

SCIENCE COUNCIL OF THE CGIAR

Commentary on the Challenge Program proposal

Climate Change, Agriculture and Food Security

SC Secretariat, 20 April 2008

The proposal for Climate Change, Agriculture and Food Security Challenge Program (CCCP) was submitted by Earth System Science Partnership (ESSP) on behalf of the Alliance of CGIAR Centers, ESSP and their respective partners. It was prepared in collaboration and consultation with a number of other bodies. The full proposal constitutes a marked improvement over the pre-proposal and the proponents are to be commended. *The Science Council recommends approval of the CCCP proposal.*

The CP is highly relevant and very timely. The proposal lays out the challenges faced by a changing climate: food security for many people who depend on small-scale agriculture and environmental feedbacks. It notes the critical link between agricultural practices as affected by and contributing to climate change through land use changes and intensifying greenhouse gas emissions and how the remedies that may deal with the climate challenges will have positive and negative impacts for food security and vice versa. One of the key contributions the CCCP can make is quantifying the magnitude of the trade-offs between food security, sustained livelihoods and the environment in various locations under different climate change scenarios that would result from alternative policy actions. That requires site specific research to develop optimal production techniques on the site, making use of best technical and best ecological means, but also comprehensive studies at other levels in order to optimize land use. The best agriculture at the best place contributes most to GHG reduction.

The goal of the CCCP is to “*overcome the additional threats posed by a changing climate on attaining food security, enhancing livelihoods and improving environmental management*”. The CCCP will address this goal by generating the knowledge base and toolsets to enable and assist farmers, policymakers, researchers and donors to successfully manage agricultural and food systems so as strengthen food security, enhance rural livelihoods, and improve environmental sustainability in the context of the challenges arising from current climate variability and progressive climate change. The proposal has six key thematic areas, grouped in two sets: (1) diagnosis of the climate change issues in agriculture, and (2) solution of the problem through adaptation and mitigation. Each theme provides a good discussion of the rationale, research questions or testable hypotheses, methods, and expected outcomes. The CCCP proposes to deliver outputs that significantly enhance achieving the objectives sought by the CGIAR, i.e., food security and sustainability of livelihoods of the poor and natural resource use.

The CCCP makes a strong case for the agricultural research community collaborating with researchers in the earth and climate sciences in a way that examines the climate change - food security link in a holistic way. Solid research in the core agricultural sciences and climate change areas is still required but these disciplinary areas need to be coordinated in an

interdisciplinary manner, and this is the thrust of the CCCP. The proponents have argued that the CGIAR's core expertise needs to be expanded at both ends (upstream and downstream) to address this critical challenge. By linking the ESSP with the CGIAR this CP proposal mobilizes added scientific and potentially financial resources to focus on the goals of the CGIAR, thereby offering very substantial synergies. The Centers based in developing countries are uniquely placed to work in an action research mode on adaptation. They have long term field sites, data-bases, links with NARS and farmers which all open the way for real engagement on the ground with the communities that will be exposed to climate change. It will also bring scientists, policy planners and development agencies onto a common platform beyond what might be feasible by the CGIAR centers or through a Systemwide program. While this is promising, there are concerns about who will be the major players within and beyond the CGIAR and ESSP in this CP and what each proposed partner brings to the table in terms of comparative advantage. It is essential that appropriate partners - even those who are currently outside the leadership group - are identified and brought into the CP to address the areas for which they are most competent.

While the potential synergies are no doubt large, to realize the full potential it is essential that the research agenda becomes more focused and more directly relevant to the goals and capacities of the CGIAR. The CP appears to incorporate parts of the research agenda of the climate change community beyond what is of immediate relevance to the CGIAR, i.e., drifting into research and policy advocacy areas where other suppliers are already very active and where the CGIAR has little comparative advantage. Lessons learned from current CPs suggest that this CP should focus on a more narrow and achievable part of the global climate change challenge. More thought needs to be given to prioritizing the research across and within themes and costing those appropriately. The CP is spread too thinly across the six major themes and is still very generic. A more detailed proposal to better flesh out each theme's research strategy and scope and the tangible outputs should be developed, building on the existing knowledge base and skills. This would present an opportunity to provide a detailed assessment of the literature to date, the research gaps, the feasible components of the proposed efforts, the proposed resource needs, and show how this will contribute to action items to deal with adaptation and mitigation.

