



CAC NEWS

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

No. 13

July-September, 2002

Consortium
Members



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- Conservation and evaluation of plant genetic resources;
- Natural resource conservation and management;
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- National research organization and management;
- Strengthening of NARS.

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Human Resource Development

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Message from Dr. Jitendra Srivastava

Dear Colleagues,

I am delighted with the excellent progress and continued success of the CGIAR Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus



since its launch four years ago. The Regional Program's mandate of food security, poverty alleviation and improving productivity and conservation of natural resources has had a major impact in the region which is demonstrated in the increasing adoption of improved high yielding varieties, seed production, on-farm water use and efficiency, new agronomic practices, feed and livestock management, genetic resource conservation and the strengthening of NARS. The global partnerships fostered by the Program and the support of donors, including ADB, GTZ, IFAD, USAID, and the World Bank is testimony to the necessity for and success of the Regional Program.

I had the pleasure of attending the Program Steering Committee meeting held in June 2002 in my capacity as chair of the Executive Committee and was encouraged by growing spirit of cooperation and trust between the NARS and the CGIAR Centers that has been exemplary and I am confident that together we can successfully realize our common goals and objectives in the region. It is heartening to note that Centers such as ICARDA, CIMMYT, IWMI and IPGRI have established regional offices in some of the CAC countries, which resulted in strengthening national programs through increased human resource development and capacity building. Training on relevant scientific courses, study tours, as well as international, regional and national scientific meetings and workshops have been regularly organized under the umbrella of the Regional Program. Such activities have also served to establish expanded and effective global networks and partnerships within the scientific community. The provision of information technology, including computers and internet access to all collaborating institutions, courses on data management, information exchange and networking as well as the provision of equipment such as cameras, automatic weather stations and other relevant laboratory tools, have substantially improved the capacity and performance of the National Programs.

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Participants of the VI ICARDA-CAC meeting in Dushanbe

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Important Events

(Continued from page 1)

The Program Facilitation Unit (PFU) has played an instrumental role in ensuring the success of the Program and I would like to take this opportunity to commend the efforts and dedication of the PFU staff. The continued existence of the PFU is critical to the ongoing success of the Program and I urge the CG Consortium to provide financial support and/or seek donor funding for assuring the sustainability of the PFU. At this juncture, to build on the achievements and successes already gained, the imperative next step is for the PFU to dialogue with the Ministries of Finance, Planning, Agriculture and Science and Technology and sensitize/convince them to the importance of relevant technologies and training in improving the performance of each country's agricultural sector.

With the emergence of the new transition economies and a concomitant rise of a new class of small farmers who lack appropriate knowledge and skills in farming and livestock management, the CGIAR can play an instrumental role in addressing the gaps and needs of the NARS and farmers. The provision, adaptation and dissemination of appropriate agricultural and extension technologies is vital for improving the performance of the agricultural sector and to address this, I am happy to note that the World Bank is continuing to lend its full support to the Program. The Bank and the CGIAR centers are currently working together on a number of projects in the region and the synergy of such a collaborative approach has resulted in significant achievements on the ground.

The CAC region is currently facing a number of challenges that require immediate scientific solutions and appropriate technologies for ensuring food security and alleviating poverty. All these issues are critical in order to stabilize economies in Central Asia and the Caucasus. I look forward to the continued efforts of the Regional Program in addressing these issues and I am confident that working together we can make a difference in the lives of the people of the region.

With best wishes,

Jitendra Srivastava
Chair, Executive Committee
CGIAR Program for CAC

THE SIXTH ICARDA-CAC REGIONAL COORDINATION MEETING HELD

(Continued from page 1)

Dr. Saxena briefed the audience on ICARDA's activities in different regions of the world, emphasizing the efforts undertaken in the CAC region. He brought back to the memory of the participants the first Regional Coordination Meeting of ICARDA-CAC, which was held in Aleppo in 1997, stressing that since then, a significant progress has been made. Dr. Saxena also expressed his satisfaction regarding partnership, which need to be further strengthened through joint efforts on poverty alleviation and agricultural productivity increase, once again reconfirming ICARDA's commitments to the idea of developing agricultural research in the CAC region.

His Excellency Mr. K. Koimododov, the Deputy Prime Minister of the Republic of Tajikistan, welcomed the participants saying that he was proud to receive the world-known scientists on the hospitable land of Tajikistan. He also conveyed to the audience greetings and best wishes for the success from the President and the Prime Minister. In his speech, Deputy Prime Minister stated that research in Tajikistan had a long history and particularly emphasized the period of Samanid dynasty, under ruling of which many prominent scientists, such as Abu Ali Ibn Sino, Abu Nasr Al-Farabi and Abu Rehan Al-Biruni had emerged. Mr. Koimododov also emphasized that the Government of Tajikistan attaches very high importance to agricultural research. He highly appreciated the support provided by ICARDA to Tajikistan.



Inauguration of the meeting in Dushanbe

Acad. B. Sanginov, President of the Tajik Academy of Agricultural Sciences, greeted the participants and in particular, Dr. M. Saxena and Dr. Raj Paroda. He said it was an honor to the Academy to host the Regional Coordination Meeting, which would greatly inspire the agricultural scientists of Tajikistan.

Presentation of the Annual Report was made by Dr. Raj Paroda, the Regional Coordinator. He highlighted the achievements in the areas of genetic resource conservation, germplasm enhancement and natural resource management as well as human capacity building. In particular, he emphasized the role of ICARDA in facilitating linkages with NARS and among NARS. He reiterated that ICARDA activities in the region were based on agricultural research priorities identified through a process of extensive consultations with NARS leaders and scientists.

The eight Heads of NARS made their respective country reports covering collaborative research activities in the areas of germplasm enhancement and natural resource management. Under the theme of germplasm enhancement, new cereal and legume crop varieties resistant to different biotic and abiotic factors were identified, of which some have already been released or submitted to the State Variety Testing Commissions.



During working session

In the area of natural resource management, the Heads of NARS reiterated the importance of the two projects on on-farm soil and water management and integrated feed and livestock production, funded by ADB and IFAD, respectively. As 2002 was the last year of these projects' implementation, all the participants urged the management of ICARDA to take necessary action for their continuation. All the three Heads of NARS from the Caucasian countries emphasized an urgent need to initiate research activities in the field of water management, improvement of soil fertility and range rehabilitation. The NARS leaders from all the eight countries were very appreciative of the support they received in the area of human resource development, stressing the importance of both specialized and English language training courses for the scientists of the region.

During the scientific session on 24 September, nine presentations were made by ICARDA scientists and other participants. In the presentations by Drs. M. Suleimenov, A. Yahyaoui, A. Sarker, J. Konopka, M. Mosaad, and S. Kugbei the major emphases were laid on the need for development and adoption of appropriate practices in conservation agriculture and strengthening of the germplasm enhancement and seed production components with consideration of proper disease management as well as new conditions of market economy.



From left to right: Acad. B. Sanginov, President, Tajik Academy of Agricultural Sciences, Dr. Raj Paroda, RC, ICARDA-CAC, H.E. Mr. K. Koimododov, Deputy Prime Minister, Tajikistan, Dr. M. Saxena, ADG, ICARDA (at large), Mr. T. Rakhmatov, Minister of Agriculture, Tajikistan

Presentations by Dr. Al-Attar (International Center of Biosaline Agriculture) and Mr. Azhigaliyev (Global Mechanism) also generated considerable interest. Group discussions were held in three groups: Germplasm Enhancement Group, Soil and Water Management Group and Livestock and Range Management Group. The results of collaborative activities carried out in 2001/2002 crop season and the proposed work plan for the 2002/2003 were discussed and finalized.

The reports of all the three groups were presented in the Plenary Session on 25 September. The participants approved the group recommendations. It was decided to hold the next ICARDA-CAC Regional Coordination Meeting in Yerevan, Armenia, in September, 2003. At the end, while thanking the host Government for excellent arrangements, Dr. Mohan Saxena expressed his satisfaction regarding the outcome of the meeting and wished that on-going partnership would further get strengthened owing to the firm commitment of all the stakeholders involved in the program. He also assured ICARDA's full support to the activities of this important regional program.

Later that day, the participants of the meeting were invited for the field visit where they got familiarized with the ongoing ICARDA-Tajikistan activities under the joint project on soil and water management funded by ADB.



