



# CAC NEWS

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in Central Asia and the Caucasus (CAC)

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ARMENIA \* AZERBAIJAN \* GEORGIA

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Consortium  
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## IN THIS ISSUE:

Message from Mr. Atagarryev  
Special Donor Meeting on CGIAR Program for CAC held  
AVRDC Joins the Consortium for CAC  
CGIAR Science Council Priorities  
ICARDA's New Strategic Plan and Research Portfolio  
Research Highlights:

- Germplasm enhancement
- Conservation and evaluation of plant genetic resources
- Natural resource conservation and management
- Strengthening of NARS

Meetings/Workshops/Conferences

Human Resource Development

Miscellaneous News

New Appointments

New Initiatives

Publications

Future Events

## SPECIAL DONOR MEETING ON CGIAR PROGRAM FOR CAC HELD

A special luncheon meeting for the CGIAR Program for Central Asia and the Caucasus (CAC) was organized in Mexico on 25 October, 2004 during AGM'04. The meeting was co-sponsored by the World Bank, USAID, EU and AREO, Iran. In all, 45 representatives of various CG Centers involved in the Consortium, donor organizations and Science Council as well as CGIAR Secretariat participated.

The meeting was chaired by Prof. Dr. Adel El-Beltagy, Chairman, CDC Task Force for CAC, whereas Dr. Kevin Cleaver from the World Bank, Dr. Francis Moore from USAID, Dr. Philippe Vialatte from European Union as well as Dr. Ali Ahoonmanesh, Deputy Minister of Agriculture and Head, AREO, Iran joined the podium as co-sponsors along with Dr. Tumurdavaa Bayarsaihan from ADB. Dr. Per-Pinstrup Andersen, Chairman, Science Council, CGIAR, Dr. Bob Havener, ex-Chairman, ICARDA BOT, Dr. Thomas Lumpkin, Director General, AVRDC, Dr. Mohammad Roozitalab, Chairman, GFAR, Dr. Asanbek Ajibekov, Head, the Kyrgyz NARS were among the various distinguished participants.

(Continued on page 2)



Participants in the Special Donor Meeting

## Message from Mr. Gurban Atagarryev Deputy Minister of Agriculture, Turkmenistan

Dear colleagues!



We are happy to avail this opportunity to thank Prof. Dr. Adel El-Beltagy, Director General, ICARDA, and Dr. Raj Paroda, Regional Coordinator, ICARDA-CAC, for their excellent cooperation and commitment to support agriculture research and development in the CAC region.

Due to their active involvement, it was possible for the Ministry of Agriculture of Turkmenistan and ICARDA to sign an agreement on cooperation in the field of agricultural research in 2003. This document has become an important milestone for strengthening partnerships between Turkmenistan scientists and the global agricultural scientific community, where the leading role is played by the CGIAR group. The Program for Sustainable Agricultural Development in Central Asia and the Caucasus has gone a long way to strengthen Turkmenistan NARS and to support resource-poor farmers. Now that the official document has been signed, it is hoped that the Program activities will further be enhanced in our country, with the range of stakeholders broadened.

Under the ADB Project on Improving Rural Livelihoods through Efficient On-Farm Water and Soil Fertility Management, the scientists of ICARDA visited Turkmenistan several times to assess and prioritize the trends of agricultural development in the country. It has already built a sound foundation for further activities in the field of NRM.

The joint research and development program implemented in Turkmenistan has already given visible results regarding breeding of cereals, legumes and forage crops, integrated feed and livestock production and soil and water management. Under the international project on wheat improvement, more than 14 thousand accessions have been tested, and three promising varieties "Guncha", "Bitarap" and "Garagum" have been selected. During our collaboration with the international centers, such as CIMMYT and ICARDA, the Turkmen breeders have submitted six cereal varieties to the State Variety Testing Commission. Based on research outputs, new technologies of minimum soil tillage and crop rotations in winter wheat based cropping systems were developed, which allows farmers to have maximum gain with reduced costs.

(Continued on page 2)

## Important Events

### AVRDC JOINS THE CONSORTIUM FOR CAC

The World Vegetable Center (AVRDC) joined the CAC Consortium as a new partner. The Memorandum of Understanding was signed during the CGIAR AGM'04 by Dr. Thomas Lumpkin, Director General of AVRDC, and Prof. Dr. Adel El-Beltagy, Chair, CDC Taskforce for CAC and Director General, ICARDA.



*Prof. Dr. El-Beltagy and Dr. Lumpkin exchanging the Agreement*

In December, 2004, AVRDC opened its regional office in Tashkent, Uzbekistan. The main objectives of AVRDC in the region will be to strengthen international cooperation in the area of vegetable research and to implement projects aimed at germplasm enhancement, improvement of seed production, development of advanced technologies for ecologically clean production and sustainable development of vegetable growing.

Dr. Ravza Mavlyanova has been appointed as Regional Coordinator of AVRDC for CAC region. She specializes in plant genetic resources as well as vegetable breeding and seed production. She has more than hundred papers to her credit, including some in international scientific journals.

In November, 2004, Dr. R. Mavlyanova participated in the AVRDC Annual Meeting in Taiwan, where she made a presentation on the status of



*Dr. Mavlyanova making presentation at AVRDC Headquarters*

### DONOR MEETING

*(Continued from page 1)*

Prof. Dr. El-Beltagy in his remarks gave the background relating to the initiation of the Program in 1998, when CGIAR agreed to expand its geographic mandate to cover the region and asked ICARDA to organize a Consortium as a Lead Center. He expressed his satisfaction with various significant achievements made by the Program involving 10 CG Centers and 8 country



*Participants observing CIMMYT experimental fields*

NARS. An impressive presentation on the Program achievements was made by Dr. Raj Paroda, Head, PFU-CGIAR for CAC and Regional Coordinator, ICARDA.

### MESSAGE FROM MR. ATAGARRYEV

*(Continued from page 1)*

The Ministry of Agriculture of Turkmenistan has actively participated in various international programs in the region, rendering all possible support and obtaining the knowledge of new approaches and methodologies. Young scientists from Turkmenistan regularly take part in workshops, conferences and training courses, organized by all CG Centers involved, which brings them up to date with the latest scientific achievements and allows them to exchange their knowledge and experience with their foreign colleagues. This is especially important since we want to interact with the global scientific community and become part of joint research efforts aimed at ensuring food security and improved livelihoods for our farmers in CAC region.

We highly appreciate efforts of ICARDA and IPGRI in the field of biodiversity evaluation and conservation, since it has already organized a number of missions to Turkmenistan to collect, evaluate, conserve and study our invaluable genetic resources.

