Cost of Training
Participants can be self-paying but would normally be sponsored by their own employers and/or international aid agencies.

Independent Planning Activity
Each participant will develop and present a plan for increasing the impact or efficiency of the breeding program of his/her institution/country, including envisioned future collaborative activities with IRRI.

Optional Activity on Information Management
Participants are encouraged to bring pedigree nursery information and other breeding data for analysis and inclusion in IRIS. They may extend their stay at IRRI, at their own cost, to learn to use the IRIS breeders' applications.

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Introduction

One of the five core goals of the new IRRI Strategic Plan (2007-2015) is to develop the next generation of rice scientists. This is particularly needed in the field of rice breeding. The number of rice breeders has decreased over the years, and those that remain need to enrich their skills with the precision tools afforded by advances in rice genomics and information technology. Meanwhile, breeding varieties that are adoptable by farmers remains a major challenge, along with the dwindling funds for breeding research. This situation demands maximum impact from rice breeding using limited resources.

Objectives

This training course aims to

- provide the participants with the theoretical knowledge on modern plant breeding methods and techniques;
- teach them planning and information management tools and experimental techniques and software for developing an efficient rice breeding program;
- give the participants the opportunity to share experiences and lessons with breeders from other programs; and
- share to the participants the information on the latest developments relevant to modern rice breeding and the worldwide exchange of rice genetic resources.

The course will be coordinated by the Plant Breeding, Genetics and Biotechnology Division (PBGB) and facilitated by the Training Center of IRRI. Modules will be developed mainly by IRRI scientists.

Methodology

The training will use various approaches: interactive lectures, group learning exercises and discussions, presentations on country/institutional breeding programs, post-training action plan development, field and laboratory visits, and a field trip to observe Philippine breeding programs.

Target Audience

The course is targeted at breeders and agronomists working on variety development or cultivar testing, and at research managers with responsibility for rice breeding programs in the public, private, and NGO sectors.

Course Content

- Introduction to breeding program planning exercise;
- Setting goals and identifying the target environment;
- Information management for pedigree breeding programs;
- Factors affecting the adoption of improved varieties;
- Factors affecting selection response;
- Choosing parents;
- Efficient approaches to pedigree and bulk selection;
- Managing plant breeding data with the International Rice Information System (IRIS);
- Quality evaluation;
- Screening for biotic stress tolerance;
- Screening for abiotic stress tolerance;
- Experimental designs for controlling field variability;
- Multi-environment trials – design and analysis;
- Participatory varietal selection and participatory plant breeding;
- Optimizing resource allocation in breeding and testing programs;
- QTL analysis and molecular marker-aided selection;
- International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and worldwide exchange and utilization of rice genetic resources;
- Intellectual property rights/plant variety protection; and
- Development and presentation of action plans for increasing the impact of participants’ programs.

Admission Requirements

Candidates should be nominated by their employers (from public, private or NGO sectors) and must:

- Have taken courses in plant breeding and statistics;
- Be proficient in English;
- Be able to use a personal computer;
- Be physically fit as supported by a medical report;
- Be under 45 years old; and
- Present (in English language) the breeding activities of his/her institution and/or country.

Nomination and Selection

Participants shall be selected based on the:

- Relevance of the training to the candidate’s work;
- Background knowledge, training, and experience in plant breeding;
- Degree of current or future collaboration with IRRI research programs;
- Number of available course slots; and
- Availability of funding.