

Republic of Kenya

Ex-Post Evaluation of Japanese ODA Grant Aid Project

The Project for Improvement of District Hospitals in the Western Region of the Republic of Kenya

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0. Summary

The objective of this Project is to enable Kisii District Hospital¹ in Kisii District, Nyanza Province, and Kericho District Hospital in Kericho District, Rift Valley Province to function as top referral hospitals of the areas by improving the outpatient department building for Kisii District Hospital, constructing the emergency diagnosis and treatment unit (casualty) for Kericho District Hospital, and providing equipment to both hospitals. This objective is consistent with the development policies and needs of the Government of Kenya at the time of the planning and ex-post evaluation of the Project, and it was in line with the Japanese ODA policies toward Kenya at that time. Therefore, the project relevance is high. The operation indicators were basically met and the hospitals expanded their services in both quantity and quality wise. The health personnel and patient satisfaction was high according to the beneficiary survey and other expected effects were observed. Thus effectiveness and the impact of the Project are high. While output was achieved according to the plan, the Project period was significantly prolonged. However, taking into account that the Project period was affected by the instability caused by the presidential election and a piracy by a group of Somali pirates which can be considered as an accident by “force majeure”, the Project period should be considered as slight delay. Thus efficiency of the Project is fair. No major problems have been observed in the operation and maintenance system, thus the sustainability of the Project effect is high.

In light of the above, this project is evaluated to be highly satisfactory.

1. Project Description



Project Location



Kisii Level 5 Hospital (Left) and Kericho District Hospital (Right)

¹ At the time of Basic Design Study, Kisii District Hospital, currently Kisii Level 5 Hospital was a “district hospital” which was classified as the quasi-provincial hospital.

1.1 Background

The state of health indicators among people in the Republic of Kenya ranked one of the worst in the world, as were neighbouring countries in East Africa at the time of Basic Design Study. Particularly the western part of the country sharing borders with Uganda and Tanzania, namely five Districts in Nyanza and Rift Valley Provinces, was suffering from widespread infectious diseases such as malaria, tuberculosis, measles, and HIV/AIDS. The western part of Kenya lacked social infrastructure in spite of their significant number of population. Many of the health facilities at various levels were built and equipped as far back as in the 1940s to 1970s and had not been upgraded since. Often they had to cope with infrastructure problems and medical equipment broken down. To tackle these problems, the Government of Kenya had been implementing programs by putting more emphasis on establishing referral systems at district level to improve the community health service, and by upgrading the health sector infrastructure.

In responding to these efforts by the Government of Kenya, the Japanese government had been providing various assistance to strengthen high level medical facilities at the central level, and to improve facilities and healthcare services at the district level. For the western part of the country in particular, two projects were implemented; the improvement of health centres at primary health care level in 2001, and strengthening of the management and the operation at health centres and the improvement of maternity care services since 2005. As a result, health service provided at the primary health care level was showing some improvements at the time of the Basic Design Study. On the other hand, however, the secondary health care level, which is at the district hospital level, was slow in progress. Though the referral system from the primary to the secondary level started to function, district level hospitals were not capable of providing appropriate care to referred patients in a timely manner due to the deterioration of the facilities and medical equipment.

Faced with the budgetary constraints in the health sector, the Government of Kenya realized difficulties to solve these problems, and therefore, filed in 2004 a request with the Government of Japan for a grant aid intended to strengthen the functions of Kisii District Hospital (classified as a quasi-province hospital then) in Nyanza Province and Kericho District Hospital in Rift Valley Province. Both hospitals were core hospitals at district level medical and healthcare services in the western part of Kenya, and were expected to improve the healthcare service of the region through improvement of facilities and provision of equipment.

1.2 Project Outline

The objective of this Project is to enable Kisii District Hospital in Kisii District, Nyanza Province, and Kericho District Hospital in Kericho District, Rift Valley Province to function as top referral health facilities in the area by improving outpatient department building for Kisii District Hospital, constructing emergency diagnosis and treatment unit (casualty) for Kericho District Hospital, and providing equipment, thereby contributing to the improvement of health/medical care service in the area. Further, the Project had second phase, though it was not planned initially. (Detailed

information is provided under the section of 3.4 Efficiency).

Table 1: Project Outline

Grant Limit / Actual Grant Amount	1,360million yen / 1,348 million yen
Exchange of Notes Date (/Grant Agreement Date)	May, 2005 March, 2010 (March 2010) for second phase
Implementing Agency	<ul style="list-style-type: none"> - Ministry of Health (Ministry of Medical Service, at the time of ex-post evaluation) - Kisii District Hospital (currently Kisii Level 5 Hospital), Nyanza Province - Kericho District Hospital, Rift Valley Province
Project Completion Date	March, 2010 for First Phase May, 2010 for Second Phase
Main Contractors	Mitsui Sumitomo Construction Co., Ltd. (construction)/ Mitsubishi Corporation (medical equipment) (JV)
Main Consultant	Nihon Sekkei Co., Ltd. / Earl Consultants Inc. (JV)
Basic Design	'Basic Design Study Report on the Project For Improvement of District Hospitals in the Western Part of Kenya in the Republic of Kenya', December 2005
Detailed Design	February, 2007 to January, 2008
Related Projects	<p>[Japanese Technical Cooperation] Japan International Cooperation Agency (JICA)</p> <ul style="list-style-type: none"> • Development Study: Study on Enhancement of District Health System (1998) • Technical Cooperation Project: Project for Improvement of Health Service with a Focus on Safe Motherhood in Kisii and Kericho Districts (2005-2008), Strengthening Management for Health in Nyanza Province (2009-2013) <p>[Japanese Grant Aid] JICA 'Project for Improvement of Health Centres in the Western Part of Kenya' (2000-2001)</p> <p>[Other Donors²]</p> <ul style="list-style-type: none"> • GIZ: Construction of Ophthalmology ward and provision of equipment to Kisii District Project • Spain: Provision of medical equipment to Kisii District Hospital and Kericho District Hospital • World Bank: Construction of three wards at Kisi District Hospital • President's Emergency Plan for AIDS Relief (PEPFAR): HIV/AIDS related support to Kericho District Hospital (rehabilitation of facility and provision of equipment)

2. Outline of the Evaluation Study

2.1 External Evaluator

Hiromi TAKENAKA, Nonprofit Organization HANDS

2.2 Duration of Evaluation Study

Duration of the Study: August, 2012 – August, 2013

Duration of the Field Study: November 23, 2012-December 3, 2012

May 5, 2013 – May 11, 2013

² These projects are support to Kisii District Hospital and Kericho District Hospital, which does not overlap with the Project.

