

Tajikistan Workshop Draft Summary Report Dusanbe, 08 April 2006

The workshop was attended by 37 participants from the main plant breeding institutions in the country (RI of Farming of Ziroatkor S&PE; Vakhsh Branch of Ziroatkor S&PE; RI of Fruit and Vegetable Growing and Viticulture of S&PE Bogparvar; Soghd Branch of of S&PE Bogparvar; RI of Plant Physiology and Genetics: Tajik Agrarian University including RI of Biotechnology; Pamir Biological Institute).

To provide background information to the participants there were three presentations:

- Assess and Strengthen National Plant Breeding and Biotechnology Capacity in Central Asia – Elcio P. Guimaraes
- National Plant Breeding Survey in Tajikistan – David Bedoshvili
- Agricultural Research Framework in Central Asia – Alex Morgounov

The most relevant comments that can be considered in the design of the strategy to strengthen Tajikistan's plant breeding and related biotechnology capacity are summarized as:

Capacity building – There was a general agreement that the first component to be considered in any strategy to strengthen the country's capacity is training. Even though the participants agreed that the current number of breeders and biotechnologists is enough attention should be paid to the importance of bringing into the system young professionals and to the decreasing trend in the numbers of plant breeders. The Tajik Agrarian University is capable of providing MSc and PhD courses in plant breeding but lacks virology and bacteriology, two high priority areas to support breeding. However, the lack of Russian and English languages knowledge is a bottleneck for the country to move ahead in taking advantage of the discoveries at international level. In general, training has to focus on scientists who already have some expertise by providing them specialized training, which is seen as long term training. The young scientists have to receive short and broad training to prepare them to deal with general aspects of breeding.

Genetic resources (GR) – The country does not have a central gene bank. To coordinate activities in this area the RI of Farming of Ziroatkor S&PE decided to centralize its information in a single gene bank and to promote exchange of GR among institutions in the country. As part of the process training on GR management was provided by the Institution. The Institution dealing with cotton improvement was never part of this initiative. Even though there was this initiative the participants felt that there is urgent need to collect new GR for some specific crops, mainly the ones originated in the country; to introduce new sources of resistance to biotic and abiotic stresses for the main crops; to produce a catalog of the existing materials to facilitate exchange; and to strengthen the relationship between gene bank managers and breeders.

Biotechnology - The most important contribution of biotechnology is the detection and production of virus free material. Tissue culture has been playing a key role in virus free seed multiplication. It has been also contributing to selecting for stress at the cell level (heat and salinity). There are good facilities for tissue culture at the

laboratory of the Tajik Agrarian University, which can be strengthened to the level of producing transgenic materials resistant to diseases, but it has low priority at this stage. The biotechnologies are available for potato only hence there is need for training to cover crops such as wheat and cotton. Application of molecular markers can be used for varietal description but does not have high priority at the moment. Equipment are needed but the limiting factor is chemical reagents for the daily work, it is also important to have additional financial resources to attract young people. The linkage between plant breeders and biotechnologists is weak but both felt that more investments are necessary to strengthen national capacity to produce improved varieties through using biotechnology tools.

National and international coordination of activities – The country has several organizations working on plant breeding and biotechnology belonging to different Ministries. A mechanism for national coordination is desirable to better allocate resources. There are many international organizations supporting activities related to conservation and use of genetic resources in the country. A better coordination among them is also desirable to focus on national priorities and to avoid duplication. These comments are also relevant to strengthen the linkages between varietal development, seed production and varietal dissemination.

Equipment and machinery needs – There is need to renew the equipment used in the biotechnology laboratories since some of them are from the Soviet time. Wheat is one of the most important crops for the country but there are no laboratory facilities to perform all quality tests required to develop improved varieties that cope with the market demand. There is also need to support acquisition of machines for experimental purposes.

Royalties - To sustain the current breeding programmes there is need for more investments by the government including increase staff salary. Royalty is an additional alternative to achieve sustainability. The country has a law that stipulates royalties levels for all crops but its implementation is weak or inexistence. Assistance to the country in this area through workshops reporting experiences elsewhere is considered very relevant. Another possibility to sustain investments in plant breeding and related biotechnology is creating research funds and fellowship programmes. Subsidy to research institutions is also a mechanism that would contribute to sustain the breeding programmes.

Regional gaps and opportunities – Information and experience sharing in the region is very limited, including genetic resources. Therefore, there is a great need and opportunity to strengthen the region's capacity to use genetic resources by developing mechanisms to facilitate these processes. The participants considered that all traditional ways of sharing are possible such as workshops, training, and technical visits, etc, but one has to keep in mind the issue of language barriers. There was a proposal to work towards creating a regional plant breeders association to help dealing with this issue.

Role of International Centres – The participants expect that the CGIAR Centres help the country in all issues discussed during the workshop; especially with genetic resources exchange. Tajikistan expects to continue receiving improved lines to test

and release them as new varieties. Exchange of parental material for breeding activities is desirable but should have lower priority.