$\text{FINAL ENVIRONMENTAL AND SOCIAL REVIEW CHECKLIST}$

Micro-project title: Reconstruction of irrigation system for land parcels in Jrvej Community

Micro-project #: TKQ-09

Is the Environmental and Social Management Plan (ESMP) developed?  
Yes + No _____

Does ESMP provide a full list of potential impacts and establish adequate measures for their mitigation?  
Yes + No _____

$\text{Conclusion of the Final Environmental and Social Assessment}$

<table>
<thead>
<tr>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro-project rejected</td>
</tr>
<tr>
<td>Micro-project approved</td>
</tr>
<tr>
<td>(environmental assessment completed)</td>
</tr>
</tbody>
</table>

+
### PART A: GENERAL PROJECT AND SITE INFORMATION

#### INSTITUTIONAL & ADMINISTRATIVE

<table>
<thead>
<tr>
<th>Micro-project number and title</th>
<th>TKQ-09 Reconstruction of irrigation system for land parcels in Jrvej community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality, community</td>
<td>Kotayq marz, Jrvej community</td>
</tr>
<tr>
<td>Scope of site-specific activity</td>
<td>Irrigation of lands in this region is carried out through the main canal &quot;Kotayk&quot;. In recent years, the demand for irrigation services in the village of Jrvej has increased due to the construction of new private houses and the expansion of the cultivated area. The construction of the 1, 2-kilometer irrigation pipelines began at the expense of municipal budget in 2015, but was not completed, leading to deterioration of the pipes and water leakage to the ground over the last two years. Present micro-project is intended for the reconstruction of the irrigation network, in particular, the existing pipeline (see the diagram below). The water enters the &quot;Kotayk&quot; canal from the reservoir of Gyumush Hydro Power Plant (HPP) and is used for seasonal irrigation. The system has been operational for several decades. Gyumush HPP reservoir is fed by various sources of water, such as rainwater, groundwater, snow melt as well as the Hrazdan River. From the reservoir, water is supplied to the HPP with a derivation canal, and afterwards enters irrigation canal &quot;Kotayk&quot;. &quot;Kotayk&quot; is the primary irrigation canal. It is managed by the local Water Committee, which has permission to use water from the “Kotayk” canal issued by the Water Resources Committee of Armenia under Ministry of Nature Protection. The micro-project is designed to reconstruct the secondary irrigation pipeline and hence, water intake permits issued for the operation of the primary “Kotayk” canal cover operation of this pipeline. As a result of completing reconstruction of the secondary irrigation pipeline, the system is expected to satisfy the needs of about 250 farms and cover about 40 hectares of land. The micro-project will not lead to an increased water intake from any natural watercourse, but arresting water loss through poor infrastructure will allow serving additional number of water users. Furthermore, residents of village Jrvej will no longer use drinking water for irrigation which has been a wasteful practice.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institutional arrangements (WB)</th>
<th>Task Team Leader: Erkin Mamadaliev</th>
<th>Safeguards Specialist: Darejan Kapanadze - Environment Sophia Georgieva - Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation arrangements (RoA)</td>
<td>Implementing entity: ATDF</td>
<td>Works Supervisor: “ALTERNATIV” LTD</td>
</tr>
</tbody>
</table>

#### SITE DESCRIPTION

<table>
<thead>
<tr>
<th>Name of institution whose premises are to be rehabilitated</th>
<th>Water Department of Kotayq marzpetaran (regional governor office), Jrvej potable water pipeline non-profit organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of site</td>
<td>Address: Kotayq marz, Jrvej village.</td>
</tr>
<tr>
<td>Who owns the land?</td>
<td>The entire route of irrigation pipelines passes through the communal roads. The comparison of Community General Map with the construction plan revealed that the entire route of the pipeline will pass through the public roads. No private land use is needed for the construction of the pipeline.</td>
</tr>
<tr>
<td>Description of physical and natural environment around the site (see maps and photo annex 1)</td>
<td>The entire route of the pipeline will be through the communal lands, particularly communal roads and trails. The pipeline will not cross any private land. The temporary closure of the roads is not necessary as construction activities will be carried out at the border of the roads and main part of the road will be used for</td>
</tr>
</tbody>
</table>
The houses through the pipeline route are mainly remote from the road so temporary disturbance to residents during the construction activities in front of the fences of private houses is not anticipated. However, temporary safe wooden passings will be used to cover the trenches in some parts of the route to ensure safe passing of the residents. Backfilling of soil and rehabilitation of landscape will be carried out immediately pipes are laid in trenches.

