

Consortium Management Response to the External Review of GRiSP

The CGIAR Research Program ('CRP') on the Global Rice Science Partnership ('GRiSP') is one of two CRPs that started in January 2011 (with CCAFS) and was consequently in its 5th year of implementation when the evaluation was conducted, representing an appropriate period for evaluating a multi-institutional program. During the last 3 years, GRiSP has implemented a substantial restructuring process, moving from a thematic-based structure to a more multi-disciplinary approach with a more outcome-based program. The recommendations of the evaluation have taken into account these changes and the progressive CRP realignment from a commodity to an agri-food systems ('AFS') program on 'RICE' for the planned next generation of CRPs from 2017 – 2022 ('phase 2').

Four of the 14 recommendations have specific relevance for the Consortium in the discharge of its oversight responsibilities for CRPs under the CGIAR Consortium Constitution:

Recommendation 2, Quality of Science: Encourage and incentivize stronger research collaboration and joint authorship on similar subjects (especially among CGIAR partners), as a means to improve the overall quality of scientific output.

Consortium response: *Agreed.* The Elsevier bibliometric analysis focusing on CRP publications between 2012 and 2014 confirms that the rate of GRiSP publications arising from international collaboration is quite low (70.5%) when compared with other commodity CRPs (GL, L&F, MAIZE, WHEAT or RTB). Secondly, the analysis also demonstrates that the field weighted citation impact of the program-related publications, is also lower for GRiSP when compared with other commodity CRPs (MAIZE, WHEAT, L&F, GL). International collaboration and co-authorship on modern pre-breeding approaches (genomic selection, reverse breeding, genome editing, etc...) and/or multi-disciplinary research combining breeding with social, economic and natural resource approaches (see recommendation #1) on rice agri-food systems should improve the overall quality of science outputs and elevate the visibility of RICE in the science community in phase 2. In parallel, the Elsevier bibliometric analysis shows that GRiSP had the largest number of program-related publications (569) far ahead the other CRPs. The evaluation suggests that the improvement of the overall quality of scientific outputs "may lead to a decrease in the number of publications (in minor journal) but should increase the average quality of GRiSP publications". Considering this number of publications (569) and the number of researchers (108) involved in these program-related papers, the average of papers by GRiSP researcher is around 5.3, which is the CRPs average and at a level reasonably expected from a 95M annual program and one of the better funded through W1/2 (35% from GRiSP annual budget). The Elsevier analysis also highlights that 28 program-related researchers (18%) have not yet produced any publication within GRiSP, which is quite

surprising and should be investigated and addressed for RICE in phase 2. Taking into account that demonstrated quality of science will be an important component to be monitoring as part of CRP performance and may influence budget allocation, this is an important matter for the new System Office to monitor in phase 2.

Recommendation 3, Effectiveness: Articulate a strategy for scaling up and scaling out beyond its immediate beneficiaries, especially for management and postharvest technologies, coupled with capacity development of relevant partners.

Consortium response: Agreed. The precise understanding of the drivers and mechanisms for both the genetic and agronomic approaches allowing appropriate levels of adoption by million farmers in Africa and South Asia, will be a key issue for addressing credibly and significantly the 3 System Level Outcomes, or goals, during the phase 2 round of CRP Proposals. If the genetic side for the adoption of new improved varieties seems to be covered by the setup of innovative public-private consortia with national partners (e.g. Hybrid Rice Development Consortium), a deeper engagement with organizations with advanced capabilities on management of agronomic practices and postharvest technologies is needed.

The new RICE AFS proposal has to explain how the new scaling-out and -up strategy will be decided jointly with NARS – based on National Rice Development Strategy (NRDS) analysis - with a clearly approved partition of roles and responsibilities. In terms of capacity building/strengthening the needs for developers with multidisciplinary skills (market analysis, niche, innovation brokers, seed specialist, etc...) able to bridge the gap between research outputs and their adoption at higher scale as research and development outcomes, will need to be addressed with a stronger commitment from the CRP and identified funding. This is a matter of common importance for all the AFS CRPs that will need to be followed up by the System Office in phase 2.

Recommendation 6, Effectiveness: Increase interdisciplinary research, in order to deliver integrated solutions consistent with CGIAR's Intermediate Development Outcomes

Consortium response: Agreed. For phase 2, the flagship project 1 ('FP') is expected to foster more interdisciplinary research with biophysical scientists (especially in FP3 and FP5, through joint situation analyses, need and opportunity assessments, and technology evaluations). FP1 management will also encourage jointly authored (among CRP centers and ARIs), high-quality publications similar to a recently published article (Takashi et al., 2016) on the adoption and impact of international rice research technologies, co-authored by social scientists from IRRI, AfricaRice, and CIAT.

