

# IRRI

INTERNATIONAL RICE RESEARCH INSTITUTE

## Response to the Recommendations of the 6<sup>th</sup> EPMR

submitted to

**The Science Council**

April 2004



Dr. Per Pinstруп-Andersen  
Chair  
Science Council

April 16, 2004

Dear Dr. Pinstруп-Andersen

Following the completion of the 6<sup>th</sup> EPMR at the end of March, IRRI's Board of Trustees met here in Los Baños to consider the draft report, and to discuss its response to the recommendations. We are pleased to forward to the Science Council the Institute's formal response to those recommendations. In doing so, we should like to express our appreciation to Dr. Dick Flavell, Chair of the EPMR Panel, and his colleagues for the collegial manner and spirit in which they undertook this important review.

This is the sixth external review of IRRI, and the report clearly describes the evolution of the institute's agenda, and how the approaches of modern biology, particularly in the area of genomics and biotechnology have come to the fore since the last review in 1998. The Panel very carefully analyzed the need for continuing support for rice research, and what IRRI's role might be in a global agenda. Their report recognizes IRRI as a strong research organization that is making (and will continue to make, given appropriate support) valuable scientific contributions in terms of enhancing food security and alleviating poverty of the many millions, particularly in Asia, who depend on rice daily. As it commenced the review the Panel was apparently somewhat skeptical about the case for rice research. Following the review, the Panel believes that the case for a role for IRRI is compelling.

The Panel has made ten specific recommendations, and a number of suggestions scattered through the report. We agree that the recommendations are clearly aimed at strengthening the research and governance of the Institute. They also provide some important pointers in terms of strategy development and planning. In the main, we are pleased to accept and endorse these recommendations, with some explanation. We provide below our detailed response to each of the ten recommendations.

IRRI is a strong organization, with an important mission and mandate. The report of the 6<sup>th</sup> EPMR provides the Board of Trustees, Management, and all staff a strong platform from which to further develop our research agenda, for the crop that feeds half the world's population.

With kind regards,



Keiji Otsuka  
Chair, IRRI Board of Trustees



Ronald P. Cantrell  
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## Chapter 2

1. *The Panel recommends that IRRI stimulates the global community to establish gene-trait linkages in carefully selected germplasm in targeted way, as rapidly as possible, for purposes of plant improvement, making results available to all. IRRI should report to the Board of Trustees by April 2005 on its progress in implementing this initiative with its partners.*

### Response

We agree that IRRI should play an important role in focusing the research of the functional genomics community on the relevant germplasm and high-priority traits. We will use our relationship with the NARES to negotiate access to important relevant germplasm for advanced research institute (ARI) research. Through the International Rice Functional Genomics Consortium (IRFGC), Asian Rice Biotechnology Network (ARBN) and several special projects (supported by the Generation Challenge Program, BMZ, and SDC) we are pursuing the path recommended by the Panel. While the recommendation endorses our approach it also imparts a sense of urgency and a doubling of effort. IRRI can strive to be the lead research hub for stress tolerance in rice (biotic and abiotic) because of the combined expertise we have. For traits that we currently don't have a sufficient critical mass (e.g. yield potential, heterosis, nutrition) we will establish active partnerships to leverage external expertise and resources.

A number of initiatives will be implemented to expand and consolidate our role in linking functional genomics research to solving the problems of Asian rice farmers. Through the USAID-Linkage Program we will strengthen the IRFGC, and invest over US\$500,000 during 2004-2005 in nine laboratories in the US to contribute to the objectives of IRFGC. This will involve finding genes for stress tolerance (drought, diseases, salinity, submergence) and developing gene verification systems. Through the Generation Challenge Program and potentially the Grand Challenges in Global Health initiative, we will tap into genomics/molecular expertise of a wider group of ARIs (in addition to US), including, Japan, Korea, Europe, and the private sector (e.g. Perlegen) to focus on target traits. We will work with NARES to help create national functional genomics initiatives to capture the benefits of the new sciences and to provide a framework to link with IRRI activities. We have been successful in doing this in India, and we are now working with NARES leaders in Vietnam and Indonesia to develop something similar. The GAMMA (Gene Array and Molecular Marker Applications) lab functions as a state-of-the-art high-throughput facility for delivery of genes/alleles using the latest molecular technologies and serves as the focus for capacity building of NARES scientists through workshops and on-the-job training.

