

**TERMINAL EVALUATION REPORT
ON JAPANESE TECHNICAL COOPERATION
FOR
THE MAJOR INFECTIOUS DISEASES CONTROL PROJECT
IN MYANMAR
[HIV/AIDS]**

29 July 2009

JAPAN INTERNATIONAL COOPERATION AGENCY, JAPAN

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1. Implementation Process and Achievement

1.1 Inputs

1.1.1 Japanese side

(1) Dispatch of Experts

8 experts were dispatched as long-term experts while 16 were dispatched as short-term experts. (See Annex 2)

(2) Provision of Equipment

The Japanese side provided facilities and equipment worth of 31 thousand US dollars in total for DOH, and 1,351 thousand US dollars for HIV/AIDS (NAP, NBC, NHL) as of the end of JFY 2008. See Annex 3.

Extra equipment for Cyclone relief (530 thousand US\$) and national TB prevalence survey (114 thousand US\$) are included in the above.

(3) Local Cost Support

Total amount of local operation expenses born by the Japanese side as of the end of JFY2008 was 298 thousand US dollars as overhead cost and 168 thousand US dollars for HIV/AIDS related activities. Expense by year was as follows. (See Annex 4.)

Project management cost included employment of local staff members, expenses for communication, office supplies, office consumables, transportation and equipment maintenance.

Unit: US\$

Year	JFY2004 Jan- Mar	JFY2005	JFY2006	JFY2007	JFY2008	Total
For project management	29,330	38,763	40,058	86,665	103,377	298,193
For HIV/AIDS control	16,032	30,914	37,536	32,738	50,793	168,014

JFY: Japanese Fiscal Year (from April to March of the next year)

(4) Counterpart Training in Japan and in Thailand

In total, nine (9) HIV/AIDS related counterparts and five (5) three-diseases related counterparts participated in trainings in Japan. HIV/AIDS related trainings were on the topics of advanced laboratory technology for care and management of HIV, sexual transmitted diseases control of AIDS and ATL, consultative meeting on infectious diseases and communicable disease control, while three-diseases related trainings were on the topics of communicable diseases control and consultative meeting on infectious diseases control. (See Annex 6.)

The trainings on program management for AIDS/STD Team Leaders were conducted in collaboration with HIV Regional Coordination Center (RCC) Project in Thailand in 2005, 2006 and 2007. In total 46 HIV/AIDS related health staff members including AIDS/STD Team Leaders, Assistant Directors of DOH, Divisional Officers and State Health Officers of NAP participated.

1.1.2 Myanmar side

(1) Assignment of counterpart personnel

A total of 15 key counterparts including 10 high officials for overseeing three-diseases, two program managers from NAP, two directors from NHL and one officer in charge from NBC were assigned. (See Annex 5.)

(2) Provision of facilities

Myanmar side provided office spaces for Japanese experts, except for a project administration office after November 2008.

(3) Local cost support

Local operation expenses for utilities in offices such as electricity and telephone were born by the Myanmar side.

1.2 Activities

PDM as of May 2009

Activities	Inputs from Japanese side	Inputs from Myanmar side	Important Assumptions
1.1 Upgrade blood donor registration system.	- Long term expert	- National AIDS Program Office	- Sufficient HIV test kit is supplied.
1.2 Enhance blood donor deferral.	- Short term expert	- Running costs	- Necessary local human resource is placed for the project by counterpart.
1.3 Educate blood donor and the relevant people.	- Office assistants	- Office supply	- Fund is available for NAP.
1.4 Improve the facility on blood safety.	- Operational assistants		
2.1 Train laboratory technician on quality assurance of HIV testing.	- Equipment		
2.2 Strengthen external quality assurance of HIV testing.	- Facility		
3.1 Train AIDS/STD team leaders.	- Training		
3.2 Support implementation of small scale projects designed by team leaders.			
3.3 Share the experiences/lessons learnt of small scale projects with other team leaders.			

Most of the activities were successfully carried out through the efforts of Myanmar counterparts and Japanese experts, in spite of some obstacles such as the Cyclone Nargis in 2008. (See Annex 9: Major Activities and their Achievement.)

1.3 Outputs

1.3.1 Achievement of Output 1

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 1 Blood safety for HIV is enhanced.	1.1 Number of blood centers adopting blood donor deferral.	- Blood bank data - HIV sentinel sero-surveillance - KAP survey - Project report	

(1) Indicator 1.1: Number of blood centers adopting blood donor deferral.

- 1) The procedures of the blood donor deferral were standardized, and the questionnaire developed by NBC and the Project has been properly used through the systematic supervision conducted by NBC with the assistance of the Project.
- 2) In total, 152 hospitals have introduced the standardized blood donor deferral as shown below. See Annex 9 "Major Activities and their Achievement" for details.

Year	2005	2006	2007	2008	2009	Total
No. of hospitals	31	20	35	51	15	152
Places	State/Division Hospitals	Township Hospitals				31 State/Division Hospitals and 121 Township Hospitals in 11 States/Divisions
		Yangon Ayeyarwaddy	Mandalay Kachin Magway	Mon Kayin Shan East Shan South Shan North	Tanintahyi	

- 3) Introduction of the standardized blood donor deferral was started from high priority areas according to the prevalence of HIV and amount of blood use.
- 4) In terms of the number of State/Division Hospitals, all of the 31 State/Division Hospitals including 7 major General Hospitals have introduced the standardized blood donor deferral questionnaire.
- 5) Concerning the number of States and Divisions, 11 out of 17 States and Divisions have introduced the standardized blood donor deferral. One more State plans to introduce the blood donor deferral by the end of the Project, therefore the coverage of the blood donor deferral would be 12 States and Divisions out of 17.
- 6) Total population of 11 States and Divisions covered by the 152 hospitals employing the standardized blood donor deferral was 40,363,465 as shown in the table below. Since the total national population was 55,513,149 in 2007, the population coverage of the standardized blood donor deferral was 73% as of July 2009.

State/Division	Population	State/Division	Population
Kachin	1,368,159	Mandalay	7,707,288
Kayin	1,770,673	Magway	5,187,036
Mon	2,799,217	Ayeyarwaddy	7,737,118
Shan East	848,293	Yangon	6,322,232
Shan South	2,210,733	Tanintahyi	1,586,649
Shan North	2,826,067	Total	40,363,465

Source: Medical Care Division, DOH, 2007

1.3.2 Achievement of Output 2

PDM as of May 2009

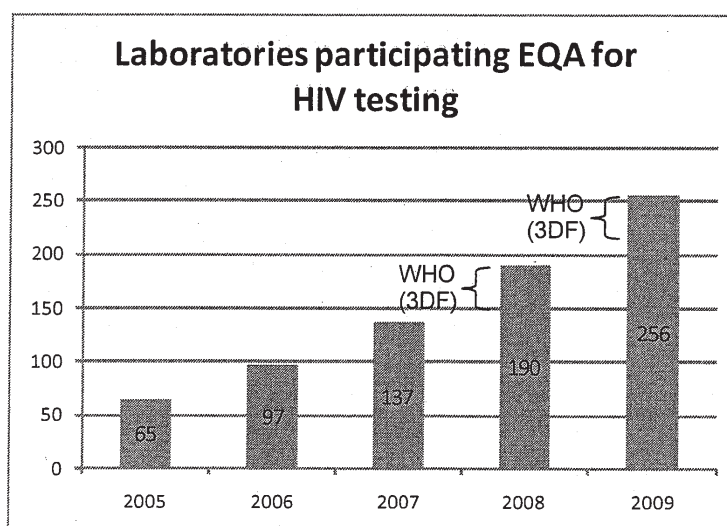
Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 2 Quality Assurance of HIV test is improved.	2.1 Number of laboratories under external quality assurance program. 2.2 Quality of supervisory visits is improved.	- Blood bank data - HIV sentinel sero-surveillance - KAP survey - Project report	

(1) Indicator 2.1: Number of laboratories under external quality assurance program.

- 1) EQA (External Quality Assessment) was introduced by the Project and has been carried out by NHL according to the standard proficiency testing schemes with the technical and financial assistance of the Project. The performance of the participating laboratories was judged in accordance with the "HIV Testing Strategy" of WHO.
- 2) The number of laboratories participating EQA has been constantly increasing from zero to 256 as of July 2009. This covers 65% of the laboratories for blood safety (estimated 75% of annual blood consumption in the country), 82% for PMCT and 93% for VCCT. WHO started assisting the trainings for NHL to extend EQA from 2008 using the fund of 3DF. Therefore, the number of laboratories participating EQA since 2008 includes the contribution made by WHO. (See Annex 9: Major Activities and their Achievement.)

Laboratories participating EQA for HIV testing										
	2004	2005		2006		2007		2008		2009
	--	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7	Panel 8	Panel 9
Public hospitals' laboratories	0	30	30	57	57	85	85	137	137	189
AIDS/STD control team laboratories	0	35	35	38	38	39	39	39	39	39
INGO laboratories	0	0	0	2	2	13	13	14	14	28
Total	0	65	65	97	97	137	137	190	190	256

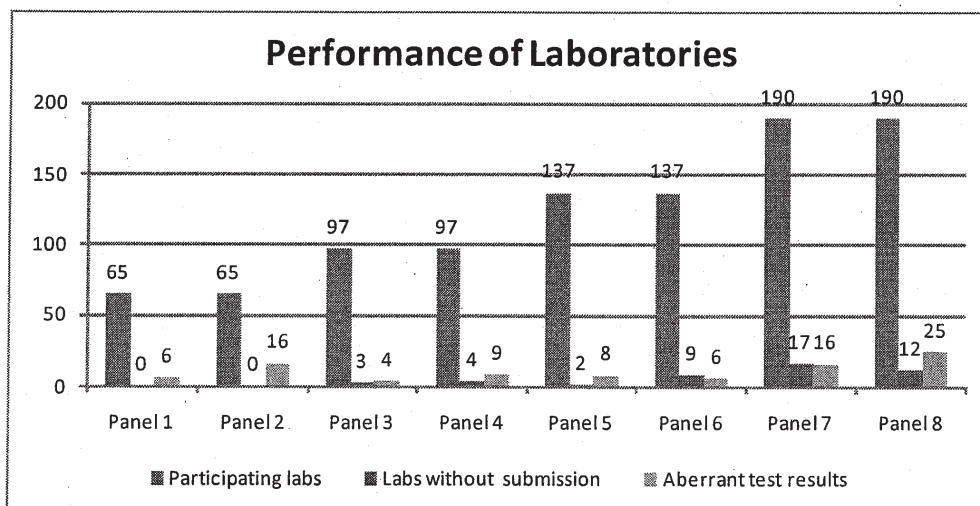
Source: NHL



- 3) As shown in the table below, the number of laboratories without submission of test results has been fluctuating at around 5% (from 0% to 9%). The number of aberrant test results has been fluctuating at around 10% (from 4% to 14%). Aberrant test result of panel 2 in 2005 was exceptionally high (25%). This was mainly due to the weak positive sample inclusion in the 2nd panel, as well as the turnover of laboratory staff. Correlative relationships are not observed between the total number of laboratories participating EQA and the number of laboratories without submission of test results and aberrant test results.

