

KYRGYZ REPUBLIC



**MINISTRY OF AGRICULTURE, FOOD PROCESSING AND LAND IMPROVEMENT
OF THE KYRGYZ REPUBLIC**

DEPARTMENT OF WATER RESOURCES AND LAND IMPROVEMENT

AGRICULTURAL PRODUCTIVITY AND NUTRITION IMPROVEMENT PROJECT

ENVIRONMENTAL MANAGEMENT PLAN
For subproject WUA «Kyrk-Bulak», Leylek rayon, Batken oblast

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Acronyms

| | |
|----------|---|
| WUA | Waterusers association |
| NSR | Night storage reservoir |
| SAEPF | State Agency for Environmental Protection and Forestry |
| GPAFS | Global Program for Agricultural and Food Security |
| POL | Petroleum, oil, lubricants |
| SETI | State Environmental and Technical Inspectorate |
| DWRLI | Department of Water Resources and Land Improvement |
| OIP-2 AF | Additional Financing for OIP-2 |
| CDN | Collector&drainage network |
| ER | Efficiency ratio |
| KR | the Kyrgyz Republic |
| IDA | International Development Association |
| AHS | Ameliorative Hydrogeological Survey |
| LSGA | Local self-governing authorities |
| EA | Environmental Assessment |
| E | Environment |
| PIU | Project Implementation Unit |
| OIP-2 | Second On-farm Irrigation Project |
| ISF | Irrigation Service Fee |
| SGM | Sand-gravel mix |
| TS | Topsoil |
| AISP | Agricultural investments and services Project |
| APNIP | Agricultural Productivity and Nutrition Improvement Project |
| RSU | Rayon Support Unit |
| RVK | Rayon Irrigation Department (Rayvodkhoz) |
| SanPin | Sanitary Regulations and Rules |
| WBSMQRS | World Bank safety measures quality rating system |
| AAS | Agricultural Advisory Services |
| GWT | Ground Water table |
| O&M | Operation&Management |
| HP | Hydropost |
| HTS | Hydro-technical structures |
| SVL | Soil-vegetation layer |
| FRP | Forced resettlement plan |
| masl | meters above sea level |
| AO | Aiyl Okrug (village authority) |

1. Introduction

The Agricultural Productivity and Nutrition Improvement Project (APNIP) for the Kyrgyz Republic is being implemented with the support of the International Development Association (IDA) and financed by the Trust Fund, provided by the Global Agricultural and Food Security Program. The general Environmental Management Plan (EMP) was prepared under APNIP. The EMP is addressed to ensure compliance of the Project with the environmental management principles and practice and, therefore, with the requirements of environmental protection policy and laws of the Government of the Kyrgyz Republic, as well as the IDA environmental safeguards. The objectives of environmental assessment (EA) is to identify the significant impact(s) of the proposed Project on the environment (positive and negative), identify appropriate preventive and mitigation interventions aimed at preventing, minimizing or eliminating any expected irreversible impact(s). The EMP serves as a management tool that ensures proper implementation of interventions to prevent and mitigate the environmental impact(s), as well as monitoring and institutional acknowledgement of recommended activities during the implementation of the proposed Project. The EMP also establishes the necessary institutional obligations, proposes the implementation timing of such activities and cost estimates for their implementation within the budget proposed by the Project. APNIP in the World Bank safety measures quality rating system (WBSMQRS) is classified as "B". No irreversible or significant impact(s) on the surrounding environment is expected. Based on the general EMP, the Environmental Management Plan (EMP) for the WUA «Kyrk-Bulak», Leykel rayon, Batken oblast rehabilitation has been developed, considering the specifics of this particular subproject.

WUA "Kyrk-Bulak" irrigation network layout

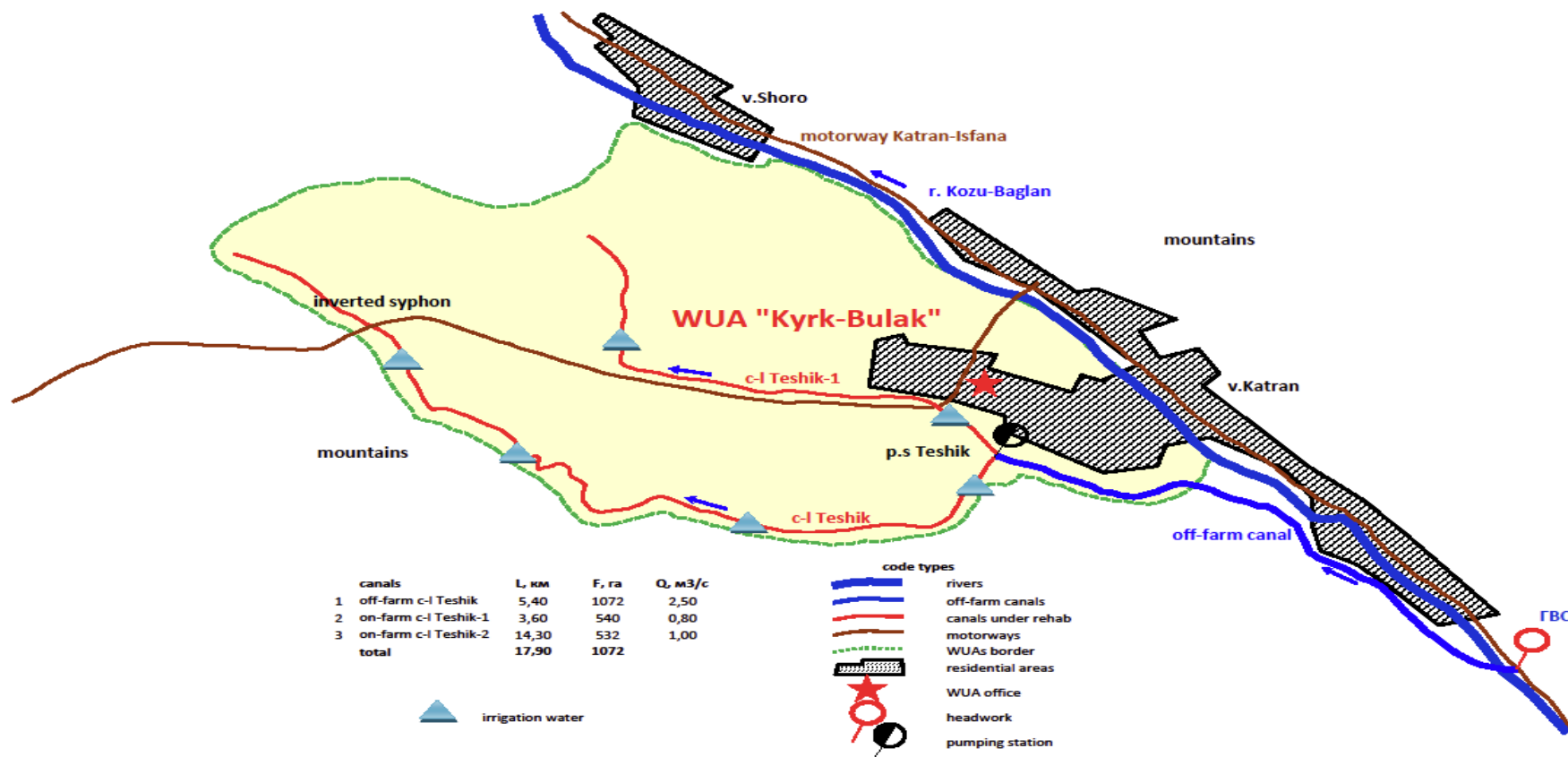


Image 1. Irrigation layout map for WUA «Kyrk-Bulak», Leylek rayon, Batken oblast.

