IWMI CELEBRATES ITS TENTH ANNIVERSARY OF WORK IN THE CAC REGION
CGIAR Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus

CGIAR Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus is being implemented in the region since 1998. The goal of the Program is to contribute to achieving the overall goal of food security, economic growth, environmental sustainability and poverty alleviation in the countries of Central Asia and the Caucasus. Its immediate objective is to assist the CAC countries in achieving sustainable increases in the productivity of crop and livestock systems through development, adoption and transfer of production technologies, natural resource management and conservation strategies, by strengthening agricultural research and fostering cooperation among the CAC countries and international agricultural research centers.
Welcome Message

Dear Reader,

Since the establishment of the independent states in Central Asia and Caucasus in the early 1990s, competition for water resources between different sectors and user groups has significantly increased. Growing population, demand for food and energy, and global changes of the environment, combined with high soil salinity and other specific environmental problems in the Region, are increasing pressure on water resources exponentially. Cooperation between countries and conflict resolution in water resources management is one of the key issues on the Regional political agenda, especially in Central Asia. At the same time, use of water per unit area of agricultural production is one of the highest in the world, and irrigation infrastructures are often old and inefficient, adding an additional burden on resources available.

During the past ten years, the International Water Management Institute (IWMI), a Center of the Consultative Group on International Agricultural Research (CGIAR) Consortium, has been conducting applied research on technical, institutional, agronomical and policy questions to address improved irrigation water management. This issue of CAC-News features a number of articles from IWMI and its key partners, the Scientific Information Center of the Interstate Coordination Water Commission and the Central Asian Research Institute of Irrigation (widely known under the acronym SANIIRI). IWMI, like all the International Agricultural Research Centers participating in the Consortium, carries out research in close partnership with the National Agricultural Research Systems (NARS). SANIIRI also celebrates an Anniversary this year – 85 years of water management research activities. We congratulate both IWMI and SANIIRI for their longstanding contribution and achievements to improved water management in the region.

Besides improved water management, the articles in this Newsletter also focus on plant breeding, varietal testing and out-scaling in different crops, socio-economic impacts of climate change, conservation and use of agrobiodiversity and many additional topics. Applied research in these areas contributes to tackling adaptation to drought, salinity, waterlogging and other major challenges in the Region. The collaborative efforts yield results – for instance, three new winter wheat varieties originating from the collaborative International Winter Wheat Programme of International Center for Agricultural Research in Dry Areas (ICARDA) and International Maize and Wheat Improvement Center (CIMMYT) have been recently registered at the State Variety Testing Commission in Uzbekistan. These have demonstrated high yield potential and better resistance to diseases.

CAC-News is committed to updating its readers on new information in agricultural research for development in the Region, both from the staff of the Consortium members and from our regional partners. In an effort to improve the quality and timeliness of the information published, we have included a “News” section on our website www.icarda.org/cac. Please have a look. Contributions and updates on projects and activities on agricultural research for development from the partners working in Central Asia and the Caucasus region are particularly encouraged. We also welcome your feedback and comments, in the hope of making CAC-Newsletter and the “News” web page a more dynamic information tool for our readers.

Jozef Turok
Head, PFU
and Regional Coordinator for ICARDA
EVENTS

IWMI celebrates its tenth anniversary of work in the CAC Region

Improved irrigation water management is of paramount importance in the Central Asia and Caucasus region. It is an important measure to improve the livelihoods of farmers, mitigate environmental problems and enhance food security. Water logging and salinity plague irrigation systems. The existing infrastructure is very old. The dismantling of the state and collective farms of the Soviet era has created millions of inexperienced new farmers with small land holdings that created the need for a micro-network of farm channels for water distribution. However, this network is either non-existent or very inadequate, resulting in inequitable and inefficient irrigation practices. This has exacerbated the existing problem of water logging and salinity, resulting in low crop yields. In addition, irrigation water management is further complicated by the transboundary nature of the rivers or reservoirs that provide water for irrigation. The problems faced by irrigation systems in Central Asian countries are very complex. Hence, there is an urgent need for conducting applied research to delineate appropriate combinations of technical, institutional, agronomical, legal and financial interventions to address these issues.

The International Water Management Institute (IWMI), with Headquarters in Colombo, Sri Lanka, was established 25 years ago. It is one of the 15 research Centers of the Consultative Group on International Agricultural Research (CGIAR) and conducts applied research on a variety of issues related to the water sector, including irrigation, socio-economic and environmental aspects. IWMI's regional/sub-regional research Centers are strategically located in several regions of the developing world: Ouagadougou, Burkina Faso; Addis Ababa, Ethiopia; Accra, Ghana; Hyderabad, India; New Delhi, India; Vientiane, Laos; Kathmandu, Nepal; Lahore, Pakistan; Pretoria, South Africa and Tashkent, Uzbekistan. IWMI works with local government organizations in the implementation of its applied research programme.

The IWMI-Tashkent office was established more than ten years ago and its work programme covers the countries of Central Asia and the Caucasus. Currently, IWMI is working closely with the Ministries of Agriculture and Water Resources of different Central Asian countries in implementing four different projects: i. Integrated Water Resources Management project in Fergana Valley; ii. Water Productivity Improvement at Plot Level project in Fergana Valley; iii. Feasibility Studies on Groundwater Storage in the Syr Darya Basin; and iv. GIS-based Mapping of Irrigated Areas in Several Transboundary River Basins of Central Asia. In implementing most of these projects, IWMI works with the Scientific Information Center of the Interstate Commission on Water Coordination (SIC-ICWC). IWMI cordially expresses its thanks to all stakeholders in the countries of the Region for their full support to IWMI's activities throughout the past ten years removes and looks forward to many more years of fruitful cooperation.

Mohan Reddy Junna
Head of IWMI-CAC

First Regional Workshop and Second Steering Committee Meeting of the Project “Improving Livelihoods of Smallholders and Rural Women through Value-Added Processing and Export of Cashmere, Wool and Mohair”

The First Regional Workshop of the project “Improving Livelihoods of Smallholders and Rural Women through Value-Added Processing and Export of Cashmere, Wool and Mohair”, was held on 13–14 October 2010, in Tashkent, Uzbekistan, hosted by the ICARDA-CAC Regional office. Seventeen participants attended the workshop, including principal investigators and collaborating scientists from the NARS in Iran, Kyrgyzstan and Tajikistan, researchers from the University of Wisconsin, USA and INTA (Instituto Nacional de Tecnología Agropecuaria), Argentina, as well as scientists from ICARDA Headquarters in Aleppo, Syria, and its Regional office for Central Asia and Caucasus (CAC) in Tashkent. The project is financially supported by the International Fund for
Agricultural Development and is implemented through ICARDA.

Dr. Barbara Rischkowsky, Project Coordinator, Small Ruminant Specialist, highlighted the following specific objectives of the regional workshop:

• Become familiar with the production systems at the new sites (site characterization);
• Review progress in project implementation at each site;
• Discuss constraints and site-specific problems;
• Discuss across-site themes such as breeding programs and marketing.

Project results achieved in 2010 were presented and discussed at the meeting. In Iran, project achievements included the selection of the project site in the Kerman province to work with Raeini white cashmere goat producing nomads; collection of more than 700 cashmere samples and testing in the Almaty laboratory to establish a database on fiber quality at the pilot site; introduction of improved breeding practices and better cashmere harvesting methods; and completion of a baseline study of 30 cashmere producers.

In Kyrgyzstan, the project team selected Naryn province of Kyrgyzstan in which a survey of 100 households in two project sites was carried out to study the flock structure, farmers’ income sources and marketing channels; wool quality analysis for fine and crossbred sheep wool was also evaluated and cooperation with the five “contact” sheep farmers, at two project sites, who provide wool for felt production by women’s groups.

The report on achievements of the NGO Central Asian Crafts Support Association Resource Center in Kyrgyzstan (CACSARC-kg) included a selection of activities of four women-felters’ pilot groups (55 women) in the Naryn province; a series of trainings on felting techniques for these pilot groups; production of chair-mats in shyrdaq technique sent to the US for test marketing, cushions and chair-mats in ala-kiiz technique, and products made using the hollow-shape felting technique; a survey of felt producers in Kyrgyzstan was carried out to study felters’ needs for wool; participation of CACSARC-kg in providing the pilot groups with raw materials and equipment; provision of the marketing support to the pilot groups and participation in the trainings within the «OIMO-2010» Festival program; and contribution of CACSARC-kg to the project development in Tajikistan through trainings. In northern Tajikistan the project team managed to establish a breeding program for mohair goats by selection of the two nucleuses with white and dark mohair; they collected preliminary results from the baseline goat producer survey; published an article on mohair goat mating problems in the “Rizkofarin” newspaper; and obtained the first offspring in the nucleus and control groups. Other activities implemented in 2010 were training of farmers, veterinary preventive measures, provision of the nucleus group with concentrates and minerals, collaboration with the major farmers of the nucleus groups of the former project, and development of the institute’s plan to establish a supernucleus at the Branch of the Livestock Research Institute. The significant progress in mohair processing and marketing in northern Tajikistan is also worth emphasizing. High quality kid mohair yarn has been produced and successfully test-marketed in the USA and Europe (Austria). Approximately 17 kg of mohair yarn and products were sold at a wholesale value of US$ 2,364.16. The project needs to substantially increase yarn production and sales as the demand is much higher than the supply. Low production capacity due to poor mohair quality is the major problem in Tajikistan. A long-term breeding program is the only solution: quality Angora goats and mohair cannot be produced without systematic breeding efforts and governmental support. A short-term solution would be to review the current mohair production cycle (shearing at six months and fleece grading) to make yarn production easier for spinners.

Results of project implementation in the Badakhshan site (Tajikistan) reported in the workshop included analysis of the goat breeds/crossbreeds available, a description of the goat production system in the Ishkashim district of Badakhshan, and study of the dynamics of small ruminants’ flocks in Badakhshan and the pilot sites. The study revealed the problems that farmers are facing, including scarce land endowment of smallholders, weak knowledge on goat breeding, and lack of access to improved animals. The project collaborators have also completed the selection of sites, establishment of fiber processing women’s groups, and development of a breeding plan, and sample fiber collection in the nine pilot villages. Eight Altay bucks from the Russian Federation were successfully imported by the project
team in October 2010. The project team has also developed a system for sorting and pricing of fiber produced by various cross-bred goats on the site. There is a high potential of spinner and knitter women in the villages. However, the lack of organized breeding and low quality of goat fiber available at the site need to be addressed. Solutions to these problems would be the use of imported bucks, dehairing fiber through collaboration with Aga Khan Foundation (AKF) and Mercy Corps’ “Yak Yak” Project, and using combed, un-dehaired fiber to produce yarn and knit Jurabe socks and gloves.

At the meeting, the main points from IFAD’s supervision mission on developing market channels, conducted by Ms. Docey Lewis, Marketing Consultant were also emphasized as follows:

1. The economic crisis in the US had adversely affected the luxury yarn market meaning that now the competition is stronger as demand has decreased;
2. Yarn produced in Tajikistan competes not only with mohair yarns but also with yarns made from other fibers (Merino, Alpaca), and it is important to make sure that the mohair yarn produced is unique enough to keep a special place in the market;
3. Marketing handspun yarns is very different from marketing machine made yarns as there is always some difference between the batches of handspun yarn, while there is no such problem in case of the machine made mohair. That is why marketing and distribution of the handspun yarn is more complicated for wholesalers. As the project will produce smaller non-uniform batches the best strategy would be the direct marketing to the retailers who can handle the diversity of yarn, marketing at different fairs and through the internet;
4. It is necessary to diversify the production. To address this recommendation the project team will also focus on adult goat mohair for production of carpets and blankets. In addition, from the leftovers kept after de-hairing of mohair, the project is planning to organize production of gloves and socks for the Russian market;
5. There is a need to set up a local marketing center to train local entrepreneurs and women producing yarn and knitting, thus building a lasting marketing capacity that will remain beyond the duration of the project.

The other important event, the Second Steering Committee meeting (SCM) of the project was held on 14 October 2010. The Steering Committee members discussed and approved the minutes of the Inception Workshop held in Khujand, Tajikistan in September 2009. Collaborators also discussed the national workplans and budget distribution for 2011. After the discussion on the venue and dates of the next Regional Workshop and SCM, it was agreed to conduct the meetings in the 4th week of September 2011 in Kyrgyzstan, as the first option, or in Dushanbe, Tajikistan, as the second option.

Visit of Professor Frank Zalom to Uzbekistan

On 10-15 October 2010, within the framework of the ICARDA - Integrated Pest Management (IPM) project, Prof. Frank Zalom from UC Davis (University of California, USA) visited Uzbekistan. The main goal of his visit was to develop a workplan for 2010-2011 on the IPM project’s tomato research activity package in Central Asia.

During his visit, Prof. Zalom met with the Program’s collaborators in Uzbekistan. On the first day of his visit, Prof. F. Zalom met with the Deputy Director of the Uzbek Research Institute for Plant Protection, Dr. A. Sagdullaev, to discuss the achievements and next steps within the project.

