

SCIENCE COUNCIL OF THE CGIAR

**Science Council Assessment of Challenge Program Concept
Notes**

The Regular Process, 2nd Cycle

SCIENCE COUNCIL SECRETARIAT

MARCH 2007

Recommendations

The Science Council (SC) assessed 41 challenge program (CP) concept notes in the 2nd Cycle of selection of CPs, as requested by the CGIAR Executive Council (ExCo).

The SC considers that the following five CP concept notes, given in alphabetical order, meet the criteria set for a CP concept note and **recommends** them to ExCo for pre-proposal development.

- *High Value Crops - Fruits and Vegetables. Plugging the income and nutrition gap in food security development*
- *Initial concept note for a challenge programme on climate change, agriculture and food security*
- *Mycotoxins, other contaminants and food safety*
- *OASIS - A concept note for a CGIAR Challenge Programme to combat desertification (dryland degradation)*
- *Stimulating market-led agricultural and rural transformation (SMART)*

Brief comments on each of the above concept notes are provided later in the report.

The SC further **recommends** that in the call for pre-proposals for the successful concept notes, the proponents be advised to: define clearly their research objectives in the context of the CGIAR System Priorities, elaborate on proposed scientific approaches and testable hypotheses, specify the major research activities and expected outputs in a clearly defined time-frame, identify the core CGIAR and external partners and their respective roles and responsibilities deemed optimal for successful implementation of the program, define the impact pathways from the research outputs to outcomes and to the expected final impacts and the explicit mechanisms by which progress along relevant impact pathways will be facilitated, monitored and used. The pre-proposal should also outline the exit strategy for the time-bound CP.

The SC observed a large discrepancy between the content of the majority of the concept notes and the guidance provided, in particular that the proposed ideas should be aligned with the System Priorities. The SC expected more than a simple reference to the relevant System Priorities, which is all that many submissions did. The SC therefore **recommends** that the process, guidelines and criteria to be used in subsequent CP selection cycles be revised each time to help elicit research proposals that can contribute to the CGIAR's prevailing research priorities. The SC concurs with the Group's original intention that the CGIAR should maintain a flexible and learning-by-doing approach to designing and implementing CPs.

Assessment

With the approval of the new System Priorities, ExCo recommended the resumption of the process for the development of new CPs, also called Cycle 2 Challenge Programs. The recommendation was approved by the CGIAR membership and an open call was launched on November 12th, 2006 for ideas/ concept notes to be submitted by 5th February, 2007.

The list of a total of 41 CP concept notes submitted is given in Annex 1. They are currently also available at <http://www.cgiar.org/impact/challenge/index.html> where the CP process is described.

In its assessment the SC applied the four broad criteria announced with the concept note call, based on the criteria used in the 1st Cycle of CP selection and complemented by an additional requirement for the concept notes to be aligned with the System Priorities. To facilitate the application of the criteria, the SC utilized a number of key dimensions under each criterion as detailed in the SC's notes of guidance for the preparation of Challenge Program Concept Notes, Pre-proposals and Full-Proposals (<http://www.sciencecouncil.cgiar.org/>). The SC observed that in majority of the submissions, System Priorities had not been adequately considered. Furthermore, a large number of the submissions presented ideas for development projects and many were very local in orientation with no elaboration of the CGIAR or other partnerships envisaged.

In its consideration of the concept notes, the SC gave emphasis to ideas which address the System Priorities for research, and for which there is likely added value in tackling the research with external sources of expertise (particularly ARIs and international science-based agencies), through collaborative research mechanisms, such as CPs.

A number of the CP concept notes submitted in this round, but not meriting development to stand alone CPs, contain elements that the SC believes deserve consideration and refinement as part of CGIAR research planning. As the System is in the process of developing specific Framework Plans (FPs) for each of the System Priorities, these elements can be considered in the context of FP development. There is need, for instance, for the CGIAR to identify the science required to address issues related to soil improvement, yield declines due to continuous cultivation, and the integrated management of landscapes in the face of conflicting sectoral goals. There is also the opportunity, based on some of the ideas submitted but with a broader scope, to consider what new aspects of science may be included in planning to bring about quantitative changes in the solution to long standing problems.

