

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR CONTROL OF TUBERCULOSIS
IN POOR REGIONS
IN
THE PEOPLE'S REPUBLIC OF CHINA**

March 2001

**Japan International Cooperation Agency (JICA)
International Total Engineering Corporation (ITEC)**

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01-062

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PREFACE

In response to a request from the Government of the People's Republic of China, the Government of Japan decided to conduct a basic design study on the Project for Control of Tuberculosis in Poor Regions in the People's Republic of China and entrusted the study to the Japan International Cooperation Agency(JICA).

JICA sent to China two study teams from 12 November to 18 November 2000 and 27 November to 24 December 2000.

The team held discussions with the officials concerned of the Government of China, and conducted a field study at the study area. After the team returned to Japan, further studies were made. As this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the People's Republic of China and for their close cooperation extended to the teams.

March, 2001



Kunihiko SAITO
President

Japan International Cooperation Agency

March, 2001

LETTER OF TRANSMITTAL

We are pleased to submit to you the basic design study report on the Project for Control of Tuberculosis in Poor Regions in the People's Republic of China.

This study was conducted by International Total Engineering Corporation, under a contract to JICA, during the period from November, 2000 to March, 2001. In conducting the study, we have examined the feasibility and rational of the project with due consideration to the present situation of China and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the project..

Very truly yours,



Kenji Ishida

Project manager,

Basic design study team on the Project for
Control of Tuberculosis in Poor Regions in
the People's Republic of China

International Total Engineering Corporation

Location Map



Data of Project Site

Provinces	Population (2002)			Prefectures		Counties		
	Total	Population covered	Coverage	Total	Prefectures covered	Total	Counties covered	Coverage
Sichuan Sheng	7,306,210	2,857,600	39.1%	7	7	46	10	21.7%
Qinghai Sheng	5,211,466	3,635,480	69.8%	8	8	43	23	53.5%
Henan Sheng	97,168,040	50,221,183	51.7%	18	18	158	78	49.4%
Neimenggu Zizhiqu	24,001,510	10,388,096	43.3%	12	9	101	30	29.7%
Jiangxi Sheng	42,191,803	5,812,929	13.8%	11	3	99	11	11.1%
Shanxi Sheng (Shan)	36,402,343	7,375,901	20.3%	10	6	107	18	16.8%
Anhui Sheng	63,749,562	16,291,740	25.6%	16	14	105	24	22.9%
Guizhou Sheng	36,250,371	14,058,210	38.8%	9	9	86	31	36.0%
Yunnan Sheng	40,652,132	12,627,130	31.1%	16	13	129	30	23.3%
Shanxi Sheng (Jin)	33,958,839	12,276,134	36.2%	11	11	119	40	33.6%
Guangxi Zhuangzu Zizhiqu	47,908,527	16,709,654	34.9%	14	11	110	20	18.2%
Total	434,800,803	152,254,058	35.0%	132	109	1,103	315	28.6%

List of Figures and Table

Chapter 1. Background of the Project	Page
Table 1-1. Requested Equipment	1
Table 1-2. Project Sites	2

Chapter 2. Contents of the Project	Page
Table 2-1. Project Sites	4
Table 2-2. Requested Equipment	5
Table 2-3. Anti-TB Drugs.....	5
Table 2-4. Estimated Cases by Province	7
Table 2-5. Dose of Anti-TB Drugs	8
Table 2-6. Regimen forceps Anti-TB Drugs.....	8
Table 2-7. Quantity of Anti-TB Drugs and Other Products.....	9
Table 2-8. Distribution Plan of Microscope	10
Table 2-9. Equipment List	11
Table 2-10. Scope of Work.....	13
Table 2-11. Country of Origin	14
Table 2-12. Procurement Plan	15
Table 2-13. Work Schedule	15
Table 2-14. Contents of Work for DOTS-Based TB Control Measures.....	17
Table 2-15. MOH Budget for TB Control Program (Fiscal 2001)	18
Table 2-16. Burden of Cost Shared by the Local Government	19
Table 2-17. Breakdown of Costs by Province (Yuan).....	19
Table 2-18. Proportion of TB Control Costs	20