## Chapter 3

2. *The Panel recommends that IRRI links the work currently carried out in Project 5 with the challenge of achieving higher yields in the most intensive production systems in the context of diminishing water supplies. Further, IRRI should extend its modeling and GIS research to optimize water-saving technologies at the irrigation scheme level to provide options for water allocation.*

## Response

We agree that research in water management (project 5) to address diminishing water supplies must link with other aspects of natural resource management (project 4) and germplasm improvement (projects 3 and 7). Linkages between NRM and germplasm improvement for diminishing water supplies exist within IRRI, although they are not prominently displayed in the MTP. The development of innovations for diminishing water supplies must encompass the full scope of integrated germplasm, crop, and resource management that addresses such important constraints as weeds, nutrients, and labor and also utilizes appropriate tools to guide decision making. An important issue is “how to make integrated research for diminishing water supplies more visible without adversely affecting the overall integration of NRM and germplasm in Program 2, which might occur if research for favorable environments was split into parallel projects based on different levels of water availability”. We believe this is an important issue for consideration in IRRI’s strategic planning.

We agree with the second sentence, and we recognize it addresses two important issues: 1) target domains for water saving technologies and 2) interactions between the farm/field level and the irrigation system level. We believe there are opportunities in the future to link the identification of target domains with *ex ante* analyses on the extent of potential benefits of a technology. The identification of target domains for technologies is expected to increase in importance in the future as water saving technologies are increasingly ready for deployment. Working at higher scales of the irrigation systems was recognized as important (output 5.2 in the MTP), but due to diminishing resources within IRRI this topic was identified as a relatively lower priority for IRRI. We have opted to handle work at the systems level through collaboration with other organizations, such as with IWMI and CSIRO. We will continue to seek such collaboration through special project support in the future.

## Chapter 4

3. *The Panel recommends that IRRI includes the results of ex ante impact studies in unfavorable environments in its priority setting exercises. The existing evidence indicates that less emphasis should be placed on uplands with low production potential and more emphasis is needed on rice-based cropping systems along the toposequence and favorable non-flooded rice systems.*

## Response

We agree with the need for *ex ante* impact studies in unfavorable environments. Such a priority setting exercise, conducted in-house in 1997 for the preparation of the Medium Term Plan 1998-2000, supported the increased investment of IRRI’s resources in the unfavorable environments over the past review period. Because of limited resources, the level of detail presently used in *ex ante* studies is somewhat constrained.

In 1998, the budget of the upland program was \$2.6 million, representing 37% of the total investment in unfavorable environments. In 2003, the budget for upland research amounted to

\$0.83 million, which is around 8% of the total budget of Program 3. IRRI has already substantially reduced its investment in the upland areas, in compliance with earlier recommendations. We maintain this small but critical effort because the uplands represent the areas of greatest poverty and negative off-site environmental effects of rice cultivation. IRRI and collaborators have generated significant improved technologies and successful pilot studies since the last review that demonstrate development of interventions to address these problems. These include the case of upland rice intensification as an entry point for livelihood improvement and environmental protection in China, the success of IRRI's first generation aerobic cultivars from the upland breeding program in the Philippines, and development of novel cropping systems to deal with reduced fallow periods or permanent cultivation in traditional areas of shifting cultivation in the sloping uplands of southeast Asia.

Within the upland system, IRRI focuses on increasing productivity in comparatively favorable niches, allowing the most fragile areas to return to forest or pastoral uses. We address the issue of critical mass in our upland research by entering into partnership arrangements with national systems and ARIs. NARES have only begun to focus on the traditionally under-represented upland areas, where farmers have long been excluded from the benefits of research, during the last decade. IRRI supports NARES institutions in those areas through their inclusion in CURE – the Consortium for Unfavorable Rice Environments, and breeding networks. Donor interest in the uplands remains strong. This allows us to maintain linkages with ARIs and other CG centers as well, in order to address our upland research agenda.

