Eurasian Development Bank
Resources Manager of Eurasian Fund for Stabilization and Development

APPRAISAL
of
Preliminary Application
of
Republic of Armenia
for
Investment Loan
to be provided by the Eurasian Fund for Stabilization and Development for the project
"Construction of Mastara Reservoir"
in the amount of US$ 25.2 million

November 2015
Republic of Armenia
Fiscal year: 1 January – 31 December

National Currency Exchange Rate
as of 01.11.2015

<table>
<thead>
<tr>
<th>Currency</th>
<th>Dram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 RUR</td>
<td>7.37</td>
</tr>
<tr>
<td>1 KZT</td>
<td>16.93</td>
</tr>
<tr>
<td>1 US$</td>
<td>472.78</td>
</tr>
<tr>
<td>1 EUR</td>
<td>520.25</td>
</tr>
</tbody>
</table>

System of weights and measures: Metric

Acronyms and Abbreviations

EDB, Manager - Eurasian Development Bank
EFSD, Fund - Eurasian Fund for Stabilization and Development
FS - Feasibility Study
GDP - Gross Domestic Product
GNI - Gross National Income per capita
IBRD - International Bank for Reconstruction and Development
IFI - International Financial Institutions
PIU - Project Implementation Unit - National Institution "Water Programs Management Bureau" of the State Committee of Water System of the Ministry of Agriculture of the Republic of Armenia
RA - Republic of Armenia
SCWS - State Committee of Water System of the Republic of Armenia
Trust Fund - Europe and Central Asia Region Capacity Development Multi-Donor Trust Fund (ECAPDEV)
WB - The World Bank Group
WUA - Water Users Association

The Appraisal has been prepared by the following officers of the Eurasian Development Bank:

Deputy Chairman of the Board, EFSD          D. Krasilnikov
Member Of the Board, EFSD                   V. Yasinsky
Head of Programs Division, Project Management, EFSD  A. Azizyan
Deputy Director of Representative Office, EFSD, Yerevan A. Pogosyan
Manager of Financial Credits Team, Project Management, EFSD A. Mirzoyev
Senior Project Manager, Financial Credits Team, Project Management, EFSD A. Dolgovechny
Lead Specialist, Programs Dept, Project Management, EFSD O. Sosnina
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## I. BASELINE INDICATIVE PARAMETERS OF LOAN RECOMMENDED BY RESOURCES MANAGER

<table>
<thead>
<tr>
<th>Form of funding</th>
<th>Investment Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beneficiary</strong></td>
<td>Republic of Armenia</td>
</tr>
</tbody>
</table>
| Responsible public authorities and organizations of the Beneficiary | Ministry of Finance of the Republic of Armenia  
State Committee of Water System of the Republic of Armenia  
National Institution "Water Programs Management Bureau" of the State  
Committee of Water System of the Ministry of Agriculture of the Republic of Armenia (Project Implementation Unit - PIU) |
| **Project company**          | Participation of Project Company (Ultimate Beneficiary) is not contemplated. |
| **Project name**             | Construction of Mastara Reservoir |
| **Project sector**           | Agriculture (irrigation-based) |
| **Main Objectives**          | • Stable supply of irrigation water for *de facto* irrigated lands;  
• Expansion of irrigated lands;  
• Reduction of irrigation water costs;  
• Reduction of risks of flooding;  
• Reduction of consumption of groundwater. |
| **Key performance indicators** | • Reduction of power consumption by selected irrigation systems;  
• Reduction of operation and maintenance costs of selected irrigation systems;  
• Reduction of water losses by selected irrigation systems;  
• Expansion of irrigated lands; |
| **Purpose of Loan**          | Payment of reasonable prices under contracts signed by the Beneficiary as part of Project implementation activities, and operating expenses of the Project Implementation Unit, funded by the Investment Loan. |
| **Amount committed by the Fund** | US$ 25.2 million |
| **Beneficiary's Project co-financing** | At least US$ 6.3 million |
| **Financial conditions for extending Fund Loan to Beneficiary.** | • Interest rate: 2% per annum  
• Risk Premium: not applicable  
• Front-end fee: 0.5% of loan amount  
• Commitment fee: not applicable  
• Interest Margin: not applicable  
• Loan maturity, including grace period: up to 20 years  
• Grace period for principal repayment: up to 10 years.  
• Grant-element level: 30.79% |
II. MANAGER'S APPRAISAL REPORT ON PRELIMINARY APPLICATION