The need to undertake research in a complex systems approach is mentioned frequently in the Consortium's annual programmatic reports (see as example [CRP Portfolio Report 2014](#)).

A minimum of funding stability – mainly through Window 1 and 2 CGIAR Fund resources - may result in a certain ability to mobilize sufficient human resources with skills in interdisciplinary and transdisciplinary research, to provide a necessary complement to the solid cadre of more time-honored disciplines that the CGIAR has acquired over time. CGIAR's new 2016 – 2030 Strategy and Results Framework recognizes the complexity of the challenges ahead, the interconnections between productivity, sustainability and resilience with environmental factors, and the consequences of globalization. A transformative integration of many scientific fields (life, natural, social, human health, mathematical) through trans-disciplinary approaches has been shown to produce major improvements for and truly innovative solutions to large-scale, complex problems (e.g., National Academy of Sciences, 2014 need to cite in full). For phase 2, one recognized and efficient way to mobilize such skills is through appropriate cross-CRP collaborations, as recognized by a number of programs. This general recommendation is a matter of importance for the next portfolio and will need to be followed up by the System Office in the future.

Recommendation 14, Governance and management: The Consortium (W1) and the Fund Council (W2) should provide expanded and reliable core funding to GRiSP in order to take full advantage of the innovative scientific partnerships available for collaborative research, as envisaged in the SRF

Consortium response: Agreed, noting that at present, the Consortium has a responsibility to allocate window 1 CGIAR Fund amounts, but that within the governance system that exists at the time of writing this management response, the Consortium is prevented from raising an adequate amount of Window 1 funding to support CRPs, and is dependent on the resource mobilization efforts of others to deliver both window 1 and 2 funding. A major risk to the new phase 2 portfolio would be the persistence of the current lack of synchrony between timing and duration of funding and the long-term nature of CGIAR's research-for-development agenda. CRPs have been requested to provide proposals for multiyear research programs in keeping with an outcome-based research approach. However, funding from W1-2 is announced on a yearly basis and – in addition - started to decline from 2014 to 2016. This shortfall in W1-2 funds was absorbed by CRPs in different manners, and hundreds of scientific positions were closed and partnering contracts cancelled.

There are three particularly worrisome knock on effects of budget cuts in W1-2 of such amplitude.

First, funding from W1-2 provides crucial support for the core strategic research and the longer-term research of the CRPs. Cuts and uncertainty in funding from W1-2 shift attention of researchers to more reliably funded bilateral projects, and undermine multiyear research planning and the continuity of core research.

Second, CRP Management Committees are seriously weakened by the loss of flexibility because of the increased reliance on W3 and bilateral projects that are constrained by the agreement between the funder and the recipient Center. This leads to an increased focus on bilateral projects and a fragmentation of the research agenda of the CRP, reverting to pre-reform modes of functioning.

Third, announcements of significant decreases in budgets for strategic core research with relatively short notice damage the credibility of CRPs with their non-CGIAR partners, including the private sector, who are not used to this yearly and hard-to-predict variations in system funding.

In conclusion we fully support this recommendation and expect that in phase 2, CRPs will benefit from a more stable and longer commitment of funding from W1 and W2. The actual situation will need to be followed up by the System Office as an essential prerequisite if CGIAR is to pursue long-term mission orientated research in the next portfolio.

The Remaining 10 Recommendations of the Evaluation

The Consortium appreciates the CGIAR-IEA GRiSP Evaluation¹ and strongly concurs with the majority of the recommendations of the panel, as summarized as follows under the headings utilized in the evaluation itself:

Relevance

Recommendation 1: Take into account local institutional capacity for adaptive research, work with national partners to ensure that interdisciplinary research on the social, economic and natural context.

Consortium response: Agreed. Indeed in the new RICE proposal downstream research and development activities will be concentrated at action sites in five mega-rice-growing environments (mega-deltas and coastal zones, irrigated systems, rainfed lowlands, uplands, and inland valleys). At action sites, multidisciplinary teams from across the FPs will work together to develop inter-disciplinary, integrated and holistic solutions that are tailored to the needs of the intended beneficiaries. RICE is planning to setup key action sites in several countries in Asia (7), Africa (7) and LAC (3); 50% of these sites are part of the integration sites proposed at the system level which will allow RICE to actively collaborate with other CRPs and CGIAR centers through site integration/coordination. In addition, RICE FP3 will play a key role in such integration, aided by a specific cluster of activities (CoA 1.3) in FP1 that supports the development of collective innovations and multi-stakeholder platforms.

