CRP4 Proposal: Agriculture for Improved Nutrition and Health

Response to the "Must Haves" comments on CRP4 from ISPC and the Fund Council (July 22, 2011)

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<tr><th>Comments from ISPC and donors</th><th>Response and changes made in revised proposal</th></tr>
<tr><td>ISPC</td><td></td></tr>
<tr><td>1. The articulation of the strategy in the revised proposal should: a) give evidence that the problems identified are recognized by the authorities in countries with major undernutrition problems; and b) a clearer specification of objectives related to the target groups affected by agricultural intensification should be provided.</td><td>a) We added an Appendix (Appendix 2), which lists 36 countries that contribute 90 percent of the burden of childhood stunting (according to the 2008 Lancet Series on Maternal and Child Undernutrition), and also added text in Section 2.5 (Geographic Focus). Appendix 2 shows that South Asia and Africa host the vast majority of stunted children. The Appendix also highlights the priority countries for several new initiatives that support country-led processes to alleviate poverty, hunger, and undernutrition—such as Scaling Up Nutrition (SUN), the United Nations' REACH (Ending Child Hunger and Undernutrition), and the U.S. Government 's Feed the Future initiative. These initiatives require countries to take an active role in characterizing the problems and opportunities in their country and in developing a national action plan to scale up nutrition interventions, and to be fully accountable for actions in their country to improve nutrition. As of September 2011, one year after its launch, 20 countries had joined the SUN movement (including high-burden countries such as Bangladesh, Ethiopia, Nepal, and several countries in Sub-Saharan Africa), reflecting an unprecedented level of commitment from developing-country government leaders. CRP4 will collaborate with these efforts in high-burden countries (see added text in Section 2.5 – Geographic Focus) and during its first year of implementation will develop a strategic plan for engaging at the country level with these and other emerging regional or global initiatives in the areas of agriculture, health, and nutrition.

b) We added the following clarifications regarding objectives/research questions related to our second target population (i.e. populations affected by agriculture intensification):
- Added 1 objective (Section 2.2)
- Added details in bullet 2 of Section 2.4 on target population
- Added a specific research question related to this target population in Component 1 (Section 6.1.1, objectives 1 and 4)
- Added a paragraph to Section 6.3.1 (on rationale for Component 3)
- Added a sentence to Section 6.3.3 on the overall objectives of Component 3</td></tr>
<tr><td>2. Many of the research activities are</td><td>To strengthen the specificity of activities and timelines, we have added:</td></tr>
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described at a high/generic level and some are already underway or have been completed by partners. The revised proposal should identify the research activities with time-bound milestones and partner roles.	- An overall section at the beginning of Section 6 that provides more information on the specificity of activities along the 3 impact pathways in terms of research locations and partners, the broader timelines for progress envisaged and the approach to jointly planning the details of activities and milestones with key partners. - We also added Table 3 in Section 6, which lists the countries where the four research components will work on different research topics (with mention of key partners and CRP linkages) - We added further details on initial research activities, outputs and outcomes for each research subcomponent (in Table 5 (Component 1), Tables 8-11 (Component 2), Tables 13, 15, and 17, and Appendix 9 (Component 3), and Tables 19 and 21 (Component 4). We also added Appendix 5, which describes specific activities that will be undertaken in collaboration with CRP3.7 on fish in Uganda. - We expanded Section 12 to provide more information on timelines and milestones for the organizational activities, and strengthened the text on the strategies that will be used for priority setting and for clarifying the roles of different partners.
3. On the basis of more detailed activities and specified outputs, the revised proposal should include a strategy for how these will be utilized to maximize the IPG benefits and the impacts on/for the specific communities identified.	The IPGs generated by this CRP include the methods and tools developed and the knowledge, technologies, and evidence generated and used for decisionmaking and investment. We added a paragraph to strengthen this point at the end of the Impact Pathway section (Section 4.2.4). We will also continue to participate in the development of a global network of academic institutions committed to higher-level training and research on the linkages between agriculture, nutrition, and health, which will use and disseminate our outputs and outcomes and maximize their IPG benefits and impacts. We added a paragraph to that effect in Section 10.1 on Capacity Strengthening.
4. In some parts (Components 1 and 3 in particular) the proposals are aspirational rather than realistic and this should be addressed through further prioritization during the process of strategy development.	The proposal has been strengthened to provide more details, especially with regards to specific countries and setting where research under the different components will be undertaken, and key partners. More specificity has also been included, particularly in components 1 and 3, on initial activities, outputs and outcomes (see response to ISPC point 2). In year 1, detailed planning with partners will prioritize research for years 1 to 3. A major focus in the first 3 years will be to collect data, refine hypotheses, develop and refine agriculture-nutrition-health indicators and provide evidence to support improved priority setting for CRP4 and for the programs and initiatives it supports.
5. The proposal should: a) make clearer use of nutrition- and health-related	a) We prepared a glossary of agriculture, nutrition, and health terminology, which appears in Appendix 1.