This Appraisal Report presents an evaluation of the preliminary application of the Republic of Armenia (RA) for an investment loan to be provided by the EFSD (hereinafter - the Loan) in the amount US$ 25.2 million, submitted to the Bank 12 November, 2015 with a letter Ref. # 5.1 / 34898-15 (hereinafter - the Application). The declared purpose pursued in applying for the Loan is to secure funding for the project "Construction of the Mastara Reservoir" (hereinafter - the Project).

Section 3 of this document contains rationale for the EFSD Resources Manager's Appraisal of the preliminary application (hereinafter - the Manager).

Having examined the Application, the Manager hereby requests the EFSD Council to consider the following recommendations and conclusions:

1. Compliance of the Application to the Mission Statement of the Fund, its funding objectives, lending policy and conditionality, as defined by the Treaty on the Establishment of the Fund, the Statute of the Fund, the Regulation on EFSD Investment Loans and relevant decisions of the EFSD Council:
   • The Application is executed in full compliance with the requirements of the Fund. The depth of elaboration of the Application in terms of the data required for evaluation purposes and supporting documentation to enable a preliminary completeness approval is deemed satisfactory.
   • The Project is consistent with the EFSD Mission Statement. The Project supports the Program of Sustainable Development of the Republic of Armenia with regard to the proposed modernization of the irrigation system and improvement of the quality of water supply. Implementation of the Project is crucial for sustainable development of agriculture in Ararat Valley, and will contribute to promotion of economic stability of the Republic of Armenia.
   • RA has met all the qualification criteria defined by the Treaty on the Establishment of the Fund, the Statute of the Fund and decisions of the EFSD Council. The requirement to make an initial contribution by cashed bills of exchange has been complied with in full. According to the information available to the Manager, the Republic of Armenia has no outstanding debts either to other Fund member states, or to any major international financial institutions. By the date of the Fund Council approval of the Loan, all relevant supporting letters will have been received.
   • The amount applied for is within the country eligibility limit for which RA qualifies with due account of the previous approvals granted by the EFSD Board for one financial credit, as well as for the projects "Construction of North-South Road Corridor" and "Irrigation System Modernization". The funding allocation limit for Armenia, net of the above loans, is equal to US$ 616.9 million.

2. Project preparation. Preparation of the Project will be funded by a grant to be provided by the Europe and Central Asia Region Capacity Development Multi-Donor Trust Fund (ECAPDEV) in the amount of US$670 thousand. It should enable the Manager to ensure high standards of project preparation. According to the rules and procedures of the Trust Fund:
   • Preparation of the Project shall be carried out in accordance with the procedures of the World Bank (WB) (environmental and social safeguards, procurement guidelines, disbursement procedures);
   • Supervision of the Project preparation activities will be carried out by the WB jointly with the Manager.

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1 The Europe and Central Asia Region Capacity Development Multi-Donor Trust Fund (ECAPDEV) was established in 2011 by the Russian Government and is currently administered by WB. Its main objective is to support improvements in the quality of preparation of investment projects and enhance operational capacity of project implementation agencies.
3. **Compliance with WB policies in Project implementation.** Preparation of the Project will be carried out in accordance with the WB Project Preparation Guidelines. Given the above, the Manager for the purposes of the Project recommends to rely on:

- **World Bank Safeguard Policies:** The environmental and social policy of the Manager provides additional requirements to be imposed on EFSD-funded projects, including compliance with relevant safeguard policies of other IFIs;
- **WB Procurement Guidelines:** In accordance with the Procurement Policy for EFSD-funded Projects, approved by the Fund Council 10 July, 2013, Minutes No. 11, for financing contracts by EFSD procurement procedures of other IFIs, including IBRD, may be applied;
- **WB Disbursement Guidelines for Projects.**

4. **Financial conditions for providing EFSD funding to Beneficiary.** In accordance with para 12 and Appendix 1 of the Regulation on the Use of Fund Resources for Providing Investment Loans, the Manager recommends to define financial conditions for the investment loan, given the need to comply with the requirement of the IMF Program on the size of the grant-element of at least 30%. 
III. RATIONALE OF APPRAISAL

1. Social and Economic Condition of Armenia

According to the EFSD Project Management Division Armenia is a middle-income country: based on preliminary assessment of the Manager its GDP in 2014, in current prices, amounted to US$10.9 billion (US$ 3.6 thousand per capita). The poverty rate is relatively high: in 2013 it was equal to 32%; yet there is no indication of any significant improvement compared with the pre-crisis level of 27.6% in 2008. The level of unemployment also remains high: about 17.8% in 2014.

