

Eco-Regional Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus

11th Program Steering Committee Meeting

21-23 JUNE 2008

ASTANA, KAZAKHSTAN

PROCEEDINGS



PROGRAM FACILITATION UNIT
CGIAR PROGRAM FOR CENTRAL ASIA AND THE CAUCASUS
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Message from the Head, PFU

In 2008, the Program for Collaborative Research in Central Asia and the Caucasus (CAC Program) is looking back on 10 years of its existence. It has grown and has made encouraging progress since its inception. This was the reason why an external review of the Program had been commissioned by the CAC Program at its 10th Steering Committee Meeting in 2007 in Dushanbe, Tajikistan. This “Consortium-Commissioned External Review” (CCER) was successfully carried out in the first half of 2008. Three eminent scientists, Prof. Elias Fereres (University of Cordoba, Cordoba, Spain), Dr. Gurdev Khush (University of California, Davis, USA) and Dr. Mohammad Roozitalab (Agricultural Research, Extension and Education Organization, Tehran, Iran) carried out the review.

The CCER report was the major agenda item at this year’s Steering Committee Meeting in Astana, Kazakhstan. As the CCER report was partly based on a hearing carried out on 28-30 April, 2008 in Tashkent, Uzbekistan, at which comprehensive center and country presentations had been made, there was a general feeling that repeating these presentations at the SCM would be superfluous, especially considering that these country- and center-wise reports had been well reflected in the CCER report. Therefore, it was decided to focus on the CCER report and its recommendations, by organizing the meeting around break-out working groups that discussed in detail several of the most important recommendations of the CCER, and how to move forward with regard to their implementation.

The 11th Steering Committee Meeting of the Program was held in Astana, Kazakhstan, from 21-23 June, 2008. The meeting was attended by approximately 50 scientists from seven CAC countries (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) and eight CG centers (Bioversity International, International Maize and Wheat Improvement Center (CIMMYT), International Potato Center (CIP), International Center for Agricultural Research in the Dry Areas (ICARDA), International Water Management Institute (IWMI)), two other International Centers (AVRDC - the World Vegetable Center, International Center for Biosaline Agriculture (ICBA)), and from Michigan State University (MSU). A representative of the World Bank office in Astana, Kazakhstan, was also present at the meeting.

Our most sincere thanks go to the staff of the Ministry of Agriculture, “KazAgroInnovatsiya”, Astana’s Seifullin Agrotechnical University, and of the “Asyl Tulik” Joint-Stock Company for their immense assistance in the professional organization of the meeting.

Thanks are also due to all meeting participants for their enthusiasm to make this program successful. We are looking forward to intensified collaboration during the next decade, aiming at the sustainability of agriculture and the improvement of living standards of the rural poor in this highly important region.

Christopher Martius
Head,
Program Facilitation Unit (PFU)

Proceedings of the Meeting

INAUGURAL SESSION

The 11th Steering Committee Meeting of the Program was held in Astana, Kazakhstan, from 21-23 June, 2008. The meeting was attended by approximately 50 scientists from seven CAC countries (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan) and eight CG centers (Bioversity International, International Maize and Wheat Improvement Center (CIMMYT), International Potato Center (CIP), International Center for Agricultural Research in the Dry Areas (ICARDA), International Water Management Institute (IWMI)), two other International Centers (AVRDC - the World Vegetable Center, International Center for Biosaline Agriculture (ICBA)), and from Michigan State University (MSU). A representative of the World Bank Astana was also present at the meeting. The list of the participants is given as *Appendix 1*.

Dr. Colin Chartres, DG, IWMI, the in-coming Chair of the Consortium, and Dr. Akyzbek Kurishbaev, Minister of Agriculture, Kazakhstan opened the meeting. Dr. Mahmoud Solh, Chairman, AE Task Force for CAC and DG, ICARDA delivered a Special Address. Dr. Chartres mentioned the immense benefit which the international collaboration can bring to all countries of this region. In his inaugural address, Dr. Kurishbaev was highly appreciative of the efforts of the CG Centers and the donor communities for their serious efforts in resolving the complex natural resource management (NRM) issues and developing technologies that now are beginning to bear their fruits in Kazakhstan. He also thanked Dr. Solh and ICARDA for taking upon them the leadership role and bringing together several key Centers to help national scientists to develop a viable action program to deal with serious NRM problems.

In his speech, Dr. Solh highlighted the achievements of the Program and remarked that national partners have made tremendous efforts in the last decade to overcome the effects of transition. He also indicated that Central Asian countries are at the crossroads between the past and the future, and that national governments must make additional investments in agricultural “research for development” so that the joint ingenuity of researchers and farmers generates innovations that help the land users mitigate and adapt to the consequences of desertification and global warming. Dr. Solh emphasized that the PFU unites the consortium partners, and plays the role of a catalyst and integrator.¹

ADOPTION OF AGENDA AND PRESENTATION OF CCER REPORT

The Session was opened by Dr. Solh, who co-chaired the session with Prof. Abdushukur Khanazarov. The agenda of this Steering Committee meeting was unanimously accepted by the participants (cf. *Appendix 2*).

