

Minutes of Consultation for the CWANA region on the Proposed International Assessment of the Role of Agricultural Science and Technology in Reducing Hunger, Improving Rural Livelihoods, and Stimulating Environmentally Sustainable Growth

**25-26 February 2003
Cairo, Egypt**

**Organized by ICARDA, The World Bank and the Department of Agriculture and Land Reclamation,
Egypt**

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Background

The World Bank initiated a global consultative process on a proposed international assessment on how agricultural science and technology can help reduce hunger and improve rural livelihoods over the coming decades at WSSD in Johannesburg last August. Such a review would be useful in order to update and improve the quality of information available for decision makers at the local, community, regional, national, and international level and to provide information useful to farmers and consumers. As part of a process to ensure that an assessment is demand-driven, owned by all stakeholders and targeted to well-defined user audiences, the World Bank has initiated a series of regional consultative workshops. The objectives of these workshops are to develop an appropriate authorizing environment for an assessment and to determine the scope, objectives and value of an international assessment.

Although enough food is being produced worldwide to theoretically feed everyone, large numbers of people remain in hunger with limited opportunities to improve their livelihoods. National food security without further damaging the environment remains a challenge for the poorest countries. Population continues to grow at a rate of around an additional 80 million per annum and as consumption patterns change there will be a need to intensify production.

Meeting these demands will require productivity increases and product diversification to improve the livelihoods of the poor, protect the environment, and ensure broad-based and equitable economic growth. Furthermore a policy environment is needed in both developed and developing countries that is equitable and that addresses issues such as trade, intellectual property rights (IPR), land tenure, and that enhances agricultural productivity while encouraging better stewardship over the use of the natural resource base.

Advances in scientific knowledge across a broad range of disciplines will be required in order to develop more and better food and fibre products with improved nutritional quality, to reduce food and commodity yield losses due to pests and diseases, to ensure healthy livestock, sustainable fisheries, aquaculture and forestry sectors, to manage water more efficiently, to prevent and reverse land degradation and to conserve and manage genetic diversity.

A focused and appropriate research agenda is required to meet these challenges that is supported by public investment. Unfortunately public investment in agricultural research and development is declining while private sector investment is increasing in the OECD. Private sector investments tend to focus on commodities produced for OECD markets and often neglect the needs of the poor. Thus the increased investment by the private sector will not meet the demand for diversified agricultural products and improved rural livelihoods via the required multi-sectoral approach that covers the economic, environmental, ethical and social considerations.

Given the decline in public sector investment in developing countries at a time when the challenges to apply science and technology are urgent, there is a need to consider carefully the agenda for future agricultural research and development efforts. This agenda must also include public debates on controversial issues such as the development and deployment of genetically modified organisms and other aspects of modern biotechnology.

It is against this background that the suggestion for an international assessment of agricultural research and development has arisen. The World Bank has initiated a process towards an assessment that aims to be inclusive of all stakeholders, that is comprehensive and multidisciplinary, and that recognises the broader policy and institutional issues concerning agriculture (see www.agassessment.org for more details).

The CWANA region

As part of the efforts of the International Centre for Agricultural Research in the Dry Areas (ICARDA) in agricultural research and development for Central and West Asia and North Africa (CWANA), an inventory of the resources in the regional NARS is available (ICARDA, FAO, AARINENA, and CIHEAM, 1999) and more recently a comprehensive priority setting exercise for agricultural research for the Central and West Asia and North Africa (CWANA) region has been undertaken with the sub-regional organizations, AARINENA and the CAC-Forum (ICARDA, 2003). Many of the findings of these two initiatives have been confirmed recently in the UNDP report on the Arab countries (UNDP, 2002).

The above mentioned reports indicate that in the WANA region an estimated 70% of the poverty is in rural areas even though only some 43% of the total population lives there. Despite the large dependence of the rural population on agriculture there is a declining emphasis on agriculture and rural development. In addition the region is facing a number of converging trends that threaten the future livelihoods of the poorest sector of society. These include;

Water scarcity

The region is already one of the most water scarce in the world and this is predicted to worsen markedly over the next 25 years. As a result the food security situation will also likely worsen. Currently the region is a large importer of grain (about 51 million tonnes per year in 1998-2000).

Population growth rates

The region is characterized by the second highest population growth rates on the planet, with some countries in the region growing at 3.5% per year.

Land degradation

As much as 45% of the total land area dedicated to agriculture and rangeland is experiencing some form of land degradation, thus reducing the already low productive potential of the land.