The most important sectors for the Armenian economy are agriculture, retail trade, manufacturing and construction. Amid a steady decline of the share of construction in GDP caused by its downturn after the crisis, and low growth in other key industries, agriculture has become the single most important sector in the structure of Armenian GDP2 (Fig. 1).

Figure 1. Structure of Armenia's GDP in 2008-2014, % of GDP

Sustainable growth of agricultural production in recent years reflects the comparative competitive advantages of this sector in the economy of Armenia. The increase in the share of agriculture evolved in the context of poor inflow of foreign investments into this sector, which varied within 2% - 5% of the total amount of incoming foreign capital (less than 1% of GDP). Furthermore, agricultural production is extremely dependent on weather conditions and availability of irrigation water.

The high concentration of exports in individual regions and for specific products results in heavy reliance on the external market conditions and economic situation in Russia. Limited available natural resources and small size of the economy generate exposure to contingencies of foreign trade. Armenia's land-locked status, rugged mountainous terrain of much of its territory, and the economic blockade imposed by two neighboring countries (Azerbaijan and Turkey) hamper development of trade relations. Exports from Armenia account for 31% of GDP and imports - for over 50%. The principal trading partners are Russia, EU, Iran, China and the United States. Russia is the key market for Armenian products of farming and manufacturing industry. Armenia's accession to the Customs Union may contribute to further integration with Russia.

A large proportion in the revenue of current cash remittances and wages of migrants working abroad in the national income structure of the country (18-20% of GDP) also deepens Armenia's dependence on external factors. Inflation and growth rates are volatile, the current account deficit3 and dollarization of the economy are at a precariously high level, whereas the

2 National Statistical Service of RA
3 Despite the current account surplus in the second quarter of 2015.
significant increase in the public external debt during the global crisis enhances the need for continued reform in the area of fiscal consolidation.

The level of public spending in RA is about 27% of GDP (average for 2010-2014), which is lower than in most countries of Central Asia and Eastern Europe. One of the constraints limiting the budget size is low tax revenue (22% of GDP)\(^4\). The budget deficit, after a dramatic expansion to 7.6% of GDP in 2009, fairly quickly diminished on average down to 2.6% of GDP in 2010-2014 owing to successful fiscal consolidation measures undertaken by the authorities during that period. As a result of the loss of income due to reduced imports, diminished revenue from customs duties within the EEU, and increased spending, such as for higher electricity prices, financing of the constitution referendum, and escalating external and internal debt service burden, the budget deficit in 2015 has enlarged substantially. According to updated estimates of the IMF, the budget deficit in 2015 may reach 3.9% of GDP. The Manager considers build-up of the deficit as acceptable, provided the need to maintain employment and stimulate economic growth is duly taken into account.

The decline in cash remittances by 32% in the first six months of 2015 has enhanced the importance of exports as a source of foreign currency to replenish international reserves and for external debt service purposes. The share of export earnings in the current account inflows in January-June 2015 amounted to 37%. Despite the decline in exports of agricultural produce due to the drop in global food prices, its share is less volatile in the structure of exports, owing to the constant growth of export volumes in this group. In the first half of 2015, notwithstanding the fall in demand on the Russian market, the agricultural exports have retained their growth rate in terms of volume\(^5\) (Fig. 2).

The ongoing devaluation has deteriorated the external debt service performance: the external debt-to-GDP ratio is close to the national threshold of 50% of GDP. In the long term it will require reduction of the budget deficit to a level not to exceed 3% of GDP and limitation of external borrowing. By 1 July, 2015 Armenia's public debt had reached 44% of GDP, of which about 75% is external sovereign debt. The high proportion of soft loans in the structure of external debt ensures relatively easy repayment terms. It is estimated by the Manager that for the next few years the level of external debt service liabilities will not exceed 10% of export earnings and current cash remittances. Despite the deteriorated debt service burden of Armenia, the impact of the proposed loan on its debt sustainability is deemed as negligible. The loan in the amount of US$ 30 million will enlarge the external public debt liability by 0.8% and will increase the external debt-to-GDP ratio by

\(^4\) Of all the EFSD countries only Tajikistan has lower revenue.