¹ One day before, on 21st June 2008, Dr. Mahmoud Solh, DG of ICARDA, delivered a Special Lecture at Agrotechnical University of Kazakhstan on "The Role of ICARDA in Central Asia and the Caucasus", which was a comprehensive account of the achievements of the CG Centers and of the PFU in Central Asia and the Caucasus. The presentation can be found under http://www.icarda.org/cac/files/rol_of_icarda_in_cac.pdf.

Then, Dr. Solh invited Dr. E. Fereres to present the report of the Consortium-Commissioned External Review (CCER). The other members of the CCER Panel were Dr. G.S. Khush, and Dr. M. H. Roozitalab. Mr. J. Fitzsimon, Director of the CGIAR Internal Auditing Unit, and Dr. R. Paroda, former Head of the PFU and ADG (IC), ICARDA also provided their inputs in finalization of the report. The full report had been circulated to all the participants in English and Russian language in advance. It will soon be made available at <http://www.icarda.org/cac/CCER>. The executive summary, which contains the 33 recommendations made in the report, is included here as **Appendix 3**. The Panel prepared seven general and 26 specific recommendations, the latter under seven thematic areas, including aspects related to the management and role of the PFU, the NARS, and the International Centers, in improving agricultural science quality.

The Chair of the CCER, Dr. E. Fereres, summarized the Panel's findings by stating that "the Panel found the CAC Program to be productive and highly important for the CAC region. It needs to be continued and sustained by the CGIAR. The Program should be re-adjusted for future challenges". The Panel stated that the CAC-Program represents an important contribution to agricultural research and development in the region at a historically critical moment. It highlighted the foresight with which ICARDA undertook a leadership role in the development and coordination of the Program.

The Panel highlighted the need for the CAC Program to capitalize on its achievements in order to promote conservation agriculture as a strategic platform for integrated efforts on poverty alleviation, and to concentrate the work on different agricultural systems in a few focal areas in the partner countries, while disseminating the results among all members. It pointed to the need for training and educating a new young generation of scientists in all the CAC countries.

It was also highlighted that the Head of the PFU should have the mandate to lead the coordination and integration of the work of the Consortium members in the CAC region. The CCER Panel at the same time expressed some concern over the financial sustainability of the Program and of the PFU (which is currently funded through the mechanism of the System-Wide Ecoregional Programs (SWEP) of the CGIAR). It encouraged larger support to the Program from the CAC countries, and by the international donor community. Responses of the Consortium to each of the CCER recommendations were discussed in-depth and will be formally prepared by the Consortium under coordination by PFU.

In order to initiate follow-up on the CCER recommendations, the Steering Committee decided to form four ad-hoc working groups during the meeting. The working groups were:

- WG 1 – Priorities for the CAC Program (Dr. Maarten van Ginkel and Acad. Shota Chalaganidze);
- WG 2 – Reforms and program expectations (Acad. Djamin Akimaliev and Dr. Herath Manthrithilake);
- WG 3 – Linking Seed Production and Breeding systems (Acad. Hukmatullo Akhmadov and Dr. Hans Braun);
- WG 4 – Water and Land Management (Prof. Abdushukur Khanazarov and Dr. Colin Chartres); and
- WG 5 – Training and capacity building (Dr. Levon Minosyan and Dr. Charles Crissman)

WG 1 – Priorities. The first work group set out to identify commonalities in the priorities identified earlier for the region by CACAARI (RNA Meeting 2007) held in Tashkent in March

2007² and those listed in the CCER report (2008). It identified coinciding priorities as well as those identified only in either one of the reports. The outputs of the Working Groups have been summarized in *Table 1*.

Table 1: Priorities identified for the CAC Region in the CACAARI workshop 2007, and the CCER report 2008 – commonalities, and differences

Topics/ Theme Area	Priorities coinciding across CCER and CACAARI	Priorities in CCER, and not or less so in CACAARI	Priorities in CACAARI, and not or less so in CCER
Comparisons between Recommendations	<ul style="list-style-type: none"> Collection, conservation, exchange & evaluation of genetic resources Strengthening of breeding (e.g. training; molecular markers) Breeding for disease resistance (e.g. wheat & Ug99) Conservation agriculture (e.g. crop residues; breeding adapted varieties) Rotating with alternative crops, environmental quality and pesticide use Soil fertility: role of legumes Irrigation management (e.g. crop choice; irrigation scheduling; supplementary irrigation) Crop/variety diversification in saline regions Crop diversification (e.g. F&V, wool) Animal genetic resources (with ILRI) 	<ul style="list-style-type: none"> Publishing research in refereed journals Testing varieties released by neighbors Seed systems (e.g. seed production; national seed boards; regional seed association) Livestock and markets Policy research Management of rangelands / feed / livestock Land management in mountainous and hill agro-ecoregions Rehabilitation of irrigated systems Improved linkages between biotechnology and genetic resources 	<ul style="list-style-type: none"> Genetic resources management: regional strategy for biotech tool use Exchange of genetic resources: regional standardization & training Water and wind erosion Rangeland management Environmental quality concerns (e.g. drainage & waste water use; carbon sequestration)
Capacity building		<ul style="list-style-type: none"> Investing more in research Training workshops Reform extension service Strengthen links through CACAARI Strengthen links with advanced research institutes in region Short technical courses Strengthen PFU 	
Socio-economic Research	<ul style="list-style-type: none"> Marketing and policy research 		<ul style="list-style-type: none"> livelihoods and poverty analysis and gender research adoption and impact assessment land tenure and local institutions competitiveness and trade

The CCER report was discussed and then unanimously adopted by the Steering Committee. This includes also the new Terms of Reference for the PFU (*Appendix 4*). The report and the Consortium's response will be submitted by the PFU to the Science Council of the CGIAR and to all DGs of the CG system.

