**ICARDA’s Response to the Recommendations of the**

**Center Commissioned External Review of the**

**Integrated Water and Land Management Program in ICARDA**

**March 2010**

ICARDA’s Board of Trustees commissioned an external review of the Integrated Water and Land Management Program (IWLMP) in ICARDA. The review Panel, comprising Prof. Luis Santos Pereira (Chair), Dr. Fatma Attia, Prof. Jim Oster, and Dr. Alia Gana visited the Center from 14 to 25 March 2009. During this period they also visited ICARDA’s collaborative activities with NARS within the water benchmarks project in Jordan, Egypt and Syria.

The Panel submitted their first draft report on 7th March 2010, which was reviewed by ICARDA for factual corrections. Several factual errors were identified and this information was provided to the Panel Chair. The Panel submitted their final report on 21st March 2010, with 13 un-numbered key recommendations included in the body of the report. These have been subsequently numbered for the purpose of responding to the recommendations. The Center’s response to these recommendations is provided below. Other suggestions and ideas were made by the Panel, but not as formal recommendations. The Center will consider these, but they are not formally addressed in this response.

**Preamble**

The Board and Management of ICARDA wish to thank and express their sincere appreciation to the Panel for their professional and thorough report. We do note that, probably due to time shortage, interactions with other ICARDA Programs were somewhat limited. They have managed within the short time they spent at the Center to capture the main issues within the IWLM Program, and have provided fresh ideas and approaches that will assist ICARDA in strengthening its integrated water and land management research.

ICARDA particularly appreciates the Panel’s recognition of the relevance of the research to the emerging national, regional, and global needs and issues regarding water and land management. It also appreciates the Panel’s commendation of the Program’s high standards of integrated research, the excellent science quality, and the close linkages to its stakeholders and collaborators internally and externally. The Panel’s confirmation of the positive response by IWLMP to recommendations of the Fifth EPMR and ICARDA’s new strategy is also acknowledged.

ICARDA generally accepts most of the recommendations of the Panel, and where we have some reservations the rationale for these is indicated. However, the Center notes that the adoption of some of the recommendations will require additional resources and, therefore, implementation of those recommendations will be subject to mobilization of the necessary resources, which the IWLMP and the management will work for, and that in addition implementation will be subject to the CGIAR reform.

**Response to Recommendations**

***Recommendation 1:*** *Analyzing the activities and projects implemented, as well as the collaborations developed within ICARDA and with NARS and other institutions,*

*It is recommended that research by IWLMP continues to focus on the three main agro-ecosystems of dry areas: rangelands, rainfed agriculture and irrigated agriculture.*

**Response: Accepted.** IWLMP will continue to focus most of its research within the three agro-ecosystems, primarily through the benchmark sites already established. The 2nd phase of the water benchmarks project is being funded and is implemented in the three agro-ecosystems.ICARDA’s other Programs integrate their work within these benchmark sites, when appropriate, and IWLMP will also work with these other Programs at other sites within these agro-ecosystems to foster more integration of the research.

***Recommendation 2*:** *Relative to EPMR5 Recommendation 3, that MP3 (land) activities on rangelands and policy options should be integrated with work on diversification, considering that water issues are the main constraint for the productivity and sustainability of dry rangeland agro-ecosystems, the Panel considers that the collaboration between IWLMP and DSIPSP needs to be strengthened, including through reinforcing the DSIPSP staff relative to the agronomic and soil management domains of dry rangelands.*

**Response: Accepted.** ICARDA is in the process of recruiting a cropping system agronomist in DSIPSP, which will enhance the collaboration on agronomic aspects between the two Programs. DSIPSP is also integrally involved work in the water benchmarks sites, especially in the *badia* (rangelands) agro-ecosystem.

