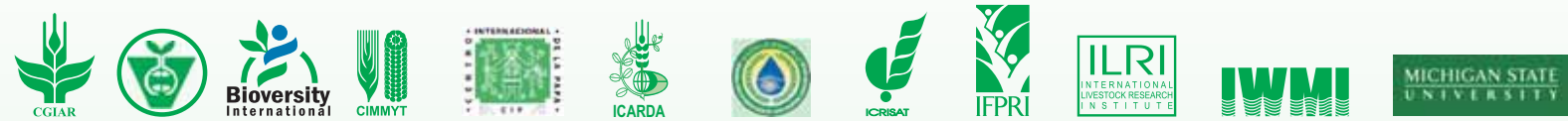


CAC NEWS

CGIAR Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus (CAC)

ARMENIA * AZERBAIJAN * GEORGIA
KAZAKHSTAN * KYRGYZSTAN * TAJIKISTAN * TURKMENISTAN * UZBEKISTAN



MESSAGE

FROM DR. COLIN CHARTRES, DIRECTOR GENERAL, IWMI, AND CO-CHAIRPERSON, CAC PROGRAM STEERING COMMITTEE



The International Water Management Institute (IWMI) is proud to be associated with the Central Asia and Caucasus region through its office in Tashkent. IWMI is concerned about the impacts that climate change are having on the region and the way that these will affect water availability and agricultural production. Globally, climate change is just one of the factors that we need to contend with in order to prevent future food and water crises. The other factors

include population growth (from 6.5 billion today to potentially 9.0 billion in 2050), growing competition for water from urbanization and biofuels and the dietary change to more water thirsty fuels. In Central Asia, where much of the water supply is dependent on snow melt, there are already grave concerns about the disappearance or retreat of glaciers. The need for hydropower in winter also is significantly changing river flow regimes and thus availability of water for agriculture.

IWMI is currently finalizing its new strategic plan, which focuses future research for development on a number of areas that can assist in finding solutions for the above problems. Four new themes have been developed. These are: Water Availability and Access; Increasing Water Productivity; Water quality, Agriculture and the Environment; and Water and Society. The first aims to determine how much water is and will be available to all users in the light of the global and climate change factors mentioned above. It also seeks to consider how changes in water supply can be managed and adapted to through water allocation policies in order to safeguard the rights of the poor. The second theme is focused on developing

more efficient ways of using water in both irrigated and dryland farming systems. These will include agronomic and engineering solutions and organizational/management changes. Both of these are aimed at producing "more crop per drop." As society becomes more urbanized, increasing volumes of wastewater will become available. These are often currently used in agriculture. The aim of IWMI's third theme is to ensure that the use of this water is free of risk to farmers and consumers. IWMI's forth theme focus on the need for the new and improved methods of water policies, governance, regulation and management that are vital if we are going to adapt to a water

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IMPORTANT EVENTS

scarce world.

A key strategic advantage of IWMI is that through its 12 locations in Asia and Africa, we are in a good position to examine different technologies and governance options that have worked in one environment and help translate them to new environments taking local socio-economic conditions into account. However, also key to the successful implementation of innovation is doing it with local partners. We have been fortunate in Central Asia to have had strong support from key donors and stakeholders including SDC, as well as good

local partnerships with SIC of ICWC and the relevant ministries in Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan and Turkmenistan with respect to our integrated water resources management work in the Ferghana Valley. IWMI intends to continue to build strong working relationships in the region in order to help to tackle the major issues which will lead to improved water access, management and productivity for all users.

Colin Chartres,
Director General, IWMI

STEERING COMMITTEE MEETING

11TH SCM OF THE CAC PROGRAM CHARTS THE NEW DIRECTIONS FOR THE PROGRAM'S FUTURE

The 11th Steering Committee meeting of CGIAR Program for Sustainable Agricultural Development in Central Asia and the Caucasus (CAC) was held on 21 - 23 June, 2008, in Astana, Kazakhstan. The year 2008 marks the 10th Anniversary of the Program which provided with an excellent opportunity to review the results and impact achieved by the Program during the previous ten years as well as chart its future directions. This was the reason why an external review of the Program had been commissioned by the CAC Consortium at its Tenth Steering Committee Meeting in 2007 in Dushanbe, Tajikistan. This "Consortium-Commissioned External Review" (CCER) was successfully carried out in the first half of 2008 and was the major agenda item at this year's Steering Committee Meeting in

Astana, Kazakhstan.

Dr. Colin Chartres, Director General of IWMI, opened the meeting, representing the Chairmanship of the Steering Committee of the CGIAR Program for CAC. H.E. Dr. Akylbek Kurishbaev, Minister of Agriculture of Kazakhstan delivered the inaugural address. ICARDA DG, Dr. Mahmoud Solh, as the Chairman of the Alliance Task Force on CAC, delivered a special lecture on the achievements of the CGIAR Program in CAC over the last 10 years. He highlighted the fact that the Central Asia and Caucasus region is rich in untapped natural resource potential. This can be harnessed if the CAC program directs its efforts towards interdisciplinary integration. He also



11th Steering Committee Meeting participants with HE Dr. Akylbek Kurishbaev, Minister of Agriculture of Kazakhstan (at center)



SCM participants discussing CCER report

emphasized the need for a consolidation of the Program's financial basis.

The Meeting was attended by 43 participants including NARS leaders from Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan, and CGIAR Centers - Bioversity International, CIMMYT, CIP, ICARDA, IWMI, of which ICARDA and IWMI were represented by their Directors General, two other International Centers - the World Vegetable Center (AVRDC) represented by its Director General Dr. Dyno Keatinge, International Center for Biosaline Agriculture (ICBA); and Michigan State University (MSU).

During the Steering Committee meeting, Prof Elias Fereres, Chair of the External Review Panel, presented the outcome of the Consortium Commissioned External Review (CCER) that emphasized the importance of the CGIAR Program's contribution to sustainable agricultural development in CAC. The report commended the achievements made during the last 10 years and presented a set of recommendations to enhance the impact of the Program in agricultural development. Dr. Christopher Martius, Head of the Program Facilitation Unit, presented the progress report on the activities of the CAC Program during the past year.

This 11th SCM makes the passage into the second

decade of the CAC program. The successful completion of the CCER provides guidelines on how to prioritize research of the program in future. The program will be characterized by increased efforts on capacity building, higher integration and better scientific output, but also a clear commitment to achieve tangible results in rural poverty reduction, in the view of the global challenges of food insecurity, land degradation and climate change that affect CAC above measure.

During the three day event, the CCER report was discussed at length. The participants deliberated 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. Roundtable discussions were held on priorities and integration, expectations and reforms, seed production and breeding, water and land management, and training and capacity building, to decide the future course of action. At the conclusion of the meeting, the Steering Committee issued the "Astana Declaration", which embodies the essence of future course of action.

The Steering Committee Meeting was completed by a field visit to the Kazakh Livestock Production Center "Asyl Tulik", where the participants were informed about the new cutting edge technologies being introduced in the livestock production in Kazakhstan.

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 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) – International Center for Agricultural Research in the Dry Areas (ICARDA), Bioversity International, International Maize and Wheat Improvement Center (CIMMYT), International Potato Center (CIP), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), International Food Policy Research Institute (IFPRI), International Livestock Research Institute (ILRI), International Center for Water Management (IWMI), and three CGIAR-affiliated International Centers - AVRDC (the World Vegetable Center), ICBA (International Center for Biosaline Agriculture), and MSU (Michigan State University).