The Council suggests that concept notes not included in the group recommended by the SC could be considered by the Alliance and the CGIAR Centers and existing programs for their scientific content for ideas that could be incorporated into on-going research and planning. The SC itself will continue to search for relevant innovative ideas in its consideration of future strategic directions for the CGIAR and will recommend that specific Centers and CPs consider specific ideas and partners arising from several of the concept notes.

The SC involved all the Council members and all the Standing Panel members in the assessment of the concept notes. The SC reached its decision by three virtual cycles of screening and commentary and it is unanimous in its recommendations. The SC offers the following commentaries on the concept notes it recommends to be developed into CP pre-proposals.

Assessments of Concept Notes Recommended for Pre-proposal Development

High Value Crops - Fruits and Vegetables. Plugging the income and nutrition gap in food security development

This concept note addresses an important issue of exploiting the potential for the high value of certain crops to improve the livelihoods of the poor. Its focus is strongly in line with the intentions of System Priority 3A. More focus is suggested by emphasizing globally relevant research questions and income generation (rather than nutritional aspects of the crops) thereby strengthening the orientation on poverty alleviation. The choice of fruits and vegetable is convincingly described and appropriate. Nevertheless, “commodity promiscuity” is still seen as a potential risk of diluting the research effort in the early stages of research. The criteria proposed by the SC for SP 3A to assist species choice include: (i) area under target crops and expected beneficiaries in 5, 10, 15 years; (ii) proportion of that area cultivated by farmers (below an appropriate poverty line); (iii) prospective change in income and stability for these farmers due to research output; (iv) prospective income gains for farm laborers; (v) gains (in nutrition and through lower prices and increased consumption of these crops) for poor consumers. The choice of key research questions relevant for producing IPGs has to be made from the range of activities offered and the time-bound nature of addressing the challenge needs to be clearly defined. Much of the expertise on the high-value crops resides outside the CGIAR and especially with the private sector and many ARIs. The proponents will need to source such expertise and clearly specify the most relevant partnerships and their specific roles. Finally the pre-proposal should identify links with related priorities, particularly 1B, 2D (specific goals 1 and 2), 5A and 5B.

Initial concept note for a challenge programme on climate change, agriculture and food security

The concept note is a statement of intent to assemble a program on the important issues of the effects of climate change on agriculture and natural resources management and its mitigation. As presented, the note is incomplete, pending outputs from a workshop which should identify potential research areas. The proposed workshop illustrates the intention to engage external global climate change expertise, with the possibility of linking biological and socioeconomic sciences to models at broader scales to exploit CGIAR and non-CGIAR complementary advantages. Definition of what research the CGIAR will contribute, and the separation of responsibilities in an international approach is needed. The interim concept note does not yet provide a problem focus, key issues or time-bound research objectives, or balance between research on adaptation to climate change versus mitigation. It makes rather large assumptions about the chances of generating impact through policy changes. While the current note tends towards environmental processes and services, and policy, the SC encourages more focus on research closer to the CGIAR's experience (agriculture and food security) that is linked to climate change issues. How the program will work with existing CGIAR research emphases (such as those on temperature or drought tolerance) within a coherent approach (including, for example, forecasting and crop targeting for food security) should be shown clearly in a pre-proposal. Producing such a focused research program would not necessarily involve all 15 Centers as implied in the introduction. Without a set of

defined research areas it is not possible yet to determine the alignment of the work with the System Priorities for research.

The SC will welcome the opportunity to provide more precise guidance once the results of the workshop are known.

Mycotoxins, other contaminants and food safety

The rationale for a strategic research challenge addressing the mycotoxin problem is sound as these fungal toxins are an extremely important health problem, particularly in Africa. The concept note addresses System Priority 2C, although only partly by focusing on the “safety” aspect of “Enhancing nutritional quality and safety”. All other aspects of 2C are already part of the Harvest+ CP. The program on mycotoxins would allow a holistic, multi-crop approach at the System level to address the issues from a number of angles, importantly including the pre- and post-harvest areas and processing. The component on water contaminants/heavy metals, however, deviates from a coherent strategic research approach on mycotoxins and does not have merits for being included in a potential CP. The research program also requires cohesion and coordination to develop networking and capacity building for the management of food toxins. The partners’ list suggested is long and criteria are needed for identifying the most relevant partnerships (including expertise in the private sector and food industries). The roles and responsibilities of the partner institutions need to be clearly defined and the relationship with Harvest+ should be clearly described.