There are no structures, crops, trees or business along the route of irrigation system. There are no subterranean networks across the route of the pipelines. During the construction works no tree removal is intended. Endemic species and plants do not exist across the land plot provided for the construction works. Geological conditions are favorable for construction works. Physical-geological phenomena do not exist in the area. The ground waters are located deeper than the pipelines are proposed to be constructed. The precipitations in the area generally have surface flood, and only the part of the water penetrate through the minerals and soil. The natural relief and landscape will be recovered after construction works.

### LEGISLATION

| National & local legislation & permits that apply to project activity | Construction of an irrigation system is not subject to the Environmental Impact Assessment and to the issuance of the expert environmental review conclusion. |

### PUBLIC CONSULTATION

| When / where the public consultation process will take / took place | Public consultation was carried out in the village of Jrvej on 09.22.2017 |

### ATTACHMENTS

- Attachment 1: Photos and plan of the construction site
- Attachment 2: Copy of an agreement for construction waste disposal
- Attachment 3: Special permission for water use
- Attachment 4. Minutes of Environmental and Social Public Consultations
- Attachment 5: Copy of the Construction Permit
### ENVIRONMENTAL /SOCIAL SCREENING

<table>
<thead>
<tr>
<th>Activity/Issue</th>
<th>Status</th>
<th>Triggered Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Building rehabilitation</td>
<td>[ ] Yes [ ] No</td>
<td>See Section A below</td>
</tr>
<tr>
<td>B. New construction</td>
<td>[+] Yes [ ] No</td>
<td>See Section A below</td>
</tr>
<tr>
<td>C. Individual wastewater treatment system</td>
<td>[ ] Yes [+] No</td>
<td>See Section B below</td>
</tr>
<tr>
<td>D. Historic building(s) and districts</td>
<td>[ ] Yes [+] No</td>
<td>See Section C below</td>
</tr>
<tr>
<td>E. Acquisition of land&lt;sup&gt;1&lt;/sup&gt;</td>
<td>[ ] Yes [+] No</td>
<td>See Section D below</td>
</tr>
<tr>
<td>F. Hazardous or toxic materials&lt;sup&gt;2&lt;/sup&gt;</td>
<td>[ ] Yes [+] No</td>
<td>See Section E below</td>
</tr>
<tr>
<td>G. Impacts on forests and/or protected areas</td>
<td>[ ] Yes [+] No</td>
<td>See Section F below</td>
</tr>
<tr>
<td>H. Handling / management of medical waste</td>
<td>[ ] Yes [+] No</td>
<td>See Section G below</td>
</tr>
<tr>
<td>I. Traffic and Pedestrian Safety</td>
<td>[ ] Yes [+] No</td>
<td>See Section H below</td>
</tr>
</tbody>
</table>

---

1 Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/ transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

2 Toxic / hazardous material includes but is not limited to asbestos, toxic paints, noxious solvents, removal of lead paint, etc.
## PART C: MITIGATION MEASURES

