

Summary

Evaluation conducted by: Takuya Adachi / Reiko Nakazawa

1. Outline of the Project	
Country: Zambia	Project title: HIV/AIDS and Tuberculosis Control Project
Issue/Sector : Health	Cooperation scheme: Technical Cooperation
Division in charge : Infectious Disease Control Division, Human Development Dept.	Total cost : Approximately 452 million yen
Period of Cooperation	(R/D): 3. 2001 – 3. 2006
	<p>Partner Country's Implementing Organization : Ministry of Health University Teaching Hospital</p> <p>Supporting Organization in Japan : Tokyo Medical and Dental University, Japan Anti-Tuberculosis Association, International Medical Center of Japan, Japanese Organization for International Cooperation in Family Planning, Tohoku University, Yamanashi Medical University, Sendai Medical Center</p>
Related Cooperation	Infectious Diseases Project (1989 – 1994), Infectious Diseases Control Project (1995 – 2000), HIV/AIDS and Tuberculosis Control Programme Coordinator (2004 – present), Project for Strengthening HIV/AIDS Laboratory Network Services (2007 – 2010), Grant Aid: Equipment Supply for HIV/AIDS Test Kits
<p>1-1. Background of the Project</p> <p>The Republic of Zambia has experienced an increase in child and adult death rates and a rapid decrease in life expectancy at birth since the late 1980s. These outcomes can be attributed to the spread of the human immunodeficiency virus (HIV) and subsequent progression to acquired immunodeficiency syndrome (AIDS). Tuberculosis, one of the major complications arising from HIV/AIDS, increased at a rapid rate during 1990s placing a burden on public health in Zambia. Japan International Cooperation Agency (JICA) has established virology and tuberculosis laboratories at the University Teaching Hospital (UTH) and has attempted to improve laboratory skills from 1989 to 2000, the period during which its two projects, the Infectious Diseases Project and the Infectious Diseases Control Project, were in operation. With the recognition of these achievements, the Government of the Republic of Zambia submitted a request to the Japanese Government for a technical cooperation project to support the Ministry of Health (MoH), Central Board of Health and the UTH in improving both of the central laboratories at the UTH as well as peripheral laboratories within the country. The Project had a duration of five years from March 2001 to March 2006, with an end goal of providing better laboratory systems for HIV/AIDS and tuberculosis.</p> <p>1-2. Project Overview</p> <p>The Project supported the MoH, Central Board of Health and UTH in strengthening their laboratory systems in relation to HIV/AIDS and tuberculosis. It aimed at improving laboratory techniques at the UTH, quality assurance of laboratory testing for the both diseases at the peripheral level, information sharing and collaboration activities with the other agencies which play key roles in the control of these diseases.</p> <p>(1) Overall Goal</p> <p>Status of HIV/AIDS and tuberculosis in the Republic of Zambia is improved.</p> <p>(2) Project Purpose</p> <p>Laboratory systems are strengthened and effectively utilized for HIV/AIDS and tuberculosis control in the Republic of Zambia.</p>	

<p>(3) Outputs</p> <p>(a) Performance of laboratory techniques, data management and overall laboratory management are improved.</p> <p>(b) Performance and quality of laboratory services with laboratory monitoring system at VCT sites and ARV centers are improved to be replicable for nationwide program.</p> <p>(c) Quality tuberculosis diagnostic system is developed as a model for national tuberculosis laboratory network.</p> <p>(d) Utilization of laboratory information obtained from the Project activities is improved.</p> <p>(e) Collaboration with HIV/AIDS and tuberculosis Working Groups is institutionalized.</p> <p>(4) Inputs (as of Project termination)</p> <p>Japanese side:</p> <p>Long-term Experts: 11 experts; Short-term Experts: 26 experts; Trainees received: 18 persons.</p> <p>Operational expenses:</p> <p>Equipment: 177,597,000 yen; Local cost support: 209,202,000 yen.</p> <p>Zambian side:</p> <p>Counterparts: 22 persons in total; Local cost: 2,705,550,091 kwacha (approx. 69,740,000 yen); Land and Facilities: Facilities within UTH.</p>
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2. Evaluation Team