2. Description of the subproject under rehab

The WUA "Kyrk-Bulak" located 50.0 km off the rayon's center v.Isfana and within the territory of Katran AA of Leilek rayon, Batken oblast. The WUA's service area - 1072 ha. The landscape height varies between 1100 - 1200 masl. The AA's population - 9500 residents. WUA "Kyrk-Bulak" was established in 2002 and registered on February 19, 2002, and re-registered on September 8, 2003 (certificate No. 601-3309-ULE) in accordance with the Law on Water User Associations (Unions). WUA "Kyrk-Bulak" includes 495 farming entities and 159 individual farmers. Water supply is carried out according to the applications, the ISF - 17.6 tyin/m³. the total length of on-farm canals – 17.90 km, of which 12.30 in L-shape blocks and 0.40 km in steel pipeline, remaining 0.30 km earthbed. The WUA's irrigation scheme does not include NSR or dams and absent of CDN. Annually, on average, the WUA abstracts 5386.0 th.m³ of irrigation water from the off-farm canal "Teshik". The average WUA's efficiency is 0.65 and only 3500.9 th.m³ reaches the farmers' fields. And according to the specialists' projections, after rehab of the canals, the efficiency should be 0.80, and up to 4,308.8 th.m³ of irrigation water will reach farmers' land plots. This will make it possible to increase the agricrop yields and WUA can increase the ISF, allowing allocation of accumulated funds for the WUA's irrigation network operation and maintenance. The main agricrops cultivated are maize (grain), perennial grasses and orchards.

2.1 Salient features of the rehab subproject

2.1.1. Off-farm canals

WUA "Kyrk-Bulak" abstracts irrigation water from off-farm canal "Teshik" (r.s Kozu-Baglan) by gravity-flow, as well as via pumping station "Teshik". The off-farm irrigation network is in decent condition, no sufficient problems observed, however, there is the need to extend the canals' walls and concrete lining of canals' bed also required from HM8+10 to HM54+00. The off-farm canal "Teshik" is on Leykel RVK's balance, abstracting water from r.s "Kozu-Baglan" via headwork, built in 1974, the total length of canal is 5.40 km on L-shape blocks. The command areas – 1072 ha, maximum water throughput – 2.5 m³/s.

The pumping station (PS) "Teshik" is on the balance of Leylek RVK. PS built in 1971 and there are 3 engines functioning, providing water pressure 100 m, the length of pipeline 1000 m. the command area 532 ha, maximum water throughput 1.0 m³/s.

The canal "Teshik" abstracts water from the r. Kozu-Baglan via headwork, built in 1974 with the length 5.40 km in L-shape blocks, the command area 1072 ha, maximum water throughput 2.5 m³/s and delivering water to WUA "Kyrk-Bulak". The canal in decent condition, no sufficient problems observed, however, there is the need to extend the canal's walls and concrete lining of canal's bed also required from HM8+10 to HM54+00 at the total length 1980 m.

2.2. On-farm canals

The on-farm canals are manly in L-shape blocks, there is a problem of technical losses of water from worn-out prefabs and L-shape blocks. Water distribution is complicated due to malfunction of water outlets and mudflows, vehicles transportation also difficult due to emergency condition of bridges and pipe-crossings.

2.2.1. ON-farm canal “Teshik-1”

The on-farm canal “Teshik-1” abstracts water from off-farm canal “Teshik” and built in 1974. The length of canal - 3.60 km, of which 3.30 km in prefab-blocks, 0.30 km - earthbed, the length of 3.30 km require rehab. The command area is 540 ha, estimated water flow rate - 0.8 m³/s. Because of long-term operation, prefab concrete blocks are worn out, resulting in technical water losses. Water distribution complicated due to faulty water outlets. A mudflow structure in the central part of the canal does not function properly. Vehicles transportation is also difficult due to the emergency condition of bridge-crossings.

2.2.2. On-farm canal “Teshik-2”

Canal “Teshik-2” abstracts water from off-farm canal “Teshik” via pumping station “Teshik” and built in 1982. The length of canal - 14.30 km, of which 12.30 km in L-shaped blocks, 1.60 km in prefab concrete blocks, 0.40 km - steel pipeline, 3.079 km require rehabilitation. The command area - 532 ha, the estimated water flow rate - 1.0 m³/s. Due to multiple years of operation, in certain part of canal the L-shaped blocks subsided, walls partially disintegrated, same concerns canal's bed. The canal's throughput is reduced because of sedimentation and mudflows remains. The tail reach prefab blocks of the canal are also in plight condition. Water distribution complicated due to faulty water outlets. Mudflows destroyed inverted syphon that cross the mudflow sai, is destroyed. Vehicles transportation is also difficult due to the emergency condition of bridge-crossings at the head of canal.

3. Description of activities executed under the Project

3.1. Off-farm canal “Teshik”

The Project includes the following types of activities:

- To increase water throughput, the Project provides:
- Partial canals' wall and bed extension;
- Dismantling of subsided L-shape blocks with follow-up concrete lining at the length of 1980m.

3.2. On-farm canal “Teshik-1”

The Projects includes following activities:

- To prevent water losses, the Project includes dismantling of prefab blocks with follow-up concrete lining at the length of 3300 m.
- To improve water distribution, it is planned to build a distribution well, 5 water outlets and 10 water outlets with pipe-crossings.
- construction overchute for mudflows passage.
- 7 transportation bridges.

3.2. On-farm canal “Teshik-1”

The Project plans following activities:

- To increase water throughput, a partial canals' walls and lining of canals' bed, as well as dismantling of L-shaped blocks and prefab blocks with follow-up concrete lining at the length of 3199 m;
- To improve water distribution, construction of 21 water outlets and distribution well;
- To transport irrigation water over sai, to construct inverted syphon;
- To protect the canal from mudslides, to construct 3 overchutes.
- For transportation purposes, construction bridge-crossing.

Rehab of reservoirs, dams and dykes is not planned. Thus, the policy on irrigation dams and reservoirs (Dam safety - OP 4.37) is not applicable. The application of WB policy 4.12 (Forced resettlement) is not required, since all works will be executed within the existing irrigation system, without construction additional facilities that capture the lands of individual landowners and land-users that may require additional coordination and relocation. Construction and rehab works deadline: October 2018-2020.