During field day in Khotlon province, Tajikistan

DR. MASA IWANAGA, NEW DG, CIMMYT, VISITS CENTRAL ASIA

Dr. Masa Iwanaga, Director General of the International Maize and Wheat Improvement Center (CIMMYT), visited Kazakhstan and Uzbekistan from 1 - 7 September immediately after his appointment. In Kazakhstan, he visited CIMMYT



Regional Office, different research institutions, Ministry of Agriculture, World Bank Mission, Asian Development Bank, etc. Dr. Iwanaga also participated in the training on "Integrated methods of economic analyses" organized by Dr. Erica Meng, Economist, CIMMYT, for farmers and district managers.

Later, Dr. Iwanaga visited Uzbekistan where he had an intensive program. During the meeting with Dr. Raj Paroda, Regional Coordinator and Head, PFU, he discussed further steps of strengthening collaboration within the Systemwide CGIAR Program for CAC. Later, they both called on the Minister of Agriculture and Water Management, Uzbekistan, Mr. Nosirjon Yusupov, and had detailed discussion on various collaborative activities.

On 6 September, Dr. Iwanaga made a presentation on CIMMYT research activities at a workshop "Strengthening Wheat Research Program in Uzbekistan" jointly organized by GTZ/CIMMYT/ICARDA.

DR. BELTAGY AND DR. PARODA HONORED

The Tajik Academy of Agricultural Sciences elected both Prof. Dr. Adel El-Beltagy and Dr. Raj Paroda as Foreign Member Academician. The Fellowship Diploma Certificates were awarded in an impressive ceremony attended by various Academician, scientists, agricultural students of Tajikistan and the NARS leaders of CAC countries. The function was presided over by the Honorable Minister of Agriculture, H.E. Mr. T. Rakhmatov. Scientific contributions of both Dr. Beltagy and Dr. Paroda were lauded. Acad. Bobo Sanginov, President of the Academy presided over the function and congratulated both Dr. Beltagy and Dr. Paroda on the occasion. In his brief response, Dr. Beltagy thanked the Academy for the honor bestowed and promised of all possible support for ARD in Tajikistan.

Research Highlights

WHEAT

RESULTS OF WHEAT SEASON IN GEORGIA

(Source: Dr. D. Bedoshvili, CIMMYT Program Manager in Georgia)

The season of 2001-2002 turned out to be unusually humid and cool in Georgia. High precipitation rate and low temperatures were observed in April and May, which delayed crop development and affected adversely pollination and seed setting. Due to intensive rainfalls, most of the wheat producers were not able to apply herbicides that resulted in the abundant growth of weeds. Rainfalls were also observed during the harvest time and caused a serious lodging in Kakheti region. The cool and wet weather favored development of stripe rust and common bunt in most of the wheat growing areas of Georgia. Based on the preliminary report from the Ministry of Agriculture and Food Processing, the estimated country-average wheat yield is about 1.5 t/ha, which is almost twice as less as the previous year record (2.7 t/ha). Under such environmental conditions, variety Mtskheta-1 (5FAWWON-35) continued to remain the best yielding variety in the registration

trials of the State Commission for Protecting Plant Breeding Achievements of Georgia.

For the first time in Georgia, Research Institute of Agriculture in Tserovani (a suburb of Tbilisi) evaluated wheat nurseries from CIMMYT-Mexico. The results of evaluation demonstrated that Mexican material is well adapted to the local environment and can be quite competitive as compared with the local varieties and other international nurseries. Twenty-five entries have been selected for further multiplication based on the plant type, disease and lodging resistance, and visual grain assessment. It was decided to continue and broaden the evaluation of the material from Mexico during next season. The top varieties selected, such as SOM//1D13.1/MLT, Torik-15, ID800994 W/Falke, Zander-13, and Vorona/HD2402, will be planted in a demonstration trial along with the best commercial varieties available at the Research Institute of Agriculture.

FURTHER PROMOTION OF DOSTLIK VARIETY

As we informed earlier, five tons of winter wheat variety Dostlik were planted in Tashkent and Syrdaria provinces, Uzbekistan. In spite of late seeding time, there were harvested as many as 92 tons of seeds, which will be distributed among farmers for their assessment and planted this fall on an area of

400 ha, mainly in Syrdaria province. Although, disease incidence was very serious due to humid conditions of this growing season, Dostlik variety was found to be resistant to yellow rust. Therefore, Dostlik was officially recognized as promising variety to be released in the near future.

PROMISING WHEAT LINES IN CAC REGION

Country and crop	Lines	Seed available	Status
Armenia Winter and facultative wheat	TAMARA, VARONA 57 and SW54	6 –10 kg of each	To be submitted to SVTC* in 2003
Georgia Winter wheat	Mtskheta-1	10 tons	To be distributed among farmers
Kazakstan Winter wheat	Almaly, Arap, Jumps	20 kg of each	For seed multiplication
Kyrgyzstan Winter wheat	Jamin	1.5 tons	To be distributed among farmers
Turkmenistan Winter wheat	Bitarap Qaragum Qunsha PCK/ VEE	10 tons 9.5 tons 4.2 tons 35 kg	To be distributed among farmers To be distributed among farmers To be distributed among farmers For seed multiplication
Tajikistan Winter wheat	Tacica Norman 4 lines	1 ton 800 kg 50 kg of each	To be distributed among farmers On-farm trials and seed multiplication
Uzbekistan Winter wheat	Dostlik Aral-96, Mira	100 tons 50 kg of each	To be distributed among farmers On-farm trials and seed multiplication

*SVTC = State Variety Testing Commission

OVERVIEW ON YELLOW RUST PATHOTYPES IN CENTRAL ASIA AND THE CAUCASUS

(Source: Dr. Amor Yahyaoui, Senior Cereal Pathologist, ICARDA)

Cereal rust epidemics have been of significant historical importance since the earliest recorded histories of civilization. Yellow rust epidemics in countries of East Africa, the Middle East, China, Caucasus, Central and West Asia have caused severe crop losses in wheat during over the past decade. Currently at least 30-40% yield losses were recorded in major wheat producing areas in Azerbaijan, Kyrgyzstan, and South Kazakhstan. In Uzbekistan over 60% of the wheat area were protected with fungicides in 2002 crop season that was characterized by rainy days and cool temperatures during the growing seasons. The high levels of yellow rust are to be addressed by a community of scientists (pathologists, breeders, policy advisors) and farmers to such events. Therefore, understanding yellow rust epidemics and the variation in disease response of cultivars are areas of major concern.

ICARDA scientists and their collaborators in CAC, particularly in Azerbaijan, Kazakhstan, Kyrgyzstan and Uzbekistan, have been conducting intensive surveys and monitoring of the yellow rust pathogen over the past four years as well as characterizing the levels of resistance in the commercial and promising wheat cultivars. Preliminary results indicate that the enhanced development and spread of yellow rust could be attributed to three major factors. The first factor is attributable to purely environmental effects such as mild winters and extended cool, moist spring seasons that provide ideal opportunities for pathogen development. The second factor underlying change in cultivar disease response is pathogenic evolution.

Monitoring of the rust pathogen using trap nursery has been implemented in at least one site in CAC region. In our collaborative research with NARS, yellow rust populations were characterized using two types of method: 1) use of a trap nursery (Central Western Asia yellow Rust Trap Nursery-CWAYRTN) planted at yellow rust hot spots in Azerbaijan, Uzbekistan, Kyrgyzstan, Tajikistan, and Kazakhstan since 1999, and 2) artificial inoculation at experimental stations in Syria, Lebanon, and Turkey.

Following analysis of trap nursery, a wide range of virulent pathotypes is found in this region causing the break down of widely utilized sources of resistance in wheat. The dynamics of yellow rust is now better understood, but the pathways through which the pathogen is spreading are still unknown. Hence, the knowledge of the yellow rust pathway is essential for the proper exploitation and management of

available sources of resistance.

The yellow rust population in the region consists of a number of pathotypes that differ in their pathogenicity toward the host plant. Some pathotypes (races) such as 2E0, 6E0 can attack only two resistance genes in the host plant while some pathotypes such as 198E150, 230E150

can attack 11 identified genes in the host plants.

