



Delivery
for Impact:

The Dissemination of Rice-Related Knowledge and Technology

(a strategy for IRRI beyond 2000)

IRRI

INTERNATIONAL RICE RESEARCH INSTITUTE

Delivery for Impact:

The Dissemination of Rice-Related Knowledge and Technology (a strategy for IRRI beyond 2000)

2001

Training Center

IRRI

INTERNATIONAL RICE RESEARCH INSTITUTE

Acknowledgment

Contributing Writers:

Paul L. Marcotte

Mark A. Bell

Madeline B. Quiamco

Gelia T. Castillo

Stephen R. Main

Editor:

Bill Hardy

Production Supervisor:

Gina E. Zarsadias

Lay-out/Graphic Artist:

Irvin M. Panganiban

International Rice Research Institute

Delivery for Impact:

The Dissemination of Rice-Related Knowledge and Technology

DAPO Box 7777

Metro Manila, Philippines

Contents

IRRI's Challenge in the World Setting	1
--	----------

IRRI's Strategy: Dissemination of Rice-Related Knowledge and Technology

▪ The Research-Delivery Process	2
▪ The Coordinating Method	3
- Step 1: Needs Assessment	3
- Step 2: Research/Technology Transfer	3
- Step 3: Delivery/Training	4
- Step 4: Evaluation/Assessment of Impact	5
▪ Operations/Connections: NARES	6
▪ Delivery Options Expanded: New Partners and New Technologies	6

IRRI's Profile as a Working Institution: Operations/Activities

▪ Evolution of Training Methods and Tools	9
▪ Training Goal, Objectives, and Mission	10
▪ Guiding Principles	12
▪ Organization and Delivery Mechanisms	12
- Course Development and Delivery	12
- Courseware Development	14
- Learning Resources	16
- Scholars'/Trainees Affairs	17
- Evaluation/Impact Assessment	17

Conclusion	19
-------------------	-----------

Attachments	20
-------------	----

IRRI's Challenge in the World Setting

Rice is inarguably the most important cereal grain in the world. It is estimated that half of the world's population depends on rice as its main source of calories. This population, primarily in Asia, is also the most hard-hit by natural disasters, such as floods and droughts, has among the highest population growth rates, and has the highest incidence and per capita rates of poverty and hunger in the world.

IRRI was established in 1960 in recognition of the importance of rice and the people dependent upon it. In the early 1960s, there was fear of widespread famine in Asia and the subsequent instability of sovereignty of nation-states in the area. In an attempt to alleviate poverty, hunger and potential instability, IRRI has worked toward the following goal:

To improve the well-being of present and future generations of rice farmers and consumers, particularly those with low incomes.

Literally from the inception of IRRI, training was a key component in its dissemination of information from research and in the development of national research systems. The first IRRI training course was a 12-month rice production course. For the first 6 months of the course, representatives/technicians of the Philippines Agricultural Productivity Commission were trained in rice production "from seed to seed." These scientists/trainees then assisted in the replication of the course for another group of Filipino scientists.

Thus began the model of training, train-the-trainer, and devolution of information and technical knowledge and process into national systems. This model is still operational today and the rice production course is still being held at IRRI and at the Rice Research Center in Pathum Thani, Thailand.



Since it began, IRRI's training effort has been consistent with the goals and objectives of the Institute. Despite changes in the organization, in its goals and objectives, and in the alignment of training within the organization, IRRI training has remained true to its original mandate. Today IRRI's training objectives are:

- to generate and disseminate rice-related knowledge and technology of short- and long-term environmental, social, and economic benefit, and
- to help enhance national rice research systems.

IRRI's Strategy: Dissemination of Rice Related Knowledge and Technology

The Research-Delivery Process

IRRI is a multifaceted institute with a wide array of responsibilities and agendas. Many of these responsibilities concern linking IRRI with in-country stakeholders, including farmers, researchers, and government agencies: This has caused problems because, in the past, various activities were not as well linked within IRRI as they might have been. Thus, there are opportunities to improve, the approach to national partners, especially in delivery. For instance, in the past, two researchers working on the same general problem in the field (e.g., cropping systems in a country) may not have had significant contact with each other regarding their research either at IRRI or in-country. This was especially problematic in the area of technology dissemination, in which it is particularly important that all stakeholders cooperate effectively. Unlike research, which can be isolated in a small area, dissemination must be coordinated across large areas involving many people.