² R. Paroda, S. Beniwal, R. Gupta, Z. Khalikulov and A. Mirzabaev (Editors). 2007. From Issues to Actions: Final Report of the Expert Consultation a Regional Research Needs Assessment in Central Asia and the Caucasus, 7-9 March 2007. GFAR, CACAARI, ICARDA- CAC, Tashkent, Uzbekistan. 14 p.

WG 2 – Reforms. This WG discussed expectations towards the program from the side of the NARS as well as the participating centers. Most recommendations endorsed those from the CCER document. The Program's visibility with NARS and donors in the regions should be heightened. A general call was issued for more funding to the CAC region, and a specific call upon the PFU donors to continue or even increase financial support on a larger scale. CAC country governments were also recommended to allocate not less than 1 % of GDP to agricultural research. The CACAARI network (Central Asia and Caucasus Association of Agricultural Research Institutions) urgently needs to be re-activated and restructured with better financing and priority setting (the annual CACAARI member meeting will take place in September 2008).

The work group concluded with the proposition that PFU initiate the joint development of a position paper on common issues, strategies, priorities and pathways for food security in the region.

WG 3 – Linking Seed Production and Breeding Systems. This Work Group observed that the CCER has recommended that (1) varieties released in one country should be evaluated in other countries of the region (especially those adhering to the International Union for the Protection of New Varieties of Plants (UPOV); cf. below); (2) the often unbalanced competition between private and state seed sector needs to be removed; (3) seed boards and national seed industry associations need to be set up; and that (4) regional seed associations for seed law harmonization, developing regulatory framework and policies as well as common methodology for variety testing and evaluation need to be set up.

The group was in agreement with the CCER recommendation that there is an urgent need to harmonize seed regulations in the CAC countries. Uzbekistan, Kyrgyzstan and Azerbaijan are members of UPOV - Georgia and Kazakhstan plan to join. Regulatory frameworks exist, but their implementation leaves room for improvement. The group recommended that IFPRI should take the lead to organize a high level workshop on seed sector regulations.

The Working Group also evaluated the potential of farmer-based seed systems and observed that varieties released through the official systems often do not reach the farmers; that the seed sector in the CAC is highly heterogeneous, and that no single system may suit all crops or all countries. Where official seed systems are inefficient, it may be advantageous to develop farmer-based seed systems suited for each crop and country, in which varieties are more efficiently spread through participatory variety selection (PVS) and mother-baby trials. However, PVS-identified varieties may not be accepted for release by the official sector. Also, quality control in farmer-based systems remains problematic.

The group was of the opinion that the PFU and the concerned crop centers and Bioversity International should step up their efforts for advocacy of regulating the seed sector through (1) establishing a formal seed sector for longer-term sustainability, and (2) developing seed delivery systems based on best fit on a crop and country basis, mostly still through the informal seed sector, to achieve the urgently needed short term impact.

WG 4 – Water and Land Management. This group emphasized that water related issues should be looked at from a river basin water management level to resolve issues of water allocation in integration with policies and the regulation of on-farm water management to reduce further land degradation. The group strongly advocated additional research on soil erosion (irrigation- and wind-induced) in mountainous areas.

The work group agreed that the Research Prospectus, a framework program for sustainable land management research (SLMR) developed earlier by ICARDA, outlines the bio-geophysical setting of Central Asia, identifies the problems and drivers of dryland degradation, discusses the SLMR priorities and outlines the opportunities and approaches to enhancing the productivity and sustainability of the production systems in the specific agro-ecologies of the region. The group agreed to the suggestion that natural resource management research should be conducted in a watershed approach, using conservation agriculture as a common basis for all efforts to fight land degradation effectively. An integrated crop/tree/livestock approach will enhance productivity of the major production systems commonly practiced in the area, i.e., (a) irrigated, (b) rainfed, (c) mountain areas, and (d) rangeland and pasture systems.

The group made detailed and specific suggestions to the formation of four work groups on these four agro-ecological areas, around which concept notes for donors will be developed. For each area, one CGIAR or associated International Research Center was given the role of coordinator. This will be taken up in the response to the CCER report.

WG 5 – Training and capacity building. The group specifically discussed the CCER's recommendations on Capacity Building (*Appendix 3*, points 26-32). Strengthening the science capacity in the region is a crucial component to implementing the consortium agenda. The PFU should coordinate the preparation of a position statement for capacity strengthening by the consortium, and guidelines for capacity strengthening in research proposals prepared and presented by consortium members, by October 2008. These guidelines should include:

1. Every funding proposal should strive to include funded studentships or post doctoral positions.
2. Every funding proposal should strive to embed the trained scientists in the proposal so that they return to the region after training.
3. Numerous universities are eager to collaborate with the consortium, supplying students and faculty supervisors for those students.
4. The PFU should facilitate the compilation of a list of regional universities and collaborating professors to ease the identification of students and their support for consortium members.
5. Where possible, the consortium scientists could contribute to university courses on topics as seen appropriate.

