

**STATE COMMITTEE OF WATER ECONOMY (SCWE)
MINISTRY OF AGRICULTURE (MOA)
THE REPUBLIC OF ARMENIA**

**PREPARATORY SURVEY FOR YEGHVARD
IRRIGATION SYSTEM IMPROVEMENT
PROJECT**

**DRAFT FINAL REPORT
(DFR)**

RESETTLEMENT ACTION PLAN

SEPTEMBER 2016

**SANYU CONSULTANTS INC. (SCI)
ORIENTAL CONSULTANTS GLOBAL CO., LTD. (OCG)**

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

LOCATION MAP

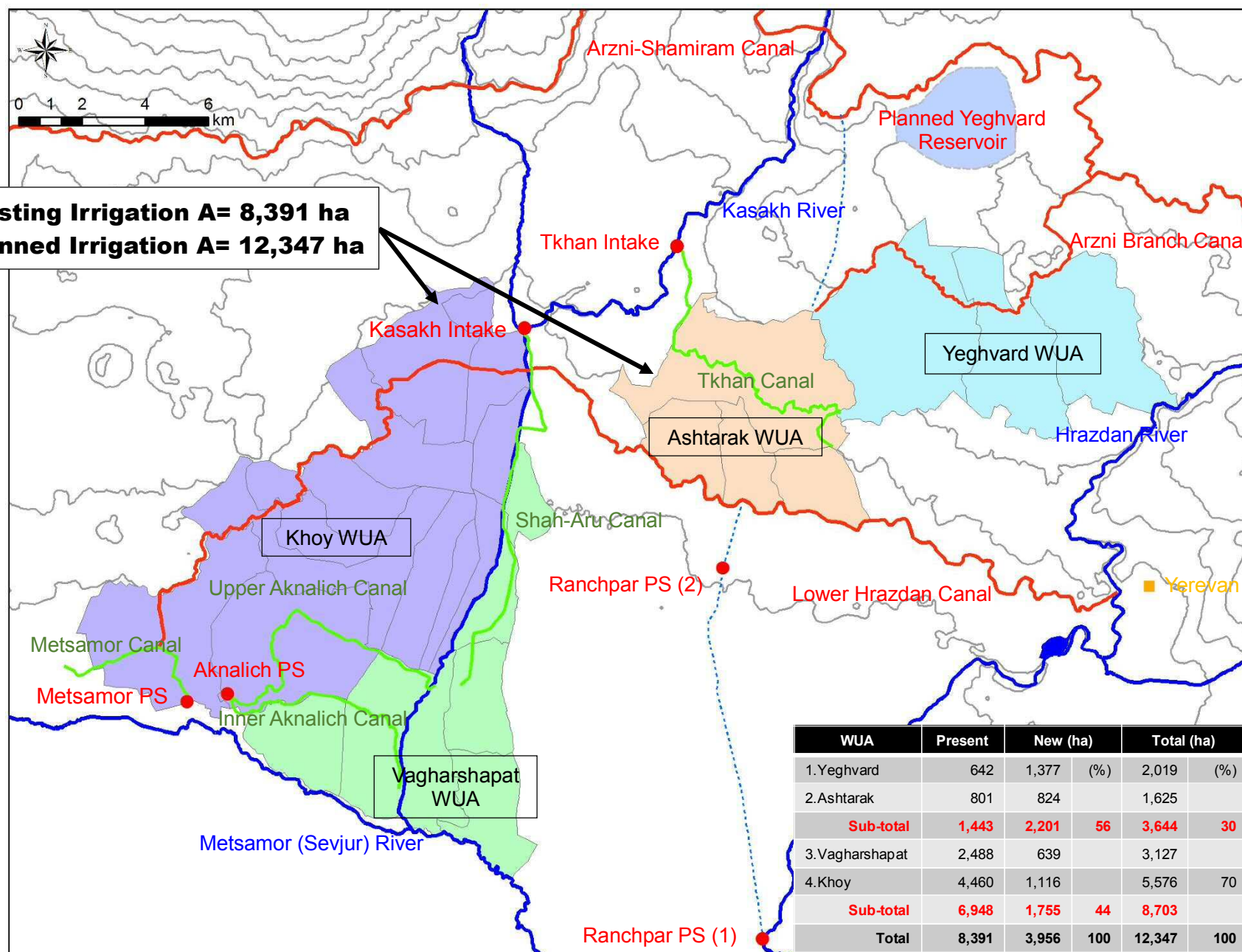


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Abbreviations

ADB	Asian Development Bank
D/D	Detailed Design
F/S	Feasibility study
JICA	Japan International Cooperation Agency
MNP	Ministry of Nature Protection
MOA	Ministry of Agriculture
OM	Operation and Maintenance
PAH	Project Affected Household
PAP	Project Affected Person
PIU	Water Sector Projects Implementation Unit
RA	Republic of Armenia
RAP	Resettlement Action Plan
SCWE	State Committee of Water Economy
SNCO	State Non-Governmental Organization
WB	World Bank
WSA	Water Supply Agency
WUA	Water User Association

Currency

Japanese Yen (JPY)

US Dollar (USD)

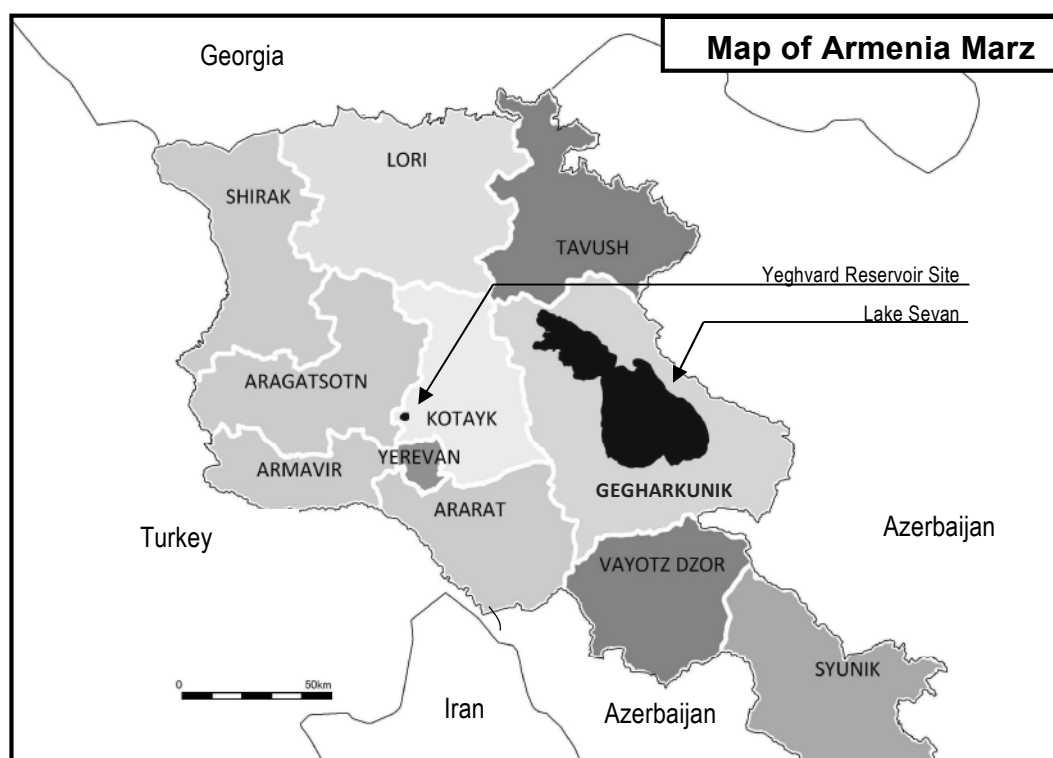
Armenia Dram (AMD)

Exchange rate (average for three months, February to April, 2016)

1 USD = 113.65 JPY (Bank of Tokyo-Mitsubishi UFJ)

1 USD = 486.99 AMD (Central Bank of Armenia)

1 AMD=0.233 JPY



CHAPTER 1 PROJECT OUTLINE

1-1 Background

Yeghvard Irrigation System Improvement Project (the Project) was planned during 1970s for improvement of irrigation system in Kotayk, Aragatsotn and Armavir regions (Marzes). In 1980s, the construction work of the reservoir with a scale of 228MCM had been started and parts of dike had been constructed. However, it was suspended due to the financial issues. In 1990s, coping with recession of water level in the Lake Sevan, the Yeghvard irrigation system improvement project was re-examined, since the target area mentioned above depends on the water of the Lake Sevan. The proposed scale of this reservoir was reviewed and reduced to 90 MCM. The Government of the Republic of Armenia (RA) requested the loan aid for the Project to the Government of Japan in May 2012; therefore, the Japan International Cooperation Agency (JICA) dispatched a Survey Team for "Data collection survey on agriculture and irrigation sector" in 2014.

In the above mentioned surveys, physical strength of embankment structure was identified, and some survey reports carried out at the time of Soviet Union were also reviewed. Through this survey 1) gravity irrigation (abolishing pump irrigation) to alleviate Operation and Maintenance (O/M) cost of pumps and 2) the importance of constructing a reservoir have been introduced to mitigate excessive dependency on water of Lake Sevan. Based on the results of this survey, the JICA has made decision to dispatch a consultant team for the "Preparatory Survey for Yeghvard Irrigation System Improvement Project" (the Survey), and the Survey Team has conducted a series of studies since June 2015. The Project implementation agency is the State Committee of Water Economy (SCWE) and PIU, and the supervising organization is Ministry of Agriculture (MOA).

1-2 Location of the Project

The Project area is located in central part of the Ararat Plain that extends over the western part of the Hrazdan River. The beneficiary area consists of 27 communities in three Marzes, namely, Kotayk, Aragatsotn and Armavir. On the other hand, the Yeghvard Reservoir is located in north-east of the beneficial area and it is located in western part of Kotayk Marz.

1-3 Project Description

In the Project, the Yeghvard Reservoir and related irrigation canals are proposed to be constructed, as shown in Table 1-3.1 and Figure 1-3.1.

Table 1-3.1 Outline of the Structure

Construction	Scale	Location
Yeghvard Reservoir	Capacity: 94,000,000 m ³ (94 MCM) Width of dam crest: 8m Full water surface area: 808ha Reservoir basin: 796ha	Yeghvard Reservoir
Feeder Canal 1 (Pipeline)	Length: about 4.4km φ 1,600 mm	This canal diverts water from Arzni-Shamiram canal to Yeghvard Reservoir.
Feeder Canal 2 (Open canal)	Length: about 0.23km Width: about 4m	This canal diverts water from Arzni-Shamiram canal to Yeghvard Reservoir.
Outlet Canal1 (Pipeline)	Length: about 0.73km φ 1,200mm	This canal diverts reserved water from Dike 2 to Arzni-Branch canal.
Outlet Canal 2 (Pipeline)	Length: about 4.7km φ 1,700mm	This canal diverts reserved water from Dike 1 to existing Ashtarak pipeline.

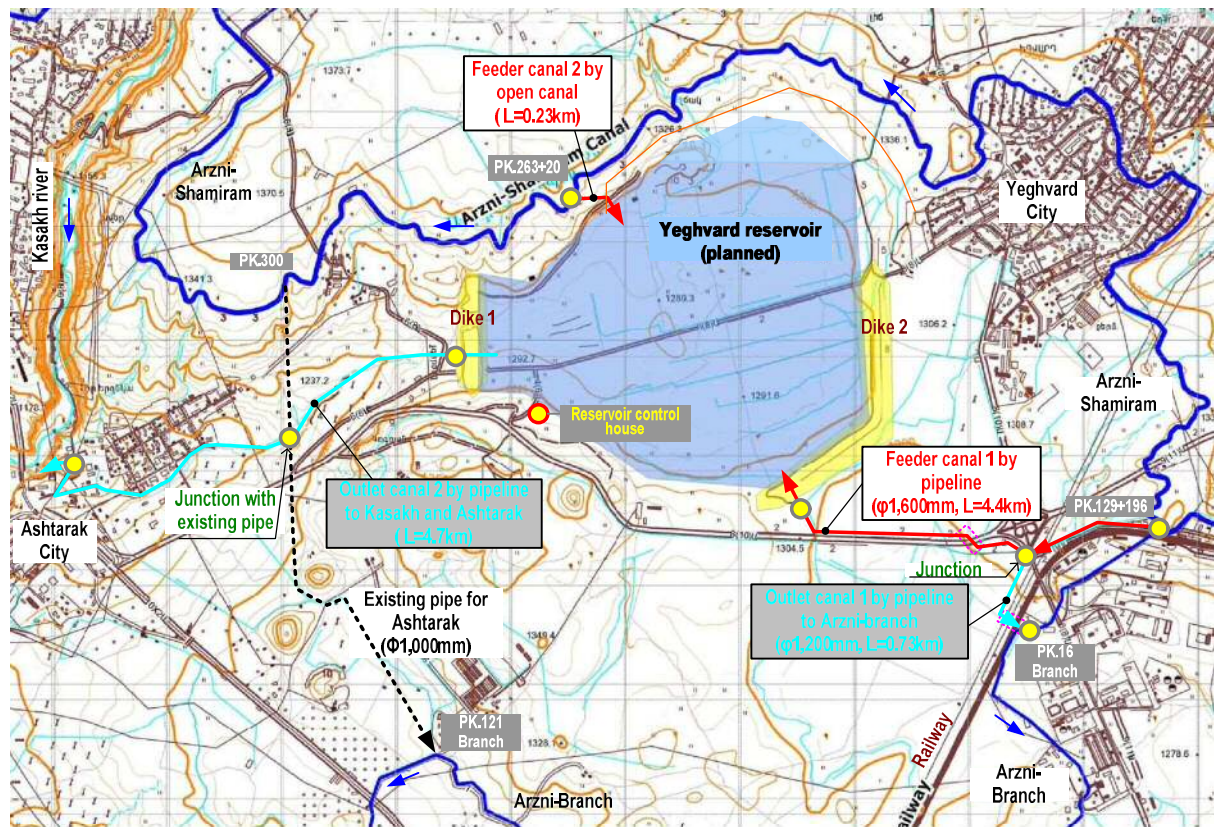


Figure 1-3.1 Outline of the Facility Design

1-4 Necessity of Resettlement and Land Acquisition

Due to the proposed facility to be constructed, land acquisition will be caused. Figure 1-4.1 illustrates anticipated affected areas.

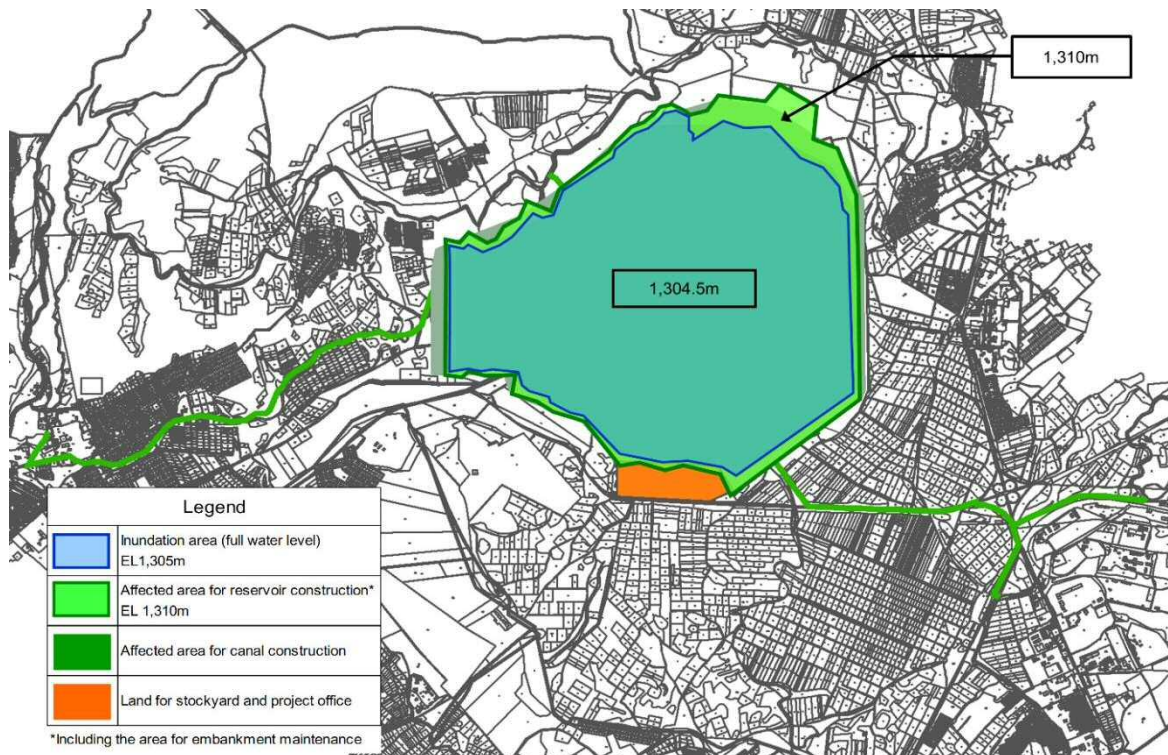


Figure 1-4.1 Anticipated Project Affected Area

While physical relocation will not be caused by the Project, land acquisition will be caused due to construction of the Reservoir and irrigation canals. Especially, the permanent land acquisition of 808ha is needed for construction of the Reservoir and Feeder Canal 2. On the other hand, concerning the area for Feeder Canal 1 and Outlet 1~2, the impacts are temporary during the construction period, since those canals are planned to be pipeline. However, there are some orchard plots and perennial grazing lands, they can be affected by the construction works even though the works are temporary.

(1) Examination of Two Candidate Routes for Outlet Canal 2

At initial stage of the Survey, there were two options for the Outlet Canal 2 to divert water from the Reservoir to the Kasakh River as shown Figure 1-4.2. First one, namely, Outlet Canal 2 (1) is planned to pass through the natural stream, while second one, Outlet Canal 2 (2) is proposed to go through the orchard and residential area. Concerning the first option, the area along the natural flow belongs to the Nor-Yerznka village, which enables to minimize the acquisition of private lands and no relocation is needed. In case of second one, relocation of several houses is necessary and orchard area along the canal 2 (2) will be damaged. Therefore, the route of Outlet Canal 2 (1) is selected finally as named Outlet Canal 2 as shown in Figure 1-3.1

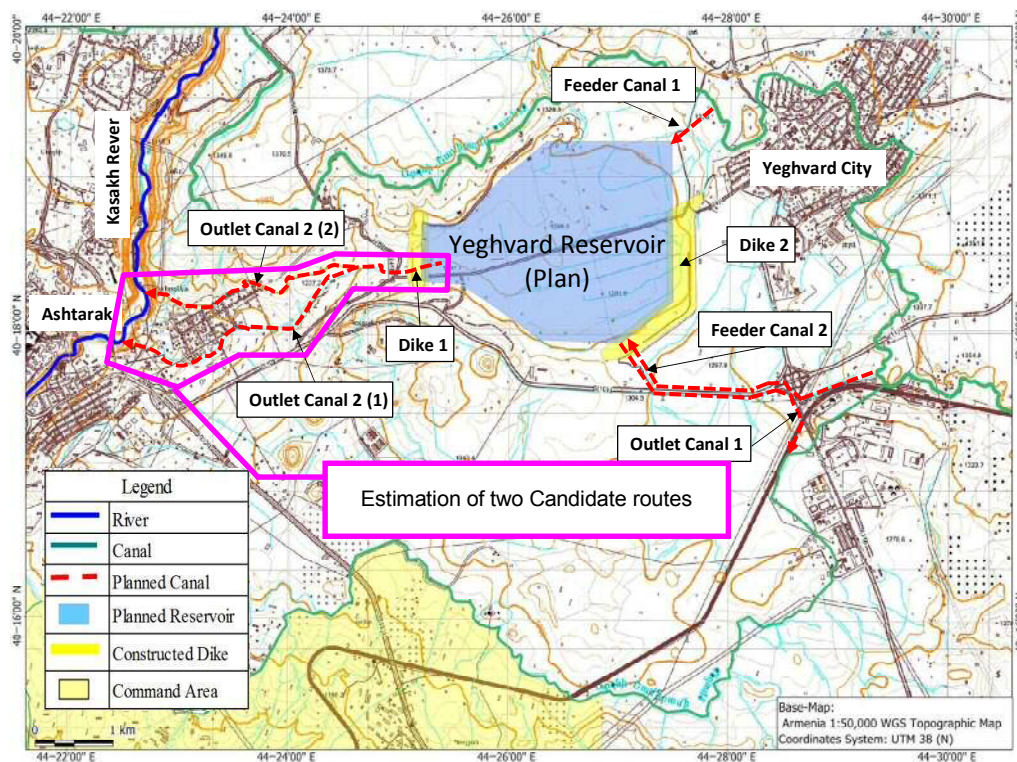


Figure 1-4.2 Examination of Options for Outlet Canal 2 at Initial Stage of the Survey

(2) Examination of Options to Minimize the damage to the Orchard

At the north-east of the Dike 1, a big scale of orchard with 24ha area is located. According to the proposed project plan, approximately half of the orchard (11.4ha) will be submerged. Therefore, two options, namely, a) compensation for the damaged orchard and b) protection for the orchard by extension of Dike 1, are compared in terms of cost. Figure 1-4.3 shows the comparison result. Cost of compensation to the affected orchard is 17.7 million USD, which is much lower than that of dike extension, with 25.1 million USD. Therefore, it is concluded that extension of the Dike 1 is not applied.

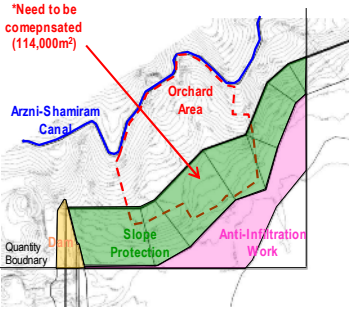
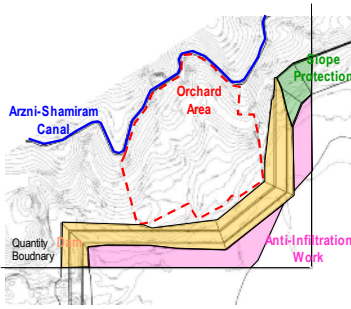
			Plan A (Compensation area is Maximum)			Plan B (Compensation area is Nil)		
Outline								
Compensation fee			Area/Volume (m ² /m ³)	Unit Cost (USD)	Sub Total (USD)	Area/Volume (m ² /m ³)	Unit Cost (USD)	Sub Total (USD)
		Tree loss	114,000 m ²	x 0.18 =	20,520	0 m ²	x 0.18 =	0
		Land loss	114,000 m ²	x 0.60 =	68,400	0 m ²	x 0.60 =	0
Construction Cost	Slope Protection	Small Dike	10,000 m ³	x 33.14 =	331,400	990 m ³	x 33.14 =	32,809
		Slope protection	314,000 m ²	x 14.31 =	4,493,340	27,000 m ²	x 14.31 =	386,370
	Anti Infiltration Work		154,000 m ²	x 14.31 =	2,203,740	170,000 m ²	x 14.31 =	2,432,700
	Dam	Core	59,000 m ³	x 4.56 =	269,040	375,000 m ³	x 4.56 =	1,710,000
		Filter	5,700 m ³	x 11.52 =	65,664	31,000 m ³	x 11.52 =	357,120
		Surface Protection	7,700 m ³	x 33.14 =	255,178	57,000 m ³	x 33.14 =	1,888,980
		Sand-and-Gravel	130,000 m ³	x 4.91 =	638,300	919,000 m ³	x 4.91 =	4,512,290
		Sand-and-Gravel (Dam Crest)	1,500 m ³	x 4.91 =	7,365	7,900 m ³	x 4.91 =	38,789
		Scoria (Dam Crest)	240 m ³	x 4.91 =	1,178	1,300 m ³	x 4.91 =	6,383
		Counter Weight	7,100 m ³	x 3.83 =	27,193	49,095 m ³	x 3.83 =	188,032
		Stripping	14,000 m ³	x 3.98 =	55,720	87,000 m ³	x 3.98 =	346,260
	Direct Construction Cost				8,348,118			11,899,733
	Indirect Cost (111% of Direct Cost)				9,266,411			13,208,704
	Sub Total				17,614,529			25,108,437
	(USD)				17,703,449			25,108,437
Total		(Million USD)			17.7			25.1

Figure 1-4.3. Comparison of Options to Minimize Damage to the Orchard

CHAPTER 2 LEGAL AND ADMINISTRATIVE FRAMEWORK

2-1 National Regulations Related to Resettlement and Land Acquisition

The Constitution of RA (2015) guarantees protection of ownership rights and provides that the ownership may be terminated in exclusive cases of land acquisition based on an established legislation with prior equivalent compensation for public and state interest. Land acquisition and compensation cases are envisaged in Land Code of the Articles 102 and 104, the RA Civil Code (1998), and Articles 218 to 221 of RA Law “On the Alienation of the Private Property for Public and State Needs” adopted on 27 November 2006. The Law was amended on 21 June 2014. Under the existing laws, the RA Government will issue a Decree determining the case of exclusive public and state priority needs based on the request from relevant state agencies.

Law of RA “On the Alienation of the Private Property for Public and State Needs” specifies the land acquisition procedures, compensation rights of titled landowners and owners of immovable property in cases of alienation of their property for public purposes. Upon enactment of the government decree on recognition of property as prevailing exclusive public interest, the authorized body shall compile minutes describing the alienated property according to the procedure, public interest requiring property alienation, deadlines defined by the government; Acquiring party, owners and those holding property rights towards the alienated property are to be compiled. Assessment of the real estate or the real estate rights shall be made in accordance with the procedure defined under the Act of the RA on Assessment of Real Estate in RA adopted in October 4, 2005. The list of main laws related to land acquisition in RA is shown in Table 2-1.1.

Table 2-1.1 Main Laws on Land Acquisition in RA

Adaption/ Amended	No. of the Law	The name of Laws (in English)
1995/ 2015	—	The Constitution of the Republic of Armenia
1998	No 1998/17	The Civil Code of the Republic of Armenia
1998	No 1988/20	The Code of Civil Procedure
2001	No 2001/17	The Land Code of the Republic of Armenia
2005	No 2005/71	The Law on Real Estate Valuation Activity
2006	No 2006/64	The Law on Alienation of Property for the Needs of Society and State
2007	No 2007/64	The Code of Administrative Procedure

2-2 JICA Guidelines on Resettlement and Land Acquisition

On the JICA Guidelines for Environmental and Social Considerations (hereinafter, “JICA Guidelines”), Resettlement and Land Acquisition are regulated as followings;

The key principle of JICA policies on involuntary resettlement is summarized below.

- I. Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives.
- II. When, population displacement is unavoidable, effective measures to minimize the impact and to compensate for losses should be taken.
- III. People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels.
- IV. Compensation must be based on the full replacement cost¹ as much as possible.
- V. Compensation and other kinds of assistance must be provided prior to displacement.
- VI. For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A.
- VII. In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.
- VIII. Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans.
- IX. Appropriate and accessible grievance mechanisms must be established for the affected people and their communities.

Above principles are complemented by World Bank OP 4.12, since it is stated in JICA Guideline that “JICA confirms that projects do not deviate significantly from the World Bank’s Safeguard Policies”. Additional key principle based on World Bank OP 4.12 is as follows.

- X. Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the Project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits.
- XI. Eligibility of Benefits include, the PAPs (Project Affected Persons) who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal

¹ Description of “replacement cost” is as follows.

Land	Agricultural Land	The pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes.
	Land in Urban Areas	The pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.
Structure	Houses and other Structures	The market cost of the materials to build a replacement structure with an area and quality similar or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labor and contractors' fees, plus the cost of any registration and transfer taxes.

legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying.

XII. Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.

XIII. Provide support for the transition period (between displacement and livelihood restoration).

XIV. Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc.

XV. For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared.

In addition to the above core principles on the JICA policy, it also laid emphasis on a detailed resettlement policy inclusive of all the above points; project specific resettlement plan; institutional framework for implementation; monitoring and evaluation mechanism; time schedule for implementation; and, detailed Financial Plan etc.

2-3 GAP Analysis between JICA Guidelines/ WB OP.4.12 and Armenian Legislation

Gaps between JICA Guidelines/ WB OP.4.12 and the laws on RA in terms of resettlement and land acquisition are analyzed as shown in Table 2-3.1.

