

Country Name	The Project for Improvement of Regional Medical Service
Eritrea	

I. Project Outline

Project Cost	E/N Grant Limit: 296 million yen	Contract Amount: 292 million yen
E/N Date	September, 2007	
Completion Date	January, 2009	
Implementing Agency	Ministry of Health	
Related Studies	Basic Design Study: January, 2007 – June, 2007	
Contracted Agencies	Consultant(s)	International Total Engineering Corporation
	Contractor(s)	-
	Supplier(s)	Sirius Corporation
Related Projects (if any)	Japan's cooperation: <ul style="list-style-type: none"> Project for Strengthening Medical Equipment Management System for Quality Health Services (Technical Cooperation, 2008-2011) (hereafter "the related technical cooperation project") Other donors' cooperation <ul style="list-style-type: none"> Construction of Burn Injury Treatment Center at Halibet Hospital (Hammer Forum, Germany, 2006) 	
Background	<p>Eritrea, since its independence in 1993, had implemented various health programs based on the infrastructures established during the Ethiopian rule. Much of those health infrastructures, however, were devastated by the military conflict with Ethiopia. After the conflict, Eritrea first focused on restoration of primary health care services, which turned out to be successful. Then, the focus was shifted to the improvement of secondary and tertiary health services. However, secondary health institutions faced many challenges such as inability to upgrade medical equipment due to budgetary reasons and poor health service provision due to lack of medical staff.</p> <p>Halibet, Agordat and Massawa hospitals, secondary health facilities that were expected to play the central role in regional medicine, had no development plans for medical equipment, and the existing equipment had been notably deteriorated with age. In addition, Villagio Ginio hospital, another secondary hospital, was opened in 2006 to meet the need of the growing population in Asmara the capital. It was becoming exponentially important to strengthen these hospitals as well as the Bio-Medical Engineering Unit (BMEU) that was responsible for maintenance of medical equipment and training for technical personnel in charge of maintenance.</p>	
Project Objectives	Outcome To improve the secondary health care service system in Maakel, Gash-Barka and Northern Red Sea regions by procuring medical equipment and testing/ training equipment at the four core hospitals (Halibet hospital, Agordat hospital, Massawa hospital and Villagio Ginio hospital) and the Bio-Medical Engineering Unit (BMEU) and by providing technical assistance to BMEU.	
	Outputs(s) Japanese Side <ul style="list-style-type: none"> Procurement of medical equipment for operation departments, radiology departments, laboratories, emergency departments, obstetrics and gynecology (OBGyn) departments, physiotherapy departments of the four hospitals, Halibet hospital (Asmara, Maakel region), Agordat hospital (Agordat, Gash-Barka region), Massawa hospital (Massawa, Northern Red Sea region) and Villagio Ginio hospital (Asmara, Maakel region), and BMEU (Asmara, Maakel region); procurement of equipment for repair, testing and training (type of equipment: autoclaves, electric cautery, X-ray equipment, etc.) Soft component: technical assistance on operation and maintenance of medical equipment Eritrea Side <ul style="list-style-type: none"> Wiring construction of electric cable at Agordat hospital Construction of the operation ward and the X-ray ward at Villagio Ginio hospital 	

II. Result of the Evaluation

Summary of the Evaluation
<p>In Eritrea, the conflict with Ethiopia in 1998-2000 destroyed a number of medical infrastructures. The primary health care services were improved after the end of the conflict, but the improvement of secondary health facilities lagged behind due to budget shortage, which caused poor service provision to people.</p> <p>This project has achieved its objective of improving medical service of the four core hospitals to some degree, while challenges remain such as decrease in the number of tests and operations due to decrease in doctors. As for sustainability, problems have been observed in terms of structural and financial aspects and the current status of operation and maintenance due to insufficient allocation of personnel and budget.</p> <p>For relevance, the project has been relevant with Eritrea's development policy, development needs as well as Japan's ODA</p>

policy at the time of both ex-ante and ex-post evaluation. For efficiency, the project period slightly exceeded the plan. In the light of above, this project is evaluated to be unsatisfactory.