As one of the supervisors on IPM CRCP (Cooperative Research Support Program), Prof. Zalom, has highly evaluated the research achievements of the Institute on rearing methods of Amblyseius predator mites and imparted his ideas about further cooperation and research work on the development of possible new approaches to biological control pests and diseases affecting tomato production. Prof. Zalom then went on to visit the farmers’ fields in Kibray district, Tashkent region, where he discussed the possibility of developing and testing new methods of tomato protection from pests and diseases with a local large greenhouse owner, Mr. J. Tashmatov.

In the Tashkent State Agrarian University (TashSAU), Prof. Zalom met with Pro-rector, Dr. L. Gafurova, and staff members of “Biocenter” (Biological Plant Protection Research and Development Centre) and visited its biological laboratory, where useful
insects (Entomophagoes) have been reared for collaborative experiments and where Bachelor degree, Masters degree and post-graduate students who directly participate in duplication of insects are trained and receive practical skills in biological plant protection. At the University training and experimental farm, Prof. Zalom viewed the greenhouse plots where students conduct experiments on cultivation of various crops including ICARDA-IPM tomato grafting research.

At the Uzbek Research Institute of Vegetables, Melon Crops and Potato, Prof. Zalom met with the Director, Dr R. Khakimov and was informed about the activities of the Institute. Discussions were also held on the development of the workplan for the second phase of the ICARDA-IPM project.

Barno Tashpulatova, IPM
Ravza Mavlyanova, AVRDC

International Symposium on Agricultural Extension Service Provision

GIZ and ZEF/UNESCO organized an International Symposium on Agricultural Extension Services held on 20-22 October 2010 in Urgench, Uzbekistan. International, regional and national organizations associated with the development of extension services were represented by the 41 participants of the symposium originating from different countries. The Symposium included the presentations of extension experience and development in different areas of the world and the individual performances for the CIS [Commonwealth of Independent States of the former Soviet Union] countries. The Symposium also involved a very interesting and practical exchange of views, information, ideas and experiences among the participants. These were not only researchers, but also extension specialists, lecturers from agrarian universities and employees of consulting and training centers providing extension services in the CIS countries. The Symposium held group discussions that triggered the various approaches to the development of extension services in the region. Extension development strategies were proposed for countries of the region to be further developed by the initiative groups. A group of the Symposium participants from Uzbekistan has initiated the preparation of a National Extension Development Strategy in the Republic of Uzbekistan.

The meeting of the initiative group of Uzbekistan included representatives of the Ministry of Agriculture and Water Resources (A. Namozov), the Farmers’ Association (A. Islamov, K. Khotamov and M. Yuldashev), GIZ (S. Khasanov), Consulting Company «NBT» (A. Nazarov) and ICARDA / CACAARI (Z. Khalikulov and A. Tashmatov), was held at the ICARDA Regional Office in Tashkent, Uzbekistan. The Initiative group developed a proposal to conduct a special study of the extension system in Uzbekistan in a report on “The concept of extension development in Uzbekistan”, in order to submit it to all interested organizations.

Alisher Tashmatov
CACAARI

IWMI joins Erasmus Mundus proposal

Under the leadership of Wageningen University, the Netherlands, the International Water Management Institute (IWMI) has become a partner of the Erasmus Mundus Program starting in 2011. The Erasmus Mundus program offers opportunities for students from developing countries to study in a relevant field in almost 20 joint MSc degree programs in different areas in over five cooperating leading European Agriculture institutions. As a member of the partnership, IWMI can now act as home and/or host institution for the students and academic staff involved in the Program.

IWMI’s participation in the Program was a direct result of the Amu Darya Basin Network (ADBN) meeting that took place at the IWMI Tashkent offices on 9 October 2010. It was the Network’s last meeting before it presented its results to the European Parliament in Brussels on 7 December 2010. ADBN (http://www.amudaryabasin.net) was created at the beginning of 2010 within the scope of a joint project by the East-West Institute and the Irrigation and Water Engineering Group of Wageningen University, entitled “Afghan-Central Asian water cooperation on management of the
Amu Darya river: connecting experts and policymakers in the low lands”. Although the project initially focused on connecting experts and policymakers in the Netherlands and Belgium, the Network expanded to connect water and policy experts in Europe and Central Asia.

Although participation in the meeting was limited to a small group, it nonetheless reflected a very relevant range of organizations and persons (Prof. Victor Dukhovny, Director of Scientific Information Centre of the Inter-State Coordination Water Commission (SIC ICWC); Dr. Jenniver Sehring - Political Adviser for Water Affairs to the EU Special Representative for Central Asia; Prof. Wim Cofino Integrated Water Resources Management Team, Wageningen University and Research Centre; and Dr. Kai Wegerich (co-founder of ADBN) Researcher on Water Policy and Institutions at IWMI Central Asia Office).

At the meeting, participants discussed the potential challenges of establishing a regional education and research centre or linking different national education and research centers within one network. It was strongly emphasized that any center or network should be grounded on field experience and research; hence, it was strongly recommended that these should be linked with on the ground research and implementation projects in Central Asia.

Kai Wegerich
IWMI

SANIIRI and IWMI Celebrate Anniversaries

The International Scientific and Practical Conference on Efficient Water Use in Agriculture and Land Amelioration was held on 10 November 2010, in Tashkent, Uzbekistan. The conference was organized jointly by the Central Asian Research Institute of Irrigation (SANIIRI) and the International Water Management Institute (IWMI), as a special event dedicated to two anniversaries - the 85th Anniversary of SANIIRI and the 25th Anniversary of IWMI. Over 70 scientists from different research institutions of Central Asian and CIS countries participated in this conference.

“Water scarcity is one of the biggest issues of our century” - said Shavkat Rakhimov, Director of SANIIRI, at the conference opening ceremony, “…and how efficiently we use water today impacts the development and livelihoods of the next generation as well as the environment.”

Established in 1925, SANIIRI was previously named after V.D. Zhurin. It has been the hub for scientific and practical research in hydraulic engineering and irrigation in the Region. The institute has 22 departments and laboratories and offers post-graduate courses. Today, the strategic areas of the research activities are land amelioration; water management from on-farm to basin scale, automation of water accounting and distribution.

The conference was devoted to a wide range of issues aimed at improving water use in irrigated agriculture. While in their opening speeches Professor E.J. Mahmudov, Director of the Institute of Water Problems and Prof. A.T. Salakhitdinov, rector of the Tashkent Institute of Irrigation and Melioration (TIIM), spoke about the existing water use problems in the Region, the participants in their presentations suggested solutions. Particularly interesting proposals were made in the presentations of Professors G.A. Bezborodov and R.K. Ikramov, who showed great opportunities for water savings at field level through improved irrigation techniques and soil moisture control. The Aral Sea problems were the subject of the presentation by Professor E. Kurbanbayev and G. Poluashova. Dr. I. Tomashevskaya presented the results of studies on the effect of melting glaciers on the quality of river flows. Specialists from IWMI, in collaboration with ICWC, SANIIRI and other scientific organizations gave presentations sharing their research results from projects located in Fergana Valley. These presentations covered improvements of water use at plot level, institutional development and management of groundwater. Dr. K. Anselm and B. Abdrakhimov highlighted problems of land reclamation in South Kazakhstan.

The conference participants made practical recommendations on the improvement of water productivity in agriculture, while the conference itself emphasized the excellent ongoing collaboration of IMWI and SANIIRI and other research institutes.
Central Asia Conference on Capacity Building for Sustainable Development

The Central Asia Conference on “Building Human Resources and Institutional Capacity for Sustainable Development of Central Asia”, hosted by Michigan State University (MSU) - one of the members of CGIAR Consortium, and University of Central Asia (UCA), was held on 28-31 October 2010. The first day of the meeting was dedicated to agriculture while the following days focused on the history and culture of Central Asia.

A number of presentations were made by scientists on the following themes:
1. Setting the Context for Institutional Capacity Building in Central Asia;
2. Natural Resources Management, Climate Change and Environment; and

In total about 70 scientists and administrators working in the sphere of agricultural development attended the conference.

The agricultural sector of the Central Asian countries was represented by the following scientists:
Prof. Laziza Gafurova, Vice-Rector, Tashkent State University, Uzbekistan; Dr. Jalil Piriev, Director, Tajik Agricultural Economy Institute; and Dr. Murat Aitmatov, Prof. Kyrgyz Agrarian University.

In his presentation on “USAID Agricultural Development Programs in Central Asia”, Dr. Scott Christiansen, Senior Agricultural Development Advisor, USAID mentioned that Tajikistan was included in the list of 20 priority countries which are receiving aid from the US government to assist them in improving food security. He informed that USAID is ready to provide support to the projects introduced by the countries of Central Asia through their country representatives. Dr. Zakir Khalikulov, Deputy Head of ICARDA-CAC/PFU-Tashkent, Uzbekistan presented a paper on “CGIAR Program for Central Asia and the Caucasus: Enhancing Food Security in Central Asia”, which was well received by participants and solicited many queries about the Program’s activities and achievements. To express to MSU high appreciation for the fruitful collaboration within the CGIAR Consortium, Dr. Khalikulov presented Mr. Kim Wilcox, Provost and Vice President of Academic Affairs, MSU CGIAR with a copy of “King Baudouin Science Award for Outstanding Partnership”, which was awarded to the Program on Sustainable Agriculture Development in Central Asia and the Caucasus two years ago.

NEW PROJECTS

Case study on “Strategic dual-purpose crops and mobilization of underutilized plants in semi-desert foothill rangelands in Uzbekistan”

In October 2010 ICARDA, in collaboration with the International Center for Biosaline Agriculture (ICBA), initiated a two-year project entitled “Strategic dual purpose crops and mobilization of underutilized plants as part of a climate change adaptation strategy. Case study in semidesert foothill rangelands near Papanaya settlement, Nurata district, Uzbekistan”, funded by the Federal German Ministry for the Environment, Nature Protection and Nuclear Safety (2010/2011).

The project inception workshop took place in the secondary school of Kadog, Nurata district, Uzbekistan on 27 October 2010. Mr. Khalilov Akmal opened the workshop and welcomed the project participants on behalf of the Khokimiyat (local
government) of Nurata district. Representatives from Mahallas (local communities) and around 20 villagers from Kadog and Papanaya took part in the workshop.

The project will assess vulnerability (exposure, sensitivity and adaptive capacity) to climate change through case studies in Kadog (foothills) and Papanaya (lowland settlement) and includes quantitative and qualitative socio-economic research. Overgrazing in the uplands and foothills, as well as across the large territories of *Artemisia-ephemeroids* semi-desert pastures, led to the mass destruction of vegetation, especially around settlements, farms and watering points. Large areas of mountain slopes are severely degraded as a result of water, wind and soil erosion. The project introduces dual-purpose crops alternated by fruit trees and forage shrubs in a strip-alley-system as one of the adaptation measures. Thus, it promotes economic diversification and sustainable intensification options to increase forage production and resilience of ecosystems. In the framework of the project, two self-help womens’ groups have been established. In 2011, they will be trained on cultivation and seed multiplication of valuable dual-purpose crops and forage shrubs, and processing of crops.

Two field rangeland inventories were organized and more than 160 wild and underutilized species were evaluated and documented. Among them, there are native endemic trees, shrubs and perennial herbs which face the highest risk of extinction due to climate change and anthropogenic pressure. Seed collecting for *ex situ* and *in situ* conservation for more than 28 arid fodders, medicinal, technical and dying plants has been conducted in the Nurata district.

The research is coordinated by Dr. Stefanie Christmann (ICARDA-CAC) collaboratively with Dr. Aden Aw-Hassen (ICARDA, Syria), Dr. Mounir Louhaichi (ICARDA, Syria) and Dr. Kristina Toderich (ICBA-CAC).

### International Center for Biosaline Agriculture (ICBA) launches a new project in Turkmenistan

In October 2010, ICBA, in collaboration with the Institute of Desert, Flora and Fauna of the Ministry of Nature Protection of Turkmenistan, launched a new bilateral project entitled “Improving Livelihoods of Rural Communities under Saline Desert Environments in Turkmenistan (Development of sustainable water, rangelands and livestock management)”. This project targets the efficiency of non-conventional water use in agri-silvi-horticultural and silvi-pastoral systems to meet the demand for food and animal feed and develop adaptation strategies to climate change and water resources shortage for the vulnerable rural communities. Another alternative for land use, contributing to income generation, is the reclamation of marginal lands by using non-conventional water for irrigation [drainage, takyr surface (a specific soil formation in Central Asian deserts) rainfall water, artificial mineralized pods, underground]. As part of the project, various low cost biosaline technologies for crop diversification, efficient water (marginal quality) use, feed and livestock production and rangelands management will be evaluated and adopted. Impact of water saving, drain-water use and crop diversification on feed livestock production will also be assessed at the demonstration sites in Dashauz (northern) and Ashgabat (southern) viloyats (districts) of Turkmenistan. A number of stakeholders including farmers, animal breeders, agropastoralists and households will be involved by developing a model of a Learning Alliance for a “Joint Arid Biosaline Food and Forage/Livestock production” in both plot areas. The measures include the establishment of on-farm demonstration trials for using:

1. Low quality water for irrigation and cultivation of suitable native and introduced wild and cultivated grasses, shrubs and trees, as well as the use of Winter/summer conventional and non-conventional crops;
2. Domestication of economically-valuable native halophytes on unproductive salt affected lands abandoned by farmers and saline-prone sandy desert rangelands;
3. Seed collecting and multiplication for sustainable production;
4. Environmental sustainability by establishment of tree plantations and shelterbelts to promote bio-drainage, increased organic matter, and promote bi-products such as wood, fruit or fodder;
Livestock component, including different rations of feeding for small ruminants using traditional and non-traditional fodders. These studies will reveal sustainability and resource efficiency use of the integrated crop-livestock production system in Turkmenistan.

