

## **ISPC Commentary on revised CRP3.1: “WHEAT - Global Alliance for Improving Food Security and the Livelihoods of the Resource poor in the Developing World”**

*(CRP Revision of August 2011)*

### **Summary comments**

In its commentary on the original CRP3.1 proposal the ISPC acknowledged the importance of wheat as one of three major global food security crops, the long standing role and track record of CGIAR Centers involved in wheat research, and the magnitude of the challenges to safeguard and increase wheat productivity. However, the ISPC and Fund Council (FC) also raised several issues and suggested they should be addressed before full endorsement. The main issues of concern included: (i) prioritization of activities so that funds could be optimally focused over the longer term on areas with greater CGIAR comparative advantage and plausibility of impact; (ii) the need for more evidence and understanding about some of the drivers underpinning the priority challenges that the program proposes to address through research and partnerships; (iii); greater clarity on outcomes and transparency of program-level impact projections; (iv) a more explicit management design tailored to the CRP aiming at efficiency, effectiveness and synergy among partners, particularly the two CGIAR Centers that deal with wheat.

In the revised proposal the issues highlighted in the list of “must haves” have been addressed through a number of modifications to the text, tables and annexes of the proposal. In some cases these changes provide better insight into the underpinning justification and prioritization processes used to set the research agenda. However, it is notable that the responses did not include any substantive changes to the priorities, scope of work, or outputs. It does not seem that further analyses were done and the research content has been defended rather than adjusted on the basis of analysis. The proposed agenda remains very broad, and the individual Strategic Initiative (SI) budgets have not changed.

The bottom line is that ISPC reiterates that the issues raised by the “Must Haves” in the original review by the ISPC and the Fund Council were substantive and that addressing them will help ensure larger impact through a more focused set of activities. The program budget is projected to remain about 30% core/70% bilaterally funded and for 2011-13. About 62% of the bilateral funding is new and has not yet been secured. The ISPC believes that a greater readiness and capacity to prioritize would help the proponents procure longer-term funding stability in a still uncertain funding climate. Therefore the ISPC continues to emphasize the importance of the CRP conducting careful analyses in the initial year to help set priorities.

A critical issue for the CGIAR remains the extent to which CRP3.1 will sufficiently integrate its research with other CRPs, particularly those seeking impact at a systems level where WHEAT research is relevant and results are targeted. The ISPC believes the articulation between CRPs is essential for the CGIAR System to become more effective in addressing the SLOs. In the WHEAT proposal, interactions with CRP 2 and CRP 7 are indicated but more

active engagement with the system CRPs (CRP1 series) and CRP 5 and 4 is desirable at this early stage of CRP development to maximize potential for efficiencies and synergy.

In conclusion, the ISPC believes the revised CRP 3.1--WHEAT represents a program area worthy of CGIAR investment although some of the critical issues related to priority setting (“must have” #1) remain to be addressed. While the ISPC **recommends** that CRP 3.1 WHEAT be approved, there is an expectation that this priority setting will be carried out in the first year of CRP implementation based on the kind of analysis requested in “must have” # 2. Given the long history of wheat research, much of the quantitative information needed for prioritization should be available. It is also critical that the issues of CRP integration, which cannot be fully addressed immediately because the system CRPs (series 1) are still at design stage, be given high priority by the Consortium and be monitored by the Fund Council.

The ISPC’s comments on the individual “must have” requirements are presented in the Table on the following pages:

