

Regional Workshop¹

Assessing and designing strategies to strengthen national plant breeding and related bio-technology capacity in Central Asia

Almaty, Kazakhstan 11-12 April 2006

FINAL REPORT

Conclusion and recommendations

1) **Capacity building** on plant breeding and associated biotechnology has high priority in the region but the approaches to strengthen the national capacities may be different:

- All countries have an urgent need to bring new scientists to their research systems
- Training on plant breeding at Bachelor and MSc degree level can be done at the country or regional level
- Training on plant breeding at PhD degree level can be done locally, in the region or internationally depending on the subject
- Short term courses on special breeding techniques can be done at international level, including hands-on training
- Training on applications of biotechnology to enhance plant breeding can be done at regional or mostly international level
- Short term training on biotechnology can be done in the regional or at international level but it is important to associate it with the countries needs and on going projects
- Plant breeding and associated biotechnology training for specific crops can be done at regional level taking advantage of the facilities and knowledge available in the countries
- Scientists trained abroad can't often apply their knowledge/skills as after returning they do not have access to modern equipment. There is a need for well equipped laboratories otherwise training may not be effective
- Look for options to perform some web based training courses, including information management
- Training on how to prepare projects proposals, including some language training is highly needed.

2) The region is rich in **plant genetic resources** (PGR) because it is the center of origin of innumerable species. To fully take advantage of them the countries have specific needs:

¹ The participants of the workshop represented Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. There were also representatives of the following organizations: Canadian Embassy, UNDP, SIDA project, Nordic Gene Bank, AVRDC, CIMMYT, ICARDA and FAO.

- Inventory of the current gene bank accessions and passport data, including characterization of the PGR, is necessary for more efficient utilization and harmonization of PGR procedures
- Field collections still need to be carried out to avoid erosion of PGR
- Exchange of PGR for CGIAR mandate crops is functioning through the facilitating role of the CGIAR centres, however, exchange of non-CGIAR mandate crops needs to be facilitated and strengthened
- Mechanisms to promote regional approaches to exchange knowledge and information and sharing of experiences are needed
- Access to PGR is limited in the regional because of the legislations hence it is suggested that international organizations work with the local governments to develop mechanisms to facilitate access.

3) Capacity to utilize and benefit from **biotechnology tools** to enhance breeding activities is highly variable among Central Asian Republics and varies from using tissue culture only to doubled haploids, marker-assisted selection and genetic engineering. To strengthen the region's capacity the following is suggested:

- Linkage between plant breeders and biotechnologists needs to be strengthened to focus on objectives and limitations identified by them and requiring molecular tools support
- A regional center for training in this area is necessary; Kazakhstan may be able to play this role for wheat, Uzbekistan for cotton improvement and Tajikistan for potato improvement.
- Capacity to use biotechnology tools for crops other than wheat, potato and cotton needs to be developed in the region
- Better infrastructure and updated equipment are essential for application of biotechnology tools and have high priority to allow their efficient use.

4) The countries recognize that political support to use of PGR has increased in the region but there are still **policy related issues** that deserve attention:

- The participants recommend that the Governments enter the International Treaty on Plant Genetic Resources for Food and Agriculture as soon as possible
- Efforts should be made by the governments to harmonize breeding and seeds legislations to facilitate access and exchange of PGR
- Enhance the role of the government in supporting use of PGR through adequate policies for resources allocations
- The governments should promote the development of mechanisms to stimulate farmers, NGO and private sector participation on breeding activities
- Awareness to the importance of PGR, conservation and utilization needs to be raised at political level as well as at civil society level
- Royalty systems need to be strengthened as they are in place in some countries; however, they needs proper normalization for its implementation, including regional harmonization
- The recommendations of the workshop should be summarized and a letter should be prepared and sent to the governments making suggestions for action on how to strengthen sustainable use of PGR

5) **Regional approaches** are feasible but to establish activities they requires political commitment, which is beyond the control and influence of the participants of this workshop. The essential role of regional cooperation to strengthen science, including plant breeding, is recognized by the participants and the following suggestions to strengthen regional cooperation were made:

- The mechanisms to exchange information, experiences and PGR in the region should be promoted and facilitated through strengthening political support
- International organizations should help to strengthening the region's capacity to use PGR through not only specific short term support but also and mainly through long term commitments (plant breeding is a long term activity)
- Creation of regional centers for capacity building focusing on plant breeding and application of biotechnology tools is feasible and desirable
- The development of service centers for applied biotechnology and quality analysis should be strongly considered
- Networks are operational in the region based on the support and coordination of the international community and the governments, but not for all priority crops and not with the necessary local support

6) Lack of adequate **infrastructure** limits the opportunities to strengthen national and regional capacity to use PGR hence efforts should be made by donors and governments to:

- Improve machines for field operation, laboratories, greenhouse and germplasm storage facilities.