  | 27             | 26             | 23             |
| Ph D                            | 42                  | 17             | 18             | 12             |
| Post-BS/MS training (nondegree) | 9                   | 14             | 6              | 4              |
|                                 | 99                  | 99             | 99             | 100            |

**Table 14. Nature of occupational mobility of Filipino alumni, by cohort.**

| Occupational mobility                 | Filipino alumni (%) |                   |                   |                   |
|---------------------------------------|---------------------|-------------------|-------------------|-------------------|
|                                       | 1962-66<br>(N-33)   | 1967-71<br>(N-70) | 1972-76<br>(N-45) | 1977-80<br>(N-77) |
| No change                             | 0                   | 3                 | 15.6              | 51                |
| Promotion                             | 46                  | 50                | 46.7              | 31                |
| Changed jobs                          | 15                  | 11                | 9                 | 1                 |
| Changed employer; different functions | 27                  | 26                | 22                | 9                 |
| Changed employer; same functions      | 12                  | 10                | 6.7               | 8                 |

**Table 15. Occupations of Filipino alumni, by cohort.**

| Occupation        | Filipino alumni <sup>a</sup> (%) |           |                   |            |                   |           |                   |            |
|-------------------|----------------------------------|-----------|-------------------|------------|-------------------|-----------|-------------------|------------|
|                   | 1962-66<br>(N-34)                |           | 1967-71<br>(N-70) |            | 1972-76<br>(N-44) |           | 1977-80<br>(N-77) |            |
|                   | T                                | S         | T                 | S          | T                 | S         | T                 | S          |
| Research          | 21                               | 42        | 31.4              | 24         | 36.4              | 60        | 62                | 65         |
| Instruction       | 23                               | 30        | 16                | 33         | 20.5              | 22        | 18                | 16         |
| Administrative    | 29                               | 0         | 18.6              | 0          | 18                | 2         | 7                 | 1          |
| Extension         | 15                               | 18        | 24                | 39         | 18                | 13        | 8                 | 10         |
| Others            | 6                                | 0         | 10                | 3          | 7                 | 0         | 5                 | 7          |
| None <sup>b</sup> | 6                                | 9         | 0                 | 1          | 0                 | 2         | 0                 | 1          |
| <b>Total</b>      | <b>100</b>                       | <b>99</b> | <b>100</b>        | <b>100</b> | <b>99.9</b>       | <b>99</b> | <b>100</b>        | <b>100</b> |

<sup>a</sup>T = at time of training, S = at time of survey (1980). <sup>b</sup>Refers to students at time of training and retirees at time of survey.

agricultural research or extension activities. About 9% of the alumni of 1962-1966 training programs have retired (Table 15).

There were major differences in the various constraints the trainees faced in their work on return to their respective countries. For example, 70% of the Thai alumni but only 20-30% of the trainees from Bangladesh, Indonesia, and the Philippines stated that they faced no significant constraints. The most-mentioned constraints were the unavailability of funds, inadequate technical support facilities, and inadequate specialized research facilities. Interestingly, only a small percentage of the trainees from Bangladesh named inadequate budget or manpower as a constraint but more than half of them regarded inadequate research facilities as a major constraint. Conversely, among the Thai trainees fewer mentioned inadequate facilities than those who mentioned shortage of funds and skilled manpower (Table 16).

### Survey of national program leaders regarding the relevance of IRRP's training program

In a separate survey, the opinion of national program leaders who are also supervisors of IRRP alumni was sought regarding the usefulness of IRRP training programs, their impact on staff, and suggestions for improvement (Appendix 2). A total of 149 supervisors, who are in charge of nearly 50% of the trainees from 11 countries, were surveyed (Table 17). They felt that the IRRP training programs

**Table 16. Percentages of research alumni from 4 countries reporting constraints in the application of their training upon their return home.**

| Response                                   | Research alumni (%) |            |           |          |
|--|---------------------|------------|-----------|----------|
|  | Philippines         | Bangladesh | Indonesia | Thailand |
| No constraints encountered                 | 21                  | 19         | 33        | 69       |
| Constraints encountered due to:            |                     |            |           |          |
| Inadequate budget and skilled manpower     | 32                  | 4          | 19        | 15       |
| Inadequate facilities                      | 26                  | 54         | 38        | 8        |
| Inadequate support of agency or superior   | 10                  | 15         | 0         | 0        |
| Training not appropriate to subsequent job | 8                   | 8          | 5         | 4        |
| Concepts learned were difficult to adapt   | 3                   | 0          | 5         | 4        |
| Total                                      | 100                 | 100        | 100       | 100      |