Members of Evaluation Team	Health Development Evaluation: Takuya Adachi, Researcher, IMG Inc. Impact Analysis: Reiko Nakazawa, Project Officer, IMG Inc.	
Period of Evaluation	25/1/2009 – 11/2/2009	Type of Evaluation: Ex-post

3.PROJECT PERFORMANCE

3-1. Performance of Project Purpose

According to the Project Design Matrix (PDM), the performance indicators for the Project Purpose were set as the “number and quality of results produced by laboratory system”, “number of laboratory staff trained for HIV/AIDS and tuberculosis”, “performance of peripheral laboratories on quality assurance tests” and “amount of information disseminated to stakeholders”. The Ex-Post Evaluation Team confirmed that the laboratory services offered at the UTH for the diagnosing of HIV/AIDS and tuberculosis had been improved in number and variety. The Team also confirmed the availability nationwide of HIV rapid tests, the transferring of CD4 counting techniques to provincial laboratories and the establishment of external quality assurance systems for tuberculosis sputum smear testing in Lusaka Province. The remaining tasks at the time of Project completion were to apply these achievements in HIV/AIDS testing to lower level laboratories and those achievements in tuberculosis to provinces other than Lusaka Province. However, apart from the regular reporting of the results to the clinical departments and the sharing of quality assurance activities between laboratories, the utilisation of laboratory information seemed to be limited due to the fact that it was not clear what information should have been shared with whom and what goals should have been achieved. Therefore, in reference to the Project Purpose of “strengthening laboratory systems and utilising them effectively for HIV/AIDS and tuberculosis control in the Republic of Zambia”, the Ex-Post Evaluation Team concludes that the laboratory systems were strengthened considerably, whereas the degree of their utilisation was deemed to difficult to measure objectively.

3-2. Achievement related to Overall Goal

“Prevalence of HIV infections”, “cure rate of tuberculosis cases” and “tuberculosis case detection rate” were adopted as the performance indicators of the Overall Goal in the PDM. Improvements were yet to be observed in these indicators at the time of the Ex-Post Evaluation. Moreover, the assumption that the indicators of HIV prevalence and tuberculosis cure rate could be improved as a consequence of achieving the Project Purpose was not logically sound due to the existence of multiple confounding factors. Consequently, the Ex-Post Evaluation Team adopted a new Overall Goal being that *the HIV/AIDS and tuberculosis morbidity patterns are clarified through accumulated laboratory data, and such information is reflected in the national health policy*, thus allowing for the assessment of the long-term consequence of the Project. The performance indicators adopted for the new Overall Goal are: (1) the types and quantity of laboratory information collected and analysed at the national level; and (2) policy documents which reflect the result of said analysis. For the former indicator, the Health Management Information System (HMIS) at the MoH has potential for incorporating laboratory data collection, but actual implementation has, as of yet, not taken place. For the latter indicator, the Team was not able to identify any policy documents which reflected the systematic collection and analysis of laboratory information. As a result, the new Overall Goal was assessed to have not been achieved as of yet.

3-3. Follow-up of the Recommendations by Terminal Evaluation Study

The Terminal Evaluation Study recommended “to allocate an adequate number of technical staff to the laboratory” and “to allocate an adequate amount of resources by the government to the UTH”. These recommendations have not been met due to the fact that the governmental budget is still highly dependent on external funding agencies. The Study also recommended “to develop a nationwide quality assurance for HIV diagnosis” and “to complete the review of the standard operation procedures”, which are still in the design phase at the MoH due to a limited capacity for responding to the rapid increase in the number of voluntary counselling and testing (VCT) facilities across the country. Another recommendation was “to integrate the laboratory data into HMIS”. HMIS was just upgraded to a new version in December 2008 in order to incorporate more issues relevant to the health of Zambian people. Although the new HMIS is designed to have some type of laboratory data integration specifying which diagnosis has laboratory confirmation, the results of the data collection remain to be observed. Another recommendation was “to strengthen laboratory equipment maintenance”. Though training of the Bioengineering Department at the UTH was attempted in order to maintain the laboratory equipment, the staff attrition rate of the Department made it impossible to perform regular inspections. The final recommendation was “to complete, analyse and publicise the operational research”. This research was completed by the Zambian personnel in charge and a former Project Expert, and the results were presented to the interested parties.

