

SCIENCE COUNCIL OF THE CGIAR
Commentary on the Fifth External Program and Management Review of the International
Center for Agricultural Research in Dry Areas (ICARDA)
September 29, 2006

The Science Council considered the Report of the Fifth External and Program Management Review (EPMR) of ICARDA, and the Center's response, at the Science Council's sixth Meeting in Cali, Colombia on the 11th of September 2006. The main findings of the report were presented (by videoconference) by Professor Elias Fereres, Chair of the EPMR Panel and brief responses made by Dr Guido Gryseels, ICARDA Board Chair, (also by video) and by Dr Mahmoud Solh, ICARDA's Director General.

Overview: The SC welcomed the indications in the Report that ICARDA had established excellent general and collaborative research relations with national partners in CWANA, and had formed strong regional programs which were well positioned to tackle the problems of dryland agriculture. However, the Panel noted that the Center's focus on regional adaptive research may have been at the cost of addressing the long term scientific challenge of the region *viz* improving water capture and efficiency of water use in the agricultural systems of the drylands region. The Panel's major recommendation of the Report is for ICARDA to raise its focus to a more strategic global mission and to de-emphasize somewhat its purely regional activities. *The SC endorses this important challenge for the institute.*

The Report noted that in many programs, scientific output had been below accepted levels. The Report identified where further strides could be made by ICARDA to enhance the targeting and staffing of the scientific program and, by providing appropriate attention to human resource issues and governance processes, to improve the contribution and morale of Center scientists. *The SC believes it is important that the Center regains its role as a world leader in dryland agriculture.*

The Report makes 22 recommendations; one in relation to the mission of the Center, four in relation to the structure of research and possible changes that could be made, seven recommendations on science, one on science quality, seven on Governance and Board processes and two relating to financial management. The response of ICARDA's Board and Management to the EPMR Report had been very positive, treating the Report as useful guidance in the further development of the Center under new management. *The SC is pleased to note that ICARDA has accepted the recommendations of the EPMR virtually in toto, and was moving swiftly to implement the Panel's recommendations.*

Research relevance: The major recommendation of the Report is for ICARDA to focus on the strategic research issues to improve the productivity of dryland agriculture and in so doing become the "global" research institution for dryland agriculture. This will require the institute to de-emphasize somewhat its purely regional activities. The intention of this recommendation is for ICARDA to address the fundamental long-term challenges of dryland agriculture rather than spread current technologies to wider geographical areas of the drylands agroecoregion (although this may be possible given the platform for research developed through benchmark sites and partnerships in CWANA). These include enhancing the efficiency of water use, closing yield gaps for staples, finding judicious means to diversify the farming systems of the region for improved income, and improving the enabling environment for the uptake of new natural resource

management practices (e.g. for rangelands) and other technologies. For this, the Center will need to enhance its own scientific quality in order to mobilise and leverage the best of global science. *The SC strongly endorses this Recommendation, and the other Recommendations on scientific quality and the targeting of approaches which derive from them.*

The SC notes that the Panel have focused the strategic question on increasing the productivity of water by more strategic research on the agroecosystem - seeking solutions from understanding causes of yield gaps (i.e. the difference between potential driven by water and actual yield) to balance the work on genetic improvements to tolerance to drought. The SC believes that the Panel has raised an important area of strategic research, often neglected in other agroecosystems as well, *viz* knowledge about the potential yields based on a limiting resource and strategic system-based research (agronomics) to close the yield gaps. In relation to the recommendations for strengthening science, *the SC notes that the Center will act to enhance in-house capacity for agronomy, GIS, and agroecological characterisation to evaluate yield gaps in staples and guide the application of new technologies.*

The Panel's Report expressed concern that the Center's review of its strategic direction was delayed (albeit for good reasons – see following) but that the Center had nevertheless gone ahead with the introduction of a new Program structure (of MegaProjects), which the Panel judged to be less than optimum to meet the needs of ICARDA and its drylands research program. The ICARDA Board Chair reported that the Center had purposely deferred the finalisation of the Strategic Plan until after the arrival of the new Director General, even though substantial programmatic changes were initiated prior to this. *The SC welcomes the Center's assurance that the Board is now overseeing the strategic planning process* and expects to receive a new draft of the Strategic Plan for endorsement at ICARDA's next Board meeting to be held in February 2007. There will be an opportunity to revisit the current program structure after the new strategic plan is in place.

The SC agrees with the Panel's view that the ICARDA figure of 8.4% of its resources being devoted to "development" is likely to be an underestimate. In the Panel's view, 20 of the 44 outputs listed in the MTP for 2006 reflected very low research content, with several country-specific activities unlikely to yield IPGs. The Panel notes that ICARDA works in a geographical region of currently variable political stability and there are calls on the Center to become involved in post-conflict rehabilitation of agricultural systems or associated technical assistance activities that have minimum research content. However the Panel has indicated that this involvement in regional activities may have come at a cost to a more long-term strategic research program and a decline in international standing as the world leader in arid lands agriculture. The SC endorses this view. The SC understands that such local activities may be hard to resist due to ICARDA's position in the CWANA region. However, *the Board must develop a new Strategic Plan, and Management a firm commitment to implementing the plan not swayed by donor needs for activities outside the strategy. In the event that some activities fall outside the CGIAR's System Priorities for research, these should be properly characterised as part of the so called 20% of non-SP activities.* ICARDA is urged to articulate better *ex ante* what the "learning" component is from its various development undertakings. Planning and choosing circumstances through which knowledge can be developed as IPGs may not necessarily favour research in post-conflict countries.