We hope that the collaboration between Turkmenistan and CGIAR centers will continue to develop and serve to the benefit of all people in the region. May we wish all our colleagues a very productive and successful year and hope that our partnership will bring new achievements and discoveries to benefit all.

vegetable research in CAC region. In March, 2005 it is planned to organize an International Conference on Vegetable Growing in Tashkent to involve representatives from all countries of the CAC region.

Staff of PFU-CGIAR for CAC and all CG Centers would like to wish Dr. Mavlyanova all the success in her new appointment.

Dr. K. Cleaver in his response praised the achievements of the Program and mentioned that it is not an issue of investment but rather of re-investment for revitalization of the agricultural research system in the region, which has great potential. Dr. Francis Moore and Philippe Vialatte also assured of their support to the Program. Dr. T. Bayarsaihan considered this regional program to be very crucial for future agricultural development in CAC and appreciated the matured leadership provided to the Program. Dr. Havener specifically mentioned that the impact of the Program is already visible and it can serve as a model for the system-wide eco-regional initiatives, which can be replicated elsewhere. Dr. Per-Pinstrup Andersen stated that the Science Council had recently reviewed the MTP of this Program, which gave an overall impression of active and productive research-for-development in the CAC region.

The participants were impressed by various posters and publications displayed during the meeting, highlighting the achievements made by various CG Centers in a short span of only 5 years. The donors assured of their continued support to the Program in view of its strategic importance.

### SYSTEM PRIORITIES PROPOSED BY THE CGIAR SCIENCE COUNCIL

1. **Conserve and characterize genetic resources**
2. **Genetic improvement of specific traits**
3. **Improve water management and use in agriculture**
4. **Better management and use of forests and forest landscapes**
5. **Better soil and land management and use**
6. **Improve production and processing systems for high-value commodities**
7. **Enhance resource-efficient and equitable forms of livestock sector growth**
8. **Improve management and use of aquatic resources**
9. **Policy and institutional innovation to reduce poverty and hunger and to enhance competitiveness of smallholders**
10. **Strengthen national and regional capacities for agricultural research.**

### ICARDA'S NEW STRATEGIC PLAN AND RESEARCH PORTFOLIO

To support the developing countries in the dry areas achieve the Millennium Development Goals, ICARDA has launched the development of a new research strategy to focus more on poverty alleviation starting 1 January 2005. The 19 research projects, on which the Center's research portfolio was built, have been consolidated into six Mega-Projects (MPs) for better coherence and coordination of research activities. The six mega-projects are:

1. Management of scarce water resources and mitigation of drought
2. Integrated gene management: Conservation, improvement and sustainable use of agrobiodiversity
3. Improved land management to combat desertification
4. Diversification and sustainable improvement of rural

livelihoods

5. Poverty and livelihoods analysis
6. Knowledge management and dissemination for sustainable development.

To implement the new research portfolio, ICARDA has initiated the recruitment process for Directors for these six MPs. The Director General has already appointed the following Directors:

- MP1: Dr. Theib Oweis
- MP2: Dr. Sanjay Rajaram
- MP3: Dr. Richard Thomas
- MP5: Dr. Kamel Shideed.

With regard to MP4 and MP6, Dr. William Erskine and Dr. Adel Aboul-Naga, respectively, are acting as interim Directors.

## Research Highlights

### GERMPALSM ENHANCEMENT WHEAT

#### IMPACT OF IMPROVED VARIETIES

Mr. Toni Rogger of GTZ-CIMMYT-DED Regional Seed Network Project studied seed production systems in Kazakhstan, Tajikistan and Uzbekistan. His study has revealed that different degree of success and development has been achieved in these three countries.

In Kazakhstan, having high degree of free market and private entrepreneurship, encouraging results have already been obtained in assisting the poor farmers in the pilot districts. These results are mainly based on testing of improved wheat varieties, such as Almaly and Naz, for yield, vegetation period, susceptibility to diseases and pests as well as adoption of the advanced technology of raised bed planting. After their submission to the State Varietal Testing Commission (SVTC) and further release, they were multiplied in seed production farms and sold to small scale farmers for their cultivation. The analysis has revealed that during the season 2003/2004, cropping area under improved varieties has increased by almost twice, on an average, for three districts (Zhambylsky, Merkensky and Kazgurtsky) in Kazakhstan. Yield assessment demonstrated better impact. In Zhambylsky district, the average yield of winter wheat was 1.65 t/ha in 2004, compared to 1.0 t/ha in 2003.

In Syrdarya Province of Uzbekistan, the analysis has demonstrated considerable advantages of improved variety



*Traditional Tajik nan made of new variety wheat "Alex"*

Dostlik and by using advanced technologies. For instance, despite a slight reduction (about 10%) in the wheat area in 2004, production increased by almost 8.5% as compared to that in 2002.

In Tajikistan, emphasis has been laid on quality improvement in terms of baking attributes of flour obtained from Tajik wheat. First results in selecting a suitable variety for the traditional Tandyr nan making have demonstrated good potential of the newly introduced variety Alex. Yield potential of this variety is 10-20% higher than that of the currently cultivated varieties. This is crucial since in Tajikistan the share of wheat products in the daily diet reaches up to 60%. In addition, variety Alex is resistant to yellow rust in different locations across Tajikistan.

*(Source: Mr. Tony Rogger, CIMMYT-Almaty)*

### BARLEY

#### NEW VARIETIES IDENTIFIED IN TAJIKISTAN

Barley breeders from the Tajik Research Institute of Grain Husbandry have succeeded in identification of two promising varieties, Zirotkor-70 (Boca S1/3/AC/253) and Alanda-01, supplied through the international nurseries. During the last four years, these varieties have out yielded the local check by 10-12% and were found suitable for both Shoraro and Vahsh regions. A proposal for release of both these varieties was submitted to SVTC in November, 2004.

### POTATO

#### TPS PROVIDED BY CIP

During the workshop on potato development in CAC, which was held in Tashkent in April, 2004, Dr. Sarah Ilangantileke of CIP made available for the first time 19 hybrids of true potato seeds (TPS) to the participants. Each packet contained about 600 true potato seeds. These are to be studied for morphological characters and yield performance, including level of adaptation and early maturity. The participants were advised to grow these seeds in greenhouses to begin with.

#### CIP MISSION TO THE CAUCASUS

Dr. Carlo Carli, CIP, Tashkent conducted a short mission to the Caucasus from 7-13 November, 2004 with an objective to familiarize with potato research and development related issues, accompanied by Dr Zakir Khalikulov of CGIAR-PFU.

In Georgia, they met with Dr. Guram Alexidze, Vice-President, Academy of Agricultural Sciences, and a number of scientists and researchers from the Academy, as well as the Head of IFAD-funded project MADI (Mountain Agricultural Development International) and CARE International project. They also visited some potato fields.