Table 2-3.1 Gap Analysis between the Armenian Law and JICA Guidelines/ WB OP.4.12

No.	JICA Guideline/ WB O4.12	RA National Legislation	Gaps	Measure to fill the gaps
1	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives (JICA GL)	The Article 4 of the "RA Law on Alienation of the property for public and state needs" (hereinafter mentioned as "the Land Alienation Law") sets that "The public interest should have higher priority than the interest of the proprietor of the alienated property". However, on the social norms, involuntary resettlement and losing livelihood should be avoided as much as possible.	None	-
2	When population displacement is unavoidable, effective measures to minimize impact and to compensate for losses should be taken (JICA GL)	The Article 11 on "the Land Alienation Law" sets the principle to compensate at market price of property plus 15% (= full replacement cost) for losses caused by involuntary property acquisition. The financial duties (taxes, fees, mandatory payments) related to property alienation are compensated by the acquirer.	None	-
3	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels (JICA GL)	According to the Article 11 of "the Land Alienation Law", "the compensation is based on market price plus 15%. It can be regarded that it is to restore Project Affected Persons (PAPs)' living standard to pre-project levels.	None	-
4	Compensation must be based on the full replacement cost as much as possible (JICA GL)	As mentioned above, the compensation is based on the market price plus 15% of the alienated property.	None	-

No.	JICA Guideline/ WB O4.12	RA National Legislation	Gaps	Measure to fill the gaps
5	Compensation and other kinds of assistance must be provided prior to displacement (JICA GL)	In the Clause 2, Article 3 of "the Land Alienation Law", adequate compensation for the alienated property is to be given at initial stage. Compensations is provided prior to displacement and property alienation.	None	-
6	For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public (JICA GL) For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared. (WB OP4.12 Para.25)	"The Land Alienation Law" does not set legal provision to elaborate the resettlement action plan.	It is not necessary to prepare RAP in RA.	Abbreviated RAP is to be prepared.
7	In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance (JICA GL)	There are no clear legal requirements to hold consultations with the affected population for resettlement and property alienation in the National Legislation.	There is no provision about preparation of RAP and consultations.	In the process of RAP preparation, it is needed to organize consultations with the PAPs.
8	When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people (JICA GL)	According to the Articles 3 and 4 of the RA Law on Language, all the official notifications within the land acquisition process should be proceed in Armenian Language. Public discussions should be held in Armenian language. For the ethnic minority groups, most of them can communicate in Armenian language without difficulty. Those who can understand Armenian language in the minority groups can support the PAPs in their own language.	None	-
9	Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans (JICA GL)	There are no clear legal requirements to assure participation of affected people in RAP planning, implementation and monitoring in the National Legislation. However, at the consultation meeting in the planning process, it is possible for the PAPs to join.	There is no mention about participation of affected people into RAP preparation, implementation and monitoring.	In the consultation and monitoring process, it is proposed to involve representative of PAPs.
10	Appropriate and accessible grievance mechanisms must be established for the affected people and their communities (JICA GL)	Article 9 of "the Land Alienation Law" sets provisions to establish grievance mechanisms. Affected population with legal ownership have the rights to appeal the Government decisions on evaluation of properties to be alienated. However, the grievance opportunity for PAPs is limited to submission of appellation for the preliminary investigation of the property. For the other issues (stages) appropriate and accessible grievance mechanisms are not established.	No grievance system except for complaint about property evaluation result is established in the National Regulation.	An accessible grievance system for the PAPs should be established.

No.	JICA Guideline/ WB O4.12	RA National Legislation	Gaps	Measure to fill the gaps
11	Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits (WB OP4.12 Para.6)	As stated in the Clause 2, Article 7 of the RA Law "the Land Alienation Law", identification of affected people (property holders) and assets is to be done at the preliminary stage. There is no provision for cut-off date and socioeconomic survey.	There is no provision for cut-off date. There is no mention about socioeconomic survey implementation.	Cut-off date cannot be set at Feasibility Stage (F/S) stage. However, it can be set at Detailed Design (D/D) stage after concluding Loan Agreement. Socioeconomic survey and census survey targeting the PAPs should be implemented at early stage of the Project. In this F/S stage, socioeconomic survey and census survey to identify the PAPs were carried out, even though it was not official.
12	Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying (WB OP4.12 Para.15)	It clearly fixed in the Clause 6, Article 11 of "the Land Alienation Law" that compensation is provided only for property owners with legal status.	In the Armenian legislation, only legal property owners are eligible for compensation.	Compensation for land loss cannot be provided to the PAPs who do not have legal status. However, they will be provided with special consideration by the Project to mitigate the impact. Compensation for tree loss should be paid to all PAPs, regardless of legal status.
13	Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based (WB OP4.12 Para.11)	The compensation strategy set by the national legislation (Article 11 of "the Land Alienation Law") includes only cash compensation regardless of livelihood and other social characteristics of the displaced people. Evaluator with license estimates the market price of land to be acquired including the land productivity.	Cash compensation for properties is principle in Armenia.	Cash compensation for land loss considering the land productivity is to be provided.
14	Provide support for the transition period (between displacement and livelihood restoration) (WB OP4.12 Para.6)	The national legislation does not envisage support for the transition period.	There is no mention in Armenian Legislation.	The Project will not cause physical relocation of local residents. Cash compensation for the land loss considering the land productivity is to be provided.
15	Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc. (WB OP4.12 Para.8)	The National legislation does not set legal mechanisms to pay particular attention to the vulnerable groups of people.	There is no mention in Armenian Legislation.	Special consideration to the vulnerable people should be paid.
16	When impacts on the	The National legislation does not	There is no mention in	The number of PAPs

No.	JICA Guideline/ WB O4.12	RA National Legislation	Gaps	Measure to fill the gaps
	entire displaced population are minor, or fewer than 200 people are displaced, abbreviated resettlement plan is to be prepared (WB OP4.12 Para.25).	envisage preparation of abbreviated resettlement action plans.	Armenian Legislation for RAP.	to be relocated is nil, therefore, an abbreviated RAP preparation is necessary (instead of full RAP) for the Project.

CHAPTER 3 SCOPE OF RESETTLEMENT

3-1 Population Census Survey

The population census survey to identify PAPs was carried out in Yeghvard city, Nor-Yerznka village, and Ashtarak city, from March to April in 2016, based on the official cadastral map provided by State Committee of Real Estate Cadastral. However, it was found some illegal land users, who have cultivated in state and community lands to be affected.

(1) Illegal land users of the Project affected area for the irrigation canals

In the Project, two feeder canals and two outlet canals are proposed to construct. Feeder Canal 1, Feeder Canal 2, and Outlet Canal 1 are planned to construct in Yeghvard city. There is no illegal land users in the area.

On the other hand, there are 7 illegal land users (households) with 44 family members in total, in the area for Outlet Canal 2 in Nor-Yerznka village.

(2) Illegal land users of the Project affected area for the Reservoir

In the Reservoir basin, all of the illegal land users are not identified². On the other hand, 53 plots under cultivation were identified within the Reservoir basin. JICA Survey Team made a survey with the local farmers to identify the cultivated plots within the Reservoir basin. As a results, 53 plots were identified. Remaining parts are natural grazing land and infertile area³. Therefore, it is assumed that there are 53 Project Affected Households (PAHs) in maximum, if each household cultivates one plot. According to the socioeconomic survey, the number of family members in average is 5.59 person. Then, the number of PAPs of illegal land users within the Reservoir basin can be calculated by multiplying 5.59 persons and 53 PAHs. Accordingly, it is 296 persons.

(3) Labors for cultivation within the Reservoir basin

According to the interview to one cultivator who cultivates hiring labors within the Reservoir basin. The illegal land users cultivate 1.0 ha hire labor for 4 days per year in usual. And the labors work 4 hours per day. The main works of labors are followings;

- a) Plowing; 40,000 AMD/ha (including salary of labor, and rental fee for a tractor)
- b) Seeding; 10,000 AMD/ha
- c) Watering; 10,000 AMD/ha

The illegal land users within the Reservoir basin hire one (1) labor for one (1) day per year, since the different labors are hired depending on the works. Some labors take on works outside of the Reservoir basin by using their own tractor, and some of them have their own farm lands. From those conditions, it can be said that the labors does not rely on the wage of works within the Reservoir basin

² The detailed information about the illegal land users who have cultivated within the Reservoir basin is mentioned later (see, "3-3 Socioeconomic Survey").

³ JICA Survey Team carried out the field survey in the Reservoir basin to identify the cultivated plots, cultivated crops, and are of each cultivated plot.

significantly.

According to the interview, the relationship between the illegal land user and labors is not dense each other. Then, illegal land user do not have the contact number of the labors. For these reasons, there is no serious impact on the labors who are hired by illegal land users within the Reservoir basin. Thus, such labors are not included to PAPs, in the Project.

(4) Total number of PAPs

Physical relocation in the Project affected area is not required. And Table 3-1.1 shows the number of PAHs and PAPs counted with 418 PAPs in 75 PAHs.

Table 3-1.1 Numbers of PAHs and PAPs

Type of loss	No. of PAHs			No. of PAPs		
	Legal	Illegal	Total	Legal	Illegal	Total
1. Required for physical relocation						
1-1. HH (Structure owner on Gov. land)	Nil	Nil	Nil	Nil	Nil	Nil
1-2. HH (Structure owner on Private land)	Nil	Nil	Nil	Nil	Nil	Nil
1-3. HH (Tenants)	Nil	Nil	Nil	Nil	Nil	Nil
1-4. CBEs (Structure owner on Gov. land)	Nil	Nil	Nil	Nil	Nil	Nil
1-5. CBEs (Structure owner on Private land)	Nil	Nil	Nil	Nil	Nil	Nil
1-6. CBEs (Tenants)	Nil	Nil	Nil	Nil	Nil	Nil
1-7. Community owned structures including physical cultural resources	Nil	Nil	Nil	Nil	Nil	Nil
Sub-total (1)	Nil	Nil	Nil	Nil	Nil	Nil
2. Not required for physical relocation						
2-1. State or Community owned land ⁴	-	60	60	-	340	340
1) Canal area	-	7	7	-	44	44
2) Reservoir area	-	53	53	-	296	296
2-2. Private owned land	15	-	15	78	-	78
1) Canal area	12	-	12	64	-	64
2) Reservoir area	3	-	3	14	-	14
2-3. Labor ⁵	-	-	-	-	-	-
Sub-total (2)	15	60	75	78	340	418
Total (Sub-total 1~2)	15	60	75	78	340	418

Source) JICA Survey Team, March-April of 2016

Remarks) 1. In the Project, farming labors are not included to PAPs.

2. CBEs; Commercial and Business Enterprises

(5) Cut-off data

The cut-off date has not been declared at F/S stage, since the Project follow the general way of RA, namely, the cut-off date is established and declared at D/D stage. However, the PAPs have been already identified by the census survey and socioeconomic survey at F/S stage. In the D/D stage, cut-off date should be established on the first date of final census survey and declared to all PAPs in advance, to prevent new residents' influx to the Project affected area. For evidences, it is proposed to take pictures of the Project affected area and PAPs before several days from cut-off date.

Information and data about the PAPs during F/S stage will be used at D/D stage. The results of census survey should be updated, since the situation of the Project affected area will be changed. According to the WB OP.4.12, the census survey must be carried out again, if the land acquisition has not conducted within two years from the last census survey. However, there is no regulation about such issue on the law of RA. Thus, it is proposed that the Project follows the regulation of WB OP.4.12, that is; the effective period of census survey is two years. It is planned to take 14 months for D/D stage, and cut-off date will be declared around 9th month of D/D stage⁵.

⁴ If the illegal users have cultivated one plot, there would be 53 illegal land users in maximum. Hence, the number of affected households are assumed as 53 households. In addition, according to the socioeconomic survey, the average number of family members in the Project affected area is 5.59 person. Then, the number of PAPs of illegal land users within the Reservoir area is assumed approximately 296 persons.

⁵ Detailed schedule is mentioned in Chapter 7.

3-2 Assets and Lands Survey

For construction irrigation canals and the Reservoir, temporary or it is needed permanent land acquisition. The results of surveys of asset and land in the Project affected area are shown below.

(1) Project affected areas

In the Project affected area, land ownerships are classified into three categories, namely a) State Lands, b) Communal Lands of Yeghvard city, and c) Private Lands. The total Project affected area is 819.36 ha. And the area affected by construction of the Reservoir is 792.48 ha, which accounts for 97 % of the Project affected area.

Table 3-2.1 Project Affected Area by Land Ownership

Category	Plots	Affected Area (ha)
1) State	2	54.49
2) Community	76	738.94
3) Private	25	25.93
Total	103	819.36

Source) JICA Survey Team, March-April of 2016

1) State owned lands

Table 3-2.2 shows the land use of State owned, which utilize agriculture mostly.

Table 3-2.2 Project Affected Area (State Owned)

No.	Land Use	Affected Area (ha)
1	Agricultural	54.42
2	Other	0.07
Total		54.49

Source) JICA Survey Team, March-April of 2016

2) Community owned lands

Table 3-2.3 shows the land use of Community owned, which belongs to Yeghvard city mostly.

Table 3-2.3 Project Affected Area (Community Owned)

No.	Location	Land Use	Affected Area (ha)
1	Yeghvard city	Agricultural	705.66
2		Residential	0.00
3		Industrial	0.00
4	Nor-Yerznka village	Agricultural	27.89
5		Residential	3.47
6		Industrial	0.00
7	Ashtarak city	Agricultural	0.00
8		Residential	1.92
9		Industrial	0.00
Total			738.94

Source) JICA Survey Team, March-April of 2016

3) Private owned lands

Table 3-2.4 shows the land use of Private owned, of which total affected area of private lands is 25.93 ha. Especially, the agricultural lands will be affected by the Project. Furthermore, Nor-Yerznka village will be the most affected among the three (3) communities concerned. The Project affected area in Nor-Yerznka village is 14.44ha with 56 % of total.

Table 3-2.4 Project Affected Area (Private Owned)

No.	Location	Land Use	Affected Area (ha)
1	Yeghvard city	Agricultural	10.05
2		Residential	0.00
3		Industrial	0.00
4	Nor-Yerznka village	Agricultural	14.24
5		Residential	0.20
6		Industrial	0.00
7	Ashtarak city	Agricultural	0.00
8		Residential	0.54
9		Industrial	0.90
Total			25.93

(Source) JICA Survey Team, March-April of 2016

(2) Project affected buildings

While the Project affected area involves some industrial and residential lands on the cadastral map. The proposed facilities are designed not to cause relocation of existing buildings. Therefore, physical relocation of buildings will not be occurred.

(3) Project affected trees

Table 3-2.5 shows the number of Project affected trees by species. Totally, 4,855 trees will be affected by the Project.

The Reservoir basin includes a private orchard, which has 3,003 pear and 200 apple trees. As mentioned at section 1-4 (2), comparison study was examined. As a result, it is required those trees should be include in the compensation to the Project.

Table 3-2.5 Number of Project Affected Trees

No.	Location	Ownership	Species	Total
1	Yeghvard city	Private owned	Apple	350
2	Nor-Yerznka village	Community owned (illegal land users)	Apricot	30
3			Apple	56
4			Bird cherry	19
5			Cherry	51
6			Hazelnut	9
7			Mulberry	5
8			Nuts	52
9			Oleaster	1
10			Peach	15
11			Pear	12
12			Plum	19
13			Private owned	Apricot
14		Apple		763
15		Bird cherry		21
16		Cherry		24
17		Grapevines		90
18		Hazelnut		1
19		Nuts		88
20		Peach		59
21		Pear		3,003
22	Plum	146		
Total				4,855

(Source) JICA Survey Team, March-April of 2016

(4) Project affected cultivation areas

Table 3-2.6 shows 3.67 ha of cultivated area affected by irrigation canals construction. The Project affected crops which belong to privates.

Table 3-2.6 Project Affected Cultivated Crops by Construction of Irrigation Canals

No.	Location	Ownership	Species	Total
1	Yeghvard city	Private owned	Wheat	1.04
2	Nor-Yerznka village	Private owned	Alfalfa	2.57
3			Wheat	0.06
Total				3.67

Source) JICA Survey Team, March of 2016

Remarks) Apart from the census survey, 53 plots of cultivated lands, which are approximately 80ha within the reservoir basin, were identified. The detailed information is mentioned later.

Table 3-2.7 shows the Project affected cultivation area by construction the Reservoir. The Project affects cultivated lands of 79 ha which belong to state or communities. Those crops are cultivated by the illegal land users.

Table 3-2.7 Project Affected Cultivated Crops by Construction of the Reservoir

No.	Plants	Area (ha)
1	Barley, Wheat	54
2	Alfalfa, Sainfoin	20
3	Plowed lands	5
Total		79

Source) JICA Survey Team, March of 2016

The Project affects cultivation area with 82.27 ha in total, consisting of 3.67 ha by irrigation canal construction and 79.00 ha by the Reservoir construction (see, Table 3-2.8).

Table 3-2.8 Cultivation Area of Affected Crops

Area	Ha
Irrigation canal area	3.67
Reservoir basin	79.00
Total	82.27

Source) JICA Survey Team, March of 2016

3-3 Socioeconomic Survey

To identify characteristics and economic situation of the PAPs, the socioeconomic survey was conducted. The questionnaire format and result of the survey are shown in the Appendix 1 and 2. The survey targeted 32 households of Yeghvard city and Nor-Yerznka village, including 14 households which have cultivated within the Reservoir basin.

Table 3-3.1 Total Number of Project Affected Households in Socioeconomic Survey

Location	Number of Project Affected Households			Number and percent of socioeconomic survey covered Affected households		
	Legal	Illegal	Total	Legal	Illegal	Total
Canal area	12	7	19	9	6	15
The Reservoir basin	3	53	56	-	11	11
Both areas				3	3	6
Total	15	60	75 (100%)	12	20	32 (43%)

Source) JICA Survey Team, March-April of 2016

Remarks) 1. There are 53 households by using number of cultivated lands within the Reservoir basin.

2. There are 6 PAHs which have cultivated within the Canal area and the Reservoir area.

3. The numbers in () shows the share on all PAHs.

PAHs can be categorized into 2 groups by the locations. And there are some households who cultivate in both the Reservoir basin and area along proposed canals. Accordingly, the result of socioeconomic survey is analyzed by three (3) groups of cultivators, as followings;

- 1) Cultivators in only Reservoir basin (n=11)
- 2) Cultivators in only area along the proposed canal (n=15)

3) Cultivators in both Reservoir basin and area along the proposed canal (n=6)

(1) General characteristics of PAHs

1) Project Affected population and family size

The number of targeted PAHs and population were identified by the survey. There are 179 persons in 32 PAHs which were conducted socioeconomic survey in the Project. 179 consists of 91 males and 88 females. The average of household member is 5.59 persons, with 2.84 males and 2.75 females respectively, as shown in Table 3-3.2.

Table 3-3.2 Project Affected Population and Family Size

Item	Male	Female	Total
1. Cultivators in only Reservoir basin (n=11)	3.18	2.73	5.91
2. Cultivators in area along proposed canal (n=15)	2.53	2.47	5.00
3. Cultivator in Both areas (n=6)	3.00	3.50	6.50
Total (n=32)	2.84	2.75	5.59

Source) JICA Survey Team, March-April of 2016

2) Female heads of PAHs

There are three households headed by female. It is only 9 % of total PAHs, as shown in Table 3-3.3. The similar trend can be seen in all of three categories.

Table 3-3.3 Household Heads of PAHs

Item	Male	Female	Total
1. Cultivators in only Reservoir basin (n=11)	10	1	11
2. Cultivators in area along proposed canal (n=15)	13	2	15
3. Cultivator in Both areas (n=6)	6	0	0
Total (n=32)	29 (91%)	3 (9%)	32 (100%)

Source) JICA Survey Team, March-April of 2016

3) Elderly persons of PAHs

There are 21 PAHs, which have persons who are elder than 65 years old. It is 66 % of total PAHs, as shown in Table 3-3.4.

Table 3-3.4 Elderly Persons of PAHs

Item	No. of PAHs	Share of the households which have elderly persons (%)
1. Cultivators in only Reservoir basin (n=11)	7	64
2. Cultivators in area along proposed canal (n=15)	11	73
3. Cultivator in Both areas (n=6)	3	50
Total (n=32)	21	66

Source) JICA Survey Team, March-April of 2016

4) Disabled persons of PAHs

While there are 10 disabled persons in PAHs, there are 9 households (28%) which has disabled persons. The households of “3. Cultivators in Both areas” does not have disabled person, as shown in Table 3-3.5.

Table 3-3.5 Disabled Persons of PAHs

Item	No. of disabled population	No. of PAHs	Share of the households which have disabled persons (%)
1. Cultivators in only Reservoir basin (n=11)	2	2	18.2
2. Cultivators in area along proposed canal (n=15)	8	7	46.7
3. Cultivators in Both areas (n=6)	0	0	0.0
Total (n=32)	10	9	28.1

Source) JICA Survey Team, March-April of 2016

5) Educational status of PAH heads

At least, all of PAPs completed elementary school. Especially, the cultivators in the both area have highest education level, as show in Table 3-3.6.

Table 3-3.6 Educational Status of PAH Heads

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both areas (n=6)
1) None	0	0	0	0
2) Elementary	0	0	0	0
3) Primary (8, 9 grade)	1 (3%)	0	1 (7%)	0
4) Secondary general	14 (44%)	7 (64%)	6 (40%)	1 (16.5%)
5) Average Professional	9 (28%)	3 (27%)	5 (33%)	1 (16.5%)
6) Higher	8 (25%)	1 (9%)	3 (20%)	4 (67%)
Total	32 (100%)	11 (100%)	15 (100%)	6 (100%)

Source) JICA Survey Team, March-April of 2016

Remarks) The numbers in () shows the share by each categories.

(2) Financial characteristics of PAHs

1) Main income source

31 households get farm-income as main source. The one household have no farm-income, since lands of the household are fallow. The second largest answer was “livestock.” This same trend can be shown in all of 3 categories, as shown in Table 3-3.7 and Figure 3-3.1.

Table 3-3.7 Main Income Source

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both areas (n=6)
1) Farming	31	11	15	5
2) Aquaculture	0	0	0	0
3) House/Land lent income	2	1	1	0
4) Pension	18	6	9	3
5) Business/ Shop	1	0	1	0
6) Carpenter	0	0	0	0
7) Livestock	24	9	10	5
8) School Teacher	0	0	0	0
9) Public Officer	10	2	4	4
10) Labor for person's farmland	0	0	0	0
11) Factory Labor	2	1	0	1
12) Company Worker	2	1	1	0
13) Remittance from family members	1	0	1	0
14) Others	9	3	6	0

Source) JICA Survey Team, March-April of 2016

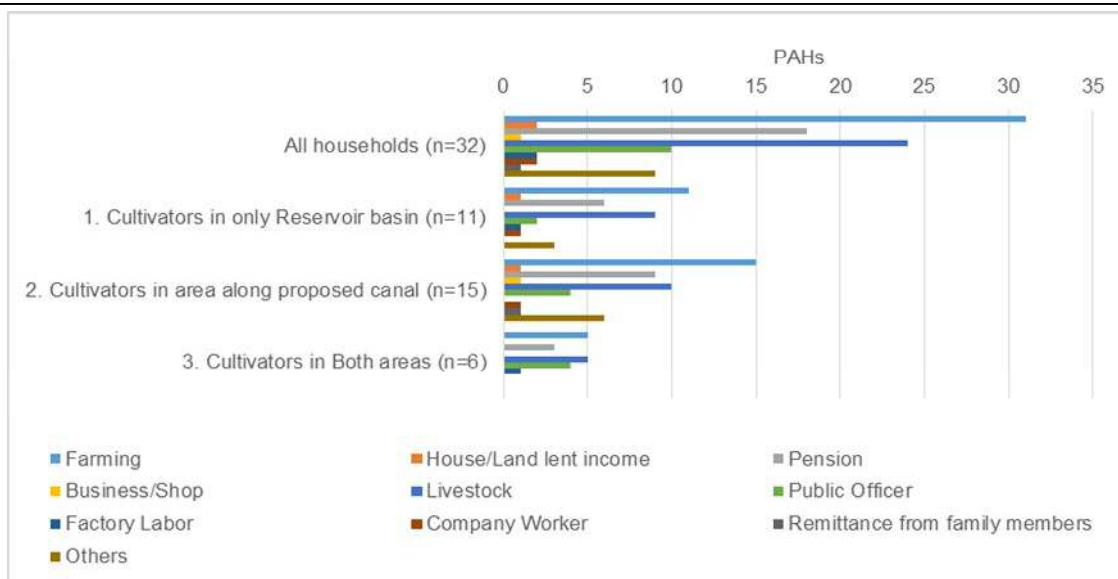


Figure 3-3.1 Main Income Source

2) Average annual gross income

The average annual gross income of all PAHs is 4,252,000AMD, including 2,357,000 AMD farm-income⁶, 1,504,000AMD off-farm income, and 391,000AMD from livestock, as shown in Table 3-3.8. The PAHs of “3. Cultivators in Both areas” get the highest annual income among the three categories. Oppositely, the PAHs of “1. Cultivator in only Reservoir basin” get the lowest annual income among the three categories.

Table 3-3.8 Average Annual Gross Income (AMD)

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both areas (n=6)
Farm-income				
Within the Reservoir basin	272,200	527,100	0	528,000
Within the Canal area	973,700	0	1,586,000	1,280,000
Not affected area	1,111,100	1,622,900	675,000	1,296,000
Sub-total	2,357,000	2,150,000	2,261,000	3,104,000
Non-farm income	1,504,000	936,800	1,921,700	1,500,000
Livestock	391,000	618,200	221,300	400,000
Total	4,252,000	3,705,000	4,404,000	5,004,000

Source) JICA Survey Team, March-April of 2016

Remarks) 1. Agricultural products for self-consumption, it was implemented imputation.

2. It was excluded one household, which has huge cultivated area compared with the other households, as the outlier.

Figure 3-3.2 shows the share of incomes source. While annual gross income of “1. Cultivators in only Reservoir basin” is the lowest among three categories, the share of farm-income from cultivation within the Reservoir basin is 14 %. And they have much higher income from cultivation in the non-affected area than in affected area.

Annual gross income of “2. Cultivators in area along proposed canal” is almost same as its average of all households. While they will lose 36 % of income from cultivation in the Project affected area, they have farm-income in non-affected area, non-agricultural income, and livestock income.

Annual gross income of “3. Cultivators in both areas” is the highest among three categories. While they will lose 37 % (11 % + 26 %) of income from cultivation within the Reservoir basin and area along

⁶ Some PAHs cultivate crops for their self-consumption. To measure of the finance damage by the Project, it was implemented imputation, based on the unit price of selling price for agricultural products.

proposed canal, they have farm-income in non-affected area, non-agricultural income, and livestock.

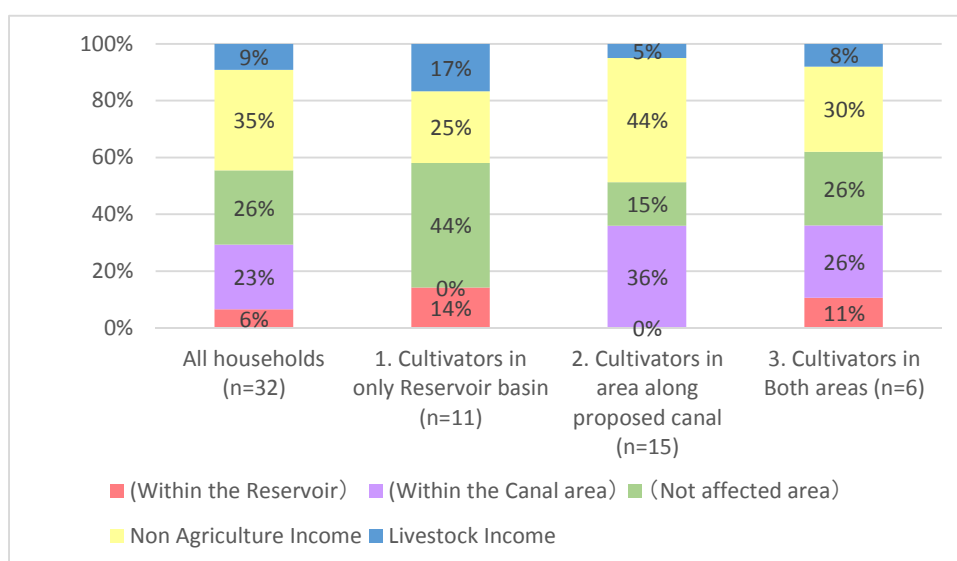


Figure 3-3.2 Annual Gross Income

3) Non-farm income

Except for a household, PAHs have non-farm income and their main source is “Salary.” Other large shares are pension, income from work abroad, and livestock. The similar trend in the three categories is observed. However, the largest share of “1. Cultivators in only Reservoir basin” is “Pension,” not “Salary,” as shown in Table 3-3.9.

Table 3-3.9 Non-farm Income

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both area (n=6)
None	1	1	0	0
Income from work abroad	4	0	4	0
Salary	12	2	6	4
Pension	9	3	4	2
Livestock	3	2	1	0
Poverty benefits	2	2	0	0
Others (pension and salary)	1	1	0	0
Total	32	11	15	6

Source) JICA Survey Team, March-April of 2016

4) Land size of Project affected area and average farm-income

As shown in Table 3-3.10, the average land size of cultivated area within the Reservoir is 1.89 ha/household. In addition, the average farm-income from this activity is 272,200 AMD/household. On the other hand, the average land size of cultivated area within the Canal area is 0.25 ha/household. Then, the average farm-income from this activity is 973,700 AMD/household. From the comparison between “Within the Reservoir basin” and “Within the Canal area,” the profitability of farm crops of the former is much lower than latter.

Table 3-3.10 Average Land Size of Project Affected Cultivated Area and Farm-income

Item		Total (n=31)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both area (n=6)
Within the Reservoir basin	Land size (ha)	1.89	1.46	0.00	8.47**
	Farm-income (AMD)	272,200	527,100	0	528,000
Within the Canal area	Land size (ha)	0.25	0.00	0.30	0.65
	Farm-income (AMD)	973,700	0	1,586,000	1,280,000

Source) JICA Survey Team, March-April of 2016

Remarks) * It was excluded one household, which get huge amount of farm-income compared with the other households, as the outlier.

