

Summary

1. Outline of the Project

Country: Republic of Zambia

Project Title: HIV/AIDS and Tuberculosis Control Project

Issue/Sector: Healthcare/population, infectious disease control

Cooperation Scheme: Technical Assistance Project

Division in Charge: Infectious Disease Control Team, Group IV, Human Development Department, JICA

Total cost (as of the time of evaluation): Approximately 438.6 million Japanese yen (excluding cost for dispatching experts)

Period of Cooperation (Duration):

(R/D): March 30, 2001-March 29, 2006

(Extended):

(F/U):

(E/N) (Aid)

Partner Country's Implementing Organization: Ministry of Health, Central Board of Health, University Teaching Hospital

Supporting Organization in Japan: Tokyo Medical and Dental University; The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association; International Medical Center of Japan; JOICFP (Japanese Organization for International Cooperation in Family Planning), Tohoku University, University of Yamanashi, Faculty of Medicine; Sendai Medical Center, National Hospital Organization

Related Cooperation: Infectious Disease Project (April 1989-March 1995), Infectious Disease Control Project (April 1995-March 2000), Equipment Supply Program for AIDS Strategy and Blood Testing (FY2001-), HIV/AIDS and Tuberculosis Control Program Coordinator (FY2004-)

1-1 Background of the Project

JICA provided technical assistance, namely the "Infectious Disease Project" and the "Infectious Disease Control Project", to the University Teaching Hospital (UTH) in Zambia between 1989 and 2000, focusing on the establishment of the testing systems employed in the UTH Virology Laboratory and the improvement of the early-stage capacity thereof. The targeted diseases included diarrhea, acute respiratory tract infection, hepatitis, polio and measles, and after the Virology Laboratory obtained sufficient capacity, JICA also participated in nationwide survey and control activities in

relation to these diseases. The TB Laboratory was established and studies on tuberculosis (TB) were initiated over the course of the project. The Virology Laboratory also initiated activities pertaining to HIV/AIDS diagnostic techniques. In the Republic of Zambia, HIV infection, which first broke out in the second half of the 1980s, together with the explosion of TB, which is one of the most common opportunistic infections among AIDS patients, has become as serious problem. Therefore, this project had been requested with the aim of further improving the capabilities of both laboratories and to improve the local inspection ability by focusing on the target diseases of HIV/AIDS and TB.

This project was inaugurated in March 2001. Considering the acute changes in the environment surrounding HIV/AIDS in Zambia and the rapid progress and growth in aspects of treatment in particular, the original Project Design Matrix (PDM) has twice been revised, in January 2002 by the Project Consultation Team and in November 2003 by the Mid-term Evaluation Team, in order to contribute in the progress of the HIV/AIDS and TB control in Zambia through the strengthening of the laboratory system.

1-2 Project Overview

(1) Overall Goal

Status of HIV/AIDS and TB in the Republic of Zambia has been improved.

(2) Project Purpose

Laboratory systems are strengthened and are effectively utilized for HIV/AIDS and TB control in the Republic of Zambia

(3) Project Outputs

1. Performance of laboratory techniques, data management and overall laboratory management are improved.
2. Performance and quality of laboratory services with laboratory monitoring systems at VCT¹ sites and ARV² centers are improved to be replicable for a nationwide program.
3. Quality tuberculosis diagnostic system is developed as a model for national TB laboratory network.
4. Utilization of laboratory information obtained by way of Project activities has been improved.
5. Collaboration with HIV/AIDS and TB Working Groups is institutionalized.

(4) Project Inputs (as of the evaluation)

¹ Voluntary Counseling and Testing (for HIV)

² Anti-retroviral Treatment

Japanese side:

Long-term experts 11 persons

Short-term experts 26 persons in total

No. of trainees received in Japan 18 persons

Equipment supply 177.597 million yen

Local cost 209.202 million yen

(All up to the end of FY2005, including those scheduled)

Zambian Side:

Assignment of counterparts 22 persons (as of October 2005)

Provision of land and facility for the Project Inputted (project office)

Local cost 2,705 million Zambian kwacha (equivalent to 69.740 million yen, including personnel expenses, actual figure as of October 2005)

2. Evaluation Team Overview

Members of the evaluation team

(Area in charge: name, title)

Team leader:

Dr. Akira Hashizume

Technical Advisor, Human Development Department, JICA

HIV/AIDS control:

Dr. Naoki Yamamoto

Director, AIDS Research Center, National Institute of Infectious Diseases

Tuberculosis control:

Dr. Nobukatsu Ishikawa

Vice-Director, Research Institute of Tuberculosis

Evaluation planning:

Ms. Miyuki Tamura

Associate Expert, Human Development Department, JICA

Evaluation analysis:

Ms. Erika Tanaka

Researcher, Social Development Dept., Global Link Management

Evaluation Period

From October 17, 2005 to November 4, 2005

Evaluation type: Terminal evaluation

3. Overview of Evaluation Results

3-1 Achievements

(1) Project Purpose Achievements

The project purpose, namely “Laboratory systems are strengthened and are effectively utilized for HIV/AIDS and TB control in the Republic of Zambia,” is expected to be achieved overall in terms of the improvement of the technical capacity of the UTH Laboratory and the benefits of the achievements of the project, as follows.