### Detailed ISPC comments on each of the “must haves” for CRP 3.1

Requirement	Response	ISPC commentary
<i>From ISPC</i>		
<p>1. Clear prioritization among regions, mega-environments and alternative research interventions focusing on where there are greatest opportunities to address CGIAR System-level outcomes, comparative advantage, and probability of impact.</p>	<p>In the introductory section, we improved the description of where WHEAT engages and capitalizes on wheat research in advanced economies. While the focus on the four ME’s (ME1, ME2, ME4, and ME5) and its justification (which relates to number of poor, comparative advantage, and likeliness of success) was already included in the earlier version, the target beneficiary section has been further revised and a regional/country-specific prioritization included in Table 2. The criteria used to set priorities are: prevalence of poverty (number of people with income below US\$2 per day), importance of wheat (calories / capita from wheat), number of people depending on wheat as important calorie and protein source, and the availability of alternative suppliers for wheat technologies. Table 2 presents the WHEAT prioritization based on megaenvironment (ME); related wheat area; affected population earning less than USD 2 per day; and associated representative locations.</p> <ul style="list-style-type: none"> <li>• High priority megaenvironments and regions: ME1 (affecting 556m people earning less than USD2 per day in West and South Asia, Egypt and Mexico); ME2 (affecting 107m people in East and North Africa); ME4 (affecting 75m people primarily in CWANA and India); ME5 (affecting 238m people primarily in South Asia); and ME12 (affecting 14m people in CWANA and China).</li> <li>• Medium priority megaenvironments and</li> </ul>	<p>The mega-environments provide a suitable framework for prioritization but Table 2 remains at a generic level. The Table contains new information about major biotic and abiotic stresses and an expanded section on climate change consequences. Elsewhere in the report the action plans allude to the need to provide more evidence to support priority setting. For instance, a revised output for SI1 (Technology targeting for greatest impact) is <i>Guidelines for refining WHEAT research priorities</i>.</p> <p>Annex A. is a useful addition although some of the areas identified for research outside of WHEAT are areas that unlikely would have been considered to be included, such as research conducted in developed world addressing developed world issues.</p>

	<p>regions: ME6 (affecting 10m people in China, Kazakhstan and Siberia); ME7 (affecting 89m people in CWANA and China); ME9 (affecting 7m people in CWANA); and ME10 (affecting 66m people in CWANA and China).</p> <ul style="list-style-type: none"> <li>• Low or no priority megaenvironments and regions: ME3 (affecting 16m people in Brazil); ME8 (affecting 2m people in Chile and Turkey); and ME11 (which primarily affects Europe and North America).</li> </ul> <p>Table 1 and Table 2 provide detailed information regarding the importance of each of these criteria for each geographic region and mega-environment. Annex A has been added as an account of a much wider list of research areas, among which those included in WHEAT were selected. Biotic stresses are further prioritized in Table 5.1 based on the area where they occur and the potential economic losses they cause. Regional priorities of abiotic stresses for wheat production are presented in Table 6.1. Priorities were based on refereed journals, expert opinions, country reports from national wheat programs, and data presented at conferences on specific diseases. WHEAT’s SI 1 will continue to work with CRP 2, CRP 7, and other WHEAT SIs to continually inform and update research priorities and strategies to maximize impacts. The text of WHEAT v7 has been modified, reflecting requested changes in:</p> <ul style="list-style-type: none"> <li>• Section 2 was rephrased to portray our pro-poor strategy more succinctly.</li> <li>• Table 2 was updated to better reflection WHEAT priorities.</li> </ul>	
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	<ul style="list-style-type: none"> <li>• In SI 4, a paragraph was added (and text was replaced) outlining clearer priorities by mega-environment and targeted country or region.</li> </ul>	
<p>2. Careful analysis of: (i) linkages between production and consumption and the benefits to poor farmers and consumers; (ii) causes of the overall decline, and in some countries plateauing rates of wheat yield gains; (iii) scenarios resulting from climate change that affect wheat production and consumption.</p>	<p>The Target Beneficiary section has been expanded to include an explication of the proportion of production and poor located in low, lower-middle, upper-middle, and high -income countries. Additional references have been included in the box describing climate change impacts on wheat and the description of key drivers of change has been strengthened in the introduction and target beneficiary section. Drivers of change remain qualitative, in particular the influencing factors of the recent food price crisis which demonstrated that realities have overtaken out-dated perceptions on where the comparative advantage of wheat production may be (wheat yields are plateauing in high income countries and increasing in developing countries) and also highlighted the role of risk versus average production. Sections have been added that clarify:</p> <ul style="list-style-type: none"> <li>• Quantifying the interrelationships between local price realities, the impact of climate change, water and fertilizer costs and availability, the push for more rainfed production, the role of biofuel friendly alternative crops, political stability and policies (applicable not only to wheat but other crops affected by biofuel, import, and export policy), and the difference between economic attainable and theoretical yield levels remains a significant and ongoing research endeavor and will be addressed in</li> </ul>	<p>The revised proposal now provides a clearer framework for the prioritization based largely on Mega Environment, distribution and occurrence of poor wheat producers and consumers, and alternative suppliers. Likewise, the discussion of potential climate change impacts on wheat production is more thorough, although better understanding of the implications on wheat demand and productivity is needed for updating the prioritization. In addition, the revised proposal now clearly recognizes the importance of poor wheat consumers as beneficiaries of CRP3.1 research, outputs, and outcomes. In fact, it is now stated that poor wheat consumers outnumber resource-poor wheat producers by a 10:1 margin (Section 1.3 on Targeted Beneficiaries, pg 10). Despite this recognition, however, there is no proposed effort to better understand how research outputs from the 10 strategic initiatives will impact <i>this</i> key beneficiary group. The ISPC believes that such work remains a “must have”. With regard to plateauing of wheat yields, the proponents claim that such trends are only occurring in high-income countries and thus, by inference, not a concern to CRP3.1. In fact wheat yield trends in India are showing statistically significant indications of reduced growth rates at yield levels that appear to be well below potential attainable yields. Understanding the biophysical and socio-economic reasons underpinning this slow down would seem to be of critical importance to research prioritization in CRP3.1.</p>