The SC has concerns about the proposal's insufficient recognition and utilization of existing work. While there is an intention to build on existing knowledge and to be inclusive in involving stakeholders along the different stages of program development, execution and implementation, there is remarkably little reference to the existing CGIAR work on climate change (including an existing System-wide effort), even though this now represents a significant part of the budget of several Centers. It should be clearer in the proposal, for example, precisely how the installed capacity of the CGIAR will be exploited in this CP.

Section 4 of the proposal addressed the contributions of the CCCP to the CGIAR priorities. While the discussion is at a fairly high level, it does present a coherent and supportive roadmap of how this CCCP is consistent with and supportive of the system priorities. Perhaps the area that has the least detail is the budget. The CCCP provided what they refer to as an indicative budget which does not include current and pending support. Also there is

limited explanation for the budgeted items, so it is hard to assess if the expected results can be achieved with the budget as specified. The allocation of resources for the first phase should require a more detailed budget with accompanying justifications.

While the proposal has many strengths and potential for success, there are issues requiring more careful consideration as the CP goes forward.

Relevance of the expected outputs

The proposed CP aims to deliver several research, developmental and policy level outputs and outcomes (p. 9-11) that would help in the long run in developing capacity and a knowledge base for achieving CGIAR objectives of food security and sustainability of resources. The focus on mitigation is also important in dealing with the impacts of climate change. While Theme #6 specifically addresses climate change mitigation, the concept underlying the proposed research questions and expected outcomes is that this activity aims more at attenuating the negative impacts of climate change on agriculture rather than at developing a new source of income for farmers. Although adaptation should and does receive a prominent role in the proposal, climate change mitigation should receive a slightly more emphasis.

The six proposed thematic areas link the research questions and projected outcomes to the goals of the CGIAR. The plan to integrate within themes across regions and within regions across themes seems appropriate. While the current proposal attempts to link the CP with all CGIAR Systems Priorities (pp.33-34), the nature of the proposed work suggests most significant contributions to System Priorities 4 and 5, and indirectly on Priority 2 primarily through enhanced climate information, analytical tools and stakeholder interactions to better target the development of appropriate germplasm.

The proposal lists 26 relatively more specific research outputs (p.31) within the first 5 years of the CP (Phase I). A number of these, particularly under Theme 3 (Enhancing researcher - stakeholder interactions), targets capacity-building in inter-disciplinary research. The expected outcomes and the research outputs are highly relevant but also described at a fairly high level and in general terms. This makes matching outputs to budgets and timelines difficult at this stage. While the level of detail is right for the purposes of this proposal, the SC looks forward to seeing further detail in the early stages of the CP implementation.

The production of International Public Goods (IPGs) is highlighted as one of the key outputs in the proposal. The capacity building plans are appropriate, as are the plans for managing databases and making them quality IPGs by intellectual property rights arrangements with collaborators. While many of these IPG outputs are indeed relevant and appropriate for the CP, there appears to be some redundancy and lack of clarity in a few. Some outputs require further consideration on the purpose and approach, such as the “network of trained research leaders and a Young Scholars Certification Program”. If the intention is to develop research leaders in the NARS, more direct contact will need to be made with individual NARS organizations in the planning the program, beyond the sub-regional organizations already contacted. The same can be said for the three well-articulated and desirable outcomes (p.10):

in order to ensure success, the primary stakeholders – the NARS leaders – must be consulted directly, throughout the project planning and implementation stages.

Quality of science and qualifications of the research team

The questions being addressed are clearly articulated and are appropriate, and the methodological approach with various scales proposed are also well justified. Integrated models will be used for scenario analyses to measure trade-offs. Besides incorporation of scenarios these models will also examine non-climate change trends (e.g. population growth, globalization) in the regions and their interactions with global climate change, which will generate clear IPGs. All six research themes have thorough descriptions of the questions, activities, methods and expected outcomes. However, the methods described for each of the six research themes are rather general, and the details will need to be fleshed out in the first year. There also needs to be more thought given to the criteria for actual choices of the sites in order to maximize the prospects of extrapolation of the insights across space and time. There are presently no plans for selecting a site in arid regions.