	2005		2006		2007		2008	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7	Panel 8
Laboratories participating EQA	65	65	97	97	137	137	190	190
Laboratories without submission of test results	0 (0%)	0 (0%)	3 (3%)	4 (4%)	2 (1%)	9 (7%)	17 (9%)	12 (6%)
Aberrant test results	6 (9%)	16 (25%)	4 (4%)	9 (10%)	8 (6%)	6 (9%)	16 (9%)	25 (14%)

Source: NHL



(2) Indicator 2.2: Quality of supervisory visits is improved.

- 1) During the project period, 66 out of 190 EQA participating laboratories have been supervised. Laboratories with poor performance have been given high priority for supervision, and other laboratories near the ones with high-priority also received supervision, to further improve their performance.
- 2) Contents of supervisory visit has been standardized with a work flowchart, checklist and laboratory register format. Recommendations made by the supervisors were documented mostly by laboratory technicians.
- 3) Hands-on trainings during the supervisory visits and refresher trainings after supervision were conducted when deemed necessary.
- 4) As a result of supervisory visits, aberrant test results were decreased in 19 laboratories out of 25 laboratories supervised with high priority, or 76% (19/25) of supervised laboratories made improvement.

1.3.3 Achievement of Output 3

PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 3 Capacity of National AIDS Program is improved.	3.1 Number of trained staff 3.2 Cases of improved routine works and performance	- Blood bank data - HIV sentinel sero-surveillance - KAP survey - Project report	

(1) Indicator 3.1: Number of trained staff

- 1) TOT (training of trainer) courses on program management were conducted in Thailand in collaboration with HIV Regional Coordination Center (RCC) Project in 2005, 2006 and 2007.

A total of 46 participants from 16 States and Divisions participated in the trainings. Participants included Assistant Directors, AIDS/STD Team Leaders, State/Division Health Officers and Health Directors covering almost all key persons in the country. As of now, 35 out of 46 participants stay in their work places relating to HIV/AIDS control.

- 2) In-country multiplier training was held in 2005 as a continuation of TOT from RCC, in which 27 Medical Officers and AIDS/STD Team Leaders participated. Those who received the training in Thailand shared their newly acquired knowledge and skills as lectures with the participants.
- 3) Pre-service training for newly recruited staff was carried out in 2008 with the recommendation of the Project, in which 29 participants participated, covering all the newly assigned NAP staff including AIDS/STD Team Leaders, Health Assistants and nurses. Since the human resource shortage is a serious issue for NAP, the pre-service training is highly significant.

(2) Indicator 3.2: Cases of improved routine works and performance

- 1) The Project has been supporting proposal-based small-scale projects, and one of the proposals made by the AIDS/STD Team Leader in North Okkalapa Township was selected and implemented with the financial support of the Project. The study result of the project was presented at Myanmar Health Research Congress 2008 and awarded the prize for the 2nd best presentation. It is also planned that NAP staff will make a presentation at ICAAP (International Congress on AIDS in Asia and the Pacific) in Bali, Indonesia in 2009.
- 2) Routine work of HIV/AIDS control activities in Townships has been strengthened through the supervisory visits made by the State/Division AIDS/STD Officers. In 2008, 71 out of the total of 325 townships were visited and supervised. 77% of the planned supervisory visit was implemented in 2008.
- 3) Coordination and cooperation among NAP, NHL and NBC has been improved through the activities of the Project. Specifically, participating in HIV test kit coordination meeting quarterly, three parties coordinate the effective distribution and use of test kits among them. Furthermore, NHL and NBC sometimes make joint supervisory visits to townships for strengthening laboratories with viewpoints from both blood safety and EQA.

1.4 Project Purpose and Overall Goal

1.4.1 Achievement of Project Purpose

PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Project Purpose National AIDS Program is strengthened.	HIV prevalence of blood donor < 0.5%	- Blood bank data - HIV sentinel sero-surveillance	Efforts of various donors and implementing partners are effectively coordinated.

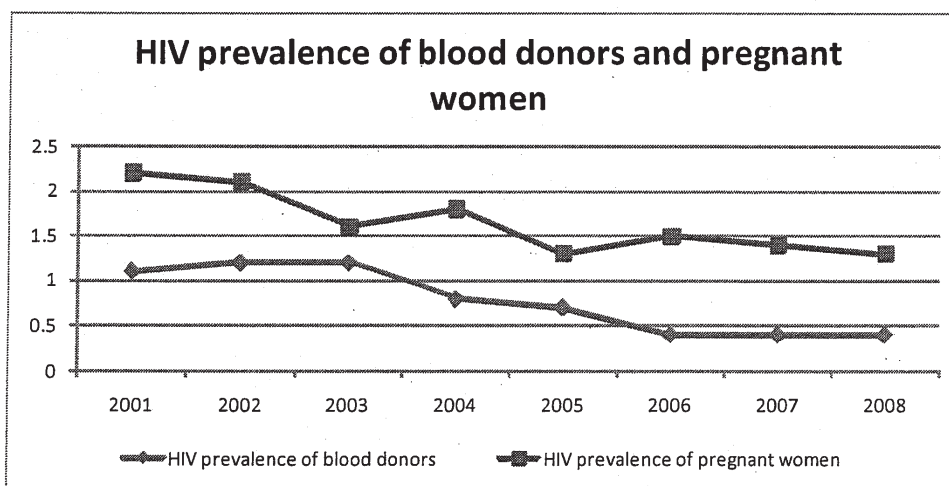
- 1) HIV prevalence of blood donors has been 0.4% as shown in the table below. Therefore, the target of the Project Purpose (< 0.5%) was achieved.

Unit: %

HIV prevalence of blood donors and pregnant women								
	2001	2002	2003	2004	2005	2006	2007	2008
HIV prevalence of blood donors	1.1	1.2	1.2	0.8	0.7	0.4	0.4	0.4
HIV prevalence of pregnant women	2.2	2.1	1.6	1.8	1.3	1.5	1.4	1.3

Source: Report of the HIV Sentinel Sero-surveillance Survey 2008 Myanmar, NAP, March 2009

- 2) Taking the HIV prevalence of pregnant women as a comparison group representing the prevalence of general population, HIV prevalence of blood donors is notably low as shown below. HIV prevalence of blood donor decreased by 0.8% from 1.2% in 2003 to 0.4% in 2008, while the decrease of HIV prevalence among pregnant women was only 0.3% in the same period of time. Therefore, the decrease of HIV prevalence among blood donors can be attributed to the intervention of the Project.



- 3) Looking into each hospital of seven major General Hospitals, the target of the Project Purpose (< 0.5%) was achieved in Yangon, Mandalay, Taunggyi and Mawlamyine, but not achieved in Patheingyi, Myitkyina and Magway as shown in the table below.
- 4) Taking the average of 7 States'/Divisions' HIV prevalence of blood donors weighted with population,

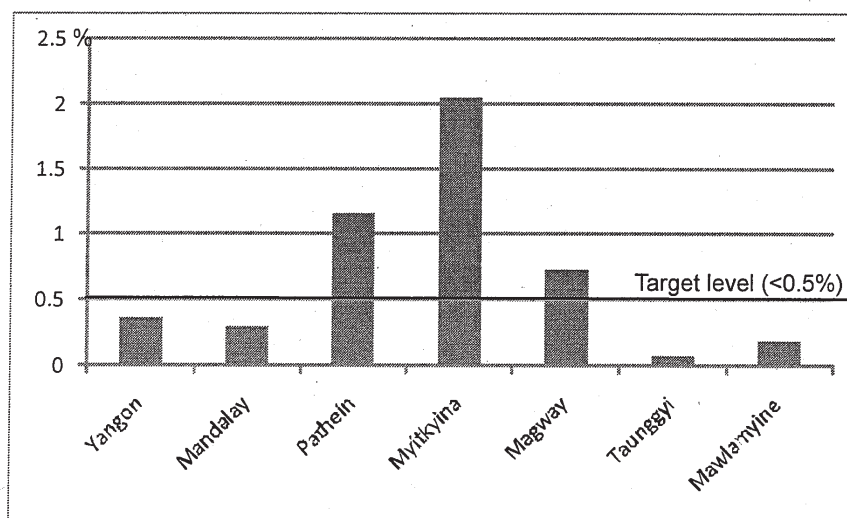
the Project Purpose (< 0.5%) was achieved with the weighted average of 0.45% in 2008.

Unit: %

HIV prevalence of blood donors in 7 major General Hospitals				
Hospitals	2005	2006	2007	2008
Yangon	0.62	0.54	0.52	0.36
Mandalay	0.6	0.50	0.40	0.30
Patheingyi	1.34	1.08	0.82	1.16
Myittha	2.52	1.56	1.56	2.05
Magway	-	-	-	0.73
Taunggyi	-	-	-	0.08
Mawlamyine	-	-	-	0.19
Weighted Average	-	-	-	0.45

Source: NBC

- 5) The achievement of the target in Taunggyi and Mawlamyine cannot be evaluated as an attribution of the Project since data is available only for 2008.
- 6) The HIV prevalence of blood donors in Yangon and Mandalay shows a descending trend but not in the other areas.
- 7) Since the prevalence in Patheingyi and Myittha is exceptionally high, it is expected to carry out a more detail investigation to identify the causes behind to come up with effective intervention.



1.4.2 Achievement of Overall Goal

PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal HIV transmission is reduced nationwide.	1.1 Adult (15-49) HIV prevalence shows a downward trend. 1.2 HIV prevalence of blood donor keeps < 0.5%.	- HIV sentinel sero-surveillance - NAP Report - NBC data	

(1) Indicator 1.1: Adult (15-49) HIV prevalence shows a downward trend

While the data of adult HIV prevalence has been accumulated, total volume of data is not enough to predict the future trend. Therefore, it is too early to evaluate the achievement of the Indicator 1.1 of the Overall Goal, and the evaluation of it should be suspended to another occasion such as an ex-post evaluation.

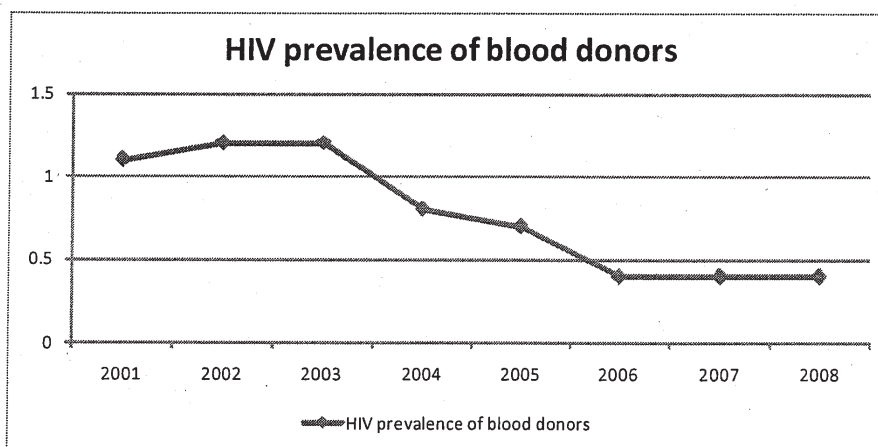
(2) Indicator 1.2: HIV prevalence of blood donor keeps < 0.5%.