In Armenia, they had a meeting with Mr. Samvel Avetisyan, First Deputy Minister of Agriculture, CGIAR-CAC focal point, and with FAO representative for Armenia.

During their trip to Azerbaijan, they met with Dr. Asad Musaev, Director General, Agrarian Sciences Center, national focal point of CGIAR-CAC. Dr. Carli also visited the Institute for Vegetables Growing, as well as IFDC, a USAID-funded project that promotes the sale of agricultural inputs and trains local input dealers and farmers.

This visit indicated that the research on potato is relatively weak in the Caucasian countries. Local staff needs guidance on germplasm management and field trials. There is also a considerable need for human resource development. The local research institutes have limited funds to take up seed production activities, including tissue culture work. Dr. Carli thinks that tissue culture and seed multiplication of disease-free materials should preferably be taken up on a commercial basis. With the presence of Dr. Carli in CAC region, it is expected that potato research including seed production program will get further strengthened.

*(Source: Dr. Carlo Carli, CIP-CAC)*

#### SEED PRODUCTION OF IMPROVED VARIETIES

In order to ensure needed benefit from newly released varieties of different crops to the farmers, considerable attention was laid by ICARDA and PFU scientists on large-scale seed

### LEGUMES

#### PROMISING CHICKPEA VARIETIES

Two promising chickpea lines, FLIP-98-121C and FLIP 98-142C, were officially submitted to the State Varietal Testing Commission (SVTC) in Kyrgyzstan on 15 November, 2004. Emerging from ICARDA international nursery, these lines have been tested during the last three years by the scientists of the Kyrgyz Research Institute of Livestock Veterinary and Pastures/Rangeland under the leadership of Dr. Amantay Samsaliev. Both these lines have demonstrated high yield and disease resistance in the Chu Valley. For three years, the average yield of FLIP-98-121C and FLIP 98-142C exceeded that of the local standard check by 76 and 94%, respectively. Being of compact habit and toll type, these two lines are also suitable for mechanical harvesting. In addition, another line supplied from ICARDA, FLIP 87-85C, has been found promising and same is being proposed for submission to SVTC in the near future.

In Tajikistan, scientists of the Research Institute of Crop Husbandry are working in close collaboration with ICARDA on identification of promising varieties of chickpea. Dr. Sohob Imomov, chickpea breeder, recently submitted to SVTC a promising line ILC-32-79 to SVTC under the name "SI-80". This variety has shown a very good performance in the competitive nursery during the last three years, continuously out yielding the standard check variety Muhtadir by 20-25%.

Turkmen breeders at the Research Institute of Grain have also identified promising lines of chickpea from ICARDA nurseries, including FLIP-98-131, FLIP-82-150C, FLIP-98-41C. Beside having high productivity, these lines have shown good disease resistance, heat and drought tolerance.



*Scientists of the Turkmen Research Institute of Crop Husbandry*

In Kazakhstan, the scientists of Krasny Vodopad breeding station are presently involved in the diversification program for rainfed conditions of southern region. They have tested thousands of chickpea accessions and selected some promising lines from ICARDA nurseries.

The chickpea lines selected are: FLIP 94-25C, FLIP 95-2C, FLIP 97-52C and FLIP 98-130C. They are suitable for mechanical harvesting. They are cold tolerant and high-yielding. 500 kg seeds of promising chickpea line FLIP 94-25C were produced during 2004. The results of last three years have indicated that this was the best. Accordingly, it was submitted to SVTC under the name "Janalyk" (News) on 5 October, 2004.

production in collaboration with plant breeders of the region. The table on page 5 provides details of seeds produced of newly released varieties during 2004:

*(Continued on page 5)*

Variety	Pedigree	Country	Available Seed (ton)
<b>WHEAT</b>			
Dostlik	YMH/TOB//MCD/3/LIRA	Uzbekistan	5500
Bitarap	SN64//SKE/2*ANE/3/SX/4/BEZ/5/SERI	Turkmenistan	3000
Nurlu 99	JUP/BJY//URES	Azerbaijan	700
Azametli-95	PRL/VEE6//MYNA/VUL	Azerbaijan	500
Mtskhetis-1	TAST/SPRW//ZAR	Georgia	240
Jamin	NS55-58/VEE	Kyrgyzstan	70
Zubkov	1D13/MLT//KAUZ	Kyrgyzstan	10
Azibrosh	OK82282//BOW/NKT	Kyrgyzstan	10
<b>BARLEY</b>			
Bakharly	Richane-03	Azerbaijan	1.2
<b>CHICKPEA</b>			
Elixir	ILC 533	Georgia	3.0
<b>LENTIL</b>			
Pablo	ILL 799	Georgia	0.9

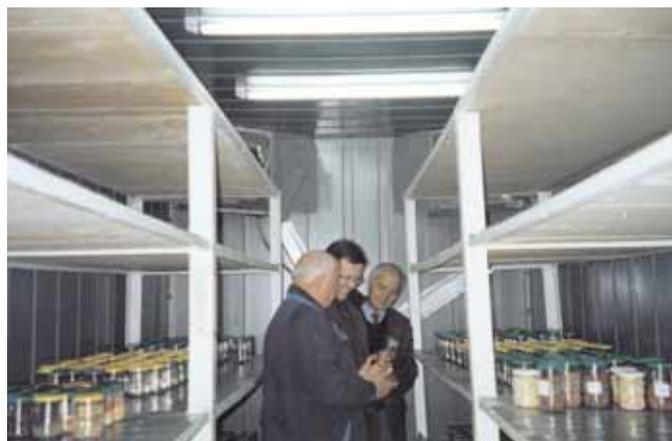
## CONSERVATION AND EVALUATION OF PLANT GENETIC RESOURCES

### GEORGIAN GENE BANK NOW FUNCTIONAL

At the initiative of the Georgian Academy of Agricultural Sciences, steps were taken with needed technical backstopping and expert advice of head PFU and ICARDA scientists to establish a Gene Bank with medium term cold storage facility at the PGR Center of the Research Institute of Crop Husbandry. With the installation of essential equipment, the Gene Bank has become functional and by now about 2000 accessions of valuable germplasm have been processed and stored.

In November, 2004, Dr. Zakir Khalikulov, PFU-CGIAR and Dr. Carlo Carli, CIP, accompanied with Acad. Guram Aleksidze, Vice President, Georgian Academy of Agricultural Sciences, visited Gene bank in Georgia. They were impressed with the achievements. The Gene Bank in Georgia is now fully functional.

Recently, Miss Tamara Jinjikhadze of the PGR unit has gone to Australia for a six month training in the field of genetic resources under the Vavilov-Frankel scholarship. Also, Ms. Anna Gulbani, member of ICARDA's PGR Unit, went to Iowa State University, USA for 10-month Gene Bank Management training



*Acad. Alexidze explaining about Georgian Gene Bank*

supported by USDA. Upon her return, she will take over the management of Georgian Gene Bank.