\(^5\) According to the Manager, exports of commodity aggregates, such as agricultural and food products, have grown by 20% in terms of volume.
0.3\% of GDP\textsuperscript{6}. Given the extended grace period and the low interest rate, it will not significantly affect the debt sustainability parameters and will not generate any major burden for the budget.

2. Agriculture of Armenia

Agriculture is a key sector of the economy of Armenia with a 21\% share in its GDP. About 36\% of the population are engaged in agricultural production activities, with vegetable produce accounting for two thirds of the total output\textsuperscript{7}. The most important location for vegetable growing activities in Armenia is Ararat Valley. Its land is used for planting high-value varieties of grapes, vegetables and fruit, which constitute a significant proportion in the agricultural balance of the country, and is largely due to the local plain terrain and a multitude of sunny days in a year. However, the region is prone to desertification and is extremely dependent on irrigation: Armavir and Ararat regions, located in the area of Ararat Valley, show the best performance in agricultural production, but at the same time are the largest consumers of irrigation water\textsuperscript{8} (Fig. 3).

The current trend of using groundwater for irrigation purposes stems from the insufficient capacity of surface water sources to provide sufficient water supply, because of the restrictions imposed by the international agreement with Turkey on water intake from the two principal bodies of water: Akhuryan reservoir and Araks River.

In the 1980s multiple deep wells were drilled in Ararat Valley to enable access to groundwater. Currently, in the Ararat Valley about 700 deep-well pumps are still in operation, although their service life has been overrun, and their performance requirements are not consistent with the current energy-efficiency standards.

Active development of fishery businesses since 2008 and a large number of permits, issued for use of groundwater for this specific purpose, have given rise to a dangerous pattern of depletion of groundwater reserves in Ararat Valley. In view of the above, in 2013 consumption of groundwater in Ararat Valley by fisheries alone has exceeded sustainable levels by a factor of 1.6. Shortage of water in the Armavir region has resulted in reduction of irrigated land area by 30\%.

In addition to the above water shortage, there is another serious problem in Ararat Valley, and it is about flooding. In spring water flows from molten glaciers floods about 30\% of the total land area in

\textsuperscript{6} With devaluation of the dram at the end of 2014 taken into account.

\textsuperscript{7} Source: National Statistical Service, data as of year end 2013.

\textsuperscript{8} World bank. 2012. Agriculture and Rural Development Policy Note for Armenia
the valley, most of which is used as farmland, roads and residence place of communities (see Appendix 2).

3. Government Support

The Government of Armenia has initiated a number of institutional reforms and development programs for modernization of irrigation infrastructure, providing conditions for sustainable and efficient agricultural production, driven by market economy, and formalized these undertakings in the following documents:

- Strategic Program of Long-term Development of Armenia for 2014-2025. (Government Decree of RA No. 442-T, 27 March, 2014), in the chapter on modernization of irrigation system and improvement of water supply;
- Government Program for 2012-2017 (Government Decree No. 730, 18 June, 2012), which determines (para 3.1.7.2) the following investment priorities:
  - Implementation of new water supply systems in rural areas;
  - Construction of reservoirs, upgrading of irrigation infrastructure;
  - Rehabilitation and strengthening of key hydraulic engineering facilities;
  - Proper operation and maintenance of existing facilities.

The proposed Project is part of continued efforts of the Government and is included in the list of priorities and objectives of the Armenian Government Program for 2015 (Government Decree No. 111 of 15 January, 2015).

4. Objectives

The main purpose of the Project consists in development of irrigation infrastructure and increased availability of water for irrigated lands in the Armavir area. Progress toward these objectives will be monitored on the basis of the following performance indicators: (a) reduction of irrigation water costs; (b) stable supply of irrigation water to de facto irrigated lands; (c) expanded surface area of irrigated lands. In addition, the Project should contribute to enhanced sustainability of agriculture in the region by (a) reducing flooding risks and (b) cutting down consumption of groundwater in Ararat Valley.

