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CAC Program Highlights

Sustainable Agriculture in Central Asia and the Caucasus (CAC)

Led by INTERNATIONAL CENTER FOR AGRICULTURAL RESEARCH IN THE DRY AREAS (ICARDA)

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Farmers in Uzbekistan benefiting from cultivation of new high yielding, yellow rust resistant winter wheat varieties

Winter wheat cultivation in Central Asia region in general and in Uzbekistan and Tajikistan in particular is plagued by frequent outbreaks of yellow rust. Wheat farmers growing susceptible varieties often have to spend fortune on fungicides to control yellow rust. The disease can infect wheat plants at all stages till leaves are green and climatic conditions are favorable for disease development. In January 2017, early infections of wheat yellow rust was recorded in farmers' fields in some parts of Uzbekistan. This early infection on susceptible cultivars requires farmers to spray fungicides to control the disease. On the other hand, no early infection was recorded on the highly resistant and moderately resistant cultivars.

The application of fungicides does not protect the crops for rest of its life cycle. A crop infected in January may require multiple sprays of fungicides through the spring months if disease epidemics continue under cool and wet conditions. Therefore, farmers cultivating yellow rust resistant wheat varieties could expect substantial savings on fungicide cost in 2017. In Uzbekistan, high yielding new wheat varieties with high level of resistance to yellow rust are 'Gozgon', 'Buniyodkor' and 'Hisorak'. There are also several moderately resistant varieties, which need limited spray of fungicides compared to the susceptible varieties. Cultivation of resistant varieties is highly significant considering that a new race of yellow rust called AF2012, first detected in Afghanistan in 2012, was found on leaf samples from Uzbekistan in 2016. Since the area under cultivation of yellow rust resistant varieties has substantially increased in 2017, farmers will greatly benefit in terms of saving on fungicide cost.

January 2017

Scientists from the CAC region participated in the Winter Wheat Annual Meeting in Turkey

International Winter Wheat Improvement Program (IWWIP), a joint wheat-breeding program of the Government of Turkey, CIMMYT and ICARDA organized its Annual Meeting on 17-18 January 2017 in Haymana, Turkey. The objective of the meeting was to share achievements of IWWIP on winter wheat research and varietal adoptions in 2016 and to discuss the plans for 2017. The participants from the CAC region included Prof. Amir Amanov from Uzbekistan, Dr. Cavancir Talai from Azerbaijan, Dr. Ulugbek Khotamov from Tajikistan and Dr. Ram Sharma from ICARDA-CAC Tashkent Office.

Prof. Amanov made a presentation on the wheat research work at various research institutes in Uzbekistan and highlighted the recent achievements in developing winter wheat varieties resistant to yellow rust, frost, salinity heat and drought. New varieties developed within the international collaboration are more resilient to climate change impacts (varying levels of irrigation, drought and heat) compared to varieties from other sources. He also presented data on adoption of new varieties, the rate of which has increased compared to the previous years. Dr. Amanov highlighted support of ICARDA and CIMMYT in capacity development of young wheat researchers in Uzbekistan and other countries of CAC.

Dr. Ram Sharma made a presentation outlining performance of winter wheat germplasm from IWWIP in the past 10 years. He presented progress made in the region on increased availability of wheat germplasm resistant to yellow rust, heat, frost and salinity. He also highlighted how the IWWIP germplasm evaluation in Central Asia has helped in identification of 16 new high yielding, yellow rust resistant winter wheat varieties in the CAC region since 2010.

January 2017

New vegetable varieties released in CAC

As a result of joint research activity of the World Vegetable Center - WorldVeg in CAC and national partners in CAC countries new varieties of several vegetable crops have been successfully released. New varieties of eggplant 'Tukhfa' and vegetable marrow 'Gayrat' were released in Uzbekistan, and new cucumber variety 'Ashgabat' in Turkmenistan. Moreover, Kazakh scientists have developed new tomato hybrids F1 'Teplichniy' and 'Keremet' with the use of WorldVeg's germplasm.

New varieties have better yield qualities and resistance to several diseases compared to the old varieties currently being used by the local farmers. National programs already started seed multiplication for the further wide dissemination of improved varieties. Starting from 2017, these hybrids and varieties will be available to local farmers in the CAC region.

January 2017

Field visits by IWMI - Central Asia team

From 15 to 21 February 2017, the International Water Management Institute (IWMI)- Central Asia team has visited project fields in Kashkadarya region, Uzbekistan under the USAID PEER Cycle 4 project called Mitigating the Competition for Water in the Amudarya River Basin, by Improving Water Use Efficiency. The main objective of the field trip was identifying key stakeholders, find out their interest, and influence towards water saving issue. Moreover, assessment of ecosystem services, which are provided by Karshi steppe, was another goal of the trip.

February 2017

Field visits to Kashkadarya and Surkhandarya provinces were organized under the EU-GIZ Project on "Sustainable management of water resources in rural areas of Uzbekistan – Component 1" from 15 to 22 February 2017. The goal of the visits was the exploration of the proposed demonstration sites for promotion of water-energy saving technologies and collecting data on the rivers for implementation of river basin planning according to the selection criteria. During this trip the selection of pilot river basins and demonstration-sites have been finalized with local stakeholders.