### SUPPORT FOR APPLE COLLECTIONS

The Interim Panel of Experts of the 'Global Crop Diversity Trust' has recently approved a new project on 'Securing important collections of apple diversity in Kazakhstan and Turkmenistan', to be implemented by IPGRI. It is focused on building capacity at two institutes in Kazakhstan and Turkmenistan, which hold relatively very large number of valuable

apple collections at the 'Talgar Pomological Gardens' in Kazakhstan and the 'Garrygalla Research Centre' in Turkmenistan, rich in local varieties and indigenous wild species. The two institutions have faced considerable financial constraints since independence and hence this project is expected to rehabilitate both these valuable collections.

## NATURAL RESOURCE CONSERVATION AND MANAGEMENT

### FAO-TCP IN NORTHERN KAZAKHSTAN CONCLUDED

Technical Cooperation Program (TCP) on "Conservation agriculture for sustainable crop production in Northern Kazakhstan", implemented jointly by FAO, Kazakhstan Government and CIMMYT during 2002-2004 has successfully been concluded. To evaluate the progress, a national workshop on "Using soil conservation technologies for grain production in Northern Kazakhstan" was held in Astana, Kazakhstan on 23

November, 2004. Organized jointly by the Ministry of Agriculture, FAO, CIMMYT and Farmers' Union of Kazakhstan, the workshop involved more than 120 participants, including specialists from Kazakhstan, USA, FAO, CIMMYT, ICARDA, the World Bank, GTZ, as well as national and foreign producers of agriculture machinery and chemicals and representatives of farming communities from Kazakhstan.

*(Continued on page 6)*

## Research Highlights

All the participants highly appreciated the results achieved under the project and expressed their support for the large scale adoption of conservation agriculture technologies. The following recommendations were developed:

Promote adoption of technologies based on direct sowing systems and zero/minimal tillage in view of their economic and environmental efficiency;

Continue research and adoption activities in the area of conservation agriculture (production technologies of zero tillage and direct sowing);

Promote wider dissemination of the Northern Kazakhstan experience in the entire rainfed agriculture in Kazakhstan, with major emphasis on crop diversification;

Maintain and update a website on "Conservation agriculture in Eurasia" in both Russian and English under the financial support of the MoA, CIMMYT, ICARDA and other stakeholders;

MoA of Kazakhstan to approach the Government for:

- Inclusion of Glyphosphate into the list of chemicals subsidized by the Government;
- Inclusion of farms adopting zero tillage technologies into a budgetary monitoring program for soil fertility under the MoA;

Facilitate local manufacturing of financially affordable drills for direct sowing;



*Supply of minimum tillage equipment*

Organize a system for wheat varieties' evaluation on their suitability for zero tillage technologies;  
Further disseminate soil-, resource-, and water-conservation technologies in irrigated farming systems in Kazakhstan; and  
Initiate a TCP during 2005 on conservation agriculture for diversified cropping systems in Southern Kazakhstan to be implemented jointly by MoA, FAO and CIMMYT.

## FAO-TCP WORKSHOP AND FIELD DAY IN KARAKALPAKSTAN

A workshop on "Conservation agriculture and water management practices" under FAO TCP on "Sustainable agricultural practices in the drought affected region of Karakalpakstan" was held in Nukus, Karakalpakstan on 6 December, 2004. It was attended by the project's national consultants, 34 farmers and other stakeholders. Dr. M. Suleimenov, ICARDA-CAC opened the workshop and briefed the participants on its main objectives. The national consultants and Drs. A. Novikova and V. Shaposhnikov, leading scientists from SANIIRI, reported on evaluation of conservation agriculture

*(Source: Dr. Marat Karabayev, CIMMYT-Kazakhstan)*



*Participants of the workshop*



*Farmers participating in the field day in Chimbay district*

practices and improved irrigation technologies in Karakalpakstan. Workshop participants discussed the on-going project activities and reviewed project work plan for the next cropping season.

A field day was organized in Chimbay district on 7 December. It involved 40 farmers of Shokh-arik canal area, where the project is being implemented, so that they could observe efficient water accounting and land leveling activities and create a Water User Association (WUA). Issues such as policy, structure and steering committee of WUA were discussed and approved by the members. The group also visited winter wheat fields and the project demonstration site. It was noticed that salinity was severe in areas where drainage system did not function properly.

## FARMERS AND SCIENTISTS AS PARTNERS

A training course on Participatory Rural Appraisal (PRA) was conducted in Tashkent under the ADB Project on "Improving Rural Livelihoods through Efficient On-Farm Water and Soil Fertility Management for Central Asia and Caucasus" in September, 2004. It was aimed at introducing NARS scientists to the basic ideas of PRA application and available tools applicable at the farm level. These trained social scientists, assisted by ICARDA socio-economists, later

conducted PRA workshops in their countries.

The workshop held in Pakhtakor district of Jizzak region, Uzbekistan was led by Dr. Eleonora Gaziyan of Uzbek Scientific Production Center of Agriculture (USPCA). It involved local farmer-members of Quduq-Bulaq Water Users Association. The purpose of the workshop was to study and analyze the nature of interaction between different farm types with regard to the use of natural resources, production and

*(Continued on page 7)*

## Research Highlights-Meetings/Workshops/Conferences Organized

marketing issues and possible areas of farmers' cooperation. Farmers were involved in drawing a map of the production area indicating important physical features and resources. They defined various constraints and identified main farm typologies determined by physical environment, technological options and production systems.

The Problem Ranking process was applied to assess major constraints. They were mostly related to water, marketing, farming knowledge and skills for crops not commonly grown as well as the access to financial resources and machinery. Farmers discussed the main causes of each type of problems as well as the related limitations for their farming activities. The problems discussed provided insight with regard to inappropriate use of technologies such as improper land cultivation, lack of control over scheduling, low yield and finally the loss of invested resources and income.

Wealth Ranking and Analysis process was used in order to assess the well-being of the farmers by ranking them into three groups: high, medium and low income. This process allowed rough estimation of wealth distribution in the local village. The results showed a huge gap between rich and poor farmers living within the same site or village.

*(Source: Dr. Eleonora Gaziyantz, UzSPCA)*



*Uzbek farmers drawing the map of production area*

## STRENGTHENING OF NARS AGRICULTURAL LIBRARY IN KAZAKHSTAN

The Scientific Agricultural Library of the Republic of Kazakhstan is one of the oldest national libraries, being founded in 1931. Its stock of 400,000 titles in Kazakh, Russian and English languages makes it also the largest agricultural library of the country.