PFU PROGRESS REPORT 2007-2008

Dr. Christopher Martius, Head, PFU, presented the PFU Annual Report in a session chaired by Acad. Shota Chalaganidze and Dr. Dyno Keatinge. He gave an overview of highlights from the ongoing projects according to research topic. The full report can be found under http://www.icarda.org/cac/files/astana/PFU_ANNUAL_REPORT.pdf. In his presentation Dr. Martius emphasized that the CAC region has a very high potential that tends to be overlooked, because degraded landscapes are often perceived as naturally poor. He presented a vision for PFU, and provided information on issues such as on (i) opening up partnerships & networking, (ii) capacity building, (iii) information dissemination, (iv) resource mobilization and (v) challenges ahead (e.g. climate change- raising temperatures and its implications on agriculture in CAC; continuing land degradation; increasing pest virulence (e.g. Sunn pest; wheat stem rust (Ug99)) that contribute to poverty and reduce food security.

The Annual Report of PFU was discussed and accepted by the Steering Committee (SC) with the remarks that concerted efforts should be made by all the participating members to (a) streamline and integrate their programs on conservation agriculture platforms, (b) develop multi-disciplinary, multi-institutional programs to address complex issues, (c) increase the role of the program in policy advocacy. The SC also stressed that members should renew their efforts in fundraising so that new programs could be taken up to meet the emerging situations. It was also suggested that national programs should also should request their respective governments to raise contributions to “research for development” in respective countries.

EXECUTIVE COMMITTEE MEETING

In this session co-chaired by Dr. Mahmoud Solh and Dr. Toleutay Rakhimbekov, Dr. Christopher Martius, the Head PFU reported on the on-going projects and several projects in the pipeline. Projects in the pipeline were endorsed by the Executive Committee and Head PFU was encouraged to look for funding for these projects together with the respective partners which developed them. The Executive Committee congratulated the leaders of projects which had been successfully completed during the year.

Head PFU provided³ budget information for 2008 for the PFU; the estimated budget for 2008 was 384,000 USD, but after re-assessing it by the end of May, when the expenditures had amounted to 194,842 USD, and the balance was 189,158 USD, a slightly lower spending of 179,453 USD (or 374,295 USD for the whole year) is now expected. Nevertheless, this is 29,301 USD more than the available funds of 344,944 USD, which include the grant to PFU under the SWEP (Systemwide Ecoregional Program) mechanism and the membership fees received from AVRDC, ICBA and MSU. PFU expects to cover this difference through cost recovery from services delivered to projects.

IRRI has informed the Head, PFU, of the wish to withdraw from the CAC Consortium, given the fact that their contribution – mainly germplasm supply to the CAC region - would be better served through the participation of the Temperate Rice Research Consortium (TRRC) in the consortium. The ExCo is asking the Head, PFU, to respond positively to the withdrawal, while pointing at the needs for the TRRC to provide membership fees, if PFU is asked to provide services to the TRRC.

The Executive Committee supports the Government of Kazakhstan’s desire to become a member in the CGIAR, and encourages all other countries of the CAC region to also become members. It was decided to reflect this support in a declaration, which was developed in the course of the Steering Committee Meeting and ratified unanimously on the last day (“Astana Declaration”; cf. *Appendix 5*).

The CCER report was received very positively. Full endorsement of the CCER report by the SCM Plenary on the first day of the meeting was highlighted. This includes the new TORs for the PFU, which attribute to PFU the role “to coordinate and integrate the program”.

- Head PFU will develop a draft of consortium response to the CCER recommendations, in consultation with the partners, until 20 July. After that, comments will be collected during the first two weeks after the meeting. Head PFU will also prepare a letter to the SC and all Center’s DG’s, informing them about the report.

³ Via e-mail after the meeting, on July 1, 2008. Approval from all ExCo members was received by July 10, 2008.

- Head PFU will coordinate efforts to prepare an implementation strategy for the recommendations of the CCER and
- Report on the implementation at the next SCM.

Head, PFU, will coordinate the preparation of a plan containing scenarios for the financial sustainability of the PFU after 2008, containing at least three alternative scenarios for funding, for next ExCo meeting in 2009.

As the next venue should be in the Caucasus region (rotational principle), Tbilisi, Georgia, was elected as the venue for the 12th SCM Meeting in 2009.

Acad. Shota Chalaganidze (President, Georgian Academy of Ag. Sciences) and Dr. Colin Chartres (DG, IWMI) were elected as new co-chairs of the Steering Committee during the period of 2008-2009.

In regard to ExCo's composition, it was decided that future ExCo's will consist of the two Chairpersons, one Head of Delegation from each of the NARS and centers, representative(s) of the Donor(s), and Head, PFU, as ex-officio secretary.

PLENARY SESSION

This session, co-chaired by Dr. Dyno Keatinge and Dr. Mahmoud Solh, was opened with the brief reports from the workgroups, which were followed by a discussion. The discussion notes are given above, under the respective sessions. A report of the chairman of the Executive Committee (Dr. Solh) followed (see Executive Committee Results Report above). The Astana Declaration (**Appendix 5**) was discussed and finalized. The 11th Steering Committee Meeting was closed with complementary remarks from the NARS and delegation heads.