## Chapter 5

*4. The Panel recommends that activities on 'Constraints to adoption of improved rice technologies assessed' in Project 10 and the entire Project 11 are transferred to Programs 2 and 3, while the rest of the activities in Project 10 be done in a new stand-alone Project, with Program 4 being dissolved.*

### Response

IRRI accepts the recommendation of relocating the project 11 to the ecosystem-based programs.

Most of the research activities on constraints to adoption of technologies are already built-in into individual projects within Programs 2 and 3. Two out of the five IRS in the Social Sciences Division have most of their time allocated for this task in the ecosystem-based programs. This remaining small resource (0.2 person years of IRS) in project 10 for conducting constraints analysis will be moved to project 8.

The Panel has observed that social science studies for understanding the context of rice research (monitoring developments in the rice sector, and generating primary data for understanding the role of rice production in rural livelihoods) are extremely useful and recommended that they be maintained as a stand-alone social science project. The panel also suggested that the knowledge dissemination, training, and NARES capacity enhancing activities of project 12 should form a separate cross-cutting service unit whose activities should be expanded greatly with diversion

of resources from conventional areas of scientific research. Our concern is how to maintain a stand-alone project and a service unit outside the structure of the MTP. Much of the progress made in the development of the Rice Knowledge Bank is because of the existence of the project that acted as a focal point for the distillation of knowledge that was seen as part of research on validation of technologies for fast tracking of impact. At present Program Leaders are responsible for the allocation of funds among projects. There is a risk that having no champion, these stand-alone units might receive low priority in the allocation of resources contrary to the suggestions made by the panel. The recommendation of dissolving the Program 4 therefore needs careful thinking. It will be taken up as an issue during the preparation of IRRI's next strategic plan.

## Chapter 6

5. *The Panel recommends that IRRI establishes a forum of rice growing countries with the purpose of financing and revitalizing INGER.*

### Response

We endorse the panel's recommendation on the importance of revitalizing INGER so that it will function effectively as the major vehicle for sharing rice germplasm and associated information. The rapidly changing intellectual property rights environment, the emergence of new breeding and evaluation tools, the increasing private sector participation in plant breeding, and the changing plant quarantine rules and regulations are the challenges that INGER should consider in the revitalization process. CORRA member countries and IRRI agree that a new mode of germplasm sharing that requires an expanded role for NARES in streamlining their nursery requests based on their needs and capacity and sharing of germplasm within their boundaries are in order. We recognize the need for stronger link between INGER and other programs that deal with germplasm exchange and evaluation to make use of strength of the network for deployment, testing and documentation of any type of germplasm and valuable biotechnology products and at the same gain insights on the genotype x environment (GxE) interaction. INGER and its partners see the need for a global information system such as the International Rice Information System (IRIS) that would handle breeding and evaluation data of NARES and CG centers working on rice for the benefit of rice breeders around the world.

6. *The Panel recommends that IRRI commissions a study, based on the vision of IRRI's role in 5-15 years, to assess the relative merits of the current model with some outreach activities, and the majority of scientists in headquarters, as compared with a model with increased outreach research staff in all those rice-producing countries where close proximity and visible presence are deemed necessary.*

### Response

We agree with the recommendation and plan to commission a study to evaluate the pros and cons of possible alternative models of locating IRRI's research activities, including the strategy of increasing out-posted research staff in rice-producing countries.

As noted by the EPMR Panel, as of Jan 2004, the majority of the IRRI IRS are based at the IRRI Headquarters and the research station in Los Baños, Philippines. Of the total 105 IRS, there are currently two core-funded and five project-funded IRS research staff located in Korea, China, Thailand, Bangladesh, Vietnam and Laos; and six (3 core-funded and 3 project-funded) IRS Liaison Scientist/Country Representative in Bangladesh, Laos, China, India and Indonesia. These out-posted staff account for 12.4% of the total IRS.

The Panel's recommendation concurs with IRRI Management's current thinking and plan to strengthen the institute's presence and research capacity at the strategically important countries and/or sites. An IRS soil scientist/agronomist will be posted in India in 2004. A new IRS breeder will be posted in Africa in 2005. We believe that there are increased need for IRRI to strengthen the dissemination of our research outputs to the NARES and to better capture the emerging new opportunities presented through NARES-initiated and/or donor funded projects, by locating IRRI staff in the region/country. A commissioned study will help IRRI to develop a better balanced model for locating research scientists at the HQ and outreach sites.