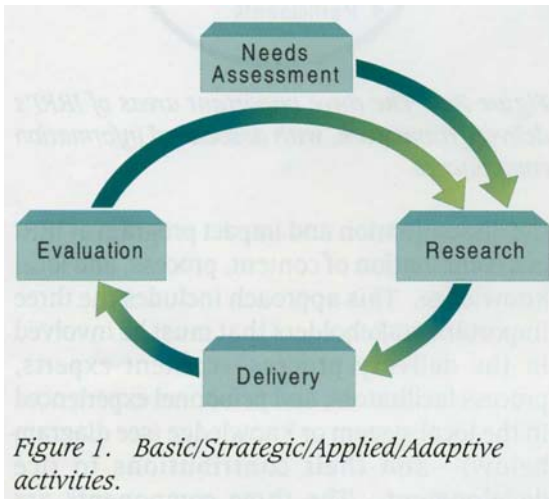
To resolve this issue and create efficiencies in delivery in the future, IRRI has begun a process of linking various components of its dissemination organization, including the Training Center and International Program Management Office (IPMO) into a coordinated unit for delivery. IPMO, with its strong ties to the national coordinating offices, will manage this new framework. The emerging structure and methodology link IRRI's basic and strategic research and researchers with applied facilities and people in host countries.



The Integrating Process

The integrating process involves four steps. Step 1 is a needs assessment in which the research problem is defined, either at the local/national level with local scientists and farmers or by

IRRI's Los Baños research and delivery staff Step 2 is the design and implementation of the appropriate research activities at the proper scale. Step 3 is the delivery of the research information/technology by the various researchers in collaboration with trainers and local knowledge experts. Finally, Step 4 of the process is evaluation for event success, feedback, follow-up, and, ultimately, impact¹.



STEP 1: Needs Assessment

Good research starts with the sound identification of the major agronomic, social, and political limitations faced by farmers. Two levels of needs assessment or problem identification are required: first at the national level and then at the field level. The partners and skills required to adequately identify these will vary.

The year 2000 was a period for integrating IPMO's country activities with research and training activities and for tapping the country representatives as sources of information

regarding national research priorities and opportunities. Subsequently, the country-based staff can also facilitate the partnerships required for appropriate field-level problem identification. Skills at this level require system integration to recognize not only the major problems but also the true causes of the problems and the potential interventions or research required.

STEP 2: Research – Identification of Knowledge Gaps and Appropriate Options

Plans for 2000 and beyond will include enhancing the integration of IRRI's applied research and technology transfer with various national agricultural research and extension systems (NARES) partners. The goals and objectives will include



¹ Evaluation, like monitoring, must be a consistent goal throughout the process. It is presented as the final stage for the sake of simplicity.

1. Sourcing, free exchange and participatory evaluation, adaptation, and use of promising components, concepts, and packages of knowledge-based technologies across national boundaries;
2. Timely collection and use of farmers' feedback to improve research relevance to clients' needs;
3. Collection and communication of created knowledge, information, and experience across interested people and institutions;
4. Identification and evaluation of innovative extension or technology delivery strategies and mass communication methods for education of farmers and wider dissemination of technologies; and
5. Upgrading of technical knowledge and skills of collaborators to improve their performance in farmer participatory research, technology evaluation, and delivery.

STEP 3: Delivery Mode (Content/Process/Local Knowledge)

In 2000 and beyond, IRRI will place greater emphasis on the delivery of research products to, and feedback from, the intended beneficiaries of its activities. In particular, the activities of the Training Center will be highlighted by a proactive posture in the design and delivery of training events and materials in close collaboration with the technology developers and other IRRI delivery and content specialists.

The process of seeking opportunities to assist in the development and delivery of field training based on the research product in association with the IRRI research program will be strengthened. The delivery mode for

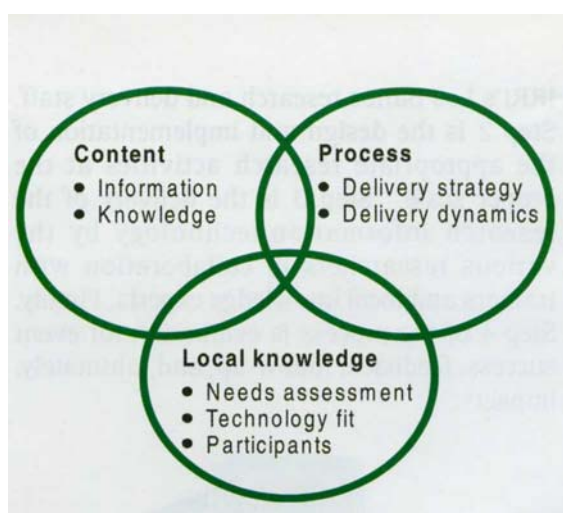


Figure 2. The three important areas of IRRI's delivery framework, with associated information components.

the dissemination and impact program at IRRI is a combination of content, process, and local knowledge. This approach includes the three important stakeholders that must be involved in the delivery process—content experts, process facilitators, and personnel experienced in the local system or knowledge (see diagram below)—and their contributions to rice development. The three components are integrated such that a flexible and replicable process ensures that the local context, including farmers' perspectives, is well understood and that problems are addressed with current useful information (content) that is supported by research.