Farmers, pastoralists and households, especially women’s groups will be trained and involved in all activities related to saline water and crop management practices and efficient forage biosaline production. They will contribute to the dissemination of the project results.

Monitoring of soil salinity, water table depth, irrigation and drainage water quality will lead to a better understanding of salt movement as a result of management practices. A brief assessment of the status of saline irrigated areas and the prospects for improving the productivity of marginal saline old agricultural and sandy desert rangelands, by taking into consideration the availability of low quality water resources, was conducted in October 2010, at the outset of the Project.

The research study is planned to be conducted jointly by scientists and farmers in two sites with contrasting agroclimatic and edafic conditions:

Karukyli Site located about 86 km north of Ashgabad city in the Central Karakum sands, which is characterized by extreme dry continental climate and low fertile saline kara takyr soils. Use of underground-mineralized (10.9-19.9 g/l) is the key advantage for domestication of economic-valuable native tree, shrubs and perennial halophytes for increasing productivity of saline-prone sandy desert rangelands;

Oguzgan Site located in Amudarya River Delta, Dashauz region in northern Turkmenistan, represents new irrigated sandy desert lands, which are severely affected by salinization, with a shallow water table (141-182 cm) and low quality of surface water (7.5-14.8 g/l) available for irrigation. Underground water (EC 9.98-12.34 dS m-1) is characterized as sulfate-chloride and sodium-calcium type by cations composition.

Simultaneous use of surface and ground water for irrigation and control of ground water and salinization levels on irrigated lands was discussed with a local farmer, Mrs Dyrdyboy Nurbetov. Options for the establishment of agroforestry trials using salt-tolerant trees and shrub species (to lower the water table) with deep-rooted forages, as well as on-farm testing of different salt tolerant germplasm were suggested. However, detailed assessment is needed to explore supply and demand potentials of new salt tolerant forage trees/shrubs and crops to be introduced and adopted in this area.

Kristina Toderich
Shoaib Ismail
ICBA

RESEARCH FOR DEVELOPMENT HIGHLIGHTS

Advances in winter wheat varieties benefit the CAC Region

There have been a number of interesting developments for winter wheat in the region in 2010. In particular, three winter wheat varieties, originating from germplasm provided by the International Winter Wheat Program, have been registered at the State Variety Test Commission in Uzbekistan by Kashkadarya Research Institute of Grain Breeding and Seed Production in collaboration with ICARDA-CAC. These varieties (“Hazrat Bashir”, “Elomon” and “Gozgon”) produced higher yields than the local checks in the past two years. Moreover, these varieties are also resistant to yellow rust, the most important disease constraint to wheat production in Uzbekistan. They also compare well with the local checks for other agronomic traits.

In addition to the three new varieties registered in Uzbekistan, many other high yielding winter wheat genotypes with resistance to yellow rust have been identified.
through the collaborative research involving Kashkadrya Research Institute of Grain Breeding and Seed Production, Uzbek Research Institute of Plant Industry, ICARDA-CAC and International Winter Wheat Program. Seeds of 23 superior lines have been distributed to wheat improvement programs in the Region.

Ram Sharma
Zakir Khalikulov
ICARDA

Modeling of winter wheat growing in the Central Asia region

Collection of data required for calibration and validation of crop-model simulation model CropSyst, which is used to assess the impact of climate change on wheat (*Triticum aestivum*) production, was completed in the framework of the biophysical assessment component of a multi-disciplinary ICARDA project on “Adaptation to Climate Change in Central Asia and People’s Republic of China”, which was completed. The sites chosen for data collection are located in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.

The main issues of the CropSyst model calibration, Weather Generators usage and climate change scenarios application were discussed during project review meetings at ICARDA’s Headquarters in July 2010. Weather Generators (WG) are statistical models used to generate daily weather data, which is necessary to run the model on the basis of observed monthly data. Comparative analysis of their outputs under Central Asian climate variability conditions allowed two models to be chosen—ClimGen and Lars-WG. They will be used for conversion of outputs of climate change scenarios into multiple-year daily meteorological data. Climate change scenarios and algorithm of their usage, using the Grafical User Interface (GUI), were discussed with the representatives of ICARDA’s GIS-Unit, who are responsible for preparation of the scenarios.

Additionally, a multi-lingual version of the GUI model has been developed according to the request of the scientists of the Central Asian Scientific Research Institutes, who are familiar with CropSyst model and are involved in the data collection within the framework of the project. The GUI model was translated into Russian and Uzbek by the project team and was tested with a few partners.

Mariya Glazirina, Tulkun Yuldashev
ICARDA

New vegetable crop varieties promoted

Supervision of promising vegetable varieties in field conditions by specialists of the State Variety Trial Commission (SVTC) is an important stage in the adoption process of new vegetable varieties. In particular, new varieties of vegetable soybean “Ilkhom” and “Universal”, mungbean “Zilola” and “Marjon”, chili pepper “Uchkun” and “Tillarang” released in recent years are unique in terms of similar commercially valuable features in the Uzbek Republic.

New varieties of mungbean, vegetable soybean, yard-long bean and sweet pepper were developed as the result of collaboration between the World Vegetable Center (AVRDC) and the Uzbek Research Institute of Plant Industry. These varieties were submitted to the SVTC, together with new varieties of marrow-stem cabbage, which were jointly developed by AVRDC with the Tashkent State Agrarian University. Introduction of these varieties in the agricultural production cycle will not only make available a wider range of nutritional products, but will also help to ensure food security throughout the year and increase farmers’ incomes.

Ravza Mavlyanova
AVRDC

Monitoring of pests and diseases in tomato fields in Tashkent region

Tomato (*Solanum lycopersicum* L.) is a perennial plant but it is grown mainly as an annual crop. In Uzbekistan, it is a highly valued crop, grown mostly for the local market. Consumers use tomatoes for fresh salad and juice, as well as in dried and processed forms. A minor part of yield is exported to neighboring countries. In
Central Asia tomato is cultivated in open fields and greenhouses. Tomato growing in Uzbekistan has great potential because it creates income generation opportunities for rural households and improves the population’s nutrition. Problems commonly faced by farmers in tomato fields are caused by nutrient deficiencies and biotic stress from pests and diseases (mainly insects and fungi). According to official data, crop yield losses from pests and diseases can reach up to 30-40%. Annual pest and disease monitoring, research and building capacity of farmers are all measures that would help to resolve these problems linked to lower tomato yields.

To assess the most common pests and diseases during summer, monitoring twice a week in a quarantine environment was conducted at the Tashkent region experimental tomato plots located at the Uzbek Research Institute of Vegetable, Melon Crops and Potato (URIVMCP). In 2010, tomato planting started in early April (plot size – 200 m²) and the crop was harvested in August-September. During the vegetation period, the field was irrigated regularly and no pesticides were applied.

Weather conditions during 2010 in the Tashkent region were different compared to previous years. According to data provided by URIVMCP, the period of 2006-2009 was favorable for physiological growth of tomato but promoted spread of pests such as fruit worm and russet mites during the summer season. In 2010, due to sufficient precipitation during summer and increased air humidity, the tomato crop was significantly injured not only by fruit worms and russet mites but also by whiteflies, which attacked the newly emerged tomato leaves. Aside from the dispersion of mentioned pests during the summer, an early blight disease (Alternaria leaf blight) was noticed on the tomato leaves caused by fungi \textit{Alternaria solani} that in the open fields in Central Asia is the most prevalent compared to other blight diseases. The disease has also occasionally occurred during other years, but it has never had an important/adverse economical impact on the crop. This year, however, the fungus developed in the form of epizootic behavior, widely spreading its population level. The isolates of \textit{Alternaria solani} obtained from the damaged leaves were brought to the Research Institute of Plant Protection laboratory. Microscope investigation of the pathogen also revealed other species of this genus, and thus further identification and isolation was conducted. As a result of the significant damage to the tomato plants, the quantity of the remaining healthy plants and fruits were low and the yield losses were estimated to be around 50%.

Given the meteorological data of May, June and July 2010, it can be concluded that in the studied area the pests and diseases spread widely mainly due to the high precipitation (particularly in June) and air temperatures that were lower than usual. Soil analysis also indicates the need to implement further measures on plant protection, soil melioration, i.e. soil enrichment with beneficial microorganisms, as well as long-term diversified crop rotation.

**Water Productivity Improvement at Plot Level**

Equitable distribution of water within Water Users Associations (WUAs) is pivotal for increasing water productivity at field level and improving water fee collection from water users. For achieving equity in water distribution, a combination of appropriate hardware (flow measurement structures and gates) and software (operational procedures and training) tools are required. With a view to improving equity in water distribution within WUAs, the Water Productivity Improvement at Plot Level (WPI-PL) project has started equipping selected WUAs with flow measurement structures and gates. The project is implemented jointly by the International Water Management Institute (IWMI-CA) and the Scientific-Information Center of Interstate Commission for Water Coordination (SIC-ICWC). It covers five regions of Ferghana Valley geographically located in Kyrgyzstan, Uzbekistan and Tajikistan. In total 17 Water Users’ Associations in three countries will be equipped with water measuring devices (665 units) and gates (617 units). Out of 17 WUAs, 8 WUAs would be equipped with flow measurement structures on 100%, i.e. each farm would have a flow measurement structure.

So far, only 75% of the total number of structures have been constructed in Tajikistan and Uzbekistan. Because of the recent civil unrest, construction of the structures
Construction of flow measurement structures at plot level helps to improve such processes as evaluation and improvement of equity in water distribution, introduction of volumetric water charges, eliminating disputes between water users and WUA staff, applying the right quantity of water during each irrigation process and conflict resolution among farmers. It is expected that introduction of volumetric water charges will encourage farmers to use water saving technologies at field level.

Mohan Reddy Junna
IWMI

Conserving Halophytes and Salt Tolerant Crops Diversity

Drought and salinity have a far greater effect on food security in Central Asian deserts, rainfed areas and foothills than in agricultural irrigated areas. As a result, the former highly productive pasture-livestock system has deteriorated and livelihoods of the people dependent on them have dramatically declined. The evaluation, domestication and sustainable use of native and introduced halophytic and salt-tolerant plant resources would have a significant impact on salinity control and remediation of arid/saline lands.

The flora of halophytes of Central Asia includes indigenous, highly valuable genetic diversity, that is little known or even unknown, but which naturally grows well on saline wetlands and marginal desert areas without any support by scientifically proven agricultural technologies. Given the critical importance of conservation of plant genetic resources in the Region, the International Center for Biosaline Agriculture (ICBA) program makes a significant contribution to the collection, documentation and domestication of plant genetic resources of halophytes and salt tolerant crops in the region. A large number of the native species have economic uses such as food, fodder, medicine, landscaping rehabilitation of degraded rangelands and erosive slopes, and have great potential for exploitation and salinity control and salt accumulation in the root zone of crops. Due to their natural adaptation, they will be of great value for various uses, such as rehabilitation of degraded lands and management of soil salinity compared to exotic and introduced species. It is therefore important to collect, investigate and conserve these species to be able to use them to address climate change adaptation and mitigation. “Plan for collection, characterization, documentation and conservation of salt tolerant and salt loving (halophytes) native species of economic value”, prepared by ICBA scientists, was published in the August 2008 issue of the bulletin of the International Center for Biosaline Agriculture. Three seasonal field expedition missions were organized in May-June-November 2010 in southwestern Uzbekistan, in which more than 380 species of different groups of salt loving plants (wild halophytes representing 19 taxonomical families) were described and documented. The study areas show a high endemism in plants (about 3.4% from total species). Most noticeable is the relative richness of the Chenopodiaceae with nearly 33% endemism, equivalent only to Australian chenopod shrublands. It is also quite rich in Asteraceae (20%), Poaceae (11%); Fabaceae and Brassicaceae (about 11%). Species belonging to Polygonaceae, Plumbaginaceae, Zygophyllaceae, Cyperaceae and Tamaricaceae account for a smaller share of the study area (3-5%), whereas, Eleagnaceae, Plantaginaceae and Frankeniaceae make up an even smaller part (< 1.0%) of rangeland halophytic pastures. Among cited plant resources there are a number of native and exotic halophytes both C3 and C4 plants suitable for reclamation of arid and semi-arid, salt/affected and waterlogging lands. We have found that plants with C3 photosynthesis types under condition of high solar radiation and shortage of water seem to be more sensitive to soil salinity than C4 plants. The ICBA-CAC database holds data on 38 species of forage value, 25 species of trees and shrubs as food, fuel, wood, bio-drainage and landscaping value, 15 medicinal species,
6 dying and 10 technical and oil plants. Among them eight species are documented as rare and endangered requiring urgent protection and conservation. Mapping of halophytic vegetation and domestication of economically valuable halophytes showed that the soil salinity types, moisture and sodium ion content were the major factors responsible for the cover vegetation changes. Vegetation richness, botanic species diversity and accumulation of high overgrown biomass were well integrated with soil salinity calculated for sodium ion accumulation. A significant drop in soil salinity and the concentration of different ions was detected in winter-spring-summer seasons, which was attributed to the diluting effect of snow and rain water. A scientific-based concept for the domestication of indigenous trees/shrubs and perennial halophytes through biosaline agroforestry systems and/or as alley-cropping alternated with agricultural sensitive salt tolerant crops adapted for different agro-ecological zones Central Asian countries is being developed.