	<p>SII and in collaboration with CRP2.</p> <ul style="list-style-type: none"> <li>• The focus cannot be on comparative advantage alone, but must include both risk management of global supply and also the need for social stability requested by major wheat consuming countries in the developing world.</li> <li>• Considering, in aggregate, the target areas (four ME's), the more detailed geographic and income related information, the improved description of where WHEAT engages viz research in first world countries, and the choice of 10 strategic interventions that were influenced by the feed-back of hundreds of partners, the document provides our best assessment of research focus while respecting activities in other CRPs (in particular CRP2).</li> </ul> <p>The text of WHEAT v7 was changed in:</p> <ul style="list-style-type: none"> <li>• Section 3 reflecting drivers of change that will affect WHEAT.</li> <li>• Socio-graphic data presented in Tables 1, 2, and 3.</li> <li>• Table 2 to reflect climate change scenarios.</li> <li>• More succinct targeting and prioritization throughout the document.</li> </ul>	
<p>3. Development of realistic outcomes at the strategic initiative (SI) level and impact projections at the program-level with transparent metrics and sources of data to justify these targets and appropriate</p>	<p>We have included footnotes to Table 3 and clarified previous ambiguity by tabulating all outputs against dated milestones to assure they clearly lead to outcomes. Outcomes have been defined and verified through feedback from NARS. While individual estimates are affected by large variation – as with any other research endeavor – when taken in</p>	<p>In SI descriptions output and milestone timeframes are now presented in tables (outcomes not) but there are very few changes to the information provided earlier. Section 4.1 cannot be found.</p> <p>The footnotes in Table 3 clarify the parameters used and some of the underlying calculations.</p>

<p>assumptions.</p>	<p>summary they do provide an estimate for the aspirations of WHEAT’s stakeholders that are quite similar to published past impacts. Improved estimates for each SI will be derived from iterative research feedback, research in SI 1 (technology targeting for greatest impact), through work with CRP 2 (policies institutions and markets), and CRP 7 (Climate Change).</p> <p>WHEAT v7 has been altered to reflect changes in:</p> <ul style="list-style-type: none"> <li>• Table 3, with added footnotes</li> <li>• Text added and edited in section 4.1</li> <li>• Outcome and Output tables added to all Strategic Initiatives</li> </ul>	
<p>4. Better elaboration of what is new in the proposal relative to current research efforts within the CGIAR and elsewhere; and what is the level of risk regarding the proposed research.</p>	<p>The description of individual SIs has been improved. Risks of not achieving project goals and outcomes are discussed. Furthermore, the risks associated with WHEAT’s research approach, organization, and funding are presented. Chapters 2 and 3 have been divided into 2.WHEAT Strategy Overview and 3. The Strategic Initiatives – Genesis, Innovation and Expected Impacts, providing a detailed account of innovations per Strategic Initiative. Chapter 4. Institutional Innovations provides an overview of institutional innovations. Throughout the document we strive to highlight these new approaches and research used in WHEAT. A sample of these innovations includes:</p> <ul style="list-style-type: none"> <li>• In the past, partnership interactions primarily occurred while cooperating across a large number of individually-funded donor projects. Using a more systematic approach of SIs, WHEAT will streamline and better focus partnership interactions by implementing a sequence of actions typical</li> </ul>	<p>The changes are mostly editorial. For only one SI (SI9) a brief section on <i>Risks and opportunities</i> has been added. The ISPC agrees that a major “newness” would come from more secure and longer-term funding of less restricted nature than in the past, allowing more coherent program design, and better ability to adjust the program and manage the partnerships</p>