One area in the proposal that may need strengthening is the impacts of uncertainty related with the definition of the climate scenarios at the temporal and spatial scales, and the role that this and attitudes toward risk may play in dealing with the challenges of climate change. The proposal does note the dynamic and complex nature of the relationships, but the CCCP stops short of discussing these complexities and what they mean for designing effective and efficient policies. To deal with the uncertain scenario at hand, the CCCP might consider developing a contingency plan for the possibility that the uncertainties prove overwhelming..

It is difficult to assess the quality of the research team from the current proposal, since the core implementation team is not yet identified and the proposal does not specify which CGIAR Centers will be involved. The Leadership Group, which has now been disbanded, seems to have many well-known and respected bio-physical and social scientists. The current list includes qualified partners, but there seems to be some dependence on existing CGIAR/ESSP-NARS programs and partnerships that were developed for some other activities. With respect to the social science components, the core institutions are not big players or major social science research think tanks. While the success of large multidisciplinary projects is not dependent on the reputation of the institution, it is vital that the individuals involved in the CP are well-connected and respected within the research community. There is a significant need to consider wider involvement of potential partners in the research team.

Strategy for utilizing and applying results

A delivery mechanism has been proposed for the stakeholders (clients) and the impact pathway strategy is well articulated. An attractive feature is that baseline indicators will be developed at the research sites on which subsequent ex post impact assessment can be soundly based. The major weakness is that the clients have not yet been identified - there is only a generic description of them. The proposal mentions that the outputs will be delivered to NARS and public sector service delivery organizations, but no plan appears in place to develop a meaningful partnership with them at the project planning stage.

Communicating the results from modeling scenarios in a convincing fashion to decision-makers at various levels, including farmers and policy-makers, will be one of the most significant challenges to the adaptation pathways described in the proposal, and it would be wise to anticipate the constraints at this stage early in the research process. It is doubtful that the dissemination and utilization of results only through research articles, reports, briefing etc. would convince farmers to place their trust in the predictions of models and base their livelihood decisions on them. The CCCP needs to address these issues as a matter of priority as ultimate impacts will critically depend on this part of the adaptation cum impact pathways.

There seems to be an implicit assumption that the climate models will be sufficiently effective to enable adaptation to be “planned”. This may not be the case. Farmers will still need the tools and technologies to enable them to adapt which will require building an understanding and a set of technologies that could be deployed in response to observed climate changes. This suggests sites for long-term observation on the ground in different agro-ecological zones and reserves of germplasm, technologies, local institutions and policies that could be drawn upon in response to changes. This aspect deserves more attention in the CP.

There also needs to be more clarity about the existing capacity within the relevant NARS to undertake the CP. It’s unclear just how much ‘extra capacity’ there is amongst NARS in Eastern and Western Africa, for example, to effectively partner with and contribute to this CP. Institution strengthening is fundamental and will be important to focus not only on producing policy relevant results but to build the institutions that will influence change at the highest decision-making levels. This is given some attention in the proposal, but further consideration is clearly necessary. The strengthening and building of institutions at national and regional levels would assure the long term impact of the CP.

An exit strategy is presented and is appropriate for the stage of this proposal, but further details of a viable, clear exit strategy will need to be developed during implementation.

Collaborative arrangements and beneficiaries involvement in research

A positive aspect of this proposal is the emphasis being put on linkages of the various bodies to achieve the expected outcomes, linkages between different research themes (earth science and agricultural research communities), between the research community and the stakeholders, and between science and policy actors. While broad partnerships are to be sought, the proposal does not elaborate further on the specifics of these linkages. According to the proposal, the CCCP has been developed after a series of consultations within the Leadership Group along with stakeholders. Judging from the written commitments from the NARS and regional organizations, there have been effective consultations with these stakeholder groups. But what is missing in the proposal is an overview of the composition of players that are needed, by discipline and by major effort area (e.g., research, training, outreach, advocacy). At this stage, it is not possible to know what each of the institutions (ESSP, other ARI partners, NARS, CGIAR), will be bringing to the CP, and at what price. Even the roles of the individual CGIAR Centers who expect to be involved are not yet spelled

out. The extent of interaction with other CPs, particularly SSA-CP and CP-WF, which have their own sites in Africa, is also not mentioned. In short, there are many unknowns, hindering further assessment in this respect. As a matter of urgency, commitments of the key centers of the CGIAR and specially ESSP proponents should be sought for a very clear specification of partners' roles and institutional commitment.