Investigation of the mechanism of salt tolerance in economically valuable species, based on morphological, physiological and biochemical parameters, has been initiated. Kristina Toderich
ICBA

True Potato Seed (TPS) - a viable alternative production technology in the highlands of Afghanistan, Tajikistan and Uzbekistan

The level of poverty among smallholder farmers of the highlands of Central Asia is extremely high. Assisting them in acquiring new technologies will provide them with the knowledge and tools that can potentially alleviate this poverty. In particular, potato is considered a crop with potential to contribute to poverty reduction because it has the highest comparative advantage under specific soil and climatic conditions. Purchasing expensive imported seed from Europe which would, in any case, not be suitable or have the traits necessary to grow well in the agro-environmental conditions present this region, is not a viable option for smallholder farmers in the Central Asian highlands. It is therefore more realistic to concentrate on the enhancement and development of a “farmer-based seed system” that supplies most of the seed, still relies on the production of seed by dual producers (producing seed and ware potato at the same time) and a few specialists, and is mainly based on a self-supplied seed system (Farmer Saved Seed).

The International Potato Center (CIP) considers True Potato Seed (TPS) technology a very appropriate option for resource-poor farmers to overcome the unavailability of good quality seed and the high cost at which imported and conventional potato seed are sold. True Seed in potato are the botanical seeds that are formed because of fertilization of ovules lodged inside the ovary of hermaphrodite potato flowers. The fertilized ovules develop into tiny seeds inside the potato fruit, called berry, and these seeds have the potential to develop into full-grown plants and form tubers, a procedure that is similar to that followed by breeders creating new potato varieties. Therefore, instead of dealing with clonal or vegetative propagation, as in the case of normal seed tubers, CIP recommend sexual multiplication where a normal tuber is replaced by a botanical seed. CIP together with partners in each country concentrated their efforts on convincing the farmers to use hybrid true seed produced as a result of cross-pollination or hybridization, which requires a great amount of skilled and dedicated labour, but gives much higher yield compared to seed produced naturally under open pollinated conditions. Furthermore, specialized potato breeders from Tajikistan and Uzbekistan were trained by CIP at Central Potato Research Institute (CPRI), Shimla, India and in situ in order to become acquainted with the technique and produce their own TPS in the near future.

Through the use of TPS, CIP introduced two techniques, the direct seeding technique with true potato seed sown in the nursery at a high density and where potato plants are grown till harvesting, and transplanting in the open field of rooted seedlings obtained in the nurseries, in order to obtain market-sized tubers from the first year. The activities took place in 2009 and 2010, in two geographical regions of Tajikistan, Zerafshan and Rasht valleys, in Bostalnik district (Tashkent region) and Kitab
district (Kashkadarya region) in Uzbekistan, and in Badakhshan province in North-Eastern Afghanistan. Prior to this, intensive training of advisors and farmers took place. The objective was to develop a strategy to introduce farmers and advisors to a technology that was completely new to the large majority of them. During the training, farmers mainly specialized in vegetable growing, among them many women, learned how to prepare and manage a nursery and handle rooted seedlings for transplanting in the field. Documentation was translated into Uzbek and Russian languages and distributed to farmers by CIP’s partners. Afterwards, nurseries were established in strategic points where the new technology could be further spread with ease. It is important to recognize that this work could not have been realized without the support of the partners who were instrumental in the diffusion of the two techniques. They were distributed by country and area:

**Afghanistan:**
- Aga Khan Foundation, Natural Resource Management project, in Badakhshan, Ishkashim (2,600 m asl), North-Eastern Afghanistan.

**Tajikistan:**
- Horticultural Institute “Bogparvar”, in Jirgatal district, Rasht valley (2,000 m asl);
- Deutsche Welthungerhilfe (German Agro-Action) “Comprehensive seed potato system in Zerafshan Valley” (TJK 1065), in Zerafshan valley (altitude ranging from 1,886 to 2,448 m asl);
- Global Partners, in Garm district, Rasht valley (from 1,300 to 2,100 m asl).

**Uzbekistan:**
- Institute of Vegetables, Melon and Potato, in Bostalnik district, Tashkent region (1,200 m asl);
- UNDP “Area-Based Development” Project, in Kitab district, Kashkadarya region (1,200 m asl).

To overcome frost damage to weak seedlings in their first stage of growth, many nurseries were protected with polyethylene tunnels. This allowed a uniform germination and growth in most places. Sowing was carried out at the beginning of May 2010 with harvest in September 2010. Results were particularly interesting in the districts of Jirgatal (Tajikistan) and Kitab (Uzbekistan), where TPS family 998010 showed a high average yield per unit area in the direct seeding method (7.3 and 4.6 kg/m², respectively). In the case of transplanted rooted seedlings, the major problem identified was growing cycle duration. In fact, while 120-130 days are necessary for seedling tubers produced according to the direct seeding technique under long-day conditions of Central Asia (from sowing till harvesting), about 150 days are needed for rooted seedlings to produce seedling tubers of commercial size (from sowing till transplanting in the field and further harvesting), in spite of the fact that market-sized tubers are already obtained in the first year. This is the reason why CIP recommends the application of the direct sowing technique, especially when the objective is to obtain seedling tubers.

**Improving rural livelihoods through enhanced crop production in Kazakhstan**

The World Bank presently classifies Kazakhstan as a middle-income country. The global crisis, however, had some impact on the country’s economic situation, but it did not stop economic growth for a long time. In addition, various Government social programs have supported the welfare of the people during the time of crisis, which testifies to the maturity of the Kazakh economy. During the last decade, average incomes in Kazakhstan have increased sevenfold, the monthly salaries increased by almost 6 times.

At the same time, according to official statistics, in rural areas, where almost 46% of the population reside, one third of the population’s incomes are below the minimum cost of the consumer basket. The results of socio-economic research point at the crisis in rural economic conditions. The rural populations are not supplied with many rudimentary utilities, primarily linked to their low financial capacities.
In such a situation, one solution is to increase incomes through the development of crop production. In this regard, the research activities conducted by ICARDA in Kazakhstan under the project on “Climate change adaptation in Central Asia” investigates the possible options for improving rural livelihoods. Preliminary results of this project indicate that:

1. Household plots play an important role in rural livelihoods. The main feature of household plots in Kazakhstan, especially in the Northern provinces, is that they are subsistence-oriented rather than commercial (mainly in crop production).
2. During the last ten years, even without government support, agricultural production in household plots has become a major source of nutrition for the rural population in Kazakhstan.
3. In spite of observed climatic changes over the last ten years (increase in drought and in the number of days with high temperatures), agricultural production in household plots is increasing.
4. In some regions, household plots have become the sole source of income for rural residents.

However, the productivity of crop production in household plots is not high because the existing government support does not cover this segment of agriculture policy. Household plots do not have access to high quality seeds; there is no existing system for developing safe and sustainable technologies for year-round production of vegetables. Resolving these issues could increase the incomes of rural residents, which is especially vital for the poorest level of the population.

Therefore, in order to raise the productivity of crop production, the project recommends establishing a system of extension centers in the rural areas to carry out trainings on the basics of agronomy (seed selection, crop management, harvesting and post harvest management), as well as on business management. These courses should also provide knowledge on agro-ecosystems, appropriate crop choice, land management and seed treatment, which are all basic elements of good crop production. Secondly, the project strongly recommends paying more attention to the development of seed production. Thirdly, it is necessary to increase attention to the problems and consequences of climate change and take action for adaptation based on research.

Ruslan Abdugaliev
Kazakh Research Institute of Agricultural Economics and Development or Rural territories
Kazakhstan

New initiatives on dissemination of improved varieties of cereals and chickpea in CAC

During the last months of 2010, ICARDA in collaboration with National Agricultural Research Systems (NARS) partners, started seed multiplication and dissemination of improved varieties of cereals and chickpea in the CAC Region. In Tajikistan, seed multiplication and varietal dissemination of ‘Hisor 32’ and ‘Sino’ chickpea and ‘Pulodi’ barley was initiated. Under this plan, 110 farmers have planted chickpea (2.5 tons) and 20 farmers have planted barley (2.0 tons). Additional seed for multiplication has been planted for the following years. In 2011 the farmers are expected to return the amount of seed they received this year. These chickpea varieties released in Tajikistan are selections from ICARDA nurseries. In Armenia, seeds of newly released varieties from ICARDA nurseries are being distributed to 200 farmers. In Kazakhstan, seed production on more than 300 ha has been planted using a chickpea variety selected from the ICARDA nursery. In Azerbaijan, Georgia and Uzbekistan seed multiplication of newly released chickpea varieties from ICARDA nurseries has been done in 2010-2011 for out-scaling in 2011-2012. Seed of ‘Dostlik’ winter wheat, which has salinity tolerance, is being multiplied by the NARS partner in Uzbekistan on more than 30 ha for distribution of the variety among farmers.

Ram Sharma, Zakir Khalikulov
ICARDA

Monitoring of household plots in Kazakhstan
Observation of developed crop varieties
A group of farmers gathered in Dushanbe, Tajikistan on 5 October 2010 to receive chickpea and barley seed under a varietal out-scaling program
CIP-bred potato clones released in Kyrgyzstan and Uzbekistan

To assist National Agricultural Research Systems (NARS) in their breeding and rehabilitation efforts, the International Potato Center (CIP) supplied a set of advanced breeding clones and varieties with potential or demonstrated adaptation to long-day conditions in the form of \textit{in vitro} plantlets (Uzbekistan) in April 2005 or in the form of tubers (Kyrgyzstan) in spring 2008. The latter were issued from a regional clonal selection that started in Tajikistan in May 2005. The same germplasm was distributed to other CAC countries. The introductions included advanced or local selections from CIP’s Lowland Tropic Virus Resistant (LTVR) population, and varieties (e.g. ‘Yagana-INIA’, ‘Achirana-INTA’) from inter-varietal crosses or collaborating institutions’ population improvement programs (Chile, Argentina). ‘Achirana-INTA’, for instance, was introduced because of its successful performance in northern China. Main traits desired by local breeders are early maturity for lowlands and a medium-late maturing cycle for the highlands (up to 120-130 days from planting), red skin color (Uzbekistan), resistance to viruses and main abiotic stresses (heat, drought) and marketability.

In Uzbekistan, minitubers produced under aphid-proof conditions in Tashkent, by the Biotechnology Dept. of the National University were planted at the mid-elevation site of Pskem (1243 m asl) in the fields belonging to the Institute of Vegetables, Melon and Potato in June 2006, for further increase and preliminary clonal observations. In collaboration with local scientists, 22 clones selected for characters such as tuber shape, tuber eye depth, plant height, length of stolons, resistance to early blight (\textit{Alternaria solani}) and viruses, were then entered in multilocation trials that were carried out in the lowland stations of Tashkent and Termez, and in Pskem in 2007, 2008 and 2009. Out of these 22 clones, three immediately revealed to be the best performing under the local conditions, 390478.9 (mid-early), 397073.16 (medium) and 397077.16 (mid-late maturing). They were selected by local NARS in Uzbekistan and proposed for variety release by national partners with the names of ‘Pskem’, ‘Serkhosil’ and ‘Sarnav’, respectively. ‘Serkhosil’ was released on 9 December 2010, with Decree No. 212 of the Ministry of Agriculture and Water Resources of Uzbekistan. Its main characteristics are as follows (see Table).

### Table: Morphology of CIP-bred clone No. 397073.16 – ‘Serkhosil’

<table>
<thead>
<tr>
<th>Morphology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit</td>
<td>Medium-tall, semi-erect, not compact, medium vigorous, stem solidity solid</td>
</tr>
<tr>
<td>Flower</td>
<td>Flowering moderate, calyx green, corolla white, anthers pale yellow, well developed, pollen fertile (78.3%), anther cone formation is normal, inflorescence type is simple, pedicel articulation position is above the middle</td>
</tr>
<tr>
<td>Tuber</td>
<td>Skin colour white-cream, size medium, long-oblong, cream, smooth, eyes shallow eyebrows, flesh cream</td>
</tr>
<tr>
<td>Sprout</td>
<td>Dark purple, conical, sprout tip open, pubescence present and slightly hairy</td>
</tr>
<tr>
<td>Maturity</td>
<td>Medium (100-110 days)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.0959</td>
</tr>
<tr>
<td>Tuber dry matter</td>
<td>22.5%</td>
</tr>
<tr>
<td>Keeping quality</td>
<td>Good, better than Sante, dormancy medium (12 weeks); it shows a noticeable apical dominance</td>
</tr>
<tr>
<td>Cooking quality</td>
<td>Good, cooks well in 20-30 minutes, floury texture, mild flavour, free from after-cooking discoloration</td>
</tr>
<tr>
<td>Marketable yield performance</td>
<td></td>
</tr>
<tr>
<td>Pskem (June-Oct.)</td>
<td>38.8</td>
</tr>
<tr>
<td>Tashkent (March-June)</td>
<td>26.6</td>
</tr>
<tr>
<td>Tashkent (July-October)</td>
<td>28.4</td>
</tr>
<tr>
<td>Termez (Feb.- May)</td>
<td>31.4</td>
</tr>
</tbody>
</table>

In Kyrgyzstan, on the other hand, the State Committee for Variety Testing (SCVT) has released five CIP-bred clones after three years of tests conducted at the Ak-
Suu station in Issyk-Kul oblast, following regulations consistent with international standards, introduced by the European Union in 2000 and including DUS (distinctness, uniformity, stability) tests. This was considered an outstanding result by CIP, considering the distance of this program from Lima, Peru. The report supplied by Kyrgyz specialists of SCVT was also judged excellent. A most outstanding feature is the short time from crossing (2002 and 2003) to varietal identification, which is obtained through the knowledge of parental value and adaptation of CIP clones in Central Asia through CIP shuttle breeding (materials and information) between HQ and CAC program and also due to the high capacity of all involved along the pipeline. These clones will be valuable for other countries of the CAC region and the completely temperate region, from Turkey up to Northern China and Mongolia due to the same long-day conditions. Their short description is given below. They have not yet been named.