The Panel expressed concern about the need for a stand alone project on knowledge management as contained in MP6. It preferred to see the various components embedded instead in the other

MPs. *The SC agrees with this assessment.*

The SC notes that ICARDA has conducted a lot of useful research into participatory plant breeding (PPB) particularly of barley. This has proved a useful tool with this crop in addressing the needs of farmers in heterogeneous environments, but the EPMR Report urges ICARDA to balance its global breeding programs (particularly with other staples) with a view to wider adaptability. The SC appreciates the careful appraisal by the Panel of this issue and notes that this has been accepted by the Center. There can be a trade-off with PPB in attaining broad adaptability and the associated international public good attributes, and *the SC hence encourages ICARDA to assess the relative value and desirability of such an approach for all its mandate crops compared with conventional breeding approaches.* The Center is well placed on the basis of its past research to examine when conventional and PPB approaches might best be used either individually or jointly in order to maximise global benefits.

Development of a more coherent and better focussed program on aspects of natural resources management underpinning production from dryland farming systems is also required. For example, the work on water harvesting and supplementary irrigation could benefit from strong linkages with ICRISAT, which has a long history of research on this technology. The causes of lack of adoption noted by the Panel may lie in a focus on low-value staples rather than high-value crops, which was the experience at ICRISAT. Recovering the high capital costs is problematic with life-saving irrigation of low-value crops. Noting that diversification and improved income from agriculture for the alleviation of poverty were leading components of the CGIAR System Priorities for Research, the SC welcomed the Panel's analysis of the best means for ICARDA to address opportunities for diversification in CWANA. Diversification contributes to reducing production risk but might add to market risk for smallholders. *Hence it would be important for the Center to develop and adhere to appropriate criteria for ICARDA's involvement in potentially high value species and products. The Center is also urged to link with existing global sources of expertise in horticulture to assist both the evolution of ICARDA's diversification program and that of its NARS partners.*

The Panel's Report noted that there is room for further strengthening of the socio-economics expertise at ICARDA, including supporting adoption and policy research on improved technologies for water management. The Center agrees with the need to enhance this capacity and will consider the options for the optimal deployment of such capacity. The SC finds this an acceptable response, noting the need to balance improved capacity in this area with the desirability of having socio-economics research properly integrated with biophysical research.

Science quality: The Panel reported that the scientific publication record in most programs was below acceptable levels even after consideration of the mission-oriented research of the Center. There are notable exceptions. The Panel found good progress in the formulation of an excellent program on water and in aspects of socio-economic impact assessment of ICARDA technologies and in the adaptive research carried out by the regional programs. However, overall, the Center needs to urgently address its scientific standing in the international community. The age profile of the scientific staff and succession planning for both scientific and management functions are mentioned as priority concerns for ICARDA in the Panel's Report. Whilst succession planning is desirable, it should not be so rigorously applied as to prevent genuine open competition. Whilst some senior scientists have good publication records helping to catalyse the necessary connections to global science, the Panel suggests that Center management evaluate the reasons for the wide variability in scientific productivity of scientists at ICARDA. A figure of 40% of

scientific staff having below-average productivity, according to the Panel, is a cause for concern. *The SC endorses the Panel's assessment and the Center's response and the sensible planning measures that are being put in place to address these issues in the near future.*¹

Inter-Center interactions: The SC welcomes the development of a new agreement between ICARDA and CIMMYT on wheat breeding and the joint program for implementation that is being developed. The SC hopes that ICARDA will build upon the momentum recently gained to develop joint approaches on other research problems.

Governance-Board processes and financial management: The SC notes that the Center has accepted all Panel Recommendations in relation to the improvement of governance and financial management processes at the Center. Further, the SC notes that the Board also welcomed the Recommendation to hold a CCER on Finance and Management and has set the CCER process in train. The Center is sensitive to the issue of staff quality, including the links between staff quality and salaries, which are being reviewed for international competitiveness. In relation to resource mobilisation, the Center reports that it had already acted to develop a new Priorities and Strategies Committee.

In summary: Recognising the high esteem in which ICARDA is held by its regional partners and the demand for ICARDA services, the EPMR Report suggests that ICARDA is in a better position now to grasp the key challenges to dry land agriculture than it was at the time of the previous EPMR. Notwithstanding the gains in developing a strong partnership in the region, the Panel highlighted the diversion this may have caused from addressing the long term strategic research issues for the arid systems. The Panel have provided good insights as to what those issues might entail. *The SC welcomes the Panel's Report and Recommendations and looks forward to seeing how these issues will be taken up by ICARDA, initially through its new Strategic Plan and then ultimately in the subsequent Medium Term Plan.* Such changes may mean that ICARDA forego some national and regional activities in order to take up the important global challenge to improve the productivity of the agricultural systems in arid lands.

¹ The SC draws attention to the more general issue for future EPMR panels to the choice of indicators to be used to judge the scientific outputs of a Center, since specific indicators need to be defined depending on the types of research and their time-frames.