Yellow rust pathotypes in Central Asia and the Caucasus would be similar to those spread in Iran, Syria or Lebanon, however some difference would appear and would not be clearly known until detailed race analysis is conducted. The analysis of the trap nursery in CAC shows that most single genes were defeated at least at one testing site and that gene combinations offered better resistance. Among the 30 available resistance genes only seven genes remain effective across the CAC region. They are: Yr SP and Yr CV available in facultative and spring bread wheat; Yr 10, Yr 3V and Yr 3N available in winter wheat; Yr 5 and Yr 15 available in wild relatives of wheat (*triticum* spp.).

Yellow rust pathogen is an obligate parasite that is highly specific and does not have an alternate host and hence no sexual cycle, nonetheless it is a highly variable pathogen. Consequently, using resistant cultivars for disease control is the best strategy as it has no cost to the farmer and is environmentally safe. Some important cultivars where resistance is based on a single race-specific gene, or combinations of genes, are currently grown on a large area in countries where yellow rust has caused major losses or threats in the past years. It must be kept in mind that major genes are implicitly vulnerable to pathogen plasticity, and their longevity can range from rapid vulnerability to relative (and often deceiving) durability. It is likely that most specific resistances, whether based on a single major gene or a combination of major genes, will sooner or later succumb to new adaptive pathotypes if careful deployment is not practiced.



Yellow rust incidence in Azerbaijan

BARLEY

BARLEY TRIALS IN KAZAKSTAN

This season, scientists of Kazakh Research Institute of Grain Farming (KRIGF) in Shortandy, northern Kazakhstan, have evaluated 617 lines from international nurseries along with three lines selected from ICARDA nurseries in previous years.

Based on the evaluation, one entry (#40) demonstrated the highest yield - 6.0 t/ha, whereas the standard variety yielded only 3.3 t/ha. To have seed material of this entry, scientists of KRIGF established a seed multiplication plot. According to their expectations, around 400 kg of seeding material could be harvested. Dr. Kravchenko, Head of Barley Breeding Department, lays his hopes on this entry being multi-row barley never sown in the northern areas of the country. In future, they would like to name this entry BIRLIK-1 and propose it for releasing in the moderately humid areas as Akmolinskaya, Kustanayskaya and Severokazakstanskaya provinces of Kazakhstan. The estimated sown area of this entry would be 400,000 ha.



Dr. N. Kravchenko observing the field of new barley entry #40

RICE

IRRI: FUTURE ACTIVITIES IN THE REGION

Dr. David Mackill, Head of Department of Plant Breeding, Genetics and Biochemistry, and Dr. Abdel Ismail, Plant Pathologist from IRRI visited Central Asia from 29 August to 5 September.

During their visit they got familiarized with rice research activities of Uzbek Rice Research Institute, Uzbekistan, Priaral Institute of Agroecology and Agriculture, Kazakhstan, and visited rice production fields in Tajikistan. Based on results of the visit, the scientists have developed the following recommendations related to further collaboration of IRRI in Central Asia: (1) there is a need to develop a joint independent project while a Network for Central Asia, including Iran and Afghanistan would be an option; (ii) basing of IRRI staff in Tashkent would be helpful with the support from PFU (iii) capacity building is a priority including English language training, short-term and degree training at IRRI, upgrading of computers, other facilities and equipment. It seems that collaboration between IRRI and Central Asia has a bright future since all the countries are eager to exchange both germplasm and experience for improvement of rice production in the region.



Dr. A. Ismail (first from right) and Dr. D. Mackill (fourth from right) together with Tajik scientists observing rice production fields, Tajikistan

MAIZE

MAIZE IMPROVEMENT IN CAC REGION

Starting since 2000, improved maize germplasm comprising around 200 kg of seeds has been distributed in the CAC region. Analyzing previous experience, it was found that CIMMYT's genotypes provided for CAC were late-maturing. Only a few accessions reached a complete maturity in desirable time. Accordingly, all the NARS maize breeders of Central Asia the Caucasus expressed the need to have earlier maturing maize genotypes and to develop a regional network for maize improvement under financial and scientific backstopping of CIMMYT. Thus, taking into account specific climate conditions of Central Asia and the Caucasus, germplasm provided in 2002

included only early-maturing maize genotypes. The trials were established in Kazakhstan (3 locations), Uzbekistan (2 locations), Kyrgyzstan (1 location), Tajikistan (1 location) and Georgia (2 locations), Azerbaijan (1 location). It should be noted that maize germplasm from CIMMYT was found to be very suitable for subtropical rainfall zones of Georgia and Azerbaijan. The selected promising lines will be included into maize breeding programs of these countries. The overall results of this year trials are being finalized and would be presented later.

GROUNDNUT

GROUNDNUT TRIALS ESTABLISHED

This year, ICRISAT provided the CAC countries with the international groundnut nurseries including early and medium mature, foliar disease resistant, drought resistant and confectionery lines. All the countries conducted groundnut trials, except Armenia where seeds were received late for planting. The result of these trials would be available after harvesting, in November, 2002.

In Uzbekistan, Dr. Makhfurat Amanova, Head, Lab of

Oilseed Crops, Uzbek Research Institute of Plant Industry, made some crosses with the selected high-yielding lines from ICRISAT, which were found to be well-adapted to local conditions. Besides, she also initiated a trial on groundnut production after cereals for double cropping.

Dr. S.N. Nigam plans to send more trials and early maturing drought tolerant material for testing in the region.

POTATO

CIP PLANS TO EXPAND POTATO RESEARCH IN THE REGION

In order to strengthen CIP activities in Central Asia and the Caucasus, the International Potato Center (CIP) has recently assigned the research and development activities on potato to the CIP-South and West Asia Regional office located in New Delhi, India.

Thus far, CIP supplied to Armenia 21 varieties in 2000 and 9 varieties and 19 tuber families in 2001. Georgia also received 20 varieties in early 2001 and a set of 20 varieties was sent from CIP headquarters to Kazakhstan in 2001.

Future Plans of CIP in the CAC region include

conducting of rapid appraisals (RA) in the selected countries to gather information for development of research work plans, and identification of training and germplasm needs. Germplasm supply and evaluation will be continued by CIP in all the CAC countries to evaluate new varieties that may perform better under the different climatic conditions. A meeting of potato breeders from CAC countries is expected to take place early next year to discuss research programs that need to be planned out for each country. CIP is fully committed to provide required assistance for potato development in the region.

CONSERVATION AND EVALUATION OF PLANT GENETIC RESOURCES

COMPLEMENTARY CONSERVATION AND USE STRATEGIES IN CENTRAL ASIA

(Source: Ms. Heidi Renkema, Associate Expert, IPGRI-CWANA, Tashkent, Uzbekistan)

When it comes to take actions in conserving agro-biodiversity, lots of questions arise: what species need to be given highest priority in conservation? Which strategy should be adopted? Which stakeholders need to be involved?

Until recently, the focus has been directed exclusively to conservation, with little attention to use. Nowadays, a more holistic approach is preferred because it has become clear that sustainability of conservation depends on our capacities to link conservation of genetic diversity with its utilization. Conservation *through* use and *for* use is indeed the key for the success in conserving plant genetic resources. Another strategic component we have to reflect in our work is participation of local communities so as to ensure that their needs are properly met and *their* livelihoods are improved thanks to a more sustainable use of biodiversity. How can we achieve this objective? First of all, we have to look at the broad spectrum of stakeholders involved in conservation and use activities (farmers, NGOs, Policy makers, national and international research centres, private sectors, etc). Each stakeholder has a role in our efforts and we need to create the right framework for allowing sharing of the expertise and responsibilities. Yet, proper integration of *in-situ* conservation methods (on-farm, natural reserve, etc) with *ex-situ* conservation methods (seed gene banks, in-vitro conservation etc.) is critical in our work. These two methods are complementary to each other and hence should be always closely combined. *Complementary Conservation and Use Strategies* are indeed the result of bringing together conservation and use, *in-situ* and *ex-situ* conservation methods along with involvement of broad range of stakeholders.

Central Asia has the largest diversity of fruit and nut tree in the region. Such natural wealth is of strategic importance for present and future generation in view of its contribution to food security and income generation. Unfortunately, such diversity is under threat of being lost. Nowadays, it is observed that interesting local varieties of fruit and nut trees, which are conserved on-farms, are being gradually replaced by modern varieties. These modern varieties have, in general, a higher market value but are less adapted to local conditions such as drought, salinity and poor soil fertility. Wild species, present in natural reserves, are also threatened by unregulated cutting of trees for fuel, overgrazing and over harvesting of fruits. Actions have to be undertaken rapidly to prevent further genetic erosion of fruit and nut tree diversity and appropriate Complementary Conservation and Use Strategies need to be designed for safeguarding these vital genetic resources.