2.3 Constraints during the Evaluation Study

Based on the amendment of the constitution in 2010, administrative system of Kenya would be re-clustered to 47 independent counties from 8 provinces. In addition, Ministry of Health was restructured to Ministry of Medical Service and Ministry of Public Health and Hygiene after the 2007 Presidential election. After March 2013 Presidential election, county system would be introduced and annual plan has already been developed based on county, not province or district bases, and Ministry of Medical Service and Ministry of Public Health and Hygiene would be remerged into one ministry. The ex-post evaluation took place at the time of transition period of both country and health system wise, and had difficulty in comparing related policies to certain extent.

3. Results of the Evaluation (Overall Rating: A³)

3.1 Relevance (Rating: ③⁴)

3.1.1 Relevance to the Development Plan of Kenya

The state of the health sector of the Republic of Kenya ranked one of the lowest in the world, as were neighbouring countries in East Africa at the time of Basic Design Study. Maternal mortality rate was 1,000 per 100 thousand live births (2003), and infant mortality rate was 78 per 1,000 live births (2002)⁵. To improve such situation, the Government of Kenya formulated “National Health Sector Strategic Plan (1999-2004)” in 1999 which set forth such priorities as decentralization, effective and fair allocation of health personnel, adjusting regional disparities, preventative and primary health care, establishment of referral system from health centre (primary health level) to district hospitals (secondary health level), in addition to the improvement of health facilities. As the health budget was limited, however, the improvement of health facilities was slow in progress.

Development plan for Kisii district (2002 - 2008) emphasized the importance of health sector, especially the improvement of facilities and medical equipment at health centers and district hospitals, training for health personnel, and measures against HIV/AIDS. Kericho district had listed malaria control, and measures against infectious diseases and HIV/AIDS in its district plan 2002 – 2008.

At the time of ex-post evaluation, the health sector has been given an emphasis as was at the Project Basic Design Study. In the first Medium-term Plan of Vision 2030, health issues are recognized as a pillar in the social development and the health/medical system reform is envisioned so as to enable a shift from the curative to the preventative health care. The Ministry of Health was divided to the Ministry of Public Health and Hygiene and the Ministry of Medical Service, and the secondary level health facilities are supervised by the Ministry of Medical Service⁶. In the Strategic Plan of Ministry of Medical Service (2008-2012), the importance of improving health facilities for effective medical services and strengthening the referral system for improving the access to health

³ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁴ ③: High, ② Fair, ① Low

⁵ Japan International Cooperation Agency (JICA) documents (World Health Report, World Bank 2003, JICA Safe Motherhood 2004)

⁶ Currently, health facilities are divided into six levels. Previously, all the health facilities were under the supervision of the Ministry of Health, Ministry of Medical Service supervises the central top referral (level 6), province (level 5), district (level 4), and Ministry of Public Health and Hygiene supervises health facilities within the district (level 1 – 3).

facilities are noted.

As the transition to the county system was anticipated, county plans 2012/2013 had been developed instead of provincial annual plans. The 2012/2013 annual plans for Kisii County as well as Kericho County are in line with the Vision 2030, namely placing much more emphasis on human-centered health sector development than ever before, and thereby stressing the provision of quality health service from the community level to higher health facility levels. It aims at providing quality medical services in the county as a whole, while keeping the emphasis on health promotion activities regarding such issues as HIV/AIDS and antenatal care at the community level.

In light of the above, it is reconfirmed that the health and medical sector remains as an important area for the Government of Kenya. Especially the improvement of health facilities and medical equipment, as stated by the Vision 2030, is regarded important in order to achieve high quality medical services together with preventive health care services. Thus, the Project continues to be relevant to the policies at the time of the Basic Design Study as well as at the time of the ex-post evaluation.

3.1.2 Relevance to the Development Needs of Kenya

The western part of Kenya (the population around 11,370,000), sharing borders with Uganda and Tanzania, has high prevalence of such infectious diseases as malaria, tuberculosis, measles, and HIV/AIDS. The area is poor in such social infrastructure as electricity, water, and health services in spite of its significant population. District health facilities, which are the secondary level of the health care system, were suffering from such problems as obsolescence and failures of medical facilities and equipment.

Nyanza Province, where Kisii District Hospital (currently Kisii Level 5 Hospital, i.e., provincial hospital) is located, has vast area with high population density. While the Provincial Hospital at the province capital Kisumu covers the northern part of Nyanza Province, the Kisii District Hospital covers the southern part⁷ of the province which consists with 8 districts and 6million people. As Kisumu locates at the northern part of the province, it is difficult to access the Provincial Hospital from the southern part of the province. Therefore, Kisii District Hospital covered not only the southern part of the province, but also people from neighboring provinces and thus had been recognized as a quasi-provincial hospital. At the time of the Basic Design Study, Kisii District Hospital was to cover almost the same number of patients as the Provincial Hospital. However, it was not capable of meeting the demand because of its deteriorating infrastructure and obsolete medical equipment.

Kericho District Hospital did not have an emergency diagnosis and treatment unit. However, patients were frequently sent from neighboring district hospitals as its operation rooms were relatively well equipped compared to other district hospitals which also did not have emergency diagnosis or treatment units. Furthermore, as Kericho District Hospital is located in a heavy traffic accident area, it

⁷ Southern part of Nyanza Province is larger than northern part of Nyanza Province with more or less the same amount of population.

needed to respond to patients injured in accidents. However, because Kericho District Hospital was not equipped with an emergency diagnosis and treatment unit, emergency patients were received at the general outpatient department. As a result, the hospital was not able to provide necessary services in a timely manner for both general outpatients and emergency patients. Under such situation, the establishment of an independent emergency diagnosis and treatment unit was in urgent needs.