1 Relevance

This project has been highly relevant with Eritrea's development policy "development of the referral system" as set in the Health Sector Strategic Plans (2005-2014 and 2010-2014), development needs (improvement of regional health services), as well as Japan's ODA policy (consensus obtained at the economic cooperation policy dialogue in 2001 on the inclusion of health sector in the priority sectors) at the time of both ex-ante and ex-post evaluation. Therefore, relevance of this project is high.

2 Effectiveness/Impact

The effects of this project has been limited compared to the expected level, as shown in many indicators whose values in the target year and the ex-post evaluation year were below the values before the project (about half of the designated indicators fulfilled the target "increase"). This was explained to be due to the opening of a new tertiary health institution, departing of doctors and so on. As for Villagio Ginio hospital newly constructed, no operations and X-ray photography have been carried out yet as the facility construction and assignment of doctors have been delayed due to difficulties in purchasing construction materials (resulted from foreign currency shortage, as suffered by other construction projects in Eritrea, too) and design changes. An underlying problem is the decline of public service expenditure reflecting the severe economic circumstances where the country's real economic growth rate has been below the African average since 2006 (-10% in 2008). Another factor is the sanctions imposed by the UN Security Council over Eritrea's. This resulted in restrictions of economic activities and a pressure on the fiscal situation of the government. Responding to the sanctions, the government of Eritrea announced a policy to restrict the activities of major partners, which is considered to have led to the delays in the facility development plan and the departing of foreign doctors, and thus affected the effectiveness of this project.

While some equipment is not operational due to breakdown, etc. (see "4 Sustainability"), the follow-up survey in September – October, 2012 found that at all of the target hospitals except Villagio Ginio hospital (temporarily closed), the operating rate of medical equipment was more than 80%, and examinations and treatment were provided using the equipment procured under this project.

Also, based on the interviews with the target hospitals, they recognize that the health services have been improved due to the upgrading of the medical equipment, and the staff and patients are highly satisfied. As for the project effects on BMEU, according to the health sector data collection survey in February 2012, the number of repair work significantly increased, and the customer hospitals highly trusted BMEU: it frequently visited the hospitals for repair of equipment upon requests, and used such opportunities of hospital visits to conduct preventive maintenance of other equipment as well.

Regarding impacts, the referral system seems to have been reinforced by the improved secondary health services with diagnostic equipment in place: patients are referred from primary to secondary and from secondary to tertiary institutions in the target areas other than Maakel region (where secondary and tertiary health institutions are located relatively close); Halibet hospital, one of the target hospitals, was upgraded to the national referral hospital. However, problems remain, such as the discharge of hospital effluent to the public sewerage as in the past¹.

As shown above, while qualitative effects have been observed, only a limited number of the indicators that were designated for evaluation have reached the expected level. Overall, therefore, effectiveness/impact of this project is low.

Quantitative Effects (Note) Figures in bold fonts achieved the target, i.e., exceeded the actual values of 2006.

	Actual value 2006 (basic design year)	Planned value 2010 (target year)	Actual value 2010 (target year)	Actual value 2011 (ex-post evaluation year)	Remarks (at the time of ex-post evaluation)
Halibet hospital					
No. of operations	5,841	Increase	4,192	4,144	Orrota hospital (tertiary) was opened in 2006.
No. of examinations	86,282	Increase	75,336	110,120	
No. of X-ray photography	16,201	Increase	13,684	14,821	
Agordat hospital					
No. of operations	371	Increase	136	248	Foreign doctors left the hospital around 2010 and the number of doctors decreased.
No. of examinations	9,824	Increase	12,189	19,827	
No. of deliveries	530	Increase	646	875	
No. of X-ray photography	2,562	Increase	1,269	2,636	
Massawa hospital					
No. of operations	510	Increase	669	441	Foreign doctors left for their home countries in 2011.
No. of examinations	25,650	Increase	18,330	15,938	

¹ The basic design study showed a concern on the lack of environmental measures, but did not suggest a concrete action plan.

