

Country Name	The Project for Improvement of Medical Equipment and Water Supply and Drainage Facilities for
Republic of Tajikistan	Maternal and Child Health Care Institutions

**I. Project Outline**

Background	Tajikistan had a maternal mortality rate of 64 per100,000 live births, an under 5 mortality rate of 63 per 1,000 live births and an infant mortality rate of 52 per 1,000 live births, which were one of the worst among the Central Asian countries (UNICEF, 2012). Most of the hospitals and their medical equipment were constructed and procured in the 1960s and 1970s. In addition to the shortage of equipment, the existing equipment was severely deteriorated and damaged due to power outages and big voltage fluctuations. In addition, securing safe water at the primary health care settings was indispensable for preventing epidemics of preventable infections. However, the number of people who used updated water source was still low. Hence, there was a need to renovate water supply and drainage facilities.			
Objectives of the Project	To improve the maternal and child health services by procuring medical equipment and renovating water supply and drainage facilities to health facilities in Dushanbe and Khatlon Province, thereby contributing to improvement of the health status of mothers and children. *The project objective is slightly modified in order to present more precise picture of this project.			
Contents of the Project	<p>1. Project Site:</p> <p>(1) Procurement of medical equipment: Maternity Hospital No.3 (Currently, Maternity Hospital No.1) in Dushanbe, Khatlon Oblast Provincial Hospital, five Number Hospitals in Khatlon Province (Jomi No. 1 Number Hospital, Jomi No. 3 Number Hospital, Rumi No. 1 Number Hospital, Rumi No. 2 Number Hospital, Shartuz No. 3 Number Hospital)</p> <p>(2) Renovation of water supply and drainage facilities: Jomi Central District Hospital and Shartuz Central District Hospital</p> <p>2. Japanese side:</p> <p>(1) Medical equipment: Anesthesia apparatus, electrosurgical unit, defibrillator, patient monitor, ventilator, ultrasound scanner, phototherapy unit, infant warmer, incubator, infant monitor, suction unit oxygen concentrator, fetal doppler, crash set, sterilizer, stethoscope, scale, stadiometer, and others</p> <p>(2) Renovation of water supply and drainage facilities and electric equipment</p> <p>(3) Technical assistance (Soft component): Setting up of a medical equipment maintenance system and development of a manual for preventive maintenance and check-up</p> <p>3. Tajikistan side: To remove existing equipment and others.</p>			
Project Period	E/N Date	March 28, 2013	Completion Date	November 21, 2015
	G/A Date	March 28, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit: 602million yen		Actual Grant Amount: 601million yen	
Executing Agency	Ministry of Health (Currently, Ministry of Health and Social Protection)			
Contracted Agencies	Main Contractor(s): Ogawa Seiki Co., Ltd, Dai Nippon Construction Main Consultant(s): Fujita Planning Co., Ltd, DAIKEN SEKKEI. INC.			

**II. Result of the Evaluation**

<Any special perspectives to be considered>

Target year to measure the effects: According to the ex-ante evaluation sheet, the target year to measure the expected quantitative effects was set three years after the project completion, and it was expected to be 2017. However, as the project was eventually completed in November 2015, the target was changed to 2018. Therefore, this ex-post evaluation verified the achievement level of project objectives based on the data of 2015 and 2018.

**1 Relevance**

<Consistency with the Development Policy of Tajikistan at the Time of Ex-Ante and Ex-Post Evaluation>

The project has been consistent with the development policies of Tajikistan. The “National Health Strategy of the Republic of Tajikistan (NHS)” (2011-2020) prioritizes maternal and child health. At the time of ex-post evaluation, improvement of maternal and child health has been continuously aligned with Tajikistan’s development policies, such as NHS, “National Development Strategy of the Republic of Tajikistan (NDS)” (2016-2030), “Mid-Term National Development Strategy of the Republic of Tajikistan (MtDS)” (2016-2020). They prioritize improvement of accessibility, quality and efficiency of health services, which include upgrading of medical equipment and infrastructures of medical facilities. Enhancing child health and reducing infant and child mortality, as well as strengthening the system of maternal health are set as main priority actions.

