

Consortium Management Response to the External Review of RTB

The CGIAR Research Program ('CRP') on Roots, Tubers and Bananas ('RTB') is one of the commodity CRPs dealing with specific challenges such as (i) integrating six different crops - all of them clonally propagated - in a unique program; (ii) identifying key priorities for research in the multiplicity of combinations between [crop x traits x users] for breeding in parallel with the diversity of related crop management approaches; and (iii) setting up and implementing a substantial restructuring of the program, moving from a thematic-based structure to a multi-disciplinary, integrating and outcome-based program. The recommendations of the evaluation have taken into account these specificities and the successful RTB realignment in Phase 1, very transparently mentioned in the RTB Annual Reports 2012-14 and the Extension Proposal for 2015-16. Substantial analysis and concrete proposals have been synthesized by the panel and are introduced adequately and contextualized in the text of the Evaluation Review.

Three of the 16 recommendations have specific relevance for the Consortium in the discharge of its oversight responsibilities for CRPs under the CGIAR Consortium Constitution:

Recommendation 3, Relevance: More strategic allocation of W1/2 funds based on program priorities and performance

Consortium response: Agreed. This recommendation will need to be part of the review process for the new RTB proposal for the 2017 – 2022 implementation period ('phase 2') to ensure strategic allocations of W1/W2 funds. The Consortium considers that there are several examples where this may be appropriate. For example, with the main objective of boosting innovative pre-breeding approaches, conducting field screening of genebank accessions for specific crops, selecting traits and locations of interest (where these are not necessarily W3 or bilaterally funded), testing multi-disciplinary integrated approaches combining host plant resistance and on-farm management practices, understanding the mechanisms and practicalities for up-scaling RTB technologies or securing the implementation of RTB Result-Based Management framework.

Recommendation 5, Quality of Science: Increase high quality science publications

Consortium response: Agreed, and will need to be closely monitored as part of the ongoing CRP performance monitoring program. The Elsevier bibliometric analysis (2014) identified this as a weakness. In addition, the Elsevier Report identified that between 2012 and 2014, the number of program-generated publications (147) by researchers (60) gave an average of 2.5 papers per RTB researcher, which is quite low when compared with other CRPs. In this analysis, 14 program-related researchers have not yet produced any publication within RTB, probably because of the quite recent starting date of this program (January 2012). Taking into account that quality of science will be even more important for monitoring CRP performance and budget allocation, this is a crucial matter to be followed up by the System Office in phase 2.

Recommendation 7, Quality of Science: Modernizing and strengthening RTB breeding programs

Consortium response: Agreed. This recommendation is a matter of importance for the proposed eight agri-food systems programs ('AFS') and will need to be closely scrutinized during the full proposal review process in advance of System Council approval later in 2016. The review should focus on the clear connectivity of the AFS programs with all three proposed platforms.

The Remaining 13 Recommendations of the Evaluation

The Consortium appreciates the CGIAR-IEA Evaluation of CGIAR Research Program on Root Tubers and Bananas¹ 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: Enhance integration beyond individual time-bound projects on the same topic (e.g. crop or trait)

Consortium response: Agreed. The essence of the CRP in bringing together research on these several commodities is to look for complementarities between Centers' activities – and other stakeholders' inputs - with the aim of creating synergies and avoiding redundancies to improve efficiency at the program level. This recommendation is of importance to RTB with four CGIAR Centers participating (CIP, Bioversity, CIAT and IITA) and a 6-crop mandate. It is similarly applicable to this multi-crop AFS CRP in phase 2 and - more generally - to emerging CRPs such as the phase 2 Dryland Cereals and Legumes AFS proposal with eight legumes and four cereals in phase 2.

Recommendation 2: Improved congruence between Clusters of Activities and the flagship project problem definition

Consortium response: Agreed. The restructuring of the program into inter-disciplinary and integrated flagship projects ('FPs') compared to the old theme-based structure was a long and complex process that satisfactorily concluded with a more coherent RTB CRP pre-proposal for phase 2. The resulting FP2 and FP3 are extremely inter-disciplinary with CoAs mixing breeding approaches and agronomic practices. For example, the FP2 on "Adapted productive varieties and quality seed of RTB crops" proposes to develop new hybrids in banana (BA 2.2), cassava (CA 2.3), sweet potato (SW 2.6) or yam (YA 2.7) in parallel with actions focusing on markets' needs and preferences in banana (BA 2.2) or Integrated approaches for potato seed quality (PO 2.4). The congruence between CoAs and FPs has also been improved for FP1, 4 and 5.