HIV prevalence of blood donors has stayed below 0.5% since 2006 as shown below. It is predicted, therefore, that the accomplishment of the Indicator 1.2 of the Overall Goal, is likely to be sustained in future.

Unit: %

	2001	2002	2003	2004	2005	2006	2007	2008
HIV prevalence of blood donors	1.1	1.2	1.2	0.8	0.7	0.4	0.4	0.4

Source: Report of the HIV Sentinel Sero-surveillance Survey 2008 Myanmar, NAP, March 2009



1.5 Implementation Process

(1) Standardized blood donor deferral (Output 1)

- 1) The Project firstly introduced the blood donor computer registration system in Yangon General Hospital. Verifying the efficiency and effectiveness of the system in Yangon, the Project gradually expanded the system to other General Hospitals according to the priority in terms of the prevalence of HIV, volume of blood transfusion and population. As of now, all the 7 major General Hospitals, located in Yangon, Mandalay, Ayeyarwady, Kachin, Mon, Shan South and Magway, have introduced the blood donor computer registration system.
- 2) For other hospitals including other General Hospitals and Township Hospitals, with fewer blood donors and/or unequipped with computers, manual registration format was introduced. The standardized blood donor registration, either computerized or manual, was introduced in 11 States and Divisions covering 73% of national population. (See 1.3.1 for details.)
- 3) Along with the standardized registration system, the questionnaire for blood donor deferral was also

introduced to 152 hospitals in 11 States and Divisions.

- 4) The standardized registration system and the questionnaire were developed with the collaboration of NBC, the Project and national specialists on HIV, hepatitis, syphilis and malaria. Thus the standardized registration system and the questionnaire, include information not only of HIV/AIDS but also of hepatitis, syphilis and malaria.

(2) HIV test kits supply (Output 2)

HIV test kits have been provided by the Project and WHO with the fund of 3DF. The Project has been providing HIV test kits (Determine and Serodia) which can be used without electricity considering unstable power supply in the country.

(3) National project staff

In the latter half of the Project period, a Japanese expert for HIV/AIDS was dispatched only on the short-term basis. In order to make up for the absence of the Japanese expert, the Project developed the capacity of a national project staff member who coordinated the activities under the supervision of the Project. She has made a considerable contribution to the Project, particularly for the coordination of stakeholders at the time of Cyclone Nargis in 2008 and for the smooth proceedings of administrative procedures.

2. Evaluation by Five Criteria

2.1 Relevance

Relevance of the Project is evaluated “**Very High**” from the following perspectives.

(1) Consistency with national health plans of Myanmar

- 1) “Millennium Development Goals: Myanmar,” which states long-term development targets of Myanmar, highlights HIV/AIDS as one of the main infectious diseases to be tackled as well as malaria and tuberculosis. Target 7 of MDG Myanmar is “Have halted by 2015 and begun to reverse the spread of HIV/AIDS.”
- 2) “National Health Plan 2006-2011,” which stipulates Myanmar government’s health strategies, ranks HIV/AIDS “as the first priority disease because of being accorded highest score on the basis of public health importance and political importance imparted to it and also on the consideration of potential socio-economic impact consequent to it.”
- 3) “National Health Plan 2006-2011” sets forth nine “Specific Objectives” on HIV/AIDS control, one of which is “to prevent transmission of HIV through hospital setting including blood transfusion.”
- 4) Targets set by the “National Health Plan 2006-2011” relating to the Project including HIV test, EQA and blood safety are as follows.

Impact/Outcome Targets	Baseline (2005)	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011
% of townships implementing HIV test with no stock out of HIV test kits	95%	100%	100%	100%	100%	100%
Proportion of HIV testing laboratories participating to NEQAS for HIV serology		25%	50%	75%	80%	85%
Proportion of transfused blood units screened for HIV	95.2% (2004)	100%	100%	100%	100%	100%

- 5) Outputs targeted in the “National Strategic Plan on HIV and AIDS 2006-2010” relating to the Project are as follows.

Outputs targeted in the “National Strategic Plan on HIV and AIDS 2006-2011”
Expansion of EQAS network for HIV serology to cover laboratories in public health sector as well as NGOs and private.
Blood transfusion services are reorganized according to the national policy.
A program for self-deferral of potential donors is in place.
All donated blood is screened for HIV.
Training of clinicians for the rational use of donated blood.
Internal and external quality control and assessment schemes for blood laboratories.

- (2) Consistency with Japanese ODA policy

“JICA Country-Specific Aid Implementation Plan for Myanmar (02.2007)” selects four major global issues, one of which is the infectious diseases control, along with environment, poverty and gender issues. Among infectious diseases control, high priority is given to HIV/AIDS, malaria, tuberculosis and avian influenza.

- (3) Consistency with the needs of target group

“National Strategic Plan on HIV and AIDS 2006-2010” explains the situation concerning HIV/AIDS as follows: “the Union of Myanmar has a population of 54.3 million. In 2004, a workshop organized by the National AIDS Programme, WHO and UNAIDS estimated that nearly 339,000 adults (15 to 49 years) were infected with HIV, representing 1.3% of population. Incidence of HIV is estimated to be around 25,000 newly acquired infections each year.” Since there has not been a drastic change of the situation, the needs for HIV/AIDS control of target group, namely the people of Myanmar, is still high.

- (4) The approach and methodology of the Project

- 1) Yangon and Mandalay are two large urban centers in Myanmar, and target areas of the Project including Yangon and Mandalay were selected according to the priority, i.e., HIV prevalence, volume of blood transfusion and population.
- 2) Although the “National Health Plan 2006-2011” and the “National Strategic Plan on HIV and AIDS 2006-2010” emphasize the significance of blood safety, the blood safety is an area that has received little support from other donors. Since the Project has filled this gap, the necessity of the Project was/is high.
- 3) Selection of the counterpart organizations was/is relevant because NAP is the key organization of HIV/AIDS control, and NHL and NBC main organizations for blood safety in Myanmar. Therefore the blood safety for HIV/AIDS control should be carried out in close coordination and

collaboration of these three organizations.

- 4) Japanese technical level of HIV/AIDS control is very high, and international technical cooperation projects have been implemented in a number of countries, including Thailand, Cambodia, Vietnam, Laos, to name a few nearby Myanmar. From the viewpoint of availability of technical expertise, the relevance of providing Japanese assistance on HIV/AIDS control in Myanmar has been very high.

2.2 Effectiveness

Effectiveness of the Project is evaluated “**High**” from the following perspectives.

- 1) According to the data of “Report of the HIV Sentinel Sero-surveillance Survey 2008 Myanmar, NAP, March 2009,” HIV prevalence of blood donors has descended to 0.4%, therefore the Project Purpose was achieved. The Project has contributed to it from the aspects as follows. (See 1.4.1 for details.)
- 2) Introducing and expanding the standardized blood donor deferral system to 11 States and Divisions, 73% of the national population is now under the blood donor deferral system. (See 1.3.1 for details.)
- 3) The capacity of laboratories for HIV testing has been highly improved through the newly introduced EQA schemes. (See 1.3.2 for details.)
- 4) The capacity of NAP staff has been improved through a variety of trainings such as TOT trainings in Thailand, counterpart trainings in Japan, in-country trainings and pre-service trainings. (See 1.3.3 for details.)
- 5) The achievement of the Project Purpose can be attributed to the Project, because the blood safety is an area that has received little support from other donors.
- 6) Looking into each hospital of seven major General Hospitals, the target of the Project Purpose was achieved in four hospitals but not in the rest of three hospitals. It is expected to carry out more detailed investigation to identify the causes behind in order to come up with further effective intervention.

2.3 Efficiency

Efficiency of the Project is evaluated “**High**” from the following perspective.

(1) Cost-efficient approach

- 1) Computers for blood donor registration were provided only to seven major General Hospitals. For other hospitals with fewer number of blood donors, a manual registration format was introduced and it has been functioning well.
- 2) Only the questionnaire was used for the standardized blood donor deferral, and it has been widely and effectively used in 152 hospitals covering 73% of national population.
- 3) HIV test kits provided by the Project were Determine and Serodia which can be used without electricity considering unstable power supply condition in the country.
- 4) TOT trainings were conducted in collaboration with RCC Project in Thailand as south-south cooperation, which made the trainings highly cost-efficient.

- 5) In the latter half of the Project period when there was no long-term Japanese expert, the Project conducted activities with a short-term expert, and a national project staff member making a considerable contribution to the effective and efficient implementation of the Project.

(2) Inputs from Japanese side

Most of the inputs from Japanese side such as dispatch of experts, trainings of counterparts in Japan and in Thailand, provision of equipment and local cost support were executed as planned. Myanmar counterparts highly evaluated the assignment timing, expertise and teaching capacity of Japanese experts. Myanmar counterparts were also mostly satisfied with contents, timing and duration of trainings. Equipment granted has been put to practical use as so intended.

(3) Inputs from Myanmar side

Myanmar side has assigned counterparts for implementing the project activities and ensuring the sustainability. While the human resource shortage has been a serious issue of NAP, with considerable efforts and commitments of Myanmar counterparts, no serious negative effects were brought about to the Project.

2.4 Impact

Impact of the Project is evaluated “**High**” from the following perspective.

(1) Achievement of Overall Goal

As stated above in 1.4.2, Indicators of Overall Goal are expected to be achieved with high possibility in near future.

(2) Other Impacts

1) Blood safety including other diseases

Since the standardized blood donor registration system and the questionnaire for blood donor deferral include information not only of HIV/AIDS but also of hepatitis B, hepatitis C, syphilis and malaria, these systems are used widely for “blood safety.”

2) Coordination and collaboration among NAP, NHL and NBC

Since NBC started participating HIV test kit coordination meetings in 2009 with the recommendation of the Project, three main players of blood safety, i.e., NAP, NHL and NBC now jointly participate in the meetings and enable the effective and efficient management and coordination of HIV test kit. Furthermore, NHL and NBC started joint supervision of laboratories in 2008 from the viewpoints of HIV testing and blood safety respectively, which allows them to share the information for improving the total capacity of laboratories.

2.5 Sustainability

Sustainability of the Project is evaluated “**Fair**” from the following perspective.

(1) Technical sustainability

Computer software for blood donor registration was developed through discussions among NBC, the Project, and a software company for making a system user-friendly and easy to maintain. Then, hospitals to be installed with computer system were carefully selected considering the availability of a maintenance company nearby. The questionnaire for blood donor deferral is made simple and inexpensive.

Technical transfer to Myanmar counterparts has been under steady progress and most of the training courses such as in-country trainings and pre-service trainings were organized and lectured by Myanmar counterparts.

(2) Institutional sustainability

Human resource shortage is still a serious issue of NAP. The vacancy of AIDS/STD team leaders, for example, is high with 10 vacant posts out of 45 sanctioned posts in total as of now.

(3) Financial sustainability

HIV test kits have been provided by the Project and WHO with the fund of 3DF after the withdrawal of Global Fund. Considering the termination of the Project, 3DF has increased the budget for covering the entire supply of test kits for another two years until the middle of 2011. However, the situation still remains unstable in the long future.