<Consistency with the Development Needs of Tajikistan at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Tajikistan for improvement of the maternal and child health. At the time of ex-ante evaluation, the maternal mortality rate, the under 5 mortality rate, and the infant mortality rate in Tajikistan were one of the worst among the Central Asian countries. At the time of ex-post evaluation, the needs for the project have been still high. The recent trends have shown gradual reduction of maternal, under 5, infant and neonatal mortalities. However, the mortality rates have been one of the worst in the region and it is estimated that Tajikistan will not be able to achieve the related Sustainable Development Goals (SDGs) by 2030.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan’s ODA Policy to Tajikistan. The rural development including maternal and child health was one of the prioritized areas under the “Country Assistance Policy for Tajikistan” (2012)

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project achieved its objectives, as most of the target values of indicators for the expected quantitative effects were achieved, although many of the target hospitals have experienced the recent overall trend of decrease in the number of births in the country.

As for the Maternity Hospital No.1 in Dushanbe, significant increase in the number of ultrasound examinations and significant reduction of referrals to other medical institutions indicate the maternal and child health service improvement at the hospital. At the Khatlon Oblast Provincial Hospital, significant increase in the number of ultrasound examinations was possible due to the project, and it improved the services not only for children but also for mothers. As for the Jomi Central District Hospital and Shartuz Central District Hospital, although the project achieved 100% water supply at facilities, the target values for the other indicators such as the numbers of deliveries and pediatric inpatients were not fully achieved because of the recent overall reduction of the number of deliveries (the number of children) in the districts.

According to interview with relevant doctors, this happened thanks to well-planned family planning activities conducted by the Government of Tajikistan with the support of development partners and aimed at raising awareness of the population on health and economic-related negative consequences of frequent deliveries. The following data on the number of deliveries is taken from the Health Statistics Department of Khatlon Oblast:

Year	2015	2016	2017	2018
No of deliveries in Khatlon Province	101 675	98 384	91 568	85 408
No of deliveries in Jomi District	5 220	4 923	4 688	4 345
No of deliveries in Rumi District	5 695	5 953	5 177	5 087
No of deliveries in Shaartuz District	4 145	3 972	3 743	3 729

While there is decrease in overall number of deliveries in target districts, the number of deliveries at the target Number Hospitals increased and mothers have been more likely to access the services at the target hospitals instead of going to Central District Hospital or other districts, which indicate maternal and child health services improvement at the target hospitals.

The most equipment procured and facilities renovated by the project have been in good conditions, functional and utilized well by the hospitals. There has been some equipment that have not been functional despite the most possible effort and measures made by the hospitals, due to unavailability of spare parts at the market in the country. The drainage facility of Shartuz Central District Hospital has not been fully functional due to external factors (sewage water has not been smoothly discharged due to the problem of public sewage system of the district drainage system), which may affect sanitation situation of the hospital in the future.

As a qualitative effect of the project, it was expected that the project enables early detection and treatment of maternal abnormalities and infants' diseases. By utilizing the medical equipment provided by the project, hospitals have been able to early detect, accurately diagnose and timely and appropriately provide treatment for maternal abnormalities and infants diseases, which were not possible before the project. Equipment also eased the burden of the medical staff at the target hospitals for detection, diagnosis and treatment.

More patients appreciate improvement of the maternal and child health services at the target hospitals. All the hospitals reported that, more mothers provided positive feedbacks.

As a result of the soft-component of the project, regular check-up and preventive maintenance of the provided equipment have been in place, and management logbooks have been recorded and maintained by medical staff. There has been shortage in planned budget for maintenance, but some hospitals have been putting effort utilizing own income and out-of-pocket payment for maintenance.