4. Description of environmental parameters at the site

4.1. Climate

The climatic conditions of the region are given according to the meteorological station (m/s) "Sulukta". The climatic conditions of the object are determined by the general atmospheric circulation system over Central Asia, where the western and northwestern masses transportation prevails. The climate is sharply continental. In rainy years, agrocrops, mostly cereals and perennial grasses, do not need additional watering. This rayon is characterized by a moderately hot summer and mild cold winter:

| | |
|---|-------------------------|
| • Average annual air T° | +10,0°C |
| • Average annual air T° during vegetation period | +20,5°C |
| • Absolute air T° maximum | +35,2°C |
| • Absolute air T° minimum | -28,0°C |
| • Average air T° of the hottest month | +20,0°C |
| • Average air T° of the coldest month | -9,0°C |
| • Average maximum air T° | +29,0°C |
| • Average minimum air T° | +6,0°C |
| • Duration of frost-free period | 175 days |
| • Average annual multiyear precipitation ratio | 400 mm |
| • Precipitation ratio during vegetation period | 290 mm |
| • maximum one-day precipitation | 70 mm |
| • average height of snow cover | 50 cm |
| • weight of snow cover per 1m ² of the surface | 50,0 kgf/m ² |
| • depth of soil freezing | 60 cm |
| • highest wind speed | 30,5 м/сек |
| • average wind speed | 4,06 м/сек |
| • prevailing wind direction | western |

4.2. Landscape

The WUA "Kyrk-Bulak" landscape specifics attributed to the northern slope of the Turkestan ridge with adyrs and high foothills. The nature of WUA "Kyrk-Bulak" landscape is a valley zone with a calm relief with a general slope from the south to north, as well as a slope zone cut in places by small periodically acting mudflow logs. Absolute marks are in the range of 1100-1200 masl. The object located on the foothills. The irrigated lands represented by an inclined, sloping plain of lowlands proluvial-deluvial plumes. The general slope ratio directed from the south to north. The foothills' surface slopes indicative with following land plots:

- sloping poorly dissected landscape ($i = 0,01 \dots 0,02$)
- steeply dissected ($i = 0,02 \dots 0,05$)
- very steep sloping weakly dissected ($i > 0,05$).

To prevent erosion caused by irrigation of agricultural lands, it is necessary to use agro-ameliorative interventions aimed at preventing water erosion of soils. In the EMP, these activities are proposed for the period of operation of the facility. Construction works will not affect the erosion processes on the lands of the projected facility. The soil cover of the landscape is represented mainly by medium-thick gray-brown soils and partly light gray soils. The difference is mainly due to the stoniness, the thickness of the fine-earth layer.

4.3. Geo-engineering conditions

The lithological structure of the projected area is monotonous, which is gravel, pebbles, small-sized crushed stone with sandy aggregate. Soils are dry, dense, stiff, with separate boulders of small and medium sizes are noted up to 10% of the total mass of deposits. Soil excavation difficulty belongs to the III group. The average density of dry soil is 1.95 t/m³. The subproject owns local building materials: cobblestone, gravel and sand for production (except for concrete works). For concrete work, inert materials will be delivered from a quarry located in the floodplain of r.Isfana-Sai 15.0 km off the rehabilitation subproject. It is possible to use local inert materials after washing and crushing them. The license is not necessary to obtain for the use of sand and gravel mixture (SGM), it is just enough to coordinate the extraction of SGM with local authorities. The seismicity of the subproject area - IX points¹.

4.4. Hydrology

The main source of irrigation for Katran AA, Leylek rayon lands is the r. Kozu-Baglan. Irrigation water delivered to the Katran AA lands via off-farm canal "Teshik". The r. Kozu-Baglan is the right tributary of the r. Leylek, flowing from the northern slope of the Turkestan ridge. The river length - 39 km, catchment area - 395 km². There are more than 15 small tributaries. According to the water regime, it belongs to the Altay type rivers. Flood occurring in late April - early June. The average long-term water consumption 7.71 m³/s².

Average multiannual water flow the r. Kozu-Baglan

| average water flow m ³ /s | | | | | | | | | | | | Q _{ave} , m ³ /s | |
|--------------------------------------|------|------|------|-------|-------|--------|--------|-------|-------|-------|-------|--------------------------------------|-------|
| I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | год. | вер. |
| 4,00 | 4,00 | 4,00 | 4,00 | 4,665 | 11,40 | 18,469 | 16,209 | 9,750 | 6,963 | 4,831 | 4,258 | 7,712 | 10,75 |

| average monthly water flow, th.m ³ | | | | | | | | | | | | W _{year} , th.m ³ | |
|---|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------------------------|--|
| I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | | |
| 10 712 | 9 676 | 10 712 | 10 368 | 12 493 | 29 549 | 49 455 | 43 408 | 25 272 | 18 647 | 12 522 | 11 403 | 244 216 | |

4.5. Vegetation cover

Vegetation cover: agrocrops, trees, herbaceous plants. SVL will not be disturbed, because construction work will be executed on existing facilities. The works will not affect irrigated agricultural fields, because all rehab facilities are beyond their borders. In the process of canals` rehabilitation, it is necessary to uproot trees that hamper course of works and within alienation zone of water facilities. According to the Water Code of the Kyrgyz Republic requirements, Art. 80 p.3., while carrying out repair and rehab works, cutting of shrub vegetation and trees that are within the alienation zones of water management structures and canals, as well as sanitary tree surgery and deadwood cutting, do not require permission from a specially authorized state bodies. At the same time, prior to commencement of work, the Contractor will inform the environmental protection agency on forthcoming works concerning cutting of tree and shrubbery vegetation. If

¹ The geo-engineering data is given from the working documentation of the subproject "Rehabilitation of WUA "Sarkent-Suu" irrigation system, Leylek rayon, Batken oblast" (PIU "OIP-2").

² Ramazan M.S. Some features of the hydrological regime and hydrotechnical classification of the KR`s rivers.

(re)construction works are carried out in areas not related to the alienation zones of water facilities, deforestation of tree and shrubby vegetation should be carried out in accordance with permit issued by a specially authorized environmental protection body.

5. Description of procedures related to regular operation workloads

5.1. Technical surveillance on canals and HTS condition

In the operational scheme activities, the paramount importance is paid to the timely conduct of preventive and rehab workloads that exclude probability of a system failure, while complying to the rules of its operation. The main indicators of a normal technical condition and a reliable operation of the on-farm irrigation network are ensuring of designed canal's throughput, minimum filtration and performance water losses, absence of sedimentation, greenery overgrowing, collapse and canal's erosion. If the actual canal's capacity corresponds to the estimated throughput, then the technical condition of a canal is good and considered as reliable. If there are 20 -25% throughput deviations, then a canal's reliability is reduced, and the technical condition is average. If the deviations are more than 25%, then a canal's performance considered as an unreliable and its technical condition is below the average. To ensure a canal's throughput, it is necessary to conduct a careful monitoring over water regulating structures. The water volumes regulating structures must be easily and reliably (re)adjusted and controlled. While operating water regulating structures, it is necessary to ensure that there is no water leakage through the water outlet/inlet gates and no canals' erosion and destruction observed on its structural parts. Expansion and (re)construction of a canal's lined sections and joint sections are the subject of constant surveillance. The damaged lining must be reworked immediately. A canal's lined and unlined sections and HTS daily maintenance (cleaning, desilting) must be executed on a permanent daily basis to prevent cracking, to ensure proper performance and removal of floating debris that hinder a canal's performance. A particular attention must be paid to subsiding soils, as concrete lining on those soils is prone to cracks formations, leading to irreparable damages, if lining failure appears it should be reworked without any delay.