***Recommendation 3:*** *Considering the need for new orientations in droughts and climate change research and the priorities of ICARDA in this domain, with implications in other programs, agronomic trials are needed to assess differential cultivar responses to abiotic stresses, mainly in relation to droughts, salinity and climate change. Thus, the panel considers that the existing collaboration of IWLMP with BIGMP is very important and needs to be further developed, which calls for additional time of the IWLMP staff involved. In order to respond to research needs on droughts and climate change, it is advisable that a new position be opened within IWLMP, mostly oriented to the hydrological/ meteorological and physics aspects of droughts and climate change.*

**Response: Accepted in principle.** ICARDA is in the process of recruiting two specialists in IWLMP, one on hydrology and the other on water resources management. The Hydrologist will be selected and oriented to cover the aspects of hydrological and physics aspects of droughts and climate change, in addition to other hydrological matters. This will also be coordinated with the work on drought and climate change conducted by GISU, BIGM, DSIPS and other Programs.

***Recommendation 4:*** *The main strategy adopted to ensure the integration of socioeconomic and policy dimensions of water and land management rests on the implementation of community based and development oriented research projects carried out at regional or local level. In order to reinforce the capacity of research teams to effectively implement community based and participatory research, IWLMP has made an important effort in terms of capacity building and training. The panel recommends that the strategy aimed at integrating socioeconomic and gender issues in IWLMP training activities be reinforced and systemized.*

**Response: Accepted.** ICARDA agrees that socioeconomic and gender issues should be part of IWLMP’s research and training activities. This will be pursued jointly with SEPRP. Several training activities conducted by IWLMP in the past have included socioeconomic and gender issues, and the involvement of SEPRP from the outset in new projects will be ensured. ICARDA will work on enhancing further this integration of joint research, especially with respect to gender issues, in future research and training activities.

***Recommendation 5:*** *Relative to the integration of socioeconomic and policy issues into water and land management research, areas of improvements have been identified under item 1 of Section 4 and item 2 of section 5. Thus, The Panel considers the need for additional efforts that should provide for: (1) Integrating socioeconomic analyses in the different phases of the research process: diagnosis, technology development, including on farm trials, and ex-post evaluation of technological innovations; (2) Reinforcing the move from a technology transfer approach to a participatory technological innovation approach; (3) Assessing the costs and benefits (of financial and social nature) associated with the adoption of the innovation; (4) Creating base information required to support research on policies; and (5) Evaluating the implications of land tenure systems and of institutional arrangements for technological innovations and adoption of improved systems****.***

*These recommendations above identify the need for enhancing the scientific capacities of ICARDA relative to interdisciplinary research; thus it is proposed that a joint IWLMP and SEPRP position be opened for better integrating socio-economic studies in water and land management projects, as well as to support participatory research issues*

**Response: Partially accepted:** ICARDA agrees that socioeconomic analysis including cost-benefit analysis, should be part of all phases of research, including cost-benefit analysis, and that stakeholders should participate in the technology development. ICARDA is applying those approaches in various projects, but will further enhance their integration in future research. These will continue to be undertakings jointly by IWLMP and SEPRP. Policy research is being initiated through several projects, which require that information needed for the analysis be collected as part of the baseline data sets of those projects. Subject to recruitment of appropriately qualified staff, ICARDA will put more emphasis on evaluating the implications of land tenure systems and institutional arrangements for the adoption of improved water and land management systems.

The Center does not, however, agree with the Panel’s specific proposal that ICARDA open a joint IWLMP/SEPRP position to better integrate this work. ICARDA is structured so that all socioeconomic staff works together in one program (SEPRP), in order to maintain critical mass, with mechanisms to provide the needed research input and support to all other Programs and Units, as relevant. It is recognized that the human resources in SEPRP may not be sufficient to fully accommodate the growth in integrated research activities in other programs. SEPRP will continue to assign its scientists to work with IWLMP on specific subjects or projects. ICARDA, however, will endeavor to also enhance the staff of SEPRP to better integrate socio-economic studies in water and land management projects, as well as to support participatory research issues, when resources are available.