Appendices

Appendix 1 Participants of the Meeting

#	NAME	POSITION	ORGANIZATION	ADDRESS	Tel/Fax/Email
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Appendix 2: Program of the Meeting

Eleventh Meeting of the Steering Committee of the CGIAR Program for Central Asia and the Caucasus 21-23 June, 2008, Astana, Kazakhstan

20 June (Friday)

Presentation of Dr. Mahmoud Solh, DG of ICARDA at the Agrotechnical University of Kazakhstan on "The Role of ICARDA in Central Asia and the Caucasus".

21 June (Saturday)

09:00-10:30	Inaugural Session <i>Co-Chairs: Dr. Colin Chartres and Dr. Toletay Rakhimbekov</i>	
09:00-09:10	Opening	Dr. Colin Chartres, DG, IWMI
09:10-09:30	Inaugural Address	Dr. Akylbek Kurishbaev, Minister of Agriculture, Kazakhstan.
09:30-10:00	Special Address	Dr. Mahmoud Solh, Chairman, AE Task Force for CAC and DG, ICARDA
11:00-13:00	Adoption of Agenda and Presentation of CCER Report <i>Co-Chairs: Dr. Mahmoud Solh and Prof. Abdushukur Khanazarov</i>	
11:00 – 11:20	Adoption of Agenda	
11:20 – 12:30	CCER Report	Dr. Elias Fereres, Chairman, CCER Panel
13:30 – 14:45	Discussion of CCER report	
14:45 – 15:00	Adoption of CCER Report	
15:30-16:30	PFU Progress Report 2007-2008 <i>Co-Chairs: Acad. Shota Chalaganidze and Dr. Dyno Keatinge</i>	
15:30 – 16:00	PFU Annual Report	Dr. Christopher Martius, Head, PFU
16:00 – 17:00	Discussion of Annual Report of PFU	
17:00-17:30	Follow-Up to CCER: Discussion of Work Groups	

22 June (Sunday)

08:00-09:30	Executive Committee Meeting (<i>For members only</i>) <i>Co-Chairs: Dr. Mahmoud Solh and Dr. Toletay Rakhimbekov</i>	
09:30-11:00	Work Group: Priorities and Integration <i>Co-Chairs: Dr. Maarten van Ginkel and Acad. Shota Chalaganidze</i>	
11:30-13:00	Parallel Work Groups a) Expectations and reforms <i>Co-Chairs: Acad. Djamin Akimaliev and Dr. Herath Manthrilake</i> b) Seed/breeding <i>Co-Chairs: Acad. Hukmatullo Akhmadov and Dr. Hans Braun</i>	
14:30-16:00	Parallel Work Groups: a) Water/ land management <i>Co-Chairs: Prof. Abdushukur Khanazarov and Dr. Colin Chartres</i>	

b) Training + capacity building

Co-Chairs: Dr. Levon Minosyan and Dr. Charles Crissman

16:30-18:00

Session: Plenary session

Co-Chairs: Dr. Dyno Keatinge and Dr. Mahmoud Solh

23 June (Monday)

08:30-10:00

Plenary Session to discuss the “Astana Declaration”

Chair: Dr. Mahmoud Solh

10:00 – 14:00

Field visit (Visit to the “Asyl Tulik” Joint Stock Company for Livestock Production) and Farewell Lunch

Appendix 3: Consortium-Commissioned External Review (CCER) - Summary and Recommendations

By Elias Fereres, Gurdev S. Khush, Mohammed H. Roozitalab

The Panel has assessed the CGIAR Eco-regional Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus (CAC Program) through field visits and desk study in the period from January to May 2008. The Panel worked for a total of 24 days, during which it visited six of the eight CAC countries (Azerbaijan, Georgia, Kazakhstan, Tajikistan, Turkmenistan Uzbekistan), and the ICARDA Headquarters in Aleppo, Syria. The CAC program consists of a consortium of 9 CGIAR Centers and 3 non-CG partners (Advanced Research Institutes).

The Panel found the CAC Program to be productive and highly important for the region. It is a Program that definitely needs to be continued and efforts must be undertaken at various levels of the CG system to ensure its future sustainability. The focus of the CAC Program also should be re-adjusted for future challenges and the Panel has the following recommendations:

General

1. After the first ten years, the CAC-Program must focus on capitalizing on its achievements, and on enhancing its activities in the countries and regions that are at an economic disadvantage, all in the fields where it has comparative advantages. On the first issue, there is a significant opportunity for the Program to catalyze large productivity increases for cereal-based cropping systems through conservation agriculture in the years to come. On the second, there is more need for integrative approaches at the system level that focus on poverty alleviation, rather than to continue with discipline-oriented and isolated research efforts.
2. Although the CAC Program is one of the larger SWEPS, its dimensions are nevertheless small relative to the needs of the region, and it is evident that hard choices must be made in the prioritization of activities and of locations. Not everything can be done everywhere. However, it might be possible that by selecting to work on different agricultural systems in different countries, maximum program efficiency will be achieved if the results of each activity are appropriately disseminated to the other countries through their NARS. The additional advantage of a scheme of this sort is that every country would have a specific program of its own.
3. Throughout its visits, the Panel found very competent and dedicated scientists in all of the institutions visited. However, the Panel is concerned that in view of the rather advanced average age of the scientists, the much reduced level of recruiting observed in many of the local programs is a threat to the continuity of the valuable national efforts. It is apparent that there is an urgent need for the training and hiring of new young scientists everywhere. In this regard, the Panel believes that the CAC-Program could make substantial contributions to the post-graduate training of the young scientists of the Region.
4. The Panel believes that the Head of PFU should have a leading role in coordinating and integrating the work of the Consortium members in the CAC region, in order to ensure maximum

efficiency and synergy among the respective programs. It is highly desirable that the PFU serves as an effective liaison office for developing joint research proposals between members of the CAC Consortium Program and the CAC countries. The PFU should also ensure that research problems identified by NARS are presented to the appropriate Consortium members (or a group of them, if considered necessary), as well as that global research problems discussed in the CGIAR system are presented to the NARS, and the PFU should coordinate any eventually ensuing project preparation.