As the result of this Project, Kisii District Hospital became capable of providing adequate medical services as a provincial level hospital, especially in the units of outpatient and obstetrics/gynaecology. As for Kericho District Hospital, speedy and appropriate services are now provided to both general outpatients and emergency patients through the new emergency diagnosis and treatment building, which resulted in an increase in the number of outpatients (casualty, general consultation, maternal child and health, and special clinic). In addition, through the improvement of medical equipment in the general outpatient unit, it was verified that Kericho District Hospital was now able to provide medical services with better quality.

In light of the above observations, it has been confirmed that both hospitals are now fulfilling their functions as the top referral medical facilities in each area, and thus the Project is relevant to the development needs of Kenya at the time of the Basic Design Study, as well as at the time of the ex-post evaluation.

3.1.3 Relevance to the Japan's ODA Policy.

The Government of Japan underlined 'economic and social development benefiting poor strata' as a development issue in the Country Assistance Policy for Kenya. Medical and healthcare service was set as a high priority area in the Japan's Country Assistance Policy as well as the JICA's Country Assistance Strategy for Kenya. Guided by these policies and strategies, Japan had implemented various programs to strengthen the highly advanced medical treatment at the national level as well as to improve the district level medical and healthcare services⁸. Given these background, the Project under the evaluation is in line with the development issues stated in Japan's ODA policies and strategies which aim at the provision of high quality medical services at district level through upgrading medical facilities and equipment.

In conclusion, this Project is confirmed to be highly relevant with the country's development plans, development needs, as well as Japan's ODA policy, therefore its overall relevance is high.

3.2 Effectiveness⁹ (Rating: ③)

3.2.1 Quantitative Effects (Operation and Effect Indicators)

1) Kisii District Hospital

Through the Project, the number of operation and ultrasonography examinations was

⁸ Maternal child health, school health, and medical facilities such as health centre.

⁹ Sub-rating for Effectiveness is to be put with consideration of Impact

expected to increase as the operation room would increase from one to three rooms, and the ultrasonography was to be provided. As presented in Table 2, the number of operation tripled compared to the year 2005. Regarding the number of ultrasonography examination, it has been understood that the data acquisition method changed from at the time of Basic Design Study and at the time of ex-post evaluation, according to the health personnel. Thus, it was not possible to compare the data to evaluate impacts of the project accurately.

Table 2: Operation Indicator (Kisii District Hospital)

Indicator	【Standard Value】 Year 2005	【Target Value】	【Actual Value】 Year 2011
Total number of operation per year (including emergency, caesarian section)	2,166	Increase from standard value	6,068
Total Number of Ultrasonography examination per year*	2,453	Increase from standard value	1,357

Source: Answer to questionnaire

Note: Data collection method was different from standard value and actual value, thus it is not possible to compare. The data would be utilized as reference.

At the ex-post evaluation, outpatient's waiting time to receive consultation was surveyed though it was not an operation indicator. Ninety two percent of 40 respondents answered that the waiting time had decreased compared to the year 2009¹⁰ (before the Project completed). In addition, the number of referral was surveyed and the result was that 95% of incoming referral patients were handled by Kisii District Hospital and remaining 5% were referred to Kenyatta Hospital (level 6 in Nairobi). The ones referred to the level 6 are those who had cancer or heart diseases, which could not be treated by Kisii District Hospital as it is level 5 (refer to Table 3)¹¹.

Table 3: Number of Referral¹²

	Year 2010	Year 2011
Total Number of Referral	1,910	2,113
- Incoming	1,802	1,989
- Outgoing	108	124

Source: Answer to the questionnaire

2) Kericho District Hospital

Since a new independent emergency diagnosis and treatment unit was to be built, an increase in the number of outpatients, including emergency patients, was anticipated. As presented in Table 4, the number of outpatients has increased 1.8 times compared to the year 2005. Before the Project, emergency patients were handled at the General Outpatients Department and there were cases where

¹⁰ 'Waited more than 40 minutes for consultation' decreased from 91% to 57%. On the contrary, the ones who received consultation within 30 minutes increased from 9% to 43%. These results demonstrate that the Project has contributed to increased satisfaction of the patients.

¹¹ Based on the interview with the Health Facility staffs.

¹² As there were no data for Year 2005, data from Year 2010 has been utilized for the sake of comparison. Data for Year 2012 is up till end of October. It is assumed that the total number for Year 2012 would be around 1,560 taking into account that the average number per month is 130.

emergency patients lost their lives as they could not receive speedy and timely service. Currently, patients are sorted at the entrance of the hospital and these emergency patients could receive the necessary service immediately and would be monitored 24 hours for any further action.

Table 4: Operation Indicator (Kericho District Hospital)

Indicator	【Standard Value】 Year 2005	【Target Value】	【Actual Value】 Year 2011
Total number of outpatients (Including casualty) per year	86,374	Increase from standard value	162,058

Source: Answer to questionnaire

The difference in waiting time was examined, in addition to the original operation indicators, and 98% of respondents answered that “waiting time decreased compared to year 2009”¹³. Furthermore, the total number of referrals, including both incoming and outgoing, was found to have increased around 2.6 times when comparing the years 2005 and 2011. While the number of incoming referral cases increased four times, the number of outgoing referrals was more or less the same. This shows that Kericho District Hospital expanded its capacity to handle more patients, and only the cases that could not be managed, such as those who needed the CT scan, were referred up to the level 6 hospitals¹⁴.

Table 5: Number of Referral

	Year 2005	Year 2011
Total Referral Number	86	225
Incoming	44	182
Outgoing	42	43

Source: Answer to questionnaire

3.2.2 Qualitative Effects

1) Kisii District Hospital

Through the Project, the outpatient and examination functions were integrated into one building which resulted in the reduction of burdens for health personnel as well as patients as they now don't have to wonder around the area which used to be scattered¹⁵. The waiting area is now placed in the middle of the building as “patio” while examination rooms are lined either next to the waiting place or at the second floor of the same building. In addition, Kisii District Hospital introduced the CCTV on its own, so that they could monitor which examination rooms are with long queue and thus could guide patients to examination rooms with fewer people waiting. This created efficiency to both medical personnel and patients which contributed to the improvement in medical

¹³ The difference in waiting time was as follows; 87% of respondents answered that they used to wait more than 40 minute, which now decreased to 25%, and the ones who could receive consultation within 30 minutes increased from 13% to 75%. This resulted in increase of satisfaction of the patients.