**Table 17. Number of national program leaders surveyed.**

| Country <sup>a</sup> | Supervisors (no.) | IRRI alumni supervised |   |
|----------------------|-------------------|------------------------|---|
|                      |                   | no.                    | % of total no. of alumni from the country |
| Bangladesh           | 6                 | 73                     | 45  |
| China — Mainland     | 10                | 31                     | 100                                       |
| Taiwan               | 9                 | 29                     | 81  |
| India                | 26                | 131                    | 56  |
| Indonesia            | 29                | 191                    | 68  |
| Japan                | 14                | 41                     | 76  |
| Pakistan             | 2                 | 28                     | 38  |
| Philippines          | 20                | 126                    | 41  |
| South Korea          | 9                 | 37                     | 46  |
| Sri Lanka            | 7                 | 30                     | 23  |
| Thailand             | 17                | 98                     | 43  |
| Total                | 149               | 815                    | 50.4                                      |

<sup>a</sup>No data were obtained from Burma, Malaysia, and Nepal. If the reported number of leavers were deducted from the total number of alumni, the percentage of alumni who were evaluated would be 54.7. The mean number of alumni per supervisor was 5.5.

improved the competence of most of the participants from their departments, as evidenced by their improved professional commitment and responsibility, technical knowledge, and competence.

The supervisors reported that about 15% of the returning trainees left their former jobs for better jobs. A few retired and a small number went abroad for advanced studies. About 77% of the IRRI alumni were involved in training programs for their junior staff. Nearly half of the alumni working in their home countries found no serious problems that impaired their productivity and effectiveness. But they mentioned as major problems inadequate budget, limited research facilities and manpower, and difficulty in adopting interdisciplinary concepts they learned at IRRI (Table 18).

**Table 18. Responses from national program leaders regarding constraints their IRRI alumni face.**

| Constraints                             | Program leaders (no.) |            |             | Total |
|---|-----------------------|------------|-------------|-------|
|   | Serious               |            | Not serious |       |
|   | Highly                | Moderately |             |       |
| Inadequate budget                       | 23                    | 56         | 57          | 136   |
| Inadequate facilities                   | 11                    | 55         | 66          | 132   |
| Inadequate manpower support             | 14                    | 54         | 59          | 127   |
| Inapplicability to subsequent job       | 5                     | 18         | 102         | 125   |
| Difficulty in adapting concepts learned | 6                     | 34         | 76          | 116   |

**Table 19. Overall evaluation of the IRRI training program by national program leaders who are supervisors of IRRI alumni.**

| Evaluation            | Program leaders (no.) |
|-----------------------|-----------------------|
| <i>Satisfactory</i>   |                       |
| Extremely             | 45                    |
| Moderately            | 80                    |
| Slightly              | 4                     |
| <i>Unsatisfactory</i> |                       |
| Extremely             | 0                     |
| Moderately            | 0                     |
| Slightly              | 0                     |
|                       | 129                   |

All the supervisor-respondents considered the IRRI training programs satisfactory (Table 19). However, they mentioned duration and kind of training programs as the two major aspects of training that needed further improvement. They also suggested that IRRI

1. implement research-oriented programs only and leave extension to individual countries,
2. institute local training based on actual needs of rice-farming families,
3. offer training programs in other fields such as physiology, marketing, statistics, etc.,
4. invite trainees from the Ministry of Agriculture as well as agricultural universities,
5. select trainees according to the needs of a region, and
6. organize an assembly of alumni every 2 or 3 years.