5. The Panel is concerned about the sustainability of the CAC-Program in general, and of the PFU, in particular. While the former depends largely on the support of the donors, the Panel thinks that if the PFU is to provide the critical support and partner integration, it is important that the Centers make explicit provision in their CAC project budgets for the PFU as well. Right now, this responsibility seems to rest too much on the convening Center (ICARDA) alone. Also, Consortium Centers should allocate funds for PFU support in all future project budgets submitted to donors. The Panel also strongly recommends the CGIAR/World Bank to continue supporting the CAC-Program on a high priority level, while the SWEP mechanism is in place.

6. The Panel notes an encouraging development in relation to national contributions to Program funding. CA countries which have benefited from recent economic growth have started contributing to the CG system. The Panel believes that substantial additional support to the Program from the CAC countries will be needed in the future to sustain this Program.

7. The CAC-Program represents an important contribution to agricultural research and development in the Region at a historically critical moment. The Panel wishes to highlight the foresight with which ICARDA undertook a leadership role in the development of the Program, and the very significant efforts this center has made over the last ten years both in research activities and in its coordinating role among the CGIAR Centers that are actively involved in CAC. The Panel believes that, under the present structure of the CGIAR, it is important for the sustainability of the Program that ICARDA maintains its present role as the convening Center of the CAC-Program.

Specific

On Science Quality, Outputs, and Impact

8. Research must always be conducted in a fashion that leads to scientific publications. The Panel noted the hard work undertaken by the Centers in producing many kinds of publications, in particular by ICARDA, which contributed almost 70% of the total number of publications. The Panel recommends that efforts are undertaken so that more research findings of this Program are published in scientific, peer-reviewed international journals, preferably in collaboration with NARS scientists.

On Genetic Improvement

9. The Program should continue the distribution and evaluation of crop and animal germplasm obtained from the CGIAR Centers and other sources. Additionally, close cooperation between NARS and CAC-Program breeders should ensure that national breeders have direct access to

materials with specific traits which are considered desirable for the Region. Gene bank material documentation must be enhanced; e.g. by using modern IT technologies, to ensure its wider application. Specifically, the Panel thinks that there is a need for breeding cereals better adapted to the conservation agriculture techniques used in the Region.

10. Varieties released in one country should be thoroughly evaluated in the other countries of the region. Entries found superior but not released as varieties should be conserved in the gene banks to serve as parents in future breeding programs.

11. Availability of germplasm from abroad should not be considered as a substitute for local breeding efforts. The Panel believes that the strengthening of the national breeding programs by training young scientists and supported financially, should be a priority in their agricultural research efforts.

12. Wheat rusts are a serious threat to the industry of the Region. All varieties should be evaluated for their reaction to rusts before they are released. The shuttle breeding program between CIMMYT and Kazakhstan should incorporate genes for resistance to rusts. The stem rust race Ug99 is likely to arrive in the region sooner or later. Its occurrence should be monitored, and as soon as resistance becomes available it should be incorporated into local breeding programs (CIMMYT and ICARDA).

On Seed Systems

13. For the development of seed production in the region, assist in removing, where such situation exists, the unfair competition between state and private seed production companies and marketing enterprises. Governments should be encouraged to consider enacting investment promotion programs for new entrants in seed production and marketing business.

14. Support, at national level, setting up of a national seed board, having representation from all stakeholders including research and private sector, should be stimulated to oversee seed industry development. A national seed industry association should be constituted covering all enterprises involved in seed production and marketing in CAC.

15. To support regional harmonization it is suggested for the CAC countries to establish a regional seed association. Harmonization of policies and regulatory framework, and a common methodology for variety testing variety evaluation, release, certification, and seed testing on regional basis should be implemented.

On Cropping Systems and Diversification

16. Promote, among the NARS, field experimentation on conservation agriculture techniques tailored to the different cropping systems of the Region. Expand efforts for the effective transfer of these technologies to all potential users.

17. Evaluate the introduction of new crops alternative to those prevailing in the current cropping systems, with a view of decreasing risks and increasing farmers' income. There are significant opportunities for the production of high quality fruits and vegetables in the region. Efforts should

be made on value chain analyses and marketing of fruits and vegetables to link farmers to markets.

18. Investigate the medium and long-term effects of the current unsustainable practices that are depleting soil fertility. Research on the role of conservation agriculture, of the introduction of cover crops and legumes in the rotation and other measures in mitigating this problem should be of high priority.