- "Process" is the design and dynamics of the training event, facilitated by an experienced, field-tested trainer, with knowledge of both agriculture and educational technology.
- "Local knowledge" is a representation of the circumstances within which the research information/knowledge is delivered. Training about any aspect of rice science shall be anchored on proper grounding in field activities. It will contain a field exposure component, an activity

to expose participating scientists to actual held situations. This is to give them a feel for the real reasons of doing research. This also ensures that the information is appropriate to the farmers’ needs, technology fit, and willingness of recipient organizations and farmers to participate in the process. Local knowledge may lead to adaptation of technologies to suit local conditions.

- “Content” is supplied by research professionals within IRRI, or the NARES, or even gleaned from successful farmers experiences (farmer-to-farmer learning). It is expected that research knowledge is state-of-the-art and includes basic to adaptive research output. Farmers’ knowledge, on the other hand, shall be “best practices” – practicable, useful, and sustainable.

Step 4: Evaluation

Evaluation is the final step in the process and ensures that the research delivery continuum is complete. IRRI has developed a conceptual model for evaluation that measures training and field research. For training, evaluation includes the following:

- Level 1: Training event evaluation and the provision of training. This focuses on the training event itself and assesses the satisfaction of the trainees with the trainers, the facilities, and the content of the program.
- Level 2: Completion of training: personal knowledge acquisition. This focuses on the individual acquisition of knowledge, skills, and attitudes by trainees at the completion of training.
- Level 3: Resumption of job-related activities: follow-up. This is an ex post evaluation that assesses the application of the newly acquired skills, knowledge, and attitudes as they are related to job activities, conducted 6 months after the training event.
- Level 4: Changed organizational performance: impact. This is the assessment/evaluation of the change in the organization as a result of the training received. It is conducted 1-3 years after the training.

Event/Intervention	Personal Acquisition	Follow-up	Impact
Training Event Evaluation	Skills/Knowledge Acquisition	Skill/Knowledge Transfer	Organizational Performance Change
Assess Satisfaction of Trainees	Assess Change in Knowledge, Skills, Attitudes	Assess Extent of Application of Skill/Knowledge to Job Related Activities	Assess Organizational Change as a Result of Skill/Knowledge Transfer and Incorporation
Event Assessment Questionnaire	Pre-Test/Post Test	Survey: Interview and/or Questionnaire	Baseline Comparison
Completion of Training	Completion of Training	3 months to 6 months	1-3 years

Figure 3. Evaluation type/sequence

In addition to the event evaluation process described above, the evaluation unit also implements a country-specific impact evaluation process. Countries that have participated in research interventions by IRRI will be studied for impact. These studies will include the evaluation of event and research/demonstration interventions, as well as socio-economic evaluations such as rates of return to investments.

The combined efforts of IPMO, the Training Center, and IRRI research units are expected to result in a comprehensive delivery system that covers each stage of technology dissemination (from needs assessment, research, and delivery to evaluation of impact). Linkages will be made with national program extension systems, which include NGOs and the private sector

Operations/Connections: NARES

There are two major vehicles for dissemination to NARES partners: Los Baños (headquarters-based) and site-specific (in-country) training events (in which a training event can be a formal course or any form of event that leads to changed behavior). These continue to be the core approaches.

Traditional training sessions are given by recognized experts in aspects of rice production through lectures and demonstrations to various agricultural workers and researchers. Hands-on trainings are also provided through field and laboratory experiments (both on- and off-campus). Group discussions among participants afford appropriate context for the exchange of ideas and interests. These trainings fall under the “train-the-trainer” approach and eventually lead to the replication of events by trained representatives at their home institutions.



Off-campus trainings (in-country, including field demonstrations) are conducted to address more site-specific needs of the trainees. Collaborative training undertaken with trainers in NARES facilities also leads to the development of NARES trainers and additional venues for dissemination. The following factors contribute to this move:

- improved training capability of NARES institutions;
- realization of the need to tackle country-specific problems;
- scientists’ need to develop general enabling skills that cut across disciplines;
- the need to maximize NARES’ scarce training resources;
- the need for training at the workplace in a real work situation.

Delivery Options Expanded: New Partners and New Technologies

IRRI has traditionally delivered its research findings to collaborative research institutions. It now recognizes the need to extend collaborative research efforts to institutions not traditionally involved in rice research. Thus, in addition to the traditional National

Agricultural Research Systems (NARS) partnership approach, the new delivery framework is including new extension partners such as NGOs and the private sector (expanding NARS to NARES) and new delivery mechanisms such as computer-aided distance training. This change and expansion in approach are recognition that local groups that understand culture-specific and site-specific factors can affect the success of information dissemination.



To address this situation, IRRI recently started an NGO office within the Partnerships office (headed by the Deputy Director General for Partnerships). The Training Center has an important role to play together with the NGO office in delivering rice research and defining problems and limitations through participatory means.