Global climate change

As a consequence of climate change, the region is projected to become warmer and drier with reduced crop productivity.

Of these the most serious is water scarcity with 15 of the countries of the CWANA region already below the water "poverty line" of less than 1,000 cubic metres per person per year, and hence integrated approaches to water management are urgently needed that consider water demand management, water use efficiency of different production systems, water resource allocation, and policy packages.

These trends threaten the region's food security and place increasing pressure on the food production systems and natural resource base.

Achievements by the Arab region on the Human Development Index (HDI) have been lower than the world average over the last decade, not because of income poverty, but rather because of a poverty of capabilities and opportunities particularly in terms of women's empowerment, and knowledge and the quality of education (UNDP, 2002). The Arab countries have the lowest level of Information and Communication Technology (ICT) in the world with only 0.6% of the population using the Internet.

Therefore in the CWANA region particular efforts are required to increase human and social capital and knowledge so that the region can develop its own capacities for agricultural research and development and be better equipped to take advantage of existing and new developments from outside the region. The earlier report by ICARDA provides a synthesis of these requirements (ICARDA, FAO, AARINENA, and CIHEAM, 1999).

The Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA) and the Central Asian and Caucasus NARS forum, together with ICARDA, have recently completed a widespread consultative prioritization exercise for agricultural research and development in the CWANA region (ICARDA, 2003) and concluded that strong research-extension-development linkages constitute the surest

and most efficient path to agricultural development and hence rural development in the region. This exercise gathered opinions from a wide range of organizations and institutions that included NGOs, the private sector, universities, investors, and donors in a four-step process involving an inventory of CGIAR activities in the region, a questionnaire, sub-regional brainstorming meetings, and culminated in a CWANA regional meeting held in Aleppo in May, 2002. The result of this exercise is an in-depth assessment of the priorities for agricultural research and development for commodities and natural resource management. It forms the basis of the necessary focus on agricultural science and technology that should be the foundations of any rural development in the CWANA region.

Purpose of the workshop and expected outputs

This report documents the proceedings of the 1st consultation workshop that was held for the Central and West Asia and North Africa region held in Cairo, February 25-26, 2003 and organized by ICARDA, the World Bank and hosted by the Ministry of Agriculture and Land Reclamation, Egypt.

The purpose of the workshops was to provide a forum for a diverse group of organizations and institutions to review and discuss the need for an assessment and how it could be organized. Participants were asked to discuss the scope, key questions and value of the assessment, to focus on questions that decision makers need answered in order to formulate policies that result in fewer hungry, poor people, and to identify the contextual issues within the CWANA region, and to discuss governance and management options.

Expected outputs included:

- The value of an assessment
- The scope of an assessment, identifying core science and technology issues that can contribute to the improvement of rural livelihoods and the reduction of hunger
- The governance and organization of an assessment

Workshop structure and process

The World Bank invited ICARDA to organize the first regional consultation on the assessment of science and technology to follow the workshop on the World Bank's strategy for Rural Development in Cairo, Egypt, February 23-24, 2003. The meeting was hosted by His Excellency Prof. Dr. Youssuf Wally, Deputy Prime Minister and Minister of Agriculture and Land Reclamation. ICARDA staff from its headquarters in Aleppo and from its regional offices of the Nile Valley and Red Sea Regional Program (NVRSP) organized the meeting and logistics with financial support from the CGIAR and The World Bank.

Over 100 people attended the consultation including World Bank staff, rural development specialists and other professionals from national agricultural research institutions, government ministries, civil society organizations, sub-regional organizations, the private sector, farmer associations, and the international agricultural research centres active in the CWANA region.

The need for an assessment

Participants clarified the aims of the assessment with particular concerns of how to ensure that the voice of the poor would be heard in the process and how will science and technology really serve the poor. The failure to transfer science and technology and its benefits to the poor was seen by the group as a major challenge.

Reasons for an assessment at this time included:

- the current lack of interest in agriculture and associated agricultural science and technology in the political arena,
- the skepticism of the benefits of science and technology in the public arena,
- the perceived failure of science and technology to meet the needs of the poor,
- the need to develop stronger public-private sector linkages,
- concerns over the impact of agriculture on the environment,
- the rapid dynamic nature of technology development and agriculture,
- the need to close the gap between the developing and developed countries in terms of the generation and use of new technologies.

Greater efforts should be made to publicize successful case studies in order to overcome skepticism and to ensure that the lessons from past efforts have been learned and that duplication of effort is avoided.