3. Recommendations

Within the project period:

To NAP, NBC and the Project

- (1) To carry out further investigation to identify the causes behind the exceptionally high HIV prevalence of blood donors in some hospitals in order to come up with further effective intervention. (See 1.4.1.(7))

Beyond completion of the project:

To NAP

- (2) To prepare the proposal for Global Fund Round 10 including the budget for HIV test kits. With the increase of the budget of 3DF, HIV test kits would be secured for another two years until the middle of 2011. However, the situation after 2011 still remains unstable. (See 2.5.(3))
- (3) To continue the efforts to tackle the problem of human resource shortage, through, for example, new recruitment, pre-service trainings for newly recruited staff, refresher training for the existing staff, strengthening supervision of AIDS/STD Teams by State/Division AIDS Officers, and regular review meetings. (See 2.5.(2))
- (4) To further involve seven States and Divisions AIDS officers in facilitating blood donor deferral in the hospitals where HIV test kits are distributed.

To NAP, NHL and NBC

- (5) To sustain and cover all HIV testing sites for quality performance of HIV testing by EQAS.
- (6) To create an information sharing system and conduct joint supervisory visit among NAP, NHL and NBC.

Information concerning blood safety obtained through the standardized blood donor registration system accumulated in NBC is considerably significant, because it could be used for making evidence based blood safety policy of MOH.

- (7) To make further efforts and commitments. Strategically focusing upon blood safety, the Project has made considerable outcomes accomplishing the Project Purpose and Outputs together with the highly possible achievement of the Overall Goal in near future. As for the remaining issues, there are still some hospitals with high HIV prevalence among blood donors, which requires further investigation and strengthening of institutional and financial sustainability.

4. Lessons Learned

(1) Indicators in PDM

Indicators in a PDM should be well elaborated quantitatively and qualitatively to serve to the effective and efficient management of the project. For this PDM, qualitative Indicators not included in the PDM, qualitative aspects of expected results of the Project have tended to be overlooked. Moreover, some indicators did not have quantitative target levels set. Indicators are expected to enable a project to monitor its progress and performance, thus to bring issues and problems to the surface and suggest solutions for proceeding to the next step.

(2) Technical and financial affordability

The Project made careful consideration for technical and financial affordability of counterparts. User-friendly and easy maintenance computer software for blood donor registration was developed through discussions among stakeholders. Hospitals to be installed with computer system were carefully selected considering the availability of a maintenance company nearby. The questionnaire for blood donor deferral was made simple and inexpensive. HIV test kits which can be used without electricity were provided considering unstable power supply conditions. For effective and efficient implementation of the project and for high sustainability, careful consideration of this sort of technical and financial affordability of counterparts is indispensable.

(3) National project staff

In order to make up for the absence period of a Japanese expert, the Project has developed capacity of a national project staff member, who coordinates the activities under the supervision of the Project. She made a considerable contribution to the Project, particularly for the coordination of stakeholders and for the smooth proceedings of administrative procedures. Capacity development of national project staff proved a notable contribution to the effective and efficient implementation of the Project.

**TERMINAL EVALUATION REPORT
ON JAPANESE TECHNICAL COOPERATION
FOR
THE MAJOR INFECTIOUS DISEASES CONTROL PROJECT
IN MYANMAR
[Tuberculosis]**

29 July 2009

JAPAN INTERNATIONAL COOPERATION AGENCY, JAPAN

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Evaluation of Tuberculosis

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1. Implementation Process and Achievement

1.1 Inputs

1.1.2 Inputs by the Japanese side

(1) Dispatch of Experts

7 experts were dispatched as long-term experts while 22 were dispatched as short-term experts. (See Annex 2.)

(2) Provision of Equipment

Japanese side has provided necessary equipment such as microscopes, portable X-ray units, automatic X-ray processors and a vehicle. Total amount of expenses for equipment for DOH was 31 thousand US\$ and for NTP was 894 thousand US\$ as of the end of JFY 2008. (See Annex 3.)

Extra equipment for Cyclone relief (530 thousand US\$) and national TB prevalence survey (114 thousand US\$) in 2008 are included in the above.

(3) Local Cost Support

Total amount of local operation expenses borne by the Japanese side as of the end of JFY2008 was 298 thousand US\$ for project management and 353 thousand US\$ for TB related activities. Expense by year was as follows. (See Annex 4.)

Project management cost was for employment of local staff, communication, office supplies, office consumables, transportation and equipment maintenance.

Unit: US\$

Year	JFY2004 Jan- Mar	JFY2005	JFY2006	JFY2007	JFY2008	Total
For project management	29,330	38,763	40,058	86,665	103,377	298,193
For TB control	28,693	64,006	95,367	54,165	110,286	352,517

JFY: Japanese Fiscal Year (from April to March of the next year)

(4) Counterparts Training in Japan

6 TB related counterparts and 5 three-diseases related counterparts participated in trainings in Japan on the topics of Stop TB Action, TB laboratory network for DOTS expansion and communicable disease control. (See Annex 6.)

1.1.3 Inputs by the Myanmar side

(1) Assignment of counterpart personnel

A total of 12 key counterparts including 10 high officials for overseeing three-diseases and two (2) program managers for TB were assigned. (See Annex 5.)

(2) Provision of facilities

Myanmar side provided office spaces for Japanese experts excluding a project administration office after November 2008.

(3) Local Cost Support

Local operation expenses for utilities in offices such as electricity and telephone were borne by the Myanmar side.

1.2 Activities

PDM as of May 2009

Activities	Inputs from Japanese side	Inputs from Myanmar side	Important Assumptions
1.1 Improve NTP facilities for program management, training, and data analysis.	- Long term expert	- Project office facilities	
1.2 Develop new district TB management modules.	- Short term expert	- NTP officers	
1.3 Carry out operational researches.	- Recruitment of the National Consultant	- Necessary supply	
2.1 Conduct laboratory training.	- Recruitment of an Assistant for the National Consultant		
2.2 Monitor QC of the smear examination for newly established TB laboratories.	- Equipment for program management and data analysis (computers for Information Section of NTP, Divisional, and District TB Offices)		
3.1 Conduct divisional TB assessment meeting (DOTS conference) regularly.	- Supplies and equipment for training		
3.2 Carry out supervision in the two divisions.	- Laboratory equipment and supplies		
4.1 Train and advocate General Practitioners (GP).	- Pick-up (e.g. Hilux) for supervision in two Divisions		
4.2 Monitor and follow up the GP.	- Local cost for data collection and assessment		Pre-conditions
5.1 Develop IEC materials and conduct advocacy events to raise awareness on TB.	- Production cost for training modules, IEC materials		- Arrangement between the Government of Myanmar and JICA obtained.
5.2 Develop and distribute manuals and guidelines for health staff and handbooks for TB patients.	- Local cost for advocacy events, meeting, and training		
	- TA&DA for supervision in two Divisions		
	- C/P training in Japan (e.g. RIT)		
	- Attendance at International conference on TB (e.g. IUATLD conference)		

Most of the activities were successfully carried out through the efforts of Myanmar counterparts and Japanese experts, in spite of some obstacles such as the Cyclone Nargis in 2008. (See Annex 9: Major Activities and their Achievements.)

1.3 Outputs

1.3.1 Achievement of Output 1

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 1 Capacity for program management and epidemiological data management for TB control is strengthened.	1.1 Quality of NTP facility and developed publication.	1.1 Facility observation 1.2 NTP publication	1. Drug supply maintained. 2. Vacant laboratory technicians posts filled. 3. HIV prevalence remains stable.

(1) Indicator 1.1: Quality of NTP facility and developed publication

- 1) Quality of facilities of NTP, NTRL and TB centers has been improved through, for example, renovations of conference rooms and water supply system, and provision of computers and office equipment. (See Annex 9: Major Activities and their Achievements.)
- 2) Capacity of NTP staff at central and local level for program management and epidemiological data management has been developed through TB prevalence survey in Yangon and in Mandalay in 2006. And, prior to and along with the prevalence survey, the Project offered a variety of training programs and On-the-Job-Trainings through the operational researches such as research methodology trainings for TB team leaders, operational research on EQA vs. conventional method using for laboratory QC, delay analysis among new S+ patients, TB screening for factory workers and qualitative research on factors relating to defaulting from TB treatment. (See Annex 9: Major Activities and their Achievements.)
- 3) As a result of these capacity development stated above, NTP staff have made a number of presentations in international conferences like "WHO DOTS Expansion Working Group Meeting" in 2005 and a series of IUATLD Conferences. And also, a wide variety of publications such as Laboratory Guidebook, Quality Smear Preparation for AFB Microscopy in Myanmar and English, PPP Guidebook, TB Patient Care Book, National Guidelines on EQA-LQAS for AFB Microscopy in Myanmar and English were published. (See Annex 9: Major Activities and their Achievements.)

1.3.2 Achievement of Output 2

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 2 TB laboratory services are improved.	2.1 Frequency of training. 2.2 Quantity of supplies and equipment. 2.3 No and QC of newly established diagnostic centers.	2.1 Project record 2.2 Project record 2.3 Lab proficiency testing, and QC results	1. Drug supply maintained. 2. Vacant laboratory technicians posts filled. 3. HIV prevalence remains stable.

(1) Indicator 2.1: Frequency of training

- 1) Trainings and workshops were conducted on laboratory services such as new-recruit training, refresher training, EQA training and EQA workshops. (See Annex 9: Major Activities and their Achievements.) In total, 21 senior TB laboratory supervisors and 73 newly recruited laboratory technicians have participated in these training courses.
- 2) Improvement of knowledge and skills of training participants were measured by comparing the

results of pre-test and post-test. The table shown below is an example of the pre/post test results obtained from the training of EQA for sputum AFB microscopy in June 2009. The results of these comparisons show the improvement of knowledge and skills of laboratory staff.

No	Name	Designation	Pre-test	Post-test
1	A	Medical Technician	22.5	62
2	B	Laboratory Officer	32	78.5
3	C	Medical Technician	19.5	79.5
4	D	Grade II Technician	6.5	26.5
5	E	Medical Technician	22.5	68
6	F	Medical Technician	64	80.5
7	G	Medical Technician	14	74.5
8	H	Grade I Technician	67	86.5
9	I	Laboratory Officer	10.5	60.5
10	J	Medical Technician	57	66.5
Average			30.95	68.3

Source: National TB Reference Laboratory, NTP

- 3) Annual laboratory evaluation meeting has been held every year since 2006. In this meeting, performance indicators of TB and technical and administrative issues of TB laboratories are discussed. Measures to be taken for improving the situation such as supervisions and trainings have been withdrawn from these discussions and implemented by the Project.
- (2) Indicator 2.2: Quantity of supplies and equipment
- 1) Supplies and equipment such as microscopes, glasses and reagents were provided by the Project. (See Annex 9: Major Activities and their Achievements.)
 - 2) 19 out of 48 public laboratories in Yangon and 19 out of 39 public laboratories in Mandalay were provided with microscopes as shown in Annex 9. Selection of centers and laboratories was made by the NTP according to the priority and necessity of laboratories. With this provision of equipment, together with the provision done by 3DF, all of the monocular microscopes were replaced by the binocular microscopes in public laboratories in Yangon and Mandalay.
 - 3) In order to maintain the conditions of these microscopes, the project has conducted maintenance trainings for the staff of NTP, NHL and others in 2008 and 2009. Lecturers of these trainings were selected from staff of NTP and NHL. As a result of these trainings together with supervisory visits made by NTP, the maintenance of microscopes has been properly carried out in almost all laboratories in Yangon and Mandalay.
- (3) Indicator 2.3: Number and QC of newly established diagnostic centers
- 1) Township TB Microscopy Centers used to participate in conventional laboratory QC system before the commencement of the Project. Then, in 2005, the Project conducted pilot operations of EQA using LQAS (Lot Quality Assurance Sampling) with three Township TB Microscopy Centers respectively in Yangon and Mandalay Division. And then, from 2006, the Project has supported 14 laboratories including 3 pilot laboratories respectively in Yangon and in Mandalay to be EQA model centers using LQAS. Beside these model centers, the Project also financially assisted NTP to introduce LQAS in 15 laboratories in other Divisions and States accommodating the request made by NTP at the time of mid-term evaluation of the Project in 2007. (See Annex 9: Major

Activities and their Achievements.)

