

Opinion of Republic of Uzbekistan on the current state of scientific knowledge on how to enhance the adaptation of agriculture to climate change impact while promoting rural development, sustainable development and productivity of agricultural systems and food security according to document FCCC/SBSTA/2013.L20, paragraph 2

Republic of Uzbekistan occupies the territory of 448,9 km² the major part of which is covered with the desert plains. Historically, the water resources and agriculture are the basic motivation for the social-and-economical and geopolitical transformations which have taken place on the territory of Central Asia during the last century. The region is characterized with rather arid climate, that is why for the provision of the irrigation in agriculture only small water resources are available – the basins of Syrdarya and Amudarya rivers. These river basins are transboundary resources 90% of which are formed on the territory of boundary states – Kyrgyzstan and Tajikistan. Uzbekistan is the main user of water resources in the region as the agriculture in the republic is almost fully based on irrigation using about 90% of water intake from the surface. Half of the republic population lives in rural areas. Agriculture comprises 38% of Gross Domestic Product and 44% of able-bodied population works in agriculture.

According to estimations of vulnerability of sectors of economy and nature resources it follows that in future water resources and agriculture depend on climate change most of all. Thus, irrigated farming is the most vulnerable to climate warming. The farmers whose farms are in the end of irrigation network will suffer the first. Besides, the climate change will result most probably, in the decrease of the pastures yield which are the main source of the forage for the livestock.

Productive yield of farms depends mainly, on technical provision, fertilizers, seeds, veterinary service and dissemination of the best practices and knowledge.

Possible change of agroclimatic resources due to the increase of summer and autumn temperature during the nearest decades will not influence much on the crop yield in the regions of irrigated and non-irrigated farming. Only up to 2050-2080 this effect will be manifested.

Thus, all adaptation actions taken by the government are aimed, mainly at strengthening the sustainability of the irrigated farming regarding the high vulnerability of this sector of economy to climate change.

Nevertheless, in practice, adaptation measures are still limited by the one-time measures or actions implemented mainly in experimental or pilot projects.

Undoubtedly, for elaboration and implementation of the relevant adaptation measures it is needed to define sensitivity and to assess the vulnerability of natural or

anthropogenic systems and to determine the ability of these systems for adaptation to climate change.

Regarding the previous information, Uzbekistan identifies several priority areas where the international community could provide support to the enhancement of knowledge in adaptation area of agricultural sector of Uzbekistan and creation of climate-resistance and climate-flexible agriculture via SBSTA. These are as follows:

1. Improvement of hydrometeorological monitoring

Creation of scenarios for the development of climate change and its impact on agricultural sector sometimes is hampered by the absence or incompleteness of data. For the solution of this problem it is needed to extend the surface network of Hydrometeorological observations including the foreign mountain territory, development and application of remote monitoring methods, reconstruction of observations of the upper atmosphere layers.

2. Studies and development and definition of the positive on adaptation of agriculture to climate change.

It is necessary to motivate the studies directed to the elaboration of methods of assessment of adaptation and risks at the national, regional and community level; identification and mapping of the maximum risk zones; elaboration of system for the early drought warning; capacity building in the field of the direct and indirect strengthening and building of adaptive capacity in agricultural sector of Uzbekistan. Further capacity building in the area a of studies and development of adaptive mechanisms for sustainable development of agricultural production including the financial mechanisms and programs managed in the most beneficial way will facilitate the improvement of life conditions of the poorest population.

3. Improvement of the land-and-water resources management at the national and transboundary level:

As the water resources of Uzbekistan are mainly transboundary, it is concerned with the problem of the capacity building in the management of transboundary water resources, search and determination of the best world practices and methods for solution of the problems of water resources deficit and their rational use with account of climate change. It is also important to develop the programs and action plans on the irrigated lands amelioration, complex assessment of the land use change, salinization and of the types of land degradation, optimization of the crops location over the territory with account of climate change (use of the laser land planning), elaboration of long-term programs/plans of development of the agriculture and water economy, improvement of monitoring of the state of seeds planting and pastures, improvement of information collection, processing and exchange between the countries of the region.

4. Improvement of knowledge at all levels (from the local communities to the decision makers) with regard of specific features of the local experience of adaptation to climate change.

The experience of farmers plays an important role in making the decisions on agriculture adaptation and climate risks management (including climate disasters). The territory of the country is diverse from the deserts to the upper mountains, that is why the combating strategies and local experience are also diverse. The approaches based on scientific

knowledge need detalization and this is not always possible because of the existing limitations. They are as follows:

Methodical. Lack of specialists using the up-to-date analysis methods and instruments and also acquire knowledge in specific, non-traditional areas – assessment of climate change impact, elaboration and introduction of mitigation and adaptation measures. The main difficulties and limitations are related to the use of tested and recommended methods and instruments: creation of social-and-economic scenarios; assessment of ecological and social-and-economic risks; analysis of measures, alternative ways of development and policy elaboration.

Financial. Often the research projects which got financing are not able to purchase the needed equipment, to organize the field studies, to participate in republic and international training workshops or conferences. The overhead costs – keeping and maintenance of buildings and administration of organizations where the expert who got grants for conduction of research works work are high.

Requirements for the development of studies. The involvement of different research institutions, agencies, representatives of economy sector, agriculture, social sector to the problem of climate change, especially in the vulnerability assessment, development and introduction of adaptation and mitigation measures to agriculture management. The most efficient way is an active participation in international research programs and projects which provide for coordination of activities at national and international levels.

That is why for the successful realization of knowledge and experience the coordination and joint introduction of the research knowledge and local experience to the processes of adaptation of agriculture to climate change is necessary.