OASIS - A concept note for a CGIAR Challenge Programme to combat desertification (dryland degradation)

This concept note addresses an issue of major significance. The activities proposed in this concept note may be considered as contributing to landscape management issues (for the dry ecoregions) relevant to System Priority 4A. However, the concept note does not coherently focus on accomplishing the specific goals of this priority. Unless such coherence is built into a program proposal, the very broad activities proposed may actually detract from accomplishing the System Priorities. The pre-proposal would need to show more clearly how the program builds on the experience of ICARDA and ICRISAT in the drylands and what its role is in relation with the Desert Margins SWEP, which has been operating for a long time with established partnerships and is now well funded. The partnership with UNCCD provides an outlet for the research and policy relevant results that could be very productive. Scaling up the results of natural resource management research is clearly important, and should be part of this research. Whilst the note describes a major issue, a pre-proposal would need to convincingly identify what science will be brought to bear on the desertification mitigation process, and present sufficient arguments as to why an expansion of activities is warranted over the existing SWEPS. Some of the general issues may intersect with the climate change agenda, but they need to be adequately defined. Thought will have to be given to the arrangement of the essential CGIAR building blocks that contribute to different initiatives to avoid overlap and redundancy.

Stimulating market-led agricultural and rural transformation (SMART)

The research on inclusive and competitive markets and market-related institutions defined in this concept note is highly relevant to SPs 5B and 5C. The note provides clear problem descriptions. This proposal offers a unique opportunity to catalyze interaction between socio-economic research and biological science, both within and outside the CGIAR System. However, the CP pre-proposal will need to narrow the scope of investigation, focusing on a few carefully selected, well defined social science questions in relation to market development and participation by the poor, which CGIAR Centers and partners have a comparative advantage in addressing. While four strategic issues have been outlined in the CP concept note, the pre-proposal will need to identify and describe the research activities, case studies, and related outputs and timeframes within which some or all of these broad strategic issues are addressed, e.g., how will “alternative mechanisms for establishing viable research-to-policy platforms” actually be identified, and over what timeframe? How is this different from IFPRI’s mandate? The laudable emphasis on panel data sets over long periods is a clear IPG but the limited timeframe of CPs may make this difficult and the proponents need to elaborate on why the CP is the best vehicle for undertaking these activities. The points of departure from IFPRI’s DSGD program need articulation, and the comparative advantage of the other CGIAR Centers to be included needs to be spelled out. The proposal makes clear that a lot of necessary analytical expertise lies outside the system in academic institutions and development agencies and it is essential that the global leaders are included. An explicit link with the high value crops CP pre-proposal would be desirable.

List of 2nd Cycle CP Concept Notes

- Crops with appropriate gene technology: Reducing barriers to approval, adoption and acceptance of GM crops in developing countries (CGIAR Centers' Alliance)
- OASIS - A concept note for a CGIAR Challenge Programme to combat desertification (dryland degradation) (CGIAR Centers' Alliance)
- Economies in transition: Reversing the trends through research for sustainable agriculture in Central Asia, the Caucasus and Afghanistan (CGIAR Centers' Alliance)
- High Value Crops - Fruits and Vegetables. Plugging the income and nutrition gap in food security development (CGIAR Centers' Alliance)
- Stimulating market-led agricultural and rural transformation (CGIAR Centers' Alliance)
- Bio-energy: Growing energy on farms to generate income and protect the environment (CGIAR Centers' Alliance)
- Mycotoxins, other contaminants and food safety (CGIAR Centers' Alliance)
- Agro-ecological intensification and diversification of the world's grain baskets: more wealth and health to the resource poor (CGIAR Centers' Alliance)
- Initial concept note for a challenge programme on climate change, agriculture and food security (CGIAR Centers' Alliance)
- Forest livelihoods & landscapes challenge (CGIAR Centers' Alliance)
- Best strategies for Sustainable Land Management in Vulnerable Mountain Regions (C.Aad Kessler, Wageningen University)
- On Climate Change and Sustainable Crop Livestock Systems in Southeast Asia: Role of Rural Institutions and their Governance (Agnes C. Rola, University of the Philippines Los Baños)
- Building Governance. Pace setting by Entrepreneur and Local Community Institutions (Anders Hiort-af-Ornas; Pham Thi Bich Ngoc, Linkoping universitet; Vietnam Institute for Water Resources Research)
- Phytomedicine and nutraceuticals in control of animal parasites: validation and standardization (A. Carolina de Souza Chagas, EMBRAPA)
- Contribution to the valorization of *Brycinus leuciscus* in fisheries of the stream Niger and the stream Senegal to Mali (Cisse Oumou Traore, Institute of Farming economy, Mali)
- Improvement of the fish quality transformed by use of natural substances in the struggle against the infestation (Cisse Oumou Traore, Institute of Farming economy, Mali)
- Indigenous Knowledge, High Agricultural Productivity, Poverty Reduction and Sustainable Development (Durgadas Mukhopadhyay, Sparta Institute of Social Studies, India)
- Elvisem AG - Agricultural Research and Development Program (Elvisem AG, Switzerland)
- Striking a Balance for Sustainable Palm Oil – balancing food production, biofuel development and environmental protection (Fitrian Ardiansyah, WWF-Indonesia)
- Pesticide Use, Farmers' Health and Agricultural Productivity in Nepal (Hom Gartaula, Kishor Atreya, Alternative Development Research Center, Nepal)
- Investigate and address nexus between HIV/AIDS, agriculture/nutrition, food security, and gender (Janet Feldman, GRASSUP NOW)
- The biological nitrogen fixation challenge (Kudzai Nyengerai, Africa University, Zimbabwe)
- Development of an inoculum composed of micro-organisms solubilizing phosphorus for a better use of the rock phosphates by the cereal food crops (Lamine Traore, IER/CRRA, Mali)
- Extension of organic Aloe Vera in the AARINENA region (M.S.A.Safwat, Minia University, Egypt)
- Promotion and extension of organic farming for medicinal and herbal plants (M.S.A. Safwat, Minia University, Egypt)