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 the intention of the Ministry of Agriculture of Kazakhstan to become Kazakhstan 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

BRIGHT SPOTS PROJECT SUCCESSFULLY COMPLETED



Project participants at the Completion Workshop

The Bright Spots Project, which aimed at improving the productivity of salt-affected soils and saline water resources and livelihoods of rural communities in Kazakhstan, Uzbekistan, and Turkmenistan, was successfully completed in June, 2008. Initiated in March, 2005, this project was unique in the region being the first and only project in Central Asia that was conducted by three NARS of Kazakhstan, Turkmenistan, Uzbekistan, and three International Centers - IWMI, ICARDA, and ICBA.

The main approach for action applied by the project was quite original. The project identified the “bright spot” farmers who are performing better than others in spite of growing salinity problems in the region. Then, coping strategies and management mechanisms used by these farmers were analyzed. To boost these successful practices, on-farm experiments were conducted on new salinity management technologies. Finally, the results of the project were out-scaled through “learning alliances” which regrouped farmers, researchers, local administrations and policymakers.

During the three years of project implementation, a number of sustainable, cost-effective salinity management technologies have been developed, fine-tuned and out-scaled, including phosphogypsum application for amelioration of Mg-rich soils, mulching and conjunctive use of deferent quality waters, fertilizer use as a management option to mitigate the effects of saline water irrigation, productivity enhancement of fodder-based cropping systems through the use of saline drainage water, introduction of halophytic plants into saline environments of Central Asia, and others.

Socioeconomic research was conducted to characterize the impact of salinity on the livelihoods of rural populations in Central Asia as well as to evaluate the feasibility of the salinity management technologies. It was found that there is a fairly strong link between the level of salinity and farmers' livelihoods. The research on the “bright spots” revealed that there are significant differences in the performance of farmers who appear to face the same biophysical constraints. Ability of bright spot farmers to timely access inputs was found to be one of the key elements of their success.

The project partners also paid special emphasis to information dissemination and knowledge generation while implementing the project. Farmers' fields days, roundtable discussions and other capacity building events involving, in total, close to 1,000 farmers, researchers, extension workers and government officials were organized in the three countries. More than 30 publications, including book chapters, research reports, brochures, guidelines and journals articles have been produced.

During the Completion Workshop of the Project that took place on 6 June, 2008, in Tashkent, Uzbekistan, NARS scientists from Kazakhstan, Turkmenistan and Uzbekistan, and their colleagues from IWMI, ICARDA and ICBA reviewed the project results and emphasized on the need for further follow-up actions for their large-scale uptake to achieve yet bigger impact. Many of the more than 30 technologies developed in this project are ready for out-scaling, and ways have to be found to secure funding for this.

RESEARCH HIGHLIGHTS

CAC COUNTRIES MOBILIZE AGAINST UG99

A highly virulent strain of wheat stem rust, Ug99, that first appeared in Uganda, Africa in 1999, has already reached the Arabian Peninsula and southwest Asia, and now has spread into Iran. It threatens to spread into other wheat-producing regions of Asia and possibly the entire world. Ug99 blocks the vascular tissues in cereal grains including wheat, oats and barley, but unlike leaf or stripe rusts that may reduce crop yields, Ug99-infected plants may suffer up to 100 percent loss. In response to this growing threat, the international scientific community is calling for immediate actions to reduce the impact of Ug99, since all of the advancement made in the past few decades in germplasm enhancement to achieve higher grain production may be eliminated by an outbreak of Ug99. Preliminary testing has shown that this disease might affect the majority of currently planted cereal grain varieties, and 95% varieties in CAC are susceptible.

Contributing to the international effort to prevent the spread of Ug99 and mitigate its possible negative impact in CAC countries, FAO, ICARDA and CIMMYT, with the facilitation of the PFU, CGIAR Program for CAC, organized a "Regional GPS Training Course for Cereal Rust Monitoring in Central Asia and Caucasus countries" from 9-12 June, 2008, in Tashkent, Uzbekistan. The training course was attended by 16 participants from Armenia, Azerbaijan, Georgia, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Dr. Keith Cressman (FAO), Drs. Amor Yahyaoui and Kumarse Nazari (ICARDA) and Dr. David Hodson (CIMMYT) provided information and training.



CAC Scientists getting ready for Ug99

The objective of the course was to train CAC researchers in the use of Global Positioning System (GPS) for cereal rust monitoring. The training course combined classroom activities with a two-day field practice in wheat growing areas in Tashkent, Syrdarya, Jizzakh, and Samarkand provinces of Uzbekistan.

On a broader scale, FAO, ICARDA and CIMMYT are presently establishing a Global Cereal Rust Monitoring System (GCRMS) which will network capabilities and operations in the Near East, Africa and Asia. This system will be based on information obtained during field surveys and therefore requires geo-referenced data on the circumstances of stem rust infections, capture of samples of the rust, subsequent analysis of the samples, and compilation of the combined data in a geographic information system for analysis and storage.

POTATO TRIALS IN TAJIKISTAN

The mountains of Central Asia provide excellent conditions for potato farming. Potato experiments have been set up in the highlands of Jirgatal (2,700 m asl) and Vorzob districts (2,000 m asl) in farmers' fields to evaluate the performance of potato clones provided by CIP under farmers' conditions. In this case, CIP would like to accelerate the diffusion of potato lines once they would be released officially by the State Committee for Variety Testing.

The picture below shows how potato can be used on

the steep slopes of mountainous areas to control soil erosion. The need for ridges and the canopy cover ensured by the potato plants after about 40 days from planting are at the basis of soil erosion control, especially if potato is grown on contour lines. In the mountainous areas of Tajikistan and Kyrgyzstan, for instance, and at an altitude above 2000 m, potato represents the predominant crop, contributing to more than 90% of household income of rural populations.



Tajikistan, Vorzob district. Potatoes cultivated on the contour lines, one month after planting (June 2008)



Tajikistan, Jirgatal district. Clonal selection plus other experiments in a very fertile valley at the border with Kyrgyzstan, June 2008

POTATO TRIAL HARVESTED IN TERMEZ, UZBEKISTAN

Nine CIP potato clones were tested under the hot conditions of Termez in a station belonging to the Institute of Vegetables, Melons and Potato, Tashkent. Termez is situated in the extreme southern part of the country, at the border with Afghanistan. The location has been chosen as the hot spot station in the recently initiated GTZ project on “Enhanced food and income security in Southwest and Central Asia (SWCA) through potato varieties with improved tolerance to abiotic stress”, due to the high temperatures reached between May and August, usually exceeding 40°C.

The nine clones were compared with the Dutch variety Sante, which is among the most popular potato varieties in Uzbekistan. Planting was done on February 29 and harvesting on June 09, about 100 days after planting. This is the so-called first growing season in the lowlands of Uzbekistan, where early and mid-early potato varieties are normally grown. Dynamic harvesting was practiced on five plants per clone grown in the outer rows of each plot, at 80, 90 and 100 days after planting to check the best



Uzbekistan, Termez. CIP and NARS partners in the middle of a potato trial (01 May, 2008)

growing cycle of each clone. The trial was replicated thrice and each plot consisted of 4 rows with the distance of 70 cm among them, with potato tubers planted at the distance of 70 x 25 cm. Each row of 5 m length had 20 potato plants, with a total of 80 potato plants per plot.