¹ <http://iea.cgiar.org/sites/default/files/RTB%20Evaluation%20Final%20Report%20Volume%20I.pdf>

***Recommendation 4:** RTB should use priority assessment results for setting program priorities and in program planning, including fundraising.*

***Consortium response:** Agreed.* A substantial prioritization exercise was carried out by RTB in 2012 through an online expert consultation in coordination with the most important regional organizations in Africa (ASARECA, CORAF, CCARDESA), Latin America (IICA) and Asia. Five key options combining crops and traits/technologies were identified (more than 1,680 responses), and have guided the selection of prioritized Clusters of Activities ('CoA') in the RTB proposal for phase 2. The results of this survey are integrated and translated into the new articulation of the RTB pre-proposal for phase 2, based on RTB stakeholders' prioritization effort. The follow up of these priorities at the regional level will be facilitated in phase 2 by the new proposed FP5 (RTB pre-proposal) which includes four geographically based CoAs on mix RTB crop-tree-livestock farming systems, which are inherited from the disrupted HumidTropics CRP.

Quality of Science

***Recommendation 6:** Play a more active role in monitoring of quality of science implemented and generated by the program*

***Consortium response:** Agreed.* For the RTB program to be responsible for the quality of science implemented and generated by the program: (i) additional strategic alignment needs to take place between the participating Centers' strategy – including for quality of science - and the strategy of the CRP to which the Center contributes; and, (ii) the repartition of roles and responsibilities has to be very clearly designed between the individual Centers responsible for the performance of their contracted scientists. Better alignment will probably result in future bilateral grants being designed to contribute to a CRP – RTB in that case - and would help to reduce the 'tension' between the use of bilateral funds and the use of W1-2 funds by the CRP. Overall performance is yet broader than this, including other external stakeholders (ARIs, NARS, private companies, etc...) not just Centers' scientists. In terms of management, the CRP Management Unit will need to include FP leaders, experienced senior research staff and top quality collaborations with ARIs with the aim of delivering high impact publications. The MEL specialist (Monitoring, Evaluation and Learning) – theoretically a member of the management unit - will need to be deeply involved in the CRP performance assessment, including obviously the Quality of Science as a key criterion.

Effectiveness

***Recommendation 8:** More efficient last mile delivery (NARS/consumer needs)*

***Consortium response:** Agreed.* By being more selective regarding the number of [crops x traits x users] the program will be able to commit jointly with NARS on the delivery of a few products (2 to 3) for each of the RTB mandate crop. The corresponding adoption strategy will be decided jointly with NARS with a very clear and 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 (after the concept test is proven) and their adoption at higher scale

as research and development outcomes, will need to be addressed by the NARS with a stronger mid- and long-term support and commitment from the CRP and - a point probably seconded by most of the development agencies - with the corresponding sustainable W 1/2 funding.

This is a **common matter of importance for all the AFS CRPs** that will need to be followed up by the System Office in phase 2.

Recommendation 9: Set up a researchers' community of practice cutting across all RTB crops

Consortium response: Agreed. The Consortium strongly supports the setup of such a community within RTB breeders and scientists with the aim of sharing ideas on methods, data, results and user feedback. That could lead to integrated data platforms, inter-Center working groups on traits or enhanced inter-disciplinarity between lab-genomics and field-breeding. This community should include the new pre-breeders in order to secure the fluent connection with the genebanks' scientists at the platform and Centers/CRP levels and with the genetic gains and Big Data platforms.

Adopting a similar approach, a community of scientists covering the existing seven commodity CRPs was created in June 2014 during the CRP leaders meeting (Montpellier; France) with the aim of sharing information, insights, experience and tools in an area of common interest linked to breeding or plant science. Based on its terms of reference, the proposed "Genebank & Commodity CRPs CoP", focused either on a professional discipline (managers, principal investigators, pre-breeders, breeders, other scientists, etc...), on a skill (program/project management, molecular biology, cell biology, quantitative genetics, pathology, bioinformatics, IT systems/data management, genebank collection/characterization, etc...), or on a topic (specific crop, Genomic Selection, GWAS, QTL mapping, cryo-conservation, double haploid production, TILLING, etc...).

The Consortium recommends that linkages amongst RTB scientists are enhanced within the framework of a Community of Practice.

Recommendation 10: Establishment of economically sustainable seed systems for RTB crops

Consortium response: Agreed. That is a key requirement for RTB as well as for all the current commodity and next AFS CRPs. For RTB the Consortium strongly supports the idea to hire a senior specialist in seed system analysis with technical skills in multiplication of vegetatively propagated crops and expertise in quality control for RTB seeds. Pathogen detection, germination and vigor testing, genetic purity control, seed lots homogeneity, seed treatment, packaging, labelling and logistic for distribution need to be addressed in order to establish a sustainable seed systems for RTB crops in phase 2.

Key strategic questions on seed system also need to be handled by this expert - probably in collaboration with the private sector. Region-specific information on market demand for RTB seed/crops will help to determine the types of products to be developed, or to identify farmer response to the range of products under development. The combination of seed-system analyses and country case studies along the 'seed value chain' will allow RTB to identify

systemic bottlenecks, and facilitate jointly with NARS the formulation of robust policies and strategies for specific country situations.