** It was included the household, which has fallow of 35 ha within the Reservoir basin.

(3) Living Conditions of PAHs

1) Cultivation years in the past

All PAHs have cultivated crops in their lands for 18.5 years in average. About “1. Cultivators in only Reservoir basin”, 55% of PAHs have cultivated for over 16 years, since the immediately before or after independence of RA. On the other hand, 45% of PAHs have cultivated there for less than 10 years. About “2. Cultivator in only area along the proposed canal”, all PAHs have cultivated over 6 years. Furthermore, 80% of them have used their lands over 16 years. About “3. Cultivators in Both areas,” the clear trend is not observed, as shown in Table 3-3.11.

Table 3-3.11 Period of Cultivation (years)

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both areas (n=6)
Average of total PAHs	18.5	14.9	22.6	14
1~5	4	3	-	1
6~10	5	2	2	1
11~15	-	-	-	-
16~20	4	2	1	1
21~25	13	4	8	1
<25	3	-	3	-
N/A	3	-	1	2

Source) JICA Survey Team, March- April of 2016

2) Legal status of land use

Table 3-3.12 shows the legal status for land use of PAHs. There are 11 PAHs of “1. Cultivators in only Reservoir basin” and 3 PAHs of “3. Cultivators in Both area”, who cultivate within the Reservoir basin. In addition, there are 6 PAHs of “2. Cultivators in area along proposed canal.” Thus, there are 20 PAHs who have cultivated the Project affected area without legal status.

Table 3-3.12 Legal Status of Land Use

Item	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivators in Both areas (n=6)*
1. Within the Reservoir basin	11	-	6
Legal	-	-	3
Illegal	11	-	3
2. Within Canal area	-	15	6
Legal	-	9	6
Illegal	-	6	-

Source) JICA Survey Team, March- April of 2016

Remarks) The total of “3. Cultivator in Both areas” is 12 PAHs, since 6 PAHs have cultivated in the both area.

(4) Others**1) Expectation to the Project**

As shown in Table 3-3.13, 25 PAPs (78%) anticipate that the Job opportunity will be increased during the construction period. Especially, the most PAPs of “1. Only Reservoir basin” anticipated it.

Table 3-3.13 Anticipated Impacts by the Project

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivator in Both area (n=6)
1) Water quality in the Community will be damaged	6	4	1	1
2) Nothing	1	0	1	0
3) Job opportunity will be increased during the construction period.	25	10	11	4
7) Others (promotion of tourism, etc.)	7	4	2	1

Source) JICA Survey Team, March – April of 2016

Remarks) This question applied plural answered.

2) Expected Benefits by the Project

As shown in Table 3-3.14, the most of PAPs expect to access to stable water in the community more easily than before. In addition, PAPs hope the development of some industries around the Reservoir area.

Table 3-3.14 Expected Benefits by the Project

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivator in Both area (n=6)
1) Stable water using in the Community	15	6	4	5
2) Solution for lack of agricultural water	15	7	6	2
3) Improvement of irrigation system	9	5	2	2
4) Promotion of industry	11	7	2	2
5) Reduction of water fee	6	3	3	0
6) None	6	1	4	1
7) Others (promotion of tourism, etc.)	4	2	1	1

Source) JICA Survey Team, March – April of 2016

Remarks) This question applied plural answered.

3) Concerns on the Project

As shown in Table 3-3.15, the most of PAPs have concerns about risk on safety/ seismicity by the Project. Then, PAPs, who have cultivated in the Project affected area are worry about compensation for land loss.

Table 3-3.15 Concerns on the Project

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivator in Both area (n=6)
1) Risk on Safety/ Seismicity	17	6	7	4
2) Financial damage due to land loss	13	5	5	3
3) Implementation of compensation	15	5	7	3
4) Increasing of water price	1	1	0	0
5) Others	1	0	0	1

Source) JICA Survey Team, March – April of 2016

Remarks) This question applied plural answered.

4) Understanding on the Project

As shown in Table 3-3.16, 24 PAPs (75 %) understand that they should stop cultivation within the Reservoir basin, when the Project is re-stated.

Table 3-3.16 Understanding on the Project

Item	Total (n=32)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivator in Both area (n=6)
Already known	24	8	11	5
Not Known	8	3	4	1

Source) JICA Survey Team, March – April of 2016

3-4 Social and Cultural Characteristics

(1) Transition of land ownership within the Yeghvard Reservoir basin

1) Period of Soviet Union

In the period of Soviet Union, all of the lands belonged to the State. Before the Yeghvard Reservoir construction project (1970's), collective farming, called as Kolkhoz, had been operated in the farmlands of Yeghvard Community, including Yeghvard Reservoir basin (see, figure right (1)). In the farmlands, grape had been cultivated and the farmers had gotten fixed monthly salary by works. The farmers had been engaged in farming activities in rotation within the grape garden.

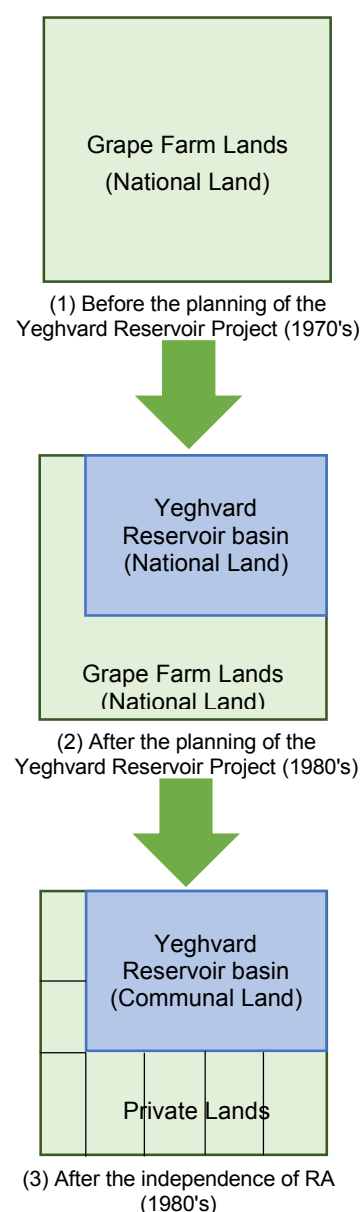
In 1980's, due to the plan of the construction of the Yeghvard Reservoir, cultivation within the Reservoir basin was suspended (see, figure right (2)). On the other hand, the farmers had continued cultivations outside of the range of the Reservoir basin. In addition, their salary was not changed, since it was fixed by the State. Therefore, the impacts on the surrounding households were not serious.

In 1984, because of the financial problems, the Government of Soviet Union stopped the construction of the Yeghvard Reservoir.

2) After independence of the RA

In 1991, the RA gained independence from the Soviet Union. After that, the Government of RA distributed the lands of outside of the Yeghvard Reservoir basin to the people as the private lands (see figure right (3)). The average land distribution was 0.5 ha per household, if the number of family members was 3 or less, while the numbers of household members was 4 or more, they could get 1.0 ha or more. On the other hand, the lands for the Yeghvard Reservoir became communal lands which belong to Yeghvard city.

Since the construction of the Yeghvard Reservoir has been suspended even after the independence, the surrounding people re-started crop cultivation within the Reservoir basin, considering the soil within the Reservoir is fertile. They do not have the legal rights to cultivate there. However, Yeghvard city has given silent



consent to them until now, since it is not sure whether the construction of the Reservoir will be re-started or not. According to Yeghvard city, approximately 30~40 farmers have cultivated, as of June in 2015.

3) Current farming conditions

As of April in 2016, land ownerships within the Reservoir basin are categorized into 3 types, namely, a) State Lands⁷, b) Communal Lands of Yeghvard city, and c) Private Lands. Most of the lands are communal lands (see, Figure 3-4.1). In addition to that, there are some private lands (four plots), which were sold by the Yeghvard city to individuals by auctions.

The farmers who cultivate within the Reservoir basin has been changed so often, since some of them have handed over or have leased lands to others, or stopped cultivation.

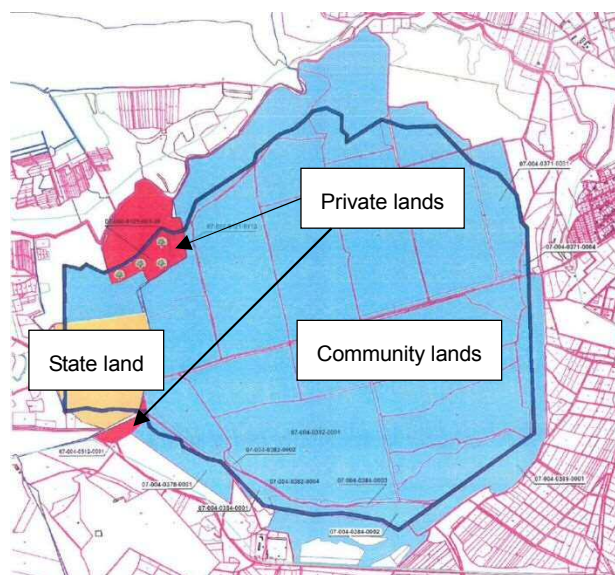


Figure 3-4.1 Current Land Ownership within the Reservoir Basin

(2) Identification of farmers of the Reservoir basin

Yeghvard city, Nor-Yerznka village, and Yeghvard WUA do not have information about the farmers who have cultivated within the Reservoir basin. As well as, the farmers in the Reservoir don't communicate with neighbor farmers well, since they don't go to the field every day. It means that there is no data/information related to the actual cultivators and the number of them within the Reservoir basin. Therefore, a site survey to identify the number of farming plots in the Reservoir was implemented by JICA Survey Team. As a result, as of April in 2016, 53 farming plots covering 80ha were identified. It could be assumed that there are maximally 53 farmers, if one farmer cultivates each plot. In the survey process, 14 illegal land users within the Reservoir basin were identified.

In the Project, the Public Consultation and public seminar are noticed in the newspapers, web-site and on the board of communities concerned and Yeghvard WUA. The purpose is to enhance understanding of the persons concerned about the Project.

(3) Current situation within the Reservoir basin

The cultivated lands within the Yeghvard Reservoir basin are shown in Figure 3-4.2. Basically, those are located on where it can access to water resource easily. In particular, the most of cultivated lands are located in the northeastern part of the Reservoir where it is close to the Arzni-Shamiram canal. On the other hand, there are few cultivated lands in the central part of the Reservoir basin, because the fertile top soil in the part has been already excavated in the period of

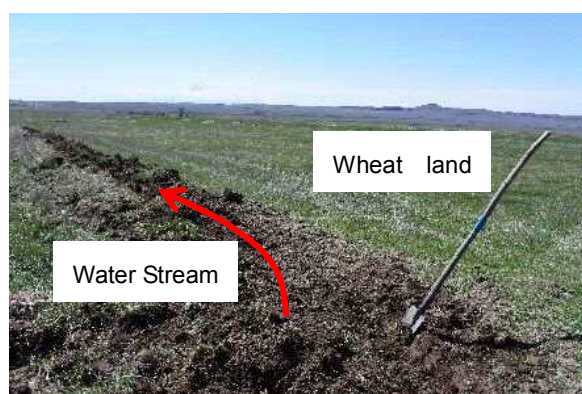
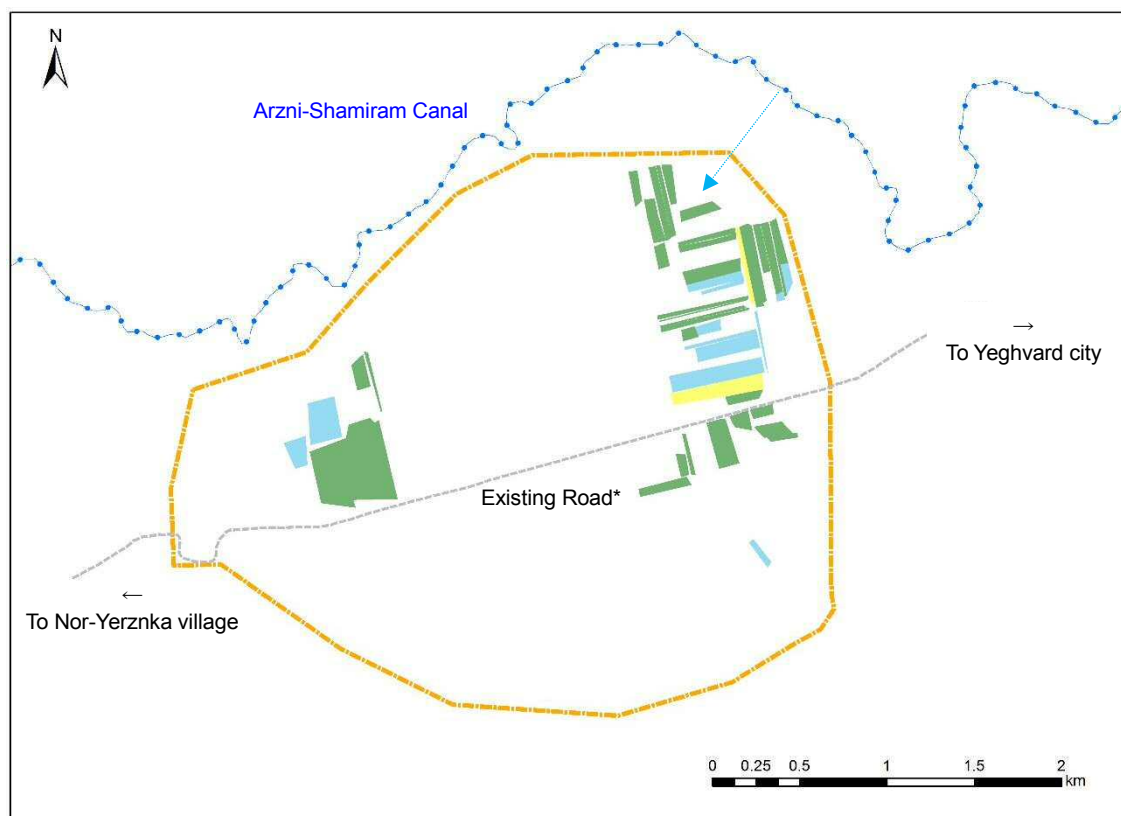


Photo 1. Maintained Ditch and Wheat Land

⁷ The current State lands belonged to Nor-Yerznka village before, however, it became state lands for construction of the Reservoir.

Soviet Union. In the same period, ditches were constructed for water distribution to grape all over the Reservoir basin. Presently, the farmers use the existing ditch or construct new one by themselves for their cultivation (see, Phot 1).

As mentioned above clause (2), 53 plots are cultivated. And the area is approximately 80 ha (see, Figure 3-4.2). There is a big plot whose area is 17 ha in the western part of the Reservoir basin and the plot is managed by one household. Except for the big plot, the average of cultivated lands area of 52 plots in the Reservoir basin is estimated at approximately 1.2 ha per household.



Crops	Plots	ha
Barley, Wheat	36	54
Alfalfa, Sainfoin	15	20
Plow ed lands	2	5
Total	53	79

Figure 3-4.2 Cultivated Lands within the Reservoir Basin

*It was maintained for construction of Yeghvard Reservoir in the Soviet Union Period.

(4) Cultivated crops within the Reservoir basin

Main cultivated crops in the Reservoir are wheat, barley, alfalfa and sainfoin (legume pasture), the cultivation areas of wheat and barley accounts for around 70% of the whole farmland area in the Reservoir basin. Alfalfa and sainfoin are perennial crops which can be harvested for 4-6 years, while wheat and barley are one-year crops. The profits from those crop productions are very low compared with those of vegetables and orchard, only 5%-20%. The reasons why such low profitable crops are cultivated is the area that 1) Yeghvard City gave an instruction to the farmers not to plant perennial crops such as fruit trees in case of re-start of the Yeghvard Reservoir Construction, and 2) water resources in the Reservoir are not sufficient.

3-5 Vulnerable People

The RA has a social welfare program for the poor, namely, “Family Benefits System (FBS)”. According to the socioeconomic survey, there are two households, which get FBS. Each of them cultivated 1 ha and 0.6 ha, respectively within the Reservoir basin for their self-consumption, and they do not own their private farmlands outside of the Reservoir. If the Project is started, they will lose their measures to gain their daily food. Hence, it is proposed to hire them with high priority as the construction labors. Apart from them, there are elder households who get pension and disabled households who get disability benefits. In addition, there are some women headed households. Those of them are also categorized into the vulnerable people, and they also will have high priority to be employed as workers by the Project. Moreover, as the ADB construction has done, allowance to them will be provided. On the other hand, there are no ethnic minority people in the affected area. Therefore, it is not necessary to consider such people.

CHAPTER 4 COMPENSATION MEASURES

4-1 Compensation for Loss

(1) Contents of compensation

In the Project, while physical relocation is not required, the land acquisition is needed. Based on the meetings with the implementation agency, namely, PIU/ SCWE, the basic compensation measures were drafted to provide compensation. Consideration. In addition, as described in “Chapter 10 Public Consultation,” the contents on drafted compensation measures was presented to PAPs at Public Seminars, and it was basically accepted by the participants. The detailed contents are mentioned below;

1) Land loss

Compensation for land loss will be done to the PAPs who have legal status. In the Project affected area, it was identified three (3) categories of land, such “agricultural”, “residential”, and “industrial⁸.” Based on those categories, the market prices are evaluated by the evaluator who has the license from the Government of RA. Furthermore, the market price is fixed based the accessibility and productivity. This market price can cover the amount that PAPs to purchase the new lands which have equal values as previous lands. After comparing between the market and official prices (see following table), the higher price, namely, market price is adopted.

Table 4-1.1 Comparison of Official Price and Market Price

	Official price (AMD/m ²)	Market price (AMD/m ²)
Agriculture (crop)	36.5-118.5	460
Agriculture (pasture)	6.75	460
Orchard	43.5-180	880
Residential area	2,940	3,800-8,700

Source) 1. Official price of lands: State Committee of Real Estate Cadaster,

2. Market price of lands: JICA Survey Team, 2016 (estimated by the licensed land evaluator)

The amount for compensation, including 15 % plus of the market price is applied and the amount of compensation can be though as full replacement cost.

While there are some illegal land users in the Project affected area, all of illegal land users within the Reservoir basin have not been identified. Also, since the illegal land users are changing by years, it is very difficult to compensate to actual PAPs who cultivate in the Reservoir basin.

⁸ The buildings will be demolished, however, the area will be affected by the Project.

According to the PIU member, the Vedi project founded by AFD, didn't compensate to the illegal land users, since the PAPs understood the area is for the Vedi project from the beginning. On the other hand, the road construction project founded by ADB, compensated to the illegal land users, since the project area was not decided in early stage and the illegal PAPs were not aware the project.

In case of the Yeghvard Reservoir Project, while it was stopped in the Soviet Union period, Yeghvard city has instructed the illegal land users not to cultivate perennial crops. Furthermore, it is known that the cultivation in state or communal land is illegal, generally. As the result of socioeconomic survey, 76 % of illegal land users within the Reservoir area have already know that they should stop cultivation within the Reservoir area, when the Project is restarted. From these reasons, it will not be difficult to gain consensus from the PAPs. Hence, though the Project will not compensate to the illegal land users within the Reservoir basin, it is recommended to employ the illegal land users as workers during construction stage with priority.

Regarding the illegal land users who have cultivated trees in area along the proposed canal, they do not have any rights nor permission for cultivation in the communal lands, as same as illegal land users within the Reservoir basin. Hence, they will not be compensated for affected land by the Project.

2) Crop loss

Compensation for perennial crop loss will be paid to the PAPs, who have legal status to be affected by the Project. In case of annual crop, the cultivator can stop cultivation based on the announcement about construction schedule. Hence, the compensation for annual crop loss will not be provided to PAPs.

The amount is calculated for expected harvest at market price by crop. Regardless of whether land is affected permanently or temporary, loss of perennial crop is compensated to PAPs who have the legal status. On the other hand, crop compensation will not be provided to the illegal land users. In the Project affected area for irrigation canal, there is no crop of illegal land users, while there are crops within the Reservoir basin. However, according to the socioeconomic survey, they have cultivated unprofitable crops, as barley or wheat.

Furthermore, if they cultivate annual crops within the Reservoir basin, the Project will not affect their cultivation, since the Project will announce at least before construction starts one year. In case of perennial crops, while the Project will affect their cultivation, according to the officer of Yeghvard city, they have instructed PAPs not to cultivate perennial crops within the Reservoir area with considering restarting its construction. Somebodies followed the instruction, while others did not. Hence, it is suggested not to compensate for the crop loss to avoid any conflicts among those legal and illegal land users.

3) Tree loss

Compensation for tree loss will be paid to the all PAPs, who will be affected by construction of the Reservoir and/ or irrigation canals. Regardless of whether the land is affected permanently or temporary, loss of tree is compensated.

Within the Reservoir area, while there is no trees which belong to illegal PAPs, in the area for irrigation canals, there are orchards of illegal land users. The profitability of trees are higher than crops, and the impact of tree loss will be significant. Therefore, regardless of legal status, all PAPs should be compensated.

4) Loss of livelihood means

Since there is no regulation regarding compensation for illegal land users in the law of RA, illegal land

users will lose the parts of their livelihood means by the Project. Thus, it is proposed the employment for construction works should be given to the illegal land users in the Project. The detailed methodology is discussed in Chapter 4-2.

5) Special attention for vulnerable people

In the Project, all PAPs which get FBS, disabled benefits or headed by female or elder people are regarded as the vulnerable people. According to ADB project, the vulnerable people can get allowance as same as amount of 6 months of minimum salary and be hired with high priority as a labor for the construction works. The same approach is proposed in the Project.

6) Temporary land loss

While temporary land acquisition for pipeline and stockyard is needed, there is no specific regulation for temporary land loss in RA. Generally, since compensation rates for temporary land loss are fixed based on the negotiations with the land owners before making compensation agreement, the rate cannot be set at least in this F/S stage. Therefore at present, it is proposed to apply the same compensation rate for temporary land loss as the permanent land loss. It means that the sum of the higher amount of market price and official price for land, and 15 % of the land price is proposed as compensation rate.

(2) Cut-off date

While at this F/S stage, the cut-off date has not been established, it should be established at D/D stage, before implementation of final census survey. In addition, at least one year before from starting construction, it is needed to announce PAPs not to cultivate in the Project affected area, for the next year. It is proposed that the announcement is done as soon as possible, after exchange of the Loan Agreement.

4-2 Methods for Recovering Livelihood Means

As mentioned section 4-1 (1) (4) and 5)), the vulnerable people and the illegal land users will lose the parts of their livelihood means. Hence, it is necessary to provide some supports. In the Project, it is proposed to hire them with high priority during the construction period.

As the result of socioeconomic survey, 11 PAHS of “1. Only Reservoir basin,” have 1.46 ha cultivated lands (see, Table 4-2.1) on average. Two households which get FBS are classified into this category. When the construction of Reservoir is started, those PAHS will lose the income from cultivation within the Reservoir. Then, the scale of their remaining lands will be less than 1.0 ha, namely, 0.28 ha as shown in Table 4-2-1.

Table 4-2.1 Average Cultivated Land Size of PAHS within the Reservoir Basin

Item	Total (n=31)	1. Cultivators in only Reservoir basin (n=11)	2. Cultivators in area along proposed canal (n=15)	3. Cultivator in Both area (n=6)
Within the Reservoir basin	1.89	1.46	-	8.47**
Within the Canal area	0.25	-	0.30	0.65
Outside the Project affected area	0.58	0.28	0.15	2.52

Source) JICA Survey Team, March-April of 2016

Remarks) * It was excluded one household, which get huge amount of farm-income compared with the other households, as the outlier.

** It was included the household, which has fallow of 35 ha within the Reservoir basin.

On the other hand, Table 4-2.2 shows that the most of farmers in RA have small scale farmlands which are less than 1.0 ha. In Kotayk Marz⁹, 46.3% of the households have cultivated lands which are less than 1.0 ha. That is to say, the scale of their remaining land become close to the general trend of

⁹ Yeghvard city and Nor-Yerznka village belong to Kotayk Marz.

Kotayk Marz.

Table 4-2.2 Cultivated Land Size by Marz

Marz	Less than 1.0 ha		1.0ha-5.0 ha		More than 5.0 ha		Total
	No. of Households (1,000HH)	Share (%)	No. of Households (1,000HH)	Share (%)	No. of Households (1,000HH)	Share (%)	No. of Households (1,000HH)
Yerevan	5.4	79.4	1.4	20.6	0.0	0.0	6.8
Aragatsotn	17.2	46.4	17.9	48.2	2.0	5.4	37.1
Ararat	21.4	43.2	25.3	51.1	2.8	5.7	49.5
Armavir	23.3	46.3	24.3	48.3	2.7	5.4	50.3
Gegharkunik	21.4	46.4	22.3	48.4	2.4	5.2	46.1
Lori	15.0	47.0	15.1	47.3	1.8	5.6	31.9
Kotayk	17.4	46.3	18.2	48.4	2.0	5.3	37.6
Shirak	13.0	46.3	13.6	48.4	1.5	5.3	28.1
Syunik	5.9	46.5	6.1	48.0	0.7	5.5	12.7
Vayots Dzor	5.1	46.4	5.3	48.2	0.6	5.5	11.0
Tabush	11.4	46.5	11.8	48.2	1.3	5.3	24.5
Total	156.5	46.6	161.3	48.1	17.8	5.3	335.6

Source) JICA Report, 2008 (original data from Ministry of Agriculture)

If the PAPs will continue their farming after the Project implementation, they have to purchase new lands, since their farmlands outside of the Reservoir are very small. At this moment, the average cultivation area within the Reservoir is 1.46ha as shown in Table 4-2.1. It is noted that the cultivated crops in the Reservoir basin are wheat, barley, alfalfa and so on, which produce low profits. The benefit per unit area is 5-20% of those of vegetables and fruit trees as shown Table 4-2.3. It means that current benefits from the 1.46ha in the Reservoir basin are low. Therefore, if the PAPs can purchase 1.0ha new farmland and they harvest vegetables and fruit trees, it can compensate for the loss of land within in the Reservoir and 1.0 ha of new land can be regarded as sufficient.

Table 4-2.3 Profit by Crop

Crop	Net profit (AMD/ha/year)
Wheat	96,520
Barley	102,900
Tomato	2,009,000
Cucumber	2,777,000
Eggplant	2,625,000
Bell pepper	2,645,000
Cabbage	3,125,000
Onion	2,152,000
Watermelon	2,310,000
Potato	1,263,000
Alfalfa (1st year)	△ 81,528
Alfalfa (after 2nd cropping year)	494,000
Alfalfa (7 years cropping)	411,782
Grape (adult tree)	514,000
Apricot	803,000
Apple	951,000

Source) JICA Survey Team (based on the data from MOA)

Except for one household¹⁰, all PAPs hope to continue their agricultural activities after the starting construction of the Project. If vulnerable people and illegal land users are hired as labor in the Project, it is supported that they can get 216,573 AMD/ month (see, Table 4-2.4)

¹⁰ The household answered "cannot answer" to this question.

Table 4-2.4 Average Monthly Nominal Salary of Workers (AMD)

Marz	Combined work	Worker with contract or civil-law agreement	
		included income tax	excluded income tax*
Total	135,764	127,858	95,894
Agriculture, forestry and fishery	81,250	-	-
Mining industry and exploitation of open mines	219,700	119,897	89,923
Processing industry	167,548	172,941	129,706
Supply of electricity, gas, steam and high quality air	1,902,754	171,906	128,930
Water supply, sewerage, waste management and recycle	151,400	141,051	105,788
Construction	339,439	216,573	162,430
Wholesale and retail trade, repair of vehicles and motorcycles	184,689	158,223	118,667
Transportation and storage economy	217,433	174,794	131,096
Organization of accommodation and public food	134,309	87,866	65,900
Information and communication	147,888	131,587	98,690
Financial and insurance activity	420,211	130,809	98,107
Activity related to real estate	394,076	120,498	90,374
Specialty, scientific and technical activity	89,391	93,360	70,020
Administrative and supportive activity	143,403	48,964	36,723
State governing and defense, obligatory social safety	95,361	108,638	81,479
Education	99,367	99,007	74,255
Healthcare and social service of population	120,332	169,020	126,765
Culture, entertainment, recreation	141,601	135,275	101,456
Other services	166,669	115,340	86,505

Source) National Statistical Service of the RA, "Socioeconomic Situation of the RA, January-February 2016"

Remarks) The income tax is around 25%.

It is assumed that the term of construction stage is for four years. Thus, the amount of income by construction is as following;

$$162,430 \text{ AMD/month} * 12 \text{ months} * 4 \text{ years} = \underline{\underline{7,796,640 \text{ AMD}}} \text{ — (1)}$$

Average farm- income in non-affected area of "cultivators in only Reservoir basin" is estimated at 1,622,900 AMD/HH/year as shown in Table 3-3.8. Thus, the amount of income by agriculture in the periods is as following;

$$1,622,900 \text{ AMD/HH/year} * 4 \text{ years} = \underline{\underline{6,491,600 \text{ AMD}}} \text{ — (2)}$$

The market price of agricultural land, which is adopted in this RAP, is **4,600,000 AMD/ha** – (3).