Uzbekistan, Termez. CIP clone 397077.16



Uzbekistan, Termez. CIP clone 720189

RESEARCH HIGHLIGHTS

At 100 days after planting, CIP clones 388615.22 and 397077.16 out-yielded the Sante variety significantly with 3.2 kg/ m² and 3.1 kg/ m²,

respectively, versus 2.4 kg/m².

Carlo Carli, CIP-Tashkent

ADVANCES IN VEGETABLE RESEARCH IN CENTRAL ASIA AND THE CAUCASUS

Selection and introduction of new varieties of vegetable crops with important characteristics as early maturity, higher yield, resistance to diseases and marketability, will allow farmers in CAC countries to increase their vegetable production and incomes, and consumers to improve their diets and health.

To contribute to this purpose, the World Vegetable Center and its NARS partners are conducting this year a Regional Varietal Trial of 24 lines of four vegetable crops, including tomato - 5, eggplant – 5, sweet pepper – 6 and cucumber – 8, in different soil and climatic conditions in all the eight countries of CAC region. In addition, new trials have also been initiated in Armenia, Georgia, Kazakhstan and Uzbekistan on a total of 80 varieties of eight vegetable crops.

During the previous years, the best varieties and lines of various vegetable crops from the World Vegetable Center were selected by CAC scientists on the basis of their highly promising performance. Competitive varietal trials of 46 promising varieties of eight vegetable crops are being conducted in Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan and Uzbekistan and 29 promising varieties of seven vegetable crops are now under the state varietal trials in Armenia, Azerbaijan, Kazakhstan and Uzbekistan, awaiting their release in the near future.



Promising varieties of tomato and sweet pepper

Two New Eggplant Varieties selected in Kyrgyzstan

In Kyrgyzstan, tomato, sweet pepper and eggplant are popular crops. Researchers from the Kyrgyz Research Institute of Crop Husbandry have been evaluating the new germplasm introduced from the World Vegetable Center and have already selected two promising lines of eggplant. During her recent visit to the Institute, Dr. Ravza Mavlyanova, World Vegetable Center - CAC, has reviewed the results of varietal trials together with Acad. Jamin Akimaliyev, Director General of the Institute, as well as the scientists from the Institute. Several opportunities for further expanding the collaboration were also discussed.



Dr. Ravza Mavlyanova and Mr. Marat Satkeev on the trial field

DISEASE-FREE CUCUMBERS FOR CAC



Drs. Abdulaziz Abbasov and Edvin Javier are

Cucumber is a very popular crop in the region. However, such diseases as mildew and downy mildew strongly affect cucumber varieties released in Central Asia, as they decrease their yields and quality, as well as by limiting its vegetation period in the region. For this reason, selection and release of new varieties of cucumber involving improved germplasm materials is highly important. The World

Vegetable Center has introduced to the region 19 promising cucumber lines for open-air cultivation and 6 lines for greenhouse cultivation. These lines are currently being evaluated at the Uzbek Research Institute of Vegetable, Melon Crops and Potato. It is expected that several promising lines of cucumber with abundant flowering and fructification, higher yield, fruit quality and resistance to diseases will be selected soon. Afterwards, the best lines will be submitted to the State Varietal Trial. Researchers at the Institute are also preparing the multiplication of the seeds of highly promising varieties at the Institute to make them available for farmers.

**Ravza Mavlyanova,
World Vegetable Center - CAC**

PERENNIAL LEGUMES BOOST INCOMES IN CENTRAL ASIAN DESERTS



Seed multiplication of the promising alfalfa varieties

In many parts of Central Asia, degradation of natural resources has negatively impacted the livelihoods of rural populations. It is especially true in the marginal desert areas which face a lack of diversification options. In this regard, salt and frost tolerant perennial legumes can be successfully integrated into production systems in marginal and degraded desert rangelands of Central Asia to generate additional incomes for agro-pastoral communities in these areas. In addition, legume crops serve as nutritious and healthy feed for livestock, especially during winter-spring seasons when there is presently an acute shortage of fodder. By densely covering the salt-affected lands, legumes can also contribute to improving fertility and moisture-holding characteristics of sandy saline soils.

In this context, ICBA introduced two salt tolerant varieties of alfalfa – Eureka and Sceptre - in 2006 at Kyzylkesek site, Uzbekistan, and Akdepe site, Turkmenistan. These varieties were found to be well adapted to the prevailing climatic and edaphic desert/semidesert conditions and outperformed

local varieties of alfalfa - Khivinskaya in Turkmenistan and Kyzylkesekskaya in Uzbekistan - in growth rate, length of generative sprouts, number of flowering buds, size and number of pods and seed per one pod, which, in combination, demonstrate higher seed productivity of introduced alfalfa varieties. In addition, ICBA varieties have also proven to be more early-maturing. These two varieties have good re-growth capacity as well. Finally, the fresh biomass yields were equal to 23 t/ha for Eureka variety and 18 t/ha for Sceptre, which is higher than the green biomass received from the local varieties Khivinskaya and Kyzylkesekskaya. Seeds of Eureka and Sceptre alfalfa varieties are now being multiplied at Kyzylkesek site for further dissemination through a “farmer-to-farmer” mechanism.

The research activities have also demonstrated that, when alley-cropped, barley, triticale, alfalfa, taken together, yield 20% higher green biomass than barley alone in the traditional barley-fallow system. Growing salt-tolerant, high-yielding legumes in combination with cereals, alternated by strips of shrubs such as *Atriplex undulata*, *Ceratoides ewersmanniana* and *Halothamnus subaphylla* was found to have great potential for producing more highly nutritional fodder (both used fresh and as hay).

Licorice (*Glycyrrhiza glabra*) can be planted on salt-affected and degraded rangelands for soil bio-remediation. Even during the remediation period, it has the potential to generate income for farmers since its biomass can be used as high quality forage additive for livestock. Its root material is well known to have a very high marketability in many industries, especially in pharmaceuticals, when it reaches the maturity stage 4-5 years after planting.

RESEARCH HIGHLIGHTS

Presently, the studies are being continued with studies on Leaf carbon isotope ($\delta^{13}C$) analysis and water use efficiency (WUE) of different ecological groups of plants, including perennial legumes. These experiments serve to determine the relationship of soil salinity with vegetation biomass. Biomass is considered to be the indicator of soil salinity. Field investigations in collaboration of ICBA (International Center for Biosaline Agriculture), University of Yamanashi, Japan, and Plant Physiology Institute of Academy of Sciences of Russian Federation have been started to test this hypothesis.

In conclusion, although more and more farmers are now being actively involved in rehabilitation of degraded soils, it is evident that in order to encourage private farmer investments into rehabilitation of saline degraded rangelands it is necessary to provide them not only with cost-effective and environmentally sound technologies, but also with incentives and direct benefits through enabling policy frameworks. A policy environment encouraging farmers to grow more frost and salt



Licorice is performing well in the Kyzylkum deserts

tolerant perennial legumes in degraded desert rangelands can be one such mechanism for effectively rehabilitating abandoned saline rangelands.

Kristina Toderich, ICBA-Central Asia

LASER LAND LEVELING GETS GOING IN KYRGYZSTAN

Land degradation is a serious threat to rural livelihoods and environmental sustainability in Central Asia. One of the causes of land degradation at on-farm level is uneven land leveling which leads to inefficient use of scarce water resources, rise of ground waters and, hence, salinity, as well as losses in crop yields and farmers' incomes.