5. Project Description

The Project consists of three components and is expected to be completed within four years.

Component 1. Construction of Mastara reservoir (US$ 30.2 million)

The Mastara reservoir is to be built in Armavir region on the Selav-Mastara River upstream of the end portion of the Armavir main channel (Fig. 4). The reservoir will be filled by molten glacier water flow streaming down from Mount Aragats and by rain showers in spring. The total capacity of the reservoir will be 10.2 million m$^3$, useful capacity - 8.2 million m$^3$, the dam height will be equal to 30 m.
The catchment areas are managed by Water Users Associations (WUA) "Armavir" and "Shenik":

<table>
<thead>
<tr>
<th></th>
<th>WUA &quot;Shenik&quot;</th>
<th>WUA &quot;Armavir&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigated land, ha</td>
<td>12,768</td>
<td>5,486</td>
</tr>
<tr>
<td><em>De facto</em> irrigated land, ha</td>
<td>6,542</td>
<td>5,388</td>
</tr>
<tr>
<td>Number of water users</td>
<td>2,735</td>
<td>6,194</td>
</tr>
<tr>
<td>Number of deep-well pumps</td>
<td>68</td>
<td>21</td>
</tr>
</tbody>
</table>

Implementation of this component will enable decommissioning of 51 deep-well pumping stations currently in operation, and adopting gravity flow irrigation techniques to distribute water by means of the existing system of the Armavir main channel, common and farm-based irrigation networks available in the catchment areas\(^9\). This will reduce the cost of irrigation water, improve water availability for farmland in the Project area, diminish intake volumes from the groundwater reserve and provide capacity for accumulation of rain flows in spring.

**Component 2. Upgrade of technologies of WUAs in the catchment area (US$0.6 million);**

The second component of the program aims at enabling compliance with energy-efficiency and energy-saving requirements. It requires technological retrofitting of WUAs "Shenik" and "Armavir" and, in particular, upgrading 38 deep-well pump stations that will remain operational upon completion of component 1, as well as further development of the power cost accounting system. The proposed activities should facilitate reduction of operating and energy costs of involved in supply of irrigation water.

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\(^9\) Currently, water intake for the Armavir channel is carried out from Araks River, Akhuryan reservoir.
Component 3. Project management (US$0.7 million)
Support provided to the Project Implementation Unit in daily coordination Project activities.

6. Current Status of Project

In 1970 Armgiproprovodkhoz Institute developed a conceptual design of Mastara reservoir on the basis of hydrological data and with due account of the local context. In 2014 an economic assessment of the Project was prepared. However, the Project is still in need of certain improvements.

To ensure high-quality preparation of the Project, EFSD in May 2015 filed an application to the Trust Fund for a project preparation grant in the amount of US$ 670 thousand for the Republic of Armenia. In August 2015 the application was endorsed by the Steering Committee of the Trust Fund. Preparation of the Project documents will be carried out in accordance with of the World Bank procedures (environmental and social safeguards, procurement guidelines, disbursement procedures). The grant will be used for the preparation of the following documents:

- Feasibility study,
- Assessment of social and environmental impacts of the Project,
- Other documents, including a procurement plan and a plan of Project performance monitoring and evaluation.

The grant funds will also be used to finance training sessions for the PIU staff. The grant disbursement process will be monitored by WB experts in consultation with the Manager. The grant must be used within 12 months. WB is currently in the process of preparation of the grant agreement.

7. Expected Benefits

Economic Benefits

According to the preliminary assessment of the Mastara construction project, it will facilitate:

- Improvement of water availability for 3,794 ha of de facto irrigated lands;
- Expansion of irrigated lands;
- Reduction of annual energy costs by 2.1 million kWh (or US$232 thousand);
- Reduction of annual operating costs by US$65 thousand.

The above benefits will apply in respect of 4,400 households in 6 rural communities.

Preliminary estimates have shown that the Net Present Value of component 1 will amount to US$14 million. This indicator represents the net benefits RA will draw from the Project in monetary terms, i.e. the total amount of cost savings and increased income of farmers, discounted to the current period.