- Laboratory techniques of the UTH Laboratory improved significantly in terms of both HIV/AIDS and TB, and both quantitative and qualitative improvements have been confirmed (Output 1).
- With regard to HIV/AIDS, healthcare personnel at VCT sites and ART centers throughout the country have been trained and laboratory techniques have been improved (Output 2).
- With regard to TB, the strengthening of functions of the UTH TB Laboratory as a reference laboratory for Lusaka Province was promoted, and an external quality assurance system for Lusaka Province was developed as a model for the national TB laboratory network. This activity contributed to the formulation of the National Guidelines (Output 3).
- Information on the achievements of this project is provided to organizations and individuals involved via newsletters and other means, which has contributed to the sharing of information among stakeholders (Output 4).
- The cooperative relationship with Technical Working Groups under the National HIV/AIDS/STI/TB Council (NAC) had been established. Based on this relationship, the project aimed to contribute to the control of HIV/AIDS and TB, a nationwide problem in Zambia. Experts attended the Technical Working Group meetings and provided advice. The project also involved the establishment of a policy framework, through such means as the introduction of Dynabeads CD4 count³ and the development of the National Guidelines for Quality Assurance of Sputum Smear Microscopy in Tuberculosis Control (Output 5).

However, in terms of the “effective utilization” of the strengthened laboratory system, some challenges remain in regards to the establishment of a working system between the UTH Laboratory and external facilities. It is considered that this is due to such

³ CD4 count: Method for counting antigens on the surface of CD4-positive cells, which are cells responsible for immune responses in their entirety. CD4 counting describes the immune status of HIV-infected patients and will serve as an important index for AIDS treatment.

factors as the fact that project activities were implemented in large part under the initiative of the UTH, and that the involvement of the Ministry of Health (MOH) and the Central Board of Health (CBOH) in the project operation framework was insufficient.

3-2 Summary of Evaluation Results

(1) Relevance

It is considered that the relevance of the project is high in terms of the needs of the Zambian health sector and Japanese ODA policy for Zambia.

In Zambia, the HIV/AIDS prevalence rate in 2002 was estimated at 16% and there are about 60,000 TB patients out of a national population of about 10.5 million (data by MOH, 2004). There is a great need for support for HIV/AIDS and TB control.

The Zambian government has highlighted HIV/AIDS and TB as public health priorities in its National Strategic Plan 2001-2005 and is going to maintain this policy in the coming National Health Strategic Plan 2006-2011. This plan mentions the importance of laboratories in terms of diagnosis and monitoring of responses to treatment, and as such the project purpose aimed at strengthening laboratory systems is highly relevant.

In the country assistance plan for Zambia implemented by the Japanese government, aid in the health sector is one of the priority areas. In particular, control of infectious diseases, including HIV/AIDS, is specified as an especially important area.

(2) Effectiveness

The diagnostic capacity of laboratory technicians and doctors at the UTH Laboratory and at local laboratories has been improved, and the number of tests provided is also increasing. Training programs in Japan and Zambia were participated in and completed by 18 and 664 persons respectively. Information on the project has been adequately provided to stakeholders via newsletters and through Dissemination Meetings, and has been reflected in policies such as the formulation of guidelines. It is expected that the project purpose will be achieved for the most part, and therefore the next challenge to be addressed in the future should be the establishment of a nationwide quality assurance system.

The basic workflow of laboratory diagnosis has been established and the data management system was improved by way of the dispatch of experts to the UTH Laboratory. However, quality assurance and data management between the UTH

Laboratory and external facilities are still insufficient.

In the area of TB, the fact that the National Guidelines for Quality Assurance for Sputum Smear Microscopy in Tuberculosis Control was developed in collaboration with TB diagnosis centers in Lusaka Province is worthy of high praise. A data management system was also established. These activities in Lusaka Province served as a model that made a significant contribution to the completion of the National Guidelines, and it is expected that this system will be introduced throughout the country.

