

Review of CGIAR Research Programme Submission

MP4: Agriculture for Improved Nutrition and Health

This review is structured according to the review criteria specified in the Terms of Reference which were provided together with the invitation to act as external and independent reviewer.

Overall, the research programme is very exciting, and has strong potential to have a major impact in the target populations within the geographical areas identified, although outputs are also likely to be relevant elsewhere. A major challenge is the scale and diversity of this programme, as well as its interdisciplinary and cross-sectoral focus. This will need to be facilitated by extremely well coordinated and tightly monitored research activities, supported by very effective within programme communication.

Comments in relation to specific strengths and weaknesses are incorporated in the text dealing with the different assessment criteria.

1. Strategic coherence and clarity of Program objectives

The vision is fine, but the relationship between programme components and objectives is unclear when first presented in the Executive Summary (on page 2). Instead of the current list of components, the programme objectives should be presented here. Given that one of the major challenges of this programme will be its cross-disciplinarity, a set of overall objectives applying across components should be presented. If it is instead felt that it is not possible to define anything other than a fairly high-level vision for such a comprehensive programme, this should be stated explicitly. It is recognised that each component's objectives are then presented later.

Each programme component has a stated objective (except for component 4), but the links and complementarity between the components needs to be presented more explicitly. It becomes clearer in the text on page 11 and the associated Figure 2.

The programme overall clearly acknowledges the need for cross-sectoral integration.

The provided categories of partnerships (i.e. enablers, implementers and researchers) are very useful. While it is useful to recognise their role, the challenge will be to establish 'optimised' sets of networks of partners and collaborators for each programme component and most likely also for their sub-components. The management of these networks and of the interactions within and between them, as well as identification of potential for synergies and their development is essential. Communication will be of crucial importance to make all this work, and mechanisms need to be put into place that recognise any problems early and deal with them efficiently.

The link between agricultural practice and its effect on health and nutrition is indeed poorly understood, and therefore provides a logical focus for this work. The CGIAR are in an ideal position to target this area.

The programme is well integrated with the CGIAR's overall agenda in relation to development outcomes (shown in Figure 1).

2. Delivery focus and plausibility of impact

The target populations and geographical regions are clearly defined, and it is acknowledged that there will be difficulty in defining where agricultural research can have most impact. It will be desirable that the programme includes structured support for the development and maintenance of linkages at the three levels mentioned (enabler, implementer and researcher) between the geographical target regions (sub-Saharan Africa and South Asia).

The comparative advantage of CGIAR for linking up with and supporting developing-country research organisations and researchers is recognised in the proposal (page 14), but the role of CGIAR as an interface of these with 'developed-world' research organisations and researchers is also crucial and needs to be emphasized as well.

The need to strengthen capacity in the countries/organisations dealing with the issues in the target populations is recognised in the proposal (16-18pp). The breadth of the activities described here seems very ambitious to deliver in all of the areas mentioned. It will be necessary to define priorities. The long-term sustainability of these activities also needs to be kept in mind, as well as the prevention of 'brain drain' from less developed partner countries to the CGIAR or other employers offering better career opportunities, pay and research infrastructure. An assessment of relevant stakeholders within the target regions needs to be performed early, and specific care has to be taken to avoid for the CGIAR and partners from outside the region to significantly distort the development networks by outcompeting local stakeholders.

The communications strategy will balance scientific rigour of any work and associated outputs with the essential need to target knowledge users and to achieve adoption. It is essential to explicitly involve knowledge users in the definition of the research agendas. The need to develop and maintain networks between internal and external partners involved in the programme is recognised but credible mechanisms for monitoring the effectiveness of the networks also need to be developed.

3. Quality of science

Component 1: Nutrition-Sensitive Value Chains

This research will involve a phase of identifying needs and gaps followed by testing interventions. The proposed work is well integrated with other CRP as well as other components of this CRP4.

Sociological/cultural factors should be explicitly incorporated in the value chain analyses (it is currently referred to as part of one of the research questions).

The role of large commercial producers as well as food retailers should be examined, and any assessment of the potential impact of any interventions needs to take into consideration how they will be affected and/or react.

Component 2: Biofortification

These activities consist of a range of fairly detailed sub-projects, that are building very sensibly on already existing work (BioharvestPlus). Links with other CRP and other components of the current CRP are mentioned but appear more vague than for Component 1.

Subcomponent 2 deviates from the other components of the programme in that the target population is in Latin America and the Caribbean. The justification for this should

be explicitly stated in the document. This will clearly result in a significant challenge for this subcomponent to become sensibly integrated with other parts of component 2 or CRP4 in general.

Component 3: Control of Agriculture-Associated Diseases

The reference Gilbert 2010 seems important for justifying the AAD emphasis but was not accessible to this reviewer. The relative importance of disease compared with that of nutrition and any secondary diseases resulting from under-nutrition is unclear. It is quite possible that infectious diseases as a primary cause of poor health may well be of relatively low relevance compared with nutrition. The same is likely to be true for the impact of animal nutrition/disease on animal productivity and derived product quality.

The risk analysis approach is central to this component, and it would be useful if this programme component would include a series of activities that lead to a review and potential revision of the associated frameworks, taking into consideration its usefulness for structuring communication between scientists and policy makers.

The high level of health problems in developing countries attributed to food-borne disease quoted here is surprising, particularly the 70% of deaths among children under 5 years of age. It would be useful if this project component could generate more specific and up-to-date attribution data, taking account of primary and secondary causes of health problems.