On Water and Soil Management

19. Improvement of irrigation management must continue to be one of the main pillars of the CAC-Program. Because of the magnitude and urgency of the water management problems, the balance between research and development has been, understandably, tilted towards immediate applications. It seems now desirable to enhance the research component by:

- a. Expansion of the current research in the Ferghana Valley on canal management to other irrigated areas, while increasing on-farm research and demonstration activities at the same time.
- b. Focusing on the improvement of current surface irrigation methods by a combination of improved land leveling, and by matching water flows to field dimensions, soil characteristics, and crop water needs. For the latter, computer models of furrow irrigation should be an invaluable tool.
- c. Addressing the apparent urgent need for much closer integration between basin-wide and on-farm irrigation research efforts. More emphasis on measuring and quantifying water seems also desirable.

20. The excellent inter-Center initiative on ‘Bright Spots’ is coming to an end. If new funding for its continuation is not available, it would be desirable to incorporate its concepts and participating farmers into the CACILM program.

21. Continue the efforts to improve production in saline areas by close integration of crop diversification efforts using more salt-tolerant species and cultivars, with improved irrigation management techniques that enhance uniformity of application and produce minimum leaching.

On Livestock Production Systems

22. The current research oriented towards communities and markets, aimed at increasing income of resource-poor producers, is of great interest for the region and could be expanded to other areas, for which additional investments from donors are required.

23. The Panel could not find evidence of significant work on the conservation of animal genetic resources or on animal health. These are two topics that directly fall on the mandate of one of the Centers, ILRI. The Panel is of the opinion that the CAC-Program and ILRI need to reach an agreement on what work to expect from ILRI on these topics.

On Socioeconomic research

24. The exploitation of new opportunities such as production of fruits and vegetables or of fine wool products, requires the development of value chains and of renewed efforts to link farmers to markets. The Panel feels that this is an important area of research that should receive additional attention.

25. The need for policy research in the Region cannot be overemphasized. Thus the Panel feels that the recent collaboration between ICARDA and IFPRI on policy and economic research in CAC-Program will benefit greatly the countries of the Region, and will strengthen the CGIAR role as agricultural research and development catalyst.

On capacity building, regional and international collaboration

26. The Panel found that the Consortium efforts in capacity building were among the most successful activities throughout the Region. The Panel believes that some countries are not investing enough in their agricultural research systems. It is recommended that all countries, particularly those with better economies, increase their investments in agricultural research and enhance the basic facilities and infrastructure of their research institutions. To better plan future investments, it would be desirable if each country, with the support of IFPRI and PFU if required, would prepare a national strategic plan for agricultural research.

27. The Program should organize more training workshops to strengthen human resource capacity of NARS, particularly for young scientists in the fields of agricultural research management, production and processing of high added value crops, integrated crop-range- livestock production systems, soil and water management, and marketing and trade.

28. Lack of effective extension systems in many CAC countries is the main constraint in transferring technologies to the farmers and end users. It is recommended that each country establishes or reforms its extension service to facilitate technology transfers to farmers.

29. Although the support of the PFU to CACAARI (the Regional Association of NARS) is commendable during the last decade, the sustainability of CACAARI depends on the ownership of the Association by the NARS members. PFU should take gradual but watchful steps to make sure that CACAARI activities and its Secretariat's function are managed and owned by the NARS partners. An independent and full time Executive Secretary is needed for enhancement of CACAARI activities. The experience of sister organizations such as AARINENA and APAARI might be used to strengthen the ownership of CACAARI by the NARS members.

30. The Program needs to further expand its collaboration with other NARS components such as universities, science academies, NGOs and the private sector in the region. The Panel noted the readiness and enthusiasm of universities to strengthen their collaboration, particular in capacity building and training events.

31. The Panel believes that teaching of the English language, *per se*, is to be deemphasized. Instead, the PFU should concentrate on offering short courses on technical subjects such as research methods and technologies, report writing, use of the web for agricultural research, writing scientific publications, and on specific subject matters, as requested by the NARS.

32. The Panel recommends that, while continuing the publication of the CAC Newsletter (preferably by electronic means), the CAC Program disseminates its scientific and technical results in the form of a periodic scientific publication, in English with abstracts in Russian. There exists already a good effort along these lines, with the publication “Agromeridian” currently edited by CIMMYT in Kazakhstan, which could be expanded to include all institutions participating in the CAC-Program. This would be a way to encourage national scientists to present their results in publishable form and following standards of refereed, international scientific publications. This is, in turn, would attract the attention of the international scientific community to the research conducted in the region.

33. The Panel believes that the PFU must be strengthened to ensure more coherence and coordination of the CAC-Program. The Panel reviewed the PFU Terms of Reference and has suggested a number of changes, described in a new text given in Appendix 2.