The SC recognizes that there is a risk in trying to engage too many stakeholders, as it would take time and resources to maintain all the links. A careful consideration would therefore be needed in establishing the collaborative partnerships. There are a number of institutions and agencies that could be included in the CP which could bring valuable expertise, resources and funding opportunities. ARI partnerships should also be sought with a wide geographic representation, in order to bring new/emerging regional knowledge and expertise, and possibly to secure funds for the CP in the long run.

In comparison to the insufficient specificity of the partners, much prominence is given in the proposal on the CGIAR – ESSP collaboration. While this is a significant part of the CCCP, it should not be over-emphasized to the exclusion of other external expertise. In addition to those mentioned in the proposal, effective linkages should also be established with the private sector (who have many of the abiotic stress and disease resistant technologies), communications experts, and political scientists.

With regard to the use of grants for establishing and maintaining partnerships, the CCCP has developed a reasonably well-structured plan with greater focus on commissioned grants than the competitive grants. While the SC agrees in principle with the strategy to use commissioned research at the outset of the CP, examining the value and desirability of adding competitive grants at a later stage, it is difficult to judge the validity of this plan as the partners are not yet specified. Lessons learnt from the current CPs suggest a need to introduce competitive proposals involving innovative ideas and partnerships during the latter part of Phase I, increasing the support as the research focus becomes clearer.

Governance, administration and budget

A comprehensive and appropriate governance and management plan has been proposed for the various tasks of CCCP. A Steering Committee will oversee and make decisions on science direction and resource allocation. Since this important Committee should have representation from key organizations and regions, its membership needs to be increased beyond the proposed six. The Committee should also have equal representation from CGIAR/ESSP, NARS and ARIs. The proposed structure of the Steering Committee, Director, and theme Coordinators seem to be adequate, while the appointment of a Scenario Officer seems unnecessary. The appointment of half-time Theme Leaders is limiting; the scope of the activities and the number of outputs should mandate a full time position for these posts.

Regarding administrative support, the proposal suggests that the Financial Coordinator be located in a CGIAR Center and the Director/Chair of the project be elsewhere. It is also suggested that these positions should be for staff from either CGIAR or ESSP. These arrangements seem too complicated and/or inappropriate, and need to be reconsidered. In

addition, the overhead cost of 50% for the host institution is excessively large.

The SC is pleased to see that an IP strategy is mentioned, and that CAS-IP is expected to play a major consultative role, although it is not clear why it was not consulted during the preparation of the proposal. A corporate IP memory is particularly important when dealing with external actors, although bringing all partners to agree to a single IP strategy might be a challenge.

The Steering Committee is responsible for monitoring and evaluating the progress and adjusting the program as needed, but there is no explicit information provided on M & E processes or on indicators which will be used to assess impacts. It is not sufficiently detailed to allow M & E at this stage.

The budget section is perhaps the weakest part of the CCCP proposal. An indicative workplan has been proposed, but it is loosely structured. The allocation of the final budget for the first phase should require more detail with accompanying justifications, particularly once the partners and sites are finalized. There is also no financing plan presented aside from some generic statements made about the CGIAR-ESSP partnership and the interest of their traditional donors. There are suggestions that DFID, Rockefeller, and Germany have shown interest in supporting this program, although no documentary support is provided for this. More efforts could be made at this stage since a CP on agriculture and rural poverty in relation to climate change led by CGIAR-NARS should attract several donors, provided partners are selected judiciously.

Proposed Next Steps

The SC recommends that the proponents develop a more detailed proposal, by January 2009, that:

- 1) prioritizes the research across and within themes and cost those appropriately;
- 2) outlines a plan for meaningful consultations with the primary stakeholders –NARS leaders – throughout the project planning and implementation stages;
- 3) develops a plan for communicating the results from modeling scenarios in a convincing fashion to decision-makers at various levels, including farmers and policy-makers; and,
- 4) elaborates on each theme's research strategy and scope and the tangible outputs, building on the existing knowledge base and skills.¹

¹ This should include for each theme: a detailed assessment of the literature to date and the critical research gaps; the feasible components of the proposed efforts, explaining how the installed capacity of the CGIAR will be exploited in this CP; research methods described more clearly for each of the themes, including the explicit criteria to be used for site selection; the proposed staff and financial resource needs, especially the composition of the players needed, the specific partners and their roles (in particular CGIAR centers) and their specific commitment to this CP; and an explanation of how this CP effort will contribute to action items to deal with adaptation.