The increasing importance of antimicrobial resistance in relation to treatment of animals and/or humans should be included as a research theme. As part of this it will be important to develop approaches to animal health that will result in reduced need of usage of antimicrobials. The human target populations identified here would also be likely to suffer specifically if current or future animal health treatment practices were to lead to increased levels of resistant organisms. Any resistance issues in relation to parasite control in animals may also be of relevance. An important challenge in the control and prevention of antimicrobial resistance is the enforcement of regulations in developing countries, particularly where increased demand has led to intensified production with high livestock density and therefore increased animal disease risks.

The true importance of so-called emerging diseases for the target populations addressed by this CRP needs to be assessed. It is likely that so-called neglected diseases and endemic diseases of livestock and humans are of higher importance.

The scientific approaches described here are very general and are therefore difficult to evaluate.

Component 4: Integrated Agriculture, Nutrition, and Health Programs

The aims and objectives of this programme component are very exciting, and have the potential to become a truly integrative part of this CRP. It currently appears to be mainly a programme evaluation activity, and be aimed at planning more effective AHN programmes. This component therefore needs to be closely linked with the activities proposed under components 1-3. Currently, its primary focus appears to be on case studies (Table 2: 77-78pp) that are unrelated to the other components of the CRP. It is acknowledged that it is necessary for the component to analyse activities conducted outside the CRP to be able to come up with recommended approaches and models, but the CRP will benefit from linking with components 1-3, as well as 5.

Component 5: Informing Policy and Decision making across Agriculture, Health, and Nutrition

Similar to component 4, this CRP component relates to interdisciplinary integrated activities, and in this case the focus is on developing integrative policy development processes across the AHN sectors. The activities are about presenting the scientific evidence base related to these processes, and the relevance of cross-sectoral approaches, as well as about defining good practice guidelines. Linkages with the other components are currently vague, but will probably emerge more clearly during the implementation phase of CRP4.

4. Quality of research and development partners and partnership management

The quality of research is difficult to assess, and the amount of detail provided in the proposal document varies between components. The research plans are in general at a broad conceptual level.

The emphasis in relation to partnerships is at the programme rather than management level. This is appropriate, and it is supported by a set of sensible management principles. Given the breadth of the programme, a wide range of partnerships is proposed in relation to development and implementation. To gain maximum benefits from these links and avoid competition/duplication, the programme management needs to develop effective mechanisms for monitoring, communicating and coordinating these links between components and partners. It might be appropriate to have the emergence of new collaborative networks, even between partners (development and implementation) as goal of the CRP. The CRP would become a catalyst for development of new collaborative networks involving a diverse range of development, research and implementation partners. The programme management team could make use of social network analysis tools for describing and evaluating the science and implementation networks emerging from this CRP.

5. Appropriateness and efficiency of Program management

The difference in the areas of strength of the main CGIAR centres involved (ILRI and IFPRI) should result in positive synergistic effects, but requires clear management structures. The idea of a joint venture between the two centres might be the most appropriate mechanism for this. The positive experience with the HarvestPlus between CIAT and IFPRI suggests that this model might work, although the scale of CRP4 is much greater and the activities involved are much more diverse and therefore much more difficult to coordinate with the aim to become truly synergistic.

The decision making structure underlying the management diagram for the joint venture presented in Figure 11 suggests that the DGs of ILRI and IFPRI are equally responsible. This seems entirely appropriate. They appear to delegate their management responsibility to a senior research manager each. But the key decision maker will be the Managing Director supervised by the two senior research managers.

Given the breadth of the proposed work, a five person independent advisory committee may be too small to competently cover the areas of research, development and implementation that will be addressed by this programme. It is likely that ad-hoc external advisors may be needed to support the committee. This external advice/review will be very important, and needs to be of high quality.

The effectiveness of the program research team will be essential for the success of the CRP. This is where any synergies, within and between sector collaboration needs to be pro-actively developed and managed. A good and constructive relationship between

the Managing Director and the program research team will be essential for the success of the CRP. The Managing Director will have to be able to identify opportunities for links between teams. It is important to prevent the development of inflexible sub-groups, so as to allow for new networks and links to develop amongst the members of the team and their research groups. This is also where external partners will be represented, and this is important since they need to be recognised as equal partners in this programme.

Industry and national laboratory experience with interdisciplinary research indicates that for such programmes to be successful they may need tight management and coordination, which is not an approach that researchers in academia are familiar with. In the current description it is not clear how this will be implemented.

It is not entirely clear how specific research projects within the programme will be evaluated and monitored (although it is mentioned that the independent advisory committee will monitor 'research program performance'). To be meaningful, this would have to involve independent scientific advice (i.e. the independent advisory committee). The research currently specified in each of the components in very general terms will have to lead to more specific research project proposals that each need to be externally evaluated.

The involvement of a stakeholder forum seems appropriate, but it may be sufficient to meet every 2 years.

Clearly, the activities within the components 1-3 are important, and have the potential to result in change consistent with the programme goals. But the success of the cross-cutting components 4-5 will be essential for being able to meet the CRP's vision of cross-sectoral integration. Their likelihood of success will strongly depend on the effectiveness of the CRP's management structure.

Mechanisms need to be put in place which will allow implementation of measures to deal with any problems that emerge during the programme implementation. Milestones or trigger points need to be specified as well as a pathway leading to corrective action should it become apparent that particular workplans/projects/activities are not achieving their objectives.

6. Clear accountability and financial soundness, and efficiency of governance

It is has to be assumed that the projected budget is justified. And given the relatively non-specific description of the activities and the budget, it is impossible to scrutinise the information as presented currently. A process managing the detailed activities will have to be implemented that ensures that the funds are appropriately used and reallocated when necessary. Therefore, the programme management should also include a financial monitoring/audit function. The CRP should also be allowed to respond flexibly to changes in financial priorities, depending on how well different initiatives develop. This flexibility is of particular for interdisciplinary research. But such a process needs to be transparent and be subjected to review.