ABBREVIATIONS

DOTS	Directly Observed Treatment, short course
DOT	Directly Observed Therapy
GMP	Good Manufacturing Practice
JICA	Japan International Cooperation Agency
MSF	Médecins Sans Frontières
WB	World Bank (International Bank for Reconstruction and Development: IBRD)
WHO	World Health Organization

Summary

Summary

Statistics (1998) of the World Health Organization (WHO) shows that each year in the world 80% of the TB patient appear in the 22 countries (high burden countries) and that subsequently to India (1.828 million), China holds the second largest estimated number of patients (1.414 million) with 0.636 million infectious sputum smear positive cases per year. WHO had taken as many measures as possible to expand DOTS strategy especially throughout the 22 high burden countries and declared in 1993 that "TB a global emergency" to advance the worldwide control as "STOP TB Initiatives. Especially in the WHO Regional Office for the Western Pacific, TB control is regarded as the most important program.

On the other hand, the Government of China, recognizing the importance of the TB control from early stage, has tackled the 5 to 10 year medium and long-range plans, while hammering out since the end of 1970's the system, notifications and statute about prevention and control of TB. Especially TB control using DOTS (Directly Observed Treatment, Short course) strategy recommended by WHO has been implemented by the World Bank loan since 1991, achieving high cure rate. Besides the World Bank Project, the Government of China has advanced TB control programs by its own budget but more than 50% of the patients are yet to receive appropriate TB treatment due to economical reasons. As of 1999, according to The National Yearbook of Health, 2000, the number of death (mortality rate 7.88/100,000) by TB in a farming area stands the 1st place of the cause of death by the single illness.

Under such circumstances, in March 2000, "Ministerial Conference on Tuberculosis and Sustainable Development" by WHO sponsorship was held in Amsterdam, in which the representative of China committed the expansion of the coverage to 90% of population by 2005. In "Control and prevention of the serious illness", one of the 14 important items adopted by the new 10th 5-year plan for health Project (2001~2005), the Government of China has designated TB as the most important disease of all and drafted "National TB prevention and control plan (2001 -2010)" to expand the coverage up to 90% throughout the country during the first 5 years.

To achieve these goals, the Government of China has fixed the coverage for the poor areas where the World Bank Project was not extended, 30% for the first year, 50% for the second, 70% for the third, 80% for the fourth and 90% for the fifth year. And, as a basic rule for the new Project mentioned above, those who can not afford to pay medical costs for treatment of infectious TB are to be exempted from the payment.

The Government of China has requested grant aid from Japan for the fund required for supply of the following anti-TB drugs and microscope in order to expand, in cooperation with WHO Regional Office for the Western Pacific, the cover area of DOTS strategy throughout the poverty 14 provinces where effective TB control is not performed.

In response to the request, the Government of Japan decided to conduct a basic design study on this Project and Japan International Cooperation Agency (JICA) sent to China two study teams from November 12 to 18 and from November 27 to December 24, 2000, respectively.

The objectives of this Project are to improve the diagnosis of TB and increase the case detection rate in order to decrease the number of death, illness and transmission in 9 provinces and 2 autonomous regions where appropriate TB control have not yet been provided for the people, and also to expand the population covered by DOTS strategy up to 35% for 2002 in the targeted areas in order to facilitate management of TB cases and treatment. Since other donors also covers some of the proposed regions, the Japan's Grant Aid Project shall be implemented from 2002 for the following 9 provinces and 2 autonomous regions.

Since the World Bank and the Demien Foundation plans to supply Sichuan province and the Neimengku autonomous region with anti-TB drugs, the Japan's Grant Aid shall be extended to the area where no duplication is found in these donors.

Project Sites

Provinces	Population (2002)			Prefectures		Counties		
	Total	Population covered	Coverage	Total	Prefectures covered	Total	Counties covered	Coverage
Sichuan Sheng	7,306,210	2,857,600	39.1%	7	7	46	10	21.7%
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DOTS-based TB control program includes diagnosis, patient management, training, regular supply of drugs and education of the people. Among them, Japan's Grant Aid aims at procurement of microscope for diagnosis and training and anti-TB drug for 2002.