terminology and b) articulate the researchable hypotheses underlying the major areas of research to be included as well as providing a mechanism or evidence for the quality of science underpinning each approach.	b) For each component, we added researchable hypotheses immediately after the research questions (see Sections 6.1.1, 6.2.1, 6.3.3, and 6.4.1) and also included a brief comment regarding the quality of science underpinning the research needed to address each of these hypotheses.
6. Further detail on linkages to other CRPs should be described, in particular making clear which work will be funded from which CRP.	CRP linkages are described in Section 9 and in Appendix 11 (previously Appendix 6). We added some specificity in the text of Section 9, and revised Appendix 11 significantly to add specificity regarding the linkages and potential joint work with other CRPs. Where possible, we also included some indication of funding sources for proposed joint work. In Section 6, we also added information regarding the sequencing of interactions with other CRPs. Final decisions and details on activities and funding flows for joint work, however, will require extensive consultation with teams from other CRPs, which will take place during the first year of implementation of CRP4.
7. The ISPC encourages a strategic approach to program evolution and the avoidance of opportunistic inclusion of some activities simply because they may draw initial funding.	We strengthened Section 11.2 on program implementation to describe program evolution; we now highlight how CRP4 plans to follow the strategic directions outlined in the proposal while being responsive to partner and client demands within those directions. We also strengthened Section 5.3 (Partnerships) by adding information on how we will manage the trade-offs between strategic directions and responsiveness to partners.
From FC Members:	
8. Address the question why the four components proposed are the top research for development priorities and how these four pieces fit together (or are linked with each other) to improve nutrition and health.	Section 2.3 describes CRP4's strategic framework, the rationale for the choice of the four components, and how these four components are linked to each other. The ISPC indicated that it was satisfied with the revised strategic framework presented in the May version of the proposal and with the discussion regarding how the four research components were selected and how they interact with each other. In response to the comment, however, we added some text that emphasizes that the CGIAR's comparative advantage in addressing nutrition and health is through agriculture-based approaches. This is the starting point of CRP4: how agriculture can contribute to the burden of malnutrition and poor health and the changing risks that arise with changes in agricultural practices and agricultural intensification. Another point that we emphasized even more strongly in this revised version of the proposal is the fact that poor diet quality (as opposed to lack of calories) and resulting

	micronutrient deficiencies and child stunting (an indicator of chronic undernutrition) constitute the most pressing nutritional problems with long-lasting health consequences. See changes in text of Section 2.3. The third and fourth paragraphs provide a detailed explanation of how the four components complement each other and are linked to each other in their contribution to addressing the critical nutrition and health problems that CRP4 is prioritizing (both because of their high prevalence and devastating consequences, as well as the fact that agriculture has to be part of the solution).
9. Consider the following issues which were underlined in the Addis Ababa workshop of CRP4: sustainable diets, and sustainable agriculture (including sustainable agriculture intensification), and the role of food and nutrition as ecosystems services; and the necessity to analyze the nutrient content of the existing biodiversity of species before engaging biofortification work.	As part of our response to ISPC point 1 (see above), we added some objectives and research questions related to sustainable agriculture intensification in relation to our second target group (populations exposed to agriculture intensification). As described under Component 3 on Agriculture Associated Diseases, and more specifically under Subcomponents 2 and 3 (Zoonotic Diseases and Other Health Risks in Agroecosystems), sustainable agricultural intensification will be explored in relation to health risks. This is an area that will be developed over the first few years once the project is implemented. Regarding biodiversity vs. biofortification: CRP4 will include research activities related to both biodiversity and biofortification. The two broad areas of research are complementary rather than substitutes, as suggested by the reviewer; more importantly, they share the common goal of improving diet quality and the micronutrient intake and status of poor populations, particularly of women and young children. For this reason, both areas of research are equally important and are therefore both included as focus areas of CRP4. For instance, specific research activities on biodiversity are included in Component 1 (Section 6.1 and Appendix 5) and Component 4 (Section 6.4), and research on biofortification is discussed under Components 1, 2, and 4 (Sections 6.1, 6.2, and 6.4).
10. More attention should be given to priority assessment in Component 1 in the proposal.	Section 6.1.4 of Component 1 describes the Component's approach to priority setting and sequencing of activities. As indicated in the text, the first part of the process will involve a meeting with relevant CRPs, CGIAR centers, and other partners who are working on value chains for target commodities – i.e. nutritious foods such as fish, meat, dairy, fruit and vegetables, or traditional or neglected and underutilized foods from biodiversity. The meeting will take place during the first year of implementation of CRP4. Examples of partners who will be invited to participate in the meeting are listed in Section 6.1.4. The Section also describes the criteria that will be used to select 4-5 value chains for an initial start-up research phase, and the future sequencing of activities that will be undertaken over a period of up to 10 years.
11. The issue of assessing potential	It has been a key principle from the start of HarvestPlus that farmers will **not** adopt nutritious