The joint sections of a canal, with prefabricated reinforced concrete slabs, are the subject of particular attention. Constant surveillance of which is necessary and, if there any urgency, must be treated with resilient watertight materials that can withstand a vegetation impact. Within the concrete flumes it is prohibited to dissolve various types of fertilizers that may cause destruction of concrete. It is also not recommended to operate concrete prefabs network if water flow temperature is below -5 - 10°C. Therefore, in the process of preparing the network for the winter, the whole canal's route must be completely absent of water. The livestock crossing and pasturing on canal's dams and slopes is strictly prohibited. The livestock drinking and dipping allowed on a special canal's sections only. To monitor the quality of irrigation water and prevent a canal's sedimentation, the water samples must be regularly inspected for the following indicators: turbidity, temperature, hydrogen index and mineralization.

5.2. Preparing on-farm network for the winter period

In the winter period, the on-farm irrigation network can be used for water charging irrigation, washing off and other types winter watering, as well as for supplying water to the residential areas and livestock farms, filling up reservoirs. The control over canals and structures operation, in the winter, should be paid a particular attention, as to prevent formation of ice jams near bridges, crossings, etc. The trash racks that were set for the summer in front of water structures, must be removed for the winter. When frosts are formed and HTS are covered with the ice, in this case the ice must be chipped without disturbing integrity of the structures and canal's lining/coating.

5.3. Looking after wood lines and access roads

Forest plantations alongside of a canal are designed to protect a canal from vegetation overgrowing, lowering the level of groundwater alongside a canal's route and reducing the adverse effect of wind force on agricrops. Alongside of permanently embedded canals within the farm network that require constant desilting interventions, it is recommended to create, on the one side two-row or three-row strips of fast-growing trees and shrubbery. The distances between trees in the strip is 1-3 m, between bushes - 0.75 - 1 m with the distance between greenery strips of 1.5 - 3 m. The field and on-farm roads on irrigated area, as a rule, are ground roads. If they pass through silty loams and solonchaks, then a road is made of gravel or other coating. A road maintenance is reduced to keeping the upper layer in good condition. The thickness of gravel coated roads is maintained within 8 - 10 cm. The roadbed condition is also the subject of maintenance and must be periodically planned and compacted. Roadside cuvettes and canals must be cleaned off dirt and vegetation. To improve the water flow into cuvettes, the roadways must be made with slopes and with a slight lateral inclination from the middle to the cuvettes.

5.4. Repair workloads

The irrigation schemes are subject to repair workloads according to the annually developed and approved plans. In the irrigation and drainage systems operation practice, the current, major and emergency repair workloads are executed.

The current repair works executed annually including desilting of canals, removal of vegetation, strengthening and widening dams, cleaning berms, eliminating small landslides, collapses, rifts and sandspits, repairing damaged anchorages and canals' lining, repairing small damages of a structural parts. While carrying out current repair works, a complex technical upgrading and modifying a structural construction is not included. The preventive (prophylactic) repair workloads include:

- Patching ratholes;
- Structural cracks maintenance after ice impact;
- Tightening fixing bolts;
- Drainage structures winterization etc.

The preventive repair and a significant part of the current repair, including desilting of canals, vegetation and landslides removal, a minor canal repair(s), repair of structures, buildings and other devices are performed annually without stopping the scheme's operation.

The major repair is executed, as required, within a few years' period and includes: repair workloads on a canal's sections, dams and parts of a structure attrition and destruction, structural modification or replacement of certain elements and structural units.

The emergency repair is rehabilitation of canals, dams and structures or parts of them, destroyed as a result of natural phenomena (mudslides, floods, etc.), or violations of the technical operation rules, execution of which carried out 24/7, and all available material and technical resources and labor resources are mobilized for the execution of emergency repair.

Rehab and (re)construction workloads on the on-farm network canals performed by WUAs contracting a construction company. Repair works expenses and operation of the on-farm network are annually provided by the WUA's budget.

5.5. Desilting of canals and vegetation removal

The solid particles of soil form sedimentation that moved around by water flow. The content of solid particles, per water volume unit, characterizes the water flow saturation with sediments, or its turbidity. Sediments, often, are formed as a result of soil wash-away in the catchment basin via snow/glaciers melting and rain waters. Partly the sedimentation is a product of a canal/river bed and banks erosion. The largest bed's sedimentation with pebbles and coarse sand observed and remain at the head section of a bulk water supply canal. The average sized sediment particles washed into a canal's distribution network and even into on-farm irrigation network. On average, about 80% of sediments remains in the off-farm canals network and about 20% inflows into on-farm irrigation network. A canal's slopes have an impact on sedimentation process, if an inclination is too steep then about 60% of sediments washed in on-farm network and fields. Desilting executed on an annual basis and, if necessary, more often.

6. Environmental impact

Implementation of APNIP is addressed to provide economic, social and environmental benefits to farmers, farming entities and local communities through WUA's development, the rehabilitation and modernization of irrigation and drainage infrastructures in projected areas. The best practices of previous Projects demonstrate positive impacts on the environment. Namely, this Project is aimed at reducing water losses in irrigation schemes, improving water resources management, scaling up agricultural productivity and improving soil fertility. The Project workloads require compliance with a number of mandatory requirements, including strict compliance with noise reduction, air quality, timely removal of solid and liquid domestic waste, construction debris. The requirements for the prevention of environmental pollution and negative impact on the population are provided by the Law of the Kyrgyz Republic "General Technical Regulations for Ensuring Environmental Safety in the Kyrgyz Republic", the Law "On Production and Consumption Wastes", the Law "On Protection of Atmospheric Air", SanPin "Noise in the workplaces, in premises of residential, public buildings and on the territory of residential buildings" the Governmental decree of the KR, dated 11/04/2016. №201.

6.1. Expected positive environmental impact

The positive impact consists of:

- Water losses reduction;
- Improved water resources management, consisting of construction and rehabilitation of water distribution and water-metering structures;
- Scaling up agricultural productivity;
- Improved soil fertility by increasing humus while applying an efficient irrigation schedules.

6.2. Potential negative environmental impact

At the same time, while carrying out irrigation network (re)construction works, there may be some potentially negative impacts on environmental conditions in the projected areas that require attention, preventive actions, and appropriate mitigation measures during planning, development, construction, operation and maintenance. While performing the planned irrigation networks rehabilitation works, no asbestos-containing materials will be used. It is necessary to mention that previously asbestos cement pipe crossings were used. But they were replaced with structures of more inert materials and, at the moment, problems with asbestos-containing materials are not foreseen. Thus, no issues concerning asbestos-containing materials are expected. In the case(s) if asbestos-cement pipes will be detected, asbestos-containing materials will be stockpiled, transported and finally disposed, and specific protective interventions will be executed in

accordance with the hazardous wastes standards handling and disposal. For detailed information concerning the asbestos-containing materials removal, see section 10. The potential negative impacts are relatively minor, and positive economic, social and environmental benefits far outweigh them in environmental assessment. The consideration of these impacts is given below.

6.3. Impact on climate change

The irrigation and drainage schemes rehab will enhance the agricultural and farming practices, improve materially-technical procurement, land owning, pastures and water management, resulting on productivity increase and adaptation to climate change, and sustainable use of natural resources.

