

SCIENCE COUNCIL OF THE CGIAR

Commentary on the 1st External Review of the HarvestPlus Challenge Program

21 September 2007

The Science Council discussed the 1st External Program Review of the HarvestPlus Challenge Program and the Program's response at the 8th Science Council meeting, in Bioversity International, Maccaresse, Italy on 29 August 2007. The SC thanked the external review Panel for their constructive work, a well-written report, and a very clear presentation made by Professor Ricardo Uauy, Panel Chair. The Council thanked the Program Coordinator, Dr. Howarth Bouis for presenting a brief response to the Report.

The Report provides 16 recommendations: 3 on the objectives and justification of the Program, 2 on plant breeding strategies, 3 on dissemination strategies, and 8 on governance.

Program-related

The SC agrees with the panel that HarvestPlus is an exciting and value-adding initiative dealing with three major micronutrients essential to tackle micronutrient deficiency (Iron, Zinc and Vitamin A), with major potential impacts on nutrition and health, especially on the poor in low and middle income countries. The Council agrees with the findings of the report concerning need for more focus on the intended objectives, and strengthened collaborations with NARS as end users of HarvestPlus products, involving them early-on in research planning.

The SC endorses the Panel's recommendation to enhance the use of both conventional and transgenic breeding for biofortification of crops with Zinc, Iron and Vitamin A. The SC acknowledges that achieving similar enhancement results for Fe and Zn may be somewhat more difficult than the early successes achieved to date for Vitamin A. In particular, the SC strongly concurs with the Panel's exhortations that HarvestPlus make more use of QTL analysis, and apply state-of-the-art molecular markers to speed delivery of improved varieties. The SC also agrees with the Panel's concerns regarding intellectual property issues of the Challenge Program, especially in the case where both conventional and transgenic breeding are used. Such IP issues may be exacerbated because Harvest Plus has a large number of partners and is itself not a legal entity.

A major point of discussion has been Recommendation 3 of the Report which talks about the implementation strategy (i.e. the deployment, testing of adoption and the impact of nutritionally enhanced varieties). This has been an important part of the HarvestPlus Program from its inception. It is an integral part of the proof of concept of the biofortification approach. Whilst enhancement may be brought about through breeding research, in moving to deployment there will be a need to consider the whole chain, from production to consumption, as there are many steps at which the quality of foods can be affected either positively or negatively. The Panel urges the CP to involve NARS at an early stage of the development of the implementation and testing, a point with which the SC concurs. The Management Response notes that breeding and enhancement are carried out both through Centers and collaborating national members of the Consortium according to their strengths in different commodities. Reaching end-users will involve all parties in the target countries, including agriculture and health institutions. This is a major task for HarvestPlus in facilitating and evaluating actual implementation by national partners. The SC notes the Panel's concern that in order to have micronutrient-dense genetic material adopted, it will be necessary to forge stronger links with conventional breeding programs that add evident traits of value to farmers, to the cryptic micronutrient ones. The SC sees this as an important component of testing of the proof-of-concept. It agrees with the panel that delivering nutritionally enhanced crops in the field - that demonstrably

have measurable effects on the nutritional status of vulnerable groups - is a higher priority at this stage of the Program than adding phase II crops.

The SC agrees with the Panel's observation that the program will not impact significantly on the <2 age group, in terms of iron and zinc, as this age group has very high micronutrient requirements and consumes small amounts of food. Thus, the SC agrees with the Panel in cautioning HarvestPlus not to promise what it cannot deliver. Nevertheless, the Panel recognizes, and the SC concurs, that other groups at high risk for anaemia, such as pregnant and lactating women and older children and adolescents can be helped significantly through biofortified staples. The SC also requests clarification of the efficacy and feasibility of the Randomized Controlled Trial (RCT) approach in China, India and Brazil. This is a component of assuring donor confidence and support for the continuation of the program.

The SC notes that there is no inherent conflict between the approaches of HarvestPlus and Bioversity. Bioversity's approach is to increase the diversity of fruit and vegetables in the diet. The approach being followed by HarvestPlus on staple crops complements this because it is known that iron intake is significantly enhanced by consuming foods that are high in Vitamin C. In addition, while the SC concurs with the Panel's recommendation that the Program strengthen collaborations with other organizations, it agrees with the Panel that the Program undertake independent external evaluations for large contracts.

Governance and management-related

The Panel offers eight recommendations on governance and management, with which the Management response largely concurs, although it points out the pros and cons of continuing with voting membership of IFPRI and CIAT on the PAC. Since the SC discussion of the Report, there has been further clarification on the position of the Program Advisory Committee (PAC) with respect to membership and rotation of membership. The SC believes it is important to synthesise these points of view across CPs so that the lessons learned from early experience with CPs can inform the development of best practice for the management of science and governance of future CPs. In general, the Panel found HarvestPlus well managed with a solid funding strategy.

In summary, the SC considers HarvestPlus a key CGIAR program, which is innovative, adds value, is well governed and managed, and concurs with the Panel's recommendations that the Program continues into a second phase. In addition, the SC suggests that the following elements are taken into account in the next phase: (i) explore and encourage donor commitment, not only from the agriculture and development side, but also from the health side; (ii) the Program should focus on strategic research, staying within proof-of-concept (breeding for enhancement, efficacy trials, deployment and impact assessment) for the crops already under research, so as not to become thinly spread; (iii) ensure that deployment research adequately includes quality analysis along production to consumption chains; (iv) combine both conventional and transgenic breeding in the activities of the Program; (v) expand public and private sector partnerships; and (vi) seriously consider explicit attention to IP issues in anticipation of scientific success.