trade-offs among breeding objectives like nutrient contents, yield, yield stability etc. should be included as a priority research question in the biofortification component, where the CGIAR has a comparative advantage and there are obvious IPG attributes associated with the findings.	varieties that are lower-yielding, and hence less profitable than popular varieties. Fortunately, research has shown that there is no significant linkage between genes that are responsible for favorable or poor agronomic characteristics and genes that are responsible for high iron, zinc, and provitamin A content. A breeding program that adds nutrient content as an additional objective (in addition to the usual core objectives of pest resistance, disease resistance, etc.) must be larger and cost more in order to make the same rate of progress on yield, but this marginal cost is precisely what HarvestPlus funds cover. Since HarvestPlus is committed to NOT compromising productivity, breeders will select first for yield and all relevant agronomic attributes and then for micronutrients. We are fully aware that foremost, yield triggers adoption. These issues are discussed in more detail in the following references: - Pfeiffer, W.H., McClafferty, B. 2007. Biofortification: Breeding Micronutrient-Dense Crops. In M.S. Kang and P.M. Priyadarshan (Eds.). Breeding Major Food Staples. Blackwell Publishing, p 61-91 (see pages 82-83). - Pfeiffer, W.H., McClafferty, B. 2007. HarvestPlus: Breeding Crops for Better Nutrition in IBPS. Proceeding published by Crop Science Society of America. Crop Sci. 47: 88-105. The issue is also addressed in the proposal in Component 2, Section 6.2.3 under the research question entitled: “Can HarvestPlus breed nutrients into staple crops without negatively affecting yield?” The point is clearly made there that “the new crops must first and foremost be attractive to farmers, with yields equal to or greater than the current varieties.”
12. Clarify the comparative advantage of the CGIAR in Component 4.	We more specifically described the comparative advantage of CRP4 and of the CGIAR in working on strengthening integrated agriculture, nutrition, and health development programs (see Section 6.4.3 under *Summary of CGIAR engagement with integrated ANH programs)*.
13. In a balanced treatment of nutrition, appropriate attention needs to be given to dietary diversity and therefore to the development of vegetable and fruit crops, e.g. the role of home gardens for smallholder food security and balanced nutrition, could be given more attention in the CRP.	The issue of dietary diversity and dietary quality is part of the main justification and rationale of CRP4 as described in Section 2.3 (CRP4’s Strategic Framework) and several other sections of the proposal, including the justification of the program (Section 3). Additional rationale and information regarding the importance of dietary diversity and access to micronutrient-rich foods has been added in Section 2.3, and the role of fruit and vegetables is clearly stated, on the list of nutritious foods that constitute a balanced diet. The terms “nutritious foods” or “nutrient-rich foods” used interchangeably throughout the proposal are defined in Footnote 3 (Section 6) and include fruits and vegetables. Component 1 focuses on value chains for select nutritious foods and again, fruits and vegetables are highlighted as key commodities of emphasis in this research. Box 4 presents an