No. of X-ray photography	1,877	Increase	2,413	2,938	
Villagio Ginio hospital (new)					
No. of operations	—	500	0	0	Construction of operation ward and X-ray ward was completed in 2010. However, operations and examinations were not practiced due to delayed selection of specialized doctors, etc. In March 2011, it was decided that the tertiary ophthalmic hospital, whose facilities were under repair, opened temporarily in this hospital. Therefore, this hospital is scheduled to be closed until November 2012.
No. of examinations	—	4,500	4,579	0	
No. of X-ray photography	—	4,200	0	0	
BMEU					
No. of repair of equipment	547	Increase	776	889	

Source: target hospitals; Health Sector Data Collection Survey in Eritrea (for data on BMEU)

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 99%), the project period slightly exceeded the plan (ratio against the plan: 106%) because of partial design change and other reasons. However, if considering the delay in the construction works at Villagio Ginio hospital for which the Eritrean side was responsible, the project period is deemed to have significantly exceeded the plan (ratio against the plan: higher than 150%). Outputs were produced as planned though there were slight modifications and partial delays. Therefore, efficiency of this project is fair.

4 Sustainability

The equipment provided by the project is maintained by Ministry of Health (each hospital and BMEU), the implementing agency. Since 2012, the structure of BMEU has been strengthened in the organizational reform of the ministry. The number of staff of BMEU and each target hospital is mostly increasing, while the number of doctors in some specialties and general physicians are decreasing due to departing of foreign doctors, etc., at some hospitals.

In the technical aspect, frequent personnel change makes each hospital difficult to keep the adequate level of technical capabilities of operation and maintenance staff. At BMEU, however, the staff who were trained under the soft component of this project as well as the related technical cooperation project continue working and apply the learned techniques to repair equipment in response to requests from the hospitals. As such, BMEU has gained confidence of the hospitals, which served as the impetus for the organizational reform mentioned above. Overall, the technical aspect is considered to have no problem as the weaknesses of the target hospitals are covered by BMEU.

In the financial aspect, although the budget information was not disclosed and thus not available, the budget allocation especially for procurement of medical equipment and its spare parts is considered to be decreasing due to recent withdrawal of major partners' assistance (budgetary measures for running hospitals are taken). Also, BMEU does not receive budget to regularly conduct hospital visit for guidance and training/meetings, but it manages the problem to some extent by utilizing opportunities under the related technical cooperation project.

As for the current status of operation and maintenance, there was breakage of equipment due to frequent power outage. Also, spare parts are not available as they are imported exclusively by the government-run trade enterprise since 2007 and cannot be purchased from private distribution agents. BMEU does not have sufficient stock².

In this way, the project has problems in structural and financial aspect and the current status of operation and maintenance; therefore, sustainability of the effects of this project is fair.

III. Recommendations & Lessons Learned

Recommendations for Implementing agency

It is hard for the implementing agency to solve the problems involved in this project, which is strongly affected by the withdrawal of major partners' assistance. Nevertheless, improvement is seen in the structure and the technical level of BMEU, the central organization for operation and maintenance of the procured equipment. Together with this, better allocation of medical personnel will further enhance sustainability. Also, each hospital is recommended to take environmental measures including proper treatment of medical effluent.

Lessons learned for JICA

Given the situation where spare parts became unavailable due to the financial scarcity in the country, it was decided that JICA would implement a separate follow-up assistance to provide spare parts. In other similar projects, the equipment

² In response to the request from Ministry of Health for assistance in procurement of consumable supplies and spare parts, JICA conducted the follow-up survey in October 2012. Based on this, JICA plans to procure parts, etc. that are needed during the lifetime of the procured equipment.

maintenance/ inspection system should be checked before the implementation, and enough attention should be paid to ensuring measures to obtain consumable supplies and spare parts as well as the repair system in case of breakdown of the equipment.



Surgical equipment provided to Halibet hospital



Autoclave provided to Massawa hospital