<table>
<thead>
<tr>
<th>CIP No.</th>
<th>Flower colour</th>
<th>Tuber shape</th>
<th>Skin colour</th>
<th>Tasting assessment rate (1-5)</th>
<th>Maturity</th>
<th>Marketable yield (&gt;60mm) (t/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>302313.5</td>
<td>White</td>
<td>Oval</td>
<td>Yellow</td>
<td>5</td>
<td>Medium (100-110 DAP)</td>
<td>35.0</td>
</tr>
<tr>
<td>302312.4</td>
<td>White</td>
<td>Oval</td>
<td>Yellow</td>
<td>5</td>
<td>Medium</td>
<td>35.6</td>
</tr>
<tr>
<td>302312.6</td>
<td>White</td>
<td>Oval</td>
<td>Yellow</td>
<td>5</td>
<td>Medium</td>
<td>33.8</td>
</tr>
<tr>
<td>30331.6</td>
<td>White</td>
<td>Elongate</td>
<td>Yellow</td>
<td>5</td>
<td>Medium</td>
<td>34.5</td>
</tr>
<tr>
<td>302089.8</td>
<td>White</td>
<td>Oval</td>
<td>Yellow</td>
<td>5</td>
<td>Medium</td>
<td>38.8</td>
</tr>
</tbody>
</table>

NB. (1-5): 5 is excellent. DAP: Days After Planting

Case study on adaptive capacity to glacier loss and climate change in mountain villages in Tajikistan

In July/August 2010, within the framework of a new ICARDA/ICBA research project “Strategic dual purpose crops and mobilization of underutilized plants as part of a climate change adaptation strategy” (see article on Page 9), participatory research was conducted in two Tajik mountain villages, Darg and Imbef on exposure, sensitivity and adaptive capacity to glacier loss and climate change.

Hundreds of mountain villages in CAC will lose their small glaciers within a generation or even within the next 20-30 years. At present, they rely on irrigated agriculture to a high extent. Mountain villages enjoying water abundance will have to adapt to water scarcity during the growing period, within a short period, as time for adaptation is short. Rainfed agriculture requires not only knowledge, but also experience. Additional problems caused by climate change are increased soil erosion, mudflows and loss of biodiversity; these problems need to be urgently addressed. The main identified challenge is to make the villages capable key actors of the change-process.

The case study showed a high lack of awareness concerning climate change and glacier loss, but if the issues are addressed promptly then the adaptive capacity of mountain villages is high. Therefore, this issue has to be addressed and improved adequately by research. Women identify different options for local climate change adaptation strategies and they therefore must be included, even if this is difficult according to local culture.

For mountainous countries such as Armenia, Georgia, Kyrgyzstan or Tajikistan, comprehensive approaches to support local adaptation processes in mountain villages might develop to become an issue with high priority. If adaptation starts too late, increasing male labor migration will make adaptation impossible. The loss of arable lands, high value agricultural products, loss of biodiversity and challenges associated with integrating the migrants from mountain villages in the lowlands might be the consequences. In addition, if high mountain villages do not start implementing the adaptation measures, increasing mudflows or avalanches might also cause problems in the more populated lower altitude.
The results of the case study were presented at the Forum for Sustainable Development of Central Asian Mountain Regions 2010 held on 4-6 November 2010 in Almaty, Kazakhstan. The presentation attracted high attention and had significant impact on the final Forum Statement. Several NGOs are interested in obtaining training related to this issue. The results of the case study were also presented at the 10th International Conference on Development of Drylands in Cairo, Egypt (12-15 December 2010). The research approach, addressing global climate change within local communities, was highly appreciated. This case study will provide terms of reference for a bigger research proposal on increasing adaptive capacity in mountain villages.

Stefanie Christmann
ICARDA

Monitoring the adaptation of farms and small households to climate change in Uzbekistan

A study of the condition of farms and small households’ adaptation to global climate change is being carried out in Uzbekistan under the ICARDA project on “Adaptation to Climate Change in Central Asia and China”. A baseline survey covering 450 respondents, including 300 farmer households and 150 farms of various regions of Uzbekistan was carried out under the project, aimed at covering all climatic zones within the country. Therefore, in the northern site, the study was conducted in the Republic of Karakalpakstan, in the south - in Kashkadarya region, while in central Uzbekistan, Tashkent region was selected. Taking into consideration the characteristics of Ferghana Valley, Andijan region was included in the research program. Site selection and specific farms and households were approached by random sampling, which allowed the optimization of geographic site selection and allocation of respondents.

The study showed that the regional agricultural authorities are working on adapting agriculture in general and within agricultural enterprises (farms and small households) adaptation to global climate change in the following areas:

- Diversification of crops;
- Changing of sowing date;
- Improving of cultivation technology of certain crops, among others.

However, the measures are often general and not always targeted, which reduces their effectiveness. Awareness of farms and small households on the impact of climate change is low, gained mainly through mass-media information (TV, radio, periodical publications). There are no specific newsletters on the subject. More than 50% of those surveyed farms and more than 90% of farmer households are completely unaware about climate change.

Based on the results of the study, the following suggestions have been made:

- Undertake activities to increase knowledge and awareness of farmers and small households on climate change and its consequences. For this, it is necessary to arrange short-term (1-2 day) courses and trainings for the chiefs of farms and small households. Training should be organized by the local administrations on agriculture and water resources, regional offices of the Farmer Households’ Association, with the involvement of employees of the Hydro-meteorological services, water management organizations and scientists;
- Agricultural authorities, jointly with the other stakeholders, should develop measures on adaptation to climate change, by taking into consideration the characteristics of each region (diversification of crops, improved seed supply of adapted crops, increasing the land area of farmer households);
- Increase the sowing area of winter crops for the effective use of the autumn – winter and spring precipitations;
- Consider the allocation of directed financial resources (grants, soft loans) for farmers and small households to undertake the activities on adaptation to climate change (the purchase of machinery, fertilizers, fuel, seed, crop diversification); and...
Sustainable groundwater management in Fergana Valley

Growing population, demand for food and energy, and competition between different water users are all increasing pressure on water resources Central Asia. In addition, water resources management is complicated by climate change and regional environmental issues. The Syrdarya River Basin is a key example where all of these problems come together and are steadily increasing. The establishment of new independent states at the beginning of the 1990s changed water allocations existing in the basin and increased competition between the upstream hydropower production and the downstream agriculture. The shift toward hydropower generation at the upstream Toktogul reservoir caused summer water shortages and excessive winter flows in the lower reaches of Uzbekistan and Kazakhstan, with water losses to the saline Arnasai depression.

IWMI studies on groundwater management in Fergana Valley were initiated in 2005 to assess potential of banking the winter hydropower releases from the Toktogul reservoir in the aquifers of Fergana Valley. It is widely recognized that the shift of operation of Toktogul reservoir in 1992-93 from irrigation to hydropower generation caused increasing detrimental water losses in Syrdarya River basin. The midstream reservoirs, the Kairakum and the Chardara are full to the beginning of winter and have no extra capacity to accumulate the excessive hydropower releases from the upstream Toktogul reservoir. Moreover, the water in the downstream river channel has ice cover in winter. This created induced winter flow discharges of 2-3 km³ annually into saline depression Arnasai, which at present has a surface area of over 3000 km² and a volume over 40 km³. The main findings of this study contributing to solving the problem are given below.

Potential of groundwater development in Fergana Valley

Zones are specified in Fergana Valley with the potential for ground water use for irrigation (Figure 1a) and groundwater recharge (Figure 1b). Intensive groundwater abstraction at proposed locations can create additional free capacities for storing Naryn River winter flow in seasonal tenure or in the long term.

The area of irrigated land with the potential to shift from surface to groundwater was found to be 290,000 ha (32% of the total), and that for conjunctive use to be at 243,000 ha (27%). This strategy will allow a significant reduction in the water intakes from the Naryn River for summer irrigation in Fergana Valley. The favorable areas for winter flow water banking (Figure 1b) include those with free capacities and the areas where these capacities could be artificially created by intensive groundwater abstraction. The free capacities exceed 3 km³; while intensive groundwater extraction will create over 100 Mm³ of additional free storage per meter of water table drawdown. The studies suggested that Sokh, Osh-Aravan, Chimion-Aval, Andijan-Shahr, Naryn, Altyaryk-Beshal, Almaz-Varzyk and Isfara aquifers have high potential for groundwater artificial recharge.

Enhancing natural recharge from river floodplains

Groundwater quality degradation is observed in many small river basins of Fergana Valley as affected by downward saline fluxes from the irrigated soils. The leakage from the small river floodplains can be intensified to sustain the groundwater quality. Adoption of water saving technologies allows the reduction of use of river flow irrigation and the use of saved flow to increase the groundwater recharge.

The studies carried out at upstream of the Sokh River estimated the leakage from the Sokh River floodplain to vary from 98 mm³ per year in low water years to 137
Mm³ per year in high water years. This groundwater recharge can be doubled by adoption of water saving technologies and by reducing irrigation withdrawals in the river upstream by 25%. Adoption of these measures will sustain groundwater quality at levels acceptable for drinking water supply upstream and for irrigation downstream.

**Banking the winter flow of the Naryn River in the Isfara aquifer**

The Isfara aquifer is one of the aquifers of Fergana Valley with high potential for ‘banking’ the winter flow of the Naryn River, as shown by the field recharge and modeling studies. The field pilot studies demonstrated that groundwater recharge, using simple structures such as trenches and canal and stream channels, is highly efficient. The modeling results suggested that changing the canal and water lift irrigation in the Isfara River upstream by groundwater irrigation will create extra storage for banking winter flow of the Naryn River. The studies found that increasing groundwater abstractions from 1.7 to 5.7 m³/s can increase free subsurface storage of the Isfara aquifer from 37 to 110 Mm³/year, which would be available for banking the winter flow of the Naryn River.

**Groundwater recovery using shallow wells and boreholes**

The research carried out by IWMI found at least two relatively low cost technologies of groundwater recovery which could be adopted by the smallholder farmers of Central Asia. These are boreholes equipped with low yielding pumps at 2-3 l/s and shallow wells of 20-40 m deep. Field demonstration studies at the pilot orchard farm in the Sokh River upstream showed that the farmers were not affected by water shortages thanks to access to groundwater through the borehole equipped with the low yielding pump. The cost of the indicated technologies is 10-20 times less compared to 60-100 m deep wells widely used in the region. This technology is the practical solution for small farms of Fergana Valley needing to irrigate orchards, vineyards and vegetables which currently face irrigation water shortages.

We express our gratitude to IWMI staff members of the GIDROINGEO Institute, as well as to staff of Uzgidromet, AVRDC and other water organizations who were actively involved in the studies.

Akmal Karimov  
IWMI

### WORKSHOPS/TRAININGS

**Traveling seminar on breeding, plant genetic resources and biotechnology in Kazakhstan**

In 2010, the National Center for Biotechnology of the Republic of Kazakhstan, JSC “KazAgroInnovation” of the Ministry of Agriculture, together with Food and Agriculture Organization of the United Nations (FAO) and International Maize and Wheat Improvement Center (CIMMYT) jointly launched the scientific and technological project on “Strengthening the plant biotechnology capacity for sustainable utilization of plant genetic resources for food and agriculture in Kazakhstan”, which was endorsed by the Government of the Republic of Kazakhstan.

The project’s main goal is to improve the breeding process of Kazakhstan’s most important crops through application of biotechnology methods and effective use of plant genetic resources (PGR), and identification of priorities and actions for the further development of these applications in research institutions of Kazakhstan.

Within the framework of this project, CIMMYT organized a traveling seminar on breeding, plant genetic resources (PGR) and biotechnology. The seminar was held from 8 to 16 August 2010 and was attended by 20 leading national scientists and specialists in the field of breeding, PGR and plant biotechnology. The main objective of the seminar was to evaluate the status and prospects of the development of breeding, biotechnology and PGR in the region, as well as to promote innovative technologies.

The itinerary of the traveling seminar included Astana - Karaganda - Astana - Shortandy - Zerenda - Kostanay - Karabalyk - Kostanay - Astana. The traveling group visited main ARIs, Centers, organizations and experimental breeding stations in Kazakhstan.
According to the seminar program, the participants became familiarized with the activities on plant breeding, genetic resources, biotechnology, crop diversification and conservation agriculture technologies. The seminar covered 1300 km across the most important agricultural regions of Kazakhstan such as Karaganda, Akmola and Kostanay provinces.