ICARDA and its partners from the Ministry of Agriculture, Water Management and Processing Industry of Kyrgyzstan and Kyrgyz National Research Institute of Agriculture have now been working for almost one year on the introduction of laser land leveling in Kyrgyzstan. These activities are conducted

under the "Sustainable Land Management Research (SLMR) Project" funded by ADB and implemented by ICARDA in all the five countries of Central Asia under the Central Asian Countries Initiative for Land Management (CACILM).

Initial results are quite encouraging. "I am very happy with this technology since I have been able to perfectly level my field even at places where it was uneven by almost 50 cm." – says Mr. Orozaly Mamaev, a pioneering farmer from the Sokoluk district of Kyrgyzstan. Enthused by the yield gains he obtained, Mr. Mamaev is also planning to level his fields before planting fodder maize as double crop this fall.



Unlevelled fields affected with waterlogging and salinity



Laser land levelling is a boon for Central Asian farmers

Dr. Malik Bekenov, National Coordinator of the SLMR project in Kyrgyzstan, informs that farmers in Kyrgyzstan are facing huge difficulties because of uneven field leveling during the last 15-20 years. As a result, waterlogging and salinity became serious issues in many areas. "The use of laser land leveling will allow farmers to use their fields more productively while improving soil fertility" – adds Dr. Bekenov.

HE Dr. Arstanbek Noguev, Minister of Agriculture, Water Management and Processing Industry,

Kyrgyzstan, indicates: "The dissemination of innovative technologies in agriculture will help our farmers increase their crop yields. Kyrgyzstan has all the potential to either locally manufacture such agricultural machinery or assemble it from components. The experiments conducted under the project clearly demonstrate the efficiency of these new technologies".

Source: Adopted form Kabar Information Agency (<http://www.oko.kg/index.php?newsid=8475>)

WORKSHOPS/CONFERENCES/MEETINGS

IWMI HOLDS KICK-OFF MEETINGS FOR TWO NEW PROJECTS IN OSH, KYRGYZSTAN

Kick-off meetings of the "Integrated Water Resources Management in Ferghana Valley Project - Phase IV" (IWRM-Fergana) and Inception Phase of "Water Productivity Improvement Project" (WPIP) were held on 20th May, 2008, in Osh, Kyrgyzstan.

Mr. B. Kashmatov – Deputy Minister and Director General of Water Resources Management, Kyrgyzstan, Mr. Hanspeter Maag - Country Director of the Swiss Development Cooperation Office in Kyrgyzstan, Dr. Chris Morger - consultant of SDC, Prof. Viktor Dukhovny - Head of Scientific Information Centre (SIC) of the Interstate Commission Water Coordination (ICWC) of Central Asia, Dr. A. Noble – Director, South East and Central Asia Operations (IWMI) and Dr. Herath Manthrilake - Head of IWMI-Tashkent office, representatives of Government Water management organizations and IWRM institutions from Kyrgyzstan and Uzbekistan participated in the meetings.

The meeting reviewed Plan of Operations for the year 2008 and discussed the key focus areas and strategies to be adopted. The focus areas during 2008 will include introduction and strengthening of basin level hydrographic regime of water distribution in the project sites, improvement of water management and distribution in existing Water Users' Associations (WUAs), enhancing the capacity of newly established



Project partners discussing future action plans

canal management organizations and strengthening their financial sustainability, and finally, out-scaling the project results.

Between the kick-off meetings, participants took part in Official opening ceremony of Automation, Control, and Data Collection (SCADA) System installed in Aravan-Akbura Canal, where Governor and Deputy Governor of the Province also participated.

Konstantin Mosin, IWMI – Central Asia

STATUS OF GM CROPS IN CAC REVIEWED

Plant biotechnology offers many potential benefits but the development of genetically modified (GM) crops has led to public concern about uncertain and unforeseen effects of genetic modification. In response to this, governments around the world are creating regulations to manage the risks associated with the release of GM crops into agricultural systems. For some consumers, GM crops might lead to human

health risks, many more people, however, are concerned with environmental impacts of GM crops, especially if they are released into the centers of origin of major agricultural crops. Therefore, risk assessment and risk management in GM crops has a vital importance for Central Asia and the Caucasus, a region known as one of the World Centers of Biodiversity.

For this purpose, FAO and ICARDA, with the facilitation of PFU, CGIAR Program for CAC, jointly organized a regional workshop on “Risk Assessment and Risk Management in GM Crops” on 16-19 June, 2008, in Tashkent, Uzbekistan. In addition to researchers and government officials from Kazakhstan, Kyrgyzstan, Uzbekistan, Azerbaijan, Russia and Syria, the workshop also involved representatives of ICARDA, FAO, and UNEP.

During the workshop, Dr. Michael Baum, ICARDA, introduced the participants to “Genetic Engineering technologies of Plants and the Current Status of GM crops worldwide”. Mr. Aleksey Tarasyev, FAO, informed the participants about biotechnology, biodiversity, biosecurity and biosafety from the FAO perspective. Mr. David Duthie, UNEP, Switzerland, updated the participants on the Current issues of the UNEP/GEF funded biosafety activities especially the implementation of the National Biosafety frameworks in Central Asian Countries. The workshop participants from the countries gave national presentations on the development of biosafety and biotechnology in their respective countries.



Participants satisfied with the meeting outcomes

All participants and lecturers found the workshop very informative and useful. The participants have also developed the following conclusions and recommendations for risk assessment and risk management in GM crops in the CAC region:

“The Central Asian and Caucasus (CAC) region hosts rich plant and animal diversity, and this region is a part of one of the oldest centers of origin of crop plants. When discussing issues of introducing GM crops and issues of risk assessment and risk management in the CAC region this needs to be considered.”

The CAC region is characterized by:

- High probability of unintentional and uncontrolled introduction of GM crop varieties (through seed exchange, humanitarian aid to farmers, seed imported for use as food or feed, commercial purchases of seed in other countries, etc)
- Lack of technical capacities (reference materials, for example) for analysis for presence of GMOs
- Lack of experts trained in GMO detection
- Lack of methodological guidelines
- Lack of experts for GMO risk analysis
- Lack of public awareness
- Organizations that are involved in seed quality control and other relevant organizations do not routinely test for presence of GMOs.

For capacity building in risk assessment and risk management of GM crops, it is necessary to:

- Take appropriate measures to facilitate fast and intensive development of modern biotechnology in the region
- Train biosafety experts
- Develop monitoring, need for training in analytical methods for detection, and qualitative and quantitative identification of GMOs

It is recommended that:

- Regional training in GMO detection and risk assessment is offered to two participants from each country in CAC region (ICARDA offered to develop a regional training proposal)
- A regional (Eastern Europe and Central Asia) conference on modern biotechnology and biological diversity is organized (Black Sea Biotechnology Association will discuss this recommendation and propose venue, time and agenda for this conference)

More information on biotechnologies and GM crops can also be obtained from the Russian version of the FAO Biotechnology Glossary recently published by FAO (can be downloaded from http://www.fao.org/biotech/index_glossary.asp).