TB Microscopy Centers	2006	2007	2008	Total
Yangon	10	2	2	14
Mandalay	10	2	2	14
Other States and Divisions	15	-	-	15
Total	35	4	4	43

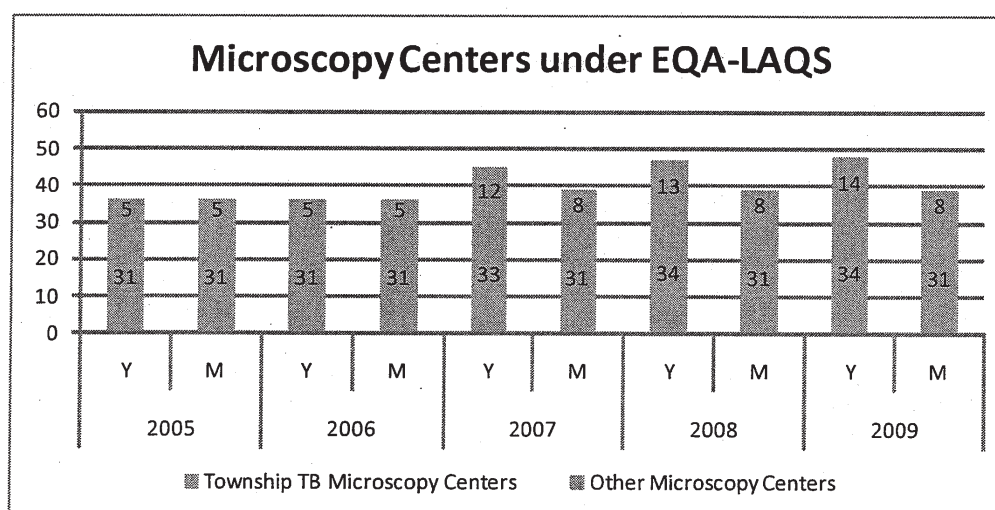
Source: National TB Reference Laboratory, NTP

- 2) Besides EQA model centers supported by the Project, NTP has also introduced LQAS in other Microscopy Centers with the assistance of other development partners. In total as of June 2009, 34 Township TB Microscopy Centers in 45 Townships in Yangon and 31 Township TB Microscopy Centers in 31 Townships in Mandalay are operational as diagnostic centers as shown below. Besides Township TB Microscopy Centers, there are other Microscopy Centers of 14 in Yangon and 8 in Mandalay such as those in Insein Jail, Yangon General Hospital, PSI Clinic and Mandalay General Hospital.

	2005		2006		2007		2008		2009	
	Y	M	Y	M	Y	M	Y	M	Y	M
Township TB Microscopy Centers	31	31	31	31	33	31	34	31	34	31
Other Microscopy Centers	5	5	5	5	12	8	13	8	14	8
Total	36	36	36	36	45	39	47	39	48	39

Y: Yangon Division, M: Mandalay Division

Source: National TB Reference Laboratory, NTP



- 4) As a result of these activities, all of the TB Microscopy Centers including private laboratories and INGOs' laboratories (AZG, PSI) in the country have introduced LQAS by 2007. And, after 2007, EQA-LQAS has also been extending to Station Hospitals.

1.3.3 Achievement of Output 3

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 3 Monitoring and supervisory capability for TB control is strengthened.	3.1 No of divisional meetings and supervisions held. 3.2 NTP performance indicators improved (CDR, CR&TSR, Defaulter & Transferred Out Rates)	3.1 Project record 3.2 NTP cohort data and supervision report	1. Drug supply maintained. 2. Vacant laboratory technicians posts filled. 3. HIV prevalence remains stable.

(1) Indicator 3.1: Number of divisional meetings and supervisions held

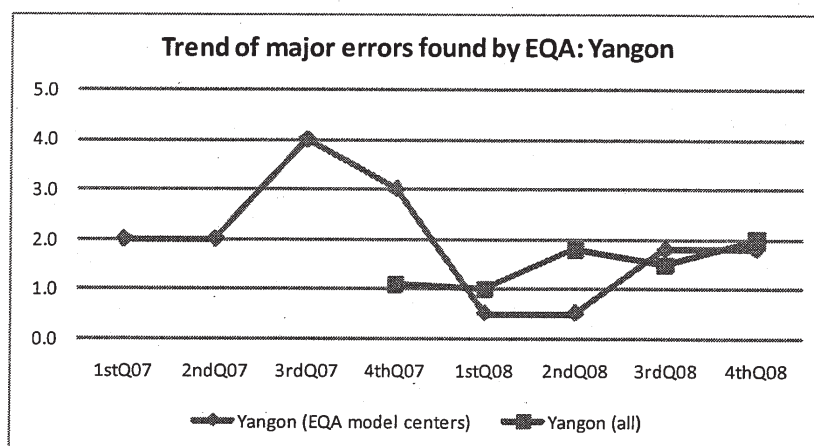
- 1) Three kinds of meetings and supervisions stated below have been held on regular basis in Yangon and Mandalay, and a wide variety of topics were discussed in them, for example, the achievement of performance targets, countermeasures for low performance laboratories, micro plans of Townships, advocacy and partnerships. (See Annex 9: Major Activities and their Achievements.)
 - Divisional TB assessment meeting
 - Quarterly TB assessment meeting in low performance Townships
 - EQA supervision
- 2) Through these meetings and supervisions together with activities for Output 2 stated above in 1.3.2, EQA-LQAS system has been widely introduced and the performance of laboratories has been steadily improved. As shown below, the effects of EQA can be observed by comparing the proportion of major errors made by the EQA model centers supported by the Project with the ones of all centers.

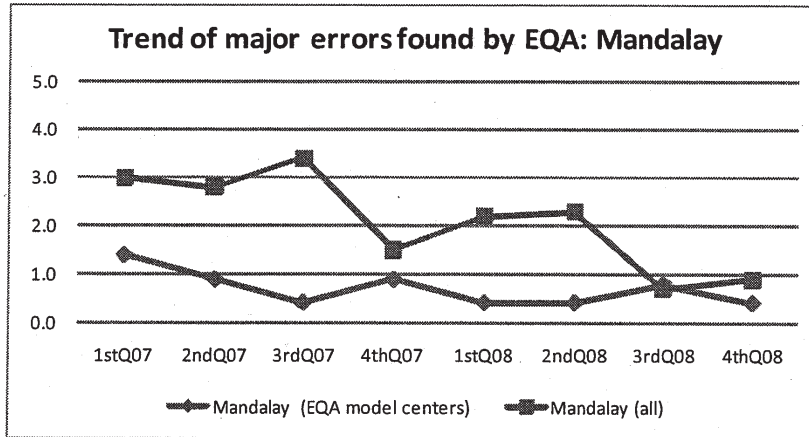
Unit: %

States	Year	2007				2008			
	Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Yangon	EQA Model Centers	2.0	2.0	4.0	3.0	0.5	0.5	1.8	1.8
	All centers	-	-	-	1.1*	1.0	1.8	1.5	2.0
Mandalay	EQA Model Centers	1.4	0.9	0.4	0.9	0.4	0.4	0.8	0.4
	All centers	3.0	2.8	3.4	1.5	2.2	2.3	0.7	0.9

*: annual data

Source: National TB Reference Laboratory, NTP

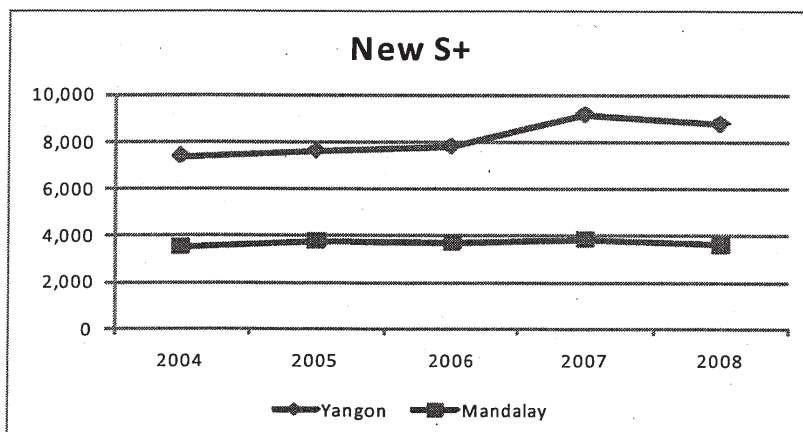




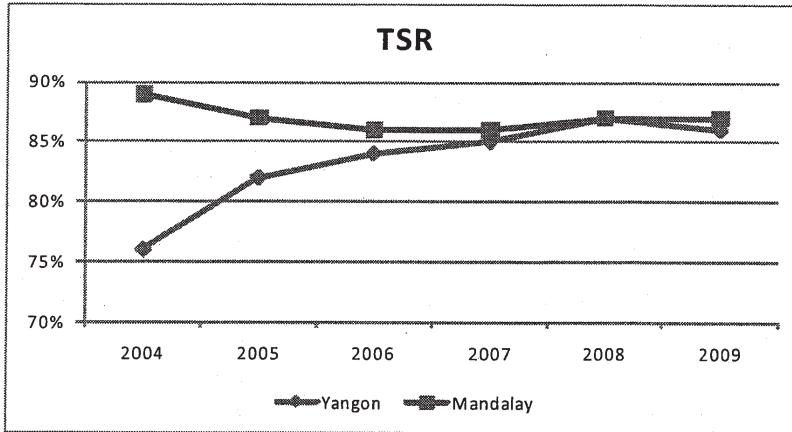
(2) Indicator 3.2: NTP performance indicators improved (CDR, CR, TSR, Defaulter and Transferred-out Rates)

Indicators	Division	2004	2005	2006	2007	2008	2009 (1st Q)
New S+	Yangon	7,377	7,608	7,803	9,164	8,788	1995
	Mandalay	3,537	3,801	3,735	3,871	3,650	870
CDR	Yangon	156%	158%	70%	81%	90%	20%
	Mandalay	65%	67%	65%	66%	83%	17%
CR	Yangon	67%	73%	78%	78%	81%	82%
	Mandalay	83%	77%	75%	79%	77%	82%
TSR	Yangon	76%	82%	84%	85%	87%	86%
	Mandalay	89%	87%	86%	86%	87%	87%
Died	Yangon	4%	4%	5%	5%	4%	6%
	Mandalay	6%	6%	7%	7%	7%	8%
Failure	Yangon	3%	3%	3%	4%	3%	3%
	Mandalay	1%	1%	2%	2%	3%	2%
Defaulted	Yangon	13%	7%	5%	4%	4%	4%
	Mandalay	2%	3%	3%	2%	2%	3%
Transferred-out	Yangon	4%	4%	3%	2%	2%	1%
	Mandalay	1%	3%	2%	2%	2%	1%