Seminar participants were unanimous in concluding that one of the most important tasks today is to increase crop yields through the development of new varieties, mobilization of PGR and use of advanced biotechnology techniques. The only obstacle is the weak link between biotechnology, breeding and PGR. Kazakhstan has developed biotechnology and breeding activities and extensive collections of PGR. However, current studies are conducted in parallel, without the close interaction between breeders and biotechnologists. In most cases, biotechnology methods and developments remain within the laboratories. Breeders practically do not apply biotechnology achievements in the breeding process. The application of biotechnology and molecular biology methods in the study, characterization and use of PGR for breeding is currently at a rudimentary level.

Increasing the productivity of plants and improving their agronomic and economically valuable traits are fundamentally linked to new approaches that are based on the methods of cell and molecular biology, physiology, biochemistry, genetics and other areas of modern biology, which allow significant acceleration of the breeding process. For the agriculture of Kazakhstan, which is referred to the area of risk farming, biotechnology approaches can play an increasingly important role in the breeding process. In the process of development of supportive infrastructure for agriculture, biotechnology would be a powerful factor in the selection of high-yielding varieties of crops which are resistant to extreme environmental conditions.

This traveling seminar was one of the important project activities, aimed at assessing the status and potential deriving from the development of breeding, biotechnology and PGR in Kazakhstan, identification of priority objectives and actions for the further development of these trends in agricultural science, and their active and effective interrelation. In 2011, similar seminars will be held in the south, southeast and southwest of Kazakhstan. The seminars and assessment results will be followed up with recommendations to be adopted, which will be presented in a special publication.

Murat Karabayev
CIMMYT-Kazakhstan

Training course on potato crop modeling

A training course on potato crop modeling was organized by the International Potato Center (CIP-SWCA), Delhi jointly with the Indian Central Potato Research Institute (CPRI) on 9-13 August 2010 in Shimla, India in the framework of the GTZ-funded Project “Enhanced food and income security in SWCA through potato varieties with improved tolerance to abiotic stress”. The workshop was attended by more than 20 researchers came from Bangladesh, India, Peru, Tajikistan and Uzbekistan. The overall goal of the training course was to introduce crop modeling and GIS to support decision-making processes in potato improvement research. Dr. F. Yuldashev from CIP-CAC, Tashkent, Uzbekistan, Mr. T. Abdurakhmanov from the National University of Uzbekistan, Mr. U. Shermanov from the National Center of Cartography and Geodesy, Tashkent, Uzbekistan and Ms. D. Saidova from the Horticulture Institute, Dushanbe, Tajikistan participated in this training course as the representatives of the CAC region.

The objectives of the training course were to:

• Improve understanding of crop modeling;
• Review target regions of the project in terms of geography and crop (water) management practices;
• Discuss the results achieved in the experiments at the Target sites (Bangladesh, India, Peru, Tajikistan, Uzbekistan) and how to utilize the data for establishing plant growth models;
• Prepare dynamic maps and models representing and characterizing stress-prone agro-ecologies of the Target sites; and
• Prepare a workplan for the collaborative development and application of models and GIS to support the decision-making process in potato improvement research.

Crop modeling in potato production has the ability to simulate models to forecast plant phenology and the potential yield of potato plants.

Firuz Yuldashev
CIP

Regional training workshop on molecular markers in plant diversity assessment

The regional training workshop on “Application of molecular marker technologies in diversity assessment of plant genetic resources”, was organized on 9-13 August 2010 in Tashkent, Uzbekistan. It was held within the Bioversity International/UNEP-GEF project “In situ/on-farm conservation and use of agrobiodiversity (fruit crops and wild fruit species) in Central Asia”. The training workshop took place at the Regional Training Center on molecular markers, based at the Center of Genomic Technologies of the Research Institute of Genetics and Experimental Biology of Plants of the Academy of Sciences. Under the guidance of the leading scientists of the Centre, young scientists from Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan improved their knowledge on the use of the latest molecular technologies in diversity assessment of plant genetic resources. During the introductory courses of the workshop, the participants became familiarized with the basics of molecular genetics and the role of molecular genetics in studies of biological systems. The trainees highly appreciated the optimal combination of theoretical lectures in the areas of interspecific diversity assessment of agricultural crops with the use of molecular marker technologies, use of DNA markers for studies on genome, bioinformatics, computer software for analysis of genomic materials, and practical courses in sequencing, preparation of biological materials, extraction of DNA from plants, electrophoretic analysis of the extracted DNA, PCR analysis, statistics, QTL and LD analysis.

Muhabbat Turdieva
Bioversity International

National workshop discusses improved wool production in Kyrgyzstan

The national workshop for Kyrgyzstan organized within the scope of the IFAD-ICARDA Project “Improving livelihoods of smallholders and rural women through value-added processing and export of cashmere, wool and mohair”, was held on 20 September 2010, at the ICARDA-CAC Regional Office in Tashkent, Uzbekistan. Participants included collaborators from national research institutions of Kyrgyzstan and NGOs supporting artisans. Dr. Barbara Rischkowsky, Project Coordinator, ICARDA Headquarters, introduced the workshop objectives, which included reviewing the implemented activities in the Naryn province of Kyrgyzstan, and discussion and elaboration of the workplan for 2011. Dr. Jozef Turok, Head of PFU and Regional Coordinator, ICARDA-CAC opened the meeting and welcomed the participants. He emphasized that the project is highly motivating because it combines a number of important elements, such as research activities, the mobilization of women felters, and is ultimately directed to improving rural livelihoods.

Acad. Djamin Akymaliev, Focal Point of the project in Kyrgyzstan, pointed out that in Kyrgyzstan people traditionally inherit the art of sheep wool processing and felting, and the project team is working hard to address the issues of wool quality improvement and capacity development of rural women. Dr. Ajibekov, National Coordinator of the project, introduced the selected project sites in Min-Bulak and Lakhol villages in the Naryn district, as well as Ak-Bayrak and Acha-Kayindy villages in the At-Bashi district of Kyrgyzstan, and described the four artisan womens’ groups participating in the project. Participants also discussed results of the socio-economic survey of 100 sheep wool producers and activities with the womens’ groups related to sample collection and trainings.

During the meeting, socioeconomicist, Mr. Jayik Isakov, reviewed the results of
the survey of sheep wool producers related to their income sources, structure of expenditures and marketing practices. Most of the interviewed farmers (60%) suggested that they mainly generate income from meat production. Analysis of expenditures revealed that most of wool producers’ expenditure goes to family needs, animal feed and seeds, fuel and machinery spare parts. A breakdown of the income sources indicated that the majority of the smallholders (82%) gets the highest income from livestock production, while crop production is the major income generating activity in 12% of farmers; the remaining households (6%) stated that most of their income is derived from state salaries, pensions and provision of services. Study of the marketing practices of farmers showed that 76% of households sell their products to middlemen, 17% to wholesalers and 7% to shops.

A review of the project activities was concluded in the presentation about the training activities provided by Ms. Svetlana Balalaeva, Representative of NGO Central Asian Crafts Support Association Resource Center in Kyrgyzstan (CACSARC-Kg). In particular, she emphasized that the four pilot artisan womens’ groups include 55 members. In 2010, four trainings on wool processing and felting techniques were conducted for the 50 women in Naryn and At-Bashi districts. Based on suggestions from the national partners, the workshop participants discussed the workplan for next year.

Prof. Mohan Reddy Junna is presenting IWMI activities in the CAC region

IWMI and SIC Seminar on Water Productivity Improvement at Plot Level

On 4-5 October 2010, IWMI and its key partner the Scientific Information Center of the Interstate Commission for Water Coordination in Central Asia (SIC-ICWC), organized a Regional Experience-Sharing Seminar on the Water Productivity Improvement at Plot Level (WPI-PL) project, which was held in Tashkent, Uzbekistan. The objectives of this seminar were to provide updates on the progress made to date, share experiences and discuss issues related to promoting effective knowledge dissemination in the region. More than 50 specialists, partners and representatives from other similar projects participated in the seminar. The Agriculture and Water Ministry representatives from Kyrgyzstan, Tajikistan and Uzbekistan also attended the seminar. Prof. Victor Dukhovny, Dr. Shukhrat Mukhamedjanov, Mrs. Larisa Averina, Mr. Islom Ruziev and Mr. Rustam Sagdollaev represented SIC ICWC. Prof. Mohan Reddy Junna, Dr. Jusipbek Kazbekov, Dr. Bakhtiyar Matyakubov, Mr. Kakhramon Jumabaev and Mr. Davron Eshmuradov presented IWMI’s perspectives.

At the seminar, two projects, Integrated Water Resource Management (IWRM) and Rural enterprise support project (RESP-2), were represented at the expert level, which was useful in discussing and exchanging the practical aspects of project implementation. The Farmers’ and Water User Association (WUA) representatives from respective districts and demonstration sites were also present, which gave the seminar grounds for interactive dialogue. The seminar noted that the WPI-PL project achieved good progress in a relatively short period and has earned itself a place among other regional projects dealing with agricultural extension. The effective linkages and partnerships promoted by the project are already giving results such as higher water productivity and higher yields at the demonstration fields and surrounding farms. The working relations established between research organizations that generate knowledge, information centers to adopt and process this knowledge into farmer-friendly language, and extension services acting as disseminators of such water knowledge, along with agro-knowledge, is a promising basis for future extension systems and can serve as a model for replication. This knowledge dissemination system is integrated with the continuous feedback system, which is adapted to the needs and problems of farmers. The seminar concluded that the WPI-PL project has been able to create “collective intellect” in the form of dissemination materials, methodologies, data and other documents. It was therefore proposed to create a specific website and post these materials into ‘discussion boards’ to solicit the opinion of a wide range of stakeholders.

Jusipbek Kazbekov
IWMI
Workshop on policy and legal aspects of agrobiodiversity conservation

A regional training workshop on “Policy and Legislative Framework on Agrobiodiversity Conservation and Access and Benefit Sharing (ABS)”, was organized on 22-24 November 2010, in Tashkent, Uzbekistan within the Bioversity International/UNEP-GEF project “In situ/on-farm conservation and use of agrobiodiversity (fruit crops and wild fruit species) in Central Asia”. Twelve National project partners from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan attended the workshop, where the country reports on improving national legislation and policy frameworks for conservation of the local horticultural varieties and wild fruit species were reviewed jointly with Dr. I. Lapena, Consultant on legislative issues and together with Ms. M. Turdieva, Regional Project Coordinator. The aim is to support farmers and local communities on agrobiodiversity conservation and recognition of farmers’ rights.

During the workshop, particular attention was given to the development of legislative mechanisms for ensuring distribution of benefits deriving from the use of plant genetic resources, providing free access to project products and information exchange. The workshop participants also discussed the potential for regional cooperation between project partners based on benefit sharing mechanisms and identified further actions for sustainable partnerships.

Muhabbat Turdieva
Bioversity International

IWMI facilitates stakeholder consultations on transboundary water governance in Ferghana Valley

IWMI-Central Asia facilitated the fourth round of stakeholder consultation workshops towards joint water governance in the two small pilot rivers of Khoja-Bakirgan and Shahimardan. The two rivers are small transboundary tributaries to the Syrdarya River on its left bank. Both are shared by two countries - one by Kyrgyzstan and Tajikistan and the other by Kyrgyzstan and Uzbekistan, and are part of the bigger IWRM-Ferghana Project that IWMI has been implementing since 2001 in association with its regional partner, Scientific Information Center of the Interstate Commission for Water Coordination in Central Asia (SIC-ICWC). The workshop was held on 9-10 December 2010 in a transboundary location nearby Khoja Bakirgan River’s Barrage on the Tajik side of the river.

The workshop agenda focused on governance options for the Kyrgyzstan parts of the two tributary rivers and was attended by a wide range of stakeholders representing the Kyrgyzstan parts of the two rivers. These comprised officials of province and district level water management organizations, local authorities, Water User Association (WUA) specialists and leaders of farmers’ organizations. Central for the workshop was to discuss options for possible joint water governance arrangements planned earlier for each riparian side of the two small rivers. Once in place, such arrangements will lay the basis for a river-wide agreement between respective riparian sides to form a joint river basin commission or authority for better governance and management of transboundary waters.

Before embarking on the major topic, the workshop participants looked into the current situation and the accomplishments against what was planned earlier. They confirmed that the basic structures for water user participation in water governance of each respective riparian side of the rivers had been in place and duly registered as Unions of sub-basin water users. For the participants representing both the water users and the government, the next step in the discussion process was to reach an agreement on the functional mandates of such Unions – to what extent they are ready to take responsibility for the operation and upkeep of higher-level sub-basin water infrastructure. Despite a range of views presented, the stakeholders finally agreed that given the current financial constraints of water users, the role of the state in financing and managing the higher-level sub-basin water infrastructures is crucial. Therefore, the consensus was that water users represented by their Unions for the time being will not be in a position to take over full responsibility and will have to share it with the state based on some kind of joint governance arrangements.
To make sure that the discussions were as open and participatory as possible, all the participants from time to time were invited to break into groups to discuss, formulate and present their respective group views. As a result, all issues discussed, decisions made and further steps planned were extremely participatory and inclusive of all those present at the workshop. To finalize the consensus reached the workshop participants were invited to jointly plan their further steps towards joint governance in their respective river sub-basins. As a result, immediate actions and the persons responsible were identified. The further steps to be taken in the short term included drafting a joint governance agreement between the Union of Sub-basin Water Users and the respective Water Management Department, followed by disseminating, coordinating, consulting and agreeing on its content with all the key organizations and bodies concerned in each respective sub-basin. It was agreed that by the end of 2010 the draft would be ready for wider dissemination for the feedback and inputs of all those concerned. For this, it was also planned to hold a number of subsequent meetings with a wider group of stakeholders in each respective sub-basin.