***Recommendation 6:*** *Aiming at the reinforcement of interdisciplinary and participatory approaches, the Panel considers the need for the Management Board of ICARDA to define further orientations about interdisciplinary research and on the relationships and work integration of SEPRP with IWLMP and eventually with other programs. Concrete actions include: (1) the setting up of a committee in charge of elaborating a strategy to strengthen interdisciplinary work and participatory research, (2) the recruitment of social scientists trained in interdisciplinary work, farming systems approaches and community-based research, (3) the development and implementation of a training program in participatory approaches and integration of social analysis in agricultural research, targeting both IWLMP and SEPRP scientists, as well as scientists and students of NARS. In addition, it would also be advantageous to develop a scholarship program that support post-doc positions and associate positions to attract young social scientists.*

**Response: Partially accepted.** ICARDA agrees that there is a need to further enhance the Center’s interdisciplinary research orientation and the integration of SEPRP’s work with that of IWLMP and other research programs. The Center will review the current situation and discuss the best means of improving its interdisciplinary research approaches, including the actions suggested by the Panel.

***Recommendation 7:*** Considering the importance of integrating social, economic and policy research in the context of water and land management projects, whatever the responsibility belongs to IWLMP or to SEPRP, there is the need for: *(1) the reinforcement and extension of the use of multidisciplinary participatory methods at all stages of the research process, mainly for the phase of technology development, including the homogenization and formalization of research methods and tools in order to ensure an effective application of participatory and interdisciplinary approaches; (2) adopting a more global view of policy related issues and to take into consideration their diverse dimensions, e.g., economic, social and institutional aspects; (3) developing research projects that investigate policy issues at farm, community and local level; (4) further integrating the different levels of analyses at which policy issues are to be investigated and to extend them at all phases of a research project; (5) a periodic follow-up evaluation to be performed by the IWLMP in cooperation with NARS to ensure the best benefits from its projects and associated findings.*

**Response: Accepted.** ICARDA is keen to address policy issues at local and national levels, and to fully take account of all dimensions (economic, social and institutional) of policy-related issues. However, due to limited resources, this has been done only in some projects and for some innovations. ICARDA intends to enhance its policy work, especially as it relates to technology adoption at local levels, but this will be subject to availability of additional resources. ICARDA will also monitor further its collaborative research with NARS through annual meetings and evaluation missions on the impact of successful interventions and document these in impact assessment studies. ICARDA’s policy research applies household data and national polices, which naturally integrates policy analysis at farm and national levels. These activities will involve SEPRP in terms of using quality science approaches to such studies.

***Recommendation 8:*** *EPMR5 Recommendation 8 refers to reinforcing GISU “to tackle the challenges of the new Water and Land Program”. This recommendation may also be understood as demanding an increased collaboration between the GISU and the IWLPM. The Panel observed that the collaboration between IWLMP and GISU is excellent and could provide for more advanced results in various land and water domains; thus it is recommended to enhance GIS capabilities within IWLMP that could provide for synergies with GISU.*

**Response Accepted.** ICARDA is aware of the benefits of using GIS tools in its research. GISU was established to provide the necessary expertise and support and to enhance the capacity of the research Programs in using GIS. These inputs into joint research are highly appreciated. When recruiting new staff in IWLMP, ICARDA favors candidates that have some knowledge or expertise in GIS, in additional to the water- and land-specific science requirements. . We will in addition, work on further enhancing GIS capacities within IWLMP staff, in order to expand the use of GIS tools in research and to provide for more synergies with GISU.

ICARDA fully appreciates that the expertise and support provided by GISU in agroecological characterization and spatial analysis is critical to advanced research in land and water management and climate change, and recognizes that collaboration between GISU and the other research programs is essential. When recruiting new staff, IWLMP favors candidates that have knowledge or expertise in GIS, so that the program is better able to access, use and apply the results emanating from GISU. We will, however, work on further enhancing the GIS capabilities within IWLMP in order to further improve the collaboration and synergies with GISU.

