

**THE MINISTRY OF AGRICULTURE AND LAND IMPROVEMENT
OF THE KYRGYZ REPUBLIC
THE DEPARTMENT OF WATER RESOURCES AND LAND IMPROVEMENT**

Investment Project

**Improvement of irrigated lands ameliorative conditions for the creation of
conditions on obtaining high yields of agricultural crops
in Sokuluk rayon Chui oblast**

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Introduction

During the Soviet period is created and now also exists in the Republic a sector of land improvement and water industry with developed collector-drainage and irrigation net.

In spite of the steps taken for the rehabilitation of ameliorative facilities increase a process of depreciation of land improvement system, land improvement of infrastructure for the last period. The main reasons of this process are:

- a lack of funding;
- a lack of harmonization of the acting legal framework.

And, as a consequence of these reasons can be noted the following negative effects:

- An ongoing process of the ameliorative systems degradation;
- A deterioration of ameliorative condition of irrigated lands;
- Inefficient management system of ameliorative assets - lack of coordination and consistency of acts of the ministries, departments and local self-government authorities involved in the process.

Condition of the lands deteriorates from year to year due to following main reasons:

1. The human economic activities (use of unusable irrigation water, device dam on drainage net, the same depth soil treatment, non-observance of irrigation technology, crop rotation and irrigation regimes).
2. A sharp decline of investments in water sector and, as a consequence of the decline in current and general overhaul of irrigation and drainage systems.
3. In recent years, construction and reconstruction of drainage, capital planning and land leaching, chemical reclamation are not carried out.
4. A newly created peasant and individual farms do not include in their annual budget – expenditure for improvement of irrigated lands and therefore do not carry out activities for their rehabilitation.

All these factors cause significant damage to the ecological balance, accelerate the process of waterlogging, salinization and desertification of lands.

At present, there are 54246 ha of irrigated agricultural area in Sokuluk rayon, Chui oblast according to data of State Reclamation Cadastre. Out of them:

- 35824 ha is in a good condition,
- 6298 ha is in a satisfactory condition,
- 12124 ha is in a dissatisfactory condition, including:
 - 2075 ha is due to close bedding of GWL (ground water level),
 - 9088 ha is due to salinization of lands,
 - 961 ha is in the complex of GWL and salinization.

The main reason is an increase of GWL in irrigated areas, which in its turn happens due to the progressive failure of the CDS related to the lack of sufficient funding for its proper operation.

In recent years, there is an intensive salinization and waterlogging of irrigated lands, and as a consequence their fall from agricultural production. 13.3 thou. ha is subject to overgrowing with reeds, 20 settlements were flooded.

There is 699,4 km of collector drainage system in Sokuluk rayon, including:

- 178,9 km of off-farm CDS

- 520,5 km of on-farm CDS

50,6 km is in a dissatisfactory condition out of 178,9 km of off-farm CDS and 306,9 km is in a dissatisfactory condition out of 520,5 km of on-farm CDS.

All off-farm collector-drainage systems (CDS) are on the balance of the Hydro-geological Expedition (RHE), and on-farm collector-drainage systems (CDS) are on the balance of aiyl-okmots, WUAs, peasant farms which are obliged to monitor over the technical condition of this network, but no one does not deal with these issues in practice

There are 271 observation wells of regime network in Sokuluk rayon out of which 121 wells are not used to control the ground water level.

1. The content of the problem and substantiation of the necessity for its solution

Modern unsatisfactory ameliorative condition of irrigated lands in Sokuluk rayon first of all is caused with the deficiency of the funds allocated in the ameliorative sphere. The main problems of the implementation of land reclamation activities are:

- A moral and physical degradation of ameliorative infrastructure;
- Reduction of irrigated lands productivity;
- Reduction of efficiency on the use of ameliorative resources;
- Low efficiency of the system for monitoring of ameliorative status;
- Deterioration of ameliorative conditions of irrigated lands;
- An increasing the negative impact of anthropogenic and technogenic character;
- An imperfection of communications, equipment and technologies for informational support of the land reclamation activities;

2. The main objectives, tasks of the Project

The project is designed to achieve the following main objectives:

- increase of unproductive lands productivity and prevention of waterlogging and salinization of irrigated lands;

Activities aimed at the solution of the major tasks:

- increase of productivity of agricultural crops at irrigated lands;
- improvement of irrigated lands ameliorative conditions.