The IWRM-Ferghana Project implemented by the Association of partners, IWMI and SIC-ICWC, is funded by the Swiss Development Cooperation and carried out in three countries, Kyrgyzstan, Tajikistan and Uzbekistan. The project promotes a full package of institutional reforms based on the Integrated Water Resource Management (IWRM) paradigm. The main features of the proposed reforms include hydrographization of water management units; user and public participation in water governance through separation of governance and management functions at each respective level of water hierarchy from farmer to WUA, and main canal to basin levels; and strengthening all new IWRM institutions through extensive capacity building. The small transboundary rivers component has been part of the IWRM-Ferghana Project since 2007.

Jusipbek Kazbekov
Murat Yakubov
IWMI

Regional training workshop on data management for cultivated and wild temperate fruit tree diversity in Central Asia

A regional training workshop entitled “Cleaning, analyzing and compiling cultivated and wild temperate fruit tree diversity and diversity management data from Central Asia in preparation for peer-reviewed publications”, was organized on 1-5 November 2010, in Tashkent, Uzbekistan within the Bioversity International/UNEP-GEF project “In situ/on-farm conservation and use of agrobiodiversity (fruit crops and wild fruit species) in Central Asia”.

Under the guidance of Dr. Devra Jarvis, senior scientist on agrobiodiversity and ecosystems, Ms. M. Turdieva, Regional Project Coordinator and Dr. P. Colangelo, external consultant on data analysis, 15 key partners from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan enhanced their knowledge and skills in analyzing the diversity of fruit crops and wild fruit species. In particular, the participants received training on statistical methods for measuring the wealth of fruit crop diversity, their distribution and divergence at household and community levels. They also obtained insights into synthesizing the gathered data; linking information on management practices and access to fruit crop planting materials with on-farm diversity level, and linking the data on use of wild fruit species with their population size; analyzing data of planting materials provision systems; calculating population sizes in wild ecosystems of monoecious and dioecious species; and developing actions for conservation of wild fruit species using the collected information. The workshop participants also specified the subject area for scientific articles for publication in a scientific journal “PGR Characterization and Utilization”.

Muhabbat Turdieva
Bioversity International
Consortium of Agrarian Universities in Central Asia and the Caucasus established

The constituent meeting of Consortium of Agrarian Universities in Central Asia and Caucasus was held on 12-13 July 2010 in Tashkent, Uzbekistan. The meeting was organized to achieve greater involvement of the Agrarian Universities in the regional processes of agricultural research for development.

This meeting was attended by CACAARI members, representatives of international organizations, scientific and technical centres, libraries, agrarian universities of Central Asia and the Caucasus (CAC) region (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan), as well as representatives from a few foreign universities and organizations.

The aim of the Consortium is to contribute to agricultural research and innovation through increased cooperation in order to develop the agricultural sector in the CAC region. Group discussions during the meeting helped to identify the universities’ roles in education, training, research, extension and innovation systems. The meeting closed with the preliminary approval of the Charter of the CAC Agrarian Universities’ Consortium.

More information about the meeting of the Consortium of Agrarian Universities is available in the meeting Minutes on the CACAARI website: http://www.cacaari.org.

Alisher Ergashev
CACAARI

Conference on plant genetic resources in Uzbekistan

The national conference “Gene fund of agricultural crops, breeding, seed production and modern technologies”, was held at the Uzbek Research Institute of Plant Industry (UzRIPI) on 18-19 August 2010. The conference was jointly organized by the Ministry of Agriculture and Water Resources, Ministry of Higher and Secondary Special Education, Committee for Coordination of Science and Technology Development under the Cabinet of Ministers of the Republic of Uzbekistan, UzRIPI Scientific-Production Center for Agriculture and UzRIPI Research Institute of Plant Industry, in partnership with different International Centers. It was attended by scientists from several research institutes of Uzbekistan which carry out the collection, conservation and use of plant genetic resources.

International Research Centers such as ICARDA, CIMMYT, ICRISAT, Bioversity International, AVRDC, ICBA and Michigan State University are all collaborating with scientists of different institutions of the Republic of Uzbekistan on a wide range of relevant issues. They are helping to modernize the genebank which was established in UzRIPI and is the largest in the CAC region. There are over 20,000 accessions of wheat, cotton and other crops held for medium-term conservation. Many new accessions acquired during joint collecting missions have enriched the genebank. In addition, many of the accessions were provided by the genebanks of the cooperating International Research Centers. The genebank database is also under development.

The complex germplasm assessment of cereals, vegetables and fodder crops was conducted as the result of fruitful collaboration between these international partners. Promising accessions have been revealed and were used to develop high-yielding adapted varieties of various crops, which were released in the Republic in recent years. In addition, there is a close collaboration on capacity building and training.

Abdumalik Rustamov
UzRIPI

Tropentag 2010 touches on Central Asia

International agricultural research could not have had a better platform than the Annual Conference on Tropical and Subtropical Agricultural and Natural Resource Management (Tropentag 2010), held at the Swiss Federal Institute of Technology (ETH) Zurich, Switzerland on 14-16 September 2010. Under the title “World food
system – a contribution from Europe”, more than 800 scientists and experts from all over the world met, presented, discussed and networked for three days on every sector of agricultural research. Food for thought was given by the provocative and informative presentations by invited keynote speakers like Tim Hall (Biotechnologies, Agriculture and Food Research, European Commission), Jimmy Smith (lead economist at the World Bank Institute), Christian Nellemann (United Nations Environment Programme, GRID), Paul Collier (Director of the Centre for the Study of African Economics at Oxford University), Hans Joehr (Corporate Head of Agriculture of Nestlé), and Jack Heinemann (IAASTAD co-author and Director of the Center for Integrated Research in Biosafety at the Canterbury University).

Dr. Louhaichi (ICARDA) presented a paper on “Inference of Ruminant Activity using GPS-based Animal Tracking Technologies”. In addition, a number of PhD students from Central Asia who are currently studying at different universities in Germany and Switzerland, as well as international students researching in Central Asia, were given the opportunity to present their ongoing research work. These studies were often conducted in collaboration with the CGIAR Centers, e.g. Bioversity International.

The presentations included topics such as

- Identifying Economically Efficient and Ecologically Sustainable Sectors for Structural Transformation in the Khorezm region, Uzbekistan: Input-output Analysis Approach (M. Bekchanov, University of Bonn/ZEF);
- An Analysis of Different Marketing Channels on Greenhouse Vegetable Market in Uzbekistan: A Case Study on Tomato and Cucumber (U. Askarov, Justus-Liebig University Giessen);
- Institutional Arrangements to Support Rural Livelihoods and Challenges to Access European Markets for Agricultural Products from Developing Countries (A. Karimov, University of Bonn);
- Performance of Maize under Conservation Agriculture in Salt-affected Irrigated Systems of Uzbekistan (M. Devkota, University of Bonn);
- Effect of Water Saving Irrigation, Tillage and Residue on Yield and Water Productivity of Rice in the Khorezm Region of Uzbekistan (K. Devkota, University of Bonn);
- Impact Monitoring and Evaluation Systems for Farmer Field Schools in Kyrgyzstan: Optimising Resource Allocation for Higher Impact (I. Mueller, Bern University of Applied Sciences);
- Roles and Rules of Irrigation Water Use in Khorezm, Uzbekistan: A Lifeworld Analysis (L. Oberkircher, University of Bonn);
- Linking Farmers’ Perceptions and Technical Solutions for Groundwater Management in Lower Amu Darya Basin, Uzbekistan (U. Khalid, Universtiy of Bonn);
- The Potential of Medium-resolution Satellite Imagery to Estimate Regional Yields of Cotton, Wheat and Rice in Irrigated Cropping Systems in Uzbekistan (S. Fritsche, University of Wuerzburg);
- Does Decentralisation Help to Fight Poverty? The Case of Community-based Pasture User Committees in Kyrgyzstan (W. Crewett, Humbold-Universtiy of Berlin);
- Adequate Perspectives of Unique Natural Walnut-fruit Forests in South Kyrgyzstan through Sustainable Management (M. Rehnus, ETH Zurich);
- Assessing the Market Potential of Local Agrobiodiversity Products in the Tajik Pamirs (A. Giuliani, Swiss College of Agriculture).

For further reading and information: http://www.tropentag.de/conference/program.php

Kirsten Kienzler
ICARDA

International Symposium on Agronomy and Physiology of Potato

The First Triennial Symposium on the Agronomy and Physiology Section of the European Association for Potato Research (EAPR) was organized in Nevsehir, Turkey, on 20-24 September 2010. The symposium was divided into two sections -
Physiology and Agronomy, and included a poster session. Distinguished researchers came from Australia, Czech Republic, France, Germany, Great Britain, Hungary, India, Iran, Ireland, Italy, the Netherlands, Poland, Romania, Slovenia, Turkey and USA to participate in the symposium. Dr. C. Carli, Head of the International Potato Center (CIP) Liaison office for CAC attended the symposium and presented two papers: “Adaptation of micronutrient-dense advanced CIP-bred clones to different environments of Central Asia” and “Assessment of dormancy and sprouting behavior of CIP elite and advanced clones under different storage conditions in Uzbekistan”.

Please see: http://www.eapr.net/sections/agrophysiology/ for more details.

Carlo Carli
CIP

Central Asia and the Caucasus Association of Agricultural Research Institutions (CACAARI)

24th Steering Committee meeting of the Global Forum on Agricultural Research (GFAR) was held on 28-19 September 2010 in Brussels, Belgium and was dedicated to discussion of various issues related to agricultural research for development (ARD). The main issues debated during the meting were related to the proposed GFAR Plan of Work 2010-2011, transformation of ARD systems globally for development impact, GCARD-2010 Synthesis Report and Road Map for developing GFAR’s post-GCARD strategic plan. Acad. Hukmatullo Akhmadov, Chairman of CACAARI and Dr. Alisher Tashmatov, newly appointed Executive Secretary of CACAARI attended this meeting on behalf of CACAARI.

Currently, the CACAARI Secretariat is preparing a report on CACAARI activities and extension services in Central Asia and the Caucasus (CAC) region, which will be presented by Dr. Alisher Tashmatov at the ZEF-GTZ Symposium on Agricultural Services in Newly Independent States of former Soviet Union which was held on 20-22 October 2010, in Urgench, Uzbekistan. The Agenda of the Symposium includes reports on the experience of organisations on agricultural extension services in the CAC region including the structure and scope for improvements of such services, and drafting concept note on an extension pilot program in CAC.

Alisher Tashmatov
CACAARI

Conference of the Parties to the Convention on Biological Diversity

The Conference of the Parties (COP) was considered the birthplace of a new Global Alliance on the implementation of United Nations Convention on Biological Diversity (CBD). The establishment of new targets for the conservation of biological diversity, formulation of an international regime for access to genetic resources and benefit-sharing to adopt a supplementary protocol on Integrated Strategic Plan of the Convention for 2011-2020 were the key achievements of the COP meeting which took place on 19-28 October 2010 in Nagoya, Japan.

A special session was dedicated to the East and Central Asian drylands, which are the most productive, but most sensitive ecosystems to climate change, wind erosion, salinization and consequently loss of biodiversity. The Panel topic “How can scientists contribute to biodiversity conservation in drylands of Eastern and Central Asia” was taken up on 23 October 2010 at the Nagoya International Conference Center. This session focused on the present status of desertification processes and its impact on biodiversity loss at the national and regional levels in the drylands of Eastern and Central Asia, and the role of scientific knowledge in biodiversity conservation, ecosystem restoration and sustainable use of these precious natural resources.

The presentation of Dr. Kristina Toderich, representative of the International Center for Biosaline Agriculture in CAC (ICBA) on “Assessment of Kyzylkum Desert Plant Diversity and its Conservation Strategies Under Climate Change”, was dedicated to current spatial and temporal changes of desert vegetation, strategies for conservation, restoration and mobilization of agrobiodiversity of foothills, rainfed
and desert ecosystems in Uzbekistan with the goal of reducing poverty and ensuring environmental sustainability.

Kristina Toderich
ICBA

GFAR Programme Committee Meeting 2010

The Global Forum for Agricultural Research (GFAR) is a stakeholder-led initiative that serves as a neutral forum for discussion and action on critical issues related to agricultural research for development (ARD). GFAR was formally established in 1996 by an agreement among stakeholders of agricultural research, as an initiative to promote cost-effective partnerships and strategic alliances in agricultural research and innovation.