This year, IPGRI launched an effort to strengthen Complementary Conservation and Use activities on fruit and nut trees in Central Asia. The Dutch Government supported an Associate Expert position for working on this subject. Ms. Heidi Renkema joined IPGRI's sub-regional office in Tashkent last

June. It is reassuring to notice that several Central Asian Research Institutions are already involved in conserving genetic resources of fruit and nut trees. Uzbekistan, for example, holds several *ex-situ* collections, where



Wild apples in *ex-situ* collection, Uzbekistan

local varieties of fruit and nut trees along with their wild relatives are properly maintained. The Research Institute of Horticulture, Viticulture and Wine-making, the Uzbek Research Institute of Plant Industry and the Research Institute of Forestry are maintaining as a whole around 1,200 accessions of cultivated and wild fruit tree species. In addition the Uzbek Botanical Gardens holds 290 accessions of these species. Unfortunately, the information on these holdings is not complete and updated, and efforts need to be made to improve its computerization. Progress in computerization of database management is to be acknowledged (for instance Forestry Database developed by the Forestry Institute in Tashkent), but still a lot has to be done in this area. These databases will be fundamental to guide decision making process in conservation while promoting the deployment of gene bank material for economic development.

The fruit and nut trees are also conserved *in-situ*. Although these varieties are also under the threat of disappearing, still more than 80 fruit and nut species are conserved in eight nature reserves across Central Asia and many local varieties are conserved on farms.

For enhancing sustainable conservation and use of agro-biodiversity, *public awareness* need also to be properly addressed. Another area of activities is creation of incentives for farmers to continue to safeguard local varieties. Strengthening market outlets for local fruits' products is for instance one of such incentives that could be supported by Governments.

Progress in fostering partnership in sustainable conservation and use of agro-biodiversity in Central Asia is bringing already some positive results: CGIAR centres, NGO's, private companies, research institutes, universities, policy makers, farmers, botanical gardens etc, are getting increasingly closer in pursuing the common goal of better livelihood options for the people of this region. IPGRI remains highly committed to further this cooperation and contribute to bring about sustainable mechanisms to rescue and maintain the unique diversity of plant genetic resources of this region.

MULTIDISCIPLINARY PROJECT IN TURKMENISTAN AND UZBEKISTAN

(Source: Mr. Sergey Treshkin, Regional Specialist in community conservation of PGR; Ms. Marina Lee, Research Assistant on socio-economics, IPGRI)

New project entitled "Strengthening community institutions to support conservation and use of plant genetic resources in Uzbekistan and Turkmenistan" has been launched since the mid of this year. The project is being funded by CAPRI and implemented by Dr. Sergey Treshkin, Regional Specialist in

PGR Community Conservation and Ms. Marina Lee, Research Assistant on Socio-economics (both are newly appointed at the IPGRI-Tashkent office) and being supervised by Dr. Pablo Eyzaguirre, Senior Scientist on Anthropology and Socio-economics, IPGRI-Rome, Italy

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Research Highlights

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The project activities envisage combination of multi-disciplinary research methods covering four main areas, in particular: (i) relationships between property rights, land tenure and natural resource use, especially agrobiodiversity; (ii) direct and indirect roles that institutions in local communities play for managing natural resources, especially agrobiodiversity and landscapes; (iii) economic factors (market and non-market) that affect crop choices and land use, focusing on the linkages between agrobiodiversity and livelihood; (iv) maintenance of local knowledge about PGR by different institutions as well as generation of new knowledge.

Initial surveys in Uzbekistan and Turkmenistan will include collection of information about the current legal and social environment, in which institutions operate as well as about existing social and community organizations. For making a picture of the context, in which the research will take place, and of relevant units to be analyzed, scientist will rely mainly on anthropological methods, which are being applied in sociology, including historical and gender analysis.

The project goal is to value how the latest agricultural

and socio-economic reforms affect livelihood strategies. As the research is based on informational indicators, the research plan requires enlarged approach, for which two objectives were identified. The first is to use participatory approaches applied for documenting types and use of PGR, and the second is to investigate types of property and their impact on biodiversity and environment, in general.

In accordance with the project work plan, some actual problems of PGR conservation and use were discussed at the First Project National meeting held in Tashkent, Uzbekistan on 26 September and was hosted by Uzbek Research Institute of Horticulture, Viticulture and Wine-making named after R. R. Shreder. During the meeting, participants discussed and approved criteria, socio-economic research areas and research sites. The same meeting would take place in the second part of November in Turkmenistan. Specific field surveys are also planned to be organized in the mid of October. Thus, implementation of the first phase would allow gathering complete information about current status of PGR, in particular horticultural and vegetable crops in Turkmenistan and Uzbekistan, thus becoming a reliable basis for further research.

NATURAL RESOURCE CONSERVATION AND MANAGEMENT

GOOD PROGRESS OF JOINT ACTIVITIES IN TAJIKISTAN

Tajikistan, being a mountainous country, has limited resources of arable land which makes only 5.6 % of the total area of the country. In this context, developing farming technologies to be used in foothill and sloping areas is very important to the sustainable development of agriculture. In southern Tajikistan, steep sloping lands occupy an area of more than 60,000 ha. Since 2001, ICARDA and Tajik scientists are jointly implementing different soil and water management technologies under the ADB-funded project on "Soil and Water Management for Sustainable Agricultural Systems in Central Asia". Since traditional farming practices are not suitable for application on such lands and the solution was found in terracing and planting of cherry, plum, almond, pistachio, and walnut trees. To improve rooting rate of tree saplings, different mulching treatments have been tested. Research results have revealed that mulching with plant residues is the most efficient technique for moisture conservation that ensures highest survival rate of tree saplings (96-97%).

In another experimental site at Obikiik, experiments on developing appropriate drip and sprinkler irrigation scheduling are being carried out for the third year. Promising results through mulching treatments have been achieved in eliminating the surface runoff that eventually reduced soil erosion, a common problem on an area of more than 250,000 ha of sloping lands in southern Tajikistan. In between persimmon trees and grapes plantations, the farmers can also grow successfully melons in the inter-row spacing, thus generating additional income while young trees and vineyards are still unproductive.

Favorable climatic conditions of the southern Tajikistan offer options for the multiple cropping, which could increase land use efficiency and the yield of agricultural crops. Experiments on double cropping based on cotton-wheat rotation are being conducted in Gozimalik district. Mr. I. Shafiev, Representative of the President in Gozimalik district, commended the efforts of ICARDA scientists to help the Tajik farmers increasing their agricultural productivity and hoped that further expansion of the project activities in Tajikistan would help

increase farmers' income considerably on their small holdings.

While visiting the sites on 28 September 2002, Director General of ICARDA, Prof. Dr. A. El-Beltagy, interacted with farmers and Government officials and assured them of ICARDA's continued support for promotion of well tested farm worthy technologies for increased income and alleviation of poverty.



DG of ICARDA, Prof. Dr. Adel El-Beltagy discussing with a farmer, Mr. S. Pironov, possible ways of drip irrigation of tree plantations on the terraced slopes of Fakhrambad site, Tajikistan

THE STEERING COMMITTEE ENDORSES THE SECOND PHASE OF S&WM PROJECT

The fourth Steering Committee Meeting of an ADB-funded project "On-farm soil and water management for sustainable agricultural systems in Central Asia" was held on 26 September, 2002, in Dushanbe, Tajikistan. The participants of the meeting discussed the results achieved during the previous three years, emphasizing that soil and water

management should be considered as a high priority in all the countries of CAC region. The Heads of NARS fully endorsed a concept note on the second phase of the project and signed an appeal to the Management of ADB urging to continue funding the project for improvement of agricultural productivity and profitability of farmers in the region.

CONCEPTUAL GUIDELINES BY IWMI

Scientists of IWMI Tashkent office synthesized the existing international literature and findings of the institutional analysis and proposed the guidelines for the integrated water management in the Ferghana Valley. After revision by all the concerned parties, the final document entitled "Framework for adopting integrated water resources management in the Ferghana Valley: Combining best practices with local logic" has been produced in mid August. The Russian version of this document was also circulated among the key stakeholders dealing with irrigated agriculture in Kyrgyzstan, Tajikistan and

Uzbekistan for their consideration and adoption. The final adoption of the revised version is expected in the end of October at the special workshop, after which the guidelines would be submitted for publication.