In addition to the increased involvement of NGOs as local partners, the delivery framework has added computer-assisted distance learning to its approach. The IRRI Information Technology Think Tank Report (1999) stipulated the need for IRRI to be a “rice knowledge center without walls - a high-speed, high-bandwidth node on the next-generation Internet. “The Training Center

responded to this by adopting the vision of “developing a virtual university of rice research information, available to national researchers, extension services, NGOs, and rice farmers of the world.” We assume that the digital divide will be bridged as more and more Asian organizations and researchers begin to learn about and use the internet. We expect that online learning will augment and maybe even replace traditional classroom-training situations. Certainly it will have a profound effect on the delivery of scientific information.

This vision will be attained by a variety of efforts. For example, the Training Center is developing workshops to train partners in the use of the Internet. The workshop “Use of Information Technology in Reaching Farmers” was offered for the first time in November 2000. The Training Center is also creating several

materials to help partners understand and begin to use the Internet. To date, the Training Center and associated IRRI units have developed the following:

- Decision support tool: Trop Rice
- Informational/Training modules: Stem Borers of Rice, Growth Stages of the Rice Plant, Hybrid Rice
- Research methods: Experimental Design and Data Analysis, IRRIStat
- Professional support tools: Digital Literacy, Presentation Skills, English for Agriculture

We expect that an additional 20 modules will be developed and put online in 2001. The Training Center has also developed the capacity to support training and facilitate discussions among experts through teleconferencing and networking. In addition to the Training Center effort, several IRRI Web sites hosting informative materials are in operation, such as the IRRI home site, RiceWeb, RiceWorld, and IRRI Library.



Internet connectivity and information and communication technologies of collaborators and researchers in Asia are not uniformly developed, and in some cases they are at an elementary stage. To provide access to information users in these areas, the Training Center has prepared IRRI's information on CD-

ROMs, which can be taken and used anywhere for training purposes. We expect that this intermediate technology can be used for training for those who have not yet received the benefits of the latest information and communication technologies.

IRRI's Profile as a Working Institution: Operations Activities

Evolution of Training Methods and Tools

IRRI has kept pace with developments in adult training and education, and has applied best-of-the-moment methods and tools to its training activities. Degree scholarships are arranged such that scholars benefit from high-quality academic training at accredited universities as well as from high-quality research experience through working with world-class rice experts and facilities at IRRI. Benefits of on-the-job training are likewise maximized through mentoring and collaborative research work between an IRRI scientist and a NARS scientist.



Group training, on-campus or in-country, subscribes to the learning principle of learning by doing; it gives equal attention to inputting information and learning skills. Thus, lectures and mediated inputting of technical information are balanced by hands-on exercises and laboratory or field work. Recognizing the importance of successful cross-cultural communication in training multicultural groups, IRRI, through its Training Center, ensures that courses are supported by relevant training materials that simplify information content. Training materials



development has been one of the major functions of the IRRI Training Center.

IRRI training has evolved over 38 years. Since its initial activities in 1962, IRRI has offered approximately 13,000 training opportunities to NARES scientists and other professionals from about 30 countries. These opportunities were made available through

- degree scholarships
- on-the-job training fellowships
- group training courses at IRRI, and
- collaborative in-country course offerings.

IRRI has conducted close to 300 offerings of group training courses on-campus to transfer knowledge generated by its research. In 1989, it also began conducting collaborative in-country courses, which are IRRI courses revised and taught in-country to respond to training needs of specific NARES. Approximately 4,000 rice professionals updated their knowledge and skills through 148 collaborative in-country courses conducted between 1989 and 1999. To support group training courses, about 300 training materials have been developed in different media formats: print, slide-tape presentations, computer-aided instruction, instructional video, Web publications, and on-line course programs. IRRI's training activities have also strengthened the indigenous training capability of national agriculture

research institutions (NARIs) in Asia through train-the-trainers courses and collaborative in-country training arrangements that used local resources and facilities. Today IRRI alumni occupy critical research and leadership positions in most NARIs in the region.

IRRI has established a reputation for high-quality technical training in rice science in Asia in the last four decades. Nevertheless, it faces several challenges that require creative action.

- IRRI must continue to provide opportunities for professional advancement to a growing number of rice professionals using much less human and material resources.
- While IRRI continues to develop human capital to maintain the critical mass of trained human resources in the NARES, it also needs to sustain the effectiveness of the scientists it has trained by providing them with individual options for life-long learning.
- Clients' growing sophistication and maturity require training activities that are highly relevant to clients' needs and are not just a way of unloading available information, and those that are of high quality in content and process.

Training Goal, Objectives, Mission

By design and implementation of the activities mentioned above, the Training Center has maintained its goal and objectives as follows:

The goal: A critical mass of well-trained, effective rice professionals who can develop, apply, and transfer knowledge and technologies to address national priorities and contribute to global research in rice.

The **objectives** are to

- develop capable rice professionals
- provide opportunities for research collaboration
- conduct training courses on-campus and in-country
- develop and update relevant training materials
- strengthen training capability of NARES
- support NARES training efforts



The **mission** of the IRRI Training Center is to develop the technical, problem-solving, opportunity optimization, and knowledge/skills development capability of rice scientists and professionals worldwide. Developing human resources engaged in rice science is necessary to enhance the benefits of environment-friendly technological advances for present and future generations of rice producers and consumers.