At present there are more than 10 kinds of anti-TB drugs. At present there are more than 10 kinds of anti-TB drugs. To take advantage of the knowledge and experience of TB control cultivated in the World Bank Project, this Project shall adopt the same anti-TB drugs as prescribed for the World Bank Project and follow the WHO's guideline of anti-TB drugs and its combination, length of treatment and management of patient and the doses.

In this Project, as seen below, the microscope used for sputum examination, easiest and most effective diagnostic method for identification of TB, and observation microscope for 5 trainees, necessary for training of medical staff, are procured.

Requested Equipment

	Contents of requested equipment
Anti-TB drugs	H (Isoniazid), R (Rifampicin), Z(Pyrazinamide), E (Ethambutol), S (Streptomycin)
	Distilled Water (Sterilized), Syringes and Needles
Microscope	Multi-head Binocular Microscope for Training
	Binocular Microscope for Sputum Smear Examination
Others	Pamphlet for Patient Education, Inscription board for Grant Aid

After completion of the Japan's Grant Aid Project, the Chinese side shall start DOTS-based TB control Project. The breakdown of the costs of this Project for the central and local governments are as follows.

MOH budget for TB control program (fiscal 2001)

	Yuan	JPY	%
Drugs	26,800,000	355,904,000	67.0%
Training	2,680,000	35,590,400	6.7%
Health education	3,840,000	50,995,200	9.6%
Supervision on implementation	3,640,000	48,339,200	9.1%
Management	3,040,000	40,371,200	7.6%
Total	40,000,000	531,200,000	100%

1Yuan = JPY13.28

Burden of Cost Shared by the Local Government of 9 Provinces and 2 Autonomous Regions

	Yuan	JPY
Treatment	8,537,640	113,380,000
DOTS Supervision	6,725,475	89,314,000
Health Education	3,760,000	49,933,000
Training	6,136,400	81,491,000
Facility	12,883,738	171,096,000
Total	38,043,253	505,214,000

1Yuan = JPY13.28

The following direct effects are expected by implementing the Japan's Grant Aid Project.

1. Population

435 million people live in the area of 9 provinces and 2 autonomous regions where this Project is extended. The population covered by this Project is 150 million, which consists 35% of the total population. 45 thousand of people are expected to receive treatment by the anti-TB drugs supplied by this Project.

In the case of non DOTS-based TB treatment, the treatment period is more than 1 year. Thus many patients give up the treatment because of making their living and sustaining their family, which result in the lower cure rate. In the case of DOTS-based treatment, the treatment period is 6 to 8 months under the proper management of patients. To encourage the patients to continue their treatment, the Government of China provides TB diagnosis and treatment free of charge for the patients who are diagnosed and treated with the goods supplied by Japan. Thus a high cure rate is expected.

2. Contribution to National TB prevention and a control plan (2001 -2010)

Japan's Grant Aid Project will make a contribution to achievement of China's national goal since it is intended for the first year of China's TB control aimed at expansion of the DOTS coverage rate up to 90% of the total population by 2005.

The following indirect effects are expected by implementing the Japan's Grant Aid Project.

1. Economic Effect on Patients and their Family

The patient must sacrifice their time to concentrate on the treatment and their economic activities will be restricted. Thus many TB patients must interrupt their treatment because they can not afford to manage to continue the treatment and to work at the same time. Under the DOTS-based strategy, treatment of TB requires less time and money. Since the Government of China plans to provide the TB diagnosis and treatment free of charge by using the goods supplied by the Japan's Grant Aid, the burden of treatment costs shouldered by the patients will drastically decrease.

2. Economic Effect on the Community

Treatment of 45,000 TB patients would require building five 500-bed new hospitals (calculated by the average length of stay, 20 to 25 days at a TB-specialized hospital). The hospital would need to pay 100 ~ 165 Yuan per patient a day and 20,000 ~ 35,000 Yuan until the completion of his/her treatment. Thus, the DOTS strategy whose costs of treatment is 200 ~ 300 Yuan per patient will have a huge impact on the local economy.