4. Results of Evaluation

4-1. Summary of Evaluation Results

(1) Relevance

HIV prevalence is still just as high at 14% (2007, Zambia Demographic and Health Survey), tuberculosis incidence is estimated to be 553/100,000 population (2006, WHO Global Tuberculosis Control), and the needs of the society remain high. Management of double-infection cases is of greater concern now more than ever. The National Health Strategic Plan 2006-2010 gives priority to the control of these diseases. Therefore, it can be said that the Project is highly relevant to the national health development programme as well as to the needs of the country. It also fits the purpose of supporting the UTH laboratory since it is the national reference laboratory in HIV/AIDS diagnosis, and at the same time, the regional laboratory covering multiple provinces for tuberculosis diagnosis.

(2) Effectiveness

The laboratory services offered at the UTH were improved, HIV rapid tests and CD4 counting were made available on a wider scale, and external quality assurance for tuberculosis sputum testing in Lusaka Province was established. However, the utilisation of laboratory information seemed to be limited due to the fact that it was not clear what information should have been shared with whom and what goal should have been achieved.

Therefore, in reference to the Project Purpose of “strengthening laboratory systems and utilising them effectively for HIV/AIDS and tuberculosis control in the Republic of Zambia”, the Ex-Post Evaluation Team concludes that the laboratory systems were strengthened considerably whereas the degree of their utilisation was deemed to be difficult to measure objectively.

(3) Efficiency

The Team confirmed that the dispatched experts in HIV/AIDS and tuberculosis achieved the expected outcomes in general. The Team observed that major equipment, such as the DNA sequencer, were maintained and used appropriately. Eight staff members were confirmed to still be active in the UTH Laboratory Services out of the fourteen persons from the UTH who had participated in the counterpart training in Japan. It was observed that they were successfully applying what they had learned during the training.

(4) Impact

The Team set a new Overall Goal of “the HIV/AIDS and tuberculosis morbidity patterns are clarified through accumulated laboratory data, and such information is reflected in the national health policy” with its performance indicators being “the types and quantity of laboratory information collected and analysed at the national level” and “policy documents which reflect the results of said analysis”. At the time of the Ex-Post Evaluation, the framework for laboratory data collection and analysis had not been established, and the new Overall Goal has yet to be achieved.

The team confirmed one considerable outcome of the Project in terms of geographical impact; the external quality assurance activities for tuberculosis sputum tests had been applied from the Project’s target area to the national level as a result of ongoing collaboration between the UTH and the other two supervisory laboratories.

(5) Sustainability

Preventing the spread of HIV/AIDS and tuberculosis is emphasised in the National Health Development Strategy 2006-2010 and is also one of the major targets of the leading international authorities including the WHO, which in itself assures the policy sustainability of maintaining laboratory diagnostic functions at the UTH. Technical sustainability was also observed through the consistent performance in a number of laboratory tests in both the Virology and Tuberculosis Units at the UTH Laboratory Services. However, vacant positions of laboratory staff have not been filled, and the UTH Laboratory Services is facing a serious human resource shortage. The majority of material supplies to the Laboratory Services still depend on international funding sources. There is limited regular maintenance of equipment apart from the particularly expensive pieces for which the maintenance is outsourced to a private company with funds from international partners. In summary, UTH’s total capacity to offer laboratory services and to keep its role as the HIV/AIDS and tuberculosis diagnostic centre is still dependent on external support, and a long-term blueprint needs to be designed by the government.