The Training Center will accomplish its mission through the following activities:

- degree/postdegree training to create a cadre of highly trained scientists who will provide

- research and development in the national research systems;
- short-term in-campus group training to develop and update scientists' technical expertise in specific aspects of rice science, as well as communication skills to nurture such expertise in others;
- collaborative in-country training to address country-specific training needs and build indigenous training capacity in the national research systems;
- distance training to provide an efficient training alternative for life-long learning, ultimately to make IRRI a "rice science university without walls";
- training materials and methodology development to support group training in all modes.

As a world-class training institution, the Training Center equitably provides group and individual training opportunities to rice scientists to improve their technical, problem-solving, opportunity optimization, and knowledge/skills development capabilities. Such training opportunities are of the highest quality, coordinated and implemented by human resource development professionals



and technical experts that are among the best in the region. In carrying out these activities, the Training Center promotes teamwork and participatory decision-making among its staff, even as it encourages development of individual capability. It promotes openness and fairness in all dealings, fosters awareness of change and technological advances in human resource development and instruction, and in general, maintains a balance between internal organizational health and external effectiveness.

Guiding Principles

In accomplishing all its tasks, Training Center staff members have developed a culture of excellence based on teamwork and continuous learning. Training Center staff members share certain identified traits; roles/relationships, attitudes, and values (TRAY) that are their guiding principles. They agree to uphold the following:

Traits	Roles/Relationships	Attitudes	Values
enthusiasm	open communication	professionalism	respect
sense of fun/humor	knowledge of each others work	self-motivation	trust
flexibility	collegial relationship for others	tolerance	honesty/truth
creativity/innovation	sense of belonging	service to clientele	fairness/equality
productivity/efficiency	inspiration/role modeling	intellectual curiosity	shared vision
energy	pursuing a common goal	excellence	hard work
open-mindedness	clear objectives		continuous self-improvement
sincerity			competence

Organization and Delivery Mechanisms

To carry out the tasks involved in the activities mentioned above, Training Center is organized in the manner described in Attachments 1 and 2. Basically, there are 5 operational units: Course Development/Delivery; Courseware Development; Learning Resources; Scholars'/Trainees' Affairs; and Evaluation/Impact Assessment. Below are descriptions of each of the operational units.

Unit 1: Course Development/Delivery

There are four approaches in the accomplishment of course development and delivery:

Approach 1: *short-term on-campus group training*. Group training courses on-campus are structured learning programs conducted for international groups to input new knowledge or skills in specific areas of specialization. The Training Center shall enhance the effectiveness and desirability of these courses by ensuring content that is relevant to trainees' needs and useful in their post-training work and by using methods and tools suited to their level of sophistication. Development of trainers' skills shall be a continuing concern of the Training Center. Table 1 lists the courses that comprise this approach during a specific year.

Table 1. Short-Term On-Campus Group Training

Science-Based	Methods/Methodology	Support
2-week Rice Production Course	Basic Experimental Design and Data Analysis	Instructional Video Production
Modern Nitrogen Management and Field Plot Techniques (Indonesia)	Intro to SAS for Windows	Train-the-Trainers Scientific Writing/Presentation Skills
Rice Seed Health for Crop Management	Advanced Experimental Design	Use of IT in Reaching Farmers
Two-Line Heterosis Breeding and Seed Production (China)	Cluster Analysis	Participatory Action Research
Integrated Pest Management (NCPC)	GIS-Modeling Integration for Natural Resource Management	Women's Leadership
Germplasm Evaluation and Utilization (Thailand)	Principal Component Analysis	
Rice Production Research Course (Thailand)	Intro to IRRISTAT	
Upland Rice Research! Mixed Cropping Systems (Thailand)	Intro to New Developments in GxE Analysis of Unbalanced Data	
Research and Resource Management	Multi-Agent Simulation Modeling	



Approach 2: *Collaborative in-country training*. The conduct of group training courses in-country is a relatively new initiative to help NARES address country-specific problems (national courses) or develop their indigenous training capacity (regional courses). The relative success of national courses in focusing on national concerns and bringing training opportunities to more NARES scientists at less cost should encourage IRRI to find more creative ways to support this arrangement. Meanwhile, lessons learned from the unsuccessful implementation of most regional courses will

be heeded. The arrangement of devolving “mature” courses away from IRRI will be reviewed and, if necessary new arrangements found to move these mature courses.

Approach 3: *Distance training*. IRRI shall develop human and infrastructure capability for distance training/education supported by Information and Community Technology (ICTs). Through training in the distance mode, IRRI can efficiently sustain its human capital development gains in the NARES by providing trained human resources with an opportunity to update their knowledge and skills at their own workplaces. Primarily, IRRI shall establish and maintain a link to the APAN satellite through ph.net (Manila). The link is vital to all of IRRI’s efforts in distance training, which is currently being hampered by connectivity problems.