¹ <http://iea.cgiar.org/sites/default/files/GRISP%20Evaluation%20Volume%201Final.pdf>

Quality of Science

Recommendation 4: Towards a single integrated rice research program in Eastern & Southern Africa, coordinated by AfricaRice

Consortium response: Agreed. In Africa, National Rice Development Strategies (NRDS) have been developed under the Coalition for African Rice Development (CARD) with support from AfricaRice. These NRDS reflect national priorities and targets and are also aligned with overarching development frameworks such as the Comprehensive Africa Agriculture Development Program (CAADP). As of November 2014, NRDS have been validated in 22 African countries. Both AfricaRice and IRRI are members of the steering committee of CARD and have ensured that priorities identified in the NRDS are taken up in a single integrated rice research program (i.e. RICE). In addition, for phase 2, RICE will be managed by a Program Planning and Management Team (PPMT, as for GRiSP) chaired by a program director and with a representative from senior management of each coordinating partner, including the Deputy Director General of AfricaRice. Finally, AfricaRice will coordinate RICE FP3 on Sustainable Farming Systems and will lead in Africa research networks on the Africa-wide Rice Agronomy Task Force and the Africa-wide Rice Mechanization Task Force.

Recommendation 5: AfricaRice should modernize and intensify its rice breeding program; GRiSP core partners, especially IRRI, should give support to the African program, developing traits and elite populations targeting African needs.

Consortium response: Agreed. Nested Association Mapping (NAM) populations have been produced by CIAT and AfricaRice from 20 diverse crosses (4,000 lines total). It is a powerful design that allows ultra-fine mapping of QTLs. The NAM populations are expected to be sequenced under RICE FP5 (New rice varieties) in phase 2. However, many tools, knowledge and capacities still need to be transferred from IRRI to AfricaRice (e.g. genebanks, GIS or breeding data management, high density genotyping, high throughput phenotyping, pre-breeding approaches, etc...). These actions will need to be supported by an appropriate budget and the allocation of the 25% of the W1/2 GRiSP budget allocated to AfricaRice in phase 1 will need to be renegotiated for phase 2. The most efficient way to get AfricaRice actively articulated with all three proposed platforms – genebanks, genetic gains and big data & ICT - through RICE will need to be clearly explained.

Cross-cutting issues

Recommendation 7: Enrich the portfolio with new frontier and discovery research projects in partnership with ARIs, with the objective of exploring new concepts and tools to achieve research goals.

Consortium response: *Agreed* with the proposed approach, which is also in line with comments in recommendation 2 above. In the new RICE phase 2 proposal, new partnerships with ARIs are expected to be continuously explored and the related-details have been presented in each FP description. As an example, in order to enhance the quality of its science, the new RICE FP3 will expand partnerships with ARIs and universities such as CSIRO, Wageningen University, University of Leeds, AVRDC, and NIAES. CSIRO and Wageningen University will specifically strengthen RICE in systems analysis such as crop simulation models and farming systems analysis. FP4 will partner with Cornell University, University of Arizona, University of Queensland, The Genome Analysis Center, and Bayer Crop Science. FP5 will involve partnership research at ARIs across the globe on genomics, system biology, gene and gene network identification, and their use in precision breeding. Specifically with ARIs in China and India, FP5 will develop strong research partnership on C4 rice, germplasm sequencing, gene identification, population development, and trait development. At proof-of-concept level, FP5 will partner with ARIs on genomic selection, marker assisted breeding, trait development, design QTL. New suggestions such as genomic estimation of breeding values, shortening crop life cycles and novel breeding techniques like genome-editing and reverse breeding should be also considered. If efforts are planned for genome editing in the new FP4 (Global Rice Array), it seems that the value of [reverse breeding](#) is not very well-identified at the CGIAR system level. This technological knowledge gap could penalize the next AFSs – including RICE. This would be unfortunate as the owners of this breeding concept ([Rijk Zwaan](#)) are open to freely share their innovation with the CGIAR in order to produce innovative pre-breeding lines of interest in a faster and cheaper way (e.g. [new hybrids](#) or [complementary chromosome substitution lines](#)).

Recommendation 8: *In order to achieve sustainable outcomes from investments in institutional and human capacity development, support participating countries to develop long-term capacity building strategies and tailor capacity building support*

Consortium response: *Agreed.* Capacity development is expected to play a crucial role in strengthening the enabling environment along the whole impact pathway of RICE, from upstream research to large-scale delivery and adoption. In many target countries of RICE, the cohort of scientists is aging and the need for investments in individual science capacity development is high. The same applies to farmers and other value-chain actors who need training and retooling to become modern business entrepreneurs, especially women and youth.