Clarity was requested on how the consultation will be used. It was envisioned that there would be multiple users of the assessment including governments, researchers, civil society organizations and consumers. If differing opinions are expressed these will be made public and the steering committee¹ would decide whether to proceed and how, when there are differing viewpoints.

There was consensus that the assessment would be of value but questions remain on how to make the assessment truly inclusive and focused on the needs and voices of the poor. Previous international assessments on themes other than agriculture have tended to not put the poor at the center even though they were supposedly multi-stakeholder efforts.

Issues raised on the scope and implementation of the assessment:

General

Participants agreed the assessment should identify where science has divergent views concerning, e.g., biotechnology, and bring these into public debate as well as address them in the assessment. The target and indicators of the assessment should be clearly stated at the beginning of the process to avoid confusion. It should highlight what we know and what we do not know and include syntheses of existing studies. The outcomes should be options to offer the range of stakeholders from the land user to the policy maker rather than prescriptive recommendations. Questions remain on how to involve civil society in the assessment, and how to include local and regional perspectives and expertise. This suggests that a consultative process and steering group is required along the lines of other international assessments and bodies. Efforts should be made to assess both the potential and risks of new S&T in the assessment.

Participants believed that the assessment should be relatively short, e.g., within 1-2 years if possible, and should address the social, political and economic dimensions, the impact of global changes, focus on poverty and sustainability, access to and transfer of technology, incorporate indigenous knowledge and address the North-South divide, regional cooperation and capacity building.

Biotechnology

Participants stated that more research is required on the risks and benefits and biosafety (health and environment) aspects of biotechnology and the results clearly explained to the public at all levels. Biotechnology needs to be directed to the needs of the poor by focusing on the "orphan" crops and on the problems of the marginal dry areas that the private sector usually ignores. In some regions, biotechnology can be used to address the issue of poor quality seed and the introduction of improved materials into the artesian or local seed sector.

Policy arena

There is a need to strengthen national policies and a need to bring in all aspects of the potential of modern science and technology via greater advocacy. In the policy arena, there is a need to focus on how the private sector can be engaged more in addressing issues of the poor. What changes are required for an enabling environment where the private sector could be greater engaged and encouraged to formulate public-private partnerships? Governments should adopt a strategy to encourage these alliances. Currently it is recognized that the scientific community is paying insufficient attention and input into policies for science.

Capacity building

Participants agreed capacity-building is urgently needed in the CWANA region for agricultural S&T. It was recognized that S&T will not advance in the developing countries without a strong capacity base. How can science and the need for a strong base be promoted in the CWANA countries? The participants agreed that there is a need to send clear messages to governments, the private sector and the consumer.

More effort needs to be made in order to empower farmers to direct the research via participatory action research, more farmer-to farmer exchanges, farmer field schools etc.

The quality of education has been highlighted as a major issue in the CWANA region at primary, secondary and tertiary levels and one, which urgently requires addressing. Incentive grants are required in order to encourage people into higher and further education and to reverse the "brain drain" in the region. International exchange schemes could be an option to help close the gap in knowledge in S&T. Greater linkages of education with the institutions involved in S&T will be particularly important. Rewards and salaries for scientists in the region are generally low with the result that there are little or no incentives to a

¹ The composition and terms of reference of the steering committee can be found at www.agassessment.org

career in agricultural S&T. This will probably remain a problem until the agricultural sector becomes wealthy enough to start to pay for research and extension services and/or greater investments are made by the public sector.

Institutional issues

Issues raised under this topic included what type of research and extension is needed to improve nutritional security, reverse natural resource degradation and increase the income of the poor.

Institutions need to collaborate more and prevent the fragmentation of efforts via greater regional and international cooperation in science and technology using networking, consortia, joint projects and greater linkages to international conventions and debates on negotiations and trade barriers.

Institutions should become learning organizations that encourage “constructive subversion” meaning that new ideas from the young should be encouraged and not crushed.

Knowledge management

There is an urgent need to exchange and share knowledge in the region but there are a few mechanisms to achieve this. Efforts should focus on how to provide the end user with the appropriate knowledge that includes technological, financial and marketing information in order to help alleviate poverty. Different media and types of knowledge are required in order to reach all sectors of agriculture.

In this respect, there is a role for knowledge management of S&T in stimulating local private industry for seed production and processing, agro-industry etc.