The cost for property registration is **23,500 AMD**¹¹ — (4)

Table 4-2.5 shows consumer expenditure of monthly average per capita, namely, 34,742 AMD.

Table 4-2.5 Monthly Average Consumer Expenditures per Capita (AMD)

	2010	2011	2012	2013	2014	Average
On food goods	16,125	18,552	18,500	19,146	20,283	18,521
On non-food goods	4,439	5,022	6,159	6,568	7,442	5,926
On service	8,082	9,011	10,262	11,073	13,045	10,295
Total	28,646	32,585	34,921	36,787	40,770	34,742

Source) National Statistical Service of the RA, "Statistical Yearbook of Armenia, 2015"

The annual average of consumer expenditure per capita is as following;

$$34,742 \text{ AMD/month/capita} * 12 \text{ months} = 416,904 \text{ AMD/year/capita}$$

In the project affected area, the average of PAH family members is 5.59 persons (see, Table 3-3.2). Then the average per household for four (4) years is as following;

$$416,904 \text{ AMD/year/capita} * 4 \text{ year} * 5.59 \text{ persons} = \underline{\underline{9,321,973 \text{ AMD/year/household}}} \text{ — (5)}$$

¹¹ The details mentioned latter.

Table 4-2.6 shows the calculation of household's balance sheet in case of purchase of new agricultural land. If the PAPs work as labor in the Project for four years, the income can cover their livelihood means, including purchasing new agricultural land. In addition, the remaining income after purchasing new agricultural lands is assumed 342,767 AMD. This amount is approximately 15 % of average gross income of all PAPs, referring to the socioeconomic survey. Hence, this methods for recovering livelihood means is proper.

Table 4-2.6 Estimated Household's Balance (for 4 years)

Item	AMD
1. Incomes	
Construction (1)	7,796,640
Agriculture in non-affected Area (2)	6,491,600
Sub-total (1)~(2)	14,288,240
2. Expenditures	
New land (3)	△4,600,000
Property Registration Fee (4)	△23,500
Expenditures (5)	△9,321,973
Sub-total (3)~(5)	△13,945,473
Total	342,767

It is noted that any farmers can find out new farmlands by themselves through intermediaries, acquaintances, or internet, if necessary, and it is not very difficult for them. However, when those people ask some advices for new land purchase, PIU/ SCWE could provide necessary information, through cooperation with communities or regional branch of State Committee of Real Estate Cadaster which have information on new farmlands.

According to the socioeconomic survey result, most of the affected farmers want to continue farming activities, and the consideration to employ them during the construction works with high priority, which enables them to purchase new farmland, can be judged as reasonable.

4-3 Resettlement Sites

It is not necessary to prepare resettlement sites, since the relocation is not assumed in the Project.

4-4 Entitlement Matrix

Taking consideration into the JICA Guideline and Armenian regulations, entitlement matrix of the Project is shown in Table 4-4-1.

Table 4-4.1 Entitlement Matrix

Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/ Guideline	Responsible Organization
1. Loss of land				
Loss of agricultural land	Legal land owners	Cash compensation at the market price (or official rate, higher of them) +15 %	1) Identification of land owners by State Committee of Real Estate Cadastral 2) Land evaluation and cost estimation by evaluators with license 3) Explanation of payment procedure for the PAPs (Project Affected Persons) and negotiation with the PAPs 4) Payment of cash compensation under the Law	PIU/SCWE
2. Loss of income sources				
2.1 Crop loss ¹²	Legal land owners	Perennial crop compensation for expected harvest in cash at market rate	1) Identification of land owners by State Committee of Real Estate Cadastral 2) Evaluation and cost estimation by	PIU/SCWE

¹² Since it is planned to notice of the timing the construction start to the PAPs and request them to stop the cultivation as soon as possible after the concluding loan agreement, it is not needed to compensate for annual crop. .

Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/ Guideline	Responsible Organization
			evaluator with license 3) Explanation of payment procedure for the PAPs and negotiation with the PAPs 4) Payment of cash compensation under the law	
2.2 Tree Loss	All PAPs regardless of legal status	Cash compensation at market rate based on type, age and productive value of the trees	1) Identification of land owners by State Committee of Real Estate Cadastral 2) Evaluation and cost estimation by evaluator with license 3) Explanation of payment procedure for the PAPs and negotiation with the PAPs 4) Payment of cash compensation under the law	PIU/SCWE
3. Loss of livelihood means				
loss of livelihood means (agriculture)	Illegal land users	Employment priority in project-related jobs	1) Identification of land users by WUA and communities concerned 2) PIU/SCWE is to push the contractor to employ the identified cultivators as workers with high priority 3) Employment by contractor	PIU/SCWE, WUA, Communities concerned
4. Special attention				
Vulnerable people*	1) Recipient PAHs of poverty benefits, disabled benefits, or 2) PAHs headed by Female or Elder people	1. Allowance equivalent to 6 months of minimum salary ¹³ 2. Employment priority in project related jobs	1) Identification of vulnerable people by communities concerned 2) Explanation of payment procedure for the PAPs and negotiation with the PAPs 3) Payment of allowance under the law 4) PIU/SCWE is to push the contractor to employ the vulnerable people as works with high priority 5) Employment by contractor	PIU/SCWE, Communities concerned
5. Others				
Temporary land loss	Legal land owners	1. For land; Cash compensation at the market price (or official rate, higher of them) + 15% 2. For crop; Crop compensation for expected harvest in cash at market rate. 3. For tree; Cash compensation at market rate based on type, age and productive value of the trees	1) Identification of land owners by State Committee of Real Estate Cadastral 2) Evaluation and cost estimation by evaluator with license 3) Explanation of payment procedure for the PAPs and negotiation with the PAPs 4) Payment of cash compensation under the law	PIU/SCWE

Remarks) Category for Vulnerable people will be re-decided at D/D stage, with Ministry of Labor and Social Affairs.

CHAPTER 5 GRIEVANCE REDRESS MECHANISM

While there is no provision about grievance redress mechanism on the law of RA, it should be established in order to deal with the discontent or disapproval to the proposed compensation measures. International donors such as WB and ADB have already implemented some projects in the RA, and they proposed new grievance redress mechanism by project, for instance, establishment of Grievance Redress Committee. However, such committees did not function well so far, since it was not close to the PAPs physically and mentally. On the other hand, although the most accessible organization for PAPs are communities and WUAs in the Project, they do not have function to settle down issues related to land acquisition. Thus, it is not practical to establish the new committee within those organizations for grievance redress, and it is recommended to use existing system for the Project.

¹³ It is regulated on the "Law on minimum monthly salary". As of April in 2016, it is fixed at 55,000 AMD.

The most practical way is that PIU handles grievances, since PIU has some experts who are in charge of environmental and social consideration, including the matters on resettlement and land acquisition. Those experts can receive grievances from the PAPs, and solve the matters. However, PIU is not very accessible for the PAPs, since it does not have the field office near by the Project affected area. On the other hand, considering that communities and WUAs are the most accessible for the PAPs, they can play role as liaison between PIU staff and the PAPs. Thus, it is proposed to involve them in addition to PIU for the grievance redress mechanism in the Project. Apart from that, it is possible for the PAPs to take grievances into the court, since Armenian people know how they can apply to the court, in general. It is noted that if a complaint goes to the court directly, it will not take time for the settlement, however, it is needed to pay commission charge. On the other hand, if a complaint gets consultation within the communities, WUAs and/ or PIU, it is free of charge but will take time to settle the issues.

Considering necessary cost, time and accessibility, three patterns for the grievance redress mechanism can be applied in the Project as illustrated in Figure 5-1. The PAPs will choose the most convenient and accessible way for them. The implementation agency, namely, PIU/ SCWE, and PAPs have already basically accepted the proposed system for grievance redress at the meetings including Public Seminars. In addition, at the final Public Consultation, which is planned to be held, such information would be announced to the participants again.

(1) Pattern 1

The PAP can lodge his/ her grievance to the community or WUA which is the most accessible for him/ her. Within 7 working days, after community or WUA receives grievance, the officer must submit the complaint to the PIU.

After PIU receives the grievance, PIU must respond to the PAPs within 15 working days. If PIU cannot solve the issue or the PAP doesn't accept the PIU's response, the PAP can proceed to the court. If he/ she wins at the court, the commission fee will be refunded. However, if he/ she loses at the court, commission fee will be shouldered by the complainant.

After grievance lodging, the court should review the expropriation cases, carry out the hearing and make decision whether the land can be acquired or not. In addition, the court also should decide how much the fair price for compensation is. Then, the

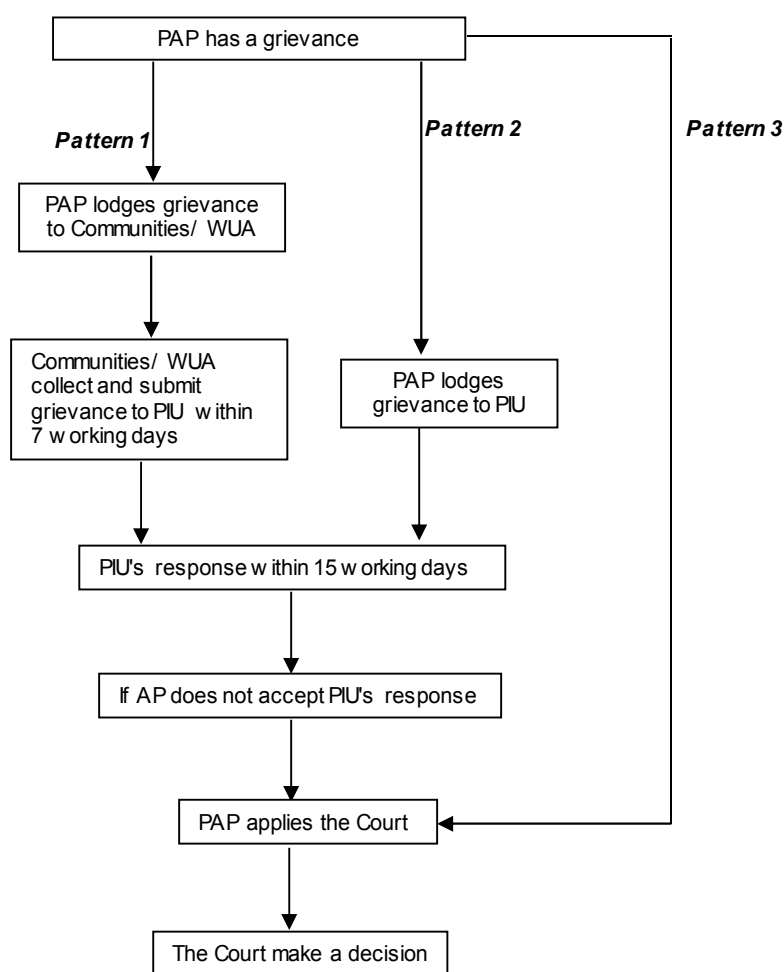


Figure 5-1. Grievance Redress Mechanism

Project and the PAP need to follow the decision of the court.

(2) Pattern 2

The PAP can lodge his/ her grievance to the PIU directly. The process for the grievance redress by PIU will be same as that in Pattern 1. If the PAP does not accept PIU's response, he/ she can proceed to the court. The process for the grievance redress by the court will be same as that in Pattern 1.

(3) Pattern 3

The PAP can lodge his/ her grievance to the court directly. After grievance lodging to the court, the process for the grievance redress by the court will be same as that in Pattern 1.

CHAPTER 6 IMPLEMENTATION STRUCTURE

Figure 6-1 shows the implementation structure for RAP of the Project.

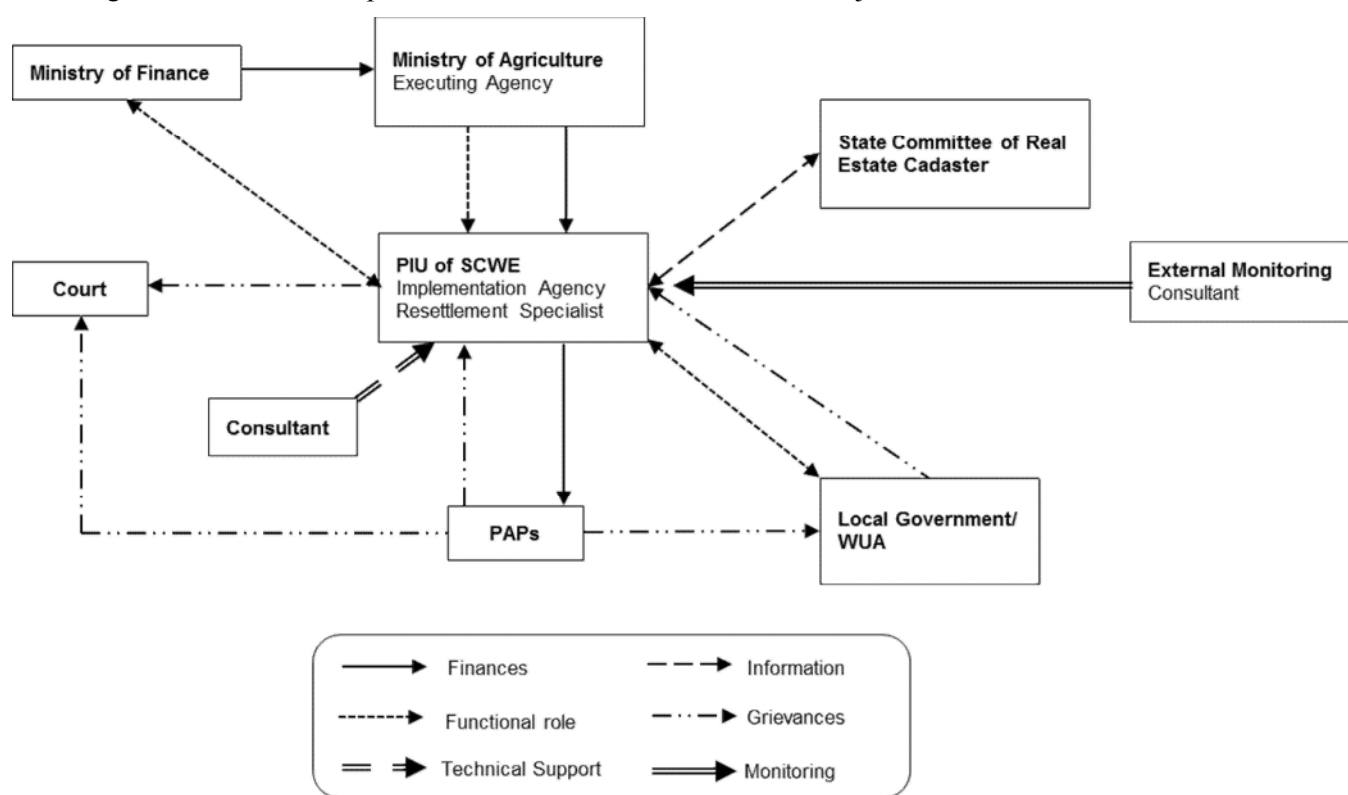


Figure 6-1. Implementation Structure

(1) Ministry of Agriculture (MOA)

MOA is the Executing Agency for the Project. It implements general functions for the Project including coordination with the concerned organizations.

(2) PIU of SCWE

PIU of SCWE is the organization which is in charge of implementation of the proposed RAP in the Project. Especially, PIU is requested to cover the final RAP preparation, implementation of the RAP, coordination with concerned organizations. Based on the proposed cost for compensation and support to the PAPs, PIU will apply the necessary budget allocation to the Government. The social expert of PIU is responsible for the general management of the planning and implementation of the RAP.

(3) Local government/ WUA

Yeghvard city, Nor-Yerznka village, Ashtarak city, Yeghvard WUA, and Ashtarak WUA are concerned, they are expected to support the PIU for identification of PAPs and payment of compensation to the PAPs. And if the PAPs needs, the organizations are expected to give advices PAPs to solve issues. When the local government/ WUA cannot solve those issues by themselves, they are needed to report it to PIU.

(4) Consultants

At the D/D stage, the consultant is required to implement the updating/ finalizing of this RAP and he/ she provides technical support for implementation of the RAP of PIU, based on the results of socioeconomic survey and monitoring.

(5) Consultants

After D/D completion, it is required to confirm the progress of compensation payment, living condition of PAPs by interview to representative of PAPs by the external consultant.

(6) Other organization concerned**1) Ministry of Finance (MOF)**

The budget for the implementation of the RAP will be allocated to the PIU by the MOF after the approval of the final RAP by the Government of RA.

2) State Committee of Real Estate Cadastral

To identification of PAPs, the information of cadastral map is provided by the State Committee of Real Estate Cadastral.

3) Court

According to the Law in RA, all PAPs can lodge their grievance, if they need. The court is required to review the acquisition cases, carries out a hearing and judges about the land acquisition and compensation.

4) PAPs

Representative of the PAPs, are requested to participate into the monitoring system. To be concrete, when the consultant take interviews, the representative of the PAPs will provide the information of the progress of compensation payment, living condition of PAPs, and so on.

CHAPTER 7 IMPLEMENTATION SCHEDULE

While implementation schedule has not been fixed yet at this moment, after the Loan Agreement between Government of RA and Government of Japan, the Project will be started soon. There will be several steps to be followed during the preparation and construction. The proposed implementation schedule of the RAP after the Loan Agreement is as shown in Figure 7-1.

Activities / Month		D/D Period (14 months)														Construction (4 years)
		Facility Design							RAP preparation							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Loan Agreement of the Project	x															
Facility design		x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Cut-off date										x						
Final census										x	x					
Disclosure of final census result												x				
Compensation agreement													x			
Compensation														x		
Land expropriation															x	
Monitoring and grievance redress																

Figure 7-1. Implementation Schedule

CHAPTER 8 COST AND FINANCIAL RESOURCES

This chapter presents the estimated compensation cost. The compensation cost shall be shouldered by the Government of RA. Table 8-1 shows the compensation cost for private land loss. 15% plus of market price is applied for the compensation cost estimation. In the Project, the following market price were estimated by the evaluator who has the license.

Table 8-1. Cost Estimation for Private Land Loss

Community	Land Use	Affected area (m ²) (1)	Market Price (AMD/m ²) (2)	Applied Value (AMD/m ²) (3)=(2)*115%	Compensation Cost (AMD) (4)=(1)*(3)
Yeghvard	Crop	100,496.59	460	529	53,162,696
Nor-Yerznka	Crop	14,588.27	440	506	7,381,665
Nor-Yerznka	Orchard	102,773.53	880	1,012	104,006,812
Nor-Yerznka	Pasture land	25,000.00	460	529	13,225,000
Nor-Yerznka	Residential area	2,021.21	3,800	4,370	8,832,688
Ashtarak	Industrial area	9,014.43	7,000	8,050	72,566,162
Ashtarak	Residential area	5,370.00	8,700	10,005	53,726,850
Total (AMD)					312,901,892
<i>Total (USD)</i> 1 USD = 486.99 AMD					64,253

Source) 1. Market price of lands: JICA Survey Team, 2016 (estimated by the licensed land evaluator)

2. Area to be affected: JICA Survey Team, 2016 (estimated by the licensed land evaluator)

In addition, Table 8-2 shows the fee for property registration.

Table 8-2. Cost Estimation for Property Registration

Community	Land Use	No. of Plot (1)	Fee for Property Registration (2)	Total Cost (AMD) (3)=(1)*(2)
Private Land				
Yeghvard	Crop	7	23,500	164,500
Nor-Yerznka	Crop	8	23,500	188,000
Nor-Yerznka	Orchard	3	23,500	70,500
Nor-Yerznka	Pasture land	1	23,500	23,500
Nor-Yerznka	Residential area	2	75,000	150,000
Ashtarak	Industrial area	2	95,000	190,000
Ashtarak	Residential area	2	75,000	150,000
Yeghvard	Crop (partly acquired)	1	3,000	3,000
Ashtarak	Residential area (partly acquired)	2	26,000	52,000
Ashtarak	Industrial area (partly acquired)	1	26,000	26,000
Communal and State Land				
Yeghvard (community)	Farmland	54	3,500	189,000
Yeghvard (community)	Farmland (partly affected)	6	3,000	18,000
Nor-Yerznka (community)	Farmland	5	3,500	17,500
Nor-Yerznka (community)	Farmland (partly affected)	1	3,000	3,000
Nor-Yerznka (State)	Residential area	1	2,500	2,500
Nor-Yerznka (community)	Residential area	11	36,000	396,000
Ashtarak (community)	Residential area	5	36,000	180,000
Ashtarak (community)	Residential area (partly affected)	5	26,000	130,000
Ashtarak (State)	Residential area	1	35,000	35,000
Ashtarak (State)	Residential area (partly affected)	1	26,000	26,000
Total (AMD)				2,014,500
Total (USD) 1 USD=486.99AMD				4,137

Source) 1. Law on state Registration of Property Rights

2. Law on the State Duties

Table 8-3 (1), (2) and (3) show unit cost of tree, number of affected trees, and cost for tree loss, respectively. Since it takes 2 to 6 years for the fruit trees to grow to produce fruits, considering tree species and ages, the unit price were determined by the calculation of evaluator who has the official license (see, Table 8-3 (1)).

Table 8-3. (1) Unit Price of Seeding

Type of Tree	1 st year	2 nd year	3 rd Year	4 th year	5 th year	6 th year	Years to produce fruit*
Apricot	2,260	3,930	5,600	7,270	8,940	10,610	6
Pear	1,760	3,210	4,660	6,110	7,560	9,010	6
Nutwood	2,396	4,896	7,396	9,896	12,396	14,896	4
Plum	1,760	3,210	4,660	6,110	-	-	4
Cherry	1,260	2,710	4,160	5,610	-	-	4
Oleaster	2,760	4,430	6,100	7,770	9,440	-	-
Hazel nuts	2,396	4,896	7,396	9,896	12,396	14,896	6
Mulberry	2,260	3,930	5,600	7,270	-	-	4
Apple	1,260	2,710	4,160	5,610	7,060	8,510	6
Bird cherry	1,600	2,137	2,674	3,211	-	-	4
Peach	1,600	2,137	2,674	-	-	-	3
Grape	1,010	2,680	4,350	6,020	-	-	4

Source) JICA Survey Team, 2016 (estimated by the licensed land evaluator)

Remarks) Years to produce fruit depend on tree species.

Table 8-3. (2) Number of Project Affected Trees

Type of Tree	1 st year	2 nd year	3 rd Year	4 th year	5 th year	6 th year
Apricot	0	6	0	0	0	65
Pear	0	0	0	4	0	3,011
Nutwood	0	0	2	0	0	138
Plum	0	0	4	161	-	-
Cherry	0	0	0	75	-	-
Oleaster	0	0	0	0	1	-
Hazel nuts	0	0	0	4	0	6
Mulberry	0	0	3	2	-	-
Apple	0	350	0	0	0	819
Bird cherry	0	0	0	40	-	-
Peach	0	0	74	-	-	-
Grape*	0	12	0	78	-	-

Source) JICA Survey Team, 2016 (estimated by the licensed land evaluator)

Table 8-3. (3) Cost Estimation for Tree loss

Type of Tree	1 st year	2 nd year	3 rd Year	4 th year	5 th year	6 th year	Total
Apricot	0	23,580	0	0	0	689,650	713,230
Pear	0	0	0	24,440	0	27,129,110	27,153,550
Nutwood	0	0	14,792	0	0	2,055,648	2,070,440
Plum	0	0	18,640	983,710	-	-	1,002,350
Cherry	0	0	0	420,750	-	-	420,750
Oleaster	0	0	0	0	9,440	-	9,440
Hazel nuts	0	0	0	39,584	0	89,376	128,960
Mulberry	0	0	16,800	14,540	-	-	31,340
Apple	0	948,500	0	0	0	6,969,690	7,918,190
Bird cherry	0	0	0	128,440	-	-	128,440
Peach	0	0	197,876	-	-	-	197,876
Grape*	0	32,160	0	469,560	-	-	501,720
Total (AMD)							40,276,286
<i>USD</i> <i>1 USD = 486.99 AMD</i>							82,705

Source) JICA Survey Team, 2016 (estimated by the licensed land evaluator)

The cost for crop loss is as shown in Table 8-4.

Table 8-4. Cost Estimation for Crop Loss

	Area (m ²) (1)	Yield (kg/m ²) (2)	Unit price (AMD/kg)* (3)	Compensation cost (AMD) (4)=(1)*(2)*(3)
Alfalfa	25,700	0.73	53	994,333
Total (AMD)				994,333
<i>USD</i> <i>1 USD = 486.99 AMD</i>				<i>2,042</i>

Source) 1. Yield; JICA Survey Team, 2016 (estimated by the licensed land evaluator)

2. Unit price; Farmer's costs of agricultural products as given by the National Statistical Service of the Republic of Armenia for 2010-2014

If all of the communities concerned agree at the voluntary provision of the communal land (including Reservoir basin) for the Project, compensation to them will not be necessary. On the other hand, if the communities do not agree at the proposal, it is needed to provide compensation for the communal land loss (Reservoir basin and area along the proposed Outlet Canal-3). In case of compensation to the communities, the cost can be estimated as shown in Table 8-5.

Table 8-5. Cost Estimation for Communal Land Loss

Community	Land Use	Affected Area (ha) (1)	Unit Price (AMD/m ²) (2)	Applied Value (AMD/m ²) (3)=(2)*115%	Compensation Cost (AMD) (4)=(1)*(3)*10,000
Yeghvard	Agriculture (crop)	705.66	460	529	3,732,941,400
Nor-Yerznka	Agriculture (orchard)	27.88	880	1,012	282,145,600
	Residential Area	3.47	3,800	4,370	151,639,000
Ashtarak	Residential Area	1.92	8,700	10,005	192,096,000
Total (AMD)		738.93			4,358,822,000
<i>Total (USD)</i> 1 USD = 486.99 AMD					8,950,537

It is necessary to provide special consideration to the vulnerable persons who are affected by the Project. Table 8-6 shows the number and percentage of vulnerable people out of the 32 PAHs, which are targeted of socioeconomic survey.

Table 8-6. Number and Percentage of Vulnerable PAHs which are Targeted of Socioeconomic Survey

Item	No. of household	Share in total PAHs (%)
1) Recipient household of "poverty benefits"	2	6.25
2) Recipient household of "disability benefits"	3	9.38
3) Headed by female	3	9.38
4) Headed by elderly person	3	9.38

Source) JICA Survey Team, March-April of 2016

The actual number of the cultivators in the Reservoir basin is unknown, however, it can be estimated at 53 households, considering there are 53 plots at most. Therefore, the total number of project affected households can be thought as 75 (=53+22¹⁴).

Table 8-7 shows the results of calculation for potential vulnerable PAHs in the Project affected area by using the result of the socioeconomic survey.

Table 8-7. Potential Vulnerable PAHs within the Reservoir Basin

Item	Total no. of PAHs (1)	Share in total PAHs (%) (2)	Vulnerable PAHs within the Reservoir Basin (3)=(1)*(2)
1) Recipient household of "poverty benefits"	75	6.25	4.68
2) Recipient household of "disability benefits"	75	9.38	7.04
3) Headed by elderly person	75	9.38	7.04
4) Headed by female	75	9.38	7.04
Total			Approximately 26

Source) JICA Survey Team, March-April of 2016

The vulnerable persons is calculated as shown in Table 8-8.

Table 8-8. Allowance to the Vulnerable Persons

Item	No. of household	Unit Price (AMD/month)	Payment Period	Total (AMD)
Allowance to the vulnerable person	26HHs	55,000*	6 month	8,580,000

Source) Law on minimum monthly salary

Remarks) Since ADB project provided minimum monthly salary for 6 months to the vulnerable persons, the Project follows the same methodology.

Based on the cost estimation mentioned above, total compensation cost is as shown in Table 8-9.

¹⁴ There are 15 PAHs with legal status and 7 PAHs which have cultivated within canal area without legal status.

Table 8-9. (1) Total Compensation Cost of the Project (Excluding the Communal Land Loss)

Item	Compensation Cost (AMD)
Private Land Loss	312,901,873
Property Registration	2,014,500
Tree Loss	40,276,286
Crop Loss	994,333
Allowance to the vulnerable persons	8,580,000
Total (1)	364,776,992
Contingency* (2)=(1)*0.20	72,953,398
Grand Total (AMD) (3)=(1)+(2)	437,720,390
<i>Grand Total (USD)</i> <i>1 USD = 486.99 AMD</i>	898,828

Table 8-9. (2) Total Compensation Cost of the Project (Including the Communal Land Loss)

Item	Compensation Cost (AMD)
Private Land Loss	312,901,873
Property Registration	2,014,500
Tree Loss	40,276,286
Crop Loss	994,333
Allowance to the vulnerable persons	8,580,000
Communal Land Loss	4,358,822,000
Total (1)	4,723,588,992
Contingency* (2)=(1)*0.20	944,717,798
Grand Total (AMD) (3)=(1)+(2)	5,668,306,790
<i>Grand Total (USD)</i> <i>1 USD = 486.99 AMD</i>	11,639,473

Remarks) Based on the Resettlement Action Plan of Sustainable Urban Development Investment Program–Tranche 2 (ADB, 2015), contingency of the compensation cost of the Project is set at 20%.