¹⁴ Based on interview with hospital personnel.

¹⁵ Additional wards and departments for Kisii District Hospital have been built according to the expansion of services to provide. Thus these wards and departments were not constructed based on the concrete landscape plan and were built where there were spaces. As a result, health personnel and patients had to move around scattered wards and department to receive necessary services.

services. In the survey conducted by the hospital in 2012, 78.5% of respondents answered that they were satisfied with the waiting time.

Moreover, Kisii District Hospital expanded its services offered as the infrastructure and medical equipment were reinforced. The Hospital was originally a level 4-district hospital. With improvements brought by the Project, it became the level 5-provincial hospital, and is currently providing services to southern Nyanza Province as well as districts of the neighboring province. As the type of services have got expanded, outgoing referral patients from Kisii District Hospital are basically cancer and/or cardiac patients to whom only the level 6-hospital (i.e., the Kenyatta Hospital at the central level) can provide necessary treatment.

Furthermore, the plan of the outpatient department raised interest among the health sector not only within the province but also countrywide as its design paid attention to the line of flow of staff and patients. The Ministry of Medical Service now advises those who are interested in building hospitals to visit Kisii District Hospital in order to learn how it is operated. Inspired by the Project, Kisii District Hospital led by the Director is eagerly working on further improvements of other wards and hygiene management so that it can be regarded as a model hospital with quality services at higher level than a provincial hospital.

Table 6 presents the result of the beneficiary survey. Both medical personnel and the patients evaluated positively about the Kisii District Hospital after the Project. While only about half of patients were satisfied with the hospital before 2009, around 90% of them answered that they were satisfied with the hospital in 2012. More than 90% of medical personnel answered that “the quality of the hospital improved”¹⁶.

Table 6: Patient Satisfaction and Recognition of Health personnel

Item	Before Year 2009	December 2012
% of patients who are satisfied with the hospital	51%	87%
Quality of hospital recognized by the health personnel (100 point)	54 point	94 point

Source: Beneficiary Survey

2) Kericho District Hospital

Before the Project, emergency patients had to wait with general outpatients for treatment. Through this Project, the independent emergency diagnosis and treatment unit was constructed and patients were sorted at the hospital entrance so that they could receive necessary service on a timely manner. In addition, emergency patients are now monitored for twenty-four hours continuously which resulted in the improvement of the quality of emergency medical services.

Through the separation of emergency care, the general outpatient unit is now able to improve its capacity in accepting more patients than before (i.e., 4 times more than compared with the year

¹⁶ Overall, patients are highly satisfied with the hospital. Respondents answered that they have observed the improvement on the following; quality of the service, trust, knowledge and technical skill of hospital personnel, attitude, and medical equipment. The medical personnel who responded, feels that the reason for the improvement in the quality of the hospital is due to that ‘the hospital could provide more quality and timely service with new equipment’. Based on the result, they also feel that ‘the complaint from the patients decreased’.

2005). Also, upgraded medical equipment in the general outpatient unit enabled the expansion of services offered and the improvement of their quality.¹⁷ The beneficiary survey and interviews revealed that both patients and medical officials' satisfaction had increased as a result.

Table 7 presents the result of the beneficiary survey and it represents that both patients and medical personnel regard the hospital highly after the completion of the Project. Before 2009, only about 50% of patients responded positively about the hospital. In 2012, nearly 90% of them said that they were satisfied with it. More than 90% of medical personnel who responded scored higher points on 100 point scale than in 2009 about the quality of services provided by the hospital, implying that they see that “the quality of the hospital improved”¹⁸.

Table 7: Patient Satisfaction and Recognition of Health Personnel

Item	Before Year 2009	December 2012
% of patients who are satisfied with the hospital	47%	88%
Quality of hospital recognized by the health personnel (100 point)	60 point	92 point

Source: Beneficiary Survey

3.3 Impact

3.3.1 Intended Impacts

1) The Role and Function as an Educational Hospital

Both the Kisii and Kericho District Hospitals play the role as educational hospitals and constantly accept trainees and students. However, there is no significant increase in the number of trainees and students. It was understood from interviews with the Hospital Director and other health personnel that there was a shortage of health staff as the number of health professional did not match with that of patients. Thus it is difficult for them to accept more trainees and students as the number of health personnel who can be instructors is limited.

2) Synergy Effects with Related Technical Cooperation Projects

Related to this Project, there were two technical cooperation projects in the area: “Project for Improvement of Health Service with a Focus on Safe Motherhood in Kisii and Kericho Districts”¹⁹ (from March 2005 to February 2008) and “Strengthening Management for Health in Nyanza Province”²⁰ (from July 2009 to June 2013). Activities for the former technical cooperation project in

¹⁷ Outpatients (internist, surgery, psychiatry, obstetrics and gynecology, pediatrics, dentistry, ENT, ophthalmology, tuberculosis), radiology, clinical pathology, physical therapy, obstetrics, neonatal, maternal and child health/ family health.

¹⁸ Patients' satisfaction toward the hospital is very high. Quality of service, trust, knowledge and technical level of health personnel, health personnel attitude, medical equipment, were recognized as 'improved compared before 2009'. The major reason for the medical personnel who answered as the 'quality of the hospital improved' was that 'the hospital could provide more timely and effective service by the use of new equipment'. In addition, they feel that the improvement in the quality of hospital created such situation as 'complaint from the patient decreased'.

¹⁹ The project aimed to improve the health status, especially maternal health in the targeted area of Kisii District, Nyanza Province and Kericho District, Rift Valley Province. In order to achieve the goal, the project focused on improvement of maternal care provided at health centres and communities, through strengthening hospital management at health centres, improved maternal care service at health centres and communities, and awareness raising at the communities.

²⁰ The expected outcomes include training on leadership and management and designing model for health promotion activities.

