

Country Name	The Project for Improvement of Equipment for Amelioration and Irrigation (Phase 2)
Republic of Azerbaijan	

I. Project Outline

Background	In the southern area of Azerbaijan, annual precipitation is as scarce as 100 to 500mm. In 40% of the farming land, the salinity of ground water was higher than 3mg/L, and the ground water level was high. For agricultural production, irrigation and drainage to the lower ground water level of farming land were essential. Under these circumstances, based on the request for Grant Aid by the Government of Azerbaijan in 1999, the Government of Japan implemented “The Project on Strengthening Equipment Supply in Melioration and Irrigation (2004-2005)” (Phase 1) in 2004 for the five southeastern districts (Sabirabad, Saatly, Salyan, Nefchala, and Shirvan) and provided excavators for dredging canals, as well as equipment and tools necessary for their maintenance. The ex-post evaluation in 2009 confirmed the high effectiveness of Phase 1. However, there remained many areas, except the five southeastern districts, which were in need of improved irrigation and drainage systems and were suffering from equipment shortages. (Figures at the time of ex-ante evaluation.)			
Objectives of the Project	To improve dredging capacity of irrigation and drainage canals by procuring equipment necessary for operation and maintenance of irrigation/drainage canals in four project districts in Azerbaijan, thereby contributing to the improvement of irrigation water supply as well as control and mitigation of salinization in the project sites.			
Contents of the Project	<ol style="list-style-type: none"> 1. Project Site: Four target districts (Aghjabadi, Imishli, Beylagan, Fuzuli) and Shirvan district as the location of Shirvan mechanical repair factory in southern Azerbaijan 2. Japanese side: Provision of grant necessary for the procurement of equipment for operation and maintenance of irrigation and drainage system (30 excavators, 4 bulldozers, 1 tractor head with trailer, 1 mobile workshop van, 1 refueling truck, 1 set of workshop equipment, and spare parts for the equipment) 3. Azerbaijan side: Operation of irrigation/drainage canal dredging and allocation of sufficient budget and personnel required for the operation, use and maintenance of procured equipment, renovation of existing workshop, etc. 			
Project Period	E/N Date	April 17, 2013	Completion Date	August 18, 2014 (Equipment handover)
	G/A Date	April 17, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit: 777 million yen, Actual Grant Amount: 723 million yen			
Executing Agency	Azerbaijan Amelioration and Water Farm Open Joint Stock Company (AWF)			
Contracted Agencies	Main Contractor(s): ITOCHU Corporation Main Consultant(s): Katahira & Engineers International			

II. Result of the Evaluation

1 Relevance
<p><Consistency with the Development Policy of Azerbaijan at the Time of Ex-Ante and Ex-Post Evaluation></p> <p>At the time of ex-ante evaluation, a land amelioration (mainly improvement of drainage) and agricultural water supply program for 2007-2015 was formulated under the 2006 Presidential Decree and was to be implemented by the AWF. At the time of ex-post evaluation, improvement of water supply and amelioration of land are still prioritized in such sources as “Strategic Road Map for production and processing of agricultural products in Azerbaijan” approved with Presidential Decree No. 1138 of the Republic of Azerbaijan dated December 6, 2016.</p> <p><Consistency with the Development Needs of Azerbaijan at the Time of Ex-Ante and Ex-Post Evaluation ></p> <p>At the time of ex-ante evaluation, the needs for irrigation and drainage was high as mentioned in “Background” above. At the time of ex-post evaluation, through the site survey and interviews with AWF and the beneficiaries, it was confirmed that there were continuing needs in order to dredge canals and improve the agricultural production. Otherwise, water loss and salinization would be caused, which would affect the agricultural production and regional economy.</p> <p><Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation></p> <p>The basic policy of Japan’s assistance for Azerbaijan in Japanese Fiscal Year 2012 was to support the Azerbaijani government’s efforts to diversify its economy and promote agriculture, tourism as well as infrastructure development for sustainable economic development and reducing disparities.¹</p> <p><Evaluation Result></p> <p>In light of the above, the relevance of the project is high.</p>
2 Effectiveness/Impact

¹ Ministry of Foreign Affairs, Japan's ODA Data by Country2013.