<Impact>

Maternity Hospital No.1 reduced the neonatal mortality rate at the hospital level to 0.78% in 2018, which reached the targeted "below 1.0%". The actual infant/child mortality rates in Khatlon Oblast Provincial Hospital were 1.0% in 2015 and 1.4% in 2018, which did not achieve its target value of "below 1.0%". The target value was calculated based on the number of inpatients and deaths of all pediatric departments, including those without the project support. In 2018, there was a significant increase in the number of deaths at other department with no equipment provided by the project, which influenced the overall infant/child mortality rate<sup>1</sup>.

No negative impact on natural environment was observed. There was no land acquisition and resettlement.

<Evaluation Result>

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

Quantitative Effects

1. Maternal and child health services at Maternity Hospital No.1 in Dushanbe

	Baseline (2011) Baseline Year	Target(2017) 3 Years after Completion	2015 Year of Completion	2018 3Years after Completion
Deliveries	6,138	6,775	7,735	6,972
Inpatient newborns	6,427	7,039	7,744	6,990
Obstetric surgeries	561	607	898 (CS:806, VE: 92)*	1,054 (CS: 971, VE:83)
Ultrasound examinations	5,823	7,633	9,700	13,887
Referrals to other medical institutions	86	Reduce	152	34

\*CS: Cesarean Section, VE: Vacuum Extraction

<sup>1</sup> The method of data collection at the hospital is not the same as the one used when the targets were set.

## 2. Maternal and child health services at Khatlon Oblast Provincial Hospital (Pediatric ward)

	Baseline (2011) Baseline Year	Target (2017) 3 Years after Completion	2015 Year of Completion	2018 3 Years after Completion
Inpatients	2,710	3,074	2,580	2,452
Ultrasound examinations	1,652	1,788	-	223 (pediatric ward) 9,079 (maternity ward)*

\*Ultrasound Scanners were provided not only to Pediatric Ward but also Maternity Ward, therefore the survey results for 2018 cover the actual data at both wards.

## 3. Maternal and child health services at Jomi Central District Hospital and Shartuz Central District Hospital

<Jomi Central District Hospital>

	Baseline (2011) Baseline Year	Target (2017) 3 Years after Completion	2015 Year of Completion	2018 3 Years after Completion
Deliveries	4,514	4,886	3,959	3,897
Pediatric inpatients	1,330	1,428	Data missing	Data missing
Percentage of water supplied within the facility that satisfies water quality standards	-	100	-	100

<Shartuz Central District Hospital>

	Baseline (2011) Baseline Year	Target (2017) 3 Years after Completion	2015 Year of Completion	2018 3 Years after Completion
Deliveries	3,685	3,989	3,414	3,270
Pediatric inpatients	1,048	1,126	930	695
Percentage of water supplied within the facility that satisfies water quality standards	-	100	-	100

## 4. Maternal and child health services at the target Number Hospitals (Total of the target hospitals)

	Baseline (2011) Baseline Year	Target (2017) 3 Years after Completion	2015 Year of Completion	2018 3 Years after Completion
Deliveries	1,652	1,823	2,506	2,982
Pediatric inpatients	447	484	921	985

Source: Questionnaire and interviews with the target hospitals.

### 3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 99%), the project period significantly exceeded the plan (the ratio against the plan: 152 %). Due to significant fluctuation of the exchange rate between Japanese yen and the US dollar, list of equipment to be procured needed to be revised several times. Additional procurements of equipment were conducted 3 times in total, for using the remaining grant amount. Due to these procurement process, the actual project period exceeded the planned period. The output were produced as planned.

Therefore, the efficiency is fair.

### 4 Sustainability

<Institutional Aspect>

Each target hospital has established a proper system for operation and management of medical equipment and water supply and drainage facilities supported by the project, and the sufficient number of staff have been assigned. Only one exception is Shartuz Central District Hospital whose technical staff will be soon retiring, but the hospital has been taking measures to recruit a new technical staff.