Kisii and Kericho Districts included assistance to strengthen the referral system from community to district level. Even if a patient is referred from a community to a health centre, and then from a health centre to either Kisii or Kericho District Hospital, if the hospital was not capable of providing necessary services on a timely manner, the effort might end in vain. Thus, through this Project, it was hoped that the District Hospitals became more capable of providing appropriate services to outpatients, including expectant mothers, through improvements in hospital facilities and medical equipment. However, the said technical cooperation project in Kisii and Kericho Districts finished before the completion of the Project under the evaluation and the direct synergy effects between two projects could not be identified.

Another project “Strengthening Management for Health in Nyanza Province” which aims to strengthen the capacity of province and district health management teams is an on-going project. This project covers Nyanza province where Kisii District Hospital locates, however, it was difficult to identify direct contributions since Kisii was not included in pilot districts of the technical cooperation project.

Though it was difficult to observe direct synergy and collaboration between technical cooperation projects and the Project, it is expected that results of each project will bring about synergy effect so as to contribute to the improvement of health service in the target area.

3) The Improvement in Financial Independence

Kisii District Hospital increased its total annual revenue by 1.7 times and Kericho District Hospital by 2.4 times compared to year 2005/2006, the project design stage. The proportion of the revenue from consultation/diagnosis and treatment fees used to be about 50%, and the rest from government subsidy for both hospitals in 2005/2006. By 2012, the consultation fee proportion increased significantly and government subsidy decreased (see to 3.5.3 Financial Aspects of Operation and Maintenance). In both hospitals, the number of patients increased, which led to the increase in consultation/diagnosis and treatment fees, and thus financial independence improved substantially.

4) The Improvement in People’s Health

Before the Project, there were cases where emergency patients lost their lives as they had to wait among other outpatients for necessary treatment, according to interviews with medical personnel. Currently, patients are sorted at the hospital entrance, and emergency patients can receive immediate service with 24 hours monitoring. As a result of this quick response, the health personnel who are involved in the emergency service note that lifesaving rate is improving, which contributes to improvement of health conditions of people in the community.

3.3.2 Other Impacts

1) Impacts on the natural environment

The Project covered the waste water drainage, waste management (including medical waste),

infectious disease prevention and nosocomial infections, and no negative impact on natural environment was found. Sewerage treatment facilities are fully equipped for the waste water, and for the exhaust system, generator runs only at the time of a blackout and a trial run. Thus, there have not been any issues in particular. Regarding general and medical waste, an incinerator in line with the standard of the Environmental Standard of Kenya (draft at the time of Basic Design Study) was introduced to Kisii District Hospital so that they can manage both types of wastes. For Kericho District Hospital, the City of Kericho collects and disposes general waste. For the medical waste, the City also collect it but separately from other waste and burns it at a newly installed incinerator for medical waste. Both hospitals were in line with the related regulations and guidelines of the country²¹.

2) Land Acquisition and Resettlement

Due to the fact that the Project was implemented on the existing site of both hospitals, resettlement of residents and land acquisition were not required. According to the Project documents and interviews with hospitals staff, there have been no complaints from residents to date, including during the time of the Project implementation. Thus, it is confirmed that no negative impact was created by the Project with regard to the resettlement or land acquisition.

3) Unintended Positive/Negative Impacts

It was observed that the moral and the motivation of the health personnel improved as the reinforcement of facilities and medical equipment contributed to upgrading of the quality of services. Before the Project, health personnel found it rather difficult to maintain their motivation as they were not able to provide appropriate and necessary services on a timely manner, and sometime ended in the loss of patients' lives. Through the Project, the motivation increased as they could provide necessary services on time. In addition, the improved level of satisfaction among patients resulted in higher reputation of the hospital in the area, and hence raised the health personnel's motivation. The ranking of the country's health facilities, which was introduced by the government in 2008, facilitates competition among them. Moreover, awarding of "best health personnel of the year" has also been introduced and now practiced all over the country. All these new measures outside the Project also have contributed to enhancing motivation of health personnel and creating synergetic effects.

On the other hand, there were only a few increases in health personnel though the number of the patients increased due to the improvement of the services accompanied with timely respondent. It has to be noted that from the beneficiary survey, 70% of health personnel from Kisii District

²¹ The Project is complied with the following regulations for waste water management; 1) Legal Notice No.121: Waste Management Regulation (2006), 2) Legal Notice No.101: Environmental Impact Assessment and Audit Regulation (2003), 3) Legal Notice No.120: Water Quality Regulations (2006). In addition, it is also complied with "Guideline for Managing Health Care Waste" for medical waste management. Dustbin are coloured in either black, yellow, red, and black stands for general waste (rubbish, paper, etc), yellow for medical waste without blood and red for medical waste with blood. In addition, small containers are provided separately for placenta, and used needles are collected in a dedicated box. Both hospitals utilize the incinerator for medical waste which is in the hospital. The Project is also complied with the national guideline 'National Infection Prevention and Control Guidelines for Health Care Services in Kenya' for infectious disease prevention, which was set in 2010.

Hospital and 30% from Kericho District Hospital responded that they had been serving patients beyond their capacities.

Though data collection method was different for one of the operation indicators and it was not possible to compare standard and target values accurately²², the result of the operation indicators proves that the Project has achieved its objectives, as most of indicators demonstrated increases. The breakdown of the referral number also shows that the service of the two hospitals improved. In addition, though the two hospitals used to be district hospitals (level 4), they are now providing either level 5 or equal to level 5 services, equivalent to province level hospitals. The facilities and medical equipment of the Project were utilized and operated effectively, and the improvement of the services resulted in the increase in patients' satisfactions, as well as to health personnel as they could provide quality and timely services.

Based on the above, this project has largely achieved its objectives, therefore, its effectiveness is high.

3.4 Efficiency (Rating: ②)

3.4.1 Project Outputs

As Table 8 shows, the Project was implemented as planned though there were slight changes in the output. Regarding the air conditioner/cassette, the shipment which contained them was captured by a group of Somali pirates, and as a result, the installation and necessary construction of the equipment were covered by the second phase of the Project (see to 3.4.2).