February 2017

The next field visits to Andijan and Fergana provinces were conducted from 21 to 24 February 2017 to monitor two of six pilot provinces of EU-GIZ project on "Sustainable management of water resources in rural areas of Uzbekistan – Component 1". During this trip the team visited the proposed farms for the integration of modern water-energy saving technologies, collected passport characteristics of the selected rivers and conducted surveys with farmers. A crop rotation scheme to be designed based on the exploratory analysis, where GPS co-ordinates were taken for further development of the efficient irrigation system and GIS maps.

February 2017

Another field trip to Namangan province, the Fergana Valley, was organized on February 24, 2017 to meet with Noryn-Syrdaryo Basin Irrigation System Authority (BISA) and inform about main objectives and activities to be implemented under the EU-GIZ Project on "Sustainable management of water resources in rural areas of Uzbekistan – Component 1". IWMI Central Asia team visited and assessed the proposed demonstration site in the northern part of Khadikent area of Yangikurgan district. It was agreed that BISA would liaise with local authority on the finalization of the selection of a demonstration site and inform the project leading members.

February 2017

IWMI-Central Asia at the Water Program Stakeholders' Workshop in Uzbekistan

The Global Environment Facility (GEF) Agency of the Institute of Food and Agricultural Sciences (IFAS) has organized a Stakeholders' Conference of the National Water Resources Management Project in Uzbekistan with financial support of the Swiss Agency for Development and Cooperation (SDC) in Tashkent on February 14, 2017. The aim of the event was to exchange operations and activities of the project by involving all 13 regional beneficiaries in Uzbekistan - Basin Irrigation System Administrations (BISA).

The International Water Management Institute (IWMI) Central Asia team has actively participated in the event and presented the outcomes of several projects with special focus on the EU Programme on "Sustainable Management of Water Resources in rural areas of Uzbekistan, Component-1", being implemented by GIZ, IWMI, CREA and UBA. During the meeting, several areas of potential cooperation have been highlighted by implementers of Component-1 EU Water Programme, such as improvement of water legislation with special attention to legal aspects of Water Consumer's Association operations, introduction of modern innovative technologies on water management including water allocation and measuring, strengthening institutional capacities of water management organization with particular focus on river basin water management concept and farmers.

February 2017

CAPACITY BUILDING

Training in Mexico for young wheat researcher

As a part of capacity-building program in CAC region ICARDA in collaboration with CIMMYT and FAO supported the participation of one young wheat researcher from the Department of Wheat Breeding and Seed Production of the Kashkadarya Branch of Research Institute for Grain and Legume Crops, Uzbekistan.

Mr. Sherzod Dilmurodov went for 3 months training course on advanced methodologies on wheat improvement, breeding and seed production, taking place in CIMMYT HQ, Mexico (February-March, 2017).

Short-term training on GIS tools

A study-tour to Vienna, Austria was organized from 1 to 3 February 2017 within the framework of EU/GIZ Programme on "Sustainable management of water resources in rural areas in Uzbekistan" by the partnering Austrian Environment Agency (Umweltbudesamt). Eight specialists from Uzbekistan including IWMI Central Asia team have participated in three-day working meeting, aimed at acquainting national GIS users with Austrian and European experience on implementation of GIS-based water data management and best practices for further development of technical specifications of water cadaster in Uzbekistan. The hosting counterparts shared their knowledge and experience in development of data exchange application interfaces and web tools along with the principles.

Graduate research studies supported by WorldVeg

The World Vegetable Center (WorldVeg) Regional Office in CAC in collaboration with partner Research Institute of Plant Industry of Uzbekistan supports two postgraduate students in conducting their research studies (2017-2019) on vegetable crops breeding. One student, Mr. Khusniddin Mansurov, accomplishes research study on mungbean new varieties breeding and seed production, while another graduate student, Mr. Mukhiddin Aliyarov, conducts research study on selection of new accessions of tomato, development of new varieties and seed production. WorldVeg-CAC monitors and provides the expertise on issues relevant to young researchers to ensure their professional development.

PUBLICATIONS

ISI-listed journal

Oyiga, B.C., R.C. Sharma, J. Shen, M. Baum, F.O. Ogbonnaya, J. Leon, A. Ballvora. 2016. Identification and characterization of salt tolerance using a multivariable screening approach of wheat germplasm. Journal of Agronomy and Crop Science. 202:472-485. doi:10.1111/jac.12178. http://onlinelibrary.wiley.com/doi/10.1111/jac.12178/epdf

Conference presentation

Mirzabaev, A., T. Yuldashev, U. Bekbaev, F. Vyshpolsky. 2017. Economics of waste phosphogypsum re-use for amelioration of sodic soils in southern Kazakhstan: Nexus opportunities and tradeoffs, Dresden Nexus Conference.

ABOUT US

CGIAR Regional Program for Central Asia and the Caucasus was initiated in 1998, and operates as a consortium of the Centers of the Consultative Group for International Agricultural Research (CGIAR), National Agricultural Research Organizations and advanced research institutions. The Program aims at reducing poverty and hunger, improving human health and nutrition, and enhancing ecosystem resilience through high-quality international research, partnership and leadership. It fosters cooperation among the countries in the Region and promotes their collaboration with the wider international community. Based in Tashkent, Uzbekistan, the Program provides policy, technical and administrative support for the implementation of the various activities and projects. It operates under the legal agreement between the Government of Uzbekistan and the International Centre for Agricultural Research in the Dry Areas (ICARDA) on behalf of the consortium.

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