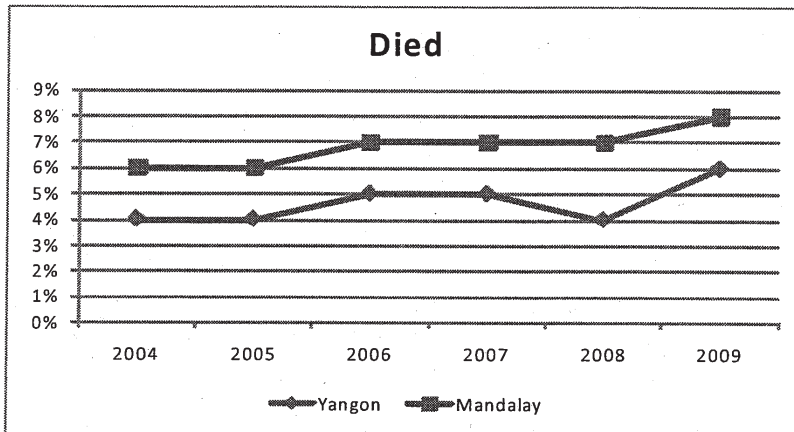
Source: NTP



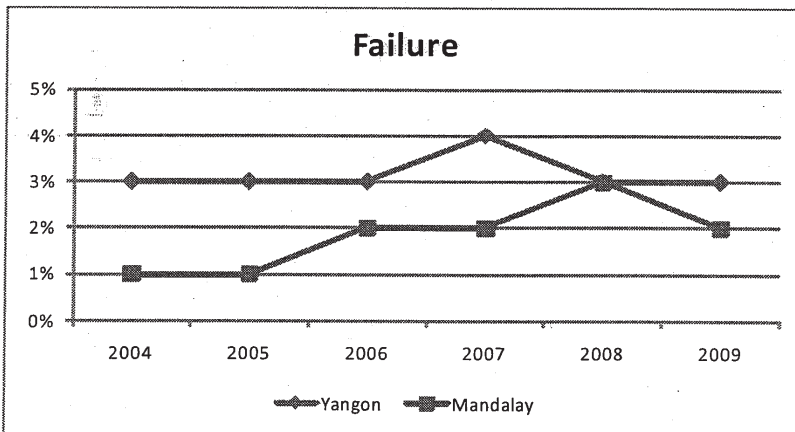
The number of new smear positive (S+) cases has been slightly increasing in Yangon, while the one in Mandalay seemed to reach a plateau.



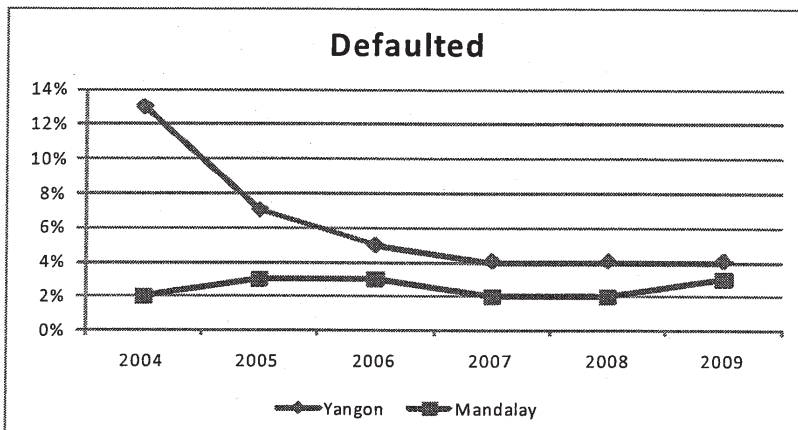
TSR in Yangon has been ascending achieving the target of 85%, while the one in Mandalay has been fluctuating at the level over 85% also achieving the target.



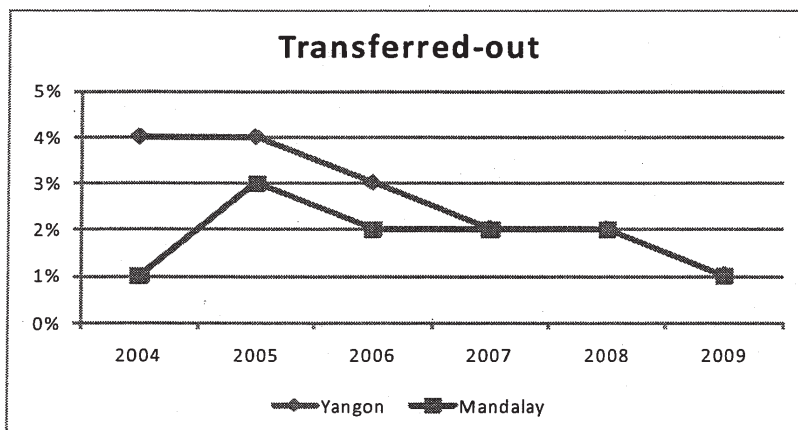
Death cases have been increasing both in Yangon and Mandalay. This trend is probably due to the co-infection of TB with HIV/AIDS, and due to quarterly cohort meeting, quarterly Township assessment meeting and defaulter tracing actions in 2006 and 2007 which found most of defaulters have been dead.



Failure rate in Yangon has been almost constant at the level of 3%, while the one in Mandalay has been increasing.



Defaulter rate in Yangon has been reduced and seemed to reach a plateau after 2007. In Mandalay it has been stable, fluctuating at the level between 2% and 3%. Reducing of Defaulter rate in Yangon was due to early miss-dose tracing, quarterly cohort meeting and quarterly assessment meeting.



Transferred-out rate in Yangon has reduced steadily possibly due to improved tracking of transferred-out patients. In Mandalay it has been fluctuating around the level of 2%.

- 1) Despite the increase of the number of S+ detected, in Yangon Division, TSR has been improved and reached the target level of 85%. This was accompanied by the decrease in defaulter rate and transferred-out rate. As for Mandalay Division, TSR was very high with nearly 90% already in 2004 and has remained above the target level of 85%. It shows a slight downward trend probably due to the increase of death cases which was resulted by improved data validation and proper supervisions.
- 2) Among these performance indicators, defaulter rate is the one which can be directly influenced by the Project activities, while the others may rather be indirectly influenced. This is clearly seen in the change of the defaulter rate in Yangon that showed a drastic improvement.

1.3.4 Achievement of Output 4

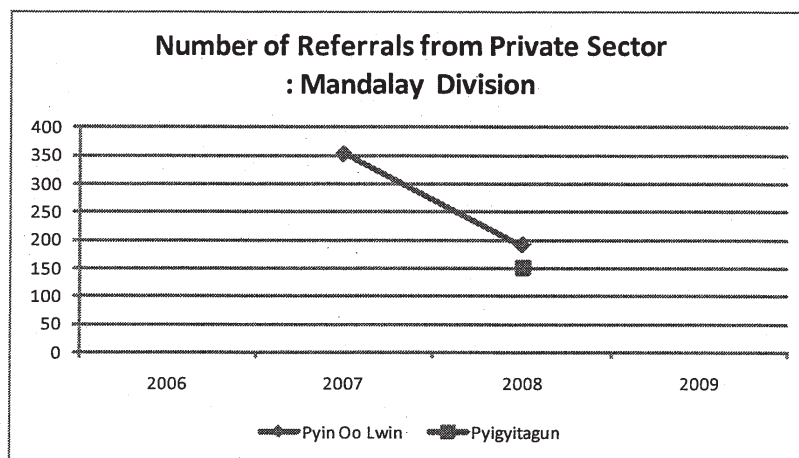
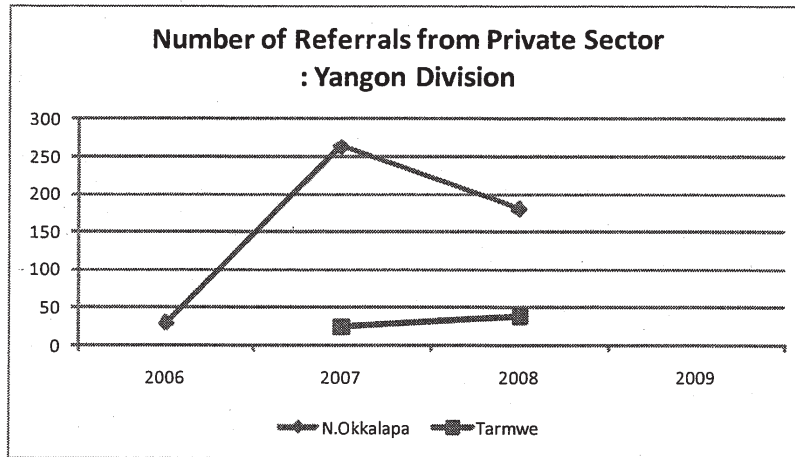
PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 4 Public Private Partnership is established in the selected sites.	4.1 No of referrals from GP shows an upward trend.	4.1 New referral forms	1. Drug supply maintained. 2. Vacant laboratory technicians posts filled. 3. HIV prevalence remains stable.

- (1) Indicator 4.1: No of referrals from GP shows an upward trend
 - 1) PPP activities such as advocacy meetings and trainings on PPP-DOTS have been conducted as pilot in two Townships respectively in Yangon Division and in Mandalay Division. (See Annex 9: Major Activities and their Achievements.)
 - 2) It is too early to evaluate any effect of PPP because the data are very much limited as shown in the table below, and due to the serious negative effects made by the Cyclone Nargis in 2008 in Yangon Division.

Source: NTP

Division	Township	2006	2007	2008	2009 (1st Q)	Total
Yangon	North Okkalapa	29	263	180	44	516
	Tarmwe		25	39	25	89
Mandalay	Pyin Oo Lwin		354	190	57	601
	Pyigyitagun			151	42	193
	Total	29	642	560	168	1399



- 3) “PPP Guidebook” was produced by the Project as one of the PPP training materials. It was widely used not only in pilot areas of the Project but also in other areas.
- 4) Three institutions, i.e., JICA, PSI and MMA, are involved in PPP-DOTS. In order to align the activities of PPP-DOTS, the “PPP National Guidelines” was developed which is currently under revision by NTP and WHO. And in order to coordinate PPP activities, “Central Steering Committee for PPP” was organized, however it was not well functioning. One good progress was that the “Partnership Meeting on PPP-DOTS” was conducted to coordinate and evaluate PPP activities and to plan for future.

1.3.5 Achievement of Output 5

PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output 5 Communication and advocacy for TB control is promoted.	5.1 No & quality of IEC materials produced and distributed 5.2 No & quality of advocacy activities carried out	5.1 Project report 5.2 Project report	1. Drug supply maintained. 2. Vacant laboratory technicians posts filled. 3. HIV prevalence remains stable.