	<p>of participatory, multi-partner programs (Figure 9). Examples include annual collaborative research planning and review meetings (specific to one or several Sis) and prioritization across the entire WHEAT agenda, participatory priority setting using impact pathways, and a stronger peer-review of past and proposed contributions.</p> <ul style="list-style-type: none"> <li>• The overall objective of SI 1 is both to provide a social science context for WHEAT and also to complement and enhance the relevance and effectiveness of the work in the other SIs. The SI will implement new approaches to strategic socioeconomics research. Together with CRP2, SI 1 intends to affect policy change at both the international and domestic level.</li> <li>• SI 2 takes a systems approach that more strongly links field level with farm level and value chain research. It also links with the mobile phone industry for research and development of community systems to supply information to farmers.</li> <li>• SI 4 and SI 7 will employ take wheat breeding to the cutting edge of genome-wide selection, high-throughput marker-assisted selection, and advanced statistical analysis of multi-location evaluation data with a particular focus on complex traits such as grain yield under optimum drought and heat conditions.</li> <li>• What is “new” is not always enticing. Crops are grown in dynamic biological systems. Resistance to diseases and pests, based on native genetic variability, risks the</li> </ul>	
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	<p>breakdown of enduring sources of resistance, as was evident in 1999 with the discovery of a new, virulent form of wheat stem rust. This “new” race resulted in millions of hectares of wheat becoming highly susceptible to wheat stem rust after more than 30 years of durable resistances being deployed worldwide. It is certain that SI 5 will encounter new diseases and pests. Strategies will need to be devised for each, on a case-by-case basis, and suited for sustainable agriculture by small-holder farmers.</p> <ul style="list-style-type: none"><li>• Through more diverse seed systems SI 8 will deliver improved seeds to farmers encouraging broader public and private participation as well as alternative and innovative seed production and marketing by farmer groups and communities.</li><li>• SI 9 uses the most cutting-edge molecular genetics technologies to characterize the CIMMYT and ICARDA held wheat collections. These technologies generate data in such quantities that no existing data management system is capable of organizing the information into user accessible formats. A large portion of the funding attributed to SI 9 will go to the development, often using existing open-source components, of systems capable of managing the volume of data.</li><li>• The strategic focus on gender is a new paradigm for many of those involved in WHEAT, particularly those from more conservative, paternalistic societies.</li></ul>	
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	Agriculture is now recognized as a key pathway out of poverty for many women. WHEAT will go beyond gender analysis and seek impact pathways that particularly strengthen the role of women.	
<i>From Fund Council</i>		
5. Elaborate of how counterfactual and attribution issues will be addressed in the <i>ex post</i> impact assessments at scale.	A discussion of how we will address counterfactual and attribution issues in <i>ex post</i> impact assessment has been added to the text of WHEAT v7 in Box 4 and Annex B. The key quantity that impact evaluation studies attempt to estimate is the <i>average effect</i> of adoption on outcomes for adoptees. This is known as the average treatment effect on the treated (ATT). Because of the selection effect (the presence of systematic differences between comparison groups in ways that affect both treatment status and the outcomes from treatment), the main challenge is to establish the proper counterfactual group against which to compare adopters (de Janvry et al. 2011).	There are no changes in Box 4. The new Annex B focuses heavily on the general use of methods, particularly use of experimental design (randomised control trials) for making predictions on impacts, rather than presenting a plan for <i>ex post</i> impact assessment at scale for WHEAT. The RCT approach deriving from medical research is much debated particularly regarding its suitability in complex social settings and for development impacts. CRP 3.1 needs to give careful consideration to how efficiently conduct <i>ex post</i> impact assessment on wheat research. Wheat research is currently an under-assessed area in the CGIAR. It is important, for both the CRP's needs and for System-level meta-assessments, that this gap be filled taking counterfactual and attribution issues into account.
6. Have a comparison of past budget shares to each SI with the proposed "optimized" allocations in the CRP 3.1 budgets.	Section 9 was updated to explain that budgeted years 2009 and 2010 (Tables 8A, 8B, and 8C) provide an indicative baseline of past spending, distributed retrospectively amongst the newly proposed Strategic Initiatives. From 2011 onward, projected budgets are optimized for the implementation of WHEAT.	The information has been adequately addressed.
7. Clarify how the requested funding for SI 9 Seeds of Discovery relates to the separate funding request to the FC for the operation of the center gene banks outside of the CRPs.	Textual changes were included in section 9 and in SI 9 to explain that, as requested by the Consortium, costs determined as "essential" for the conservation of wheat genetic resources have been removed from the WHEAT budget scenarios. SI 9 intends to add value to the collections held by CIMMYT and ICARDA by leveraging top-end genomic and	This "must have" has been adequately addressed.