***Recommendation 9:*** *Taking into consideration the current research and development studies, the Panel considers that the Program covers effectively the use of various types of water resources in agriculture and should further develop research relative to groundwater conservation and control of health and salinity hazards in relation to the use of treated wastewater.*

**Response: Accepted.** ICARDA fully agrees withthe recommendation. IWLMP is recruiting a water resources management specialist for whom expertise on groundwater will be the top priority. ICARDA has developed a concept note in partnership with IWMI and IFPRI to address the issues of ground water depletion, quality deterioration and conservation. IWLMP also has a joint appointment with IWMI for research on marginal quality water, including treated wastewater. We will further enhance the salinity work, but will rely on IWMI for addressing health aspects of using treated wastewater.

***Recommendation 10:*** *The analysis of the work done by IWLMP, including in cooperation with other programs and institutions, evidence very positive developments as well as clear research trends. Consequently, various research recommendations of technical and scientific nature are summarized in item 14 of Section 5. A few recommendations refer to new areas of research but the opportunity for their implementation depends upon successful research funding. These areas mainly consist of: (1) developing new research issues on drought risk management, including early warning, mainly aiming at supporting further developments and applications by the NARS; (2) developing climate change scenario studies that may be useful for the BIGM program as well as for NARS in terms of adaptation to climate variability and variation and relating to the prediction of the onset of rains, temperature extremes and changes in rainfall regimes; (3) further developing studies on salinity, including assessing models that address salinity management, either for irrigation with saline waters or cultivation of salt-affected soils; (4) further developing research on using treated wastewater and greywater, mainly aiming at avoiding related health and salinity hazards; (5) develop research on groundwater conservation in the context of dry areas; (6) initiate studies on canal delivery scheduling and management aimed at solving existing constraints to adopt improved water saving and salinity management irrigation at farm level; (7) develop studies on irrigation water user associations whose mismanagement of irrigation systems may be constraining water use on farm.*

**Response: Partially accepted.** Some of the suggested “new” topics are already addressed by IWLMP in collaboration with other Programs and Units within ICARDA, including groundwater, salinity, wastewater and gray water and some aspects of climate change adaptation, especially with supplemental irrigation and water harvesting. We will continue to enhance this innovative cross-cutting research, doing so with colleague Programs and Units. ICARDA will actively pursue funding for more emphasis on groundwater, drought and climate change issues. However, ICARDA will seek IWMI’s expertise in addressing issues related to irrigation conveyance systems, water user associations, and health aspects of wastewater.

***Recommendation 11:*** *Considering the fruitful results achieved relative to salinity research, It is highly desirable that ICARDA continues collaboration with IWMI on the salinity topic and extend this collaboration to drought, climate change, wastewater research, groundwater management in dry areas, canal management and irrigation water user associations.*

**Response: Accepted.** ICARDA will continue to strengthen and expand collaboration with IWMI on salinity, wastewater, drought, groundwater and canal water management.

***Recommendation 12:*** *The EPMR5 Panel proposed Recommendation 7 on the need for “increased efforts in agronomy to assist countries in bridging the yield gap between actual and attainable yields, including researching the agronomy, crop management and economic incentives required to generate the needed synergies with the breeding efforts”. IWLMP is responding well to this recommendation through appropriate research on various facets of water productivity and through a very good collaboration with the BIGM Program. The Panel recommends both that collaboration with BIGMP is reinforced and that research on land productivity develop further since land productivity is a key factor in the income of farm communities.*

**Response: Accepted.** ICARDA is in full agreement with the Panel recommendation and will continue strengthening the inter-Programs collaboration especially with GISU, BIGMP and DSIPSP, where for example our conservation agriculture research is housed. ICARDA research aims at sustainably improving land and water productivities, based on the resources availability and comparative advantages.