### **Survey of IRRI scientists regarding the short-term courses**

The IRRI staff members appreciate the importance of the availability of well-trained and high-caliber scientists in different rice-growing countries to improve the level of scientific research and production practices for rice and rice-based cropping systems. Because countries with good national research programs derive the maximum benefit from international agricultural research centers, they are highly enthusiastic about the various training programs at IRRI. Furthermore,

**Table 20. IRRI senior scientists' rating of selected statements about the short-term courses**

| Question  | Rating <sup>a</sup> |
|---|---------------------|
| Presenting training lectures is an unwanted burden that takes away from my research program                   | 2.15                |
| You welcome the opportunity to present professional concepts of your discipline and expertise to the trainees | 3.81                |
| The administration should find a way to quantitatively evaluate and reward participation in training          | 3.86                |
| The administration gives positive feedback for training efforts in the process of professional evaluation     | 2.16                |
| Training lectures can be adequately presented by the junior staff   | 3.02                |
| You agree with the slide/tape modular alternative to facilitate the training process                          | 4.02                |
| You would like to be involved in generating one or more modules   | 3.51                |
| IRRI should encourage the national programs to offer certain nondegree training courses                       | 3.79                |
| The responsibility of all training courses should be under the jurisdiction of one department                 | 3.34                |
| Many trainees have inadequate language skills to comprehend your lectures                                     | 3.72                |
| The conceptual level of many trainees is inadequate to comprehend your lectures                               | 3.19                |

<sup>a</sup>On a scale of 0-5: 5 = strongly agree with the statement, 4 = agree with the statement, 3 = neutral, 2 = disagree, 1 = strongly disagree, 0 = don't know.

the scholars or fellows in the research-oriented training programs make valuable contributions to IRRI's overall research efforts; upon returning to their countries, they frequently collaborate in research with IRRI scientists. Most of the IRRI senior staff members indicated their willingness to have 3-6 research scholars and fellows and 1-2 postdoctoral research fellows working with them.

The short-term courses demand staff time and generate little immediate return in terms of research results or prospects for collaborative research. But the scientists are generally quite willing to offer the appropriate number of lectures, and to conduct practical classes. This willingness is reflected in their response to a questionnaire about the various aspects of short-term courses at IRRI (Table 20). The staff members feel that greater recognition should be given their inputs in the training programs. They regard the use of training modules as a very important pedagogic aid to assist, but not substitute for, the lecturer. Most staff members are willing to participate in the production of training modules.

The scientists favor encouraging and assisting the national programs in offering short-term courses. However, when asked which of the courses currently offered by IRRI can be taken up by the various national programs, they responded as follows:

| Course         | No. of respondents in favor of decentralizing courses<br>(total IRRI staff surveyed — 57) |
|----------------|---|
| <b>RPTP</b>    |   |
| 2 weeks        | 14  |
| 5 months       | 14  |
| <b>INSFFER</b> | 7   |

Continued on next page

| Course                | No. of respondents in favor of decentralizing courses<br>(total IIRI staff surveyed — 57) |
|-----------------------|---|
| CSTP                  | 7   |
| Ag. Economics         | 4   |
| GEU                   | 2   |
| Upland rice           | 2   |
| IWMT                  | 2   |
| Ag. Engineering       | 2   |
| IPM                   | 2   |
| Farm Manager's course | 1   |

Thus, many of them feel that the RPTP course can be offered by the national programs. Actually, it is already being offered in Bangladesh, Indonesia, and Sri Lanka. Furthermore, there is a distinct capability in several countries to offer this course considering the number of their nationals who have graduated from this course at IIRI.

| Country     | RPTP graduates<br>(no.) |
|-------------|-------------------------|
| Philippines | 95                      |
| India       | 86                      |
| Indonesia   | 71                      |
| Sri Lanka   | 51                      |
| Thailand    | 38                      |
| Bangladesh  | 30                      |

The use of training modules would be useful to the RPTP course. But, the problem expected to arise is whether IIRI should discontinue offering this course or accept trainees only from countries that lack adequate expertise in organizing such courses. If the former is done, there would be difficulty in training candidates from several countries whose rice production specialists and extension workers urgently need training. Even though RPTP was the first course offered at IIRI, it has the most applications for participation among all the training courses at IIRI. So far, 563 persons have been trained in RPTP. The decision regarding discontinuance of this course should also consider the need for a large number of trainers to organize the "Training and Visit" (T & V) method of extension promoted by the World Bank.

### CONCLUSIONS

A fairly large number of scientists from many rice-growing countries have trained at IIRI. These scientists are making major contributions to research on the production of rice and associated crops in their respective countries. The partici-

pation from a few major rice-growing countries has been minimal, however, because of a variety of reasons.