3. Prevention of Infection

Treatment of a TB patient means not only patient's recovery from the disease but decrease in the possibility of his/her family and people nearby being infected by TB. Thus, it can be said that the Project is indirectly effective to the whole community of the target area.

4. Contribution to the Global and Local TB Control Program

This Project will be executed to cure TB patients in China where there is presumably the second largest TB population in the world, in response to "Stop TB Initiative" recommended by WHO, in association with Japan's Technical Cooperation and with WHO. Thus, it can be said that this Project will make a huge contribution to the TB control not only in the Western Pacific Region where TB control is regarded as a priority issue but also in the global level.

5. Attainment of Publicity for Japan's Grant Aid

On the wrapping of anti-TB drugs, boxes, injection syringes/needles and pamphlet for patient education, the indication of Japan's Grant Aid are printed. And inscription board inscribed with information of Japan's Grant Aid are prepared for each 435 Project sites. Thus, the Japan's Grant Aid will become widely and directly known to the people of China.

Therefore, it shall be valid for the Japan's Grant Aid to be extended to this Project.

To assure the more effective implementation of the Project, the following recommendations shall be proposed.

- (1) Technical Cooperation, Other Donors

It is necessary to standardize the level of diagnosis and management technique in the Project areas since there are many areas not covered by the World Bank Project and there are many staff involved in the Project. For that purpose, the government of China has requested to dispatch experts and to accept Chinese trainees for the Japan's technical cooperation. It is also necessary to continue the ongoing technical assistance from WHO.

(2) Budget

It is necessary for the central and provincial governments to monitor execution of the budget for the entire 315 sites not only for the first fiscal year but also for the entire Project period.

(3) Inventory Control of Drugs

In the Japan's Grant Aid Project, one year dose of anti-TB drugs are allocated at 2 phases to each province and autonomous region. For the relevant authorities of each provinces and autonomous regions, in order to avoid shortage or surplus, it is necessary to deliver the appropriate amount of drugs to each peripheral site according to its progress.

(4) Post Grant Aid Project

The anti-TB drugs supplied by the Japan's Grant Aid Project covers one-year period of the whole Project. If the supply of the drugs stops after one year period of this Grant Aid Project and no other supply plan is established thereafter, that means failure in the whole Project and brings about grave consequences in TB control. And this is the most important aspect of the DOTS strategy. Thus it is necessary to estimate the amount of the drugs needed from the next year afterward, to select the proposed Project sites and establish a transportation method.

CONTENTS

Preface

Letter of Transmittal

Location Map

List of Figures & Tables

Abbreviations

Summary

Chapter 1 Background of the Project.....1

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project 3

2-2 Basic Design of the Requested Japanese Assistance..... 4

2-2-1 Design Policy 4

2-2-2 Basic Plan 7

2-2-3 Implementation Plan..... 12

2-2-3-1 Implementation Policy..... 12

2-2-3-2 Implementation Conditions..... 13

2-2-3-3 Scope of Works 13

2-2-3-4 Consultant Supervision..... 13

2-2-3-5 Quality Control Plan 13

2-2-3-6 Procurement Plan 14

2-2-3-7 Implementation Schedule..... 15

2-3 Obligations of Recipient Country 16

2-4 Project Operation Plan 17

2-4-1 Operation Plan for DOTS-based TB Control Measures..... 17

2-4-2 Operation and Maintenance Plan 18

2-4-3 Operation and Maintenance Costs 18

Chapter 3 Project Evaluation and Recommendations

3-1 Project Effect.....21

3-2 Recommendations.....22

Appendices

1. Member List of the Study Team..... A - 1

2. Study Schedule..... A - 3

3. List of Parties Concerned..... A - 7

4. Minutes of Discussions No1..... A - 9

5. Minutes of Discussions No2..... A - 31

6. Equipment List by Province A - 39

7. Calculation of Dose of Anti-TB Drugs..... A - 57