Table 8: Outputs

【Planned】 Basic Design Study	【Actual】 Implementation
【Japanese Side】 ■ Kisii Level 5 Hospital <ul style="list-style-type: none"> Facilities: Outpatient Department Building, Ancillary facility, elevated water tank Medical equipment: 63 types of equipment for general outpatient, casualty, special clinic, X-ray division, Operation Division, High dependency unit (HDU) division, delivery division, existing facilities ■ Kericho District Hospital <ul style="list-style-type: none"> Facilities: Casualty, ancillary facility, elevated water tank Medical equipment: 53 types of equipment for casualty and some existing facilities ■ Common Output for Two Hospitals (Soft Component Program) <ul style="list-style-type: none"> Technical support on maintenance system and medical waste management system. Technical support on infectious prevention. 	【Japanese Side】 <ul style="list-style-type: none"> Minor changes were made but have basically been implemented as planned. As the shipment which contained air conditioner/cassette was captured by a group of Somali pirates, these were covered by the second phase of the project.
【Kenyan Side】 <ul style="list-style-type: none"> Relocation of the existing gate and access road (Only for Kisii Level 5 Hospital) Demolition of the existing facilities and building site preparation 	【Kenyan Side】 <ul style="list-style-type: none"> It has been confirmed that it has been implemented as planned.

²² Among the operation indicators, the data acquisition method of the ultrasonography examination at the time of Basic Design Study and at the time of ex-post evaluation was different. Thus it was not possible to compare the data to understand what has been achieved accurately.

<ul style="list-style-type: none"> in the site of the cooperation project. • Cost of transfer of the demolished facilities and replacement of existing infrastructure. • Improvement of the power system. • Purchase of general furniture (including medical consultation desk set) and supplies. • Bearing of the expenses of relocation to the newly built buildings. 	
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Source: JICA documents

3.4.2 Project Inputs

3.4.2.1 Project Cost

As Table 9 shows, a second phase of the Project was not planned initially. However, the additional E/N (Exchange of Notes) for the second phase for 27 million Japanese Yen was agreed, which made aggregate limit of the first and second E/N up to 1,360 million Japanese Yen. The actual expenditure was 1,348 million yen (99% against planned).

The reason for the addition of a second phase was that the shipment which contained air-conditioners and cassettes was captured by a group of Somali pirates. As it was difficult to assume when the shipment would be released, this equipment had to be re-procured²³ through another phase. In the ex-post evaluation, this unexpected accident is taken into consideration and the planned total project cost is considered to be the sum of the total project costs of the first and second phases. The difference in the amount for Kenyan side is due to the increase in the cost for the improvement of the power system for Kisii District Hospital, and the increase in cost for the transfer of demolished facilities and the abolition of scrapped material for Kericho District Hospital²⁴.

Table 9: Project Cost – Plan and Actual

	Initial Plan	Additional E/N	Unit: million Japanese Yen Actual
Total Project Cost	1,371		Approximately 1,392
• Japanese (E/N limit)	1,333	27	1,348
• Kenya	38 ²⁵		Approximately 44 ²⁶

Source: JICA documents

3.4.2.2 Project Period

As shown in Table 10, while project period was planned as 20 month, the actual project period was 37 month. The delay in the project period was due to the political uncertainty after the 2007 Presidential election and by the incident of piracy off the coast of Somalia²⁷.

²³ In 27 December 2007, Presidential election was held and result brought civil unrest with riots. Japanese residents in Kenya, including the Project members, had to evacuate. Though the Ministry of Foreign Affairs of Japan lifted a ban on travel to in April 2008 Nairobi, the Project area was regarded as a 'Hot Spot' and the project members could not enter the area till September 2008. As 10 month had past already in October 2008, discussion took place in order to resolve force majeure clause, and constructors needed further time to examine the security situation. The construction work could only start from February 2009.

²⁴ Includes additional construction cost for HIV/AIDS Clinic as it needed to be continued.

²⁵ Exchange rate: 1 Kenyan Shilling = 1.526 Japanese Yen

²⁶ Exchange rate: 1 Kenyan Shilling = 1.393 Japanese Yen (average rate between the year of start of the Project and the year of hand-over.

²⁷ As the shipment which contained air conditioner/cassette was captured by a group of Somali pirates, these equipment had

Table 10: Project Period—Planned and Actual

	Plan	Actual
Detail Design	4 month	4 month (from E/N detailed design study to E/N construction)
Tender	3 month	4 month (from E/N construction to contract with contractor)
Construction	13 month	29 month (from contract with contractor to handing over date)
Total	20 month	37 month (185% against planned period)

Source: JICA documents

At the time of Basic Design Study, 4 months for detail design, 3 months for tender, 13 months for construction, 20 months in total was planned. However, the construction could not start until February 2009, which caused 13 months delay. After the 2007 presidential election, Japanese construction company could not enter the area till September 2008 due to the political instability of the area, and had to reassess the security situation of the area as well as to consult with the Kenyan side the interpretation of contract termination by force majeure. In addition, the Project period was affected by the incident of piracy in which the ship containing air conditioners and cassettes for the Project was captured. A second phase of the Project was added so as to re-procure these stolen items, and this caused 2 months of delay. In total, the Project period was delayed by 15 months.

The actual project period was 37 months in total, and it was significantly longer than planned (20 months). However, taking into account 15 months of delay caused by the above-mentioned factors, the evaluator re-calculated the project period by deducting 15 months and concluded the revised actual project period as 22 months in total; which is to say 110% compared to the planned project period. In sum, the project period with the revised actual project period was “slightly longer than planned”.

Although the project cost was within the plan, the project period exceeded it, therefore efficiency of the project is fair.

3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

At the time of the project design stage, both hospitals were defined as secondary level hospital in the Kenya's health system, and were the top referral hospital within each district. The Kisii Hospital consisted of 6 general outpatients, 5 wards, 3 examination departments, and administration. The Kericho Hospital consisted of 6 general outpatients, 6 wards, 3 examination departments, and administration. The operation and management structure of district hospitals is represented by a hospital director, who is assisted by heads of medical departments (medical treatment and nursing), examination departments and the administration.

There is no major change in the structure of operation and management since the time of Basic Design Study. Though both hospitals have not employed additional staff for the maintenance

to be re-procured through the second phase of the project.

unit, regular maintenance is carried out systematically according to guidelines and ledgers which were reinforced by the Project's technical assistance.