The Consortium recommends that this position and the coverage of these areas should be made evident in the forthcoming phase 2 CRP.

Recommendation 11: Better integrate research on crop improvement (breeding) and crop management

Consortium response: Agreed. The Consortium appreciates the huge effort that has been made in rebalancing crop improvement (breeding) and agronomic practices related to crop management in the new RTB preproposal for phase 2, mainly for FP2, FP3 and even in FP4 by including the contribution of post-harvest and processing technologies for bio-fortified cassava and sweet potato. We also fully agree with the panel on the key principle indicating that “narrowing the yield gap for farmers may require rebalancing the RTB portfolio towards agronomic and soil fertility research”. Unfortunately, the second research topic on soils is still missing in the RTB pre-proposal and could be developed, potentially in collaboration with the Water, Land & Ecosystems CRP.

Recommendation 12: Increased focus on post-harvest research on the crop-specific aspects of value chain improvements that can deliver added value (link to generating global public goods)

Consortium response: Partially agreed. The urgency for further work in this area seems reduced, mainly because, as previously explained in response to recommendation 12, the Consortium considers that the program has made huge effort to include innovative, demand-led, postharvest technologies in the newly proposed FP4 (“Nutrition food and value added through postharvest innovation”) in their new proposal for phase 2.

Gender, capacity development and partnerships

Recommendation 13: Secure adequate resources to develop and implement the needed strategy for communication and knowledge management

Consortium response: Agreed. The last three years, RTB has made a commendable effort to increase its visibility by communicating on program’s activities, outputs and outcomes, through an efficient communication and knowledge-sharing website. The next step will probably be a better coordination between the RTB knowledge management (KM) strategy and the implementation of the Open-Access and Open-Data policy approved by the Centers in 2014. In phase 2, RTB will probably have a leading role in the design of the best tools/platforms and processes for integrating the genebank information with their genomic databases (e.g. excellent Cassavabase, Musabase, etc...) probably in collaboration with ARIs (e.g. BTI) and including the phenotyping and agronomic data.

Impact and sustainability

Recommendation 14: RTB impact assessment ('IA') plan at the CRP level.

Consortium response: Agreed. This IA plan has to be probably designed by the MEL specialists and directly linked with the monitoring and evaluation criteria. RTB should also apply lessons learnt from the SIAC program (Strengthening Impact Assessment in the CGIAR, 2015 Progress Report) - mainly on the advance methodologies for tracking the uptake and adoption of improved cassava varieties in Ghana – which shows that GBS (Genotyping by Sequencing) is becoming increasingly affordable in variety identification for adoption studies.

Governance and management

Recommendation 15: More clarity to the respective roles, relationships and accountabilities of FP leaders, cluster leaders and project leaders within the management structures

Consortium response: Partially agreed. RTB is probably one of the clearest and most efficient program in terms of CRP Management Unit governance and role. The project management unit and CRP leader should be congratulated for their transparent and fair management system that was well appreciated by FP leaders, IPs from external partners (CIRAD) and Centers in phase 1 and should be taken as a model for phase 2.

Recommendation 16: Greater description of partners' involvement in management & governance

Consortium response: Partially agreed. In phase 1, RTB put emphasis on strengthening partnership amongst the four Centers and CIRAD making up the programmatic approach. Partners are well represented in the CRP management unit and the steering committee. Collaborations with NARS for sharing technicians or jointly publishing with national scientists is well established. Obviously, the program could go further in phase 2 by handling of joint appointments, handling joint undertakings and codes of conduct in program participation. The conclusion by the panel that boundary partners of RTB are not sufficiently aware of RTB's roles and activities, is very likely applicable for a number of other CRPs. The Consortium recommends that boundary partners as well as donors (Fund donors and bilateral donors) have to be better included in priority-setting and implementation of the CRP in phase 2 through an action plan aimed at: (i) raising the awareness of boundary partners; (ii) better understanding the concrete needs of strategic partners and boundary partners; and (iii) better communicating with its key donors about the synergies the CRP creates through closer integration of bilaterally funded projects with W1-2 funded work.

Consortium assessment of the CRP Management Response

As identified in the commentary above, the Consortium largely concurs with the RTB management response to the IEA report and associated action plan. Indeed many of the recommendations have been translated into actions incorporated into the phase 2 RTB full proposal.

Recognizing that RTB itself says that they are bringing many changes into the phase 2 proposal, the one area that we believe is deserving of particular additional scrutiny as the evaluation of the full proposals proceeds, is recommendation 7 – modernizing and strengthening RTB breeding programs. The Consortium believes that there is greater potential in phase 2 to adopt novel breeding techniques based on genome editing and reverse breeding. Adoption and testing of these new technologies will also help improve the quality of science publications (recommendation #5 above).

The Consortium thanks the evaluation panel Chair, Dr. Jillian Lenné and her team for producing a well-argued and readable report of utility to both the RTB CRP and its staff and stakeholders, together with clear guidance for the development of the phase 2 program.