	example of a nutrition-sensitive value chain for traditional African green leafy vegetables. Component 4.1 on integrated agriculture, nutrition, and health programs also has a strong emphasis on homestead food production systems, which typically focus on vegetables and fruits, but also incorporate animal source foods in order to provide more readily bioavailable micronutrients such as heme iron and retinol (for vitamin A). Several sections of the text for Component 4.1 focus on home gardens and homestead food production systems, including the sections on rationale, objectives and research questions, the activities, outputs and outcomes, and the sections on the selection of case studies and summary of CGIAR engagement with integrated ANH programs. Appendix 9, which presents examples of case studies that will be considered for the research, includes programs mostly focused on homestead food production activities, all of which include the promotion of fruit and vegetable production and consumption by small farmers and their households. The World Vegetable Center, the Global Horticulture Initiative, and FAO are all key partners of CRP4.
14. Other components clearly require further development, particularly in terms of identifying target groups and establishing indicators of success. The section on value chain needs to recognize the relative benefits of commercialization and home consumption. "Boundary" issues between CRP4 and other CRPs, for instance on zoonoses on IPM / pesticide residues, also require further attention.	- While the proposal presents the work on value chains and on programs (such as home gardens) as operating through separate impact pathways, we also acknowledge that there is great overlap between home consumption and commercialization. We will address these more complex relationships in our initial partnerships with CRP 1.3 and CRP 3.7 and our program implementation partners (such as Concern Worldwide, HKI, etc.). We describe at the beginning of Section 6 how these partnerships will be developed in Year 1. - We added some text related to boundary issues in the section on links with other CRPs (Section 9, and related Appendix 10). Many of the boundary issues such as IPM and pesticides, however, are not initial priorities of CRP4, but they will be developed more deliberately over time. Relative to value chains, the greatest need in Year 1 is for discussions with crop CRPs on the role CRP4 can play in adding nutrition and health value to crop value-chain technology (breeding, post-harvest, etc.) and crop value-chain development.
15. Recognize the role and potential of fish and fisheries in the CRP.	Fish was always included in CRP4 as a highly nutritious food with enormous potential to improve dietary diversity and ensure adequate micronutrient intake and status among the poor, while also contributing to poverty reduction. With their high content of omega-3 fatty acids, certain types of fish also confer a range of health benefits, including the prevention of certain types of non-communicable diseases and the promotion of optimal growth and cognitive development in children. We plan to work closely with CRP1.3 and CRP3.7 on developing joint research, especially in value chain for nutrition and food safety (Components 1 and 3), and in integrated agriculture and health programs (Component 4). We will work with World Fish and their partners to prioritize joint research on fish (for health and nutrition) during the first year of implementation. We added to the

	proposal an Appendix (Appendix 4), which describes some potential areas of research relevant to CRP4 on fish, nutrition, and health. We also included a case study in Component 1, which highlights emerging research on fish value chain for nutrition, with a focus on women and young children (see Box 5).
16. The policy component of the CRP needs to consider the role and impact of economic growth on nutrition and health.	A research question related to the impact of economic growth, and more specifically agriculture-led economic growth on nutrition and health outcomes has been added in Section 6.4.4. This type of research will be carried out in collaboration with CRP2 and the DfID-funded Leveraging Agriculture for Nutrition (LANSA) and Transform Nutrition (TN) projects in which IFPRI and other CRP4 partners are involved (see brief project descriptions in Box 10.
17. Clarity on the issue of whether or not the products of the Harvest Plus component involve transgenic technology should be made in the proposal.	All HarvestPlus crop releases, and all varieties in the HarvestPlus breeding pipeline are conventionally bred. This will continue to be the case until HarvestPlus ends after 2018. The only investments that HarvestPlus makes in transgenics is in laboratory, proof-of-concept research on high-iron rice, high-iron wheat, and high-iron maize.
18. Address overlaps in the work done in biofortification between CRP 4 and CRP 3.4 which need clarification.	HarvestPlus will scale up orange sweet potato in Uganda during 2011-2016 under the HarvestPlus budget. CIP will be a subcollaborator on this project. Otherwise, orange sweet potato is the responsibility of CRP 3.4.
19. Strengthen the discussion of partnerships throughout the proposal.	The discussion of partnership has been further strengthened by 1. adding text to Section 5.3 further detailing partnership priorities and giving an example of partnerships along value chains, 2. adding specific partnerships through which initial priority actions will be done at the beginning of Section 6, and 3. adding text in Section 12 on timelines and milestones on initial partnership priorities and actions. 4. The appendices also provide specific examples of partnerships around support to CAADP (Appendix 3) and other development partnerships (Appendix 8).
20. Strengthen the section on M & E; it is lacking in originality or specifics.	The revised proposal provides additional information on some of the key considerations for designing the CRP4 M&E system relative to the three impact pathways (value chains, programs, and policies). These relate to how CRP4 will work with others in developing M&E, some of the theory of change for achieving nutrition and health outcomes and impacts—with specific impacts on women, children, and the poor, and how these will be included in detailed M&E planning.
21. The risk assessment section needs	We added a table in Section 13 to provide a more specific assessment of key governance and