Table 2. Assessment and ranking of environmental risks

| Activities | Impact | Type | Duration | Term | Degree | Risk | Reversibility | Probability |
|---|---|----------|------------|----------------------|----------|----------|---------------|-------------|
| construction phase | | | | | | | | |
| Construction site location | Soil contamination at a construction site as a result of storage, construction and household waste, including liquid wastes. | direct | short-term | immediate | low | low | reversible | average |
| | surface water and ground water contamination at a construction site, as a result of stockpiling of construction and household waste, including liquid waste | direct | mid-term | immediate or delayed | low | low | reversible | low |
| uploading of excavated soil during (re)construction of a canal's bed | the landscape degradation, destruction of the animal world habitat | Direct | Mid-term | Immediate | Low | Low | Reversible | Average |
| construction materials transportation, heavy machinery use | air pollution and noise impacting the population/workers while heavy machinery and vehicles use | Direct | short-term | Immediate | Low | moderate | Reversible | High |
| canals rehab | Damage and trees felling and shrubbery cutting | Direct | long-term | Immediate | High | Low | Reversible | High |
| Operation and maintenance phase | | | | | | | | |
| earth-bed canals and drains cleaning while in operation | landscape and animals' natural habitat degradation | Direct | Mid-term | Immediate | Low | Low | Reversible | Average |
| increase in irrigation water volumes delivery, which increases the volumes of waste water | surface water pollution with agrochemicals, as a result of excessive application of pesticides and mineral fertilizers | indirect | Mid-term | delayed | moderate | moderate | Reversible | Average |

| | | | | | | | | |
|--|---|----------|-----------|---------|----------|----------|------------|---------|
| increase in irrigation water volumes delivery affects the surface water filtration and GWT | GWT contamination by agrochemicals as a result of excessive agrochemicals and fertilizers use | indirect | long-term | delayed | moderate | moderate | reversible | average |
| increase in irrigation water volumes supply that leads to water speed increase | soil erosion related to existing agricultural production practices | indirect | long-term | delayed | moderate | moderate | Reversible | Low |

7. Environmental management and monitoring plan (EMP)

All the (re)construction phase risks are easily monitored and eliminated. They can be minimized by properly designing mitigation measures and monitoring the Contractor, while executing workloads. The activities undertaken will not affect the existing ecological situation. Before lining of canals, the washed out areas will be restored and further gully formation will cease. Improving the irrigation system will create optimal conditions in the surface layer (temperature and humidity), reduce deformation of the soil, and improve the local landscape. During the (re)construction work, felling of trees and shrubbery alongside of alienation zones will be executed in accordance with the Water Code (Article 80, para. 3.) requirements, and in agreement with the specially authorized body for environmental protection. Among the O&M risks, the risk of landscape and animals' natural habitat degradation, while cleaning earth-bed canals and drains, is clear and easily controlled. The risks of surface and groundwater pollution by agrochemicals, due to excessive use of pesticides and mineral fertilizers, soil erosion associated with the existing practices of agricultural production, increase of near-surface (shallow) groundwater table, due to excessive irrigation and, as a consequence, soil salinization, require a specific monitoring. The need for environmental mitigation interventions, while on O&M phase, is determined exactly in the process of environmental monitoring.

Table 3: Mitigation plan

| Phase | Issue | Preventive/ Mitigation interventions | Cost, US \$ | | Institutional responsibility | | Control |
|--------------|---|---|--------------------|---|------------------------------|------------|--|
| | | | implement ation | operation | implement ation | operation | |
| Construction | organizing a construction site | 1) it is prohibited to locate a construction site in the water protection zones and canals; 2) to ensure removal of all waste and construction rubble from (re) construction sites to dispose on the authorized municipal landfills, with the permission of local authorities 3) to execute planning and restoration interventions to restore troubled lands during and after completing (re)construction | n/a | Part of the Contract`s (re)construction works KGS 38 000 000 | PIU/Contractor | contractor | 1) A Contractor bears responsibility to execute environmental mitigation interventions; 2) A construction site inspections executed by PIU; 3) SAEPF |
| | earthbed after desilting of a canal | executing rehab and planning works | n/a | | PIU/Contractor | contractor | 1) A Contractor bears responsibility to execute environmental mitigation interventions; 2) A construction site inspections executed by PIU; 3) SAEPF |
| | trees and shrubbery | coordinating with the specially authorized environmental protection body on trees and shrubbery felling/cutting located beyond the alienation zones of a canal; | n/a | Part of the Contract`s (re)construction works | PIU/Contractor | contractor | 1) A Contractor bears responsibility to execute environmental mitigation interventions; 2) A construction site inspections executed by PIU; 3) SAEPF |
| | vehicular emissions into the atmosphere | 1) vehicular exhaust systems and construction machinery should be in good condition, in order to minimize air pollution; | n/a | Part of the Contract`s (re)construction works | PIU/CONTRACTOR | contractor | 1) A Contractor bears responsibility to execute environmental mitigation interventions; 2) A construction site inspections executed by PIU; |

| | | | | | | | |
|-----------|---|--|-----|---|----------------|-------------|---|
| | | 2) Limiting the speed of vehicles and selecting suitable transportation routes to minimize dust emissions; 3) Moisturizing the road surface while driving through the residential area territories | | | | | 3) SAEPF |
| | noise impact within labor area | machinery and equipment operation | n/a | Part of the Contract's (re)construction works | PIU/CONTRACTOR | contractor | 1) a contractor bear responsibility to execute workers' health and safety activities; 2) SAEPF |
| | Workers' and rural population health and safety | 1) construction sites will be equipped with information and designator boards concerning working regulations and requirements; 2) easily accessible and complete first aid kit to treat an injury. 3) ensuring personal protection equipment (helmets, protected shoes, gloves); 4) limiting access to (re)construction sites, zones, equipment locations and other potentially dangerous places by local citizens. | n/a | Part of the Contract's (re)construction works | PIU/CONTRACTOR | contractor | 1) a contractor bear responsibility to execute workers' health and safety activities; 2) SAEPF |
| operation | threats to water quality due to soil salination from drainage water threats to water quality due to water contamination with agrochemicals | - Training to improve water and soil use; - Visual observations (prevention from waterlogging) - conducting training(s) on improved pest control/pesticides application practice. - Application of agrochemicals in accordance with recommended standards | n/a | n/a | AAS/AISP | WUA members | RSU on-site check, compliance and coordination with SAEPF RSU on-site check, compliance and coordination with SAEPF RSU on-site check |

| | | | | | | | |
|--|--------------------------|--|-----|-----|----------|-------------|--------------------|
| | increase of soil erosion | <ul style="list-style-type: none"> - Prevention of waste water ingress into canals and surface water bodies | n/a | n/a | AAS/AISP | WUA members | |
| | climate change impact | <ul style="list-style-type: none"> - training(s) on water use and soil management. - awareness raising campaign; - adequate use of irrigation water and irrigation in accordance with irrigation schedule; - lining up of irrigation furrows on the lowest slopes (transverse furrows); - shortened furrows length; - change or irrigation technology (sprinklers, drip irrigation). - climate change mitigation measures training; - compliance to irrigation norms and regimes | n/a | n/a | AAS/AISP | WUA members | RSU on-site check, |