CHAPTER 9 MONITORING STRUCTURE AND MONITORING FORM

For carrying out of the RAP, it is required the internal and external monitoring by different organizations, as shown below;

(1) Internal Monitoring

The internal monitoring is carried out by PIU and private consultants for RAP implementation. In the internal monitoring process, following indicators could be proposed;

- Number of people raising grievances in relation to the Project and number of unresolved grievances;
- Progress of compensation payment;
- Whether the payment properly done; and
- Change of the living conditions of PAPs

(2) External Monitoring

The purpose of the external monitoring is examine the impacts on the PAPs objectively. The external monitoring is carried out by private consultants hired by the PIU/SCWE, who are independent from internal monitoring, to confirm whether the compensation, considerations, grievance redress and so on are properly implemented in accordance with the RAP.

(3) Monitoring Form

It is needed to confirm whether the proposed RAP is implemented as planned through the monitoring. Verification of payment, grievance handling, and conflict settlement have to be managed. During the compensation and construction stage, the monitoring will be practiced on monthly basis and it is

implemented by the PIU/SCWE in collaboration with the private consultants. The consultants must provide technical advices to the PIU/SCWE, and the result should be complied as a monitoring report. After the construction completion, i.e., in the operation stage, the living conditions of the PAPs should be monitored bi-annually by PIU/SCWE by using format shown in Table 9-1.

Table 9-1. Sample of Format for Monitoring

Public Consultation

No.	Date	Place	Contents of the consultation/ main comments and answers
1			
2			

Resettlement Activities	Planned Total	Unit	Progress in Quantity			Progress in %		Expected Date of Completion	Responsible Organization
			During the Quarter	Till the Last Quarter	Up to the Quarter	Till the Last Quarter	Up to the Quarter		
Preparation RAP									PIU/ SCWE
Employment of Consultants		Man-month							
Implementation of Census Survey (including socioeconomic survey)									
Approval of RAP			Date of Approval:						
Finalization of PAPs List		No. of PAPs							
Progress of Compensation Payment		No. of PAHs							
Lot 1		No. of PAHs							
Lot 2		No. of PAHs							
Lot 3		No. of PAHs							
Lot 4		No. of PAHs							
Progress of Land Acquisition (all lots)		ha							
Lot 1		ha							
Lot 2		ha							
Lot 3		ha							
Lot 4		ha							
Progress Asset Replacement		No. of PAHs							
Lot 1		No. of PAHs							
Lot 2		No. of PAHs							
Lot 3		No. of PAHs							
Lot 4		ha							
Progress of Relocation of People (all lots)		No. of PAHs							
Lot 1		No. of PAHs							
Lot 2		No. of PAHs							

Resettlement Activities	Planned Total	Unit	Progress in Quantity			Progress in %		Expected Date of Completion	Responsible Organization
			During the Quarter	Till the Last Quarter	Up to the Quarter	Till the Last Quarter	Up to the Quarter		
Lot 3		No. of PAHs							
Lot 4		ha							

CHAPTER 10 PUBLIC CONSULTATION

It was decided to hold the series of stakeholder meetings on ESIA and RAP at the same time. The venues to hold the Stakeholder Meetings are Yeghvard city and Nor-Yerznka village, since their get impacts by the Project mostly.

Following the Armenian law on Environmental Impact Assessment and Expertise, public consultation shall be organized at two stages. Before the start of the environmental impact assessment survey (Scoping Stage), the 1st Public consultation should be organized, and the project outline and environmental expected impacts would be presented. In addition, before the submission the draft of ESIA Report, the second Public Consultation would be organized to share the environmental impact assessment results and gain comments from the participants. At the same time, it is needed to get feedback from the participants about socioeconomic survey results and compensation policy.

10-1 Arrangement of Public Consultation

Republic of Armenia has been a member country of the Aarhus Convention which has regulated the access-ability to the environmental information, since 2002. In the Republic of Armenia, there are 15 Aarhus Centers, which was founded by Organization for Security and Cooperation in Europe (hereinafter, "OSCE"), in each Marzes. Especially, Ministry of Territorial Administration and Emergency Situations and MNP had been involved with their establishments. And Aarhus Center has promoted information disclosure and public involvement, with supporting of the Armenian Governmental organizations, including SCWE. Moreover, the centers have taken charge of arrangement for Public Consultation. Actually, SCWE requested Aarhus Center of Yeghvard City to support for holding of the first Public Consultation. SCWE, the Survey Team, and Aarhus Center of Yeghvard City worked together.

According to the Law on Environmental Impact Assessment and Expertise, seven working days before of Public Consultations, information of public consultation shall be noticed. On 8th October 2015, public notice was presented at the newspaper (see Appendix 3) and website of Aarhus center. And Table 9-1 shows the contents of the Public Notice which would be organized on 20th October 2015. And the same contents were published on the website of Aarhus Center.

Table 10-1.1 Contents of the Public Notice

A public hearing (consultation) about the document of "Application of the Initial Assessment of Environmental Impact of the Yeghvard Irrigation System Improvement Project" will be held on 20th October, 2015, at 15.00 - 18.00 at the Yeghvard Municipality Conference hall (address: Yeghvard, 1Yerevanyan street) as follows:	
Undertaker	State Committee of Water Economy, MOA, RA
Venue of the public consultation	1 Yerevanyan str., Yeghvard, Conference Hall of the Municipality
Possible environmental impact	Some environmental impacts due to the project are expected.
Time, date, location and method to learn about the application mentioned above	<p>The initial assessment application is uploaded in website of following addresses:</p> <ul style="list-style-type: none"> • State Committee of Water Economy (Yerevan, Vardanants deadlock 13A) – www.scws.am • Yeghvard Municipality info@yegvard.am, and • Yeghvard Aarhus Center - www.aarhus.am. <p>Furthermore, you can contact the offices mentioned above every day at</p>

	14.00-18.00 from the day of public notice to the deadline mentioned below, if you want to make the comments and suggestions on the application.
The deadline for submitting comments and suggestions on the application	7 working days after, counting from the date of public notice.
Responsible officer for discussions	Yeghvard Municipality
E-mail address and telephone number of Responsible Officer	E-mail address info@yeghvard.am Tel. (0224) 2 11 10

10-2 Public Consultation on the Project Outline by SCWE

On 20th October 2015, the Public Consultation on the Project Outline was organized at Yeghvard City office. This Public Consultation was organized by the Project, and general project outlines were explained to the participants.

Table 10-2.1 shows the comments and questions from the attendees. Seemingly, the attendees do not oppose to the Project.

Table 10-2.1 Discussion at the Public Consultation on the Project Outline (20th October 2015)

No.	Speakers	Questions/ Comments	Respondents	Answers
1.	Director of Vagharshapat WUA	How is the stakeholder territory of the project distributed among WUA? How much territory will be served by each of 4 WUAs?	Hydro-technical Engineer of PIU	Mentioned that the studies are still being carried out, but the areas being served are known. The biggest areas are in Khoy and Vagharshapat WUAs.
2.	Director of Yeghvard WUA	How about the progress and results of geological survey for determination of water permeability of the bottom of Yeghvard reservoir?	Team leader of the Survey Team	We started the investigations in June. The geological survey and the ground water survey were implemented. The preliminary data show that the permeability coefficient is high and the water may easily infiltrate through the existing layer. Therefore, it is necessary to take anti-filtration measures. The type of impervious material and the method of application will be determined as a result of survey. The expenses related to reservoir construction are mostly dependent on the type of impervious layer.
3.	Mayor of Ashtarak City	How much is the approximate budget for Yeghvard irrigation system improvement project and is it planned to create a recreation zone near the reservoir?	Hydro-technical Engineer of PIU	As it was mentioned by Mr. Tsumura, the project budget depends on the method and material of impervious layer. The budget will be calculated after selection of the abovementioned. Regarding the creation of recreation zone near the reservoir, it is not a subject of this project and is not being considered by the survey team.
4.	Director of Ashtarak WUA	Some areas of the 27 communities are located on higher altitude than Yeghvard reservoir. How will the irrigation be done for them? Do you plan to construct new canals?	Hydro-technical Engineer of PIU	New canals will not be constructed. The water from Yeghvard reservoir will flow to Arzni-Branch canal and Kasakh river, and will be guided to stakeholder communities by the use of existing system.
5.	Social Expert of PIU	How is the status and ownership of the lands of the territory of reservoir?	Social Specialist of ATMS Solutions LLC	Mentioned that the issues of alienation and compensation of the lands are being considered in the frames of F/S of Yeghvard irrigation system improvement project. At this moment the studies are still being carried out and there are no final results. However, there will be several explanations. Particularly, the actual reservoir is located on community lands that belong to Yeghvard and Nor-Yerznka communities. This means that large scale resettlement is not envisaged. However, in case of feeder and intake canals, resettlement issue may arise. However, the canal routes have not been determined yet. Detail information will be provided to the Client soon.
6.	Mayor of Ashtarak City	Is there an issue of transportation of topsoil? Is it completely transported? If there is	Hydro-technical Engineer of PIU	Most part is transported to Ashtarak to establish gardens. There is a few humus in the territory.

No.	Speakers	Questions/ Comments	Respondents	Answers
		such an issue, then you have to consider it.		
7.	Deputy Mayor of Yeghvard City	As I know the Japanese company is mainly implementing technical surveys. Do you have any preliminary data on the possible impact on the environment?	Environmental Consideration of the JICA Survey Team	The environmental impact assessment of Yeghvard irrigation system improvement project is on-going. Impacts on ecosystem, especially to the fishes of Hrazdan and Kasakh rivers, are examined. Besides, underground water and soil contamination by pesticides/fertilizer in the beneficial areas are studied.
8.	Director of Vagharshapat WUA	If the water of Kasakh river will flow to Yeghvard reservoir, is there a possibility, that the irrigation of the territories served by "Khoy" and "Vagharshapat" WUAs will depend on reservoir?	Hydro-technical Engineer of PIU	Water of Kasakh river will not be used. Only the additional surplus water will be directed to the reservoir. The reservoir will store 90 MCM of water, which will be used by WUAs (Khoi, Vagharshapat, Yeghvard and Ashtarak). The water will be stored in the reservoir during non-irrigation season, mainly during spring floods.
9.	Deputy Chairman of SCWE	What are possible social and environmental risks during construction of reservoirs and if they are typical for Yeghvard reservoir?	Environmental Consideration of the JICA Survey Team	Regarding the social impact, in case of construction of canals, the issue of alienation and compensation will arise. The lands in the actual reservoir area are not private. However, the people who cultivate there will have to leave their lands. As for natural environmental impact, there will be air pollution because of large-scale construction works with various types of machines and vehicles. As the reservoir will be filled by the water from Hrazdan river, which will then flow to Kasakh river, the ecosystems of Hrazdan and Kasakh rivers will possibly mix with each other. In case of such projects, it is very difficult to avoid environmental impact completely, however, our goal is to minimize it.
10.	Resident of Yeghvard City	How many years will the construction of Yeghvard reservoir last?	Hydro-technical Engineer of PIU	The F/S stage of Yeghvard irrigation system improvement project will be finished in May 2016. 1-1.5 years will be required for agreement of it. After that, 4-5 years will be required for construction of the reservoir.
11.	Resident of Yeghvard City	Is there any initial calculation of minimum and maximum depths of the reservoir to be constructed?	Hydro-technical Engineer of PIU	According to the initial calculations the maximum depth is going to be 15 m. The minimum depth is going to be 1.5 meters. It means that 6 MCM will always remain in the reservoir.

As Table 10-2.2 shows attendants, the total numbers of the attendants was 35. 17 persons out of 35 are from SCWE, PIU, JICA Survey team member, Aarhus Center staff and the environmental consultants for ESIA and RAP preparation, while 18 persons out of 35 are from beneficial communities, 4 WUAs concerned to the Project, and additional 2 WUAs.

Table 10-2.2 Participant List of the Public Consultation on the Project Outline (20th October 2015)

No.	Name	Position	Organization
1.	Volodya Narimanyan	Deputy Chairman	SCWE, MOA
2.	Viktor Martirosyan	Advisor of Chairman	
3.	Khoren Tsarukyan	Hydro-technical Engineer	PIU, SCWE, MOA
4.	Marina Vardanyan	Social Expert	
5.	Martiros Nalbandyan	Environmental Expert	The Survey Team of JICA
6.	Kazumitsu Tsumura	Team Leader	
7.	Rie Kitao	Environmental Consideration	
8.	Shohey Natsuda	Social Consideration (1)	
9.	Ayumi Shiga	Social Consideration (2)	
10.	Gevorg Gevorgyan	Assistant/ Interpreter	
11.	Luiza Manyan	Assistant/ Interpreter	
12.	Khristine Goroyan	Assistant/ Interpreter	Aarhus Center
13.	Ruzanna Manyan	Head Officer	
14.	Anush Beybutyan	Coordinator	ATMS Solutions LLC, Local ESIA Consultant
15.	Artak Ter-Terosyan	Environmental Specialist, Director	
16.	Suren Gyunjinyan	Social Specialist	
17.	G.Sahakyan	Cameraman	Yeghvard city
18.	Karen Harutyunyan	Deputy Mayor	
19.	-----	Resident (Head of Library)	
20.	-----	Resident (Librarian)	

No.	Name	Position	Organization
21.	-----	Resident (Librarian)	
22.	-----	Resident	
23.	Armen Antonyan	Mayor	Ashtarak city
24.	Armen Sargsyan	Head of Community	Hovtamej Community
25.	Suren Baghdasaryan	Deputy Head of Community	Zovuni Community
26.	Sedrak Khachatryan	Head of Community	Kashakh Community
27.	V.Mkhitarian	Representative	Sasunik Community
28.	G.Shahgeldyan	Representative	Arshaluys Community
29.	A.Movsesyan	Representative	Aragats Community
30.	Mihran Hovhannisyan	Director	Yeghvard WUA
31.	Sedrakyan Sedrakyan	Director	Vagharshapat WUA
32.	Arsen.Khachatryan	Director	Ashtarak WUA
33.	Sargyan Sargsyan	Director	Khoy WUA
34.	Hovik Gevorgyan	Director	Parpi WUA*
35.	Armen Karapetyan	Director	Nairi WUA*

Remarks: 1. Parpi WUA and Nairi WUA are outside of project beneficiary and affected areas.

2. In Armenia, generally, there are one or plural communities under one community. Both Yeghvard and Ashtarak are categorized into city, those cities have one community each, Yeghvard City is sometimes called as Yeghvard Community. Communities are politically managed by "Head", while City is headed by "Mayor".

10-3 Public Seminar on the Project Outline in Nor-Yerznka Village

Given that the number of participants from the communities, namely, general residents, at the public consultation is limited, a seminar was organized to promote the local residents to attend more to supplement the public consultation on 5th November, 2015 in Nor-Yerznka village.

Nor-Yerznka village is located on west of the Yeghvard Reservoir, and parts of the village could be affected by the Project. At the arrangement of the seminar, the Project side tries to enhance women's participation in the seminar in terms of gender balance, since women's participation rate in the Public Consultation was low. On the other hand, it is noted that Head of Nor-Yerznka village is female.

At the seminar, the project outlines and expected impact by the Project were explained by the Project Coordinator of PIU/SCWE, Mr. K.Tsarukyan, using the same presentation material as the one at the Public Consultation was used. Moreover, the location map illustrating the affected area in the village was also presented to the participants. It is noted that two routes for Outlet Canal-2, namely, 1) northern route which passes through orchard and houses and 2) southern route passes through natural stream, were proposed at that time, both route on the map were presented¹⁵. The participants made some questions and comments as shown in following table. As a whole, no objection against the Project was presented, however, some issues to be examined were raised.

Table 10-3.1 Discussion at the Public Seminar in Nor-Yerznka Village (5th November 2015)

No.	Speaker	Question and Comment	Answer
1.	Head of Community	Proposed northern route for Outlet Canal passes through the graveyard, and it is very difficult to expropriate the lands around the route. On the other hand, another option, namely, southern route passes through natural stream, which results in small impacts on the residents. The community supports the Project, if southern route is selected.	-
2.	Resident	My concerns are counteraction of the Reservoir and earthquake proof.	Japan has experienced many natural disasters, Japanese engineer's design is reliable. It is planned to implement quake-resistance study during the survey.(Mr. Khoren Tsarukyan, PIU)
3.	Resident	Impact on the community by water leakage from the Reservoir is also a concern.	After the completion of the reservoir construction, it is planned to maintain the Reservoir continuously and take measures against any problems. The Project is not first reservoir construction project. Your concern has been already examined in other reservoir construction projects so far, and you do not have to be worry about the issue. Safe reservoir construction is examined. (Mr. Khoren Tsarukyan,

¹⁵ Ultimately, the northern route was not proposed as the Project component.

No.	Speaker	Question and Comment	Answer
			PIU)
4.	Resident	What is the reason for intake from the Arzni-Shamiram Canal? Do you have a plan to use the irrigation water of the canal?	It is planned to use free water of the Hrazdan River through the Arzni-Shamiram Canal, and to store the water at the Yeghvard Reservoir. (Mr. Khoren Tsarukyan, PIU)
5.	Resident	I think the free-water is only one million tons.	According to current estimation, amount of the free water is 90 million tons and the water will be stored during 2-3 months. (Mr. Khoren Tsarukyan, PIU).
6.	Head of Community	Nor-Yerznka Community uses Aparam Canal and Arzni-Shamiram Canal for irrigation. Is it possible for the community to use the store water at the Yeghvard Reservoir?	The Project plans to divert the stored water at the Reservoir to the Kasakh River for irrigation of Ararat Plain. Beneficial communities are Kasakh, Zovuni, Proshyan and so on. (Mr. Khoren Tsarukyan, PIU)
7.	Resident	Is it planned to use canals to discharge the Reservoir water to the Ararat Plain?	Kasakh River will be used for water distribution to the Ararat Plain. (Mr. Khoren Tsarukyan, PIU)
8.	Resident	When river water is used, around 20% of the water will be lost?	In general, water loss in river is observed even in natural conditions. However, free water, which is planned to be diverted to the Kasakh, can be used without loss. Mr. Khoren Tsarukyan, PIU)
9.	Resident	Existing roads are included in the affected areas, and how the roads will be changed after the construction works?	After the pipelines are buried, the roads will be restored to the original conditions. (PIU, Mr. Khoren Tsarukyan, PIU)
10.	Resident	I think that capacity of the Reservoir becomes smaller than that before.	Original plan of reservoir capacity was 230 MCM, while current planned capacity is around 90 MCM. (Mr. Khoren Tsarukyan, PIU)
11.	Head of Community	How do you evaluate the compensation rate? Is it based on the market price or official price?	Based on the law/regulation, land evaluation and compensation will be implemented. (Mr. Artak Ter-Torosyan, ATMS Solutions LLC) The Reservoir basin is owned by State/Community, therefore, compensation for the loss in the reservoir will not be a big issue. Regarding temporary land acquisition, compensation for the loss during the construction period will be provided. (Mr. Khoren Tsarukyan, PIU)
12.	Resident	Which place is the highest point of water pressure by the Reservoir?	Nor-Yerznka Community side in the Reservoir is relatively higher. (Mr. Khoren Tsarukyan, PIU)
13.	Resident	If the Reservoir capacity is 90 MCM, how deep in the reservoir?	Around 15-16m depth. Since the reservoir area is wide, water depth is not very huge. It is noted that the standard of quake-resistant during Soviet Union period was not very strict, however, new standard becomes strict than before. The quake-resistant design/measure is examined in collaboration with the Academy at this moment. (Mr. Khoren Tsarukyan, PIU)
14.	Resident	When will the construction works start?	It is F/S stage at this moment and after the F/S completion, Loan Agreement (L/A) will be exchanged. After the L/A, it will take 1.5 years for Detailed Design (D/D). After the D/D completion, the construction works will be started. (Mr. Khoren Tsarukyan, PIU)
15.	Resident	Climate change due to the construction works is expected?	It is recommended to ask the environmental expert for the issue. (Mr. Khoren Tsarukyan, PIU)
16.	Head of Community	Are there any environmental impacts on Nor-Yerznka Community?	During construction stage, heavy construction vehicles will be used, which can cause air pollution. (Mr. Khoren Tsarukyan, PIU)
17.	Resident	What kinds of materials will be used during construction stage? Do you have a plan to use oil?	It is planned to reduce the impacts on natural environment by the construction materials as much as possible. (Mr. Khoren Tsarukyan, PIU)
18.	Head of Community	There can be some dangerous situations by the Project. However, due to the increase of soil moisture, I think that Nor-Yerznka Community can be rich.	Indirect impact such as increase of agricultural application amount will be examined. (Mr. Khoren Tsarukyan, PIU)
19.	Resident	The most important matter for the Community is safety, namely, quake-resistant measures of the Reservoir. Permeability examination during the construction stage is necessary.	If no measure is taken, all of the 90MCM water for the Reservoir will be infiltrated into the soil. Therefore, any measures have to be done. At this moment, anti-infiltration works are examined, and main construction cost will be for the works. In the Reservoir basin, most of area consists of sand and clay, while only a part of northern part of the Reservoir basin is rock. (Mr. Khoren Tsarukyan, PIU)
20.	Resident	Do you have a plan to transport of the fertile top-soil within in the Reservoir basin to other areas?	Some parts of top-soil in the Reservoir basin had been already transported during the Soviet Union period. If necessary, before the construction works, transportation of the top-soil will be examined. (Mr.

No.	Speaker	Question and Comment	Answer
			Khoren Tsarukyan, PIU)
21.	Resident	The most important matter for the Community is safety. If safety is considered and secured, we will support the Project.	—
22.	Resident	Water leakage will give damage to not only Nor-Yerznka Community, but also Zovuni Community.	—
23.	JICA Survey Team	We would like to some female participants to express their opinions.	It seems that everybody regards the Project as very good one. However, there can be a possibility that dangerous situations in the Community will be caused by the Project, and I cannot support the Project completely. (a female resident)

At the seminar, official personnel of the PIU, the Survey team members, private environment experts (ATMS Solutions LLC), staff of Aarhus Center, the Community Head, and fifteen (15) residents including WUA Deputy Head participated. Attendant list of the seminar is as shown in Table 10-3.2.

Table 10-3.2 Participant List of the Public Seminar in Nor-Yerznka Village (5th November 2015)

No.	Name	Position	Organization
1.	Alina Sahakyan	Head of the Community	Nor-Yerznka Village
2.	Haikush Nazaryan	Community office worker	Nor-Yerznka Village
3.	Lolita Tonotyan	Community office worker	Nor-Yerznka Village
4.	Artur Tonyan	Deputy Head	Ashtarak WUA
5.	-----	Resident	-----
6.	-----	Resident	-----
7.	-----	Resident (a vehicle Operator)	-----
8.	-----	Resident (Director of Culture House)	-----
9.	-----	Resident (School Director)	-----
10.	-----	Resident (Librarian)	-----
11.	-----	Resident	-----
12.	-----	Resident	-----
13.	-----	Resident (Farmer)	-----
14.	-----	Resident	-----
15.	-----	Resident	-----
16.	-----	Resident	-----
17.	Khoren Tsarukyan	Hydro-technical engineer	PIU, SCWE, MOA
18.	Kazumitsu TSUMURA	Team Leader	JICA Survey Team
19.	Ayumi SHIGA	Environmental and Social Consideration	JICA Survey Team
20.	Gevorg GEVORGYAN	Interpreter	JICA Survey Team
21.	Ruzanna Manyan	Coordinator	Aarhus Center
22.	Artak Ter-Torosyan	Director	ATMS Solutions LLC

10-4 Public Consultation on the Project Outline by the MNP

Based on the law in Armenia, the Public Consultation by the MNP on application of the Initial Environmental was held in Yeghvard municipality on 23rd December 2015. The Public Consultation was organized under the responsibility of the MNP, for the purpose of confirmation of the result of the Public Consultation, which had been already done by the Project. The opening remarks were done by Mr. K. Harutyunyan, Deputy Mayor of Yeghvard city and Ms. A. Drnoyan, the specialist of “Environmental Impact Expertise Center” SNCO. The discussion at the Public Consultation by the MNP is as shown below:

Table 10-4.1 Discussion at the Public Consultation on the Project Outline by MNP (23rd December 2015)

No	Speaker	Question and Comment	Answer
1.	Resident	What water will be used to fill the reservoir? Will the water of Sevan Lake be used? Is there enough water reserve, which will ensure irrigation of agricultural lands during irrigation period?	Water of Hrazdan river will be used to fill the reservoir through Arzni-Shamiram canal during springtime before irrigation season. Regarding the irrigation water reserves, 90MCM water will be reserved annually, which is quite huge amount for irrigation of lands. (Mr. Khoren Tsarukyan, PIU)
2.	Resident	You mentioned during presentation that the construction of reservoir will solve social issues. What kind of labor issues will be solved and is a fishing industry planned?	Currently our task is to construct the reservoir for the purpose of irrigation of lands. Regarding the recreation zone, maybe in the future fishing industry and recreation zone will also be considered, but such works are not envisaged in current project. (Mr. Khoren Tsarukyan, PIU)
3.	Resident	Is there a possibility to create a recreational	

No	Speaker	Question and Comment	Answer
		zone around the reservoir?	
4.	Resident	What will happen to the humus (top soil) after removal during reservoir construction works? Will it be provided to land users of that territory?	The removed humus will be used for agriculture. (Mr. A. Ter-Torosyan, Environmental expert of ATMS Solutions LLC) Answers of such questions related to humus will be given in the main stage of environmental impact assessment and alternative options for solution of those issues may be proposed. All the proposals and remarks will be taken into consideration. (Ms. A. Dmoyan)
5.	Resident	What kind of compensations will be provided to the owners of lands in the territory of reservoir?	Beside the laws of the Republic of Armenia there are international regulations, according to which, the land user, who has no ownership of the land, will not receive compensation as a land owner, but investments he made for cultivation of the land will be compensated. (Mr. M. Vardanyan, Chief accountant of "Welfare and housing fund" office)
6.	Resident	Will there be independent experts in the stage of assessment of environmental impact?	Independent experts are also being involved during the main stage of expertise, but this is still an initial stage and no independent expert is involved. (Ms. A. Dmoyan)

Table 10-4.2 Participant List of the Public Consultation by MNP (23rd December 2015)

No.	Name	Position	Organization
1.	K.Harutyunyan	Deputy-Mayor	Yeghvard city
2.	A.Dmoyan	Specialist	"Environmental Impact Expertise Center" SNCO, MNP
3.	N.Karapetyan	Leading specialist of Yeghvard City	Yeghvard City
4.	R.Manyan	Coordinator	Yeghvard Aarhus center
5.	M.Vardanyan	Specialist of social affairs	PIU, SCWE, MOA
6.	D.Zakaryan	Hydrologist	PIU, SCWE, MOA
7.	K.Tsarukyan	Hydro-technical engineer	PIU, SCWE, MOA
8.	A.Ter-Torosyan	Director	ATMS Solutions LLC
9.	A.Vardanyan	Chief accountant	"Welfare and Housing Fund" office
10.	A.Aleksanyan	Clerk	"Welfare and housing fund" office
11.	-----	Resident of Yeghvard Community	
12.	-----	Resident of Yeghvard Community	
13.	-----	Resident of Yeghvard Community	
14.	-----	Resident of Yeghvard Community	
15.	-----	Resident of Yeghvard Community	
16.	-----	Resident of Yeghvard Community	
17.	-----	Resident of Yeghvard Community	
18.	-----	Resident of Yeghvard Community	
19.	-----	Resident of Yeghvard Community	
20.	-----	Resident of Yeghvard Community	
21.	-----	Resident of Yeghvard Community	
22.	-----	Resident of Yeghvard Community	

10-5 Public Seminars on Environmental and Social Impacts by the Project

It is not a duty for any project undertakers to organize public consultations for Category A projects more than twice. However, the Project could cause land acquisition and several dozen people will be affected, and expected impacts by the Project should be presented to the people at early stage, so that, the Project can be implemented smoothly. Based on the concept, the public seminars to explain about anticipated impacts were organized on 31st May 2016 prior to the official public consultation on the ESIA report. The most affected areas by the Project are Yeghvard Community and Nor-Yerznka Community, and the seminars were held at those municipality offices. Public notice were presented at two (2) community offices mentioned above and four (4) WUA offices concerned (see the photos of public notice in Appendix 6) to encourage the people concerned to participate in the seminar as much as possible.

At the seminars, as a whole, there were no objection against the Project, and the participants are interested in compensation policy, transportation of fertile top-soil in the Reservoir basin, anti-infiltration works and involuntary communal land provision. It is noted that both heads of communities hope governmental support, e.g. small scale of project, in case of voluntary communal land provision. The discussions and participant lists at Nor-Yerznka Community and Yeghvard

Community are shown in Table 10-5.1, Table 10-5.2, Table 10-5.3, and Table 10-5.4, respectively.