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES (provide costs where applicable)</th>
</tr>
</thead>
</table>
| 0. General Conditions     | Notification and Worker Safety          | (a) The local construction and environment inspectorates and communities have been notified of upcoming activities  
(b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works)  
(c) All legally required permits have been acquired for construction  
(d) The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.  
(e) Workers’ PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots)  
(f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. |
| A. General Construction Activities | Air Quality                          | (a) During interior demolition debris-chutes shall be used above the first floor
(b) Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust
(c) During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site
(d) The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust
(e) There will be no open burning of construction / waste material at the site
(f) There will be no excessive idling of construction vehicles at sites |
| Noise                     |                                        | (a) Construction noise will be limited to restricted times agreed to in the permit
(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible |
| Water Quality              |                                        | (a) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. |
| Waste Management           | Water Quality                          | (a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities.
(b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers.
(c) Construction waste will be collected and disposed properly by licensed collectors
(d) The records of waste disposal will be maintained as proof for proper management as designed.
(e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos) |
| B. Individual wastewater treatment system | Water Quality                          | (a) The approach to handling sanitary wastes and wastewater from building sites must be approved by the local authorities
(b) Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment
(c) Monitoring of new wastewater systems (before/after) will be carried out
(d) Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies. |
| C. Historic building(s)   | Cultural Heritage                      | (a) If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notification shall be made and approvals/permits be obtained from local authorities and all construction activities planned and carried out in line with local and national legislation.
(b) It shall be ensured that provisions are put in place so that artifacts or other possible “chance finds” encountered in excavation or construction are noted and registered, responsible officials contacted, and works activities delayed or modified to account for such finds. |
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES CHECKLIST</th>
</tr>
</thead>
</table>
| D. Acquisition of land | Land Acquisition Plan/Framework | (a) If expropriation of land was not expected but is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the Bank’s Task Team Leader shall be immediately consulted.  
(b) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented. |
| E. Toxic Materials | Asbestos management | (a) If asbestos is located on the project site, it shall be marked clearly as hazardous material.  
(b) When possible, the asbestos will be appropriately contained and sealed to minimize exposure.  
(c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust.  
(d) Asbestos will be handled and disposed by skilled & experienced professionals.  
(e) If asbestos material is stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. Security measures will be taken against unauthorized removal from the site.  
(f) The removed asbestos will not be reused. | (a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information.  
(b) The containers of hazardous substances shall be placed in a leak-proof container to prevent spillage and leaching.  
(c) The wastes shall be transported by specially licensed carriers and disposed in a licensed facility.  
(d) Paints with toxic ingredients or solvents or lead-based paints will not be used. |
| F. Affected forests, wetlands and/or protected areas | Protection | (a) All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities.  
(b) A survey and an inventory shall be made of large trees in the vicinity of the construction activity, large trees shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided.  
(c) Adjacent wetlands and streams shall be protected from construction site run-off with appropriate erosion and sediment control feature to include by not limited to hay bales and silt fences.  
(d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas. | (a) In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to:  
▪ Special facilities for segregated healthcare waste (including soiled instruments “sharps”, and human tissue or fluids) from other waste disposal; and  
▪ Appropriate storage facilities for medical waste are in place; and  
▪ If the activity includes facility-based treatment, appropriate disposal options are in place and operational. |
| G. Disposal of medical waste | Infrastructure for medical waste management | (a) In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to:  
▪ Special facilities for segregated healthcare waste (including soiled instruments “sharps”, and human tissue or fluids) from other waste disposal; and  
▪ Appropriate storage facilities for medical waste are in place; and  
▪ If the activity includes facility-based treatment, appropriate disposal options are in place and operational. | (a) In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to:  
▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards.  
▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes.  
▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement.  
▪ Active traffic management by trained and visible staff at the site; if required for safe and convenient passage for the public. |
- Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.
## Environmental Monitoring Plan for construction and operation phases.