The Training Center shall initiate activities and procedures to make distance training a reality. Using methods based on principles of distance education and capitalizing on its collaborative relationship with capable NARIs, it shall develop and implement online courses supported by pertinent digital and traditional training materials. Such courses will have the flexibility to enable rice professionals to

update their technical knowledge and skills whenever they can, wherever they may be. Ultimately, IRRI shall become a “rice science university without walls.”

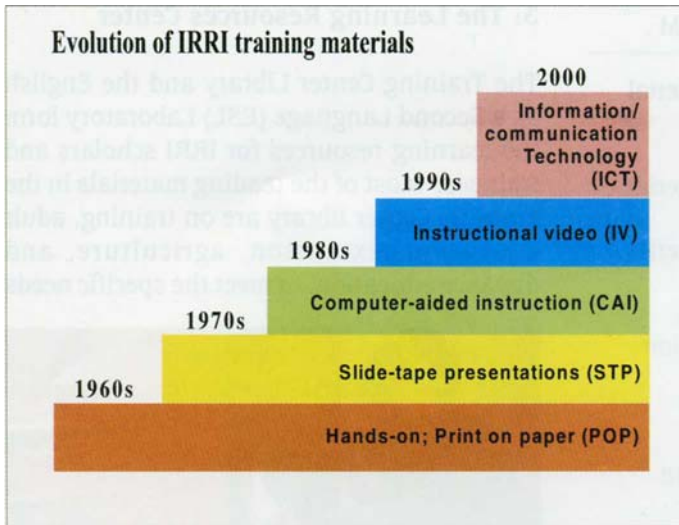
Approach 4: *Special projects*. In approach 4, the Training Center provides assistance to NARES in the design and delivery of special projects. An example of the approach is the current project with the Indonesia-IRRI Joint Research Program. This project, titled “Development and Evaluation of Location-Specific integrated Crop and Resource Management Packages for High Rice Yields”, combines research with 18 training visits per year including dissemination of research results, technology transfer, social sciences, and training of trainers.

Unit 2: Courseware Development

In light of distance education developments and accompanying challenges, IRRI must increase the effectiveness and desirability of its training activities through content that responds to clients’ specific needs and delivery methods, and tools that match their sophistication. It also must strengthen its distance education capability to provide trained NARES scientists with opportunities to access updated information and new skills at their own workstations.

The development of new information and communication technologies (ICTS) is offering new and more powerful options for the delivery of information content in training. ICT-based training materials development is the next stage in the evolution of training materials development at IRRI. This evolution to keep up with





training a more efficient and flexible process that can respond to the different and changing needs of its clients.

To support IRRRI's on-campus, in-country, and distance training activities, the Training Center is intensifying its training materials development efforts. Moving from Stage 4 into the threshold of Stage 5, it is developing its human and infrastructure capability to use ICT in training. It is

communication technology development since the 1960s can now be described in five stages:

- Stage 1 - print materials (manuals, skills booklets, guidebooks, handouts)
 - Stage 2 - slide-tape instructional units (learning modules consisting of a slideset, a taped narration, and a booklet with content and review questions)
 - Stage 3 - computer-based instruction (learning modules on floppy diskettes, programmed for simple interactivity)
 - Stage 4 - video instruction (video-taped demonstrations of procedures and descriptions of processes)
 - Stage 5 - ICT-based training materials and methods (ICT-mediated instruction, Web-based publications, synchronous and asynchronous conferencing, and online courses)
- developing a digital core of information, data, and graphics from which trainers can directly draw as they develop online courses or ICT-based training materials. It is also setting up a system for maintaining, revising, updating, and accessing content of this digital core.
 - developing ICT-based training materials for training in the face-to-face or distance mode.
 - continuing to develop and produce training materials using other media, as appropriate for the target participants, subject matter, and learning objectives of a training course.
 - combining training materials of different kinds and media types to achieve optimum learning among trainees and in support of the course design.
 - transforming content of types 1-8 into Web publications for online dissemination.

By ensuring relevant content information and maintaining a varied menu of instructional methods supported by a rational combination of digital and other forms of communication technology, IRRRI can make

Training materials/courseware that the Training Center has developed and is developing fall into the following categories:

TYPE	MEDIUM
1. Performance objectives manual	print material
2. Guidebook	print material
3. skills booklet	print material
4. Slide-tape module	slide-tape presentation
5. computer-aided instruction	computer program on diskette
6. Instructional video	video tape
7. Glossary	print material
8. Instructor's manual	print material
9. Web publication	Internet-based; compact disk (CD)

To ensure that the materials are scientifically correct, up-to-date and relevant to needs, Course Teams have been developed. These teams include members from the various IRRI research divisions, professional trainers from Unit 1: Course Development Delivery, IT specialists and designers from Unit 2: Courseware Design and Development, and other members as appropriate. These teams operate in a project mode. The subject/content of the workshops being designed are based on priorities set by a negotiated process which involves researchers, extension agents, and NGOs after an extensive training needs assessment.