<Technical Aspect>

Except for Shartuz Central District Hospital, all the target hospitals have trained staff to appropriately handle and maintain the provided equipment and renovated facilities. Manuals and documents necessary for O&M which were prepared by the project, have been properly kept and utilized. An expert on medical equipment maintenance has been dispatched in 2019, and will be dispatched in 2020.

<Financial Aspect>

There was not enough data to check if there was enough budget allocated for the project equipment. From the interviews conducted, some of the Central District Hospitals have been able to maintain the equipment and facilities from the government subsidies and income from the provision of paid services. However, some of hospitals in the rural areas have the government subsidy as the only income budget, which is not enough for the maintenance expense. There is no a well-established practice of budget planning for O&M of equipment by the hospitals and requesting budget from financial authorities. JICA has raised the importance of budget allocation at various levels, including through Japanese Expert and follow-up trainings where the importance of preventive maintenance, including budgeting was raised and discussed.

<Current Status of Operation and Maintenance>

- An appropriate after-sales maintenance service of the equipment has not been accessible. Availability and quality of maintenance service including spare parts has been limited in Tajikistan due to lack of specialists and lack of representations of manufactures for some equipment.
- As mentioned above, appropriate number of staff has been trained and assigned for maintenance of medical equipment and facilities, however, there is some room for further capacity building of technical staff.
- To enhance medical equipment maintenance, since 2018 JICA has been dispatching an expert and follow-up mission of KCCP on Medical Equipment Maintenance to Tajikistan.

<Evaluation Result>

As there have been some challenges in the institutional and financial aspects, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project has achieved its objectives, as the project mostly attained the targets values of the expected quantitative effects set to measure the improvement of maternal and child health services such as the number of ultrasound examinations, though the number of deliveries at hospitals was affected by the overall tendency of the decrease in the number of deliveries in the country. As for the sustainability, problems have been observed in terms of the financial aspects. As for the efficiency, the project period significantly exceeded the plan due to repeated changes in procurement process.

Considering all of the above points, this project is evaluated to be satisfactory.

**III. Recommendations & Lessons Learned**

Recommendations to Executing Agency:

- The target hospitals do not have sufficient planned budget allocated by the government for O&M of the equipment and facilities. By the end of 2020, respective ministries and local governments are recommended to ensure the sufficient amount of budget allocation to the target hospitals for appropriate operation, management and maintenance of the provided equipment and the renovated facilities, in order to ensure their sustainable use.
- Most of the equipment have been in good condition, however, appropriate after-sales maintenance service is not accessible for some equipment. Availability and quality of maintenance service is limited for some equipment in Tajikistan due to lack of specialists and representations of manufactures. By the end of 2020, the Ministry of Health and Social Protection of the Population, and the related ministries and organizations are recommended to draw up a policy to strengthen measures for enhancing the countrywide system of management and maintenance service available and accessible for the hospitals, in order to ensure their sustainable use.
- Hospitals are recommended to systematically calculate their needs for maintenance of equipment and submit budget plans to the financial authorities for allocation of necessary budgets.

Lessons Learned

- When setting the target values for the number of deliveries, it is recommended to take into account the tendency of the number of deliveries and its dynamics in the country or districts, as well as possible factors that may affect the target values (eg. continuous promotion of family planning by the government).
- Based on the facts that some provided equipment items were not fully functional, and that in most of the cases it is difficult to find spare parts for replacement in Tajikistan and neighboring countries, even with most efforts of the hospitals to solve the problems, it is recommended to examine the regulations and conditions of the recipient country and the target facilities, as well as availability of spare parts and consumables at the stages of the design surveys for deciding the specifications of equipment in order to ensure effectiveness and sustainability of the project.
- It is important to concretely discuss with responsible personnel of the counterpart ministries and financial authorities of various levels during the project formulation, preparatory study and implementation, as well as to continuously discuss and promote necessary measures through monitoring and follow-up after the project completion.



A doctor is washing her hands with running water supported by the Project at Maternity Department at Jomi Central District Hospital



A pregnant woman is examined by a midwife using a Fatal Doppler provided by the Project at a Numeral Hospital in Jomi District