The upgrade of a number of pump stations in the Armavir region proposed in the second component, will improve cost-effectiveness of the Project as a whole. Detailed projections and economic outputs for all components will be estimated and provided following completion of the Project FS.

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10 Preliminary economic assessment of the Project for financing approval was carried out jointly by experts of the Kuwait Fund for Arab Economic Development, the Armvodproekt Institute and the PIU. The assessment was executed on the basis of actual prices current as of the year-end of 2013 - start of 2014.

11 The application to the Trust Fund was filed with a cover letter of support signed by the Minister of Finance of Armenia.

12 Preliminary economic assessment of the Project cost-effectiveness was carried out by comparing "project" and "no project" scenarios for a 20 years horizon for a rate of discount of 10%. The assessment was based on the net energy and operating/maintenance cost savings, as well as increased agricultural production in monetary terms.
Environmental Sustainability

In spring due to heavy rains water rises in the Selav-Mastara riverbed and floods the existing infrastructure, farmland and communities in the Aravir area. Construction of the reservoir will facilitate the task of collection of rain flows for irrigation purposes, and will also prevent flooding of land in the Aravir region.\(^\text{13}\)

The proposed construction of the reservoir will also enable adoption of gravity flow irrigation techniques, which will reduce the annual consumption of groundwater by 5.3 million m\(^3\) (about 5% of the volume annually extracted from the groundwater reserve for irrigation in Ararat Valley). Thus, the Project will contribute to solving the problem of depletion of the groundwater basin of Ararat Valley.\(^\text{14}\)

Creation of new jobs

The Project does not provide any opportunities for creation of a large number of new jobs, apart from temporary employment for the period of construction. However, since the Project aims at improving efficiency and stability of irrigation water supplies and expanding irrigated lands, which will increase planting of perennial higher value-added crops (vineyards, apricot orchards), it will therefore enhance the attractiveness of farming business and will have a positive impact on employment in the agricultural sector.

Reduction of water subsidies

Currently, the Armenian Government provides subsidies to cover the difference between water utility charges levied by the WUAs from farmers and real water supply costs. One of the principal objectives pursued by the State in the sector is self-sufficiency. Implementation of this objective follows two vectors: (a) progressive increase of tariffs subject to social standing of the farmers; (b) investments in upgrading of irrigation systems with a view to reducing costs and losses, and improving management efficiency. As a result of the Project the cost of irrigation water will drop, and therefore, the amount of subsidies will also be reduced.

Increase in exports of agricultural produce

The Project contributes to improvement of agricultural productivity. Thus, it ensures growth of exports of agricultural products (juices, canned fruits and vegetables), and better balance of payments.

8. Project Compliance with EFSD Mission

According to the Manager the Project is fully compliant with the objectives pursued by the EFSD. The Project will contribute to enhancement of economic and social sustainability of RA, as well as will improve national food and agricultural security (see Appendix 1 "Matrix of Project Compliance with EFSD Mission Statement").

As indicated in the previous section, the Project contributes to sustainable development of agriculture, enhanced employment in rural areas, fiscal efficiency and improvement in the balance of payments of RA, which constitute an integral part of one of the objectives of EFSD, i.e. promoting sustainability of EFSD member states. The Project is also characterized as featuring moderate integration potential, since more regular and predictable water supplies will increase crop yield and exports to EFSD member states.

\(^{13}\) Flooding, in addition to direct economic damage nationwide, is also dangerous for cropland in view of its soil salinization risks, erosion of the humus layer and fluvial aggradation.

\(^{14}\) The depletion of the groundwater reserve accelerates desertification, which is a serious issue for Armenia.
9. Synergy with EFSD Project "Modernization of Irrigation Systems"

The two EFSD projects "Construction of Mastara Reservoir" and "Irrigation System Modernization" in Armenia are mutually complementary. The Project "Irrigation System Modernization" makes provision for upgrading common and farm-based water ducts of WUAs «Shenik» and «Armavir»:

<table>
<thead>
<tr>
<th></th>
<th>WUA &quot;Shenik&quot;</th>
<th>WUA &quot;Armavir&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common water ducts, km</td>
<td>4.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Farm-based water ducts, km</td>
<td>11.9</td>
<td>13.7</td>
</tr>
</tbody>
</table>

And the component on WUAs capacity building in the Project "Irrigation System Modernization" in Armenia ensures sustainability of the Project outputs when the system is put into operation.