CIP HOLDS PROJECT PLANNING AND IMPLEMENTATION WORKSHOP



The participants of the Workshop, Shimla, India

A Project Planning and Implementation Workshop on “Abiotic stress tolerance of potato germplasm”, jointly organized by the International Potato Center (CIP-SWCA), Delhi office, and the Indian Central Potato Research Institute (CPRI) was held from 20-22 May, 2008, in Shimla, India, under the framework of the GTZ Project on “Enhanced food and income security in Southwest and Central Asia (SWCA) through potato varieties with improved tolerance to abiotic stress”. The workshop was attended by 28 participants, including scientists from CIP, Institute of Abiotic Stress Tolerance (IST), Germany, CPRI and NARS representatives from Bangladesh, Tajikistan (2) and Uzbekistan (2).

The workshop was co-chaired by Drs. Carlo Carli, Regional Seed Production Specialist (CIP-Tashkent), S.K. Pandey, Director (CPRI-Shimla), Sarath Ilangantileke, retired Regional CIP Representative (CIP-Delhi), Mohinder Kadian, Senior Potato Agronomist (CIP-Delhi) and Roland Schafleitner, Biotechnology Research Scientist (CIP-Lima).

The first two days of workshop were devoted to the presentation of the current status of the activities related to potato abiotic stress tolerance and to discuss the development of the project workplans. In the third day of the workshop, participants visited CPRI

laboratories and made field trips to Kufri and Fagu research stations where they were introduced to the pre-basic seed potato production scheme in India.

The expected outputs from this workshop were generalized into four themes: (1) Breeding for selection of abiotic stress tolerant varieties; (2) Plant growth models and screening methods for stress tolerance breeding; (3) Characterization of stress-prone environments using GIS; and (4) Capacity building for participatory selection and dissemination of improved varieties in SWCA.

During the workshop, it was noted that the development of abiotic stress tolerant varieties will increase productivity and bring non-traditional areas under potato cultivation. The abiotic stress factors such as heat, drought and salinity were found to be important for countries like Uzbekistan and Bangladesh, while India and Tajikistan expressed interest for potato varieties resistant to heat and drought. It was agreed that the next workshop will be organized in September, 2009, in Tashkent, Uzbekistan. The participants thanked CPRI for the warm reception and the excellent hospitality during their stay in Shimla.

Zokhid Ibragimov, CIP-Tashkent

INTERNATIONAL DAY OF BIODIVERSITY CELEBRATED IN TASHKENT

Crop biodiversity is an important resource for increasing the productivity and income for farmers of Central Asia. This is the statement made by national and international agricultural researchers during a workshop on “International Day of Biodiversity”, held on 22 May 2008, in Tashkent, Uzbekistan.

With this, they drew public attention to the fact that diversity of plants is an important factor in diversifying farmers' incomes. In addition, having access to wild relatives of widely used crops is a valuable resource for breeding of new higher yielding and more stress resistant crop varieties.



Dr. Christopher Martius, Head, PFU, emphasizing the importance of biodiversity

Central Asia covers a territory of about 4 million km² and is a vast region of great contrasts in landscape and biological diversity - from steppes and deserts to mountain forests. What many people do not know is that this region is also the center of origin for many globally significant agricultural crops, including fruit and nut trees, vegetables and cereals. More than 8100 plant species have been recorded in the region, and 890 of them are endemic. About 400 are listed in the Red Data Book of IUCN as endangered.

The diverse natural and climatic conditions of Uzbekistan have helped farmers produce varieties adapted to drought and resistant to a number of environmental stress factors. These locally developed traditional varieties are essential components of crop production in difficult environments. Besides, many wild horticultural relatives of apple, pear, plum, almond, pomegranate, grape, melon and some others still exist in the country, which definitely need protection against the threat due to overgrazing, deforestation, industrialization and logging.

Any significant progress in attaining global goals to prevent the loss of biological diversity in the agricultural sector can not be achieved without further supportive measures to preserve the lands with high natural value and to improve the conditions of biological diversity in intensively cultivated croplands. But even marginal, low-value land can be planted to more diverse crops, even trees, and thus used to the benefit of the country, as it frees the more fertile areas for high nutritional crops. In Uzbekistan, the Ministry of Agriculture and Water Resources, the CGIAR Centers, the Institute of Genetics and Plant Experimental Biology, the Institute of Horticulture and Grapes named after R.R. Shreder, the Institutes of Forestry, of Plant Industry, of Botany and Botanical Gardens, and several other institutions and organizations, are actively engaged in promoting this important issue.

Their activities are focusing on the assessment of

conditions and tendencies in agricultural biodiversity, in-depth studies of existing local varieties, and on harnessing the local expertise and knowledge in agricultural management. Also, significant attention is devoted to identification and application of adaptive practices in technology and preventive measures. One of the key objectives is protection, conservation and sustainable use of plant genetic resources, which have important values for food production and agricultural development. For achieving this, the CGIAR Centers have helped their national partners to set up gene banks to preserve valuable plant genetic resources in the region.

The "International Day of Biodiversity" reminds us of the International Convention on Biological Diversity, an agreement ratified by 191 countries which aims at preserving this rich asset of humankind. To value this Day, a special workshop with demonstration of samples on the country's species and varieties of crops was held in Tashkent on 22 May 2008. This event was initiated by Bioversity International and jointly organized with the International Center for Agricultural Research in the Dry Areas (ICARDA) under the umbrella of the Program Facilitation Unit (PFU), together with the Association of Farmers of



Farmers showing interest in the CAC Program publications

Uzbekistan, State Committee for Nature Protection, UNEP-GEF "Crop Wild Relatives" Uzbekistan Project Unit and other International Centers active in the CGIAR Program for CAC. It was also transmitted by national TV and radio news channels.

As a result of this event, public awareness, especially farmers' awareness about the importance of biodiversity in agriculture, was broadly raised, and a general understanding was reached that by biological diversity our environment will be richer and more fruitful, our food more nutritional and delicious, our life more energetic, and our farmers wealthier.

**Azam Kabirov,
Bioversity International – Tashkent**

REGIONAL SEED ASSOCIATION ESTABLISHED FOR ECO REGION



Group photo of the meeting participants

The Food and Agriculture Organization of the United Nations, upon the request of Governments of its member countries and that of Economic Cooperation Organization (ECO) made available a regional TCP funding for Strengthening Seed Supply in the ECO Region. The project is being implemented by ICARDA in close collaboration with FAO and ECO Secretariat in Iran. One of the main outputs of the project is the harmonization of regulations with particular emphasis on variety release mechanisms, seed certification schemes, quarantine procedures and international seed trade.

The 3rd Regional Workshop on Harmonization of Seed regulations and the Consultative Workshop on Establishing Regional Seed Association were held during 14-18 July 2008, in Istanbul, Turkey. The events were hosted by the Ministry of Agriculture and Rural Development of the Republic of Turkey. The workshop brought together senior delegates from ECO member countries, ECO secretariat, FAO and ICARDA to deliberate on effective ways of harmonizing Variety Release, Plant Quarantine and Seed Regulations Mechanisms and achieve its objectives successfully, thereby ensuring that farmers in the region have unlimited access to varieties and seeds, suitable for their various specific agro-ecological needs in ECO Member Countries and Opportunities for Harmonization.. The meeting was attended by Heads of Variety Testing and Release Agencies, National Plant Quarantine Offices and Seed Control Agencies or senior delegates nominated by respective governments from Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan as well as by representatives of regional/international organizations (ECO, ICARDA and FAO). A total number of 60 participants from 10 member countries of the ECO

region comprising of Afghanistan, Azerbaijan, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan participated to both workshops.