3: The Learning Resources Center

The Training Center Library and the English as a Second Language (ESL) Laboratory form the learning resources for IRRI scholars and trainees. Most of the reading materials in the Training Center library are on training, adult education, extension, agriculture, and distance education, to meet the specific needs



of the Training Center's clientele consisting of scholars, trainees, and IRRI staff. The ESL Laboratory has language, speech, and reading improvement audio cassettes and video tapes and a speech and language console for individual and group speech lessons. Several interactive CDs on learning English are also used for language lessons. Courseware materials developed at the Training Center are made available to the Training Center's clients through the library

Individuals affiliated with other institutions in the Los Baños Science Community (LBSC), such as the University of the Philippines Los Baños (UPLB), Philippine Council for Agricultural Resources Research and Development (PCARRD), Department of Science and Technology (DOST), and Southeast Asia Regional Council for Agriculture (SEARCA), also use the facilities. However, only IRRI staff, scholars, and trainees can take out books and other materials from the library. IRRI staff spouses

and children can also avail themselves of the Library and ESL Lab services and facilities. Special training and tutorials for English language-related needs of scholars and trainees are arranged and scheduled based on their most convenient time. The Training Center also offers editing services for scholars' theses and trainees' technical papers. Short training courses on Basic English, English for Conversation, Intensive English, and Self-Editing are conducted for interested scholars, trainees, and nationally recruited staff. English for Agriculture classes began in July 1999 and are on-going.

Plans for the future include having more computer-assisted and interactive language learning courses, facilitating scientific writing, presentation skills, and other English language instruction in the distance learning mode, and transforming the Speech Laboratory into a user-friendly state-of-the-art language learning facility.

Unit 4: Scholars'/Trainees' Affairs

Degree/Postdegree training. IRRI provides scholarships to enable qualified NARES scientists to pursue Ph.D. and M.S. degrees, as well as fellowships for them to update their technical knowledge and skills by working

with an IRRI scientist on a research project of mutual interest to IRRI and the scientist's institute. It is a priority of the Training Center to maintain the IRRI degree/postdegree program and enable scholars to optimize learning during their tenure at IRRI by the following:

- generation of donor interest and proposing exciting scholarship administration arrangements
- close collaboration with universities administering the academic component of scholars' programs
- close monitoring of scholars' progress to provide timely intervention
- provision of sufficient time for scholars to complete their program and establish responsibility for noncompletion
- enabling a more active role in improving their language capability to facilitate learning through a more aggressive English proficiency development program
- proactive management of scholars'/trainees' entitlements
- improving quality of dormitory life.



Unit 5: Evaluation/Impact Assessment

All too often, the emphasis of training organizations and units is on delivery of materials. The evaluation and assessment of the training received, what the trainee has learned and taken back to his/her organization, and the long-term effects on the individual and the organization are often overlooked. The IRRI

Training Center has recently established an evaluation/impact assessment unit to attempt to identify and assess the impact of the IRRI training program. There are two primary activities in the evaluation/impact assessment unit: the evaluation of training events and impact assessment of IRRI country projects.

Evaluation of training events. The purpose of this evaluation is to capture the effects of IRRI training at four levels. The first of these is to collect information at the conclusion of training, that is, trainee satisfaction and analysis of the event. The second level is the assessment of learning as a result of the training received. This requires a pre-and post-test of the materials delivered in the training sessions. The third level is to follow up on the learning that the trainee has received. Thus, the trainees are contacted at their workplace and an assessment is made on the incorporation of the materials on a personal and institutional basis. The fourth level is a long-term assessment of the impact of the training on the trainee and the organization.

Impact assessment of IRRI-country projects. The purpose of impact assessment is to

- quantify return to investment in research and technology development,
- understand the reasons why practices are being adopted or not adopted,
- decide whether improved varieties or crop management practices are suitable for release,
- improve the technology delivery system, and
- guide future research policy.

An impact assessment procedure will be designed in which the level of assessment is standardized, the indicators and methods made clear, and the objectives defined. Trainers should play an important role in developing this procedure.

Conclusion

In conclusion, IRRI's delivery-for-impact organization and mechanisms have undergone a number of changes in response to the changing environment of training, the inclusion of new partners, and the new developments in delivery technologies. We have entered the new millennium with tools, practices, and perspectives that will enable our continued success in our new environment.

Organizationally IRRI has recognized that delivery capability needed to be linked both internally and with our new partners. Internally, IPMO will manage the new framework, which includes country representatives, technology transfer units, and the training center. Externally, we are actively seeking new development and delivery partners. This recognizes that research-to-farmer connections can be facilitated by new and emerging organizations and tools, in addition to our traditional partners.