IWMI-CAC office also developed detailed guidelines on organizing farmers into Water Users Associations and Water Users Federations. The draft has been circulated among the key project partners for their feedback. After subsequent refining, this document would be submitted for publication as an IWMI working paper.

LIVESTOCK MANAGEMENT AND FEED PRODUCTION

Following the National Coordination Meetings on IFAD-funded project "Integrated Feed and Livestock Production in the Steppes of Central Asia" that had been conducted in all the four participating countries (Kazakhstan, Kyrgyzstan, Turkmenistan and Uzbekistan) from 1 to 13 August, 2002, a Regional Coordination Meeting of this project was held in Tashkent on 16 August, 2002. The RCM was attended by Dr. L. Iniguez, the Project Coordinator, ICARDA, Aleppo, Syria, and National Coordinators. Dr. Iniguez summarized the research results under the project during the year 2001-2002, emphasizing a good progress achieved in the Socio-economic component, which had been the weakest during the first two years of the project. He also informed the National Coordinators that according to their request during a Brainstorming Meeting on the project, held in Almaty in April, 2002, it was decided to have a one-year extension of the project on a no-cost basis. Then he presented a work plan based on comments and suggestions that had been received earlier from principal investigators of the project. After deliberations, the work plan was approved by all the participants of the meeting. The National Coordinators thanked Dr. Iniguez for providing the excellent training opportunities to researchers and farmers

involved in the project. They also expressed their hopes for further strengthening of the human resource development component through the second phase of the project, which in their opinion, would play an important role in agricultural development of Central Asia.

NEW REPORT ON CENTRAL ASIA BY ILRI

International Livestock Research Institute (ILRI) in partnership with the Macaulay Land Use Research Institute (MLURI), UK, has brought out a socio-economic and policy research report entitled "Potential for increasing producers' income from wool, fiber and pelts in Central Asia". The report includes results of research activities conducted in three Central Asian countries: Kazakhstan, Kyrgyzstan and Turkmenistan. A reader can find the comprehensive information regarding the current situation of wool and pelt production, market conditions, policy issues and international market potentials in this report available with ILRI and also with PFU, Tashkent.

NATIONAL RESEARCH ORGANIZATION AND MANAGEMENT

ISNAR ACTIVITIES IN THE REGION

- During last quarter of this year, a specialist from ISNAR, Dr. Turgul Temel, is going to visit Armenia, Azerbaijan, and Georgia to organize Needs Assessment meetings with policy makers, managers and researchers of these countries in order to evaluate and identify issues for further study under the Challenge Program proposal for CAC (CP-CAC). As stated in this proposal, ISNAR undertakes activities to contribute to the CP by developing different research proposals. For that, ISNAR needs to identify the areas that require immediate attention from policy makers and research managers.

- In May 2002, ISNAR issued a country report No 64 "The Agricultural Innovation System of Azerbaijan: an Assessment of Institutional Linkages" Now, a complete study of innovation system of Azerbaijan would be finalized during a workshop jointly organized by Agrarian Science Center of Azerbaijan and ISNAR. In this workshop, the key results of the country report would be discussed along with suggestions for enhancing the agricultural innovation system of Azerbaijan. The workshop is planned to be organized in the second week of October 2002.

UZBEK TEAM VISITS ICAR, ICRISAT AND OTHER CG CENTERS IN INDIA

Dr. Paizullo Khodjiev, Director, Dr. Ravza Mavlyanova, Deputy Director, and Dr. Valentina Lovkina, Specialist on Seed Storage from Uzbek Research Institute of Plant Industry (UzRIPI), Uzbekistan, visited India from 25 July to 2 August. Their visit was jointly organized by ICRISAT and IPGRI. The main purpose of the visit was to familiarize them with the functioning and management of modern gene banks in New Delhi and Hyderabad and learn about oilseed, sorghum, and millet research and development in India. In New Delhi, they visited Indian Agricultural Research Institute (IARI), National Bureau of Plant Genetic Resources (NBPGR), both ICAR institutions as well as IPGRI, CIMMYT, IRRI, and CIP offices. In Hyderabad, they visited ICRISAT office in Patancheru, Directorate of Oilseeds Research (DOR), National Research Center for Sorghum (NRCS), NBPGR Regional Station (ICAR institutions). While visiting institutions, scientists from Uzbekistan had extensive exposure to gene bank management both at ICRISAT and NBPGR. At ICRISAT, they interacted with genetic enhancement and plant genetic resource scientists and discussed possible collaborative research activities on groundnut, sorghum, and pearl millets. Notwithstanding their busy schedule, the visitors were able to glimpse historical

places in Agra and Hyderabad. This visit was indeed very timely and useful since a new gene bank facility at UzRIPI has recently been upgraded and put into operation.



Uzbek team with Dr. William Dar (third from right) and Dr. Sh. Nigam (first from left) at ICRISAT, Patancheru

Strengthening of NARS

UZBEK GENE BANK RENOVATED



Medium-term storage room

On 19 September 2002, the newly renovated gene bank facility was formally opened at the Uzbek Research Institute of Plant Industry (UzRIPI) by Deputy Minister of Agriculture and Water Management and Director General of UzSPCA, Dr. SherAli Nurmatov. The facility has come up exceedingly well and the building now looks quite modern and functional.

The inauguration ceremony was attended by many officials and senior scientists including Dr. Raj Paroda. All the speakers stressed that such a modern facility is unique for Central Asia and the Caucasus, thus it may serve as also regional gene bank. The role of Ministry of Agriculture and Water Management of Uzbekistan, USDA, ICARDA and IPGRI in upgrading the facility at UzRIPI was highly appreciated.



Dr. SherAli Nurmatov (second from left) inaugurating the gene bank building at UzRIPI

Uzbekistan, on the occasion of its 80th anniversary celebrations.

- ICARDA provided technical backstopping to UzRIPI in terms of repairs and upgrading of different equipment in its new gene bank. ICARDA also provided financial support for purchasing of 11,000 plastic containers for seed storage. IPGRI also plans to provide a seed dehumidifier to UzRIPI and some more plastic containers in the near future.
- To strengthen communication facilities at Uzbek Rice Research Institute, IRRI presented the Institute with one computer as well as one printer and a digital camera.
- One computer was presented by PFU to the Research Institute of Cotton Breeding and Seed Production,
- Uzbekistan, on the occasion of its 80th anniversary celebrations.
- A weather station was installed at the research site of Kyrgyz Agrarian Academy, Kyrgyzstan, in August, 2002. This is the third station after Uzbekistan and Kazakhstan, installed for facilitating research activities under the soil and water management project funded by ADB.
- ICARDA presented one copy machine and an overhead projector to Tajik Academy of Agricultural Sciences during the sixth ICARDA-CAC Regional Coordination Meeting held in Dushanbe, Tajikistan, from 23-25 September, 2002

Meetings/Workshops/Conferences Organized

A SEMINAR ON UPOV METHODS IN RUSSIA

As we informed earlier, in November 2001, a regional workshop "The status of the national systems for cereal variety testing and plant variety protection in Central Asia" was organized by CIMMYT and GTZ, Germany. The workshop was held in Almaty, Kazakhstan, within the framework of the CIMMYT-GTZ joint project, which aims to establish efficient and sustainable mechanisms of variety promotion and seed production for CAC countries. One of the recommendations of that workshop was to organize a special training seminar on cereal crop varietal trials, uniformity and sustainability of cereal production in accordance with the UPOV (International Organization on Protection of Breeding Achievements, Geneva)

requirements. Such seminar was jointly organized by CIMMYT, GTZ and the State Commission on Testing and Protection of New Crop Varieties, Russia, on 1-5 July, 2002 and was held at the Egoryevskaya State Variety Testing Station, Moscow province, Russia. A total of nine participants from Kazakhstan, Uzbekistan and Tajikistan attended the seminar and had both theoretical lectures and practical training in UPOV methods of cereal varietal trials and other related activities. While visiting Russia, the participants also visited the Agricultural Research Institute for None-Chernozem Zones, Moscow, Russia, where they familiarized with wheat breeding programs of the Institute.