In the area of HIV/AIDS, the quality assurance system for HIV/AIDS diagnosis linking UTH Laboratory with VCT centers throughout the country has not been fully developed, and the situation is similar with that of data management. It was necessary to establish a national system by way of a comprehensive approach at the national level, including the MOH, but this could not be adequately addressed by the operational system of this project.

Registration systems for equipment inventory management and equipment management were introduced for maintenance and management of equipment and machinery. However, there was some difficulty in disseminating the concept of systematic maintenance and management of equipment, and the process of establishing a system within the UTH remains at the formative stage.

As explained above, each project output is in essence contributing to the achievement of the project purpose. However, due to the insufficient achievement in regards to data management and equipment maintenance on the part of the UTH Laboratory and its external facilities (Output 1) as well as that of local facilities' monitoring systems (Output 2), the establishment of a nationwide quality assurance system still remains as an issue.

Operational research pertaining to TB and HIV/AIDS in Kamanga proved to be a successful pilot case for the effective networking of laboratories, communities and health centers for the purpose of providing care to patients with TB and HIV coinfection. Utilization of this achievement will be an issue to be tackled in the remaining duration of the project.

(3) Efficiency

The inputs of the project were generally implemented smoothly.

Some experts were not dispatched as scheduled. For example, experts in the field of TB were not dispatched for the first half of the project period and there was a period during which a chief advisor was absent. However, through efforts on the part of

experts and their Zambian counterparts as well as the capability of experts in their specialized field, it is expected that the scheduled activities will be more or less completed by the end of the project period. Regarding Zambian personnel, personnel appointed to the UTH Laboratory were too busy to spend enough time in project activities, partly due to the fact that there was no supplementary staff able to take the place of UTH Laboratory counterparts upon their absence due to research leave or turnover, and that the UTH Laboratory provides a range of auxiliary functions, including laboratory tests, quality assurance and education.

There were delays in the delivery of equipment due to problems in procurement procedures and delays in the installation thereof at the Laboratory due to restrictions in terms of fixtures, which affected some activities. However, other types of equipment were fully utilized on a daily basis and maintained in a favorable manner, and this contributed to the achievement of outputs.

Training of counterparts was implemented as scheduled on the whole, achieving the expected objective and contributing to the improvement of the capability of counterparts and the achievement of outputs. On the other hand, as many of the training courses continued over a long period, counterparts were absent from their workplace for long periods of time, and by the time the training had finished little of the project time period remained.

(4) Impact

In the areas of HIV/AIDS and TB control, accurate and quick diagnosis is essential. It is expected that diagnostic techniques and accuracy improved through the strengthening of the capability of the UTH Laboratory are having a significant impact in regards to the improvement of HIV/AIDS and TB control. However, because the indicators such as HIV prevalence and TB case detection rate are not subject to sudden change, it is necessary to observe changes over the long term. Also, approaches in terms of social factors, including treatment and community education, will be necessary in addition to diagnosis. Improvement of indicators such as incidence and cure rates partly depends on these external conditions.

The project provided some technical advice in regards to the HIV/AIDS control program, including the preparation of a directory containing information on the location and contact points of HIV-related service facilities, to the expert dispatched to the NAC based on the activities of the project. This contributed to the promotion of JICA's approach in regards to its HIV/AIDS control program. In the course of the implementation of the project, communication between other laboratories within the

UTH, local health institutions and the MOH improved. No particular negative impacts have been reported.

(5) Sustainability

It is expected that the Zambian government policy of giving priority to HIV/AIDS and TB control will be maintained into the future. The status of the UTH Laboratory as the national/provincial reference laboratory will also be maintained.

The doctors and technical staff who underwent training acquired the necessary abilities, and as such sustainability in terms of technical aspect is high. One concern is that the trained personnel will leave the laboratory. One of reasons for the shortage of human resources was the suspension of new employment of government personnel upon recommendation by the IMF. However, the MOH was recently given authority by the Cabinet Office to employ 1,366 new staff members before the end of 2005, so it is expected that this problem will be solved. As for financial sustainability, although self-financing by the UTH may prove difficult, the UTH is trying to secure financial resources by reinforcing relationships with other donor organizations and research institutes. For instance, it is already raising funds from the Global Fund to Fight AIDS, TB and Malaria (GFATM). It has been suggested that this is a result of the high acclaim that the UTH Laboratory has gained in regards to its capability and performance, and it is expected that further financial support from external organizations will be obtained by through the maintenance of this high level of capability into the future. However, as the government of Zambia has endorsed the UTH Laboratories (and Virology Laboratory in particular) as national reference laboratory, it is essential that the government takes responsibility for ensuring organization and funding appropriate for the functions in question.