<Effectiveness>

The project has achieved its objective of improving dredging capacity of irrigation and drainage canals in the target project sites. Through the site survey, it was confirmed that all the equipment procured under the project was continuously utilized actively and properly as originally planned. Based on the data provided by AWF and the result of site survey, it is clear that dredging capacity of irrigation/drainage has improved and the excavating volume (Indicator 1) and the equipment sufficiency ratio (Indicator 2) have achieved the target. It was also confirmed through the site survey that the dredging work was actively done in each targeted region and that the frequency of dredging work was aligned with based on the Government's annual budget plan.

<Impact>

The data provided by AWF clearly shows the stable productivity of major crops and improvement of soil through prevention of salinization (i.e., lower level of salinization compared to before the project). Moreover, based on the site survey, it is clear that the farmers are very much satisfied with the result of the project because of soil conditions' improvement and increase of productivity. For example, some regional offices of AWF received the appreciation letters from the farmers.

No negative impacts were observed. Through the interview with regional AWF in Fuzuli district, the following positive impacts were confirmed. Due to the warfare with a neighboring country, Fuzuli district received many internally displaced persons. However, before the project, there was not enough soil with good quality to work as farmers, and thus these internally displaced persons left Fuzuli district for big cities like Baku. However, after the project, more precisely, after the soil condition got improved, many people came back to Fuzuli district and started working as farmers, and the number of population of the district has been increasing. This is a significant positive impact for the district.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

Indicators	Baseline 2011 Baseline Year	Target 2017 3 Years after Completion	Actual 2015 1 Year after Completion	Actual 2016 2 Years after Completion	Actual 2017 3 Years after Completion (Target Year)
Indicator 1: Excavating volume by excavators in possession (m ³ /year)	3,240,000	5,640,000	5,437,300	6,546,377	6,495,068
Indicator 2: Equipment sufficiency ratio (%) (ratio of excavation capacity of the excavators in possession to the annual sedimentation volume)	34	58	56	68	67

Source: AWF

Productivity of major crops (average in the target districts) (Unit: centner/ha)

	2013	2014	2015	2016	2017
Wheat	31.9	32.4	36.1	34.9	36.5
Barley	26.9	27.1	28.0	28.3	28.6
Vegetables	129.2	129.7	133.4	133.6	148.3

Source: AWF

Note: These statistics were collected to verify "improvement of agricultural productivity by stable water supply" that was originally indicated as a qualitative indicator in the ex-ante evaluation sheet.

Agricultural land area by level of soil salinization (total sum in the target districts) (Unit: ha and %)

Year	No salinization	Low	Medium	High	Severe	Total
2013	114,766 (63%)	25,685 (14%)	21,329 (12%)	13,605 (7%)	7,264 (4%)	182,649 (100%)
2017	145,238 (78%)	30,075 (16%)	7,351 (4%)	3,010 (2%)	1,015 (1%)	186,689 (100%)

Source: AWF

Note: These statistics were collected to verify "conservation of fortified soil by prevention of salinization" that was originally indicated as a qualitative indicator in the ex-ante evaluation sheet.

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 93% and 94%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

AWF, a governmental organization equivalent to ministry and the executing agency of this project, is responsible for operation and maintenance (O&M) of this project. The mechanical department of each regional office of AWF is in charge of both O&M of the equipment and dredging of irrigation/drainage canals. In case when serious repair is required and the regional office cannot handle it, the regional office sends the equipment to Shirvan mechanical repair factory, which repairs all the equipment owned by AWF. Based on the review of the organizational structure and the site survey with interviews, it is clear that the targeted regional offices have an appropriate organizational structure with a sufficient number of staff for both O&M and dredging of irrigation/drainage canals. This is clear from the fact that the planned targets have been achieved as well.