	phenotypic technologies. The goal is to both uncover the genetic heritage of wheat and also build a platform which enables wheat researchers and breeders to bring novel diversity into breeding programs via well-characterized accessions and parental germplasm. These activities fall outside the purview of the Consortium and Global Crop Diversity Trust essential funding of the collections.	
8. Clarify how SI 2 on sustainable wheat systems will relate to other systems-oriented CRPs such as 1 and 5	This has been addressed in the newly included “SI 2 Outputs and Corresponding Milestones, by year” table included within the SI 2 text; and in a revised Table 5; and in Section 7.	Some additional clarification is provided, but there is still a difficulty in specifying linkages with the CRP1 systems programs because the research agenda in these CRPs have not yet been elaborated, and in the meanwhile CRP 3.1 is designing its own systems-oriented research . We can therefore only re-state our concern that CRP3.1 must be actively engaged with CRP1 series proponents to ensure maximum synergies and effectiveness of efforts in both programs.
9. Prioritize different SIs where CRP 3.1 has a clear comparative advantage, and where there is high probability of achieving the stated outcomes and longer term impacts	WHEAT is a strategic plan whereby all SI components fit together as an interlinked chain, moving from strengthened institutions (SI 1 and SI 10), to basic research and pre-breeding (SI7 and SI 9), to technology development (SI 3, SI 4, SI 5 and SI 6), and to dissemination and expedited impacts (SI2 and SI 8) for farmers and consumers. There is an enormous amount of information to consider, prioritize, and put into context. Between the target areas (four ME’s), the more detailed geographic and income related information, the improved description of where WHEAT engages viz research in first world countries, and the 10 strategic interventions (influenced by the feed-back of hundreds of partners), we have presented our best assessment of WHEAT’s clear comparative advantage and highlighted where there is high probability of achieving the stated outcomes and	The comments given for “must have” # 1 on prioritization in general apply here. All SIs are presented as essential components of the program as a whole, which gives no flexibility to prioritizing among the different SIs. It begs the question: how would this CRP respond to a 10% budget reduction to achieve greatest possible impact on CGIAR-SLOs?