IPR

A clear need to protect the IPR of indigenous and local community knowledge was expressed, as was the need to separate ownership rights of scientists and others who develop innovations from the rights to use information for research purposes. The challenge here is how to put the pieces together in a balanced way taking into account the technical and human resource constraints, the legislative issues, and public perceptions of IPR. An overly stringent IPR process will stifle the development of the private sector particularly in developing countries that need to close the gap with developed countries. A lack of cooperation among the developing countries was highlighted as an obstacle on IPR issues. The costs of adequately dealing with IPR could be prohibitive for many countries and there was the recognition that many countries cannot field teams of experts at negotiations thereby weakening the bargaining positions.

Loss of biodiversity

The region is characterized by dry lands and these regions have important sources of biodiversity associated with drought and salinity tolerance that need to be protected and conserved. At the same time, there is a need to increase productivity and diversification of the production systems. Therefore, there is a need to study and promote the concept of eco-agriculture, i.e. the encouragement of biodiversity and agricultural production within the same landscape.

Water resources and their management

Because the region is the most water scarce in the world a particular focus needs to be made on declining water resources for the agriculture, industrial and domestic sectors and on increased water use efficiency at all levels. Re-use of water will become an increasingly important aspect of water management with accompanying health and social considerations. Hand in hand with increased water use efficiency will be the development of more drought and salinity tolerant plants by both conventional breeding methods and new biotechnologies, and more efficient irrigation systems. Increased efforts on improving water use efficiency should accompany efforts to diversify production systems with new crops and rotations that are more conservative in water use rather than a focus on productivity *per se*.

Other issues on natural resource management

Central Asian delegates were particularly concerned that soil and land degradation be addressed in their region. This is also reflected in the ICARDA-led priority setting exercise for the CWANA region that ranked soil degradation second after water in the list of priorities for natural resource management. Perverse incentives that damage the environment such as fertilizer subsidies should be removed and more environmentally friendly technologies encouraged.

Specific challenges and vision for the CWANA region

Goals for the region include optimizing crop production and financial returns, bridging the food gap (food security), enhancing the sustainability of agriculture and the natural resource base and expanding foreign exchange earnings. The need to re-connect economics and ecology was emphasized for long-term sustainability.

Participants viewed the desired future in the region as one where there is, self-sufficiency and food security, reduced poverty, political and economic stability, the basic needs of the poor are met in terms of food, shelter, sanitation and assured water supplies of good quality, greater access to markets, a desire to remain in the rural areas but where children have access to education and employment opportunities, where local people are managing new technologies, an absence of land degradation and desertification, and greater opportunities for people to increase their adaptive capacities.

The recent priority assessment exercise conducted by ICARDA, AARINENA and the CAC-Forum should be referred to for more details on the regional priorities for CWANA.

Organization and governance of the proposed assessment

Participants were asked to consider a number of options for the organization of the assessment. These included,

- Inter-governmental or non-governmental?
- The IPCC, Millennium Assessment, IAC or World Commission on Dams model?
- If inter-governmental, which agency would be considered appropriate e.g., FAO, UNDP, UNEP, World Bank?
- If non-governmental, how should it be managed?

For an international assessment to be successful, it was recognized that it needs to be a transparent process with well-defined principles and procedures. There needs to be ownership by all relevant stakeholders. The assessment should involve the full range of stakeholders and be prepared and reviewed by the world's recognized experts with balanced intellectual inputs from a wide range of disciplines and geographic representation.

On the question of whether the assessment should be governmental or non-governmental, participants had varied viewpoints, although overall, the meeting tended towards an intergovernmental process. An inter-governmental process would have a greater chance of increasing the profile of agricultural S&T though it may be somewhat less flexible and protracted in reaching conclusions. Some participants believed that to truly incorporate the voices of the poor a non-governmental process would be preferable with an independent representative body overseeing the process rather than an institute such as the World Bank, IFAD, FAO or the CGIAR system for example.

Concerns were expressed about the loss of the local or regional perspective if the assessment was organized via an inter-governmental mechanism. Any steering committee should have representatives from regional and sub-regional organizations and should not be managed solely by a secretariat from one of the inter-governmental agencies. Several delegates wished to see a regional organization, such as ICARDA, taking a leading role in the facilitation of the assessment for the CWANA region by building on the existing consultative mechanisms and fora catalyzed by ICARDA.