10. Funding Scheme

According to preliminary estimates, the total amount of the Project funding requirement is about US$31.5 million.\(^{15}\) It is contemplated that the Project will be funded from two sources: Armenian national budget will provide 20% of its total cost, and EFSD will invest 80%. Thus the total amount of financing by EFSD will be equal to US$25.2 million, which is equivalent to the country eligibility limit for Armenia, given the previous approvals granted by the EFSD Council for one financial credit, as well as for the projects "Construction of North-South Road Corridor" and "Irrigation System Modernization" (Armenia's country eligibility limit net of the above loans is US$616.9 million).

The Government of RA will be the Beneficiary of the proposed investment loan and, thus, the borrowed funds of EFSD shall be part of the sovereign debt liabilities of the Republic of Armenia.

In the context of rapid growth of external borrowing and debt exposure to external shocks, a zero limit for non-preferential lending was agreed upon under the current IMF program in RA for the total portfolio of external sovereign and government-guaranteed borrowings. RA has assumed the commitment to refrain from borrowing and issuance of guarantees for loans that may reduce the average grant-element for the above portfolio to a level below 30%.

In view of the above and given the need for compliance with the required size of the grant-element of at least 30%, the Manager recommends to set the following financial conditions for the requested Loan:

- Interest rate: 2% per annum;
- Front-end fee: 0.5% of loan amount;
- Loan maturity: 20 years, including 10 years of grace period (during which no repayment of the principal shall be required);
- Grant-element: 30.79%

\(^{15}\) Following completion of the detailed FS the amount of funds required will be updated.
### 11. Preliminary Risk Assessment

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
<th>Rating</th>
<th>Impact on Project</th>
<th>Risk mitigation</th>
<th>Rating after mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design risks</td>
<td>Design errors and poor quality of design documentation</td>
<td>Medium</td>
<td>High</td>
<td>Preparation of the Project will be funded by a grant provided by the Trust Fund; administration of grant disbursement, according to the TF procedures, shall be the responsibility of the World Bank, an organization with extensive experience and relevant expertise in project preparation matters, including projects for construction of reservoirs.</td>
<td>Low</td>
</tr>
<tr>
<td>Operational risks</td>
<td>During implementation of the Project the PIU may have to assume the responsibility and accountability for management of another project, and it may result in a lack of skilled staff and time.</td>
<td>Medium</td>
<td>High</td>
<td>In the course of preparation of the Project assessment of the number of staff required for the Project, will be made, and this information will be taken into account in drafting of the loan agreement. In addition, as part of the grant-funded activities, training sessions will be organized for the PIU personnel to improve their skills and performance.</td>
<td>Low</td>
</tr>
<tr>
<td>Operational Risks</td>
<td>Upon completion of the Project, organizations responsible for running the irrigation networks, deep-well pumps and the reservoir, may be found to lack sufficient resources and capacity for efficient operation.</td>
<td>Medium</td>
<td>Medium</td>
<td>As part of the Project preparation process proper analysis will be undertaken and, if necessary, a list of relevant corrective actions will be produced. Furthermore, the EFSD-funded project &quot;Irrigation System Modernization&quot; in one of its components makes provision for capacity building and technological upgrade opportunities for WUAs.</td>
<td>Medium</td>
</tr>
<tr>
<td>Financial Risks</td>
<td>Beneficiary's insolvency</td>
<td>Low-Medium</td>
<td>Medium</td>
<td>The Manager carries out continuous monitoring of debt sustainability of the Beneficiary. As of 1 July, 2015 sovereign debt was equal to 44% of GDP. Up until 2017 Armenia's sovereign debt will remain within 44-51, 6% of GDP. It is estimated by the Manager that for the next few years the level of external debt service liabilities will not exceed 10% of export earnings and current cash remittances.</td>
<td>Low</td>
</tr>
<tr>
<td>Environmental risks</td>
<td>Implementation of the Project requires construction of a reservoir, which will alter the natural landscape and may have a negative impact on the environment.</td>
<td>High</td>
<td>High</td>
<td>In the course of Project preparation activities guidelines will be developed for compliance with social and environmental safeguards (including the World Bank Operational Manual &quot;Safety of Dams&quot;), which will provide analysis of all potential environmental impacts of the Project and a mitigation plan.</td>
<td>Medium</td>
</tr>
<tr>
<td>Social risks</td>
<td>The Project may have an adverse impact on the social structure of communities located</td>
<td>Medium</td>
<td>High</td>
<td>In the course of Project preparation activities guidelines will be developed for compliance with the WB social and</td>
<td>Low</td>
</tr>
</tbody>
</table>
Environmental safeguards, which will provide analysis of all potential social impacts of the Project and a mitigation plan.