Table 4. Environmental monitoring plan

| Project Phase | Parameter | Location | Method/ Equipment | Frequency | Objective | Costs | | Responsibility | |
|---------------|--|--|--|---|--|--------------|---------------|-------------------|---|
| | | | | | | Organization | Performance | Organization | Performance |
| baseline | salinity, concentration of hydrogen ions (pH), water turbidity | the head and tail end of irrigation system of r. Kozu-Baglan | Field equipment for parameters measurement | At the beginning, in the middle and at the end of vegetation season | Rehabilitation works and agricultural activities impact assessment | 0 | insignificant | RSU takes samples | water sampling and analysis |
| construction | Site-specific EMP | subProjects under rehabilitation | Visual inspection of subProject | Before, during and after completion of construction | Compliance with environmental protection measures | 0 | Insignificant | PIU/Contractor | PIU/Contractor |
| | Salinity, concentration of hydrogen ions, turbidity | Canals under rehabilitation, located upstream and downstream of the rehabilitation site | Field equipment for parameters measurement | prior and after construction workload completion | assessment of construction works impact | 0 | insignificant | RSU | water sampling and analysis. Introduction of results to PIU |
| | Pollution of watercourses by petroleum, oil and lubricants | Selectively for subProjects when suspected of contamination. Downstream of rehabilitation subProject | Sample for laboratory analysis | During construction | Civil works impact assessment | 0 | 100 USD | Contractor | Accredited laboratory Water sampling and analysis. Introduction of results to PIU |
| operation | the salty content in the soil | problematic locations | soil sampling /analysis | quarterly | soil quality ratio | 0 | USD 300 | AHS | AHS |
| | Salinity, concentration of hydrogen ions, turbidity | the head section of WUAs - r. Kozu-Baglan irrigation system | Field equipment for parameters measurement | prior and at the end of the vegetation season | irrigation and waste waters quality grading | 0 | Insignificant | RSU | RSU |

8. Stockpiling, transportation and disposal of asbestos containing materials

Asbestos-containing materials disposal will be executed in accordance with the local legislation, including construction standards, occupational health and safety regulations, emissions of harmful substances into the atmosphere, disposal/removal of construction and hazardous wastes (in cases of a specific domestic legislation absence, the European Parliament Directive 2003/18/EU, which amends and updates the EU Directive 83/477/EEC on protection of workers against workplace exposure to hazards from asbestos and asbestos containing materials: the air pollution thresholds are 0.1 fiber/cm³, and also use the recommended standards Notes: Asbestos: "Health problems at the workplace and in the community", the World Bank). The asbestos materials are subject to immediate unconditional disposal/entombment in special conditions.

In accordance with the Government of the Kyrgyz Republic's Order No. 885 "On Management of Hazardous Wastes in the Kyrgyz Republic, December 28, 2015," asbestos-containing wastes should be disposed the following order:

In accordance with the Government of the Kyrgyz Republic's Order No. 885 "On Management of Hazardous Wastes in the Kyrgyz Republic, December 28, 2015," asbestos-containing wastes should be disposed the following order:

- The process of handling hazardous wastes (waste lifecycle) consists of the following stages: generation, accumulation (collection, temporary storage, stockpiling), transportation, neutralization, recycling, reuse of processed products and disposal/entombment.
- If there is asbestos on a construction site, it should be clearly marked as a hazardous material. Asbestos-containing materials should not be cut or destroyed, as this leads to dust formation. During the (re)construction, all workers should avoid crushing/destroying the asbestos-containing waste, store such waste(s) in designated areas on a construction site and properly dispose thereafter in a special place or landfill.
- When asbestos-containing wastes are to be temporarily stored at a designated area(s)/construction site, they should be properly placed in sealed containers and marked appropriately as a hazardous material. Precautions must be taken to prevent unauthorized disposal of such wastes from a designated area/site.

8.1. Storage and stockpiling

- The asbestos containing materials extraction should be minimized through the use of efficient technologies
- All asbestos containing materials should be recycled and disposed by the experienced specialists. The specialists are obliged to wear protective outfit (face masks, gloves, uniform)
- The stockpiled wastes, on a designated area(s), should not exceed established volumes/requirements.
- The access roads for removal of industrial and construction wastes from a designated area(s) should not be obstructed.
- While handling asbestos containing wastes, all operating staff members should wear protective outfit (facemask, gloves etc.). Prior to removal of asbestos waste (if necessary) the stockpiled area should be treated with a moisturizing agent to minimize emission of asbestos containing dust. Disposed asbestos should not be reused.
- Storage of inappropriate items, individual protective or working outfit is strictly prohibited at the designated asbestos waste(s) locations.
- During handling operations, all workers should strictly follow the asbestos treatment requirements, and health and safety requirements. All operations should be executed with the use of mechanized machinery, elevating and transportation equipment.

- Hazardous waste(s) should be transported by the superficially equipped Vehicles to the landfill locations, either contracted, or owned. The Vehicles should be designed and used in such a way, as to prevent possible incidents, losses and pollution of the environment, both on the way to the disposal site location, and during the (re)loading of waste from one vehicle onto another. All types of handling and transportation of waste operations from/to the main and supporting facilities should be mechanized, and an airtight equipment used. It is strictly prohibited, during the transportation, to open the hazardous waste containers.
- Solid and dusty wastes are the subject of transportation in a specially designed containers, equipped with gripping devices for (un)loading by cranes. The transportation of asbestos wastes on the open-bed vehicles and railway cars is strictly prohibited.
- The use of hooks and other sharp tools, while processing the waste, is strictly prohibited.
- The driver of the Vehicle, transporting hazardous waste and authorized accompanying staff only, are allowed on the Vehicle(s). the Driver(s) must be aware of the safe transportation requirements.

All handling, transportation, (un)loading and disposal of waste must be mechanized. The waste must be transported in such a way, as to prevent transport losses and impact on environment.

8.2. Disposal of asbestos containing wastes

Asbestos-containing waste must be disposed in municipal solid waste dumps or non-recyclable industrial solid waste damp-yards.

9. Legislative support

In the Kyrgyz Republic, there are a number of environmental protection laws, regulations and requirements, which address the specific issues of environmental protection. Table 5 summarizes the legal norms relevant to this Project.

Table 5: The main subordinate legislations, regulations and requirements

| Legal authority | Legal mandate |
|---|--|
| Constitution (2010) | The state's ownership of natural resources, rights and duties of citizens. |
| Water Code of the Kyrgyz Republic (2005) | It identifies the state policy, legislative and institutional basics on water resources management and protection |
| Law on environmental protection (1999) | It identifies state policy on environmental protection, legislative and institutional basics on water resources management and environmental protection |
| Law "General technical regulation on ensuring environmental safety in the Kyrgyz Republic" (2009) | The Regulation determines the main provisions of technical regulation in the field of environmental safety and establishes general requirements for ensuring environmental safety while designing and implementing of interventions within economic and other types of production activities, storage, transportation and production disposal. |
| Law on environmental expertize (1999) | It requires review of environmental protection issues (environmental appraisal) and prevents negative environmental impacts and human health as a result of economic and other activities |

| | |
|--|---|
| Law on specifically protected natural reservations (2011) | It establishes regulations for specially protected natural areas, various types and/or levels of economic activity. |
| Law on protection of atmosphere (1999) | It regulates emissions to atmosphere and specific obligations on protection of atmosphere |
| SanPin "Noise on the workplaces, in premises of residential, public buildings and on the territory of residential buildings" the Governmental decree of the KR, dated 11/04/2016. №201, | Establishes a sanitary-epidemiological requirements, standardized parameters and maximum permissible noise levels at (re)construction sites, noise classification, permissible noise levels in the Projected rooms, (re)construction sites, (re)constructed and operated residential, public buildings and on the territory of residential buildings. |
| the GovKR. Provision No.224 of 03/05/2013. "On approval of fees for calculating the amount of penalties for damages caused to objects of animal and plant life, mumijo-containing mineral materials and mushrooms by legal entities and individuals" | Fees designed to ensure preservation of biodiversity, proper protection of flora and fauna |

The Government of the Kyrgyz Republic ratified a series of international conventions on environmental protection and agreements, related to this Project:

- Convention on environmental impact assessment of the transboundary territories Espoo(2001);
- Agreement on cooperation in environmental protection and efficient use of natural resources (Kyrgyz Republic, Kazakhstan, Uzbekistan) (1998),
- Convention on wetlands, representing the international importance for the waterfowls main habitat (Ramsar Convention) (2002);
- Convention on right to use international watercourses as transport routes (1997), Agreement on the use of water structures for interstate purposes on the Chu and Talas Rivers (Kyrgyz Republic and Kazakhstan) (2000);
- the United Nations Framework Convention on Climate Change (2000 r.);
- Kyoto Protocol (2003).