All the research-related training programs — the nondegree postmasteral fellowship, the postdoctoral fellowship, and the senior research fellowship — benefit both the students and IRRI. They provide professional advancement to national scientists and give them an opportunity to update their knowledge. At the same time they contribute in an important way to research programs at IRRI. A committee at IRRI will decide the priority areas for the research fellowships and the selection of the candidates. Research fellowships should continue receiving high priority and when possible, its number should be increased. Wherever appropriate, persons with several years of service in the national programs should be encouraged to come to IRRI for a 6-month to 1-year apprenticeship-type of nondegree training in research.

Postdoctoral fellows are classified according to the number of years of experience after their conferral with the Ph D. Increasing the tenure of the postdoctoral fellows to about 3 years will increase the continuity of their research projects at IRRI, but will deprive the national programs of urgently needed professional staff. Also, unless research and accommodation facilities are increased, any increase in duration of fellowships will bring down the total number of postdoctoral fellows over a period of time.

The degree training programs, extremely important in upgrading competence of personnel in national programs and usually preferred by most prospective trainees, should also receive high priority. The arrangement in which the scholar completes course work for the MS program in his own country but comes to IRRI to conduct the thesis research should be further strengthened. The IRRI stay is important because it enables the student to participate in ongoing research that frequently is directly applicable to the problems in his own country. However, if the home organization has adequate research and personnel facilities, it would be advantageous for the student to do part of his thesis research in his own country. The arrangement in which Ph D candidates requiring more specialized training take course work in universities in developed countries where they can select from a larger number of available courses and then conduct their thesis research at IRRI, appears to have many advantages.

The graduate training program has turned out quite a large number of candidates with the MS, providing the national programs a basic minimum number of scientific staff members (Table 2). There is now an urgent need for more specialized and advanced training. Ph D programs, therefore, require greater emphasis.

The concept that degree training candidates should have at least one course in research management and another in scientific English writing should be encouraged and pursued.

Because the short-term courses are extremely important to various national programs, IRRI has continuously modified existing courses and initiated new ones on the basis of national needs (Table 21). Several hundred persons have been trained in some of these courses. Eventually, the national programs will need to organize their own training programs since only a limited number of persons can be trained abroad. Therefore, IRRI must encourage and, whenever appropriate,

Table 21. Participants in research-oriented and short-term courses at IRRI, 1962-1982.

|   | Participants (no.) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|   | 1962               | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 |
| <i>Research-oriented training</i>   |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Postdoctoral fellowship   | —                  | 4    | 9    | 8    | 3    | 5    | 3    | 9    | 15   | 14   | 8    | 10   | 15   | 12   | 16   | 32   | 31   | 35   | 38   | 38   | 40   |
| Ph D fellowship   | —                  | —    | 4    | 19   | 10   | 15   | 19   | 17   | 3    | 4    | 4    | 12   | 12   | 17   | 19   | 22   | 41   | 44   | 44   | 50   | 43   |
| MS fellowship or scholarship  | 22                 | 33   | 70   | 55   | 50   | 28   | 29   | 33   | 40   | 42   | 25   | 31   | 31   | 42   | 42   | 45   | 73   | 79   | 89   | 105  | 108  |
| Nondegree fellowship or scholarship   | 1                  | 12   | 17   | 8    | 30   | 40   | 17   | 21   | 33   | 34   | 28   | 28   | 35   | 30   | 26   | 34   | 53   | 61   | 45   | 44   | 56   |
| <i>Short-term courses</i>   |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| (Name and duration)   |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Rice Production Training <sup>a</sup><br>Program (6 months)                                       | —                  | —    | 5    | 5    | 5    | 58   | 34   | 35   | 34   | 34   | 36   | 30   | 35   | 29   | 28   | 37   | 38   | 40   | 28   | 29   | 23   |
| Rice Field Experimentation <sup>a</sup><br>Workshop (6 weeks)                                     | —                  | —    | —    | —    | —    | —    | 16   | —    | —    | 18   | —    | —    | 16   | —    | —    | —    | —    | —    | —    | —    | —    |
| Cropping Systems Training<br>Program (6 months)   | —                  | —    | —    | —    | —    | —    | —    | 15   | 21   | 22   | —    | —    | 13   | 25   | 33   | 38   | 40   | 47   | 42   | 40   | 38   |
| Genetic Evaluation and<br>Utilization Training<br>Program (4 months)                              | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 16   | 27   | 35   | 43   | 59   | 47   | 50   | 44   |
| Ag. Engineering Course<br>(2 weeks)   | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 13   | 21   | 25   | 26   | 23   | 10   | 52   | 29   |
| International Agro-<br>Economic Training<br>(1 month)   | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 14   | —    | —    | —    | —    | —    | —    | 11   |
| International Network<br>on Soil Fertility<br>and Fertilizer<br>Evaluation for Rice<br>(4 months) | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 21   | 24   | 22   | 22   | 24   |
| Irrigation Water Management<br>Training (6 weeks)   | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 21   | 24   | 17   | 28   | 23   |
| Mechanization Consequences<br>Training Program<br>(2 months)                                      | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 8    | —    | —    | —    | —    |
| Integrated Pest Management<br>(3½ months)   | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 18   | 39   |
| Farm Manager's Course<br>(3 weeks)  | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | 13   | 6    |
| Upland Rice Training<br>Course  | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| Total   | 23                 | 49   | 105  | 95   | 98   | 146  | 118  | 130  | 146  | 168  | 101  | 111  | 157  | 198  | 212  | 268  | 395  | 436  | 382  | 489  | 484  |