At the time of Basic Design Study, the regional maintenance unit in both provinces functioned²⁸. However, at the time of the ex-post evaluation, personnel of maintenance and administration bureau of both hospitals mentioned that it did not function anymore as GIZ ended its assistance. Spare-parts that are held by the regional maintenance unit are limited in number (quantity) and varieties, and moreover, they do not match with the medical equipment of the two hospitals. Nevertheless, both hospitals are able to procure necessary spare-parts by themselves.

Regarding the cleaning and waste collection, Kisii District Hospital hires cleaning personnel and the hospital provides training for them. On the other hand, Kericho District Hospital outsources the cleaning and waste collection to a private company. Health personnel of the hospital separate general waste and medical waste into three categories: black, yellow and red. Cleaning personnel collects and handles the waste accordingly to the regulations.

3.5.2 Technical Aspects of Operation and Maintenance

There is no particular problem to be noted regarding the human resources of health personnel²⁹. All health personnel holds relevant national qualifications, and all technicians also holds medical qualifications or have acquired necessary technology in order to be able to operate medical equipment procured by the Project. Both hospitals have the role as educational hospitals and provide training and technical supports to human development of health personnel and health facilities at lower levels in the region. Thus, it was felt that both hospitals have attained adequate level of human resources.

The Hospital Maintenance Units (HMU) of both hospitals maintain facilities and medical equipment. They provide maintenance and management service from regular check-ups to repair work for malfunctioning medical equipment, and the level of technical capacity of both HMUs is considered as adequate for daily maintenance. The maintenance for the equipment which requires advanced maintenance and repair is outsourced and carried out when necessary. Though HMU staffs have opportunities to participate in the professional trainings provided by the government and relevant ministries, they request more brush-up and step-up type of trainings since these are still quite limited³⁰.

In addition, the director and staff of Kericho District Hospital recognize that it is more costly to repair broken equipment, and emphasize the importance of preventive measures, such as proper usage and regular maintenance in order to avoid a complete breakdown.

²⁸ When an issue was raised and it was beyond the capacity of the management unit of District hospital, it was transferred and handled by the management unit of Provincial hospital. Spare-parts were stocked in 4 storages and necessary spare-parts were purchased on a request-basis through a centralized procurement system. Since it was not an on-line system, technicians at District hospital would receive a fax once requested spare-parts arrived at the storage so that they could be picked up.

²⁹ Based on the interview with the Directors and health personnel of both hospitals.

³⁰ Kisii District Hospital staff received 2 training courses and Kericho District Hospital staff received 1 training course, both related to facility and medical equipment maintenance. These training courses were announced by the Ministry of Medical Services for the respective health facilities.

3.5.3 Financial Aspects of Operation and Maintenance

The health sector of Kenya depends heavily on tax revenue. At the same time, the user fee system has already been implemented. There are two main sources of national budget in the health sector, one is “health development budget” (construction of facilities, equipment procurement, etc.) and the other is “health regular budget” (labour and administrative costs). The proportion of the budget for the health sector in the government budget decreased from 8% at the time of Basic Design Study to around 6% in years 2010 and 2011.

Table 11: Percentage of Budget for Health Sector against National Budget

	Year 2004	Year 2010	Year 2011
Proportion of Health Sector Budget against National Budget	7.9 %	5.9 %	5.9 %

Source: WHO Database

The budget of both hospitals consists of subsidy from the Ministry of Health and consultation/diagnosis and treatment fees. Tables 12 and 13 show that Kisii District Hospital increased its total income by 288% and Kericho District Hospital, by 275%, when compared with years 2004/2005 and 2011/2012. The subsidy from the Ministry of Health to Kisii District Hospital decreased by approximately 46%, and the subsidy to Kericho District Hospital increased by 140%. Furthermore, the percentage of subsidy against total income of Kisii District Hospital decreased from 36% to 7%, and that of Kericho District Hospital, from 30% to 15%. On the other hand, the consultation/diagnosis and treatment fees of Kisii District Hospital increased by 4.2 times, and that of Kericho District Hospital, 3.3 times. Similarly, the percentage of consultation/diagnosis and treatment fees against total income of Kisii District Hospital increased from 64% to 93%, and of Kericho District Hospital increased from 69% to 85%.

Table 12: Income and Expenditure of Kisii Hospital

Unit: 100 million Kenyan Shilling

	Year 2004/2005	Year 2011/2012
Subsidy from the Ministry of Health	16.68	9.09
Medical Treatment/ Consultation Fee	29.47	124.04
Total Income	46.17	133.13
Total Expenditure	46.17	133.13

Source: Answer to Questionnaire

Table 13: Income and Expenditure of Kericho Hospital

Unit: 100 million Kenyan Shilling

	Year 2004/2005	Year 2011/2012
Subsidy from the Ministry of Health	6.90	9.69
Consultation Fee	16.00	53.54
Total Income	22.91	63.23
Total Expenditure	22.91	63.23

Source: Answer to Questionnaire

The total income is equal to the total expenditure in both hospitals. The directors and relevant staff of both hospitals confirmed that they keep balanced payment. As Table 14 shows, the maintenance costs increased after the Project completion. Of the total expenditure, maintenance cost accounts for approximately 29% for Kisii District Hospital, and 4% for Kericho District Hospital. According to the hospital personnel, the reason for this increase is mainly due to the increase in the cost of procurement of spare parts for medical equipment, the increase in unit cost for utilities (3 times more for electricity unit cost, for example) and consumption of utilities. Regarding Kisii District Hospital, the reason that the maintenance cost accounts for nearly one third of the total expenditure, is that the hospital installed LAN system and CCTV system which enables them to monitor waiting time of patients.

Both hospitals (directors and HMU staffs) pointed out that the maintenance is a pressing issue as the cost for maintenance increased as well as the percentage of the maintenance cost against the total expenditure also increased. Many of the spare parts for the medical equipment procured by the Project are not locally available and they need to procure from a third country. Thus spare parts procurement has become expensive and time consuming. Taking this background into account, both hospitals prioritize procurement by cost and timing and take preventive measures as much as possible, so as to minimize the negative impacts on hospital services.