10. Awareness rising campaign, consultations and public attendance

10.1. Public consultations

In accordance with Operational Procedures OP4.01.³ The WB has special requirements for disclosure of information and public consultations. The disclosure includes introduction of information about the Project affected population (PAP) and other stakeholders, from the Project's early implementation cycle, and throughout lifecycle of the Project. The information disclosure is intended to facilitate comprehensive interaction with the Project affected population, and stakeholders throughout the lifecycle of the Project. Moreover, the Kyrgyz Republic is a member of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, the United Nations Economic Commission for Europe, which also contains provisions for ensuring the disclosure of the objectives and environmental considerations of the Project.

The Public hearings in WUA "Kyrk-Bulak" held on June 19.2018, Laylek rayon, Batken oblast, which was attended by 43 people; WUA representatives, local authorities, farmers, WUA RSU, design engineers, PIU. The public hearings delivered a general info on the Project, as well as technical solutions and activities that will be undertaken to prevent and mitigate impact(s). the attendees asked several questions on EMP. The Minutes of the public hearings and images applied.

10.2. Grievance redress mechanism (GRM)

Objective. The primary target of GRM and population's statements is identification, registry and assistance in solving complaints that were stressed during the Project activities.

The GRM main principles are:

- (i) Protection of Citizens' rights;
- (ii) Transparency;
- (iii) Accessibility to a free GRM mechanism and without follow-up prosecution;
- (iv) Appropriateness, from the point of local cultural sensitivities view;
- (v) Personal responsibility for the performance duties;
- (vi) Accountability of during the GRM consideration and applications by the PIU.

Complaints and applications filed in accordance with the established procedure are subject to a mandatory review, refusal to admit is not allowed. Complaints and applications of citizens, without indication of the name and postal address, to which the reply should be sent, are considered anonymous and are not subjected to revision.

The GRM does not hinder the right of citizens to applying into the Judiciary authorities. Citizens have the right to apply to the court, or other state bodies for the resolution of emerging issues related to the violation of their rights, emerged under the Project.

For the GRM implementation, the PIU and WUA created a register of complaints and statements from the population. Moreover, anyone can apply to the PIU in an online format at:

<https://mail.rambler.ru/m/redirect?url=http%3A//apnip.water.kg/%25D0%25BE%25D0%25B1%25D1%2580%25D0%25B0%25D1%2589%25D0%25B5%25D0%25BD%25D0%25B8%25D1%258F-%25D0%25B8-%25D0%25B6%25D0%25B0%25D0%25BB%25D0%25BE%25D0%25B1%25D1%258B/&hash=8ef50d487d10168e5d891f2d9dd443cd>

10.2.1. General GRM process

³ The World Bank operational procedures 4.01, "Environmental Assessment", Para. 3.

- In the process of the assets assessment, PAP will be introduced to the information concerning filing and reviewing procedure.
- The first step in the process of handling complaints will be a personal verbal appeal to the Project representative, AO's authority, or by phone (the mobile phone number will be provided on the information board of AO's office, and also posted in ads in places frequented by the population). If the problem cannot be resolved within 5 days, consideration of the complaint will be done at the next level.
- An aggrieved person can file a complaint on the issue related to the process of resettlement or compensation, in written form, to the PIU APNIP Director. A complaint must be signed and dated by an aggrieved party. The APNIP social affairs consultant will maintain a direct link with the PAP. The PIU will determine the validity of a complaint and notify an aggrieved person that he/she will be assisted. The answer will be provided within 14 working days, during which meetings and discussions will be held with an aggrieved person.
- If a complaint concerns an asset assessment at the expense of the Project, a secondary or even a third assessment of an asset will be carried forward, until it is accepted by both parties. The follow-up assessments can also be carried forward by an independent appraiser(s) at the expense of an aggrieved party. The PIU will assist to an aggrieved party at all stages to resolve a complaint and ensure that a complaint is treated the best-of-breed.
- If, after receiving a response from the PIU, an aggrieved party remains unsatisfied, then a complaint is considered in the working group of the Project under AO, which will be established by the head of AO's resolution, from the members of the Local AO deputies, WUAs representatives, local dignitaries and the PIU specialists.
- In case of an objection, regarding to the working group decision, which is provided within 30 working days, the PAP may appeal to the court.

10.2.2. A registered complaint management

A local representative of the Project should ensure a weekly transfer of received complaints from the PAP to the PIU, as well as the first instance consideration result(s). The local authorities should work with complaints in accordance with the established order and should file the complaints and proposals in the processing registry. The PIU upon receipt of an information, the social consultant should ensure that each complaint has an individual identification number and a progress report in reviewing each complaint reflected in the FRP, which identifies a person(s) responsible for each individual complaint and recording the dates of the following events:

- the date of filing a complaint;
- the date of entering a Complaint(s) Registry in the Project database;
- the date when the information on the proposed solution measure(s) was sent to an aggrieved party (if applicable);
- the response date to an aggrieved party.

The general information on complaints received (number, type of complaint), progress in resolving it and problems encountered, should be included in the Project's periodic reporting submitted to the World Bank.

Annex 1. The minutes of Public hearings

The minutes of public hearings on environmental protection and social issues in WUA "Kyrk-Bulak", Leylek rayon, Batken oblast, the World Bank project "APNIP"

Katran AO

June 19. 2018

Attendees:

A.Ajimatov – Engineering coordinator (south), PIU APNIP;
Neronova T. – National environmental consultant, PIU APNIP;
K.Anipaev - Design engineer, PIU APNIP;
R. Tashbaev – Design engineer, PIU APNIP;
A.Berdibaev – WUA “Kyrk=Bulak” Director.

The public hearing was attended by 43 people; waterusers, representatives from farming entities, WUA members. The list of attendees is applied.

Chairperson – A.Berdibaev – WUA Director

A. Ajimatov - spoke about the Project and introduced all rehab activities planned for on-farm network within APNIP. 3 rehab options were introduced for the WUA.

Neronova T. - has explained about the Kyrgyz Republic's environmental legislation requirements and the World Bank's policy on environmental protection under the Project. The task of environmental assessment is to identify the Project's significant impact on the environment (positive and negative), identify appropriate preventive measures and mitigation measures aimed at preventing, minimizing or eliminating any expected irreversible impact(s). The experience of previous projects shows the positive impact of the Project on the environment. In fact, many positive impacts of projects have been identified during the environmental assessment. Namely, this Project is aimed at reducing water losses in irrigation schemes, improving water management, scaling up agricultural productivity and improving soil fertility.