also to be improved; it should provide assessment of risks due to proposed governance model. Sophisticated assessment of what might derail this CRP should be provided.	management risks (partnership, leadership, operational, and administrative risks) for CRP4 and proposed mitigation approaches.
22. Define a clear strategy on forming the partnerships. The CRP needs to clearly identify a group (or groups) of partners, including the private sector, who are committed to work with the listed CGIAR centers on this CRP.	Also see point 19. The development of a partnership strategy will be a key activity in Year 1 after the proposal is approved. Partners will be formally engaged in both defining and setting priorities for the overall program and for the specific areas noted in Section 5.3. A couple of examples of partnerships around value chains and policy making are also provided.
23. Identify quantifiable and critical outcome and impact indicators and targets, and establish a set of agriculture-nutrition indicators that link to nutrition-health indicators.	We agree that it is essential to identify quantifiable and critical outcome and impact indicators and targets. Some additional specificity has been added in the proposal text (see responses 2 and 4 to ISPC comments) and in the performance indicator matrix (Appendix 3). We also agree that establishing a set of agriculture-nutrition indicators that link to nutrition-health indicators is essential. The lack of such indicators has been identified as a major gap by the majority of people engaged in these areas. An initial workshop on metrics and indicators was held with some partners in May 2011. Detailed planning with partners on how to develop, test and refine key indicators will take place in year 1 to guide research activities in years 1 to 3 to improve agriculture-nutrition-health indicators.
24. Clarify how the pre-existing funding streams for Harvest Plus are accounted for in the final budget, and what funds are available for the other research activities over the full term of the proposal.	The budget for Harvest Plus is projected based on the level of activity that has been included in financial proposals submitted to its key donors (BMGF, CIDA, DFID, and World Bank) during the past two years. These donors have made commitments based on these submissions. For the three years of the project (2011-2013), the known funding from these donors has been included in “Current Restricted Donor Projects” Total, Table B2 in the submission. The HarvestPlus Challenge Program is by definition a Project and its funding has always been designated as restricted. The total CRP amount of $41.201M in 2011 includes the $18.993M for HarvestPlus as shown in Table B6 (reproduced below). The Harvest Plus Challenge Program is unique in the CGIAR as it recognized from the outset the long-term nature of its work, and served as a good example in the whole recent reform of the System. There is an assumption that funding from the CGIAR Fund will grow as the HarvestPlus donors begin to reprogram from restricted funding to the Fund Windows.

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<tr><td>HARVEST PLUS</td><td></td><td></td><td></td></tr>
<tr><td>CRP4 BUDGET SUBMISSION</td><td></td><td>in $ '000</td><td></td></tr>
<tr><td></td><td>2011</td><td>2012</td><td>2013</td></tr>
<tr><td>CGIAR Fund</td><td>1,500</td><td>9,808</td><td>13,902</td></tr>
<tr><td>Restricted Donor Projects</td><td>18,993</td><td>9,808</td><td>7,486</td></tr>
<tr><td>Total</td><td>20,493</td><td>19,616</td><td>21,388</td></tr>
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The second part of the question asks for clarification on the funds available for other research activities over the period of the plan. As mentioned in the budget commentary, budget figures are stated at conservative levels and do not include upside or overly optimistic estimates. First-year budgets are based largely on financial data from each center’s Medium Term Plan (MTP) on a full cost recovery basis and are comparable to 110 percent of actual expenditures for 2009. For Year 1, which was assumed to be 2011, a total of $58.8M funding is budgeted of which $42M is from bilateral sources. In Years 2 and 3, assumed to be 2012 and 2013, there is an assumption that donors supporting the biofortification work will begin to shift their funding to the Consortium Windows 1 and 2.
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<td>25. From a research continuum and innovation perspective, a more balance investment is desired to advance the agriculture nutrition and health research for development.</td>
<td>In the budget description of the proposal (Section 15), we acknowledge that the current resource allocation is not balanced and that we would like to grow components other than Component 2. Given the reliance on restricted grants (71 percent of funding), this will need to be accomplished in an evolutionary way over time through a combination of program funding and restricted grants in areas of funding gaps.</td>
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