<sup>a</sup>Major contents have been incorporated in the Rice Production Training Program.

assist the various national programs in initiating their own training programs. If necessary, IRRI staff can participate in joint training programs in different countries at the initial stages of organization.

The concept underlying the short-term courses at IRRI is "training the trainer." Senior scientists assist countries in starting their own training programs. IRRI has prepared autotutorial units (slides with taped commentary) on about 90 topics as an aid in training programs. These are comprehensive and of excellent quality. A unique advantage of the module is that the narration can be done in the local language, thereby increasing its value to a much larger audience.

Also, training courses on special topics should continue to be organized, in cooperation with national programs, at selected locations outside IRRI. Earlier courses on deepwater rice were held in Thailand, on agroecomic methodology in Bangladesh, on upland rice in Indonesia, and on hybrid rice and tissue culture in the People's Republic of China.

It appears feasible for several countries to initiate their own rice production training courses patterned after IRRI's RPTP course. Bangladesh, Indonesia, India, and Sri Lanka have been offering such courses. However, several other countries, where there are no qualified persons to offer such a course on their own, continue to request for training in this course. Their need would not be met if this course was discontinued at IRRI. An alternative would be to offer the course every other year and accord priority to countries that need such help.

The GEU course has been offered for the last 8 years and 321 persons have attended it. It appears to have met the most pressing need of several countries for GEU personnel. Thus, only one GEU course per year, instead of the usual two, appears adequate. The second GEU course in 1982 was devoted to more specialized training on cold tolerance. A new course on upland rice will be offered this year.

In the selection of fellows, scholars, and trainees, IRRI should continue giving high priority to candidates from the national research and extension organizations.

The IRRI fellowship terms for all scholars and fellows are identical irrespective of the candidate's nationality or source of funding. Such policy is important and necessary in maintaining cordial relations among scholars and fellows.

# Appendices

Appendix 1. Survey of IIRRI Alumni, 1962-80

Please attach your recent photograph here

QUESTIONNAIRE

I. PERSONAL HISTORY AND COVERAGE OF TRAINING AT IIRRI

1. Name in full \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_  
 (Please underline your family name)
  
2. Name of institution where currently employed \_\_\_\_\_  
 Address \_\_\_\_\_  
 (No. and street) (City) (State/country)  
 \_\_\_\_\_  
 (Postal code) (Telephone no.) (Cable/telex address)
  
3. Date of birth \_\_\_\_\_ Date \_\_\_\_\_ Month \_\_\_\_\_ Year \_\_\_\_\_
  
4. Civil status \_\_\_\_\_ Single \_\_\_\_\_ Married \_\_\_\_\_ Age and sex \_\_\_\_\_  
 of children \_\_\_\_\_
  
5. Scholarship/fellowship at IIRRI
 

|                          |                      |                    |              |
|--------------------------|----------------------|--------------------|--------------|
|                          |                      | Duration (no./yr.) | Sponsoring   |
| a)                       | <u>Name</u>          | (from - to)        | organization |
| <input type="checkbox"/> | Training course      | _____              | _____        |
| <input type="checkbox"/> | Degree fellowship    | _____              | _____        |
| <input type="checkbox"/> | Nondegree fellowship | _____              | _____        |

- 2 -

b) Title of research project(s), if any

thesis \_\_\_\_\_

special project(s) \_\_\_\_\_

c) Extra-curricular activities \_\_\_\_\_

6. Educational background

| <u>Degree</u>  | <u>Name and address of institution</u> | <u>Period of study (from - to)</u> | <u>Degree and major field</u> |
|----------------|--|------------------------------------|-------------------------------|
| Doctoral       | _____                                  | _____                              | _____                         |
| Masteral       | _____                                  | _____                              | _____                         |
| Under-graduate | _____                                  | _____                              | _____                         |

Any other diploma or training received?