The consultative workshop on establishing regional seed association was focused on Formation of Regional Seed Trade Association and explores opportunities for regional collaboration to promote seed trade. The International Seed Federation (ISF) and Asia & Pacific Seed Association (APSA) also attended the meeting to share their experiences and develop future collaboration and assistance required for the establishment of regional seed association. History was made on 18 July in Istanbul, Turkey, when the formation of the new regional seed association was announced by 10 member countries of the Economic Cooperation Organization (ECO) region comprising of Afghanistan, Azerbaijan, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan. In recognition of the advanced nature of the Turkish seed industry and the leadership role it could play in ensuring the visibility and viability of the association, the delegates agreed to locate the headquarters of the regional seed association in Ankara. Also present at the meeting were international experts as well as executives of the International Seed Federation (ISF) representing the global seed industry and the Asia and Pacific Seed Association (APSA) who shared their experiences in facilitating seed security and seed trade.

In his closing remarks Dr. Michael Larinde of FAO said: "Today we have planted a seed which should be nurtured to develop into a productive plant that would bear fruits to meet regional food security".

Aziz Nurbekov, ICARDA-CAC

EMPOWERING THE CAC REGION IN CONSERVATION OF LOCAL DIVERSITY OF FRUIT CROPS

The CAC region contains extremely important biodiversity of plant genetic resources representing a very rich genetic diversity of crops with many landraces and their wild relatives. Therefore, supporting researchers and farmers in their efforts on sustainable management of local varieties of fruit crops and their wild relatives is of utmost priority for the CAC region. Contributing to this noble objective, the UNEP/GEF project “In situ/On farm Conservation and Use of Agricultural Biodiversity in Central Asia” has been implemented in the region by Bioversity International since 2006. The project involves Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

On 14-18 June, 2008, the Third Meeting of International Steering Committee of the project was in Tashkent, Uzbekistan. Representatives of national executing agencies and national project coordinators participated in the meeting to review the progress made at national and regional levels during the project implementation in 2007. The participants reviewed the progress made according to the work plan activities, project milestones, outputs and outcomes, including the financial status.

Bioversity International was represented by Dr. Mauricio Bellon, Director of Diversity for Livelihood Program, and Muhabbat Turdieva, Regional Project Coordinator. The meeting was inaugurated by Prof. Abdushukur Khanazarov, Director General of Uzbek Scientific and Production Centre for Agriculture and Deputy of Minister of Agriculture and Water Resources Management of the Republic of Uzbekistan.

In his welcome statement Prof. Khanazarov emphasized that unique diversity of local varieties and wild relatives of temperate fruit crops still existing in Central Asia is a basis for sustainable agriculture development of the region. Its significance is increasing with challenges faced by global agriculture production caused by climate change and resulted in food crisis. In this regard, “the project's contribution to the conservation and sustainable use of local diversity of fruit crops which is significant resource for breeding and health environment programs is highly valuable both at regional and global levels” – Prof. Khanazarov said.



Participants of the Meeting

Ms. Marieta Sakalian, Program Management /Liaison Officer for Biodiversity, UNEP-GEF, noted that considerable work has been done by partners in assessment of intra-specific and specific diversity of 12 target crops, using participatory approach as Focus Group Discussion where farmers' knowledge of their fruit crop varieties and maintenance practices is essential for diversity evaluation. Key nurseries for multiplication of local varieties of apple, apricot, almond, pear, pomegranate, grape, fig, peach and promising forms of pistachio, walnut, sea-buckthorn and alycha have been selected in farmers' fields. Farmers' orchards for establishment of demonstration plots on target fruit crops have been selected in all five countries. Ms. Marieta Sakalian underlined that “the project made considerable contribution to the capacity development of national partners by establishing training centers, equipping research institutes and farmers, organizing training workshops for researchers, farmers and policy makers and empowering them in their activities on in situ and on farm conservation of local diversity of fruit crops”.

The meeting participants visited the farmers' apple orchards and vineyard in the project site in Zarkent village of Parkent District in Tashkent Province where they got acquainted with local varieties of apple and grapevine and agricultural practices that farmers use for their maintenance.

Muhabbat Turdieva, Bioversity-Tashkent

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AWARDS AND RECOGNITIONS

During 11th Steering Committee Meeting of the CGIAR Program for CAC, held on 21-23 June, 2008, in Astana, Kazakhstan, the Minister of Agriculture of Kazakhstan,

HE Dr. Akylbek Kurishbaev awarded all the International Centers active under the CGIAR-CAC Program with Honorary Certificates for contribution to

the agricultural development in Kazakhstan. "The Ministry of Agriculture of Kazakhstan, thus, would like to express its high appreciation for the collaboration

between the international centers and Kazakhstan", HE the Minister said.

AVRDC BECOMES THE WORLD VEGETABLE CENTER

It is now official: AVRDC has become The World Vegetable Center (WVC) effective from 14 April, 2008.

KAZAKH AGRARIAN UNIVERSITY HONORS DR. MAHMOUD SOLH

Dr. Mahmoud Solh, Director General, ICARDA, was awarded the title of "Honorable Professor" by the Saken Seifullin Kazakh Agro Technical University, Astana, on 20 June, 2008. Dr. Solh was invited to deliver a special lecture on "The role of ICARDA in Central Asia and the Caucasus." The lecture was attended by more than 100 senior faculty members, representatives of Kazakh Government, graduate and postgraduate students of the University, NARS leaders from the CAC countries, as well as scientists and researchers from the CG centers.

In his lecture, Dr. Solh elaborated on ICARDA's mission, research activities and achievements in the dry areas of the world, with emphasis on the CAC region. The participants were impressed with ICARDA's research achievements in germplasm conservation, breeding new crop varieties, soil conservation and water saving technologies, livestock management, as well as socioeconomic research.



Dr. Mahmoud Solh (right) with Prof. Aitbay Bulashev (left), Rector of the University

DG OF WORLD VEGETABLE CENTER VISITS CENTRAL ASIA

The new Director General of the World Vegetable Center (WVC), Prof. Dyno Keatinge visited Uzbekistan on 18-19 June this year. He has visited WVC's varietal trials at the Uzbek Research Institute of Plant Industry and the Uzbek Research Institute of Vegetable, Melon Crops & Potato. Together with Dr. Ravza Mavlyanova he visited the Asian Development Bank and the Uzbek Scientific-Production Center for Agriculture. Strengthening of collaboration was discussed during meetings with Deputy Minister, Director General of UzSPCA Abdushukur Khanazarov and National coordinator on vegetable system R&D, Dr. Botyr Azimov.



Dr. Dyno Keatinge (first from left) discussing future cooperation with his Uzbek colleagues

ISO ACCREDITATION, A WORLD-FIRST FOR CIP GENE BANK

The International Potato Center (CIP) in Lima, Peru, was awarded International Organization for Standardization (ISO) Accreditation for its germplasm acquisition, management and distribution operations. This is the first time that a genebank has gained accreditation anywhere in the world.

This means that in vitro material distributed from CIP

will bear ISO accreditation that it is free from viruses, pathogens and diseases. As well as the confidence this will inspire in CIP's partners, it is evidence that the biodiversity the Center holds in trust is being safely conserved for the future.

"The accreditation is a milestone event in many ways for CIP and was only possible through the hard work

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and dedication of the CIP staff,” said Dr. Pamela Anderson, the Director General of CIP. “This demonstrates how seriously we take our obligations to distribute disease-free germplasm. I am very proud

that CIP's genebank is the first in the world to gain ISO accreditation.”