Table 10-5.1 Discussion at the Public Seminar in Nor-Yerznka Village on Environmental and Social Impacts

(31st May 2016)

No.	Speaker	Question and Comment	Answer
1.	Resident	What benefit will Nor Yerznka community receive from the reservoir? I think we have a privileged use of water, however, people don't get water even now.	If you have water shortage issue, please apply to PIU and explain your problem, they will record it. At this moment, we are in the F/S stage. We will implement further study in next stage (D/D). (Khoren Tsarukyan / PIU)
2.	Alina Harutyunyan/ Head of Community	We have gathered today in order to discuss issues related to the reservoir. If you have some other issues related to PIU, we will discuss it later.	Today's topic of discussion is environmental and social impacts by the Project, in terms of positive and negative impact. (Khoren Tsarukyan / PIU)
3.	Resident	How long does it take for the construction works?	Around 4 years (Khoren Tsarukyan / PIU)
4.	Resident	What if I do not agree with the compensation amount? (*1)	It is today's main subject to be discussed. If you do not agree, we may decide not to pass the pipeline through your land (Khoren Tsarukyan / PIU)
5.	Alina Harutyunyan/ Head of Community	How many meters of width is necessary for burying the pipeline (ø1,600 mm) which will pass through the community?	In general, 15m width for one-side (excluding canal) is secured for the proposed pipeline, still, in this Project, more than 15 m width for the pipeline is secured for safety side. It is noted that this is F/S stage and it will be finally decided during D/D stage. Everything will be done in accordance with the law. (Khoren Tsarukyan / PIU)
6.	Alina Harutyunyan/ Head of Community	Are you going to use existing dam or implement some additional works related to the dam?	Yes. It will be a high quality dam by using existing dam and additional works. The specialists from Japan have a rich related experience. We will take all the possible measures to ensure the safety of the dam. (Khoren Tsarukyan / PIU)
7.	Resident	There are many sandy areas in the reservoir basin. According to my experience, sprayed water is immediately absorbed into the soil. So, there will be a problem of infiltration.	We have carried out many surveys. The most severe issue is the anti-infiltration works. We have planned to implement anti-infiltration works to solve the issue. (Khoren Tsarukyan / PIU)
8.	Resident	Do you have a plan to construct a spill way?	No, the water is going to be discharged into Kasakh river through Outlet canal pipeline. In case of Yeghvard reservoir, we do not have the issue of catastrophic discharge facilities, because it is not going to be constructed on the river. In case of river, it is necessary to construct spill way. (Khoren Tsarukyan / PIU)
9.	Resident	But what if we have an earthquake?	We are going to design an emergency action plan where all the issues and scenarios will be considered. (Khoren Tsarukyan / PIU)
10.	Resident	How deep will the reservoir be?	10-15m (Khoren Tsarukyan / PIU)
11.	Alina Harutyunyan/ Head of Community	Why does the section related to fertile soil contain only the name of Yeghvard community?	It is possible to discuss the matter, If you have the land within the Reservoir. (Artak Ter-Torosyan / ATMS Solutions) There is not going to be any biased towards any of the communities. There will be multi-party supervision not only by PIU, SCWE, Ministry of Agriculture (Suren Gyurjinyan / ATMS Solutions)
12.	Resident	You said that it will take 4 years for the construction works. Have you considered that we have very strong wind from end of May to end of June? And all the construction dust will be blown away to Nor Yerznka community. So, it can be a kind of environmental impact on the village by the Project.	We will certainly take it into account (*2) (Artak Ter-Torosyan / ATMS Solutions)
13.	Alina Harutyunyan/ Head of Community	I have a concern related to donation of the community lands to the state. If the land is taken from the community, at least some investments should be made in the community by the state. We do not want money. If the state can implement some small scale project for the community, it is OK. We need improved irrigation systems. Please mention this issue in your minutes of meeting because we have made some investments in many lands and donated them to the state. (*4)	The law is on your side. According to law, you can receive compensation. (*3) (Suren Gyurjinyan / ATMS Solutions) The community should defend your own interests. You can demand any supports from the state. (Suren Gyurjinyan / ATMS Solutions) I think this should be mentioned in the minutes of meeting and it can be taken into account later (Marine Vardanyan / PIU)

No.	Speaker	Question and Comment	Answer
14.	Resident	In the presentation, construction of a new pipeline which will pass through the community is proposed. Is it possible to connect the new pipeline with an existing pipeline which provides water to Ashtarak canal?	Yes, it is planned in the Project. If your land is located under this pipeline, you will get water. (Khoren Tsarukyan / PIU)

*1: The question No.4 mentioned above was made before explanation of compensation policy, and the speaker understand the policy after the explanation.

*2: It is possible to minimize dust generation by water spray at the construction site.

*3: There is a case that the State provided compensation for communal land loss in Armenia (RAP for Construction of Road Links of Yerevan Western Ring Road, ADB, 2015). However, in the Project, it has yet to be decided whether the communities concerned to the Project will provide the communal land to the State voluntarily. This issue will be discussed after the Loan Agreement.

*4: It is possible to request to the Government to provide some small scale projects for the community. However, it is not fixed whether the Project will be implemented, therefore, after the loan agreement, such negotiation will be done between the community and the government.

Table 10-5.2 Participant List of the Public Seminar in Nor-Yerznka Village (31st May 2016)

No.	Full Name	Position	Organization
1	Alina Harutyunyan	Head of Community	Nor Yerznka Community
2	Lolita Tonoyan	Chief Specialist	Nor Yerznka Community
3	Yupik Rzgoyan	Chief Specialist	Proshyan Community
4	*****	Resident, Nor Yerznka	
5	*****	Resident, Nor Yerznka	
6	*****	Resident, Nor Yerznka	
7	*****	Resident, Nor Yerznka	
8	*****	Resident, Nor Yerznka	
9	*****	Resident, Nor Yerznka	
10	*****	Resident, Nor Yerznka	
11	*****	Resident, Nor Yerznka	
12	*****	Resident, Nor Yerznka	
13	*****	Resident, Nor Yerznka	
14	Artur Tonyan	Deputy Head	Ashtarak WUA
15	Khoren Tsarukyan	Hydro-technical Engineer	PIU
16	David Zakaryan	Hydrologist	PIU
17	Marine Vardanyan	Social Expert	PIU
18	Ruzan Khojikyanyan	Program Coordinator in Armenia	JICA Armenia Liaison Office
20	Ayumi Shiga	Social Consideration	JICA Survey Team
21	Gevorg Gevorgyan	Assistant	JICA Survey Team
22	Kristine Goroyan	Assistant	JICA Survey Team
23	Luiza Ohanian	Assistant	JICA Survey Team
24	Artak Ter-Torosyan	Environmental Specialist	ATMS Solutions LLC
25	Suren Gyurjinyan	Resettlement Specialist	ATMS Solutions LLC

Table 10-5.3 Discussion at the Public Seminar in Yeghvard City on Environmental and Social Impacts (31st May 2016)

No.	Speaker	Question and Comment	Answer
1.	Karen Harutyunyan / Deputy Mayor	There are many poisonous snakes in the Reservoir basin. When the construction works are started, they will escape to outside of the Reservoir. We should not allow them to hurt people. The reservoir is surrounded by communities. Wherever the snakes go, we will face danger. Please consider the countermeasure against the issue.	At the moment, we do not have any ready-made solutions. We will try to find an optimal solution to the issue. (Artak Ter-Torosyan / ATMS Solutions)
2.	Karen Harutyunyan / Deputy Mayor	Currently, Hrazdan River and Kasakh River are not connected each other. If fish from the Hrazdan River are flushed to the Kasakh River through Yeghvard Reservoir, fish in both rivers can be mixed. Any ecological problems will be caused?	We are going to take the water at Arzni-Shamiram intake from the Hrazdan River. Around the intake point in Hrazdan River, 6 fish species are identified, and 5 species out of them are also identified in Kasakh River. Hence, it will not be a big issue. (Rie Kitao / JICA Survey Team)
3.	Karen Harutyunyan / Deputy Mayor	What if only a part of the land is to be alienated?	If the owner of the alienated land can prove that the remaining part of land (not to be alienated) also cannot be used any more since it is useless, he/she can demand compensation for whole land. In case of large lands, there is a principle of partial

No.	Speaker	Question and Comment	Answer
			alienation. But in case of small lands, we have adopted the principle of alienating the whole area of the land. (Suren Gyurjinyan / ATMS Solutions)
4.	Garush Simonyan / Kasakh Community	We also have a problem of the difference of market price of the lands before and after construction of the reservoir.	Armenian legislation stipulates a very clear price determination methodology. Unit price of land is market price plus 15%. The land price should be determined before the construction. According to the regulation, a professional land evaluator with license makes measurement of the affected area, and set the market price. A notification is sent to the owner. If the owner does not agree the price, he/she can appeal to the court. Governmental decree simply states which area of land should be alienated for public interest, however, there is no provision of market price in case of alienation. (Suren Gyurjinyan / ATMS Solutions)
5.	Karen Harutyunyan / Deputy Mayor	Isn't the Government responsible for determining the market price?	No. Government will not determine the land price. Land evaluators will do that. (Suren Gyurjinyan / ATMS Solutions)
6.	Garush Simonyan / Kasakh Community	Can the resident insist on getting land as compensation instead of money?	He can negotiate and come to an agreement. He cannot take the case to the court. Experience shows that the amount of compensation is almost always acceptable for the land owner. (Suren Gyurjinyan / ATMS Solutions)
7.	Garush Simonyan / Kasakh Community	When the Reservoir is constructed, the land price will be increased. If compensation is done before construction, the land price can be lower than that after the project completion.	We have to follow the law for land price estimation regardless of land price increase or decrease. (Suren Gyurjinyan / ATMS Solutions)
8.	Sargis Hovhannisyan / land owner /officer of community	I have two pieces of lands in the affected area, in one land, 2 year-old apple trees are planted, while 8 years apple trees are planted in another land. How the compensation will be done?	One of the lands (8-year-old trees) is out of the affected area. Regarding the other one, you will get compensation for the land, as well as for your expenses made for the apple trees. (Suren Gyurjinyan / ATMS Solutions)
9.	Karen Harutyunyan / Deputy Mayor	Which company will construct the reservoir? Is there going to be an international or a local tender?	Irrespective of international or local contractor, we will suggest the contractor to hire the local population as much as possible. We will also suggest the contractor to provide job opportunity for local women, for instance, to employ women as cook for labors. (Marine Vardanyan /PIU)
10.	Karen Harutyunyan / Deputy Mayor	Those who get a pension at this moment can receive allowance by the Project. It means that they receive both the pension and allowance.	That is why we have introduced some additional criteria, namely families headed by single mothers, old people and families that have disabled members. If you can suggest any other criteria, we are ready to discuss it. (Suren Gyurjinyan / ATMS Solutions)
11.	Karen Harutyunyan / Deputy Mayor	We provide community lands to the state but don't get anything in return. So, we would like to get some benefits. For instance, we could have free irrigation system for 10-15 years.(*1)	I would suggest that you negotiate on some social projects, for instance, construction of a school (Suren Gyurjinyan / ATMS Solutions)
12.	Karen Harutyunyan / Deputy Mayor	Are you going to completely use the stored water at the reservoir during the irrigation period?	No, it is going to keep a "dead" water level. In the area close to Nor Yernzka, the water depth will be 2-3m, while it will be around 0.5m near Yeghvard Community. (Khoren Tsarukyan / PIU)
13.	Karen Harutyunyan / Deputy Mayor	In such case, a swamp can be formed?	No, because the water will flow all the time. The water is continually stored and discharged for irrigation. Therefore, water will not be stagnant and no swamp will be formed. (Khoren Tsarukyan / PIU)
14.	Karen Harutyunyan / Deputy Mayor	What kind of anti-infiltration measure do you plan to use?	We plan to use bentonite sheet and soil-cement. This soil-cement will be kind of a weak concrete. And the slopes will be protected from wave action and infiltration.

No.	Speaker	Question and Comment	Answer
			(Khoren Tsarukyan / PIU)
15.	Garush Simonyan / Kasakh Community	Are the ground waters affected by the Project?	The ground waters range in very deep layer, at around 120-130m, the water is filtrating into the ground, finally to the Kasakh River. After anti-infiltration works by the Project, stored water at the Reservoir almost will not permeate into the soil. Thus, no impact on the ground water by the Project is expected. (Khoren Tsarukyan / PIU)
16.	Karen Harutyunyan / Deputy Mayor	How the fertile top soil of the Reservoir basin will be managed by the Project?	We should have a discussion with the communities and decide the method of fertile layer transportation and the destination. (*2) (Khoren Tsarukyan / PIU)
17.	Garush Simonyan / Kasakh Community	What if, for instance, my land is evaluated and given a lower price than my neighbor's land?	If you do not agree with the price determined for your land, you have some options, and finally you can take the case to court. (*3) (Suren Gyurjinyan / ATMS Solutions)

*1: Whether the communal land will provided voluntarily cannot be determined at F/S stage. After the loan agreement, it will be discussed between community concerned and the Government.

*2: In case of any projects which would disturb fertile top-soil, it is needed to transport the soil to outside of the area based on decrees in Armenia. However, there is no mention who is requested to transport the fertile soil and how the soil is distributed among the stakeholders in the decrees.

*3: Three patterns for lodging of complaints are proposed in the Project, it is possible to consult with the communities concerned and PIU prior to court.

Table 10-5.4 Participant List of the Public Seminar in Yeghvard City (31st May 2016)

No.	Name	Position	Organization
1	Karen Harutyunyan	Deputy Head	Yeghvard City
2	Lilit Harutyunyan	Officer	Yeghvard City
3	Narine Karapetyan	Officer	Yeghvard City
4	Sona Karapetyan	Officer	Yeghvard City
5	Narine Harutyunyan	Officer	Yeghvard City
6	-----	Resident, Kasakh Community	
7	-----	Resident of Yeghvard Community	
8	-----	Resident of Yeghvard Community	
9	Khoren Tsarukyan	Hydro-technical Engineer	PIU
10	Marine Vardanyan	Social Expert	PIU
11	David Zakaryan	Hydrologist	PIU
12	Ruzanna Manyan	Coordinator	Aarhus Center, Yeghvard City
13	Anush Beybutyan	Coordinator	Aarhus Center, Yeghvard City
14	Ayumi Shiga	Social Consideration	JICA Survey Team
15	Rie Kitao	Environmental Consideration	JICA Survey Team
16	Gevorg Gevorgyan	Assistant	JICA Survey Team
17	Kristine Goroyan	Assistant	JICA Survey Team
18	Luiza Ohanian	Assistant	JICA Survey Team
19	Artak Ter-Torosyan	Environmental Specialist	ATMS Solutions LLC
20	Suren Gyurjinyan	Resettlement Specialist	ATMS Solutions LLC

Since the number of farmers who participated in the public seminar in Yeghvard Community on 31st May was limited, additional seminar in Yeghvard WUA office to get feedback from the PAPs was organized. The discussion at the seminar and participant list are as shown in Table 10-5.5 and Table 10-5.6.

Table 10-5.5 Discussion on the Draft ESIA Report at the Public Seminar in Yeghvard WUA (3rd June 2016)

No.	Speaker	Question and Comment	Answer
1.	Resident	How large was the Reservoir area during the Soviet Union period and how large is current proposed area of Reservoir?	During the Soviet Union period, it was around 1,000 ha, at this moment, the planned area is around 800 ha. (Khoren Tsarukyan / PIU).
2.	Resident	Are only cereal crops cultivated in the reservoir area?	Both cereal and fodder crops are cultivated. (Suren Gyurjinyan / ATMS Solutions)
3.	Resident	How much is the minimum monthly salary rate in Armenia?	Currently, it is 55,000 AMD per month (Suren Gyurjinyan / ATMS Solutions)
4.	Resident	In case we need to apply to the court for solution of some issues, who is going to pay for court expenses?	The person who applies to the court should pay when he/she applies. But if the applier wins the case, the expenses will be reimbursed to him/her. (Suren Gyurjinyan / ATMS Solutions)
5.	Resident	Is the community land compensated by the	This issue should be solved through negotiations

No.	Speaker	Question and Comment	Answer
		State? If there are any vulnerable people (regardless of directly affected or not affected by the Project), what kind of compensation can be provided to them?	between the State and the community. If the State provides compensation for communal land loss, it will be provided to the community, not to vulnerable people in the community, In general, vulnerable people are provided by social support program, like renovation of schools, some cultural houses, etc. It means that the State already has special supporting to such kind of people. (Suren Gyurjinyan / ATMS Solutions)
6.	Resident	When will the Project be officially launched?	It will take one year for negotiation between Government of Japan and Government of Armenia for signing the loan agreement. After that, D/D and construction works will be started. The construction stage will last 4-5 years. (Khoren Tsarukyan / PIU)
7.	Resident	What do you mean by saying partial alienation of land?	After completion of the design, the land size to be alienated will be decided based on the inventory survey. For example, if you have a land with 50 m width and only 15 m width of that will be alienated by the Project, the amount of compensation will be calculated only for the part of 15 m width. (Suren Gyurjinyan / ATMS Solutions)
8.	Resident	What type of canal will be constructed?	It is going to be a pipe with 1,600 mm diameter, buried at 2-2.5 m depth (Khoren Tsarukyan / PIU)
9.	Resident	Will the compensation be provided equal to market price or cadastral price?	Higher price between them will be applied. However, usually market price is higher than the cadastral one. (Suren Gyurjinyan / ATMS Solutions)
10.	Resident	I expect that tourism around the Reservoir will be developed after construction.	-
11.	Resident	My private land will be affected by canal construction. However, I support the Project, since I know its importance.	-

Table 10-5.6 Participant List of the Public Seminar in Yeghvard WUA (3rd June 2016)

No.	Name	Position	Organization
1.	-----	Resident	
2.	-----	Resident	
3.	-----	Resident	
4.	-----	Resident	
5.	-----	Resident	
6.	-----	Resident	
7.	-----	Resident	
8.	-----	Resident	
9.	-----	Resident	
10.	-----	Resident	
11.	-----	Resident	
12.	-----	Resident	
13.	-----	Resident	
14.	-----	Resident	
15.	-----	Resident	
16.	Gayane Karapetyan	WUA officer	Yeghvard WUA
17.	Aida Hovhannissyan	WUA officer	Yeghvard WUA
18.	Gyurjinyan Suren	Resettlement expert	ATMS Solutions
19.	Ayumi Shiga	Social Consideration	JICA Survey Team
20.	Rie Kitao	Environmental Consideration	JICA Survey Team
21.	Gevorg Gevorgyan	Assistant	JICA Survey Team
22.	Tatevik Minasyan	Assistant	JICA Survey Team
23.	Luiza Ohanyan	Assistant	JICA Survey Team

Appendixes

APPENDIX 1 Questionnaire of Socioeconomic Survey**Questionnaire No. _____**

Name of Interviewer: _____

Date of Interview: ____ / ____ / 2016

Cadastral Number: _____

INTERVIEWEE'S PROFILE		
Full Name: Mr. / Ms. _____		Age: (____) years old
Contact Number: _____ - _____		
Marz: _____	City: _____	Community: _____

Family Characteristics

Q.1 Number of family members who live with you (including you)? Male: _____ / Female: _____

Q.2 Number of person older than 65 years old in your household: _____ person(s)

Q.3 Are there any disabled persons in your household? 1. Yes 2. No

(1) If yes, how many? (_____) person(s)

Q.4 Educational status of head of family:

1. None 2. Elementary 3. Primary (8, 9 grade) 4. Secondary general

5. Average professional 6. Higher 7. Postgraduate

6. Other (please specify: _____)

Q.5 Sex of household head: 1. Male 2. Female

Q.6 Does the head of household live together?

1. Yes 2. No. He/ she is out of house, since he/she is a migrant labor in other cities/ countries.

3. Other (please specify: _____)

Domestic Finance

Q.7 What are income sources of your household? (Indicate the all possible options)

1. Farming 2. Aquaculture 3. House/ Land lent income 4. Pension

5. Business/ Shop 6. Carpenter 7. Livestock 8. School teacher

9. Public officer 10. Labor for other person's farmland 11. Factory labor

12. Company worker 13. Remittance from family members who work in other cities/ countries

14. Others (please specify: _____)

Q.8 What is main income source of your household apart from farming? _____

Q.9 How much is the annual gross income of your household apart from farming? _____AMD

Q.10 How much is the annual gross income of your household from livestock? _____AMD

Q.11 How much does your household spend for taking care of livestock annually? _____AMD

Q.12 Please describe annual situation of agricultural activities of your household.

Name of Crop*	Cultivating Area**		Annual Harvest	Income
1. _____	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
2. _____	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
3. _____	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
4. _____	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
5. _____	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD

* Please use supplemental sheets for more than five crops.

** Please choose the unit.

Q.13 If your household has cultivated within the Project Affected Area, please describe annual situation of agricultural activities within the Project Affected Area. (If no, go to Q.14)

Name of Crop*	Location	Cultivating Area**		Annual Harvest	Income
1. _____	1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir Area	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
2. _____	1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir Area	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
3. _____	1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir Area	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
4. _____	1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir Area	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD
5. _____	1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir Area	1 st _____ m ² / ha 2 nd _____ m ² / ha 3 rd _____ m ² / ha	_____ time(s)	_____ kg (_____ kg for sale) (_____ kg for house)	_____ AMD

Q.14 How much does your household spend for farm inputs in this area annually?

Seed: _____AMD, Fertilizer: _____AMD,
 Pesticide: _____AMD, Labor: _____AMD,
 Water fee: _____AMD, Fee of WUA membership: _____AMD,
 Fuel and maintenance cost for agricultural machines: _____AMD

Q.15 If your household has cultivated within the Project Affected Area, how much does your household spend for farm inputs within the Project Affected Area? (If no, go to Q.16)

(1) Within the Yeghvard Reservoir Area

Seed: _____AMD, Fertilizer: _____AMD,
 Pesticide: _____AMD, Labor: _____AMD,
 Water fee: _____AMD, Fee of WUA membership: _____AMD,
 Fuel and maintenance cost for agricultural machines: _____AMD

(2) Outside of the Yeghvard Reservoir Area

Seed: _____AMD, Fertilizer: _____AMD,
 Pesticide: _____AMD, Labor: _____AMD,
 Water fee: _____AMD, Fee of WUA membership: _____AMD,
 Fuel and maintenance cost for agricultural machines: _____AMD

Living Condition

Q.16 Have you done some activities within the Project Affected Area? 1. Yes 2. No (go to Q.17)

(1) If yes, where is the location?

1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir

(2) If yes, how many years have you owned the land there? (_____) years

(3) If yes, does your household have any certifications?

1. Certifications for property rights from the cadastral office 2. Nothing

3. Others (please specify: _____)

Q.17 Have you had any buildings on the Project Affected Area? 1. Yes 2. No (go to Q.18)

(1) If yes, where is the location?

1. Within the Yeghvard Reservoir Area 2. Outside of the Yeghvard Reservoir

(2) If yes, how many years have you owned the buildings there? (_____) years

(3) If yes, does your household have any certifications?

1. Certifications for property rights from the cadastral office 2. Nothing

3. Others (please specify: _____)

Q.18 What kind of domestic and agricultural machines does your household have?

(Indicate the all possible options)

- | | | | |
|------------------------------------|---------------------------|-----------------------|-------------------|
| 1. TV | 2. Refrigerator | 3. Washing machine | 4. Heating boiler |
| 5. Computer | 6. Passenger car | 7. Truck | 8. Tractor |
| 9. Seeder | 10. Tiller/ cultivator | 11. Combine | 12. Plough |
| 13. Reaper | 14. Grass-cutting vehicle | 15. Forage harvester | |
| 16. Grass pressing machine | 17. Milking equipment | 18. Packaging machine | |
| 19. Fruit processing equipment | 20. Dryer for fruits | | |
| 21. Others (please specify: _____) | | | |

Q.19 Does your household make savings from the revenue of your household?

1. Yes 2. No (go to Q.20)

(1) If yes, how many percent of savings from the total revenue of your household?

Average; _____%

Others

Q.20 What do you think, how will the construction of the Reservoir impact on your community?

(Indicate the all possible options)

1. Water quality in our community will be damaged.
 2. Nothing 3. Job opportunity will be increased during the construction period.
 4. Others (please specify: _____)

Q.21 What fruits do you expect from the Yeghvard Reservoir Project?

1. We will have the most effective option for water resources protection and use.
 2. The shortage of irrigation water in rural lands will be solved.
 3. Improvement for irrigation system of our lands.
 4. Development of some industries around the Yeghvard Reservoir Area.
 5. Irrigation water price will be reduced.
 6. Nothing
 7. Others (please specify: _____)

Q.22 What is your worries on the Yeghvard Reservoir Project?

1. Safety/ Seismicity related to the Yeghvard Reservoir Project.
 2. Financial damage due to the land loss caused by the construction of the Yeghvard Reservoir and related canals.
 3. Whether compensation is paid or not for the land loss.
 4. Irrigation water price will be increased.
 5. Others (please specify: _____)

Q.23 Do you want to continue farming activities in this area after the Yeghvard Reservoir Project is restarted? 1. Yes 2. No

Q.24 If your household cultivated within the Project Affected Area, how did your household get permission for the land use within the Project Affected Area? (If no, go to Q.28)

(1) Within the Yeghvard Reservoir Area

1. Without any certification
2. Oral contract with Yeghvard Community
3. With certification

4. Others (please specify: _____)

(2) Outside of the Yeghvard Reservoir Area

1. Without any certification
2. Oral contract with the community
3. With certification

4. Others (please specify: _____)

Q.25 If your household cultivated within the Project Affected Area, how many years have your household cultivated within the Project Affected Area?

(1) Within the Yeghvard Reservoir Area; () years

(2) Outside of the Yeghvard Reservoir Area; () years

Q.26 If your household cultivated within the Yeghvard Reservoir Area, have you already know that your household should stop cultivation within the Yeghvard Reservoir Area, when the Yeghvard Reservoir Project is restarted?