Number of staff in charge of O&M of the equipment and dredging of irrigation/drainage canals

Shirvan mechanical repair factory	Imishli regional office	Beylagan regional office	Aghjabadi regional office	Fuzuli regional office
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- Mechanical repair factory: 9	- Bahram-tapa construction office: 16 - Irrigation office: 20 - Central Mugan Drainage office: 22	- Irrigation office: 17 - Drainage office: 13	- Irrigation office: 19 - Drainage office: 22	- Mil-Mugan construction office: 15 - Irrigation office: 9
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Source: AWF

<Technical Aspect>

As mentioned elsewhere, all the procured equipment is in good condition and has been actively utilized. It was also confirmed that almost all the operators and mechanical engineers who participated in the training provided by the supplier (contractor) at Shirvan mechanical repair factory during the project are still working with the same position. Furthermore, when necessary, training has been done by those who participated in the training in Shirvan as well. Thus, it is possible to remark that AWF has enough capacity.

<Financial Aspect>

Based on the data provided by AWF and site survey, it was confirmed that the necessary budget is calculated in advance and sufficient budget is allocated for proper O&M. The costs for fuel and lubricants for the procured equipment, maintenance and service costs, salaries of the operators are also fully covered by the budget. Although the total income of AWF is in a decreasing trend, it is still much higher than the budget before project implementation,² when the preparatory survey team for this project concluded that the estimated O&M cost for the equipment to be procured could be funded from the budget with no problem. Therefore, it is possible to remark that AWF has and will have a sound financial situation to conduct appropriate O&M for the procured equipment.

Budget of AWF (unit: thousand AZN)

Description	2015	2016	2017	2018 (May)
Total income	314,185	288,861	237,330	92,316
Allocated from Government budget	310,951	285,461	233,830	88,816
Other incomes	3,234	3,400	3,500	3,500
Total costs	314,185	288,861	237,330	92,316
Remuneration	56,400	60,423	63,021	22,434
Procurement of goods (works and services) (maintenance, repair etc.)	66,960	60,806	35,397	20,353
Transportation expenses	8,870	7,981	7,900	3,154
Utilities and communication costs	75,088	75,059	108,751	35,694
Capital repairs	68,939	63,730	7,000	3,925
Purchase of main supplies	31,791	15,000	10,000	4,460
Others	6,137	5,862	5,261	2,296

Source: AWF

<Current Status of Operation and Maintenance>

Through the site survey, it was confirmed that all the procured equipment is in good condition. Regarding the spare parts, each regional office annually announces tenders to procure necessary spare parts and signs the agreement with private companies. In case of shortage of spare parts, these private companies are supposed to procure necessary spare parts, and this system is functioning.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project has achieved its objective of improving dredging capacity of irrigation and drainage canals in target project sites by proper use of the procured equipment such as excavators, which contributed to stable agricultural productivity and mitigation of salinization. All of the aspects of the sustainability (i.e., institutional, technical, and financial), as well as the status of O&M, are good. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- The biggest factor of successful implementation of the Project is very high capacity of AWF headquarters office and the regional offices in operation and maintenance of procured equipment. And also, the headquarters office of AWF has been managing the regional offices very carefully and systematically, which also contributed to the successful implementation. Therefore, it is very important for JICA to confirm the implementing agency's sufficient capacity in O&M through analyzing financial situation as well as organizational structure. And also, examining the targeted organization's performance in similar projects, if any, implemented by JICA and/or other development partners could be also helpful to clarify the capacity. If there will be a project with AWF in the future, the project will be certainly successful.

² For example, 217 thousand AZN in 2010 and 219 thousand AZN in 2011 (source: Preparatory Survey Report).



Working excavator with staff of AWF regional office and farmers (Aghjabadi)



Renovated workshop and equipment for major repair
(Shirvan mechanical repair factory)