Table 14: Maintenance Cost of Kisii District Hospital and Kericho District Hospital

Unit: 100 thousand Kenyan Shilling

	Year 2010/2011		Year 2011/2012	
	Maintenance Cost	% out of Total Expenditure	Maintenance Cost	% out of Total Expenditure
Kisii District Hospital	14.44	11%	39.04	29%
Kericho District Hospital	1.87	3%	2.85	4%

Source: Answer to Questionnaire

3.5.4 Current Status of Operation and Maintenance

Hospital Management Unit (HMU) is in charge of the maintenance of facilities and medical equipment implemented by the Project. HMU practices maintenance work in accordance with such tools created by the Project's soft component as: the guidelines, maintenance system flow, yearly maintenance plan, ledger for facilities and equipment, and maintenance record. Detailed information such as life-span and conditions of medical equipment at the time of daily maintenance is recorded in the ledger for equipment. Spare-parts are purchased based on the procurement plan and the level of wear and tear, and the timing of maintenance and parts replacement is planned based on these records. Health personnel knew the Mobile phone numbers of the HMU staffs, so that they could be contacted quickly in the event of a problem. These guidelines and ledgers are applied not only to the facilities and equipment supported by the Project, but also to the whole facilities and equipment of the hospital.

Based on the above, no major problem has been observed in the operation and maintenance system, therefore, sustainability of the Project effect is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of this Project is to enable Kisii District Hospital³¹ in Kisii District, Nyanza Province, and Kericho District Hospital in Kericho District, Rift Valley Province to function as top referral of the area by improving outpatient department building for Kisii District Hospital, constructing emergency diagnosis and treatment unit (casualty) for Kericho District Hospital, and providing equipment for both hospitals. The objective is consistent with the development policies and needs of the Government of Kenya at the time of the planning and the ex-post evaluation of the Project, and it was in line with the Japanese ODA policies toward Kenya at that time. Therefore, the project relevance is high. The operation indicators were basically met and the hospitals expanded their services in both quantity and quality wise. The health personnel and patient satisfaction was high according to the beneficiary survey and other expected effects were observed. Thus effectiveness and impact of the Project are high. While output was achieved according to the plan, the Project period prolonged significantly. However, taking into account that the Project period was affected by the instability caused by the presidential election and a piracy by a group of Somali pirates which can be considered as an accident by “force majeure”, the Project period should be considered as slight delay. Thus efficiency of the Project is fair. No major problems have been observed in the operation and maintenance system, thus the sustainability of the Project effect is high.

In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

(1) Cleaning and Waste Collection

The two Hospitals have adopted different ways of cleaning and waste management; Kisii District Hospital hires cleaning staff directly, while Kericho District Hospital outsources cleaning and waste management to a private company. Both systems have advantages and disadvantages. As Kisii District Hospital does, direct recruiting relatively reduces labor costs. At the same time, cleaning and waste collection staff has to be trained, given guidance, monitored, and managed by the hospital whenever there is a turnover. In addition, the hospital has to purchase consumables and equipment for the cleaning, such as clothes and gloves. On the other hand, outsourcing these works to a private cleaning company eases the burden of quality control. The training, re-training, and replacement of consumables are direct responsibilities of the company. It may be worthwhile to reconsider which option is better suited to the hospital, taking into account the advantages and disadvantages of direct recruitment and outsourcing.

³¹ At the time of Basic Design Study, Kisii District Hospital, currently Kisii Level 5 Hospital, was a “district hospital” which was classified as the quasi-province hospital.

(2) The Impact of Improvement of the Hospital and Medical Equipment on staff.

Through the Project, moral and motivation of the staff has been enhanced and the quality of services (timely response, in particular) was improved. The number of patients has also largely increased alongside. On the other hand, the number of health personnel and relevant staff has not increased, and the health personnel and relevant staff actually feel that they are overstretched. It is highly recommended to take urgent actions by verifying the ratio of health personnel and patients, and working hours of the employees, for example, that are under the control of the Ministry of Health.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

(1) Data Collection and Calculation Method

Data calculation method for the number of ultrasonography examination at the time of project design was different from the one at the time of ex-post evaluation. As the number of ultrasonography examination was applied as an operation indicator, it became difficult to compare and to judge the project effect. Upon deciding operation indicators, it is important to verify the ways of data acquisition and calculation method even if the data is submitted by relevant stakeholders.

(2) Considerations on “Appropriate Referral System”

One of the outcomes expected from the Project was that “an appropriate referral system is set through reinforcement of the hospital and intensive concentration of outpatient at district hospital is mitigated”. It is rather difficult to quantitatively specify the cause and effect link of “mitigation of intensive concentration of outpatients” and “increase/decrease of the number of referral”. Taking into account such a difficulty, the evaluator tried to examine several data to analyse the changes in the quality of services provided by the hospital and the working situation of the referral system. From the view point of qualitative analysis, the evaluator interviewed relevant hospital staffs and acquired such qualitative data as “the hospital was enabled to handle more cases by themselves, and the number of patients who are referred to higher level hospital decreased”. In the meanwhile, the quantitative data analysis such as the incoming and outgoing referral numbers made clearer that the total referral numbers increased while the number of outgoing patients did not increase. Thus, upon evaluating the hospital project, it might be worthwhile to take into account the proportion of incoming and outgoing patients, in addition to the total referral number.

(3) Consideration on Improvement of Facility and Medical Equipment, and Staff Allocation

Through the improvement of the facility and medical equipment, both hospitals were able to increase the types of services to be offered, and to upgrade the quality of services. At the same time, the moral and the motivation of the health personnel and satisfaction of the patients were enhanced. As

a result, both hospitals now receive more patients than expected while the number of health personnel remains more or less the same. Hence, the ratio of patient per one health personnel increased. Behind this background, staff recruitment of public hospitals is handled by the Ministry of Health (Medical Service) and the hospital cannot employ staff on its own decision. Since the recruiting more staff will affect the budget of the Ministry of Health, it is not easy for the Kenyan government whose budget is under severe pressure to increase the staff number. Thus, upon planning a similar hospital project, the possibility of the increase of burden of health personnel as a result of the increase of patients should be taken into consideration. It is desirable to discuss such human resource issues from the project planning stage with concerned stakeholders (i.e. Ministry of Health, hospitals), who are in charge of the recruitment of health personnel, in addition to the issues of facility and equipment improvement.