Since April, 2002, the Library was assigned to serve as a depository library for UN FAO publications that are now being received on a regular basis. Besides, the Library actively searches for new sources of materials' supply. In 2004, the Library started collecting a stock of publications brought out by different agriculture research organizations and agricultural scientists. A database is being developed and stored on electronic media. Also, international book exchange with libraries of Russia, Byelorussia and other foreign countries has been established.

## PARTICIPATION IN EXPERT SYSTEMS COURSE

A training course on the "Utilization of Expert Systems in Agricultural Research and Production," was organized by ICARDA and the Central Laboratory for Agricultural Expert Systems (CLAES), from 4-14 October 2004 at ICARDA Headquarters in Aleppo. Eighteen participants from CWANA region attended. The course was designed to introduce expert systems for different NARS scientists for use in their agricultural research programs. The course described the basic components of an expert system and how it differs from other software programs. Participants received hands-on training on various stages of expert systems development, ranging from knowledge acquisition and analysis to implementation, verification, and evaluation.

From CAC region, Dr. Malik Bekenov, Deputy Director General, Center for Agricultural Research and Consulting

The German Research Society, CIMMYT, ICARDA and other international organizations provide published reports and books to the library. Considerable attention is paid to acquiring policy and legislative documentation as well as standards and reference books in different agricultural sectors. The long-term partnership with CIMMYT has been extremely beneficial to the Library.

The Library offers the services on providing information and data on new acquisitions, content of trade magazines, patents registered in the Republic of Kazakhstan and agricultural industry standards, as well as bibliographical reference lists, bibliography of eminent agricultural scientists of Kazakhstan etc. The Library can be contacted by e-mail: [rsal@litte.kz](mailto:rsal@litte.kz) or [mshb@netmail.kz](mailto:mshb@netmail.kz) and its website can be visited at: [www.agrowebunesco.kz](http://www.agrowebunesco.kz).

Services, Kyrgyzstan and Dr. Kadyrzhan Mukin, Researcher, Scientific and Production Center for Agriculture and Plant Growing, Kazakhstan attended. Both of them felt that the skills acquired during this training, would be very useful for implementation of various projects in their countries. Upon his return, Dr. Malik Bekenov, who is also the National Coordinator of the ADB project on soil and water management, organized a workshop for the principal investigators of the project to explain details concerning utilization of Expert Systems in their research. At the first stage, it is planned to apply this program for irrigation of agricultural crops at demonstration sites at collaborating farmers' fields. For this, data of the automatic weather station and soil moisture meter, provided earlier under the project, will be used. At a later stage, the Expert Systems can be used for integrated pest management and socio-economic research.

## Meetings/Workshops/Conferences Organized

### MEETING ON INFORMATION MANAGEMENT

First Meeting on Information Management under UNEP-GEF Project «In-situ conservation of crop wild relatives through enhanced information management and field application» took place at IPGRI headquarters from 4-7 October, 2004.

The project involves five countries: Armenia, Bolivia, Madagascar, Sri-Lanka and Uzbekistan. The meeting addressed current status, problems and opportunities related to information

system on wild relatives of cultivated crops in these countries. Mr. Faizulla Abdullaev, Head, PGR Documentation Unit, Uzbek Research Institute of Plant Industry (UzRIPI), who was representing Uzbekistan, submitted a report on «Crop wild relatives in Uzbekistan». He also presented a descriptor word index produced by Uzbek scientists on the basis of work being conducted in Uzbekistan.

*(Source: Dr. Fayzulla Abdullaev, UzRIPI)*

### THE VICE-PRIME MINISTER OF TURKMENISTAN APPRECIATES CGIAR PROGRAM

**D**r. Raj Paroda, Regional Coordinator, ICARDA-CAC and Head, CGIAR-PFU recently visited Turkmenistan to finalize the arrangements for the up-coming ICARDA Regional Coordination Meeting and to review the progress achieved under the ADB project entitled "Improving rural livelihoods through efficient on-farm water and soil fertility



Meeting with H.E. Mr. Atamuradov

management in Central Asia". He had an opportunity to visit with H.E. Mr. Beguench Atamuradov, Vice-Prime Minister and Minister of Agriculture, Turkmenistan and conveyed the greetings for the New Year. He also briefed the Vice-Prime Minister on major achievements made by Turkmen scientists in different programs in association with scientists of ICARDA and other CG Centers. Dr. Paroda specifically emphasized on a number of recently approved projects, including those on management of apple collections in Turkmenistan to be implemented by IPGRI and on combating land and water resource degradation to be implemented jointly by IWMI and ICARDA.

H.E. Mr. Atamuradov was highly appreciative of the support received from CG Centers, especially ICARDA to the agricultural research system in Turkmenistan. He emphasized on the urgent need for strengthening the seed sector, which is of paramount importance in the context of changes in the Law on Land and to improve crop productivity of both cotton and wheat. He also desired to have in particular support from FAO, IPGRI and ICARDA to establish their national gene bank in the building of Museum of Grain, being newly constructed. H.E. Mr. Atamuradov was happy that the next ICARDA-CAC Regional Coordination Meeting will be held in Ashgabat from 2-4 March, 2005, and assured of his Government's full support in organizing the proposed meeting. He also agreed to visit ICARDA Headquarters in Aleppo, Syria to attend the Presentation Day

### NEW DIRECTOR GENERAL OF USPCA JOINS



**D**r. Abdushukur Khanazarov has recently taken over as new Director General of Uzbek Scientific Production Center for Agriculture (USPCA). Earlier, he was the Director of Uzbek Research Institute of Forestry and had participated in many meetings of CGIAR Program, especially on PGR.

On 27 December 2004, Dr. Raj Paroda met Dr. Khanazarov to congratulate on his appointment and to wish him every success. During the meeting, they discussed the opportunities for strengthening existing cooperation between CGIAR Centers and Uzbekistan. Dr. Khanazarov said that he visited ICARDA Headquarters in 1996, when he was the Minister of Forestry of Uzbekistan and he was impressed by its numerous achievements.

Dr. Khanazarov was appreciative of on-going cooperation with CGIAR Centers, and assured of his continued support to the on-going research collaboration with the scientists of Uzbekistan. He also highlighted the importance of using tree species for bio-drainage in saline areas of Uzbekistan and wished that work on these lines will get further strengthened. In his present capacity, Dr. Khanazarov will be the National Focal Point for CGIAR Program in Uzbekistan.

### WORKSHOP ON DATA MANAGEMENT

**A** workshop on data variables and structure to answer questions that support the conservation and use of crop genetic diversity under the first IPGRI global on-farm project «Strengthening the scientific basis of in-situ conservation of agricultural biodiversity on-farm» was held at IPGRI headquarters, Rome, from 20-24 September, 2004.