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Description</th>
<th>Probability</th>
<th>Impact</th>
<th>Mitigation Factor</th>
<th>Risk Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal risks</td>
<td>Risks of inappropriate interpretation and, as a consequence, non-performance (delayed performance) under the investment loan agreement and all related documents, other than legislation of RA.</td>
<td>Medium</td>
<td>High</td>
<td>One risk mitigation factor may be the preparation of an investment loan agreement by RA, followed by its ratification in due process, which will upgrade its status to that of an international instrument, and will thereby ensure its precedence over national legislation of RA.</td>
<td>Low</td>
</tr>
<tr>
<td>Corruption and fiduciary risks</td>
<td>In the process of funding of the Project corruption and fiduciary risks may arise in connection with alleged misuse of loan funds.</td>
<td>High</td>
<td>High</td>
<td>Project procurement operations will be carried out in compliance with the Fund's Procurement Policy and IBRD Guidelines: Procurement of Goods, Works, and Non-Consulting Services. Monitoring of the Beneficiary's compliance with the above procedures should be carried out by experts of the IBRD.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
### APPENDIX 1. MATRIX OF PROJECT COMPLIANCE WITH EFSD MISSION STATEMENT

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Anti-crisis</th>
<th>Integration</th>
<th>Social stability</th>
<th>Economic sustainability</th>
<th>Environmental sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project implementation in depression-stricken sector</td>
<td>Growth of mutual investments in EFSD member countries</td>
<td>Creation of new jobs</td>
<td>Growth of tax revenue (both directly from project implementation, and indirectly, from creating conditions for development of other industries and/or businesses)</td>
<td>Project implementation is carried out under stringent environmental policies (WB safeguards)</td>
</tr>
<tr>
<td></td>
<td>Project implementation in sector exposed to crises.</td>
<td>Growth of mutual trade in EFSD member countries</td>
<td>Creation of new jobs for disadvantaged groups of population</td>
<td>Development of export-driven sectors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Funding of project, whose failure may produce adverse social and economic impacts (threats to food security, agricultural production capacity)</td>
<td>Growth of product items for trading between EFSD member countries</td>
<td>Improvement of food security</td>
<td>Growth of share of domestic value-added products.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation of project of strategic importance in the context of increasing budget constraints</td>
<td>Growth of passenger and freight traffic flows in EFSD member countries</td>
<td>Reduction of volatility of prices for food and basic services</td>
<td>Support of stability of operation of national power supply systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restoration of sector in the aftermath of armed conflicts, mass riots, etc.</td>
<td>Reduced overheads on traffic of passengers and goods between EFSD member countries</td>
<td>Increased accessibility of basic services (education, health care, etc.)</td>
<td>Reduction of logistics overheads</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creation of new jobs in the context of growing unemployment</td>
<td>Reduced overheads on traffic of passengers and goods between EFSD member countries</td>
<td>Improved access to higher quality water resources</td>
<td>Diversification of economy and/or exports</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved access (reduced costs and time) to key transport hubs (not necessarily located in EFSD member countries) linking EFSD member countries</td>
<td>Increased access to electric power supply for communities in inaccessible and sparsely populated areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project implementation with a view to preparation of country to joining Customs Union</td>
<td>Extended coverage of inaccessible and sparsely populated areas with communications services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Provision of access to housing utility services (sewerage, gas supply, district heating) for communities in inaccessible and sparsely populated areas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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16 The Investment Project under review must comply with one or more criteria in each column of the matrix. Highlighted criteria indicate compliance.
APPENDIX 2. PICTURES OF FLOODING IN ARMAVIR REGION

2013

![Picture](image1)

17/05/2013 18:09

2014

![Picture](image2)