NATIONAL WORKSHOP ON STRENGTHENING WHEAT PROGRAM IN UZBEKISTAN

On 5-6 September 2002, CIMMYT and ICARDA-CAC jointly organized a workshop supported by GTZ on "Strengthening wheat research program in Uzbekistan". The workshop was held in Tashkent and attended by 60 participants including representatives of the Presidential Office of Uzbekistan, UzSPCA, Center on Science and Technologies (CST), Tashkent State Agrarian University (TSAU), and the scientists and wheat breeders from all the Research Institutes of Uzbekistan. Dr. Masa Iwanaga, Director General of CIMMYT, who was in Uzbekistan on a visit after joining his position recently, made a formal inaugural presentation and addressed the participants. He expressed his satisfaction with the joint CIMMYT-ICARDA activities and assured the participants about his support to strengthen the wheat program in Uzbekistan.

Dr. Raj Paroda, ICARDA Regional Coordinator in CAC, made a presentation on "ICARDA and Uzbekistan: partnership for cereal research and development". He congratulated the Government of Uzbekistan, Uzbek farmers and scientists for attaining the record wheat harvest of 5 million tons this year. One of the core suggestions made by Dr. Paroda during working session was to establish unified national varietal trials to be tested in different climatic zones of Uzbekistan to have comparative evaluation of advanced breeding material evolved by different Centers. This proposal was endorsed unanimously for immediate action.

Dr. A. Morgounov, CIMMYT Program Leader in CAC, informed the participants about GTZ-supported project activities in Uzbekistan, especially highlighting seed production of promising wheat varieties and introduction of new crop management technologies as bed planting and zero tillage. Dr. Morgounov stressed the importance of the coordinated approach in collaborative activities with the International Centers, which should cut across all the steps from quarantine to release of a promising variety.

During the working session, the participants made an overview of the national wheat breeding program reflecting the details of incoming international lines and accessions, number of crosses made annually, number of varieties included for initial seed production, competitive varietal testing, etc. All this has allowed to develop a well-coordinated approach in wheat

germplasm movement, selection and distribution. An important decision was made to have a centralized varietal nursery on disease resistance at the Institute of Genetics, and similarly to have the same centralized grain quality assessment at the laboratory of Galla-Aral Branch of RI of Grain.

It was also decided to establish a Technical Council on international cooperation of Uzbekistan with representatives of CIMMYT and ICARDA in the area of wheat production. The Council was authorized to develop a project proposal on breeding and selection of wheat varieties resistant to yellow and brown rusts and to suggest recommendations on improvement of testing and distribution of germplasm from the international nurseries. The participants proposed to organize a workshop on assessment of wheat resistance to the dominating diseases and to publish a unified methodology on evaluation of breeding material and establishment of experimental varietal trials. Human capacity building; English language; training in quarantine at ICARDA, Syria, Turkey and India; as well as training in biotechnologies and modern breeding methods were recognized as top priorities.

An important input to the workshop deliberations was made by Prof (Ms.) Laziza Gafurova, Pro-Rector, TSAU. She stressed the importance of involving young students in the breeding process. Even the best students face some difficulties having graduated the University because they feel a lack of practical knowledge so needed for successful scientific work, she said. She called the Research Institutes of Uzbekistan and International Centers to identify future research successors among students and to involve them in the collaborative international trials. Since this year, she said, the University opened a Chair of Wheat Breeding and established its own variety trial nursery, in which the students could make evaluation of the international material within the overall national wheat improvement program. The participants of the workshop decided to involve the TSAU in the national wheat breeding program; to initiate competition or fellowship to support talented students and to provide educational establishments of Uzbekistan with relevant literature on crop breeding from CIMMYT and ICARDA.

KAZAKSTAN-SIBERIA TRAVELING WORKSHOP

From 29 July to 7 August, CIMMYT, National Academic Center for Agricultural Research (NACAR), Kazakhstan, and Siberian Research Institute of Agriculture (SRIA), Omsk, Russia,



Participants of the workshop in Omsk, Russia

organized a regional traveling workshop entitled "Spring wheat improvement and conservation agriculture in northern Kazakhstan and western Siberia". A group of ten senior scientists from CIMMYT and Kazakhstan traveled from Almaty to Karaganda, Astana, Kostanay, Karabalyk, Petropavlovsk and Omsk. In every region, the participants visited and surveyed varietal trials, zero-tillage experiments and seed multiplication fields at the research institutes, stations and farms. Due to high rate of precipitation, many diseases and weeds were observed in the fields. However, this year conditions have clearly exposed disease resistant potential of wheat varieties from international nurseries as well as advantages of the zero-tillage technologies. The traveling workshop was closed in Omsk by a regional workshop held at the SRIA, where the main results of CIMMYT-Kazakhstan-Siberia joint breeding activities were reviewed as well as recommendations and priority areas for future activities were finalized.

CIMMYT AND ICARDA REDISCOVER THEIR PARTNERSHIP STRENGTH

Bread wheat is the principal food source for most people in the Central and West Asia and North African (CWANA) regions. The average person consumes more than 170 kg per year, the highest per capita consumption of wheat in the world. This dependence on wheat combined with rapid population growth and increasing desertification makes this region the world's largest wheat importer.

Poor farmers struggling to provide food for a growing population face formidable constraints, the foremost being the lack of water. Most of them depend on meager rainfall to water their crops. The crop yields are low and the crop is attacked by a number of diseases and insect pests. Improved wheat varieties with resistance to pests and diseases and tolerance to drought and techniques for efficient water management are needed to boost wheat production. Central and West Asia is the birthplace of wheat and a treasure of wheat wild relatives, which can provide resistance genes. Rapid breeding of these genes into high-yielding, high-quality wheat varieties will benefit wheat production around the world.

In a concerted effort to address poverty and food security in the CWANA region, Dr Masa Iwanaga, the new Director General of the International Maize and Wheat Improvement Center (CIMMYT), based in Mexico, and Prof. Dr Adel El-Beltagy, Director General of the International Center for Agricultural Research in the Dry Areas (ICARDA), based in

Syria, organized a joint meeting of scientists from both Centers in Cairo, 8-9 September.

Dr Robert Havener and Dr Alex McCalla, ICARDA and CIMMYT Board Chairmen, respectively, were present. They both stressed the importance of the meeting in planning for future joint CIMMYT/ICARDA wheat improvement activities in CWANA. Complementarity and cooperation between both Centers should be the guiding rule in the relationship between both Centers", they stressed.

The two Directors General stated: "After 25 years of cooperation, CIMMYT and ICARDA are going to utilize the best new tools of science for wheat improvement and create a synergy with the evolving wheat agendas of national improvement efforts. The outputs for poor wheat farmers in the region will thus be maximized."

The two Centers committed themselves to a single CIMMYT/ICARDA joint program with renewed enthusiasm to increase wheat production in the different agroecologies of CWANA, with the goal of delivering sustainable wheat-production technologies designed to improve rural livelihoods in the region.

Human Resource Development

DIFFERENT TRAINING ACTIVITIES:

- On August 25, 2002, a group of eleven young scientists from Central Asia and the Caucasus returned home after successful completion of the CIMMYT wheat improvement training lasted for six months from mid-February to mid-August in Mexico. The course included on-hand experience combining theoretical lectures with practical training in wheat breeding and related subjects.
- Two scientists from the region, Ms. Ana Gulbani, Georgia, and Mr. Bayram Seyidov, Turkmenistan, are being currently

trained at ICRISAT in groundnut breeding since 10 September. Their training course will last for two months and will include on-hand experience in groundnut hybridization, selection of breeding populations, multi location trials, general agronomy, plant protection and seed production. It must be mentioned that groundnut breeders from Armenia, Azerbaijan, Kyrgyzstan, Tajikistan and Uzbekistan have already completed a similar training and now work in the area of groundnut improvement in their respective countries.

- Mr. Ikrom Djumanov, scientist from Uzbek Rice Research Institute, Uzbekistan, has started his three-month international training in hybrid rice at Hunan Academy of Agricultural Sciences, China, in July. His visit was supported by PFU as a special case.
- Prof. Giyz Rakhimov, Director and Dr. Shuhrat Haidarov, Scientific Secretary from Uzbek Rice Research Institute (URRI), Uzbekistan, and Dr. Bakiruli Kurmanbekov, Deputy Director, Prialar Research Institute of Agroecology and Agriculture, Kazakhstan took part in the International Rice Congress held in Beijin, China, on 16-19 September, 2002. The Congress, which was organized by the Government of Peoples Republic of China, was attended by 2500 representatives from 58 countries. During the Congress,

representatives of Uzbekistan and Kazakstan presented posters about their activities related to rice breeding and production, and established important contacts for future collaboration. These included a special agreement with Hunan Academy of Agricultural Sciences on opening of a joint Uzbek-Chinese laboratory at URRI. PFU-CGIAR provided logistical support for their visit.