RICE partners require institutional development on capacity in gender research and transformative changes, partnership skills, innovation, modern research methods, scaling, and monitoring, learning and evaluation (to name a few) . This strategy will be supported by a relevant funding request for phase 2 (10 to 15% of the RICE FPs' budget).

Recommendation 9: Undertake more in-depth analysis to understand opportunities and constraints of women in rice farming and value chains

Consortium response: Agreed. In the new RICE proposal, gender research has been strengthened to pay particular attention to gender issues upstream in the research-delivery pipeline, to conduct in-depth research on the role of women in rice farming and value chains, and to guide planning of research that explicitly incorporates gender dimensions in the early stage of technology design in RICE.

Impacts

Recommendation 10: Institutionalize a systematic process of assessing GRiSP equity, nutrition and environmental impacts at a global level, especially for its germplasm, employing the latest tools and methods to achieve credible standards of rigor at reasonable costs.

Consortium response: Partially agreed. We confirm the need to institutionalize a process for assessing impact through a systematic approach meeting current standards for impact evaluation; that should be designed and undertaken jointly between the CRPs, ISPC/SPIA, IEA and the future System Office. We also propose more frequent impact assessments as mid- and long-term processes in phase 2, particularly for fundamental outcome indicators such as “Number of farmers and others who have applied new technologies or management practices as a result of CRP research” and the “Number of hectares under improved technologies or management practices as a result of CRP research” as in table Annex 1 of the CRP Annual Report. However, regarding nutrition and environmental impact’s assessment at a global level, cross-CRP collaborations - mainly between RICE and A4NH, CCAFS or WLE – should be made much more efficient and reliable.

Governance and management

Recommendation 11: The Oversight Committee should define its processes of consultation for establishing global strategic priorities in rice research, and communicate this process widely to its stakeholders.

Consortium response: Partially agreed. From our perspective, the consultative process on National Rice Development Strategies (NRDS) for Asia, Africa and Latin America and Caribbean put in place under GRiSP through CORRA, NEC and FLAIR respectively was useful for this strategic prioritization exercise. These process will need then to be supported by the planned actions at the integration site levels in order to monitor and adjust these strategic research priorities. In phase 2, the new RICE Oversight Committee should design and propose new terms of reference (‘TOR’) as suggested by IEA to feed into the TOR of the new Independent Steering Committee (ISC) of RICE. Then the RICE Program Planning and Management Team

(PPMT) supported by a Program Planning and Management Unit, will be in charge of communicating this process widely to RICE' stakeholders.

Recommendation 12: GRiSP level external reviews of particular areas of research should be commissioned by the Oversight Committee in consultation with the Board Program Committees and managed by the program management unit

Consortium response: Agreed. Indeed this point was already mentioned in the Consortium comments on RICE pre-proposal in October 2015. We also recommend clarification of the interconnections between the Oversight Committee and their respective roles regarding the results based management framework implementation and monitoring, evaluation and learning, with particular emphasis on learning.

Recommendation 13: Review and clarify the roles and expectations of its non-CGIAR partners (JIRCAS, IRD and CIRAD) in governance, management and research implementation

Consortium response: Agreed. The desirability of having the non-CGIAR centers (Cirad, IRD, and JIRCAS) present in the management team of the new program was a key question discussed in GRiSP and then for preparing the RICE phase 2 proposal. In line with IEA recommendations, the roles of non-CGIAR partners in research implementation have been made explicit in the RICE full proposal. Indeed, non-CGIAR participating centers lead specific clusters of activity and coordinators in those institutes will be appointed and have a separate coordination budget. IRD will co-lead (with JIRCAS) the cluster of activities on “biotic rice-plant interactions” (FP4.3) and will co-lead with Cirad the “Big Data integration platform” (FP4.5).

Consortium Assessment of the CRP Management Response

We concur with the GRiSP management response to the IEA report and associated action plan. Indeed many of the recommendations have been translated into actions already incorporated into the phase 2 RICE full proposal. Most of the recommendations (#1, 2, 6, 7, 9, 11 or 13) are taken into account and quoted with the relevant related-actions in the RICE full proposal. However other strategic recommendations related to scaling-up and –out (#3), increased resources and Centers' commitment with Africa Rice (#4 and 5), or long-term capacity building strategies (#8) are less clearly approached in the RICE proposal for phase 2. Consequently, the follow-up of these recommendations will need to be carefully considered during the review and approval processes for the RICE proposal for phase 2.

The Consortium thanks the evaluation panel Chair and his team for producing a well-argued and readable report of utility to both the GRiSP CRP and its staff and stakeholders, together with clear guidance for the development of the phase 2 RICE phase 2 proposal.