## Chapter 7

7. *The Panel recommends that, annually, the Nominating Committee develop a List of Trustee Competencies required by IRRI over the next 5 years and, on approval by the Board, develop its list of potential candidates accordingly. This List should also be a key input in the Board's decision as to whether a second term should be offered to current Trustees up for re-election. Automatic second term election, even where there are no adverse circumstances suggesting otherwise, should not be the norm.*

## Response

We agree with the recommendation to develop a list of Trustee competencies, reviewed annually, over the next five years and consider nominations, as well as, renewals in accordance with such list. IRRI notes that the recommendation reinforces the process that is currently in effect under the "Guidelines for Nomination and Election of Trustees" in the IRRI Board of Trustees Handbook.

8. *The Panel recommends that IRRI provide all members of the Finance and Audit Committee with:*

- i. a monthly Cash Flow forecast for the ensuing 6 months;*
- ii. monthly income and expenditure statements (with actual-vs.-budget comparisons and commentary);*
- iii. quarterly reports on project costs and revenues – highlighting those where cost under/over runs exceed 10%and articulating what management is doing to resolve the issues; and*
- iv. monthly reports on investment income compared to budgeted income.*

*All Board members should receive this same information on a quarterly basis, and all these reports should be available to Board members within 20 days of the end of the reporting period.*

#### **Response**

All members of the Board of Trustees currently receive a quarterly financial report, in addition to the Treasurer's reports in April and September. The contents of the quarterly report will be enhanced to include any additional items recommended by the Panel. The Board is of the view that, in the present circumstances, the enhanced quarterly report will be adequate to provide the information needed to fulfill its oversight and control responsibility. The frequency of the report will be reviewed as and when circumstances change.

9. *The Panel recommends that IRRI develop updated Investment Portfolio Guidelines that cover the broad spectrum of portfolio management guidelines typically addressed, including maturities; types of instruments; risk assessment, risk management and reporting; benchmarking arrangements; currency hedging arrangements; and the risk and portfolio reporting procedures for the FAC and the Board, for the External and Internal auditors, and for Management.*

#### **Response**

Steps are well advanced for the revision of IRRI's existing Board-approved policies. The draft will be tabled for approval at the September 2004 meeting of the Board. The suggestions made by the panel will be considered in the revision and the necessary external expertise will be sought and utilized if needed in finalizing the new investment policy guidelines.

#### **Chapter 8**

10. *The Panel recommends that Programs 2 and 3 become the flagships of IRRI's research effort, with strong and articulate Leaders, who should prioritise and implement integrated research within their assigned ecosystems. They will be IRRI's representatives in the Programs' research consortia and will be the spokespersons for their respective Programs. The Leaders have the following tasks:*

- i. When setting priorities they should evaluate alternative approaches to alleviating the poverty problems in their ecosystems, and recommend changes to project structure as needed.*
- ii. In implementing the research they should control the GOC and FTE inputs, and thus may negotiate for the human resources from all the Divisions as needed.*
- iii. At particular milestones during or at the close of their research, they should sponsor studies of the impact of their work.*

#### **Response**

We appreciate that establishing "flagship programs" would help to raise the profile, hence would hopefully increase future funding and enhance the programs role as the primary

channels of delivering information and IRRI research outputs to the beneficiaries. The concept merits a thorough deliberation during the next strategic planning and developing a new IRRI MTP for 2006-2008.

However, the justification for the concept is weakened when all three research programs, after Program 4 ceases existence as recommended by the Panel, are made “flagships” which would be inclusive of nearly all the research and delivery activities of the Institute. This may alienate other “non-flagship” activities and projects in the institute.

The Panel recommends three major tasks for the leaders of the Flagship Programs. In fact, these tasks are already, to a large extent, the roles and responsibilities of the Program Leaders in the current IRRI management matrix, although the way and the extent of implementing these responsibilities vary among the Program Leaders. However, the intention of the Panel recommendation to strengthen the role of the Program Leaders in developing the vision and the direction of the program, ensuring the relevance and enhancing the efficiency and the impact is well appreciated.