(1) Indicator 5.1: Number & quality of IEC materials produced and distributed

- 1) A variety of IEC materials including TB patient care book, TB knowledge book, PPP pamphlets,

posters and videos were produced and distributed widely. (See Annex 9: Major Activities and their Achievements.)

- 2) "TB Patient Care Book" in Myanmar language, for instance, have been produced in volume of 30,000 to 50,000 copies every year since 2005, and systematically distributed to the project sites, namely all the Townships in Yangon and Mandalay Divisions. At present, using other fund such as GF and 3DF, the care book is distributed nationwide.

(2) Indicator 5.2: Number & quality of advocacy activities carried out

- 1) Various advocacy activities have been conducted using IEC materials developed by the Project. (See Annex 9: Major Activities and their Achievements.)
- 2) Advocacy meetings on "TB Patient Care Book" were conducted both in Yangon and Mandalay Divisions, and the Book has been effectively and practically used not only by TB patients but also by the contacts of patients such as family members and health care providers.
- 3) Health education drama videos "Quick Treatment (2004)" and "Cold Breeze (2007)" were broadcasted on every World TB Day and also occasionally.
- 4) The VCD & DVD of health education dramas and DOTS related video clips were distributed to all health centers in Yangon and Mandalay Divisions, and shown regularly at TB diagnostic centers and TB hospitals in patients' waiting rooms.

1.4 Project Purpose and Overall Goal

1.4.1 Achievement of Project Purpose

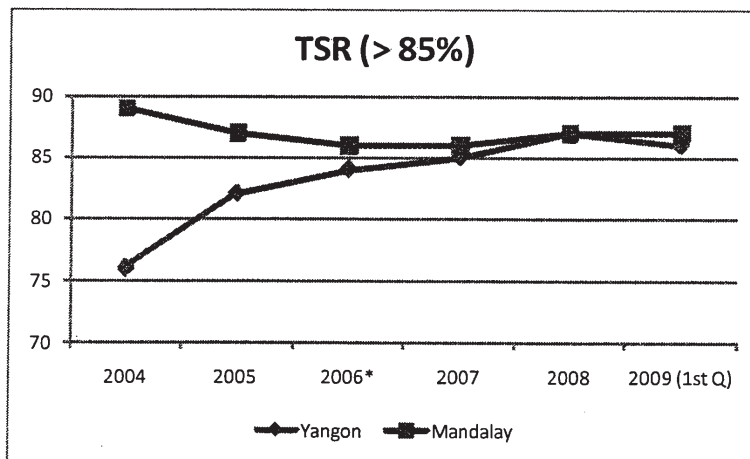
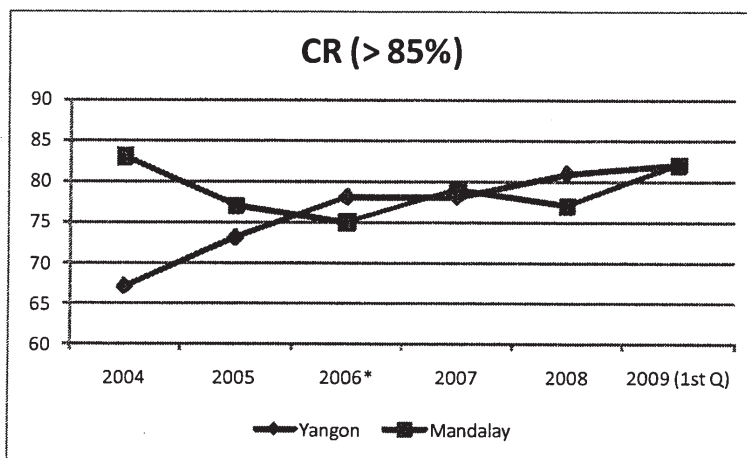
PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Project Purpose TB control in Yangon and Mandalay Divisions is improved.	By year 2009, CDR > 70% and Cure Rate > 85% will be sustained in Yangon and Mandalay Divisions	NTP annual report on cohort analysis	Political commitment for TB control maintained.

Unit: %

Indicators	Division	2004	2005	2006	2007	2008	2009 (1st Qt)
CDR	Yangon	156	158	70	81	90	20
	Mandalay	65	67	65	66	83	17
CR	Yangon	67	73	78	78	81	82
	Mandalay	83	77	75	79	77	82
TSR	Yangon	76	82	84	85	87	86
	Mandalay	89	87	86	86	87	87

Source: NTP



(1) CDR

The target of CDR (>70%) was achieved both in Yangon and Mandalay Divisions in 2008 as shown in the table above. CDR values in 2004 and 2005 were irrelevant exceeding 100%. This was due to the too low estimation of incidence rate. When the project started in 2005, the estimated incidence rate of new smear positive TB as given by WHO was 75/100,000. But the prevalence survey conducted by the Project in 2006 in Yangon Division revealed the incidence of 170/100,000.

Since the trend of CDR both in Yangon and Mandalay Division is increasing, the achievement of the target is expected to be maintained in future.

(2) CR

CR shows an upward trend in Yangon Division, but the target (> 85%) has not been attained. CR in Mandalay Division has been fluctuating at the level of 75% and reached over 80% in 2008, but the target (> 85%) has also not been attained.

(3) TSR

While the PDM of the Project employed CR as an indicator of the Project Purpose, TSR has been more officially used as an indicator of improvement of DOTS instead of CR by WHO and other development partners. Taking TSR into consideration also in this Project, the global target of 85% has been accomplished both in Yangon and Mandalay Divisions in 2007 and the level has been kept since then.

1.4.2 Achievement of Overall Goal

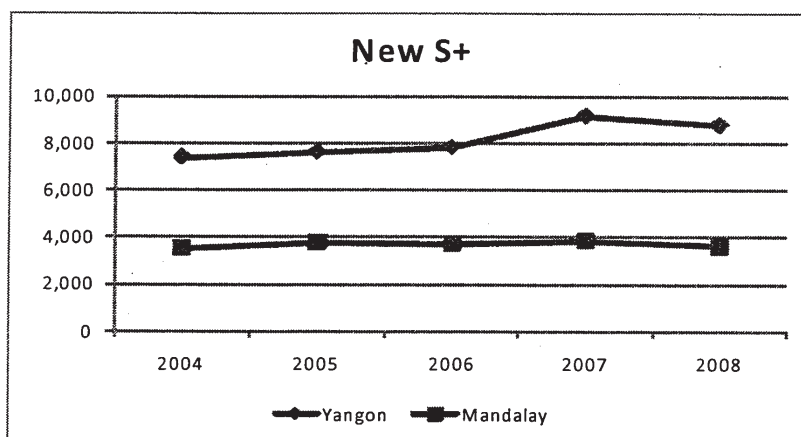
PDM as of May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal New TB infection is controlled in Yangon and Mandalay Divisions.	1.1 No of new smear positive TB detected reaches a plateau. 1.2 Increasing notification rate of new smear positive TB slows down.	NTP annual report	

(1) Indicator 1.1: Number of new smear positive TB detected reaches a plateau.

The number of new S+ cases seems to be reached at a plateau in Mandalay as shown below, while that in Yangon shows a slight increase.

However, with extension of public health services and PPP, the number will be further increased in future. Therefore, the careful observation over new S+ cases will be very important.



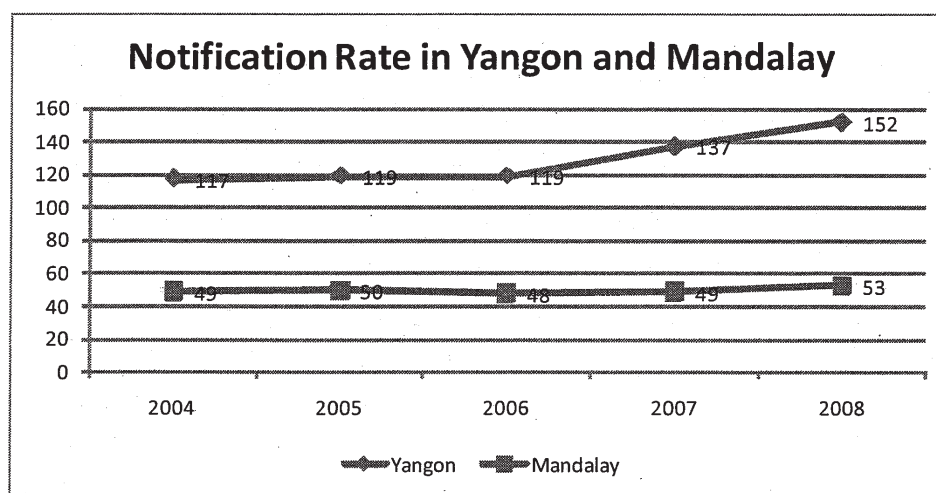
(2) Indicator 1.1: Increasing notification rate of new smear positive TB slows down.

As shown in the table below, the notification rate in Yangon shows an increasing trend, while that in Mandalay has been almost constant at the level of 50/100,000. Therefore, the Indicator of the Overall

Goal is expected to reach the target in Mandalay but not in Yangon.

		2004	2005	2006	2007	2008
Yangon	Population	6,293,724	6,419,598	6,556,495	6,687,623	5,792,701
	New S+ detected	7,377	7,618	7,803	9,164	8,788
	Notification Rate (/100,000)	117	119	119	137	152
Mandalay	Population	7,286,448	7,571,010	7,707,288	7,861,434	6,940,848
	New S+ detected	3,537	3,801	3,735	3,871	3,650
	Notification Rate (/100,000)	49	50	48	49	53

Source: NTP



1.5 Implementation Process

(1) Operational research as OJT

As seen above in 1.3.1, the Project has implemented a variety of operational researches including the prevalence survey in Yangon and in Mandalay in 2006. The capacity of NTP staff at central and local level has been highly developed through not only trainings but also these operational researches as On-the-Job-Trainings. Effective and efficient capacity development was realized in this manner.

(2) Prevalence Survey

Responding to the needs perceived by NTP and development partners such as WHO, the Project has implemented the prevalence survey in Yangon and the trial survey in Mandalay in 2006 as one of the operational surveys planned in the PDM. Compared the inputs for the survey including provision of X-ray machines and accessories and dispatching Japanese short-term experts, the outputs and outcomes of the prevalence survey were useful for NTP and also for other partners. NTP is now implementing

the National TB Prevalence Survey applying the knowledge and skills acquired in the previous surveys.

(3) Contribution of National Consultant

A long-term Japanese expert for TB was not dispatched, but dispatched short-term experts of wide variety of expertise. In order to back-up the absence period of Japanese experts, the Project has assigned a national consultant who has long experience in TB control in MOH with high level of knowledge and a wide information network. He has made a considerable contribution to the Project, particularly for the coordination of stakeholders at the time of Cyclone Nargis in 2008 and for the smooth proceedings of administrative procedures in the country.

2. Evaluation by Five Criteria

2.1 Relevance

Relevance of the Project is evaluated “**Very High**” from the following perspectives.