Main ways of the tasks solution:

a) in technical field:

- rehabilitation of technical conditions of the existing facilities of ameliorative infrastructure up to a design level, restoration of discharge capacity of collector and drainage networks and structures.
- prevention of re-salination of irrigated lands.
- increase of efficiency of irrigation system use due to reducing water losses caused by filtration and unproductive discharges.

Introduction of advanced technologies of irrigation, water conveying and distribution and applying of the advanced agricultural methods, etc. are required for it;

b) in legal field:

- modernization, harmonization and further development of a legal framework regulating ameliorative relationship and principles of ameliorative activities;
- increase of legal responsibility of economic entities and general public for securing a rational use and preservation of ameliorative structures;
- improvement of norms and rules of design preparation, construction and efficient operation of ameliorative systems and structures;
- optimization of procedures of public regulation and control of use and preservation of ameliorative assets adjusted for the existing social and economic and political conditions.

в) in institutional field:

- optimization of a structure of ameliorative system management;
- delineation of powers and responsibilities, and strengthening of coordination of ameliorative relationships between parties;
- strengthening of measures of public control over rational use of ameliorative structures.

г) in water resources conservation:

- modernization of system of monitoring drainage and waste water quality and quantity;
- regulated use of mineral fertilizers, herbicides, pesticides, defoliants and others, and limitation of their ingress to ameliorative systems;
- regulated disposal of cattle-breeding enterprise wastes;
- rehabilitation and development of treatment systems for waste water and collector and drainage waters with further return of water for reuse;
- limitation of any types of water use leading to degradation of ameliorative facilities, pollution, salination or depletion of lands.

3. Information and technical support to the project implementation.

1. Regulatory support is implemented by the Department of Water Resources and Land Improvement.
2. Information and consulting support is implemented through Ameliorative Hydrogeological Expedition of the Department of Water Resources and Land Improvement.

4. Functions and powers of Authorities in the project implementation:

- Department of Water Resources and Land Improvement (DWR);
- Ameliorative Hydrogeological Expedition (MHE);

- Ameliorative Hydrogeological Team (AHT) of Sokuluk Raion will be involved in the project implementation.

5. Financial and resources provision of the project

For purpose of implementation and provision of the project with financial resources, the entire cost will be requested from investments and makes up KGS 77.05 mln.

6 . Mechanism of the project implementation

Implementation mechanism is sequential and phased introduction of all points of the project starting from business entities (JSCs, WUAs, collective farms, private farms) and involved public agencies.

7. Evaluation of efficiency, social and economic and environmental results of the project implementation.

The expected social and economic results of this project:

- increase of cereal crops by 1.5-2 times is possible in case of strict adherence to agronomic technologies, crop rotation and irrigation regimes. In addition, if regular investments to land reclamation continues after ameliorative measures, one can expect stable yields of cereal crops to 30-40 centners/ha;
- increase of irrigated land productivity and stable provision of local population with food;
- increase of crop yield by 30% on areas to be rehabilitated;
- ameliorated area of irrigated land will make 7,150 ha;
- reduction of poverty of rural commodity producers;
- protection of 20 settlements from underground waterlogging and negative impact from it;
- improvement of environmental, sanitation and epidemiological conditions on areas to be rehabilitation and adjacent massifs;
- strengthening and development of ameliorative infrastructure;

8. Conclusions

1. To date measures taken for improvement of ameliorative conditions of irrigated land are extremely insufficient. Conditions and efficiency of use of irrigated lands and ameliorative facilities in the country deteriorate as a result of regular underfinancing.
2. Especial concerns are caused by conditions of on-farm system of ameliorative network, the biggest part of that is derelict after collapse of big farms (kolkhozes and sovkhoses) and establishment of smaller farms. As a result, conditions of ameliorative assets and ameliorative conditions of irrigated lands deteriorate.
3. If above mentioned problems are solved, such problems as poverty, forced internal and external migration will be solved and in the long run health of the nation and food security of the region will increase too.

ESTIMATES
of measures aimed at improvement of ameliorative conditions of irrigated lands,
Sokuluk Raion, Chui Oblast.

Measures	Unit	Quantity	Volume 000 m3	Cost, 000 KGS	Area of improvement, ha
Total for the Raion, including:				77053.0	7150
Mechanical cleaning of open collector and drainage network	km	197.8	692.3	47472.0	3956
Repair to and cleaning of closed collector and drainage network	km	159.7		27947.5	3194
Rehabilitation of observation wells	nos.	121		77053.0	