With respect to planning and delivery a fundamental change that has been recognized is that training/delivery is an integral part of the research process. Thus, the process now begins with participatory problem identification and needs assessment, proceeds through research and problem solving, coordinated delivery, and evaluation. The delivery mode for this process includes

content, process and local knowledge. This mode ensures:

- content: correct diagnoses of researchable problems and professionally conducted scientific experimentation
- process: use of adult and distance learning expertise for successful processing of events
- local knowledge: involvement of local knowledge experts (relevance) to assess and adapt appropriate information for specific circumstances.

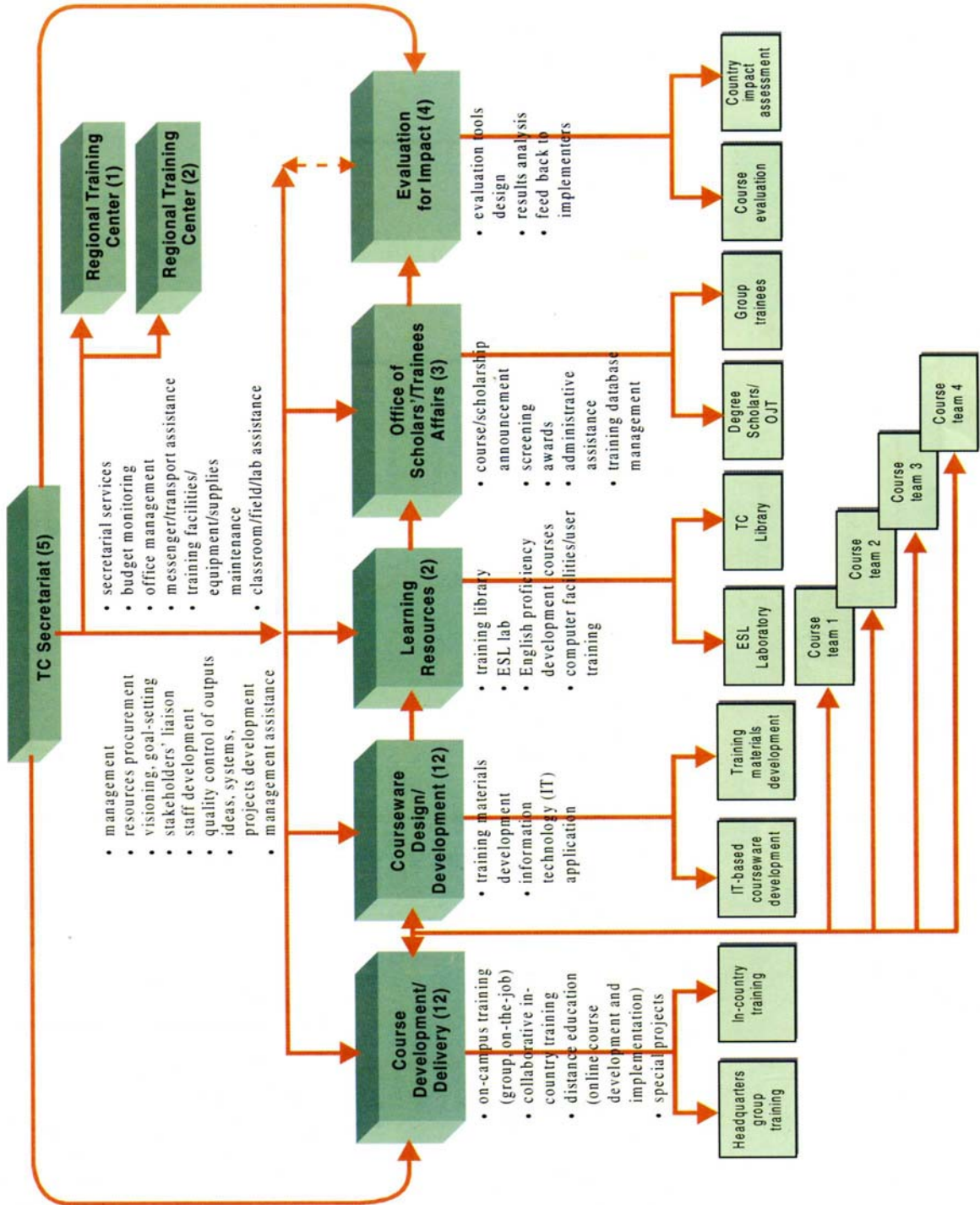
In terms of delivery itself, we will continue our successful approaches of the past. We will continue our headquarters and in-country courses and at the same time multiply our capability by linking to new organizations such as universities and NGOs. New approaches at both headquarters and with our partners will include IT materials and on-line courses. This will require more training of trainers, more support activities, and courseware materials in digital mode.

Finally, the Training Center will require a new organizational framework, new skills and experience, and a general re-building for our new tasks and our new vision

Note:

To fulfill and succeed in these promises, the TC has been reorganized. Please find attached our new organizational chart by function and by position.

Attachment 1. Functional chart, Training Center 2001



Attachment 2. Staff chart, Training Center 2001