Source: adopted from CIP Press release at: http://www.cipotato.org/pressroom/press_releases_detail.asp?cod=55

DG of CIMMYT VISITS CENTRAL ASIA

Dr. Thomas Lumpkin, Director General of CIMMYT, visited Uzbekistan on 03-04 July, 2008. During his visit to the region, Dr. Thomas Lumpkin had a number of fruitful meetings on further strengthening CIMMYT's activities in the region and expanding the linkages with other partners active in the CAC Program. These meetings were with Dr. Christopher Martius, Head, PFU, CGIAR Program for CAC, Dr. Muhabbat Turdieva, Project Manager, Bioversity International, Dr. Carlo Carli, Regional representative, CIP, as well as with the donor organizations including Mr. Loup Brefort, Country Manager, World Bank, Mr. Hong Wei, ADB, and Mr. Pierre-Paul Antheunissens, Coordinator, Europa House. Dr. Thomas Lumpkin, accompanied by Dr. Christopher Martius, and Dr. Raj Gupta, coordinator of SLMR also visited the Pakhtakor research site where on-farm experiments on conservation agriculture and resource conserving technologies are currently being conducted under ICARDA's SLMR-CACILM project.



Uzbek farmer expressing his enthusiasm about conservation agriculture to Drs. Thomas Lumpkin (second left) and Christopher Martius (first left)

IWMI HEAD FOR SOUTH EAST AND CENTRAL ASIA VISITS UZBEKISTAN AND KYRGYZSTAN

Dr. Andrew Noble, the new Head of South East and Central Asia of IWMI visited Central Asia from 13th to 26th May. During this visit, he has attended the kick-off meetings of two SDC funded projects- Phase IV of IWRM Fergana and inception phase of Water Productivity Improvement project, held in Osh at the office of the Sub-Basin Water Management Organization of Kyrgyz Republic, where he met with a donor organization representatives, regional water sector leaders and stakeholders.

He also witnessed the handing over process of SCADA System installed in Aravan Akbura Canal to operators. During this visit, he met the Rector and the Vice- Rector of the Osh Agricultural University, who are long standing partners of IWMI and thank the Rector, staff and students for their support in IWMI work in the region.



Dr. Andrew Noble during his meeting with IWMI-Central Asia staff

A YOUNG ICBA COLLABORATOR AWARDED WITH PHD SCHOLARSHIP

The Japanese Government Scholarship for PhD research on “Socio-economic assessment of biosaline technologies for better livelihoods of agro-pastoralists” was awarded to Mr. Hasan Boboev, ICBA-CAC volunteer. In his PhD research, Mr. Hasan Boboev will study traditional farming practices and socio-economic factors influencing technology adoption in rural-pastoral communities, local knowledge practices

addressing land degradation, economic feasibility and environmental benefits of various agro-bio-remediation and salinity management technologies, as well as highly marketable crops for saline environments. Mr. Boboev will also develop a forecasting model for promotion and up-scaling of bio-saline technologies to improve rangeland productivity and income of rural desert communities.

New Publications:

- Akramkhanov, R. Sommer, A., C. Martius, J.M.H. Hendrickx, P.L.G. Vlek (2008): **Comparison and sensitivity of measurement techniques for spatial distribution of soil salinity**. *Irrigation and Drainage Systems* 22, 115-126. (DOI: 10.1007/s10795-008-9043-9).
- AVRDC-The World Vegetable Center. 2008. **Proceedings of the CAC Vegetable R & D Network First Steering Committee Meeting**, Tashkent, Uzbekistan. 9 August, 2006. AVRDC-The World Vegetable Center. Shanhuia, Taiwan. AVRDC Publication 08-704. 120 pp. (in Russian and English languages).
- Carli C. (Editor), 2008. **Recent advances of potato research and development in Central Asia and the Caucasus**", International Potato Center (CIP). **Germplasm Enhancement and Crop Improvement Division**, Working Paper No. 2008. Produced by the CIP Communication and Public Awareness Department (CPAD), April 2008. 58 pp. ISBN 978-92-9060-351-1
- CIMMYT. 2008. **CIMMYT Wheat Improvement Program for Kazakhstan: Together in 21st Century**. CIMMYT-Kazakhstan. 55 pp. (in English and Russian)
- Kohlschmitt, S., R. Eshchanov, R., C. Martius (2008): **Alternative Crops for Khorezm (Uzbekistan) and their Sales Opportunities as well as Risks on the European Market**. 42pp. ZEF Work Papers for Sustainable Development in Central Asia. No. 11. 42 pp. <http://www.khorezm.uni-bonn.de/downloads/WPs/ZEF-UZ-WP11-Kohlschmitt.pdf>
- MSU-ICARDA. 2008. **Management of Farm Field School on IPM**. Training Manual. MSU-ICARDA. Bishkek, Kyrgyzstan. 96 pp. (in Russian).
- MSU-ICARDA. 2008. **Botanical pesticides against pests and diseases of vegetables and fruits**. MSU-ICARDA. Bishkek, Kyrgyzstan. 52 pp. (in Russian and Kyrgyz).
- Ombayev A., B. Rischkowsky, L. Iniguez, H. Hamdamov, 2008. **ICARDA in Southern Kazakhstan. Shymkent, Kazakhstan**. 30 pp (in English and Kazakh).
- Program Facilitation Unit (PFU), 2008. **CGIAR in Kazakhstan: A Decade of Partnership**. CGIAR - PFU - CAC, Tashkent, Uzbekistan. June, 2008. First Edition. 20 pp. (in Russian and English languages).
- Program Facilitation Unit (PFU), 2008. **Annual Report 2007-2008**. CGIAR - PFU - CAC, Tashkent, Uzbekistan. June, 2008. 30 pp. (in Russian and English languages).
- Rudenko, I., U. Grote, J. Lamers, C. Martius (2008): **Wert schöpfen, Wasser sparen. Effizienzsteigerung im usbekischen Baumwollsektor**. In: M. Sapper, Volker Weichsel (Eds.): *Grünbuch. Politische Ökologie im Osten Europas*. Berlin. [Osteuropa 04-05/2008], 407-418.
- Scheer, C., R. Wassmann, K. Kienzler, N. Ibragimov, J. Lamers, C. Martius (2008) **Methane and nitrous oxide fluxes in annual and perennial land use systems of the irrigated areas in the Aral Sea Basin**. *Global Change Biology*, 14, 1–15, doi: 10.1111/j.1365-2486.2008.01631.x
- Shuyskaya E. M. Naoko, K. Toderich, K. Sunada, P. Voronin , L. Gismatullina, D. Aralova, T. Rajabov. 2008. **Carbon isotope analysis of plant vegetation of salt-affected desert rangelands in Central Asia**. *J. Arid Land Studies* (accepted in press)
- Toderich K. I. Shoaib, T. Radjabov, O. Kozan, A. Rabbimov, 2008. **Phytogenetiques resources of halophytes of Central Asia and its role for the rehabilitation of desert degraded rangelands**. *J. Arid Land Research and Management*. 21., 1-2.
- Toderich K., I. Shoaib, E. Juylova, A. Rabbimov, B. Bekchanov, E. Shyuskaya, L. Gismatullina, O. Kozan, T. Radjabov, 2008. **New approaches for Biosaline Agriculture development, management and conservation of sandy desert ecosystems**. In the book: *Biosaline Agriculture and Salinity Tolerance in Plant*: Chedly Abdely, Munir Ozturk, Muhamad Ashraf & Claude Grignon eds.: Birkhauser, Verlag/Switzerland: 247-264
- Toderich K.N., I. Masseno, S. Ismail, T. Tsukatani, A. Khujanazarov., A. Rabbimov, T. Kuliev, H. Boboev, D. Aralova, S. Usmanov, 2008. **Utilization of Agriculture residues and livestock waste in Uzbekistan**. *Kier Discussion paper No 651, Kyoto University Proceedings*: 15pp.
- Toderich K., T. Tsukatani, S. Ismail, I. Massino, M. Wilhelm, S. Yusupov, T. Kuliev, S. Rusiev. 2008. **Extent of salt affected lands in Central Asia: biosaline agriculture and utilization of marginal resources**. *Kier Discussion paper No 648, Kyoto University Proceedings*: 35pp.
- Toderich K., K. Juylova, T. Yunusov, L. Gismatulina, A. Rabbimov. 2008. **Domestication of Underutilized Wild Fodder and Medicinal Halophytes for Improvement of Degraded Desert Rangelands and Better Livelihood of Agropastoralists in Central Asia**. Abstracts of the International Symposium "Underutilized Plant Species for food, nutrition, income and sustainable development" Arusha, Tanzania.
- Wahyuni S., S. Oishi, K. Sunada, K. Toderich, 2008. **The estimation of the groundwater storage and its distribution in Uzbekistan "Proceedings of Round Table Meeting "Strategies for marginal water/land use and salinity control in the Aydarkul-Arnasay Lakes System and southwestern Kyzylkum Desert"**, ICBA/ICARDA/University of Yamanashi (Japan): p. 20-26
- In addition, brochures on "**Supplemental Irrigation**" (T.Oweis) and on "**Water Harvesting**" (T.Oweis, D.Prinz, and A.Hachum) have been published in Russian by ICARDA.