(1) Consistency with global health policies and trend

- 1) TB Control was one of the global priority issues for sustainable development. The fight against the communicable diseases such as TB, AIDS and Malaria is one of the 7 targets of MDGs.
- 2) Following the TICAD IV and G8 Hokkaido Toyako Summit in 2007, International TB Symposium was held in July 2008 in Tokyo. The symposium confirmed TB as an on-going serious global threat to human, and endorsed international strategies to control TB. The Project extensively tackles the TB issues in Myanmar, thus, is in line with the global directions and the strategies of TB control.

(2) Consistency with national health plans of Myanmar

- 1) “Millennium Development Goals for 2015: Myanmar,” which illustrates long-term development targets of Myanmar picks up TB as one of the main infectious diseases to be tackled along with HIV/AIDS and Malaria. MDG Goal6, Target 8, Indicator 24 sets quantitative targets on TB such as CDR (>70%) and TSR (>85%).
- 2) “National Health Plan 2006-2011,” which stipulates Myanmar government’s health strategies, ranks TB as the third priority disease following HIV/AIDS and malaria because of being accorded “the score on the basis of public health importance and political importance imparted to it and also on the consideration of potential socio-economic impact consequent to it.”

(3) Consistency with Japanese ODA policy

“JICA Country-Specific Aid Implementation Plan for Myanmar (02.2007)” selects four major global issues and the infectious disease control is one of them along with environment, poverty and gender issues. In the infectious diseases, high priority is placed on tuberculosis, malaria, HIV/AIDS, and bird flu.

(4) Consistency with the needs of target group

According to the “Global Tuberculosis Control 2009, WHO,” Myanmar is ranked 20th of the 22 High Burden Countries of TB with estimated incidence of 75 in 100,000 population per year, prevalence of 162 in 100,000 population per year and mortality rate of 13 in 100,000 population per year. The necessity of TB control for Myanmar people is very high.

(5) The approach and methodology of the Project

- 1) Yangon and Mandalay are two large urban centers in Myanmar, and target areas of the Project were selected according to the priority with high contribution to notified TB case load.
- 2) Japanese technical level of TB control is very high, and international technical cooperation projects had been implemented in Nepal, Philippines, Cambodia and other countries in collaboration with international organizations such as WHO. From the viewpoint of availability of technical expertise, the relevance of providing Japanese assistance on TB control in Myanmar is very high.
- 3) Besides the Project, Japan extended grass-roots grant aid assistance for renovation of North Okkalappa Model DOTS Center in Yangon Division.

2.2 Effectiveness

Effectiveness of the Project is evaluated “**High**” from the following perspective.

- 1) Accomplishing the target of CDR and TSR over 70% and 85% respectively, the Project Purpose was achieved. (See 1.4.1 for details.) While the target of CR (>85%) has not been achieved, the trend of it has been ascending indicating the improvement of the situation. The Project has contributed to it from the aspects as follows.
- 2) Skills of NTP has been strengthened through trainings, operational researches and the prevalence survey. Innovation of facilities and provision of equipment have also helped the improvement of the performance of NTP. (See 1.3.1 for details.)
- 3) Quality of TB laboratories has been improved through training courses including new-recruit training, refresher training and EQA training together with the provision of laboratory equipment such as microscopes. EQA using LQAS has been widely introduced to all laboratories in the country. (See 1.3.2 for details.)
- 4) Monitoring and supervision systematically conducted by NTP with the assistance of the Project has greatly contributed for laboratories to improve their performance. (See 1.3.3 for details.)
- 5) Concerning PPP, although the number of referrals from private sectors has not increased, the Project has made a notable contribution by pioneering PPP activities in pilot Townships making initial prototype of implementation methods and procedures. (See 1.3.4 for details.)
- 6) A wide variety of IEC materials such as TB patient care book, PPP pamphlets, EAS SOP, AFB Microscopy Guidebook and sputum collection posters and pamphlets were produced and distributed widely not only in the Project target areas but also to other areas other than Yangon and Mandalay Division.
- 7) The target of CR (>85%) has not been achieved probably due to the co-infection of TB with HIV/AIDS. According to the “Report of the HIV Sentinel Sero-surveillance Survey 2008 Myanmar, NAP, March

2009,” HIV prevalence among new TB patients was 4.7% in Yangon.

2.3 Efficiency

Efficiency of the Project is evaluated “**High**” from the following perspective.

(1) Cost efficient approach

- 1) Since no long-term Japanese expert for TB was dispatched but experts dispatched on short-term basis, in order to back-up the absence period of Japanese experts, the Project has assigned a national consultant. He has made a considerable contribution to the Project, particularly for the coordination of stakeholders at the time of Cyclone Nargis in 2008 and for the smooth proceedings of administrative procedures in the country.
- 2) Collaboration and cooperation with a variety of stakeholders has facilitated effective and efficient implementation of the Project. For example, TB prevalence survey in Yangon Division was conducted in collaboration with NTP, WHO, GFATM, JATA and the Project in 2006.

(2) Inputs from Japanese side

Most of the inputs from Japanese side such as dispatch of experts, training of counterparts in Japan and provision of equipment and local cost support were executed as planned. Myanmar counterparts highly evaluate the assignment timing, expertise and teaching capacity of Japanese experts. Myanmar counterparts were also mostly satisfied with contents, timing and duration of programs of training. Equipment granted has been put to practical use as so intended.

(3) Inputs from Myanmar side

Although the insufficient health manpower and rapid turnover has been a serious issue for DOH, Myanmar side has assigned counterparts for implementing the project activities and ensuring the sustainability. And serious negative effects were not brought about to the Project activities.

2.4 Impact

Impact of the Project is evaluated “**High**” from the following perspective.

(1) Achievement of Overall Goal

The number of new S+ cases seems to be reached a plateau in Mandalay, while that in Yangon shows a slight increase. As for the notification rate, in Yangon it shows an increasing trend, while that in Mandalay has been almost constant at the level of 50/100,000. Therefore, the target of Indicators of the Overall Goal is expected to be attained in Mandalay but not in Yangon. Therefore, continuous efforts to expand DOTS services and the careful observation over new S+ cases will be indispensable. (See 1.3.4 for details.)

(2) Other Impacts

- 1) The Project supported 14 laboratories respectively in Yangon and Mandalay to be EQA model centers. Beside these model centers, the project also assisted 15 laboratories in other Divisions and States. And the centers other than EQA model centers have also started LQAS with the assistance of 3DF. As a result of these activities, all of the TB Microscopy Centers including private laboratories and INGOs' laboratories in the country have introduced LQAS until now. (See 1.3.2 for details.)
- 2) "PPP Guidebook" was produced by the project as one of the PPP training materials. This guidebook has been widely used not only in pilot areas but also in other areas. (See 1.3.4 for details.) "TB Patient Care Book" developed by the Project and distributed to the project target areas, i.e. Yangon and Mandalay Divisions, has been reprinted and distributed nationwide by NTP using other fund such as GF and 3DF. (See 1.3.5 for details.)
- 3) No negative impact is observed.

2.5 Sustainability

Sustainability of the Project is evaluated "**Fair**" from the following perspective.

(1) Technical sustainability

Although the work burden of some of the Myanmar counterparts is considerably heavy, technical transfer to Myanmar counterparts has been under favorable progress and most of the training courses such as new-recruit training and EQA training were organized and operated by Myanmar counterparts. Various systems developed by the Project such as EQA using LQAS have been spreading to other areas in Myanmar beyond Yangon and Mandalay Divisions, and institutionalized as a national system.

(2) Institutional sustainability

As "National Health Plan (2006-2011)" states, "insufficient health manpower and rapid turnover" is a serious issue for the health sector of Myanmar including DOH and NTP. The sustainability in this context would difficult to be assured unless there is a huge effort by the government.

(3) Financial sustainability

Anti-TB drugs have been provided by GDF and WHO with the fund of 3DF after the withdrawal of Global Fund. 3DF will extend special direct grant for covering the entire supply of TB drugs for 2010. But the situation still remains unstable in the long future.

DOH prepared 3% of total cost for anti-TB drug for 2009, and plans to increase the share 1% every year.

3. Recommendations

Within the project period:

To NTP and the Project

- (1) To make further efforts and commitment. The Project has made considerable outcomes accomplishing

the Project Purpose and Outputs together with the highly possible achievement of the Overall Goal in future. As for the remaining issues, there are still some improvement of TB control performance expected especially in Yangon Division, and strengthening of institutional and financial sustainability is also required. Therefore, further efforts and commitment of NTP and the Project are expected.

- (2) To improve the capacity of information management and to develop information sharing system. Information concerning TB patients and the capacity of laboratories obtained through EQA and supervisions accumulated in NTP is considerably significant, because it could be used for making evidence based TB control policy of MOH. For realizing this, it is highly recommended the Project and Myanmar counterparts to improve the capacity of information management and to develop information sharing system among stakeholders.

Beyond completion of the project:

To NTP

- (3) To prepare funds for anti-TB drugs. With the increase of the budget of 3DF, anti-TB drugs would be secured for another two years until the end of 2010. But the situation still remains unstable in the long future. Therefore, it is highly expected NTP to prepare funds for anti-TB drugs.
- (4) To continue the efforts to remedy the state of human resource shortage. It is expected NTP to continue the efforts to remedy the state of human resource shortage through, for example, new recruitment, new-recruit training and strengthening monitoring and supervision over Township TB Centers and laboratories.
- (5) To align and coordinate stakeholders involved in PPP-DOTS. Strengthening of PPP is significant since a large portion of potential patients visit not NTP but private clinics and/or NGO clinics for diagnosis. Three institutions of JICA, PSI and MMA are involved in PPP and their activities are not necessarily well coordinated, because "PPP National Guidelines" are under revision at present and "Central Steering Committee for PPP" is not functioning. It is, therefore, necessary to publish the revised version of "PPP National Guidelines" as early as possible in order to formulate and disseminate standardized methods and procedures of PPP. And the coordination of implementation of PPP is expected to be coordinated by making the Central Steering Committee for PPP functional.
- (6) To scale-up "scheme III" of the PPP, i.e., diagnosis, treatment and recording and reporting to NTP by GPs, should be considered.

4. Lessons Learned

(1) Indicators in PDM

Since qualitative components were not incorporated in Indicators in PDM, qualitative aspects of expected results of the Project were likely to be overlooked. Besides, there were some indicators whose quantitative target levels were not set. Indicators are expected to be the ones which enable the project to monitor its progress and performance, thus to bring issues and problems to the surface and suggest solutions for proceeding to the next step. In this respect, Indicators in PDM should be well elaborated quantitatively and qualitatively to serve to the effective and efficient management of the project.

(2) Early detection of patients

While multiform services including TB/HIV, MDR, child TB and PPM are global trend of TB control, the most fundamental and significant service is to find patients as early as possible and employ DOTS. The Project has, therefore, focused upon the early detection of patients inputting resources into urban areas. For effective and efficient implementation of TB project, this sort of careful consideration on the local situation and selection of strategies are indispensable.

(3) National consultant

In order to back-up the absence period of Japanese experts, the Project has assigned a national consultant who has long experience in TB control in MOH with high level of knowledge and a wide information network. He has made a considerable contribution to the Project, particularly for the coordination of stakeholders at the time of Cyclone Nargis in 2008 and for the smooth proceedings of administrative procedures in the country. Assignment of capable national consultant could be a considerable contribution to the effective and efficient implementation of the project.