7. Work experience. Start with your current position.

| <u>Position held</u> | <u>Period of employment (from - to)</u> | <u>Name and address of organization</u> | <u>Nature of job responsibilities</u> |
|----------------------|---|---|---------------------------------------|
| _____                | _____                                   | _____                                   | _____                                 |
| _____                | _____                                   | _____                                   | _____                                 |

8. Describe briefly the activities (research, teaching, extension and administration) in your current position.

9. Number of publications

| <u>Type of publication</u> | <u>No. published</u> |
|----------------------------|----------------------|
| Research papers            | _____                |
| Reviews                    | _____                |
| Popular articles           | _____                |
| Books and monographs       | _____                |

10. Membership in professional societies

11. What do you consider your outstanding accomplishments?

12. Professional awards and other forms of recognition

| <u>Title of award</u> | <u>Year conferred</u> |
|-----------------------|-----------------------|
| _____                 | _____                 |
| _____                 | _____                 |

4 -

11. YOUR EVALUATION OF IRRI'S TRAINING/FELLOWSHIP PROGRAM. This part will not be published in the Directory but will be very helpful in assessing and improving our training/fellowship programs.
13. In what ways has your IRRI training contributed to your competence in research, extension, and administration?
14. Which part of your IRRI training was most useful to you in relation to subsequent positions and responsibilities?
15. What part of the training program at IRRI could be further improved? Please add suggestions for how to bring about this improvement.
16. To what extent were you able to apply the training you received at IRRI in your own institution or country?



- 6 -

20. Do you currently receive IRRI publications?

Does the library of your institution receive IRRI publications?

21. Are you involved in any collaborative or cooperative research with IRRI? If yes, state the name of the project(s).

22. Please add any comments or suggestions you wish to offer about IRRI training or fellowship programs, and about continuing communication between IRRI and IRRI alumni.

APPENDIX C: Survey of Supervisors of IIRI Alumni

QUESTIONNAIRE

INSTRUCTIONS. The following questionnaire should take you about 20 minutes to complete. Please answer the questions completely and accurately. Some questions may require a written answer, others may require that you check (✓) the appropriate box, and still others may require both. We appreciate your finding time inspite of your busy schedule to answer them. Thank you.

I. Respondent's Profile

1. Name \_\_\_\_\_
2. Official Designation \_\_\_\_\_
3. Institution \_\_\_\_\_
4. Please indicate the number of persons in your department who have been trained at IIRI.
 

|                           |                                  |
|---------------------------|----------------------------------|
| Research Scholars/Fellows | Trainees (RPTP, CEU, etc.)       |
| _____ MS/Ph D             | _____ Short term, 1-3 months     |
| _____ Nondegree           | _____ Long term, 4 months & over |
5. How many times have you visited IIRI? \_\_\_\_\_
6. Are you involved with a collaborative or cooperative project with IIRI? \_\_\_\_\_  
Please specify \_\_\_\_\_
7. If there is an opportunity, how often would you like to visit IIRI? \_\_\_\_\_

II. On-the-Job Performance of IIRI Alumni

- A. 1. Have all your scholars and trainees at IIRI returned and remained in the organization as of the present?
 

|         |
|---------|
| ( ) Yes |
| ( ) No  |
2. If No, how many have left the organization? \_\_\_\_\_
3. Please indicate the reasons for the separation of the scholars from the organization.  
\_\_\_\_\_

more ....

B. What positions are the IRRI scholars and trainees occupying in your organization? Please check as many answers as applicable.

- administrative
- research
- extension
- instruction
- others, please specify \_\_\_\_\_

C. 1. What are the responsibilities of the IRRI scholars and trainees in your institute? Please check as many answers as applicable.

- administrative
- research
- extension
- instruction
- others, please specify \_\_\_\_\_

2. What are the research responsibilities of the IRRI scholars and trainees in your organization? Please check as many answers as applicable.