The GFAR governance structure consists of a Steering Committees (SC) and a Program Committee (PC), comprising representatives of all regional fora, including CACAARI. A GFAR Programme Committee meeting was held on 10-11 November 2010 in Rome, Italy, after the earlier GFAR Steering Committee meeting that was held on 28-29 September 2010 in Brussels, Belgium. Dr. Alisher Tashmatov, Executive Secretary of CACAARI participated in both of these events. The GFAR Programme Committee is responsible for reviewing “The GCARD (Global Conference on Agricultural Research for Development) Road Map: Transforming Agricultural Research for Development Systems for Global Impact”, which was thoroughly revised and prepared for finalization by the SC. The Road Map establishes an inclusive, rolling process of reform and capacity development that aims to mobilize the full power of agricultural knowledge and innovation towards meeting agriculture and food-related development needs. In addition, the PC also thoroughly reviewed the GFAR Plan of Work 2010-2011 and discussed actions towards forming the GFAR Medium-Term Plan.

Hazrat Ashurov
CACAARI

Annual Meeting of the project “Enhanced food and income security in South, West and Central Asia through potato varieties with improved tolerance to abiotic stress”

The third Annual Meeting of the CIP-BMZ/GTZ project on “Enhanced food and income security in South, West and Central Asia through potato varieties with improved tolerance to abiotic stress”, was held in Gandhinagar, Gujarat State, India, on 29-30 November 2010. The meeting was followed by a visit to laboratories, greenhouses and fields of the Gujarat State University where trials with CIP-bred clones were conducted. Gujarat state is an important potato growing region in India, characterized by the presence of important potato processing companies like FritoLay (Pepsico) and McCain, specialized in chips and frozen French fries production, respectively. Gujarat is also affected by heat stress especially at the beginning of the potato growing season (October to February), and the search for adapted varieties to overcome this stress during the first 40 day-period during which tuber initiation occurs, is highly welcome by farmers. Since water availability is also becoming an important concern in Gujarat State, drought tolerance is another trait of interest to local farmers.

The meeting was widely attended and included Dr. Anne Bartelmann (Julius Kühne Institut, Germany); Dr. M. Bonierbale (CIP-Lima, Peru); Dr. F. Ezeta (CIP-Indonesia), Program Leader of the Potato Lowlands Tropic Geographic Area, Bangladesh; Dr. M. Hasan of TCRC (Tuber Crop Research Center)/BARI (Bangladesh Agricultural Research Institute); Drs. Kurbon Aliev and Zulfiya Davlatnazarova of the Plant Physiology and Genetic Institute of the Academy of Sciences, Dushanbe, Tajikistan; Drs. Carlo Carli, Firuz Yuldashev and Mr. Zokhid Ibragimov (CIP-Tashkent, Uzbekistan); plus a very large Indian delegation including representatives of FritoLay, McCain, local State University and Ministry of Agriculture; Dr. B. P. Singh, the new Director of Central Potato Research Institute (CPRI), Shimla, India, and his staff, plus Drs. M. Kadian and N. Sharma (CIP-Delhi office).
The review of the seven project Work Packages and respective Tasks was postponed to the last day at the end of each presentation. There were a total of 15 presentations from the lecturers: (1) Latest developments of germplasm enhancement and crop improvement at CIP and CPRI (Crop Potato Research Institute) with regard to abiotic stress tolerance; (2) Screening methods under laboratory, greenhouse and field conditions; (3) GIS mapping for drought and heat prone areas in the countries of the project (Bangladesh, India, Tajikistan and Uzbekistan); (4) Results of baseline surveys in India and Bangladesh; (5) Results of field trials in the four countries; (6) Crop modeling to forecast plant phenology and potential yield of potato plants under abiotic stress conditions; (7) Capacity building for dissemination of pathogen-free seed potatoes in the four countries; (8) Follow-up research and building on the accomplishments of the current project; and (9) Presentations from the private sector participants (FritoLay and McCain). During the introduction of the participants, Dr. C. Carli, the project leader, announced BMZ’s agreement to a no-cost extension of the project till 31 December 2011, which will allow the project to continue the research on improving potato varieties particularly resistant to abiotic stress such as drought and heat that will strengthen income security and nutrition in the region. At the end of the meeting, participants were invited to observe the performance of CIP-bred clones under heat and drought stress conditions in the field plots.

Carlo Carli
CIP

Roundtable for inter-ministerial support group to discuss IWRM adoption in Kyrgyzstan

The International Water Management Institute (IWMI) - Central Asia, together with its key partner the State Committee on Water and Melioration (SCWM) of Kyrgyz Republic organized a roundtable meeting for the members of the inter-ministerial group to discuss Integrated Water Resource Management (IWRM) adoption in Kyrgyzstan on 23 December 2010 in Bishkek, Kyrgyzstan. This group was organized under the IWRM-Ferghana Project "National Coordination and Support Group (NCSG)". Similar groups have been established in the two other countries that share the Ferghana Valley – Tajikistan and Uzbekistan.

The main objective of the meeting was to discuss practical issues related to the implementation of IWRM principles. The State Secretary of the SCWM, Mr. Omurbek Abdirazakov, officially opened the meeting and the National Coordinator of the NCSG, Mr. Nurgazy Mamataliev, chaired the roundtable meeting. IWMI was represented by Mr. Jusipbek Kazbekov and SIC was represented by Mr. Mikhail Khorst. Participants included representatives of the different ministries e.g., Justice, Education, Extreme Conditions, Environmental Protection, Finance and Communal Municipality. Importantly, representatives of the project stakeholders from the Osh Province - the Osh City Mayor’s Office and the Osh Municipal Water Supply Department, were also present to raise and discuss practical problems to be faced after the establishment of IWRM structures and other related operational concerns. Other key speakers involved in the deliberations were National Manager, Mr. Kadirbek Tajibaev; chairman of the Union of Canal Water Users (UCWU), Mr. Talaibek Dubanaev and the project’s Social mobilizers of the project, Mr. Kasimjan Gazibaev and Mr. Nurlan Nurmatov. The problems raised and discussed during the meeting can be summarized as following: concerning issues related to incentives for efficient use and water savings, it was recommended that the Water User Association (WUA) acts as the reference point to introduce the systems after the cost of bulk water is paid for; regarding the problems related to canal alienation zones and the situation with continuous expansion of household construction in the canal zone, where the main canal flows through the Osh City, the SCWM confirms that the government has elaborated an appropriate solution to solve this issues. This has been accepted by the Osh City Mayor’s office and will be implemented; the proposal to establish Small Agricultural Cooperatives according to the project’s Water User Group principles was agreed upon by the SCWM and others; regarding appropriation of reduced credits to the UCWU to purchase heavy machinery to help WUAs, representative of the Ministry of Finances commented that this issue should be well studied by the Central Bank for cost feasibility;
the small transboundary rivers component gained the support of the NCSG to establish effective water governance.

The project has tested and adopted major approaches, frameworks and methodologies for the introduction of IWRM along three pilot main canals in Fergana Valley. The project initiated major institutional reforms through the establishment of unified canal management along hydrographic boundaries, harnessing canal governance setup with water user involvement, creation of pilot WUAs using a bottom-up social mobilization approach and strengthening all new IWRM type institutions through extensive capacity building. For better policy uptake and to ensure support at national level, the project established multidisciplinary and inter-ministerial groups since 2005.

Jusipbek Kazbekov
IWMI

FARMERS’ DAY

Farmers’ Day in Uzbekistan

On 10 July 2010, The World Vegetable Center (AVRDC), in collaboration with the National Agricultural Research System of the Republic of Uzbekistan, organized Farmers’ Day at “Ziyaviddinov Riskali” farm located in Kibray district of Tashkent region, Uzbekistan.

This event was sponsored by the Republic of Uzbekistan’s Legislative Chamber “Oliy Majlis” and co-organized by the Ministry of Agriculture, Water Resources, the Farmers’ Association of the Republic, the Coordinating Committee for Science and Technologies under the Cabinet of Ministers of the Republic of Uzbekistan, the Uzbek Scientific Production Center of Agriculture, the Council of Young Scientists under the Ministry of Agriculture and Water Resources of Uzbekistan, and local governments of the Tashkent region and Kibray district. Participants from the Tashkent State Agrarian University, the Uzbek Research Institute of Plant Industry, the Uzbek Research Institute of Vegetable, Melon Crops and Potato, and the Institute of Microbiology of the Academy of Sciences of Uzbekistan, made innovative presentations.

As part of the Farmers’ Day event, a scientific and practical seminar on “New high-quality varieties and technologies in vegetable production”, was also held, attended by 130 participants, including farmers, specialists and scientists from ICARDA, FAO and National research Institutions. Among them were several scientists from India and Japan.

At the demonstration plots, participants acquainted themselves with new varieties and non-traditional valuable vegetable crops, early maturing varieties of legumes, which improve soil fertility and are used in crop rotation during basic and repeated sowing. Environmentally safe organic fertilizers and methods for their use, as well as measures for protecting vegetable crops from pests and diseases were also presented during the event.

Farmers had the opportunity to make agreements with the research institutes on multiplication of high-quality seeds of new vegetable crop varieties. There were some discussions and exchange of opinions regarding the issues of wide introduction of promising technologies and the strengthening of collaboration between researchers and farmers. The overall goal of all the stakeholders participating in this seminar was to increase the planting area while ensuring high quality products and raw materials for processing production, as well as strengthening the potential of vegetable export.

Ravza Mavlyanova
AVRDC

Agriculture and Rural Development Day (ARDD) 2010

Agriculture and Rural Development Day (ARDD) 2010 was convened in Cancun, Mexico, on 4 December 2010, as a one-day side event to the United Nations Cancun Climate Change Conference (COP-16) which discussed agriculture sector adaptation and mitigation strategies on climate change. ARDD 2010 was
NEW STAFF

Head of Program Facilitation Unit and Regional Coordinator, ICARDA-CAC

On 17 September 2010 Dr. Jozef Turok joined the ICARDA Tashkent Office as the new Head of PFU and Regional Coordinator of ICARDA-CAC.

Dr. Jozef Turok is a Slovak national. He holds a PhD in Forest Sciences obtained from Georg-August-University, Gottingen, Germany. From 1999 until joining ICARDA,
Dr. Turok was the Regional Director of Bioversity International’s Regional Office for Europe, based in Rome. He was responsible for facilitating and coordinating regional collaborative activities within 45 countries in geographic Europe, including southeastern Europe and Caucasus. Dr. Turok was also Acting Regional Director for Central, West Asia and North Africa in addition to his responsibility as the Director of the Regional Office for Europe.

Dr. Turok is a member of number of international scientific committees, editorial boards and associations. He has written several books, published peer-reviewed journal papers and articles in the area of forest sciences and on international networking collaboration.

All staff members of PFU-CAC and ICARDA are very happy to welcome Dr. Turok. They congratulate him on his appointment and wish him the best of luck in his career!

Executive Secretary of CACAARI
Dr. Alisher Tashmatov was appointed Senior Researcher, Executive Secretary of CACAARI in September 2010. Dr. Tashmatov obtained his PhD from the All-Union Scientific Research Institute of Cotton, Economic Department, Uzbekistan. He has worked at Tashkent State Agrarian University, General Rural Restructuring Agency under the Ministry of Agriculture, TIAME/TIIM, and the Center of effective economic policy and Social-economic research under the Cabinet of Ministers of the Republic of Uzbekistan. His last work experience was as Director of the Project Implementation Unit of the Asian Development Bank (ADB) project and UNDP Aid Coordination Project Manager. In 1989 he was Laureate of Premium of the Uzbek Youth Organization in Science. Dr. Tashmatov’s research interests include social and political aspects of agricultural development in Central Asia, on which he has published numerous articles. Dr. Tashmatov is responsible for the overall management of CACAARI and development of the links with national, regional and global Agricultural Research for Development (ARD) organizations. Colleagues wish Dr. A. Tashmatov every success in his new position!

Assistant to the Executive Secretary of CACAARI
Mr. Hazrat Ashurov joined the PFU team at the end of September 2010 as the Assistant to the Executive Secretary of CACAARI. He obtained his Master Degree in Business Administration from Lingkopings University in Sweden and is currently doing his PhD degree in Designing Logistics of Uzbekistan at Uzbekistan Academy of Science, Research Institute of Algorithm-Engineering. For the past two years, he had been working as a chief feasibility study specialist for the Ministry of Economy of Uzbekistan in the State Project Design office “UzOilGazChemicalProject” in Tashkent. Colleagues wish Mr. Hazrat Ashurov all the best in his career!

Assistant to the Head PFU and ICARDA Regional Coordinator
Mrs. Albina Bekmetova joined ICARDA on 18 October 2010 as Assistant to the Head PFU and ICARDA Regional Coordinator. She obtained her Bachelor Degree in Accounting and Audit from Tashkent State Agrarian University. Mrs. Bekmetova has worked as a senior staff member in the areas of service and office administration at the Shodlik Palace, Domina Hotels Uzbekistan and Le Meridien Tashkent Palace Hotels. From 2008-2010 Mrs. Bekmetova worked as Administrative Specialist in Investment Banking IT (GIS Capital Markets) Deutsche Bank Ltd., in Moscow. For a short period of time, she also worked as Office Administrator in Nestlé Uzbekistan, in Tashkent. ICARDA and PFU staff wish Mrs. Bekmetova best of luck in her new position!
PUBLICATIONS


Dukhovny, V., S. Mukhamedjanov, H. Manthrithilake, L. Averina, J. Kazbekov, A.


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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.