One option is to have a secretariat that is distributed around the world but with one host institution that houses the secretariat and facilitates the process. Checks or firewalls would need to be installed to ensure the independence of the secretariat. If there are major stakeholder groups or regional structures, standing committees can be established (civil society, private sector, sub-regional) to ensure that all views are covered. The biggest perceived drawback of an inter-governmental process is the fact that the plenary sessions can only be represented by governments. If multi-stakeholders are to drive the process there needs to be a clear process for ensuring that all voices are represented and that the concept of subsidiarity is respected. This may mean that the process should have a multi-level structure that feeds into any inter-governmental process. Such a structure would need further discussion and elaboration but the consensus was that such an arrangement be explored during the assessment process and in particular at what levels should there be groupings, e.g., local, national, sub-regional, regional, or by civil society organizations.

Overall this meeting tended towards an inter-governmental organization that was responsive to all sectors of rural society and one that consults broadly with existing organizations, networks, consortia at the national

and regional level etc. Central Asia representatives made a plea to be brought into the process and to be provided with guidance on future directions of agricultural S&T as due to their isolation, they have not been able to keep up with current developments.

The fact that some governments have already committed resources to the assessment suggests that there is sufficient interest for an inter-governmental approach. No clear views were forthcoming as to how the process may be managed via a non-governmental approach although it was clear that some participants would prefer this option.

Agreement was reached that a transparent and participatory process was essential as indicated above. The process should be driven by the representatives from the countries of the CWANA region in order to ensure that the exercise produces results that are relevant to the demands from the region.

In general, the following core S&T questions were viewed by participants as high priority issues for the proposed assessment:

- The potential of current and future technologies, by region, to produce crops, livestock, fish, forests, biomass for energy, commodities, with the required nutritional value in an environmentally and socially sustainably manner;
- The potential to reduce post-harvest losses and minimize waste;
- The potential to improve crop traits, e.g., drought, pest, salinity and temperature tolerance;
- Whether animal protein is part of solution or problem;
- The biophysical barriers to agricultural production and how indigenous knowledge can improve the approach these barriers;
- How much energy and water will be needed as agriculture expands to meet demand: what the potential is for improving energy and water use efficiencies in agriculture;
- How can we ensure biodiversity in areas where production must be increased;
- The potential to deliver pharmaceuticals through agricultural products safely and reliably
- How information technologies can assist producers;
- How to create an environment for countries to share technology success stories; what is need to eliminate technical and human capacity gaps in ICT.

Acknowledgements

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Consultation on the Proposed International Assessment of the Role of Agricultural Science and Technology in Reducing Hunger, Improving Rural Livelihoods, and Stimulating Environmentally Sustainable Economic Growth

Tuesday 25 February

1030-1145	Welcome Opening Remarks Opening Remarks Plenary presentation and discussion on the scope Of the proposed assessment	Adel El-Beltagy Kevin Cleaver Ismail Serageldin Robert Watson
1145-1300	Breakout groups on scope and key questions Group 1: North Africa/Nile Valley & Red Sea Region Group 2: West Asia Region Group 3: Central Asia and the Caucasus	

There is broad acknowledgement that improvements in agriculture can increase food security and alleviate poverty. In this meeting we want to focus on the key questions in agricultural science and technology that decision makers need answered in order to formulate policies that result in fewer hungry, poor people.

Some ground rules for use in formulating questions:

- Use a broad definition of agriculture (one that includes livestock, aquaculture and forestry, commodities and biomass)
- Focus on scientific and technical issues related to agriculture, i.e., increased production, product diversification, and human nutrition; and related environmental, social and institutional considerations
- Encompass the full range of existing and possible future technologies; and
- Keep in mind that these questions will be used to produce a high-quality assessment that analyzes existing knowledge to identify gaps where we need more information and more research in order to capture the full range of perspectives along the entire agricultural chain.

1300-1430	Lunch	
1430-1800	Breakout groups on scope and key questions (Continued)	

26 February 2003

	Chairman: H.E. Dr. Youssef Abou Safieh	
0830-1030	Plenary presentation of reports from breakout groups	
1030-1045	Coffee Break	
1045-1145	Plenary presentation and discussion on organization and Governance of proposed assessment	Robert Watson
1145-1300	Breakout groups on organization and governance Group 1: North Africa/Nile Valley & Red Sea Region Group 2: West Asia Region Group 3: Central Asia and the Caucasus	
1300-1430	Lunch	
1430-1530	Breakout groups on organization and governance	

1530-1600	Coffee Break
1600-1800	Plenary presentation of breakout groups Closing remarks Chairpersons: Adel El-Beltagy / Robert Watson