4-2. Factors that have promoted the project

(1) Impact

The ability of the UTH laboratory staff, the relevant contents of the guidelines, the success of the operation in the pilot area during the implementation of the Project, the leadership of the MoH and the support from external funding agencies have all contributed to the application of the external quality assurance of tuberculosis testing from the Project’s target area to the national level.

(2) Sustainability

The technical transfers between laboratory technicians within a facility, the maintaining of laboratory staff’s morale for serving the needs of society, and the acceptable working condition of the majority of equipment have contributed to the technical sustainability of the UTH Laboratory Services.

4-3. Factors that have inhibited project

(1) Impact

The laboratory has not been given a priority in traditional health programmes, both domestically and internationally, as compared to widely recognised issues such as child health, maternal health and vaccination.

It is difficult to maintain the means for human and material transportation, as well as communication between distant laboratories, without external funding.

(2) Sustainability

Vacant positions of laboratory staff have not been filled, and the UTH is facing a serious human resource shortage. This puts UTH's sustainability in jeopardy; however, this is beyond UTH's control and requires attention from higher authorities.

4-4. Conclusions

In regards to the achievement of the Project Purpose of "strengthening laboratory systems and utilising them effectively for HIV/AIDS and tuberculosis control in the Republic of Zambia", the Ex-Post Evaluation Team has concluded that the laboratory systems have been strengthened considerably whereas the degree of their utilisation was deemed to be difficult to measure objectively.

Improvements in the performance indicators for the Overall Goal were yet to be observed, and the Team considered that the assumption that the indicators of HIV prevalence and tuberculosis cure rate could be improved as a consequence of achieving the Project Purpose was not logically sound due to the existence of multiple confounding factors. The Team therefore set a new Overall Goal of "the HIV/AIDS and tuberculosis morbidity patterns are clarified through accumulated laboratory data, and such information is reflected in the national health policy" with its performance indicators being "the types and quantity of laboratory information collected and analysed at the national level" and "policy documents which reflect the results of said analysis". At the time of the Ex-Post Evaluation, the Team could not identify established frameworks for systematic laboratory data collection and analysis, and the new Overall Goal was assessed to have yet to be achieved.

A geographical impact was observed; the external quality assurance activities of tuberculosis sputum test had been applied from the Project's target area to the national level as a result of ongoing collaboration between the UTH and the other two supervisory laboratories.

Although the maintained laboratory services demonstrated the UTH's technical sustainability, the UTH was facing a serious human resource shortage, and financing was still dependent on external support, which put the organisational and financial sustainability in jeopardy.

4-5. Recommendations

Effective utilization of laboratory information is indispensable to enhancing the understanding of the essential nature of diseases at the national level. The Ex-Post Evaluation Team suggested that the utilisation roles of the information, such as in laboratory quality assurance, disease surveillance or epidemiological survey for vaccine development, should firstly be specified, then a proper framework of laboratory data collection and analysis should be designed based thereon. The HMIS of the MoH has potential for playing a central role in this framework.

The Team also recommended the continuation of the current quality assurance activities for tuberculosis testing and collaboration with the Laboratory Unit of the MoH in order to expand quality assurance for HIV rapid tests. The goal should be to offer more reliable laboratory diagnostic services at provincial, district and health centre levels.

4-6. Lessons Learned

For the case of the counterpart organisation facing human resource shortages and their staff being unable to concentrate on the project activities, the project should consider expanding its focus from a single counterpart organisation to multiple organisations, just as this Project expanded collaboration from UTH to provincial and district health facilities.

On the selection of which technology is to be transferred, careful considerations should be made concerning such matters as the cost of introduction and maintenance, the needs of the society, the expected performance of the technology and the estimated impact on the target population.

A goal that can be logically achieved as a result of the Project Purpose within a time frame of three to five years after the completion of the project should be determined as the Overall Goal.