1. Yes 2. No

>>>> If you have any comments or questions on the Yeghvard Reservoir Project, please specify.>>>>

[illegible]

APPENDIX 2 Result of Socioeconomic Survey

No.	Interviewer	Date of Interview	Cadastral no. of Project Affected Lands				Interviewee's PROFILE						Family Characteristics					
							1. Mr., 2. Ms.	First Name	Sir Name	Age	Marz	Community	Q.1 Numbers of Family members			Q. 2 Numbers of older than 65 years old in your household	Q.3 Are there any disabled persons in your household?	
			1st	2nd	3rd	4th							Male	Female	Total		1. Yes, 2. No	Numbers
1	----	11 / 3 / 2016	0024-0006				1	----	----	41	Kotayk	Nor Yerznka	4	4	8	1	1	1
2	----	11 / 3 / 2016	0024-0009				2	----	----	42	Kotayk	Nor Yerznka	1	3	4	1	1	1
3	----	11 / 3 / 2016	0025-0006				1	----	----	54	Kotayk	Nor Yerznka	3	2	5	0	2	0
4	----	11 / 3 / 2016	0024-0005				1	----	----	44	Kotayk	Nor Yerznka	2	3	5	0	1	1
5	----	11 / 3 / 2016	0122-0011				1	----	----	43	Kotayk	Nor Yerznka	2	3	5	1	2	0
6	----	11 / 3 / 2016	0024-0007				1	----	----	58	Kotayk	Nor Yerznka	3	3	6	1	2	0
7	----	11 / 3 / 2016	0134-0001				1	----	----	52	Kotayk	Nor Yerznka	1	1	2	1	1	1
8	----	11 / 3 / 2016	0121-0001-17				1	----	----	74	Kotayk	Nor Yerznka	3	4	7	2	2	0
9	----	11 / 3 / 2016	0026-0017				1	----	----	61	Kotayk	Nor Yerznka	2	1	3	1	2	0
10	----	11 / 3 / 2016	0122-0015	0126-0002	0122-0017	0122-0013	1	----	----	66	Kotayk	Nor Yerznka	3	3	6	2	1	2
11	----	18 / 3 / 2016	0017-0028				2	----	----	66	Kotayk	Nor Yerznka	0	2	2	2	1	1
12	----	18 / 3 / 2016	0026-0024				1	----	----	71	Kotayk	Nor Yerznka	3	2	5	1	1	1
13	----	18 / 3 / 2016	0122-0105				1	----	----	35	Kotayk	Nor Yerznka	5	3	8	1	2	0
14	----	18 / 3 / 2016	0121-0113				2	----	----	38	Kotayk	Nor Yerznka	2	6	8	2	2	0
15	----	18 / 3 / 2016	121-001-09-23	121-001-09-24			1	----	----	48	Kotayk	Nor Yerznka	2	2	4	0	2	0
16	----	30 / 3 / 2016	illegal	0410-0035			1	----	----	52	Kotayk	Yeghvard	2	4	6	0	2	0
17	----	30 / 3 / 2016	0505-0032				1	----	----	79	Kotayk	Yeghvard	4	3	7	2	2	0
18	----	3 / 3 / 2016	0504-0033	0536-0021			1	----	----	54	Kotayk	Yeghvard	3	2	5	0	2	0
19	----	13 / 3 / 2016	illegal				1	----	----	35	Kotayk	Yeghvard	4	6	10	0	2	0
20	----	13 / 3 / 2016	illegal				1	----	----	32	Kotayk	Yeghvard	4	2	6	0	2	0
21	----	13 / 3 / 2016	illegal				1	----	----	39	Kotayk	Yeghvard	2	2	4	0	2	0
22	----	13 / 3 / 2016	illegal				1	----	----	43	Kotayk	Yeghvard	4	3	7	1	1	1
23	----	13 / 3 / 2016	0512-0001	0416-0006			1	----	----	32	Kotayk	Yeghvard	2	0	2	0	2	0
24	----	11 / 3 / 2016	0122-0016	0122-0018			1	----	----	50	Kotayk	Nor Yerznka	2	2	4	0	2	0
25	----	4 / 4 / 2016	illegal				1	----	----	59	Kotayk	Yeghvard	4	1	5	0	2	0
26	----	4 / 4 / 2016	illegal				1	----	----	35	Kotayk	Yeghvard	4	2	6	1	2	0
27	----	1 / 4 / 2016	illegal				1	----	----	47	Kotayk	Yeghvard	3	2	5	1	2	0
28	----	5 / 4 / 2016	illegal				1	----	----	44	Kotayk	Yeghvard	3	3	6	2	2	0
29	----	7 / 4 / 2016	illegal				1	----	----	46	Kotayk	Nor Yerznka	3	3	6	1	2	0
30	----	7 / 4 / 2016	illegal				1	----	----	32	Kotayk	Nor Yerznka	1	2	3	1	1	1
31	----	11 / 3 / 2016	illegal				1	----	----	74	Kotayk	Nor Yerznka	3	4	7	2	2	0
32	----	11 / 3 / 2016	illegal				1	----	----	68	Kotayk	Nor Yerznka	7	5	12	1	2	0

No.	Family Characteristics			Domestic Income			
	Q.4 Educational status of head of family 1. None, 2. Elementary, 3. Primary (8, 9 grade), 4. Secondary general 5. Average professional, 6. Higher, 7. Postgraduate, 8. Other	Q.5 Sex of household head 1. Male, 2. Female	Q.6 Does the head of household live together? 1. Yes, 2. No. He/ she is out of house, since he/ she is amigrant labor in other cities/ countries. 3. Other (please specify)	Q.7 What are income sources of your household? (Indicate the all possible options)	Q.8 What is main income source of your household apart from farming?	Q.9 How much is the annual gross income of your household apart from farming?	Q.10 How much is the annual gross income of your household from livestock? (AMD)
1	4	1	1	1,4,7,14-Income from work abroad	Income from work abroad	1,000,000	0
2	5	2	1	1,7,9,14-disability benefit	salary	650,000	0
3	5	1	1	1,7,14-Income from work abroad	Income from work abroad	500,000	400,000
4	4	1	1	1,14-disability benefit,Income from work abroad	Income from work abroad	500,000	0
5	4	1	1	1,4,7	pension	400,000	100,000
6	5	1	1	1,4,14-Income from work abroad	Income from work abroad	4,800,000	0
7	5	1	1	1,3,4	pension	700,000	0
8	4	1	1	1,4,7	pension	1,000,000	0
9	5	1	1	1,7,9	salary	1,500,000	100,000
10	6	1	1	1,4,7,14-disability benefit	pension	1,500,000	300,000
11	3	2	1	1,4,7	pension	1,300,000	720,000
12	4	1	1	1,4,7	livestock	2,200,000	1,000,000
13	4	1	1	1,4,7,9	salary	1,500,000	300,000
14	5	1	1	1,4,7,9	salary	1,000,000	0
15	6	1	1	1,7,9	salary	8,000,000	8,000,000
16	6	1	1	1, 7, 9, 11	salary	4,000,000	2,000,000
17	6	1	1	1,4,9	salary	5,000,000	0
18	4	1	1	1, 5	salary	10,000,000	0
19	4	1	1	1,7,14-poverty benefits	poverty benefits	900,000	400,000
20	4	1	1	1,7,14-self-employed	livestock	3,700,000	2,500,000
21	5	1	1	1, 7	livestock	2,000,000	2,000,000
22	4	1	1	1,7,14-poverty benefits	poverty benefits	600,000	0
23	6	1	1	9	salary	2,500,000	0
24	6	1	1	1,7,12,13	salary	600,000	400,000
25	4	1	1	1	none	0	0
26	6	1	1	1,4,7,9,12	pension, salary	3,500,000	1,500,000
27	5	1	1	1,4,11	salary of labor	2,000,000	0
28	4	1	1	1,4,7	pension	1,200,000	0
29	4	1	1	1,4,7,9	salary	1,500,000	0
30	5	2	1	1,4,7	pension	600,000	0
31	4	1	1	1,3,4,7	pension	1,100,000	400,000
32	6	1	1	1,4,7	pension	1,000,000	0

No.	Q.11 How much does your household spend for taking care of livestock annually? (AMD)	Domestic Income																			
		Q.12 Please describe annual situation of agricultural activities of your household.																			
		1st Crop										2nd Crop									
		Name of crop	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)	Name of crop	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)
1st	2nd		3rd	Total	for sale	for house		Total	1st	2nd			3rd	Total	for sale	for house		Total			
1	70,000	vegetables	30	0	0	30	1	0	50	50	0	fruit garden	2,000	0	0	2,000	1	100	100	200	200,000
2	70,000	apple	200	0	0	200	1	0	275	275	0	forage grass	200	0	0	200	2	0	700	700	0
3	200,000	fruit garden	200	0	0	200	1	500	500	1,000	500,000		0	0	0	0				0	0
4	0	fruit garden	1,200	200	0	1,400	1	100	100	200	100,000		0	0	0	0				0	0
5	200,000	apple	2,000	0	0	2,000	1	3,700	300	4,000	250,000	apricot	2,500	0	0	2,500	1	3,700	300	4,000	250,000
6	0	apple	600	0	0	600	1	0	100	100	0	plum	600	0	0	600	1	0	100	100	0
7	0	apple	2,000	0	0	2,000	1	14,800	200	15,000	200,000	grape	2,000	0	0	2,000	1	2,800	200	3,000	200,000
8	500,000	forage grass	18,000	10,000	0	28,000	2	0	10,000	10,000	0		0	0	0	0				0	0
9	150,000	apple	500	0	0	500	1	0	70	70	0	pear	500	0	0	500	1	0	30	30	0
10	160,000	apple	7,000	0	0	7,000	1	19,700	300	20,000	6,000,000	walnut	4,000	0	0	4,000	1	900	100	1,000	1,000,000
11	500,000	apple	1,200	0	0	1,200	1	0	150	150	0	walnut	1,200	0	0	1,200	1	70	30	100	35,000
12	2,000,000	apple	400	0	0	400	1	0	500	500	0		0	0	0	0				0	0
13	150,000	fruit garden	1,400	0	0	1,400	1	2,700	300	3,000	1,000,000		0	0	0	0				0	0
14	500,000	grape	4,500	0	0	4,500	1	500	500	1,000	500,000	forage grass	4,500	0	0	4,500	2	0	1,500	1,500	0
15	5,000,000	pear	240,000	0	0	240,000	1	600,000	1,000	601,000	150,000,000		0	0	0	0				0	0
16	1,200,000	wheat	37,000	0	0	37,000	1	0	4,000	4,000	0	apple	9,000	3,000	0	12,000	1	7,000	1,000	8,000	2,000,000
17	0	wheat	10,370	0	0	10,370	1	3,000	2,000	5,000	1,000,000		0	0	0	0				0	0
18	0	apple	11,500	0	0	11,500	1	28,000	2,000	30,000	1,400,000		0	0	0	0				0	0
19	500,000	wheat	10,000	0	0	10,000	1	0	1,500	1,500	0		0	0	0	0				0	0
20	2,000,000	barley	10,000	0	0	10,000	1	0	2,000	2,000	0		0	0	0	0				0	0
21	1,000,000	barley	8,000	0	0	8,000	1	2,000	0	2,000	240,000		0	0	0	0				0	0
22	0	barley	6,000	0	0	6,000	1	0	1,500	1,500	0		0	0	0	0				0	0
23	0	fallow	350,000	0	0	350,000				0	0	fallow	9,800	0	0	9,800				0	0
24	250,000	apple	5,000	0	0	5,000	1	10,000	2,000	12,000	1,500,000	forage grass	600	1,900	0	2,500	2	4,000	4,000	8,000	250,000
25	0	wheat	10,000	5,000	0	15,000	1	0	2,000	2,000	0	Orchard	5,000	0	0	5,000	1	0	500	500	0
26	500,000	sainfoin	10,000	0	0	10,000	2	6,000	6,000	12,000	1,200,000	wheat or barley	15,000	15,000	0	30,000	1	5,000	5,000	10,000	1,500,000
27	0	Alfalfa	12,000	0	0	12,000	4.5	20,000	0	20,000	700,000		0	0	0	0				0	0
28	300,000	wheat	20,000	0	0	20,000	1	0	4,000	4,000	0		0	0	0	0				0	0
29	500,000	barley	10,000	0	0	10,000	1	0	800	800	0	grape	2,750	0	0	2,750	1	0	1,750	1,750	0
30	1,000,000	sainfoin	35,000	0	0	35,000	1	0	1,600	1,600	0	Orchard	5,000	0	0	5,000	1	0	1,000	1,000	0
31	300,000	fruit garden	10,000	0	0	10,000	1	9,000	3,000	12,000	4,000,000		2750	0	0	2750				0	0
32	500,000	forage grass	18,000	10,000	0	28,000	2	0	10,000	10,000	0	wheat	5000	0	0	5000	1	38,000	2,000	40,000	5,000,000

No.	Domestic Income																			
	Q.12 Please describe annual situation of agricultural activities of your household.																			
	3rd Crop										4th Crop									
	Name of crop	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)	Name of crop	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)
1st		2nd	3rd	Total	for sale		for house	Total	1st			2nd	3rd	Total	for sale		for house	Total		
1				0				0			0	0	0	0				0	0	
2				0				0			0	0	0	0				0	0	
3				0				0			0	0	0	0				0	0	
4				0				0			0	0	0	0				0	0	
5	peach			0	1	3,700	300	4,000	250,000		0	0	0	0				0	0	
6	fruit garden			0	1	0	100	100	0		0	0	0	0				0	0	
7	forage grass			0	2	6,000	0	6,000	350,000		0	0	0	0				0	0	
8				0				0			0	0	0	0				0	0	
9	apricot			0	1	200	200	400	10,000	walnut	500	0	0	500	1	0	100	100	0	
10				0				0			0	0	0	0				0	0	
11				0				0			0	0	0	0				0	0	
12				0				0			0	0	0	0				0	0	
13				0				0			0	0	0	0				0	0	
14				0				0		pasture	43,500	0	0	43,500				0	0	
15				0				0			0	0	0	0				0	0	
16	Alfalfa	20,000	40,000	0	60,000	4	60,000	60,000	120,000	3,000,000		0	0	0	0				0	0
17				0				0			0	0	0	0				0	0	
18				0				0			0	0	0	0				0	0	
19				0				0			0	0	0	0				0	0	
20				0				0			0	0	0	0				0	0	
21				0				0			0	0	0	0				0	0	
22				0				0			0	0	0	0				0	0	
23				0				0			0	0	0	0				0	0	
24				0				0			0	0	0	0				0	0	
25				0				0			0	0	0	0				0	0	
26				0				0			0	0	0	0				0	0	
27				0				0			0	0	0	0				0	0	
28				0				0			0	0	0	0				0	0	
29				0				0			0	0	0	0				0	0	
30				0				0			0	0	0	0				0	0	
31				0				0						0				0	0	
32				0				0						0				0	0	

No.	Domestic Finance																					
	Q.13 If your household has cultivated within the Project Affected Area, please describe annual situation of agricultural activities within the Project Affected Area. (If no, go to Q.14)																					
	1st Crop											2nd Crop										
	Name of Crop	Location 1. Within Reservoir area, 2. Outside of the Reservoir area	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)	Name of Crop	Location 1. Within Reservoir area, 2. Outside of the Reservoir area	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)
1st			2nd	3rd	Total	for sale		for house	Total	1st				2nd	3rd	Total	for sale		for house	Total		
1	fruit garden	2	2,000	0	0	2,000	1	100	100	200	200,000			0	0	0	0				0	
2	apple	2	200	0	0	200	1	0	275	275	0	forage grass	2	200	0	0	200	2	0	700	700	0
3	fruit garden	2	200	0	0	200	1	500	500	1,000	500,000			0	0	0	0				0	
4	fruit garden	2	200	0	0	200	1	50	50	100	50,000			0	0	0	0				0	
5	apple	2	2,000	0	0	2,000	1	3,700	300	4,000	250,000	apricot	2	2,500	0	0	2,500	1	3,700	300	4,000	250,000
6	fruit garden	2	100	0	0	100	1	0	100	100	0			0	0	0	0				0	
7	forage grass	2	5,000	0	0	5,000	2	6,000	0	6,000	350,000			0	0	0	0				0	
8	forage grass	1	10,000	0	0	10,000	2	0	4,000	4,000	0			0	0	0	0				0	
9	walnut	2	500	0	0	500	1	0	100	100	0			0	0	0	0				0	
10	apple	2	700	0	0	700	1	19,700	300	20,000	6,000,000			0	0	0	0				0	
11	apple	2	1,200	0	0	1,200	1	0	150	150	0	walnut	2	1,200	0	0	1,200	1	70	30	100	35,000
12	apple	2	400	0	0	400	1	0	500	500	0			0	0	0	0				0	
13	fruit garden	2	1,400	0	0	1,400	1	2,700	300	3,000	1,000,000			0	0	0	0				0	
14	pasture	1	43,500	0	0	43,500				0				0	0	0	0				0	
15	pear	1	240,000	0	0	240,000	1	600,000	1,000	601,000	150,000,000			0	0	0	0				0	
16	Alfalfa	1	20,000	0	0	20,000	4	20,000	20,000	40,000	1,000,000	apple	2	9,000	3,000	0	12,000	1	7,200	800	8,000	1,500,000
17	wheat	2	10,370	0	0	10,370	1	3,000	2,000	5,000	1,000,000			0	0	0	0				0	
18	apple	2	11,500	0	0	11,500	1	28,000	2,000	30,000	1,400,000			0	0	0	0				0	
19	wheat	1	10,000	0	0	10,000	1	0	1,500	1,500	0			0	0	0	0				0	
20	barley	1	10,000	0	0	10,000	1	0	2,000	2,000	0			0	0	0	0				0	
21	barley	1	8,000	0	0	8,000	1	2,000	0	2,000	240,000			0	0	0	0				0	
22	barley	1	6,000	0	0	6,000	1	0	1,500	1,500	0			0	0	0	0				0	
23	fallow	1	350,000	0	0	350,000				0		fallow	2	9,800	0	0	9,800				0	
24	forage grass	2	600	1,900	0	2,500	2	4,000	4,000	8,000	250,000			0	0	0	0				0	
25	wheat	1	10,000	5,000	0	15,000	1	0	2,000	2,000	0			0	0	0	0				0	
26	sainfoin	1	10,000	0	0	10,000	2	6,000	6,000	12,000	1,200,000	wheat or barley	1	15,000	0	0	15,000	1	2,500	2,500	5,000	750,000
27	Alfalfa	1	12,000	0	0	12,000	5	20,000	0	20,000	700,000			0	0	0	0				0	
28	wheat	1	20,000	0	0	20,000	1	0	4,000	4,000	0			0	0	0	0				0	
29	barley	1	10,000	0	0	10,000	1	0	800	800	0			0	0	0	0				0	
30	sainfoin	1	35,000	0	0	35,000	1	0	1,600	1,600	0			0	0	0	0				0	
31	forage grass	1	10,000	0	0	10,000	2	0	4,000	4000	0						0				0	
32	wheat	2	10,900	0	0	10,900	1	38,000	2,000	40000	5,000,000						0				0	

No.	Domestic Finance																	
	Q.13 If your household has cultivated within the Project Affected Area, please describe annual situation of agricultural activities within the Project Affected Area. (If no, go to Q.14)											Q.14 How much does your household spend for farm inputs?						
	3rd Crop											Seed (AMD)	Fertilizer (AMD)	Pesticide (AMD)	Labor (AMD)	Water Fee (AMD)	Fee of WUA membership (AMD)	Fuel and maintenance cost for agricultural machines (AMD)
	Name of Crop	Location 1. Within Reservoir area, 2. Outside of the Reservoir area	Cultivating Area (m2)				No. of times for cultivation (times)	Annual Harvest (kg)			Annual Income (AMD)							
1st			2nd	3rd	Total	for sale		for house	Total									
1			0	0	0	0				0		0	20,000	50,000	0	20,000	6,000	0
2			0	0	0	0				0		0	15,000	0	0	25,000	6,000	15,000
3			0	0	0	0				0		0	20,000	40,000	0	30,000	6,000	50,000
4			0	0	0	0				0		0	0	0	0	5,000	6,000	0
5	peach	2	2,500	0	0	2,500	1	3,700	300	4,000	250,000	0	60,000	300,000	150,000	60,000	6,000	30,000
6			0	0	0	0				0		0	6,000	20,000	0	14,000	6,000	0
7			0	0	0	0				0		0	70,000	200,000	250,000	130,000	6,000	30,000
8			0	0	0	0				0		0	40,000	50,000	0	80,000	6,000	0
9			0	0	0	0				0		0	0	20,000	0	15,000	6,000	0
10			0	0	0	0				0		0	120,000	500,000	300,000	110,000	6,000	0
11	peach	2	400	0	0	400	1	0	70	70	0	0	12,000	0	0	20,000	6,000	0
12			0	0	0	0				0		0	0	10,000	0	10,000	6,000	50,000
13			0	0	0	0				0		0	35,000	200,000	200,000	10,000	6,000	150,000
14			0	0	0	0				0		0	36,000	30,000	0	25,000	6,000	0
15			0	0	0	0				0		0	6,000,000	6,000,000	2,500,000	3,000,000	6,000	1,000,000
16			0	0	0	0				0		200,000	300,000	650,000	470,000	370,000	6,000	120,000
17			0	0	0	0				0		72,600	36,000	0	0	0	6,000	0
18			0	0	0	0				0		0	200,000	400,000	1,200,000	160,000	6,000	200,000
19			0	0	0	0				0		0	36,000	0	0	0	6,000	0
20			0	0	0	0				0		50,000	36,000	0	0	40,000	6,000	130,000
21			0	0	0	0				0		40,000	40,000	0	0	20,000	6,000	100,000
22			0	0	0	0				0		0	25,000	0	0	20,000	6,000	0
23			0	0	0	0				0		0	0	0	0	0	0	0
24			0	0	0	0				0		0	60,000	300,000	300,000	120,000	6,000	200,000
25			0	0	0	0				0		80,000	120,000	100,000	190,000	180,000	0	30,000
26			0	0	0	0				0		210,000	150,000	0	60,000	60,000	0	240,000
27			0	0	0	0				0		15,000	0	35,000	150,000	190,000	0	30,000
28			0	0	0	0				0		60,000	50,000	0	200,000	100,000	0	0
29			0	0	0	0				0		60,000	63,000	60,000	230,000	102,000	0	150,000
30			0	0	0	0				0		500,000	0	0	200,000	70,000	0	60,000
31						0				0		0	40,000	50,000	0	80,000	6,000	0
32						0				0		1000000	600,000	800,000	800,000	1,000,000	6,000	300,000

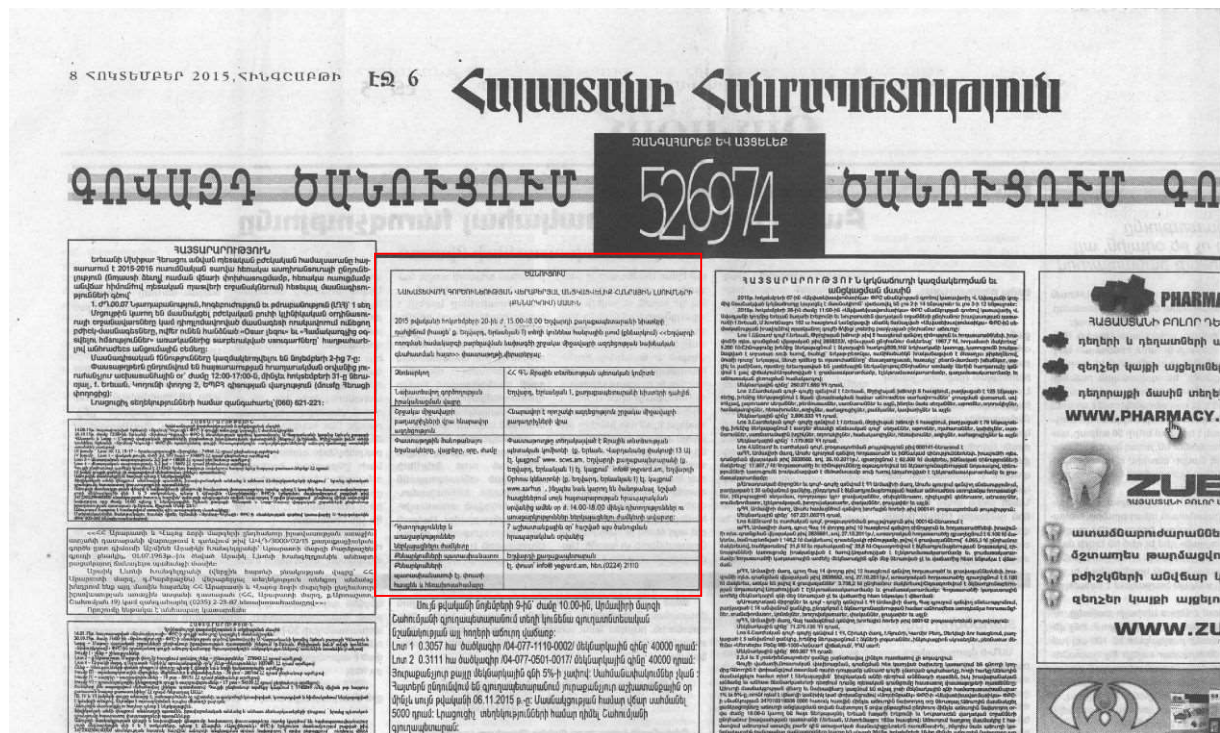
No.	Domestic Finance															Living Condition			
	Q.15 If your household has cultivated within the Project Affected Area, how much does your household spend for farm inputs within the Project Affected Area? (If no, go to Q.16)															Q.16 Have you done some activities within the Project Affected Area?			
	(1) Within the Reservoir Area							(2) Outside of the Reservoir Area								1. Yes, 2. No	(1) If yes, where is the location? 1. Within the Reservoir area 2. Outside of the Reservoir area	(2) If yes, how many years have you owned the land there?	(3) If yes, does your household have any certifications? 1. Certifications for property rights from the cadastral office, 2. Nothing. 3. Others
	Seed (AMD)	Fertilizer (AMD)	Pesticide (AMD)	Labor (AMD)	Water Fee (AMD)	Fee of WUA membership (AMD)	Fuel and maintenance cost for agricultural machines (AMD)	Seed (AMD)	Fertilizer (AMD)	Pesticide (AMD)	Labor (AMD)	Water Fee (AMD)	Fee of WUA membership (AMD)	Fuel and maintenance cost for agricultural machines (AMD)					
1	0	0	0	0	0	0	0	0	20,000	50,000	0	20,000	6,000	0	1	2	26	1	
2	0	0	0	0	0	0	0	0	15,000	0	0	25,000	6,000	15,000	1	2	21	1	
3	0	0	0	0	0	0	0	0	20,000	40,000	0	30,000	6,000	50,000	1	2	20	1	
4	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	1	2	25	1	
5	0	0	0	0	0	0	0	0	60,000	300,000	150,000	60,000	6,000	30,000	1	2	25	1	
6	0	0	0	0	0	0	0	0	0	10,000	0	5,000	6,000	0	1	2	25	1	
7	0	0	0	0	0	0	0	0	0	0	250,000	50,000	6,000	0	1	2	25	1	
8	0	20,000	20,000	0	40,000	6,000	0	0	0	0	0	0	0	0	1	1	20	2	
9	0	0	0	0	0	0	0	0	0	0	0	0	6,000	0	1	2	25	1	
10	0	0	0	0	0	0	0	0	120,000	500,000	300,000	110,000	6,000	0	1	2	don't remember	1	
11	0	0	0	0	0	0	0	0	12,000	0	0	20,000	6,000	0	1	2	25	1	
12	0	0	0	0	0	0	0	0	0	10,000	0	10,000	6,000	50,000	1	2	30	1	
13	0	0	0	0	0	0	0	0	35,000	200,000	200,000	10,000	6,000	150,000	1	2	25	1	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
15	0	6,000,000	6,000,000	2,500,000	3,000,000	6,000	1,000,000	0	0	0	0	0	0	0	1	1	10	1	
16	120,000	0	50,000	220,000	300,000	0 or 1000	0	0	300,000	600,000	250,000	70,000	6,000	80,000	1	1, 2	25	2, 1	
17	0	0	0	0	0	0	0	72,600	36,000	0	0	0	6,000	0	1	2	9	1	
18	0	0	0	0	0	0	0	0	200,000	400,000	1,200,000	160,000	6,000	200,000	1	2	10	1	
19	0	36,000	0	0	0	6,000	0	0	0	0	0	0	0	0	1	1	10	2	
20	50,000	36,000	0	0	40,000	6,000	130,000	0	0	0	0	0	0	0	1	1	25	2	
21	40,000	40,000	0	0	20,000	6,000	100,000	0	0	0	0	0	0	0	1	1	1	2	
22	0	25,000	0	0	20,000	6,000	0	0	0	0	0	0	0	0	1	1	4	2	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1, 2	don't remember	1	
24	0	0	0	0	0	0	0	0	30,000	0	100,000	30,000	6,000	50,000	1	2	26	1	
25	80,000	80,000	0	140,000	120,000	0	25,000	0	0	0	0	0	0	0	1	1	25	2	
26	120,000	75,000	0	30,000	30,000	0	120,000	0	0	0	0	0	0	0	1	1	25	2	
27	15,000	0	35,000	150,000	190,000	0	30,000	0	0	0	0	0	0	0	1	1	20	2	
28	60,000	50,000	0	200,000	100,000	0	0	0	0	0	0	0	0	0	1	1	25	2	
29	60,000	42,000	0	130,000	60,000	0	100,000	0	0	0	0	0	0	0	1	1	2	2	
30	500,000	0	0	200,000	0	0	20,000	0	0	0	0	0	0	0	1	1	7	2	
31	0	20,000	20,000	0	40,000	6,000	0	0	0	0	0	0	0	0	1	1	20	2	
32	0	0	0	0	0	0	0	1000000	420,000	30,000	180,000	500,000	6,000	150,000	1	2	can't answer	1	

No.	Living Condition								Others	
	Q.18 What kind of domestic and agricultural machines does your household have? (Indicate the all possible options)								Q.19 Does your household make savings from the revenue of your household?	
									Q.20 What do you think, how will the construction of the Reservoir impact on your community? (Indicate the all possible options)	
	1. TV	4. Heating Boiler	7. Truck	10. Tiller/ cultivator	13. Peaper	16. Grass pressing machine	19. Fruit processing equipment		1. Yes, 2. No	(1) If yes, how many percent of savings from the total revenue of your household? (%)
	2. Refrigerator	5. Computer	8. Tractor	11. Combine	14. Grass-cutting vehicle	17. Milking equipment	20. Dryer for fruits			
	3. Washing Machine	6. Passenger Car	9. Seeder	12. Plough	15. Forage harvester	18. Packaging machine	21. Other			
1	1,2,3	5, 6	7, 8						2	
2	1,2,3	5							2	
3	1,2,3	5, 6							2	
4	1,2,3								2	
5	1,2,3	4, 5, 6							2	
6	1,2,3	5							2	
7	1,2,3	6	7						2	
8	1,2,3	5, 6	7						2	
9	1,2,3	4, 5, 6							1	2
10	1,2,3	5, 6			13		20		2	
11	1,2,3	5, 6							2	
12	1,2,3	5							2	
13	1,2,3	4, 5, 6	7, 8						1	3
14	1,2,3	4, 5							2	
15	1,2,3	4, 5, 6							1	30
16	1,2,3	4, 5, 6	8	10, 12			21. tractor trailer		1	15
17	1,2,3	5, 6							2	
18	1,2,3	4, 5	7, 8	10, 12			19, 20		1	10
19	1,2,3	4, 5							2	
20	1,2,3	4, 5, 6	7, 8		13				2	
21	1,2,3	4, 5, 6							2	
22	1,2,3	4, 5, 6	8						2	
23	1,2,3	4, 5, 6							1	10
24	1,2,3	4, 5, 6							1	10
25	1,2	6							2	
26	1,2,3	5, 6							2	
27	1,2,3	4, 5, 6							2	
28	1,2,3	6							2	
29	1,2,3	4, 5, 6							2	
30	1,2,3								2	
31	1,2,3	5, 6	7						2	
32	1,2,3	4, 5, 6	7, 8, 9	11	13				2	

No.	Others					
	Q.21 What fruits do you expect from the Yeghvard Reservoir Project?			Q.22 What is your worries on the Yeghvard Reservoir Project?		Q.23 Do you want to continue farming activities in this area after the Yeghvard Reservoir Project is restarted?
	1. We will have the most effective option for water resources protection and use in our community. 2. The shortage of irrigation water in rural lands will be solved. 3. Improvement for irrigation system of our lands.	4. Development of some industries around the Yeghvard Reservoir Area. 5. Irrigation water price will be reduced. 6. Nothing	7. Others (please specify)	1. Safety/ Seismicity related to the Yeghvard Reservoir Project. 2. Financial damage due to the land loss caused by the construction of the Yeghvard Reservoir and related canals.	3. Whether compensation is paid or not for the land loss. 4. Irrigation water price will be increased. 5. Others (please specify)	1. Yes, 2. No
1		6		1,2	3	1
2		4		2		1
3	2			2		1
4	2				3	1
5	2			2		1
6		6		1		1
7		5		1		1
8	1			1		1
9	2				3	1
10	1				3	1
11		5		1		1
12	1			1		1
13		6		1,2	3	1
14	1,2,3	4		1,2	3	1
15	1			1,2	3	1
16	1,2,3	4	7-climate change, ecology change	2	3	1
17		6			3	1
18	1,2,3	4,5	7-recreational zones will be built		3	1
19	2			1		1
20		6			3	1
21		4		2		1
22	2			1		1
23	1			1		can't answer
24	1,2,3			1		1
25	1,2,3	4, 5	7- recreation, tourism	1, 2	3, 4	1
26	1,2,3	4,5	7- price of real estate will increase, tourism will develop	2	3	1
27		4		2	3	1
28	1,2,3	4		2	3	1
29	1,2,3	4, 5		1		1
30	1,2,3	4		1		1
31	1			1		1
32		6			5-not reliable	1