Appendix 4: Terms of Reference for the Program Facilitation Unit

The CCER Panel has suggested changes in the current Terms of Reference of the Program Facilitation Unit (PFU) of the CGIAR Eco-regional Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus (CAC) and proposed the following revised ToR, which were approved by the plenary session of the 11th SCM 2008 in Astana, Kazakhstan, on 21. June, 2008:

1. PFU, which is hosted by ICARDA's Regional Office for CAC in Tashkent, Uzbekistan, will have a leading role in coordinating and integrating the work of the Consortium members in the CAC region, in order to ensure maximum efficiency and synergy among the respective programs. PFU will serve as liaison office for developing joint research proposals between members of the CAC Consortium Program and the CAC countries. PFU will also ensure that research problems identified by NARS are presented to the appropriate Consortium members (or a group of them, if considered necessary), as well as that global research problems are presented to the NARS, and PFU should coordinate any eventually ensuing project preparation.
2. PFU will support the Program Steering Committee (PSC) of the CAC-Program in its functions by providing secretariat support for the PSC meetings. This will include preparing brief reports on the previous year's meeting, budget statements, efforts on resource mobilization, current status of on-going, pipe-line and new projects.
3. PFU will provide support services necessary for effective use of Program resources including organization of meetings and workshops, language translation and interpretation, internal and international travel arrangements as well as visa for all staff of the Consortium members and their visitors, import of equipment and vehicles, authorizations to travel within the countries of the CAC region, accreditation issuance for the PFU, all staff, visiting scientists and vehicles, and communication.
4. PFU will provide assistance to the members of the Consortium in elaborating arrangements for collaborative research activities with the local partners and will also intervene in cases of conflicts arising under such arrangements.
5. PFU will function as a central documentary and information exchange center and as a repository for Program documents and publications.
6. PFU, in consultation with implementing institutions/agencies, will share information and assist in information exchange between Program participants and other stakeholders through direct contacts, brief reports, a periodic "Update on Activities", a quarterly Newsletter, and a periodic research journal. Use of electronic means to reduce production and mailing costs is recommended. PFU will also work to increase the visibility of the CAC program through holding regular contact with all relevant media in the countries.
7. The Focal Point institutions of different projects will share the responsibility with PFU for ensuring that all likely Program participants are informed of dates and locations of project planning workshops so that the maximum participation in research projects is obtained (participating NARS, extension agencies, NGOs and privately owned production farms/companies), all of which are expected to take an important role in the dissemination of the improved technology expected to be generated in this Program.
8. PFU will maintain contacts with institutions conducting research activities in the CAC region, which are outside this Program and funded by external agencies and by private industry.
9. PFU will be responsible for establishing linkages on behalf of the Program with other international agencies operating in the CAC region, and for identifying potential partners, and

will encourage the individual partners in the Program to develop potential partnerships where this is practical and feasible.

10. The Head of PFU will coordinate his activities closely with Center Focal Points and organize meetings minimum at monthly frequency to ensure effective communication and coordination among the Program partners.
11. PFU collects membership fees to ensure financial coverage of its services from members and projects.

Appendix 5: The “Astana Declaration”

The Eleventh Steering Committee meeting of CGIAR Program for Sustainable Agricultural Development in Central Asia and the Caucasus (CAC-Program) met in Astana, Kazakhstan, between 21 and 23 June, 2008. The Program is implemented by a Consortium of partners, namely the eight National Agricultural Research Systems of Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, eight International Centers of the Consultative Group on International Agricultural Research (CGIAR) – Bioversity International, International Maize and Wheat Improvement Center (CIMMYT), International Potato Center (CIP), International Center for Agricultural Research in the Dry Areas (ICARDA), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), International Food Policy Research Institute (IFPRI), International Livestock Research Institute (ILRI), International Water Management Institute (IWMI); two other International Centers – AVRDC - the World Vegetable Center, International Center for Biosaline Agriculture (ICBA); and Michigan State University (MSU).

The Program was established in 1998, and the activities of the Program over the last ten years have been positively evaluated by its External Review in 2008. Achievements were made in germplasm improvement, seed supply systems, cropping systems and agricultural diversification, integrated system of livestock and fodder production, integrated on-farm soil, water and salinity management, conservation of plant genetic resources, small ruminants breed characterization, socioeconomic and policy research, capacity development and regional and international cooperation.

During the meeting the participants started working actively on means and ways to implement the recommendations of the Review Panel, principally with regard to further improving the overall integration of all research components of the Program.

The Participants recognize the progress achieved in sustainable agricultural development of the CAC region, and note the need for more to be done, principally in view of globally challenging and pressing problems such as increased food prices, climate change, food insecurity, water scarcity, land degradation, loss of biodiversity, and the urgent need for poverty alleviation and improvement of livelihoods. The participants support the efforts undertaken by all the Consortium members, including national programs and international agricultural research centers, to coordinate and integrate the Program’s activities through the Program’s Facilitation Unit (PFU). Based on their comparative advantages and knowledge accumulated thus far, the participants give high priority to approaches that address the above-mentioned problems and challenges through conservation agriculture, integrated land and water management, agricultural water productivity, crop improvement, integrated pest management, diversification of production systems, improved mountain agriculture, integrated livestock/rangeland/crop management, and socio-economic and policy research. They express their commitment to actively work for improving the interaction of the CAC Program with academic, research and development institutions, civil societies and the private sector, which are actively involved in the region to contribute to sustainable agricultural development in the CAC region.

The Meeting Participants agree to jointly develop a fund-raising strategy for the Program activities to seek a wider attraction of financial resources from the international and regional donors. Furthermore, the participants endorse their National Partners’ efforts to raise the contribution of the national budgets invested in agricultural research.

The participants welcome and support the intention of the Ministry of Agriculture of Kazakhstan to become a member in the Consultative Group on International Agricultural Research (CGIAR).

The participants express appreciation to the Government of Kazakhstan and the Ministry of Agriculture for hosting this meeting in Astana and for all the support and hospitality to make this meeting a success.

Astana, Kazakhstan, 23. June 2008