The partners implementing the project reported on their progress and status of on-farms agrobiodiversity conservation in Morocco, Uganda, Tanzania, Ethiopia, Burkina-Faso, Mexico, Nepal and Vietnam. Uzbekistan participated in this meeting for the first time, as it has recently joined the IPGRI Global On-farm Project. Uzbekistan was represented by Mr. Faizulla Abdullaev, Head, PGR Documentation Unit, Uzbek Research Institute of Plant Industry (UzRIPI) provided a report on «Data variables and variety choice selection, reasons for location and area planted for fruit trees in Central Asia».

The research related to on-farm biodiversity conservation and evaluation in different countries has demonstrated considerable difficulties and importance of this issue. Evaluation of genetic diversity of fruit crops with the use of molecular markers and GIS will henceforth be conducted in Central Asia, including socio-economic studies of in-situ fruit conservation.

*(Source: Dr. Fayzulla Abdullaev, UzRIPI)*

### CONFERENCE ON MARKET REFORMS ORGANIZED IN UZBEKISTAN

**D**uring 12-13 November, 2004, a National Conference on "Issues of agricultural market development under conditions of liberalized economy" was held in Tashkent, Uzbekistan. It was attended by about 100 participants from the Ministry of Agriculture and Water Resources, Ministry of Finance, National Parliament, agricultural research institutes, Farmers' Association, Taxation Committee, Insurance Committee, Agency of Foreign Investment into Agriculture and Agency for development Project Monitoring. Acad. Rasulmat Khusanov presented the keynote paper, in which he Emphasized that the

task of market development was extremely complex and that in spite of great efforts made by the Government, many critical problems still need to be resolved. Representatives of all stakeholders, including farmers from different provinces, participated in the discussions covering the issues of crop diversification, agricultural input supplies, access to market etc. ICARDA was represented by Dr. M. Suleimenov, who presented a paper on possibilities of successful crop diversification in Central Asia.

### MEETING WITH THE NEW UZBEK MINISTER

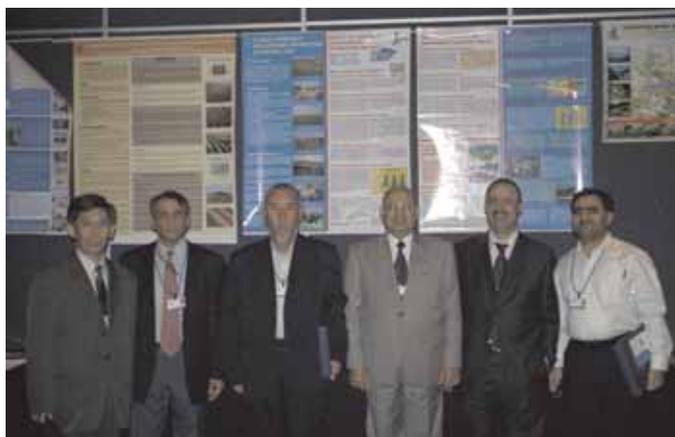
His Excellency Mr. Sayfidin Ismailov has recently been appointed as the new Minister of Agriculture and Water Management of the Republic of Uzbekistan. Dr. Paroda met with him to congratulate on his appointment and wish him all the success on behalf of Prof. Adel El-Beltagi, Director General, ICARDA, and other CG Centers. Dr. Paroda briefed Mr. Ismailov on CGIAR Centers' activities in the region, and enlisted his support for future collaborative research in Uzbekistan.

H.E. Mr. Ismailov assured Dr. Paroda of his continuing support and assistance to the CGIAR research centers in the Republic and emphasized that special attention was to be given to the issues of salinity and water management and the extension of advanced farming technologies to the farming in Uzbekistan. He also was pleased with the work on varietal improvement, genetic resources and the human resources development, including English training for young scientists. He was particularly impressed with the quality of publications brought out by the scientists working in the program in partnership with all CG Centers working in the region. He also desired to have more support from ICARDA to strengthen the national agricultural research system (NARS) in Uzbekistan.



*Meeting with the Minister of Agriculture and Water Management, Uzbekistan*

### CACAARI PARTICIPATES IN GFAR MEETINGS



*Dr. Ajibekov (first from left) participates in Donor Meeting*

Dr. Asanbek Ajibekov, Director General, Center of Agrarian Sciences and Consulting Services of the Kyrgyz Republic and Executive Secretary of the Central Asia and the Caucasus Association of Agricultural Research Institutions (CACAARI), visited Mexico City, Mexico from 22-25 October 2004 to attend the 14th Global Forum for Agricultural Research (GFAR) Steering Committee Meeting.

At the NARS Sub-Committee Meeting on 23 October, 2004, Dr. Ajibekov made a presentation on the CACAARI activities. Since his last report at the AGM'03 in Nairobi, the CACAARI carried out the following activities aimed at strengthening partnership between Research Institutions,

farmers, NGOs and other GFAR Stakeholders:

- Regional Agricultural Information System (RAIS) Workshop for Central Asia and Caucasus, Tashkent;
- GFAR Retreat, Second Meeting of Executive Secretaries, Inter-Regional Workshop of Global RAIS;
- The Meeting of CAC Regional Forum CACAARI held in Baku, Azerbaijan, on 8 June, 2004;
- Second INCANA Meeting organized in Tashkent, Uzbekistan, 6-8 September, 2004.

Dr. Ajibekov also informed participants that CACAARI Webpage has been established at <http://www.cacaari-forum.narod.ru> and all information about our Forum activities of CACAARI has been posted there.

Dr. Ajibekov also briefed about the planned future activities of the CACAARI, which will be:

- CACAARI General Assembly Meeting, 2-4 May, 2005, Aleppo, Syria;
- Sub-regional Research Prioritization Meeting for the Caucasus, July-August, 2005, Tbilisi, Georgia;
- Expert Consultation Meeting on Managing and Strengthening NARS in the CAC Region, November-December, 2005;
- Overall strengthening of CACAARI Secretariat.

The GFAR Steering Committee agreed in principle to provide need based support for above activities during 2005 so that CACAARI becomes an effective Regional Forum to foster research partnership in CAC region.

Dr. Ajibekov also attended the special Steering Committee Meeting of CGIAR in FAO, Rome on 15 December, 2004.