<table>
<thead>
<tr>
<th>Activity</th>
<th>What (Is the parameter to be monitored?)</th>
<th>Where (Is the parameter to be monitored?)</th>
<th>How (Is the parameter to be monitored?)</th>
<th>When (Define the frequency or continuous?)</th>
<th>Why (Is the parameter being monitored?)</th>
<th>Who (Is responsible for monitoring?)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONSTRUCTION PHASE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Supply of construction materials</td>
<td>Purchase of the construction materials from licensed providers</td>
<td>Offices and warehouses of material suppliers, and borrowing sites</td>
<td>Checking documents; Inspection of material quality</td>
<td>In the process of signing the agreements for material provision</td>
<td>Ensure technical quality of construction; Protect human health and environment</td>
<td>ATDF</td>
</tr>
<tr>
<td>2. Transportation of construction materials and waste</td>
<td>Technical condition of construction vehicles and machinery; Adequacy of the loading trucks for transported types of cargo, and canopy coverage of cargo transported in open trucks; Movement of construction vehicles and machinery along pre-defined routes</td>
<td>Routes for transportatio of construction materials and construction wastes</td>
<td>Inspection of roads adjacent to the construction site and included in the agreed-upon routes of transportation</td>
<td>Unannounce d checks during the working hours</td>
<td>Avoid air and road pollution with dust and solid matter; Reduce traffic disruption</td>
<td>ATDF, Municipality of the village of Jrvej</td>
</tr>
<tr>
<td>3. Generation of construction waste</td>
<td>Temporary storage of inert and hazardous wastes separately at the Construction site and base (if applicable);</td>
<td>Checking documents; Visual observation</td>
<td>Entire period of construction</td>
<td>Avoid pollution of the environment</td>
<td>ATDF, Municipality of the village of Jrvej</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Accumulation of household waste</th>
<th>Provision of waste containers on-site; Agreement with local municipality for regular out-transporting of waste</th>
<th>Construction site and base (if applicable)</th>
<th>Visual inspection</th>
<th>Entire period of construction</th>
<th>Avoid pollution of soil and water with household waste</th>
<th>ATDF, Municipality of the village of Jrvej</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Safety of labor</td>
<td>Provision of uniforms and protective gear to the contractor’s personnel and enforcement of their use by contractor; Consistency with the rules of exploitation of the construction equipment and usage of private safety means</td>
<td>Construction site</td>
<td>Inspection of the activities</td>
<td>Entire period of construction</td>
<td>Reduce the probability of accidents</td>
<td>ATDF</td>
</tr>
<tr>
<td>6. Undertaking works within the settlement</td>
<td>Fencing of work site; Timely backfilling of soil once pipes are laid in trenches; No parking of construction vehicles and machinery outside work site the way</td>
<td>Construction site and nearly area</td>
<td>Visual inspection</td>
<td>Entire period of construction</td>
<td>Reduce disruption of movement around the work site and decrease probability of accidents</td>
<td>ATDF, Municipality of the village of Jrvej</td>
</tr>
</tbody>
</table>
impeding free passage of traffic and pedestrians;
No piling and no scattering of construction materials and waste outside the work site

<table>
<thead>
<tr>
<th>OPERATION PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ensuring smooth operation of pipeline</td>
</tr>
<tr>
<td>2. Ensuring quality of water supplied to the village</td>
</tr>
</tbody>
</table>
Attachment 1: Photos and plan of the construction site
Attachment 2: Agreement for construction waste disposal

Non-official translation of the above attached document:

Reference
The following reference is given that within the framework of construction of an irrigation system in the village of Jrvej implemented by Armenian Territorial Development Fund the generated waste will be transported to the landfill in Jrvej community which is situated 7 km away from the reconstruction site.

Head of Community (signed) V. Sahakyan
Attachment 3. Special permission for water use

Non-official translation of the above attached document

The village council of Jrvej, region Kotayq of the Republic Armenia applied to the Ministry of Nature Protection with application number 46 on 23.03.2016 in order to get consent to implement irrigation water supply from the "Kotayk" irrigation canal situated in the administrative area of the community and to use it.

Head of Community (signed) R. Petrosyan
Attachment 4: Minutes of Public Consultation on the Draft ESMP

MINUTES

Of Public Consultation Meeting on draft Environmental and Social Management Plan for the Reconstruction of irrigation system for land parcels in Jrvej Community

A stakeholder consultation meeting on the draft Environmental and Social Management Plan (ESMP) for the Micro-project of the Reconstruction of irrigation system for land parcels in Jrvej Community was held at Jrvej Community Administration Office, Kotayq Marz on 22 September 2017.

The announcement for the meeting in Armenian and English languages, including its date and time, was disclosed on the ATDF web page (www.atdf.am) on 13 September 2017. Information on the meeting day and time was posted on information boards of Jrvej Community Administration Office; in addition, the Administration conducted telephone calls to ensure participants’ attendance.

The public consultation was carried out by ATDF Environmental Specialist A. Osipova and ATDF Social Specialist Sonya Msryan. 19 participants were present at the meeting, among which 6 women (about 33%).

A. Osipova welcomed participants and introduced the main purpose of the consultation. The Head of Community Mr. Petrosyan introduced the key features of the Micro-project, including reconstruction of the secondary irrigation network which will enable irrigation availability for about 250 farms and will cover about 40 hectares of land.