- Recycling of agricultural and agro – industrial wastes, especially medicinal and herbal plants (M.S.A. Safwat, Minia University, Egypt)
- Production of some fixed oils extracted from organic cultivation of some medicinal plants in the AARINENA region (M.S.A. Safwat, Minia University, Egypt)
- Production and distribution of mycorrhizal fungi inoculums in AARINENA region (M.S.A. Safwat, Minia University, Egypt)
- Knowledge Network (Molly Wynn-Owenn, International Centre for non-food crops)
- Sustainable increase in Agriculture production through effective approaches to participatory waste water irrigation management technology development i.e. waste water utilize for small irrigation purpose (Harish L. Atre, Nitha Development Foundation)
- Sustainable agriculture pilot cashew farm in Nhacra-Guiné Bissau (Pedro Melo Franco, Proj-Hectaire Terrorio, Portugal)
- Soil conservation and regeneration (SCR); Integrated approach to ameliorate soil fertility in semiarid soils (SAS) with on-farm experimentation in Senegal; Effects of natural phosphorus (NRP) amendments, mychorization (MH) and rhyzobium (RH) inoculation on SAS fertility (Rhokaya Daba, Institut National de pedologie, Senegal)
- Use of renewable energy sources for agriculture in Armenia (Vardan Urutyan, International Center for Agribusiness Research and Education)
- Introduction of RISE assessment tool in Caucasian countries (Vardan Urutyan, International Center for Agribusiness Research and Education)
- The role of area enclosures in enhancing soil quality, carbon sequestration and vegetation restoration in Tigray, Ethiopia (Wolde Mekuria, Mekelle University)
- Development of technology to transform plants with more efficient and better adapted mutant rubiscos (Jill E. Gready, Spencer M. Whitney, Australian National University)
- Cellulosic and lignocellulosic materials as basis for bioplastics production (Hartmut Seliger, German University in Cairo)
- The impact of poor waste management on food safety in Uganda (Noble Banadda, Makerere University)
- Socio-ecological indicators for an assessment of the soybean production in the region Santa Cruz (Bolivia) – creating scenarios for a sustainable use of resources (Stefan Jergentz, University Koblenz-Landau)
- Genetic transformation of chickpeas (*Cicer arietinum* L.) for resistance to pod borer (*Helicoverpa armigera*) through development of transgenics using two Bt genes (*Cry1Ac* & *Cry2Aa*) (Manav Yadav, B.K. Sharma, Assam Agricultural University, Jorhat, India)
- Programme DPEO, ou Creation d'une dynamique visant à réduire les handicaps majeurs pour doper le passage d'une croissance convergente à un état souhaitable en écorégion (Prosper Ndjiodi, Centre d'appui au développement en projets et partenariats)