- rice research
- research in other crops
- research in other fields in agriculture, e.g. animal husbandry
- nonagricultural research
- others, please specify \_\_\_\_\_

3. What are the extension responsibilities of the IRRI scholars and trainees in your organization? Please check as many answers as applicable.

- rice extension
- extension in other crops
- extension in other fields in agriculture
- nonagricultural extension
- others, please specify \_\_\_\_\_

D. Have the former scholars and trainees been involved in the training of research or extension personnel?

If Yes, what is the subject matter of the training?

- research methods
- extension methods
- rice production
- use of agricultural machines
- others, please specify \_\_\_\_\_

more ....

- page 3 -

**III. Contribution of IIRI training to the competence of participants.**

A. In what ways and to what degree has the IIRI training contributed to the IIRI alumni's competence in research, extension and administration? Please check as many answers as applicable.

|  | 1<br>high<br>degree      | 2<br>moderate<br>degree  | 3<br>slight<br>degree    | 4<br>none                | 5<br>no basis for<br>judgment |
|--|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------|
| ( ) gained knowledge and experience in research              | <input type="checkbox"/>      |
| ( ) gained knowledge in specific discipline                  | <input type="checkbox"/>      |
| ( ) gained knowledge in production of rice and other crops   | <input type="checkbox"/>      |
| ( ) gained acquaintance of peers, scientists                 | <input type="checkbox"/>      |
| ( ) gained self-confidence; enriched professional experience | <input type="checkbox"/>      |
| ( ) others, please specify                                   | <input type="checkbox"/>      |
| _____  | <input type="checkbox"/>      |
| _____  | <input type="checkbox"/>      |

B. To what degree has the IIRI training contributed to the competence of the IIRI alumni with respect to your institutional needs? Please check the appropriate box.

| <u>Satisfactory</u> |                   |                 | <u>Not Satisfactory</u> |                   |                 |
|---------------------|-------------------|-----------------|-------------------------|-------------------|-----------------|
| <u>Extremely</u>    | <u>Moderately</u> | <u>Slightly</u> | <u>Extremely</u>        | <u>Moderately</u> | <u>Slightly</u> |

|  |                          |                          |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. <u>Professional responsibility</u><br>(meet requirements of job or exceed expectations) | <input type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

more ....

page 4

|   | Satisfactory             |                          |                          | Not satisfactory         |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | Completely               | Moderately               | Slightly                 | Extremely                | Moderately               | Slightly                 |
| 2. <u>Technical knowl-<br/>edge</u> (Generally<br>sufficient, thorough<br>and updated knowledge<br>of subject matter) | <input type="checkbox"/> |
| 3. <u>Technical compe-<br/>tence</u> (Proficiency<br>of skills in research<br>extension, etc.)                        | <input type="checkbox"/> |

C. Are there constraints to the application of the scholars' training to their jobs? Please check severity of these constraints.

|  | <u>Highly<br/>Serious</u> | <u>Moderately<br/>Serious</u> | <u>Not Serious or<br/>No Constraints</u> |
|--|---------------------------|-------------------------------|--|
| inadequate facilities  | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| inadequate budget  | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| lack of skilled manpower<br>support                          | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| inadequate support of<br>agency or superior                  | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| not appropriate to<br>subsequent job                         | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| adaptability of concepts<br>learned to local condi-<br>tions | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| others, please specify                                       | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| _____  | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |
| _____  | <input type="checkbox"/>  | <input type="checkbox"/>      | <input type="checkbox"/>                 |

more ....

IV. Training Needs and Improvement

1. What aspects can be added to the training program to enable it to meet the needs of your organization?

\_\_\_\_\_

2. What part of the training could be further improved? Please check as many answers as applicable, and qualify your answers.

Please check

Please specify  
(e.g., more, less, add or change of characteristics, duration or quality)

( ) course content \_\_\_\_\_

( ) choice of teachers \_\_\_\_\_

( ) teaching methods \_\_\_\_\_

( ) duration of training and training schedule \_\_\_\_\_

( ) trainor-trainee relationships \_\_\_\_\_

( ) accommodations and other necessities \_\_\_\_\_

( ) others, please specify \_\_\_\_\_

3. On the whole, what is your evaluation of the present IRRI training program?

Satisfactory  
extremely moderately slightly

Not satisfactory  
extremely moderately slightly

4. Please cite other suggestions and comments you wish to offer about IRRI's training or fellowship programs.

\_\_\_\_\_