### REGIONAL SEED CONFERENCE

Dr. Bitore Djumakhanov, Cereal Breeder, ICARDA-CAC participated in the Regional Seed Conference, held in Osh, Kyrgyzstan from 2-5 December, 2004. The conference was organized by the Ministry of Agriculture, Water Management and Processing Industry of the Kyrgyz Republic, Seed Production Association, Association of Agri-Businessmen "Jer Azygy", SIDA project on "Support for development of seed production sector in Kyrgyzstan" and IFDC-USAID project on "Supply and development of agribusiness in Kyrgyzstan". In all, about 120 scientists, farmers, policy makers and representatives of international organizations participated in the conference as

*(Continued on page 10)*



*Opening of the conference*

## Human Resource Development

well as Silk Road AGROEXPO exhibition. Dr. Djumakhanov made a presentation on ICARDA activities in the area of germplasm improvement and seed production. He also highlighted the possibility of collaboration between ICARDA and SIDA projects, especially with regard to varietal testing, field days, traveling workshops and training activities. With Dr. Person Ruther of SIDA, it was agreed to initiate some joint activities on varietal testing and seed development in Tajikistan and Kyrgyzstan, where SIDA projects are being implemented.

### UZBEK FARMER PARTICIPATES IN AGM'04 STAKEHOLDERS MEETING

**M**r Yulbek Kushmanov, a farmer from Uzbekistan, represented CAC and ICARDA in the farmers' dialogue organized during the AGM'04 Stakeholder meeting on 27 October, 2004. Speaking on the occasion (thanks to Dr Zakir Khulibulov who provided simultaneous interpretation in English), Mr Kushmanov said, "I have 25 hectares of land. I grow cotton, wheat, corn, sunflower and sesame crops. The main problems in the region are salinity, poor soil fertility, and the absence of small-farm mechanization and new technologies for effective use of water and crop diversification. The Collaborative Program of the CGIAR on sustainable agricultural development has been working in the region since 1998. Since 2000, on-farm research cooperation started with ICARDA and I am a direct beneficiary of this partnership. With the assistance of ICARDA and SANIIRI (our Water Management Institute) I have installed lysimeter, sprinkler system, and portable chutes on my farm. Scientists of ICARDA and SANIIRI frequently visit our fields and give us advice on soil and water management systems, in order to get more income from our fields. Scientists are also conducting research on my farm. As a result of implementation of new technology, the yield of cotton in my farm has increased from 1.2 ton/ha to 2.0 ton/ha. I am very glad that ICARDA and other international Centers are working in the region to help farmers like me."

The conference also proposed to establish a Regional Seed Association for Central Asia, which would provide support to seed production organizations. This initiative would require approval at the Government level and the participants agreed to discuss this issue with the policy makers in their respective countries. The follow up will be done by Mr. Jean Louis Duval, Seed Legislation and Plant Breeders Rights Specialist, Sida currently working in Kyrgyzstan.



*Mr. Yulbek Kushmanov honors Dr. Ian Johnson*

## Human Resource Development

### VAVILOV-FRANKEL AWARD

**M**s. Tamar Jinjikhadze of the Institute of Farming, Tbilisi, Georgia has received a Vavilov-Frankel Fellowships Award for 2004. Under this fellowship, which is managed by IPGRI, she is now studying in Australia, supported by the Grains Research and Development Corporation (GRDC). Ms. Jinjikhadze will carry out a study entitled "Rust (*Puccinia* spp.) resistance and associated molecular diversity of endemic Georgian *Triticum timopheevii* plant genetic resources". Earlier, Ms. Tamar received training at ICARDA in Documentation under an ACIAR project.



*Ms. Tamar Jinjikhadze, recipients of the Vavilov-Frankel Fellowship 2004*

### RICE SCIENTISTS TRAINED AT IRRI

**T**wo young specialists from CAC region, Mr. Ablay Karlykanov of Kizil-Orda Rice Research Institute, Kazakhstan, and Mr. Ikrom Jumanov of Uzbekistan Rice Research Institute (UzNIIR), were invited to IRRI Headquarters for a 6-months training course. The training was mainly focused on practical work



*Scientists from CAC participating in IRRI workshop*

and they spent a lot of time working in the laboratories and greenhouses. They became acquainted with the latest rice growing technologies, including land preparation, harvesting, methods of grain quality evaluation as well as breeding technologies aimed at better pest, salinity and weed tolerance.

### CANDIDATE FROM KAZAKHSTAN WINS THALWITZ SCHOLARSHIP

**M**r. Sayat Shortan, an economist at the Scientific Production Center of Grain Farming, Kazakhstan, won the prestigious IFAR/Wilfried Thalwitz Scholarship to pursue his research on the socio-economic aspects of crop diversification in Northern Kazakhstan in collaboration with ICARDA.

The Wilfried Thalwitz Scholarship awards US \$ 10,000 to a promising young scientist working on research that makes a direct contribution to the application of agricultural and rural development policy, and encourages cooperation among the national research institutes and the CGIAR Centers.

Mr. Shortan is currently working with ICARDA on implementing the ADB-funded project on "Improving rural

livelihoods through efficient on-farm water and soil fertility management in Central Asia". The project identifies alternative crops to promote crop diversification - a priority area for agricultural policy in Kazakhstan.

Mr. Shortan's research project will take those results further by identifying alternative crops used by farmers in profitable and sustainable farming systems that maintain soil fertility, as well as listing the main constraints for the adoption of alternative crops recommended by the scientists. The results will be presented to national policy makers and donors. For his research, he will work under the supervision of Dr. Aden Aw-Hassan, Senior Socio-economist, ICARDA.

### WORKSHOP ORGANIZED AT YALE UNIVERSITY

**I**CARDA, in collaboration with Yale University, USA organized a methodology workshop on the impact of agricultural research on poverty in dry areas. The workshop, conducted on 14-15 December, 2004, was hosted by the Economic Growth Center of Yale University. Eleven ICARDA staff and NARS partners, working in current projects including the on-farm soil and water management project in Central Asia, attended. The workshop was organized by Prof. Douglas Gollin and Prof. Bob Evenson and opened by Prof. Chris Udry, Chair of the Economic Growth Center. Participants from Williams College, Massachusetts; Cornell University; and the World Bank also attended.

Dr. Aden Aw-Hassan from ICARDA made a presentation on the background and setting of ICARDA's studies. This was followed by the presentations on methodologies for poverty measurement, sampling, survey techniques, household data collection, and data management. Ms. Madina Musaeva and Mr. Anvar Nasritdinov represented ICARDA-CAC, and presented their research findings on socio-economic component of the ADB



*Participants of the Yale workshop*

project. This workshop provided an opportunity to young scientists from CWANA region to interact with experts in poverty assessment studies.

## Miscellaneous News

### NEW DIRECTOR OF INTERNATIONAL COOPERATION JOINS ICARDA



**P**rof. Magdy A. Madkour has been appointed as Director of International Cooperation at ICARDA. Prof. Dr Madkour assumed his office on 3 October 2004.

Prof. Madkour will lead ICARDA's international cooperation by further strengthening the Center's collaborative research with NARS, develop new collaborative mechanisms with institutions and

countries in the dry areas, promote resource mobilization efforts, and facilitate capacity building and institutional development activities in CWANA region.