	longer term impacts. The relative emphasis on various SI's is reflected by the respective "optimized" resource allocation in the Budget section (Table 8A-C, indicative of 2011 funding, onwards) and will continuously be improved in course of executing the CRP through partner feedback and activities within SI1.	
10. Develop realistic and monitorable outcome indicators with a timeframe at the SI level and longer term impact projections at the overall CRP level	This has been addressed in the version 7 newly included "SI Outputs and Corresponding Milestones, by year" tables included within the SIs descriptive text.	Presentation clarity has been added by tabulating annual milestones for each SI output.
11. Improve management structure to ensure overall efficiency and effectiveness of the CRP implementation and coordination among SIs and with multiple partners	CRP-specific management approaches have been compared with those of other CRPs and further detailed in the Oversight and Management section, making them similar to those that have already been endorsed. WHEAT was developed through consultation with more than 200 stakeholders and endorsement letters show widespread support. They are included in Annex C. It is our understanding that the Consortium Board has recognized the oversight by multiple bodies as an issue for all CRPs and has contracted an independent study to recommend models for more effective, representative CRP management. We will await the outcome of this study before recommending changes to the WHEAT management structure.	The ISPC argues that for all CRPs, management structures that clearly support the CRP orientation, decision-making, accountability and sufficient independence from the lead-Center are needed. A programmatic approach to research implementation is a central feature of the CGIAR reform with the aim of having effectively coordinated and cohesive programs capable of delivering program-level results for System-level impacts. The ISPC considers that a co-chair model for the Program Management Committee, of two Deputy Directors General (for Research and Partnership) with strong Center alliances, is not optimal. Management structure needs to support an integrated program which builds on CIMMYT and ICARDA research and that of the vast partnership.  A meta-analysis is expected from the set of CRPs already endorsed and in the pipe line regarding good practices in management and governance. The ISPC agreed that issues of management structure and governance need to be addressed at the cross-CRP level under the leadership of the Consortium Board.
12. Indicate activities and/or SIs that may be scaled down or	Activities conducted under actual funding scenarios will be described in the WHEAT Operational Plan	As stated in the CRP response these scenarios are not presented in the proposal

<p>dropped if resources are reduced</p>	<p>and annually updated based on available funding, as described by the document on “Consortium level monitoring principles”. Under the supervision of the Oversight Committee, the Management Committee will strive to fund the most important SI’s (based on continuous and forthcoming partner feedback), for the most important target regions (as described by Table 1 and 2), and based on the comparative advantage of the IAR (viz national research).</p>	
<p>13. Clarify the potential linkage between CRP3.1 and the International Research Initiative on Wheat Improvement (IRIWI)</p>	<p>The new version now includes the following important section: <i>“The G20 Ministers of Agriculture recently declared their support for the CGIAR, GFAR, and GCARD and highlighted the need to promote technology transfers, knowledge sharing, and capacity building through North-South, South-South and triangular cooperation. The declaration1 announced the launch of an International Research Initiative for Wheat Improvement (IRIWI) to better coordinate national wheat research in G20 countries</i>  1 <a href="http://www.g20.utoronto.ca/2011/2011-agriculture-plan-en.pdf">http://www.g20.utoronto.ca/2011/2011-agriculture-plan-en.pdf</a> with CGIAR ie WHEAT–led efforts directed at the needs of the developing world. It is important to note that IRIWI is a coordination and not a funding body. The declaration similarly endorsed GRiSP. Discussions over the past years with national wheat scientists in advanced economies, including now these leading up to the formation of IRIWI have led to the conclusion and specific requests from the global wheat research and development community that leadership from WHEAT should come from exploiting the wild relatives of wheat through new synthetic wheats, in cytogenetic manipulations for alien gene transfer from wild and cultivated</p>	<p>The new section introduces the new IRIWI coordination initiative, the desired relationship of IRIWI and WHEAT and the role that WHEAT is expected and planned to play. The ISPC assumes that the WHEAT CRP will nest its priorities (indicated under # 1 and # 2) for wheat improvement within carefully targeted regions and beneficiary groups and that outcomes and impacts will be adequately supported by social science.</p>

	<p><i>relatives, in finding new sources of pest and disease resistance (particularly rust resistance), in new physiological tools for selecting heat and drought tolerant lines as well as applying systems-based approaches and precision agriculture technology to improve the productivity, sustainability, and resource-use efficiency of the developing world's wheat production systems. [I.e. these discussions defined the WHEAT agenda as presented to the Consortium and the FUND Council]. Through its involvement with IRIWI, WHEAT will strengthen its ability to benefit from developments in advanced economies in crop genomics, genetics, pathology, physiology, and agronomy; it will direct emerging technologies from that work into varieties and production systems adapted for lower-income wheat growing countries."</i></p>	
<i>From World Bank</i>		
Remove capital investments in BISA from the budget tables	This has been done.	Done