No.	Others							If you have any comments or questions on the Yeghvard Reservoir Project, please specify.
	Q.24 If your household cultivated within the Project Affected Area, how did your household get permission for the land use within the Project Affected Area?				Q.25 If your household cultivated within the Project Affected Area, how many years have your household cultivated within the Project Affected Area?		Q.26 If your household cultivated within the Yeghvard Reservoir Area, have you already know that your household should stop cultivation within the Yeghvard Reservoir Area, when the Yeghvard Reservoir Project is restarted?	
	(1) Within the Reservoir area		(2) Outside of the Reservoir area		(1) Within the Reservoir area	(2) Outside of the Reservoir	1. Yes, 2. No	
	1. Without any certification 2. Oral contract with Yeghvard Community	3. With certification 4. Others (please specify)	1. Without any certification 2. Oral contract with Yeghvard Community	3. With certification 4. Others (please specify)				
1				3		26	2	Worry about security
2				3		21	1	
3				3		20	2	
4				3		25	1	
5				3		25	1	
6				3		25	1	
7				3		25	2	
8	1				20		1	
9				3		25	1	
10				3		don't remember	2	
11				3		25	1	
12				3		30	1	Will the project be really implemented?, Positive to the project.
13				3		25	1	
14		3			1		1	
15		3			10		1	
16	1			3	25	13	1	
17				3		9	1	
18				3		10	1	
19	1				10		2	
20	1				25		2	
21	1				1		2	
22	1				4		1	
23		3		3	don't remember	don't remember	1	
24				3		26	1	
25	1				25		1	
26	1				25		1	Will be nice if the topsoil will be removed to my other land
27	1				20		1	
28	1				25		1	
29	1				2		1	
30	1				7		1	
31	1				20		1	
32	1			3		4	2	

APPENDIX 3 Public Notice of Public Consultation on the Project Outline (In Newspaper)



APPENDIX 4 Photos of Public Consultation on the Project Outline by SCWE



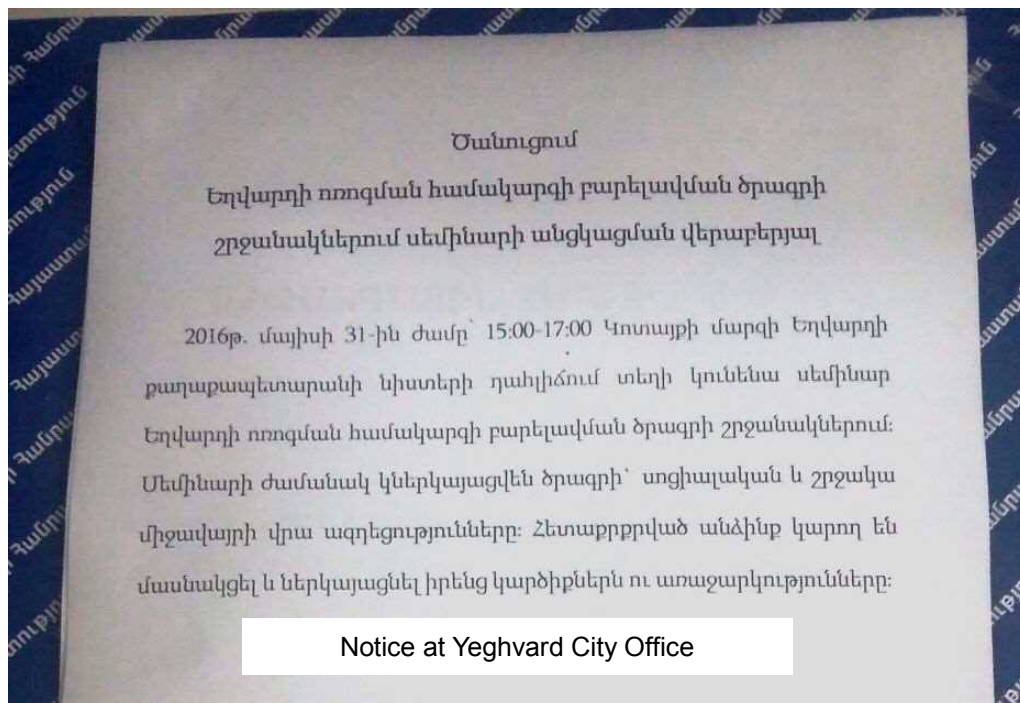
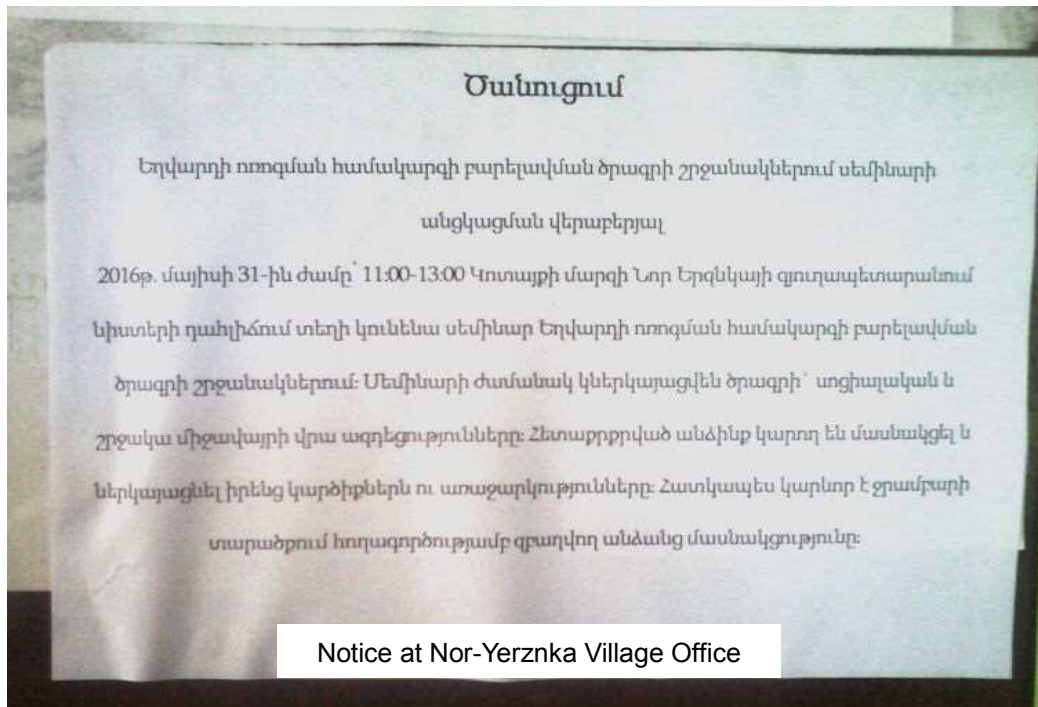


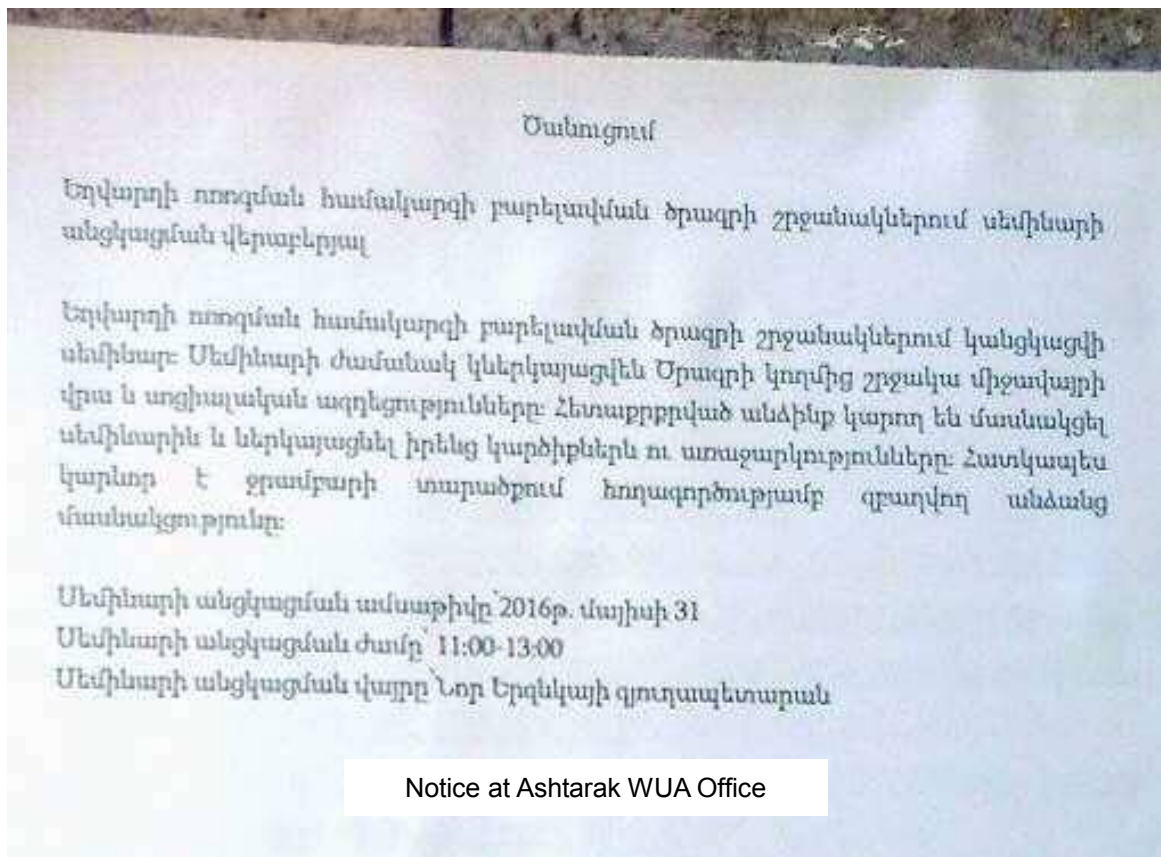
APPENDIX 5 Photo of Public Seminar on the Project Outline in Nor-Yerznka Village



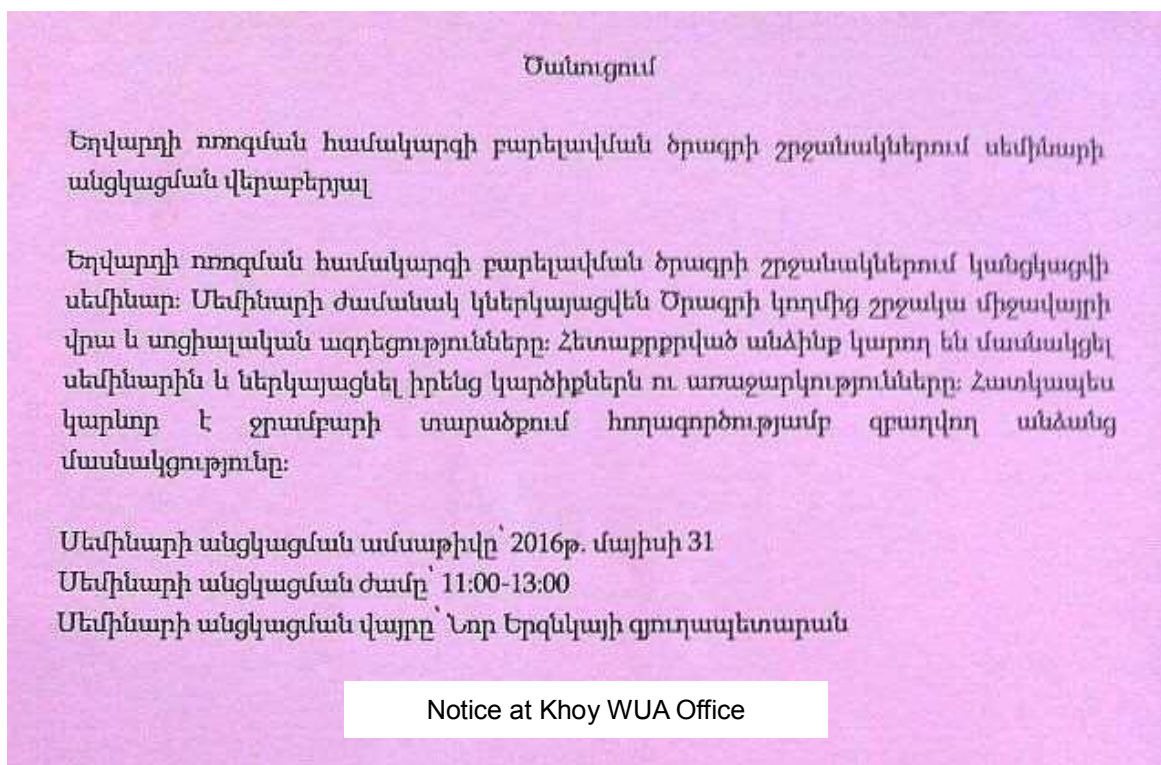
APPENDIX 6 Public Notice at Community Offices and WUA Offices for Public Seminar on Environmental and Social Impacts on 31st May 2016

(1) Photos of the Public Notice at Community Offices

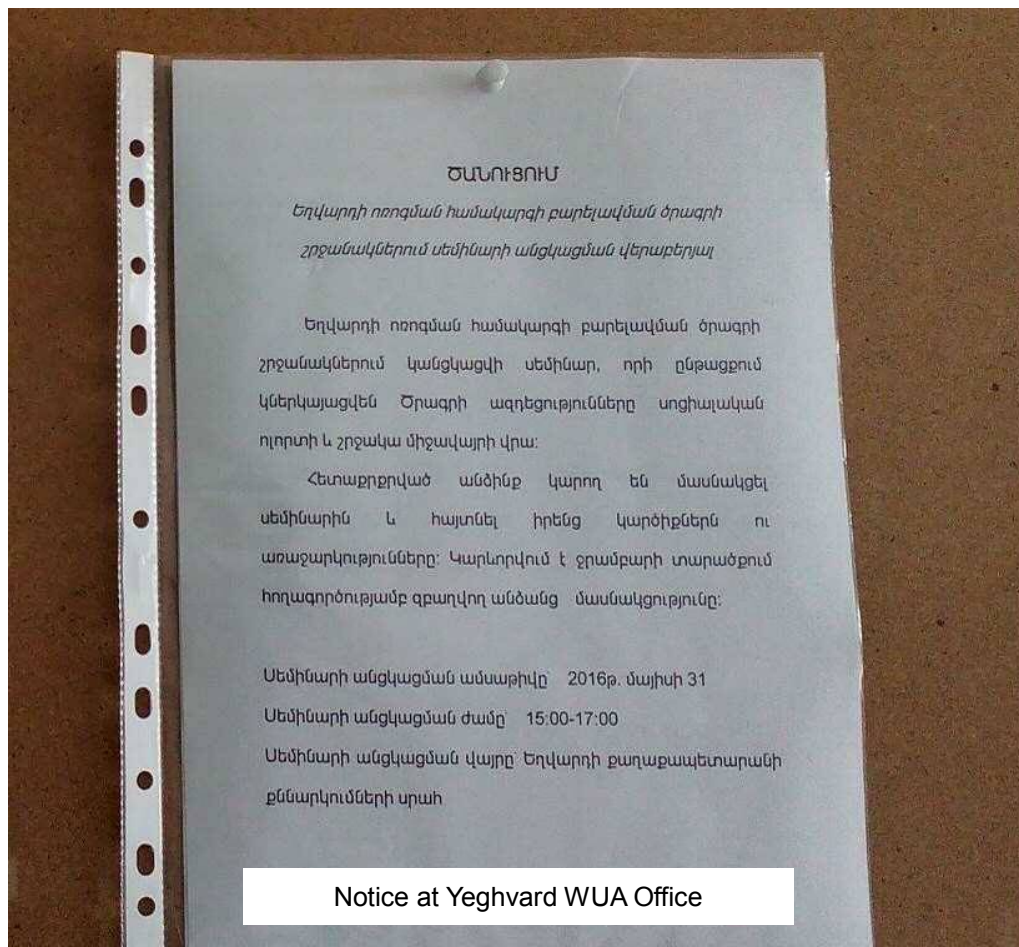
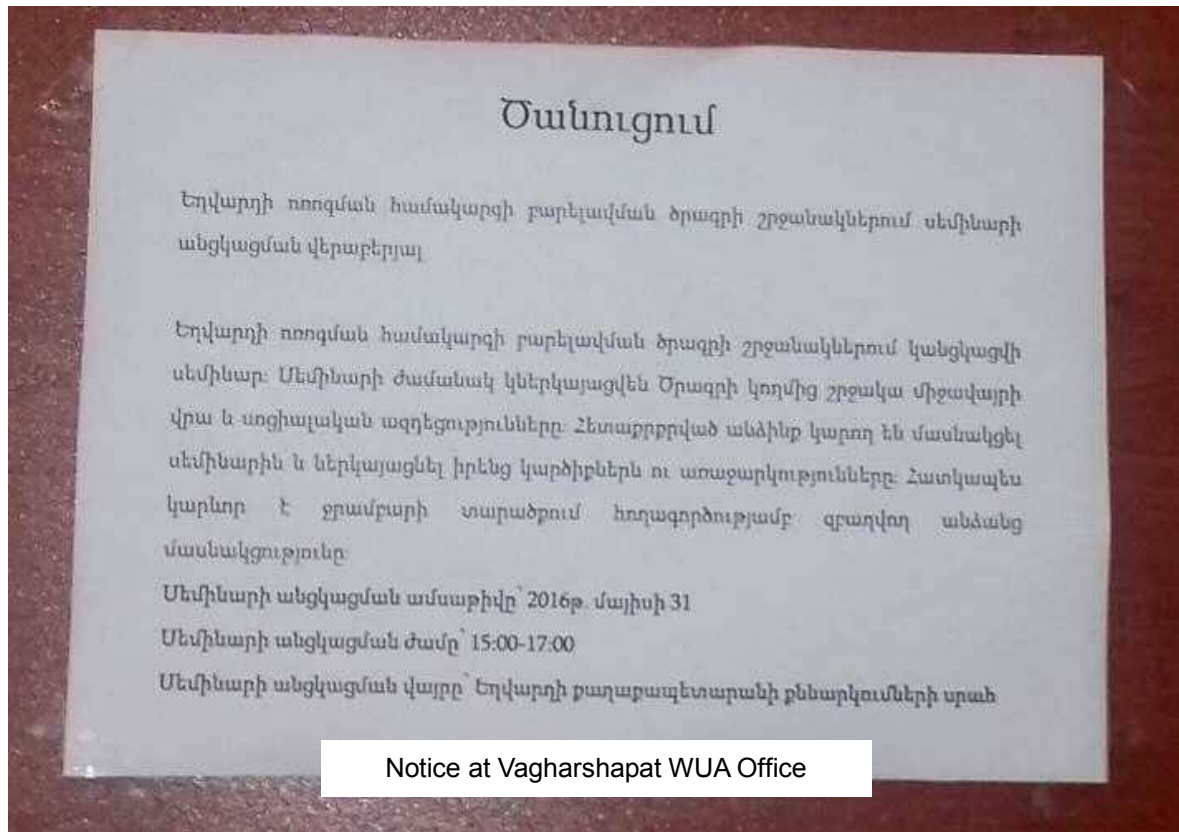


(2) Photos of the Public Notice at WUAs

Notice at Ashtarak WUA Office



Notice at Khoy WUA Office



(3) English (Translated)

Notice

Re: Seminar for the Yeghvard Irrigation System Improvement Project

To: all the concerned

The Seminar for the Yeghvard Irrigation System Improvement Project will be organized. Expected environmental and social impacts by the Project will be explained at the seminar. Concerned people are welcome to join and express your opinions at the seminar. Especially, those who cultivate within the Reservoir Area are the most welcome.

Day: 31st May, 2016

Time: 15:00-17:00

Venue: Yeghvard City Conference Room

Notice

Re: Seminar for the Yeghvard Irrigation System Improvement Project

To: all the concerned

The Seminar for the Yeghvard Irrigation System Improvement Project will be organized. Expected environmental and social impacts by the Project will be explained at the seminar. Concerned people welcome to join and express your opinions at the seminar. Especially, those who cultivate within the Reservoir Area are the most welcome.

Day: 31st May, 2016

Time: 11:00-13:00

Venue: Nor Yerznka Village Office

APPENDIX 7 Photos of Public Seminar on Environmental and Social Impact in Nor-Yerznka Village



APPENDIX 8 Photos of Public Seminar on Environmental and Social Impacts in Yeghvard City



APPENDIX 9 Photos of Public Seminar on Environmental and Social Impact at Yeghvard WUA



APPENDIX 10 Letter From Yeghvard City to Chairman of SCWE

(1) Original



**ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ԿՈՏԱՅՔԻ ՄԱՐԶԻ ԵՂՎԱՐԴ ՀԱՄԱՅՆՔԻ
ՂԵԿԱՎԱՐ**

Հայաստանի Հանրապետության Կոտայքի մարզի Եղվարդ համայնք,
ք. Եղվարդ, Երևանյան 1, Հեռ. (0224) 21110, info@yeghvard.am

**N 132
04 ապրիլ 2016թ.**

**ՀՀ ԳՆ ԶՐԱՅԻՆ ՏՆՏԵՍՈՒԹՅԱՆ
ՊԵՏԱԿԱՆ ԿՈՄԻՏԵՆԱԽԱԳԱՀ
ՊԱՐՈՆ Ա.ՀԱՐՈՒԹՅՈՒՆՅԱՆԻՆ**

Հարգելի պարոն Հարությունյան.

Ի պատասխան Ձեր 16.03.2016թ. N 01/510-16 գրության՝ հայտնում ենք, որ Եղվարդի ջրամբարի տարածքը 1991 թվականից ի վեր գյուղատնտեսական նպատակներով ապօրինի կերպով օգտագործվել է համայնքի բնակիչների կողմից: Ժամանակի ընթացքում, փոխամաձայնության գալով, փոխվել են տարածքի որոշ հողօգտագործողներ, մի մասն ընդհանրապես դադարել է մշակել նախապես զավթված հողատարածքները, իսկ որոշ մասը շարունակում է մշակել դրանք մինչև այսօր: Եղվարդի համայնքապետարանը ապօրինի հողօգտագործողների հետ չի կնքել տարածքի վարձակալության կամ օգտագործման իրավունքի պայմանագրեր և հաշվառման չի վերցրել նրանց, քանի որ անորոշ է եղել ջրամբարի տարածքի հետագա ճակատագիրը: Նշված հանգամանքից ելնելով համայնքապետարանի աշխատակազմը չի կարող Ձեզ տրամադրել հողօգտագործողների հստակ ցանկ:

Հարգանքով՝

ՀԱՄԱՅՆՔԻ ՂԵԿԱՎԱՐ՝

ՆՈՐԱՅՐ ՍԱՐԳՍՅԱՆ

Կադ. 'Կ. Հարությունյան

0224-2-11-58



(2) English (Translated)



HEAD OF YEGHVARD COMMUNITY, RA KOTAYK MARZ

RA Kotayk marz, Yeghvard Community,

Yeghvard city, Yerevanyan 1, Tel. (0224) 21110, info@yeghvard.am

N 132
Harutyunyan

Mr. Aram

04 April 2016

Chairman, RA State Committee of Water Economy (SCWE),

Dear Aram Harutyunyan,

In response to Your N 01/510-16 letter, we inform that the Yeghvard reservoir area since 1991 was used for agricultural purposes by local residents, illegally. Coming to an oral agreement between land users, some of the land users have been changed, some of them stopped to cultivate previously occupied lands, and some of them continued to cultivate until today.

As the future/fate of the reservoir area was uncertain, Yeghvard community did not conclude agreements with illegal land users on land lease or right of use and did not register them as land user.

Based on the above mentioned circumstances, the staff of the community can't provide an exact list of land users.

Regards,

Head of the community

Norayr Sargsyan

APPENDIX 11 Letter from Nor Yerznka Village to Chairman of SCWE

(1) Original



ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ԿՈՏԱՅՔԻ ՄԱՐԶԻ ՆՈՐ ԵՐԶՆԿԱ ՎԱՍՏԱՅՆՔ

Հայաստանի Հանրապետության Կոտայքի մարզի Նոր
Երզնկա համայնք
ՀՀ, Կոտայքի մարզ, գ. Նոր Երզնկա, 2-րդ փող., 33
Հեռ. (0232)3-67-91, norerznka-village@mail.ru

N 74
18 մարտ 2016թ.

**ՀՀ ԳՅՈՒՂԱՏՆՏԵՍՈՒԹՅԱՆ
ՆԱԽԱՐԱՐՈՒԹՅԱՆ ԶՐԱՅԻՆ
ՏՆՏԵՍՈՒԹՅԱՆ ՊԵՏԱԿԱՆ ԿՈՄԻՏԵ
ՆԱԽԱԳԱՀ Ա. ՀԱՐՈՒԹՅՈՒՆՅԱՆԻՆ**

Ձեր 16.03.2016 թվականի թիվ 01/511-16 գրությանը ի պատասխան Ձեզ ենք ներկայացնում տեղեկատվություն Եղվարդի ջրամբարի թափի հողատարածքում Նոր Երզնկա համայնքի բնակիչների կողմից հողօգտագործողների վերաբերյալ՝
1. Գրիգորյան Սերյոժա - 1,5 հա ապօրինի
2. Պետրոսյան Տիգրան - 1,0 հա ապօրինի



Կառ. գլխավոր Ս. Սահյան՝ Լ. Խուրշուդյան

Ս. Սահյան՝ ՂԵԿԱՎԱՐ՝ *Ս. Սահյան* ԱԼԻՆԱ ՀԱՐՈՒԹՅՈՒՆՅԱՆ

(2) English (Translated)

N74

18.03.2016

Chairman of State Committee
of Water Economy of MoA of RA
Mr. A. Harutyunyan

As a response to your letter N 01/511-16 dated on 16.03.2016, we present you an information about land users of Yeghvard reservoir area from Nor Yernka community.

1. Grigoryan Seryoja – 1.5ha illegal
2. Petrosyan Tigran – 1.0ha illegal

Head of community

Alina Harutyunyan

APPENDIX 12 Letter from Yeghvard WUA to Chairman of SCWE

(1) Original

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ
«ԵՂՎԱՐԴ»
ՋՐՕԳՏԱԳՈՐԾՈՂՆԵՐԻ
ԸՆԿԵՐՈՒԹՅՈՒՆ



РЕСПУБЛИКА АРМЕНИЯ
ОБЩЕСТВО
ВОДОПОЛЬЗОВАТЕЛЕЙ
«ЕГВАРД»
REPUBLIC OF ARMENIA
«YEGHVARD» WATER USERS
ASSOCIATION

ք. Եղվարդ, Կոնյանց 14
Հեռախոս (0-24) 2-39-90
Ֆաքս (0-224) 2-39-90
Էլ. փոստ/ yeghvardwua@mail.ru

г. Егвард, Кнунянц 14
Yeghvard, Knunyanс 14
Телефон (Fax): (0-224) 2-39-90
E-mail: yeghvardwua@mail.ru

18.03.2016թ. N 01-ՄՊ.240

ՀՀ ԳՆ ՋՐԱՅԻՆ ՏՆՏԵՍՈՒԹՅԱՆ
ՊԵՏԱԿԱՆ ԿՈՄԻՏԵԻ ՆԱԽԱԳԱՀԻ
ՏԵՂԱԿԱԼ ՊԱՐՈՆ Վ.ՆԱՐԻՄԱՆՅԱՆԻՆ

Հարգելի պարոն Նարիմանյան.

Ի պատասխան Ձեր 16.03.2016թ. N 02/504-16 գրությանը՝ հայտնում եմ, որ ընկերությունը չի տիրապետում Եղվարդի ջրամբարի կառուցման թասի հողատարածքը մշակող հողատերերի վերաբերյալ պահանջվող տեղեկատվությանը:

Հարգանքով՝

ԳՐՈՇԱԴԻՐ ՏՆՕՐԵՆ

Մ. ՀՈՎՀԱՆՆԻՍՅԱՆ

Կատարող
Ա. Մաթևոսյան

(2) English (Translated)

18.03.2016 N 01MK240

Deputy-Chairman of State Committee
of Water Economy of MoA of RA
Mr. V. Narimanyan

Dear Mr. Narimanyan,

As a response to your letter N 02/504-16 dated on 16.03.2016, I inform you, that the Association doesn't have information about land users of Yeghvard reservoir area required by you.

Regards,

WUA Director

M. Hovhannisyan