MISCELLANEOUS INFORMATION

STAFF CHANGES

- **Dr. Bitore Djumakhanov**, Breeder, ICARDA-CAC, retired in April, 2008, after more than five years of service at ICARDA. His colleagues wish Dr. Djumakhanov excellent continuation of his scientific work in his future assignments in the National Agricultural Research System of Kazakhstan.
- **Mr. Muzaffar Aliev** has been hired as Administrative Officer, PFU, starting from April, 2008. Mr. Aliev replaced Mr. Alexey Kim, who retired in April, 2008, after more than three years of excellent service in this position.
- **Ms. Elvira Grigorieva** has been hired as Cashier and Human Resources Officer, PFU and ICARDA, starting from 19 May, 2008.
- **Mr. Farhod Hamroev** has been hired as Assistant to Administrative Officer, PFU, starting from 17 June, 2008. He replaced Ms. Nargiza Tursunova, who completed her assignment in this position in June, 2008.
- **Ms. Adolat Akhunbabaeva** has been hired as Secretary, ICARDA-CAC, starting from 17 June, 2008. She replaced Ms. Lola Yuldasheva, who completed her assignment as Secretary, ICARDA-CAC, in June, 2008.

All staff welcome the new colleagues on board, and wish outgoing colleagues all the success in their new employments.

FUTURE TRAININGS

OPTICAL SENSOR TECHNOLOGY BOOSTS RESOURCE CONSERVATION IN CENTRAL ASIA

Handheld GreenSeeker optical sensor technology is emerging as a potential tool for efficient N management and monitoring crop growth with remotely sensed indices like the Normalized Difference Vegetation Index (NDVI). This technology can be used to optimize nitrogen application, improve nitrogen use efficiency and estimate in-season yield of cereals, legumes and cotton, even before crop harvest.

GreenSeeker measurements when integrated with NDVI obtained from satellite allow predicting N recommendations at plot level as well as over a large area. GreenSeeker technology can also be used to identify N deficient areas and study the integrated impact of conservation agriculture practices on soil health and to quantify the soil heterogeneity.

In view of the cutting-edge nature of this technology, an advanced training program is being organized from August 7-13, 2008, in Urgench, Uzbekistan, for the benefit of scientists from the five Central Asian countries. The program will be jointly organized by ICARDA's SLMR project and the ZEF-UNESCO Project. The first training program was organized in February, 2008, in Tashkent under the aegis of SLMR project, which is funded by ADB and is a part of the Central Asian Countries Initiative for Land Management (CACILM). Twenty-five research scientists drawn from the five national agricultural research systems of Central Asian countries will participate in this one-week training program. Dr. Bram Govaerts from CIMMYT, Mexico, will be the resource person. Drs. Raj Gupta (ICARDA) and John Lamers (ZEF-UNESCO) are the course coordinators.



OBITUARY

Prof. Mirzakeldy Toregeldievich Abdraimov, the first vice-president of Joint Stock Company "KazAgroInnovatsiya", and his spouse tragically passed away in a car accident on 7 July, 2008.

Prof. Abdraimov was born on 29 January, 1948, in Birlik village, Dzhambul Region, Kazakhstan. In 1967 upon graduating from the Dzhambul Zooveterinary Technical School, Prof. Abdraimov was among the top graduates being transferred to Timiryazev Moscow Agricultural Academy. In 1972, he completed his studies at the Moscow Agricultural Academy and by decision of the Selection Committee was given the opportunity to continue his studies at the postgraduate level at the same Academy. In 1993, Prof. Abdraimov successfully defended his Doctoral thesis and was awarded the Doctor degree.

Later on, he was selected as an academician of the Academy of Agricultural Sciences of Kazakhstan, and in 2005 he was selected as the Honorable Doctor of the Siberian branch of the Russian Academy of Agricultural Sciences. In 1994, he was appointed as the Chairman of Scientific-Administrative Council of the Kazakh Academy of Agricultural Sciences. After transformation of the Academy into the National Academic Center of Agrarian Research (NACAR), Prof. Abdraimov continued working as senior secretary-scientist of NACAR.

Prof. Abdraimov has more than 150 scientific publications to his credit, including 6 books, 12 recommendations, one monograph, and 22 brochures on various problems of livestock technology. He also received several patents of the National Patent Authority of the Republic of Kazakhstan for his innovations.

Since 2007, had been serving as the First Vice-President of the newly established "KazAgroInnovatsiya".

Prof. Mirzakeldy Abdraimov made a huge contribution for the creation and strengthening of the cooperation between Kazakhstan and International Centers. He was always distinguished by his high expertise, visionary approach in development and decision-making, great humanity, ability to listen and support collaborators, responsiveness and throughout his life he remained a very modest person. As a fervent supporter of the cooperation between Kazakhstan and the CGIAR system, his crucial support to the collaboration lasts back to the first years of the CAC program. His contributions to agricultural research in Central Asia, and his work, as Vice President of KazAgroInnovatsiya, for the modernization of agricultural research in Kazakhstan, will be kept alive in our minds.

The scientists of Central Asia and the Caucasus are deeply grieving the untimely death of this brilliant scientist, excellent person, kind and sensitive colleague. They express their deep and sincere condolences to his family and relatives.



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DISCLAIMER: While every effort has been made to ensure the accuracy of the information, the Program Facilitation Unit (CGIAR-CAC) cannot accept any responsibility for the consequences of the use of this information. The Newsletter provides a brief overview of agricultural research and other activities of the Program during the last quarter.