At the same time, while carrying out civil works on (re)construction of irrigation networks, there may be some potentially negative impacts on environmental protection conditions in projected areas that need attention, to undertake preventive actions and appropriate mitigation measures during planning, development, construction, operation and maintenance.

- No asbestos-containing materials will be used for the planned rehabilitation of irrigation networks, noting that previously asbestos-cement pipe crossings were used. But even in the past years they were dismantled and replaced with structures of more inert materials. Thus, no problems with asbestos-containing materials are expected.
- Potentially negative impacts are relatively small and positive economic, social and environmental benefits far outweigh them in environmental assessment. Consideration of these impacts is given below.

The main impact(s) that can be seen as a result of the civil works:

- 1) Soil pollution on construction site.
- 2) Groundwater pollution on construction site.
- 3) Deterioration of the landscape, destruction of the natural habitat of the animal world, changing the local drainage network.
- 4) Air pollution and impact on workers/population during traffic and heavy equipment

operation.

The site specific EMP is composed for each of the rehabilitation subproject to prevent or mitigate the negative impact of the construction works. It includes a mitigation and monitoring plan, both for the construction phase, and for the O&M phase. All the risks of the (re)construction phase are easily controlled and eliminated. They can be minimized by properly designing mitigation measures and controlling the Contractor, while carrying out the works.

Among the risks of operation and maintenance phase (O&M), the risk of degradation of the landscape and destruction of the animal world's natural habitat, while cleaning unlined canals and drains is obvious and easily controlled. The risks of surface and groundwater pollution by agrochemicals, due to excessive use of pesticides and mineral fertilizers, soil erosion, associated with existing practices of agricultural production, groundwater table rising in the shallow zone due to excessive irrigation and, as a consequence, salinization of soils, require special monitoring. The need for mitigating measures at the stage of O&M is determined precisely during the process of environmental monitoring. Each WUA included in the rehab program should maintain a register of complaints and, to date, almost all WUAs have it. Moreover, all WUAs have a complaint form and a complaint management matrix. In addition, the PIU site (www.apnip.water.kg) has a separate section on appeals and complaints, where anyone can send their appeal or complaint about the Project's activities. For effective monitoring and management of complaints and appeals of the population, the PIU maintains a database of complaints and appeals.

Questions:

O.Alimov – construction and household wastes, where it will be removed?

T. Neronova – All type wastes will be transported by the Contractor to a designated area(s) approved and located by the Local authorities. Construction wastes might be reused, if the case.

S.Borubaev – Who is in charge to control (re)construction works?

Neronova T. – member of WUA will execute construction works. the PIU, DWRLI, SETI will control (re)construction works.

S.Borubaev –Do we need to obtain permission for shrubbery and trees uprooting located within alienation zone?

Neronova T. – While examining the areas under rehab, it was found that there are sections of canals where tree and shrubbery vegetation within the canals' alienation zone that must be removed. WUA has to compose the formal letter to the Batken oblast environmental protection department, and they will consider this issue. If there is a new construction, it is necessary to obtain a permit for cutting green plantations.

S. Japarov – Will noise and dust impact the residents during (re)construction works?

T.Neronova – Dust might come from machinery and vehicles driving through a residential area(s). the EMP set the requirements addressing low transportation speed via residential areas that reduce outburst of dust and noise and also (re)construction workload must be executed during day time only.

In conclusion, all attendees have supported the implementation of this Project.

The Chairperson on behalf of all attendees has expressed his gratitude for the support and information provided.


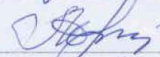
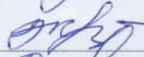
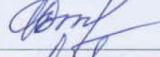
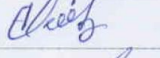
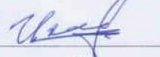

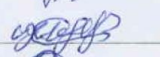
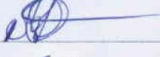




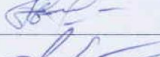
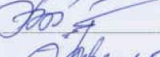
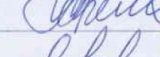
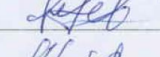
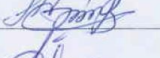
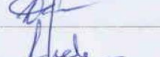
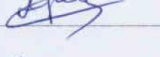

Chairperson

A.Berdibaev

National Environmental protection consultant

Neronova T.

The list of attendees

| Список участников общественных слушаний по охране окружающей среды и социальным вопросам в АВП «Кырк-Булак» Лейлекского района Баткенской области в рамках проекта Всемирного Банка «Улучшения сельскохозяйственной производительности и питания» | | | |
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| 12. | Батиев Бердиев З. | 0774421463 |  |
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| 14. | Абдумамедов Р. | 0771357515 |  |
| 15. | Урусбаев М. | 0779688546 |  |
| 16. | Исраилов Д. | 0770 483469. |  |
| 17. | Бадиров М. | 0770 518616 |  |
| 18. | Мамматов М. | 0778178918 |  |
| 19. | Исраилов Шамбаев | 0770 780204 |  |
| 20. | Фрунзеков Р. | 0772682382 |  |
| 21. | Исраилов К. | 0770 09 69 51. |  |

| №№ пп | Фамилия имя отчество | Телефон | Подпись |
|----------|----------------------|------------|---------|
| 22 | Ахмедов Сагир | 0772627383 | Ахмедов |
| 23 | Ахмедов Базилан | 0779642287 | Ахмедов |
| 24 | Ахмедов Абдулла | 0779482982 | Ахмедов |
| 24 | Ахмедов Таир | 0779462749 | Ахмедов |
| 26 | Ахмедов Ахмед | 0779509747 | Ахмедов |
| 27 | Ахмедов Айдар | 0770377030 | Ахмедов |
| 28 | Ахмедов Сапар | 0778833938 | Ахмедов |
| 29 | Ахмедов Сулейман | 0778310341 | Ахмедов |
| 30 | Ахмедов М.В. | 0772535751 | Ахмедов |
| 31 | Ахмедов Абдулла | 0778520057 | Ахмедов |
| 32 | Ахмедов Сулейман | 0777469191 | Ахмедов |
| 33 | Ахмедов Ахмед | 0772722295 | Ахмедов |
| 34 | Ахмедов Абдулла | 0873515900 | Ахмедов |
| 35 | Ахмедов Абдулла | 0551747934 | Ахмедов |
| 36 | Ахмедов А | 0778132124 | Ахмедов |
| 37 | Ахмедов А.С. | 771301208 | Ахмедов |
| 38 | Ахмедов А | 77802009 | Ахмедов |
| 39 | Ахмедов А | 777931-331 | Ахмедов |
| 40 | Ахмедов А | 0770840702 | Ахмедов |
| 41 | Ахмедов Б | 0773024808 | Ахмедов |
| 42 | Ахмедов Б | 0773904142 | Ахмедов |
| 43 | Ахмедов А.Б. | 077251684 | Ахмедов |
| 44 | | | |
| 45 | | | |

11. Images



Image 1. Canal “Teshik-1”, June 2018



Image 2. Canal “Teshik-2”, June 2018.



Image 3. Village “Katran”, the public hearing, June 2018.



Image 4. Village “Katran”, the public hearing, June 2018.