- Ms. Makhfurat Saidakhmedova, Rice Breeder, Mr. Ikrom Djumanov, Rice Breeder, and Mr. Mokhamodjon Ergashev, Agronomist, from Uzbek Rice Research Institute, Uzbekistan, have completed the three-month English language training course organized by PFU-CGIAR from May to July, 2002.
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TRAINING ON USE OF SOIL MOISTURE METERS

To develop an effective irrigation scheduling, measure soil moisture dynamic and to estimate soil water balance, a soil moisture level is to be monitored. For that, a portable moisture meter Diviner 2000 is a very efficient tool widely used in Australia, Northern America and Europe. One soil moisture meter can be used for soil moisture analyses in 90 wells at the neighboring sites while a measurement can be made up to 1.5 m depth. In future, this tool will be used at different S&W project experimental sites in Central Asian countries. In order to train project investigators in basic ways of moisture measurements with Diviner 2000, ICARDA-CAC in collaboration with SANIIRI, Uzbekistan, organized a short-term training course on 8-9 August, in which twelve young researchers from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan participated. Mr. Arjan Jangnekt, an expert from Daily Drip Company, the Netherlands, was invited to instruct the course participants on Diviner 2000 installation and use. On 9 August, the participants had a practical training at the project experimental site and installed the moisture meters under the supervision of Mr. Jangnekt. In the end, each country participating in the project was provided with one moisture

meter along with spare parts and accessories. Installation and use of moisture meters would allow having a detailed picture of soil moisture distribution in order to improve irrigation on the project sites.



During installation of moisture meters in Boykazan farm, Uzbekistan

Miscellaneous News

ICARDA SIGNS AN AGREEMENT WITH TAJIKISTAN



H.E. Mr. K. Koimododov, Deputy Prime Minister, Tajikistan (right) and Prof. Dr. Adel El-Beltagy (left) signing the Agreement in Dushanbe, Tajikistan

The Government of Tajikistan and the International Center for Agricultural Research in the Dry Areas entered into a Memorandum of Agreement on 28 September, 2002 in Dushanbe for cooperation in agricultural research.

Prof. Dr. Adel El-Beltagy, Director General, ICARDA and H.E. Kozidavlat Koimododov, Deputy Prime Minister of Tajikistan signed the agreement and hoped that cooperation for agricultural research will be further strengthening between ICARDA and the National Agricultural Research System supervised by the Tajik Academy of Agricultural Sciences under the leadership of Acad. Bobo Sanginov. Both expressed their satisfaction on fruitful results accomplished in the past and assured of their best support to strengthen partnership for ARD in the future. According to the Agreement, Government of Tajikistan has agreed to provide all privileges to the ICARDA scientists for their research work, including those applicable to the Diplomatic Missions. ICARDA will extend a need based support to strengthen agricultural research activities in Tajikistan.

PRIME MINISTER OF TAJIKISTAN RECEIVES DG OF ICARDA

On 28 September, 2002, Prof. Dr. Adel El-Beltagy, Director General, ICARDA had a very fruitful meeting with the Prime Minister of Tajikistan H.E. Mr. Akil Akilov in Dushanbe. While explaining various challenges being faced by agriculture sector in Tajikistan, such as need for increased productivity, increased cropping intensity, diversification of agriculture, improvement of rangelands, need for terrace cultivation on slopes, and efficient use of water and land resources for sustainability, he expressed his great satisfaction regarding ICARDA's contributions in addressing most of these problems. He specifically stated that "ICARDA's activities carried out in Tajikistan are indeed very useful and relevant to the needs of small and marginal farmers". He also desired more support for research relating to "Mountain Agriculture" and "Livestock Development" since 70 per cent of the population lives in these areas. He also informed that the Government of Tajikistan is laying greater emphasis on fresh water and during the year 2003, Tajikistan would hold an "International Forum on Water", in order to look at all problems in an integrated way to improve WUE. In response, Dr. Beltagy thanked H.E. for sparing his valuable time and providing an excellent account of important issues being faced in Tajikistan. He admired the national commitment for support to ARD and assured for ICARDA's full support to strengthen partnership for research in all priority areas, especially germplasm

improvement and natural resource management, with special emphasis on land degradation and on-farm water use efficiency. ICARDA would also like to participate in the proposed "Forum on Water" next year. Prof. Beltagy thanked H.E. for the excellent support provided in hosting the Regional Coordination Meeting of ICARDA held recently in Dushanbe. He also appreciated the dynamic leadership provided to the national agricultural research system by Academician Bobo Sanginov, President of the Tajik Academy of Agricultural Sciences, and appreciated the excellent support extended to the Academy by the Minister of Agriculture, H.E. Mr. Tursunboi Rakhmatov.



Prof. Dr. Adel El-Beltagy meeting H.E. Mr. A. Akilov, Prime Minister (third from right), Dushanbe, Tajikistan

GLOBAL MECHANISM PLACES ITS REPRESENTATIVE IN TASHKENT



To solve the problem of desertification, a Global Mechanism (GM) was established under the authority of the Conference of the Parties of the United Nations Convention to Combat Desertification (UNCCD). The GM acts as a

hub for a dynamic network of partners, committed to focusing their energies, resources and knowledge on combating desertification. The GM not only mobilizes financial resources, but also channels their flow, thereby guaranteeing increased financial effectiveness and efficiency and ensuring a holistic and equitable approach to resource distribution.

In conformity with the provisions set forth in Article 21 of the UNCCD, the Global Mechanism was established under the authority of the First Conference of the Parties (COP1) to the UNCCD held in Rome in September 1997.

The GM is hosted by the International Fund for Agricultural Development (IFAD) in Rome and supported by an International Facilitation Committee (FC) comprised of the following: GM's funding members: IFAD, UNDP and the World Bank; as well as other partner institutions: AfDB, ADB, FAO, GEF/Secretariat, IADB, UNEP, CGIAR and the UNCCD/Secretariat.

The overall objective of the GM is to increase the effectiveness and efficiency of existing financial mechanisms through promoting actions leading to the mobilization and channelling of substantial financial resources for Convention implementation.

Partnership is one of the most important features of the Convention. In this spirit, the GM is a partnership builder that actively works on the interface between resources needed and resources available, between supply and demand, with the task of mobilizing substantial resources for combating desertification and drought. In this connection, a main objective of the Global

Mechanism is to promote a broader involvement of Government and NGO's and potential donors to work together towards the implementation of the Convention. In particular, the GM assists in integrating desertification and land degradation into ongoing programs, and in fostering linkages between these programs so that they together contribute more efficiently. In addition, the GM promotes and enhances opportunities for developing innovative sources of funding and new strategic initiatives.

According to decision made during the Global Mechanism meeting at IFAD on 29 April 2002, a GM Officer has been appointed and hosted at the ICARDA Regional Office for CAC in Tashkent since 11 September, 2002. Mr. Yerken Azhigaliyev, from Kazakhstan will act as Regional Environmental Management Officer of Global Mechanism in Central Asia. His duties and responsibilities include overseeing and management of all the GM-initiated and affiliated programs and projects in Central Asia. The Officer will facilitate the smooth and effective implementation of the various existing program/project components as well as those under development through conducting country missions and liaising with the various stakeholders.

Similarly, the Officer will also assist IFAD's Asia and Pacific Division in its follow-up and supervision of the on-going IFAD-assisted loan and grant supported activities in the region as well as in development of new project proposals and strategic policy frameworks.

ICARDA-CAC and PFU staff welcomes Mr. Azhigaliyev and wishes him all the success in his new assignment.



NEW APPOINTMENTS IN ICARDA-CAC OFFICE



Since 1 August, 2002, Dr. Bitore Djumakhanov, has joined ICARDA-CAC Tashkent office as Post-doctoral Fellow (Cereal Breeder). He was born in 1965, graduated Tashkent State Agrarian University with honor and during ten years was engaged in cereal varietal trials and selection. He is a co-author of durum wheat variety Karlik-85, triticale varieties Norman and Farkhad, and the author of barley variety Daston. In his new position, Dr.