3-3 Factors Contributing in the Production of Effect

(1) Planning

- With the plan focusing on the strengthening of the diagnostic capability necessary for HIV/AIDS and TB control, the project succeeded in contributing to HIV/AIDS and TB control in Zambia.

(2) Implementation Process

- Employment of Dynabeads CD4 counts by the MOH contributed in the development of HIV/AIDS diagnostic capability. As for test reagent and consumables, the regular

supply provided by way of the cooperation of JICA was helpful. High awareness among ART center directors and the doctors and technicians responsible for ART were also contributing factors in terms of the overall operation of the project.

- As for achievements in the area of TB, the cooperative relationship maintained between the MOH, the Centers for Disease Control and Prevention (CDC) and the Chest Disease Laboratory (CDL) served as a contributing factor.
- Information on the project was transmitted to- and shared with government officials through newsletters and the dissemination meeting. In addition, the distribution of quarterly reports pertaining to TB and the pronouncement and awarding of accolades to centers with favorable laboratory performance contributed in terms of promoting the sharing of information and increasing motivation.
- The Project Steering Committee Meeting was held once every month, wherein the Zambian and Japanese sides confirmed project progress using the Progress Score and shared their recognition of the project's achievements.

3-4 Problems and Factors that Raised Problems

(1) Planning

- While the modification of the project purpose upon by the Project Consultation Team was adequate in terms of the direction to be taken, major counterparts engaged on a daily basis in the joint implementation of activities consist mostly of UTH Laboratory staff members, the operational system was not reviewed thoroughly in accordance with the modification of the project purpose.

(2) Implementation Process

- A shortage of human resources in the UTH Laboratory as well as their leave periods affected the production of project results.
- Delay in the delivery of equipment due to problems related to procurement procedures affected the smooth progression of the project.

3-5 Conclusion

Project purposes have on the whole been achieved and the project will be finished by March 2006 as scheduled. The establishment of a national quality assurance system bringing the UTH Laboratory, external hospitals and VCT centers into a unified network will be an issue to be addressed in future.

3-6 Recommendations (Specific Measures, Recommendations and Advices on this Project)

Recommendations to the MOH and the UTH are as follows.

Human resource issues: There is a need to allocate sufficient numbers of technical personnel to the Laboratory.

Funding: Allocation of funds adequate for the national/provincial reference laboratory should be made to the UTH by the government.

Quality assurance: A nationwide quality assurance system should be developed for the purpose of improving HIV diagnoses. A review of standard operational protocol (SOP) should be completed and the utilization thereof should be monitored.

Data management: It is recommended that the data management system of the project be integrated with the Health Management Information System (HMIS), which is being developed by the MOH.

Equipment management: The maintenance system for laboratory equipment must be strengthened in collaboration with the UTH Biomedical Engineering Department and the biomedical equipment and infrastructure unit of the MOH.

Operational research: Because the pilot study was successfully performed in spite of a rather small number of patients, the outcome obtained needs to be analyzed and publicized as a feasible model. It is also necessary to evaluate the possibility for the wider application of the model. Full follow-ups should be conducted for all patients recruited during the project period for twelve months after the start of ART in a manner similar to the operational research targets.

3-7 Lessons Learned (Matters Helpful for Discovering/Forming Similar Projects Derived from this Project and Implementation, Operation and Administration Thereof)

- The operational research at Kamanga has demonstrated a potentially feasible model of community ART through DOTS (directly observed treatment, short-course), a standard form of TB treatment. Community-based DOTS organization, district health centers, and Virology and TB Laboratories at the UTH have addressed this issue in close coordination with each other. This ART model is applicable in areas wherein the TB DOTS is well established, and advanced laboratories should be utilized for programs of this sort.

- The issuance of newsletters and quarterly reports as well as the holdings of the Dissemination Meeting are effective in terms of maintaining the motivation of stakeholders in the fields of HIV/AIDS and TB control.

- The introduction of Progress Score appeared to have been useful in monitoring the

progress of the project and in reaching consensus among stakeholders.

- The project activities were delayed during the time when counterparts were undergoing lengthy training sessions in Japan. It is important to formulate plans for the implementation of project activities ahead of time while counterparts are absent for training in Japan.
- Inventory management systems and equipment management records should be introduced by utilizing databases in order to keep accurate records of equipment information.
- Although the project purpose was modified after the launch of the project, the project implementation system was insufficiently reorganized. The project purpose should be clearly stated prior to the commencement of the project and when the project purpose is modified due to inevitable circumstances, it is necessary to reestablish the implementation system in line with the purpose of such modification.

3-8 Follow-ups

None in particular