A. Osipova briefly introduced World Bank requirements and Armenian legislation on conducting environmental assessment and reasoned the need to develop ESMP for water supply reconstruction projects as in case of Jrvej Micro-project. She introduced that the micro-project will not lead to an increased water intake from any natural watercourse, but arresting water loss through poor infrastructure will allow serving additional number of water users. She outlined that the micro-project will have positive environmental impact as residents of village Jrvej will no longer use drinking water for irrigation which has been a wasteful practice.

A. Osipova described baseline environmental conditions and outlined likely negative environmental impacts related to the Micro-project implementation. She specified that no tree removal is intended, the site does not involve endemic species and plants, as well as subterranean networks. Physical-geological conditions are favorable for construction. The key environmental adverse impacts include pollution of air, generation of construction waste, disruption of landscape. She specified key environmental measures aimed at reduction of negative impacts and emphasized that natural relief and landscape will be recovered after construction works. As the surrounding area next to the route of the pipelines includes traffic roads small direct hazards to public traffic and pedestrians by construction activities are anticipated. She highlighted that safety measures for community members and workers will be applied. A. Osipova also explained what measures ATDF will apply to enhance effectiveness of construction waste management.

A. Osipova outlined that technical supervisors on monthly basis will keep under control the fulfillment of all the environmental mitigation measures included in ESMP, and report the deviations to ATDF.

S. Msryan presented the main provisions of the ESMF concerning to the social aspects of the Project. She emphasized that the project does not involve any resettlement as the entire route of the pipeline passes through communal roads which are public property. She outlined that temporary closure of the roads is not necessary as construction activities will be carried out at the border of the roads and main part of the road
will be used for passing. Temporary safe wooden passings will be used to cover the trenches in some parts of the route to ensure safe passing of the residents. Backfilling of soil and rehabilitation of landscape will be carried out immediately pipes are laid in trenches.

Ms. Msryan explained mechanisms of public engagement and grievance redress mechanism (GRM) to be applied during project implementation. Elected grievance focal point at the community level Garik Mkrtchyan, who is also Community Council Member, was introduced to the community members. S. Msryan explained the purpose of Focal points at local level and welcomed participants to apply to Mr. Mkrtchyan in case of questions/feedback or grievances concerning to the project implementation.

S. Msryan informed the beneficiaries that they also have the option to contact ATDF directly to communicate their grievance if they are unable to, or do not wish to, go through the PIC grievance focal point. S. Msryan explained all the cannel of grievance submission involving e-mail address, hot line telephone number, postal address and web-site link and outlined that ATDF contact information is reflected on the booklets delivered to the participants, as well as on the information desk to be posted in public visible places in the Community, including Community Administrative Office building. S. Msryan introduced that information on Micro-project details permanently will be available on the information desks, as well as ongoing announcements and references. She outlined that these will support to raising public awareness and early identification, assessment and resolution of complaints on Project activities.

The participants were welcomed to raise questions regarding to the discussed questions. Following questions were raised by the participants:

Gohar Mkrtchyan: We would like to welcome the Project and outline that this project is very important for the Community as it will enable us to have regular irrigation water and will enable to minimize loss of water which is actual now. The development of strong irrigation water supply system is very important for community in terms of agricultural development.

Tatevosyan Armen: I would like to mention that the project will have beneficial environmental impact as we have planted lot of trees along the roads which are now in a poor condition because of lack of irrigation water. After project completion we will ensure proper maintenance of trees and green zones. I am sure that the difference will be evident as soon as project is completed. The route of pipeline passes in front of fences of our houses and you can be sure that we will monitor the project implementation to ensure proper implementation of the project. And we are very happy to hear that there is a special mechanism to receive grievances as in many cases people are not sure where to apply having grievances.

There were raised technical questions on the next procedures of the Micro-project and start date which were answered by the Specialists.

The list of participants and photos are attached.
Republic of Armenia
Kotayk Region, Community Jrvej
Construction Permit N 38, 28.11.2017
This is given for the Reconstruction of irrigation system for land parcels in Jrvej Community
The design documents are developed by “Zrtuk” LTD, license 6982
The construction will be implemented within 100 days.

R. Petrosyan
Sealed/Signed