Djumakhanov will contribute to study of new international cereal and legume nurseries in the region as well as facilitate seed multiplication and establishment of unified national cereal and legume varietal trials. He will also organize national and regional workshops, meetings, and field days.



Ms. Madina Musaeva is a post-graduate student in agricultural economics registered at ICARDA HQ. For her thesis, Ms. Musaeva is working on a research theme entitled "Socio-economic aspects of treated wastewater utilization in irrigated agriculture". She has joined ICARDA-CAC Tashkent office since 1 September, where she will work as a Consultant for the project on Integrated Feed and Livestock Production in Central Asia. Her duties will include socio-economic research in Central Asia related to livestock production systems and marketing.

ICARDA-CAC/PFU-CGIAR staff welcomes Dr. Djumakhanov and Ms. Musaeva and wishes them all the success in their new appointments!

ASSESSMENT OF CHALLENGE PROGRAM PROPOSALS

The concept of Challenge Program is a major pillar in the current CGIAR reform process. The CPs are meant to improve the CGIAR's relevance and impact, achieve greater efficiency and cohesion among the Centers of the CGIAR and ultimately mobilize greater and more stable long term financing.

For the first year of their implementation, the Group decided to accelerate the process by taking on a pilot one-time-basis ten pre-proposals essentially bypassing the ideas/concepts phase. Out of the ten pre-proposals, the iSC endorsed, and the ExCo approved, for full proposal preparation three candidate CPs, which more than adequately meet the requirements of Challenge Programs and will do the CGIAR proud.

The CP on "Unlocking Genetic Diversity in Crops for the Resource Poor" resonates directly with Plank No. 2 of the new CGIAR vision and strategy of mobilizing modern science such as genomics and informatics to bear on previously intractable difficult-to-address causes of poverty and food insecurity. The CP offers radically new approaches to crop improvement, which historically had been CGIAR's principal instrument in achieving the System's goals. Unfortunately, these new technologies so crucial to the future of food and agriculture are increasingly made inaccessible to the developing world. This CP attempts to create a platform of genomics and bioinformatics enabling technologies in the public domain with

which to unlock the rich genetic diversity in crops for the resource poor.

The "Water and Food" CP proposes to launch a very ambitious research, extension and capacity building programme aimed at increasing the productivity of water used for agriculture. Water scarcity is one of the major environment problems in the coming century. Since agriculture is the biggest user of fresh water, it is vital to the planet's future that water productivity in agriculture be significantly enhanced to meet future food production demands.

The CP on "Biofortified Crops for Improved Human Nutrition" brings the realistic promise of significant improvements in nutritional levels for tens and hundreds of millions of poor people who are nutrition-poor and health-poor. From a primary focus on crop yields with the historic successes in rice, maize and wheat, this CP shifts the CG's research paradigm towards nutrient-dense crops to combat hidden hunger by increasing the level and bioavailability of iron, zinc and vitamin A in major staples.

The iSC continues a process of assessment of some more CPs following the above mentioned ones, among which there is a CP proposal on "Partnership for the Development of Sustainable Agricultural Production Systems in Central Asia and the Caucasus", which was unanimously endorsed by all the NARS Heads in June, 2002 in Tashkent.

EXTRA GENE BOOSTS PLANTS' STRESS TOLERANCE

Currently, global agriculture is facing two major challenges namely, a rising population and the threat of climate change. These conditions reduce the area of fertile land and make hardier plants necessary. Scientists from the University of Sheffield, UK have been able to increase the tolerance to high light and high temperature of the weed *Thale Cress* (*Arabidopsis thaliana*) by adding an extra gene.

Plants have several mechanisms to combat the effects of excessive sunlight and one of them is the production of chemicals called xanthophylls. The chemical diverts excess energy away from the plant tissues and acts as a sacrificial

target. The team from Sheffield composed of Davison, Hunter and Horton, inserted extra copies of the gene for an enzyme that drives the synthesis which doubled the amount of xanthophylls in the chloroplasts. The engineered plants became more tolerant to high light and high temperature.

The method does not introduce foreign genes into the plant. However, it remains to be seen if the same method will work for important crops like maize or potatoes.

The original article was published in Nature Magazine, volume 418. a related feature article is available online for free at <http://www.nature.com/nsu/020708/020708-8.html>.

INTER-REGIONAL WORKSHOP ON COTTON

An Inter-Regional Workshop for development of partnership on cotton research in Central Asia, South Asia and WANA regions will be held in Tehran, Iran, from **12-13 October 2002**. AARINENA, APAARI, CAC-Forum and ICARDA Office in Tehran will jointly support this important event. Senior NARS leaders from Azerbaijan, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, as well as from Iran, Pakistan and India will participate and make presentations. The purpose of the workshop is to develop partnerships for strengthening cotton research in the region. Also, it is expected that the participants would formally establish a Regional Cotton Research Network and develop a work plan for the coming season, including activities in the field of productivity enhancement, IPM, soil and water management, crop rotation, etc. Dr. Raj Paroda would participate in this important meeting in his capacity of Chairman, Global Forum on Agricultural Research (GFAR), and also Executive Secretary of Asia-Pacific Association of Agricultural Research Institutions (APAARI).

FIRST WHEAT CONFERENCE

The first Wheat Conference for Central Asia will be jointly organized from **9-12, July 2003** in Almaty, Kazakhstan by the Ministry of Agriculture, Kazakhstan, National Academic Center for Agricultural Research, CIMMYT, ICARDA, GTZ, and Washington State University, USA. The purpose of the meeting is to assess the current status of wheat improvement, information exchange and strengthening of further collaboration.

NEW WEB SITE FOR CAC LAUNCHED

CIMMYT announces about new web site <http://www.semena.kz> launched recently in Russian language. The site provides the information about GTZ-CIMMYT project, germplasm exchange, new varieties and technologies. A visitor can also find some important publications and announcements.

WORLD DEVELOPMENT REPORT 2003 BY THE WORLD BANK

Three billion people will be added to the world's population over the next 50 years and 2.8 billion people today already live on less than \$2 a day almost in all developing countries. Ensuring these people have access to productive work and a better quality of life is the core development challenge of the first half of this century. Growth could itself be jeopardized over the longer term, unless a transformation of society and the management of the environment are addressed integrally with economic growth.

Now in its 25th edition, this year's World Development Report examines, over a 50 year period, the relationship between competing policy objectives of reducing poverty, maintaining growth, improving social cohesion, and protecting the environment. The World Development Report

NOMINATION FOR THE KING OF MOROCCO HASSAN II GREAT

During its 7th meeting held in The Hague in March 2000, the Board of Governors of the World Water Council approved the proposal submitted by the government of the Kingdom of Morocco to establish the "King Hassan II Great World Water Prize". The Prize is to be awarded every three years on the occasion of the World Water Forum, to a person, group of people, institute or organization, in honor of their outstanding achievements in scientific, economic, technical, environmental, social, institutional, cultural and political aspects of water resources development and management. The Prize will comprise a certificate, a trophy and a sum equivalent to US\$ 100,000 generously provided by the government of the Kingdom of Morocco. Candidates will be judged by the evaluation of written proposals. Nominations must be received before or on Thursday, **31 October, 2002**, and should be addressed to the World Water Council Headquarters. Self-nominations are not accepted. Detailed information is available on the web site of the World Water Council, at www.worldwatercouncil.org/water_prize.shtml, from where a Nomination Form can be downloaded.

REGIONAL WORKSHOP ON SEED REGULATION IN CWANA

The Seed Unit of ICARDA in cooperation with the National Seed Program of Iran is organizing a regional workshop on harmonization of seed regulations for Central and West Asia sub-regions in **November 2002**. The workshop will focus on reviewing the national seed policies; variety release and registration procedures; seed quality control and certification; international seed trade (import/export); quarantine regulations; and plant variety protection. The main purpose of the workshop is to endorse the harmonization initiative to be undertaken in the participating countries. The workshop participants would be senior seed program managers or policy makers from the neighboring countries such as Afghanistan, Azerbaijan, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan.

2003 emphasizes that many good policies have been identified but not implemented due to distributional issues and barriers to developing better institutions. The Report reviews institutional innovations that might help overcome these barriers and stresses that ensuring economic growth and improved management of the planet's ecosystem requires a reduction in poverty and inequality at all levels: local, national, and international.

As in previous editions, the World Development Report 2003 contains an appendix of selected indicators from the World Development Indicators. Anyone interested may visit the web site: <http://www.worldbank.org> to download the full report.