Prof. Madkour is no stranger to ICARDA. He has had a long and fruitful association with the center in various roles, most recently as a member of the ICARDA Board of Trustees. He was President of the Agricultural Research Center (ARC), Egypt, before joining ICARDA. PFU family in Tashkent congratulates him on this prestigious assignment and wishes him all the success.

### ICRISAT GENE BANK VISITED

**R**ecently, Dr. Raj Paroda, Head, PFU-CGIAR participated in a meeting at ICRISAT on "Need assessment for research prioritization in South and East Asia", organized jointly by ICRISAT, Indian Council on Agricultural Research (ICAR) and Asia-Pacific Association of Agricultural Research Institutions (APAARI). During the meeting, he was invited to visit the Gene Bank, named by ICRISAT after him, which holds the largest number of accessions (more than 113 thousand) in the CG System. The collection includes germplasm of sorghum, pearl millet, chickpea, pigeon pea, groundnut and small millet, and the storage facilities have recently been renovated and fully modernized.



*Dr. Raj Paroda with Dr. Hari Upadhyaya, Incharge of Gene Bank*

## New Appointments

### TECHNICAL ASSISTANT (PUBLICATIONS) JOINS PFU



Ms. Eugenie Muminova joined PFU-CGIAR office in Tashkent in October 2004 as a Technical Assistant (Publications). She has a background of working as a senior interpreter for one of the ADB's educational projects in Uzbekistan. Her new duties will include preparing and managing publications as well as providing translation and interpretation services.

Staff of PFU-CGIAR for CAC wishes Ms. Eugenie all the success in her new assignment.

### CIP APPOINTED A SEED SPECIALIST FOR CAC REGION



Dr. Carlo Carli, who hales from Italy, has recently been appointed by CIP to the position of Regional Seed Specialist in the CGIAR program for CAC. Having worked as Team Leader for the EU project in Kyrgyzstan (1996-1999), and also worked in FAO projects in Armenia (2001-2003), as well as in EU project formulation for Tajikistan (2004), he is well familiar with CAC. His new assignment started on 1 October, 2004. Dr. Carli will operate from PFU-CGIAR office in

close association with Dr. Raj Paroda, Head, PFU to strengthen potato research in the region.

Staff of PFU-CGIAR for CAC and all CG Centers would like to wish Dr. Carli all the success in his new assignment.

## Future Events

### CONFERENCE ON AGROBIODIVERSITY

The Conference on "Promoting Community-driven Conservation and Sustainable Use of Dryland Agrobiodiversity" will be organized at ICARDA in Aleppo, Syria, from 18-21 April, 2005. Detailed information, guidelines and registration forms can be found at:

[http://www.icarda.org/Announcement/Agrobiodiversity\\_18-21April05.htm](http://www.icarda.org/Announcement/Agrobiodiversity_18-21April05.htm).

### AVRDC WORKSHOP IN TASHKENT

AVRDC Workshop on "Improved Income and Nutrition in Central Asia and the Caucasus through Enhanced Market- and Trade-oriented Vegetable Systems Research and Development" will be held in Tashkent from 15-17 March, 2005. It will be cosponsored by ADB, Taiwan Ministry of Foreign Affairs and GTZ of Germany. Detailed information can be found at: <http://www.avrdc.org/cac/home.html>.

### TRAINING ON FOREST BIODIVERSITY

In June, 2005, IPGRI, in collaboration with the Austrian Office and Research Centre for Forests (BFW), will organize a two-week training workshop on Forest Biodiversity. Participants from Armenia, Azerbaijan and Georgia are invited to apply. For more information, please contact Ms. Muhabbat Turdieva, IPGRI-Tashkent or visit: [www.ipgri.cgiar.org/regions/europe](http://www.ipgri.cgiar.org/regions/europe)

### IFPRI-ISNAR REGIONAL WORKSHOP

IFPRI-ISNAR Program and PFU-CGIAR for CAC will organize a Regional Workshop on Policy Research to be held from 7-9 April, 2005 in Tashkent, Uzbekistan. More information can be obtained from the PFU-CGIAR Office in Tashkent.

## Publications

### NEW PUBLICATION BY IWMI RELEASED

The publication titled "Guidelines: Transfer of Irrigation Management Services" produced by IWMI, together with Food and Agriculture Organization (FAO) and German Technical Cooperation (GTZ), has now been translated into Russian. These guidelines have been written to assist policy-makers, planners, technical assistance experts and other stakeholders to facilitate their decisions. The publication attempts to present a comprehensive set of principles, steps, options and methods which tend to be applicable for IMT programs in most places. It distills the lessons from research and practical experience over the last decade in planning, implementing and evaluating irrigation management transfer programs around the world.

## New Initiatives

### NEW ADB PROJECT APPROVED

A new project proposal entitled "Enabling communities in the Aral Sea Basin to Combat Land and Water Resource Degradation through the Creation of Bright Spots" for three years has been approved by ADB under the Ninth RETA for CGIAR with a total budget of \$700,000. The project is to be implemented by IWMI in joint collaboration with ICARDA and ICBA in Kazakhstan, Turkmenistan and Uzbekistan. Its overall goal is to address poverty alleviation, improve food security at the household level and improve environmental security by the development, promotion and adoption of strategies that enhance the productivity of existing irrigated farming systems in Central Asia. Mr. Mehmood Ul-Hassan from IWMI, Tashkent will be the Project Manager.

### FAO-TCP APPROVED FOR UZBEKISTAN

A new FAO-Technical Cooperation Program on "Improvement of cereal, leguminous, oil and forage crops seed production" has been approved for Uzbekistan. The technical assistance will contribute to the development of an efficient and integrated seed production system by (i) strengthening the technical capacity of the institutions responsible for varietal improvement program and seed production; (ii) modernizing procedures and regulations for seed quality control; and (iii) improving coordination mechanism for seed industry development.

### GLOBAL TRUST FUNDS NEW PROJECTS

The project "Establishment of a regional plant genetic resources information network for Central Asia and the Caucasus (CAC) region" has been approved in principle for funding by the Global Crop Diversity Trust (GCDDT). The Trust has approved a budget totaling \$98,000 over eighteen months.

The project "Inventory of ex-situ collections of Treaty crops in Central Asia and the Caucasus" has also been approved in principle for funding by the GCDDT. The Trust has approved a budget totaling \$43,500 for the nine-month project. The first funds will be released following the approval by the Trust secretariat.

The GCDDT has also approved a project on "Regeneration of CAC germplasm for repatriation" to be implemented by the Vavilov Research Institute (VIR), St. Petersburg, Russia with the potential participation of countries from CAC region.