

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT OF THE HEALTH FACILITIES
IN
THE LIMPOPO PROVINCE
IN
THE REPUBLIC OF SOUTH AFRICA**

AUGUST 2003

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**JOINT VENTURE
BETWEEN
INTERNATIONAL TOTAL ENGINEERING CORPORATION
AND
YAMASHITA SEKKEI INC.**

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PREFACE

In response to a request from the Government of the Republic of South Africa, the Government of Japan decided to conduct a basic design study on the Project for Improvement of the Health Facilities in the Limpopo Province in the Republic of South Africa and entrusted the study to the Japan International Cooperation Agency (JICA).

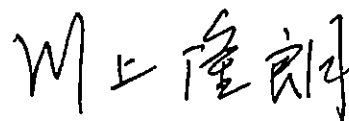
JICA sent to South Africa a study team from 22 March to 28 April 2003.

The team held discussions with the officials concerned of the Government of South Africa, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to South Africa in order to discuss a draft basic design, and 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 Republic of South Africa for their close cooperation extended to the teams.

August, 2003



Takao Kawakami

President

Japan International Cooperation Agency

August, 2003

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Improvement of Health Facilities in the Limpopo Province in the Republic of South Africa.

This study was conducted by the joint venture between International Total Engineering Corporation and Yamashita Sekkei inc., under a contract to JICA, during the period from March, 2003 to August, 2003. In conducting the study, we have examined the feasibility and rational of the project with due consideration to the present situation of South Africa 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..

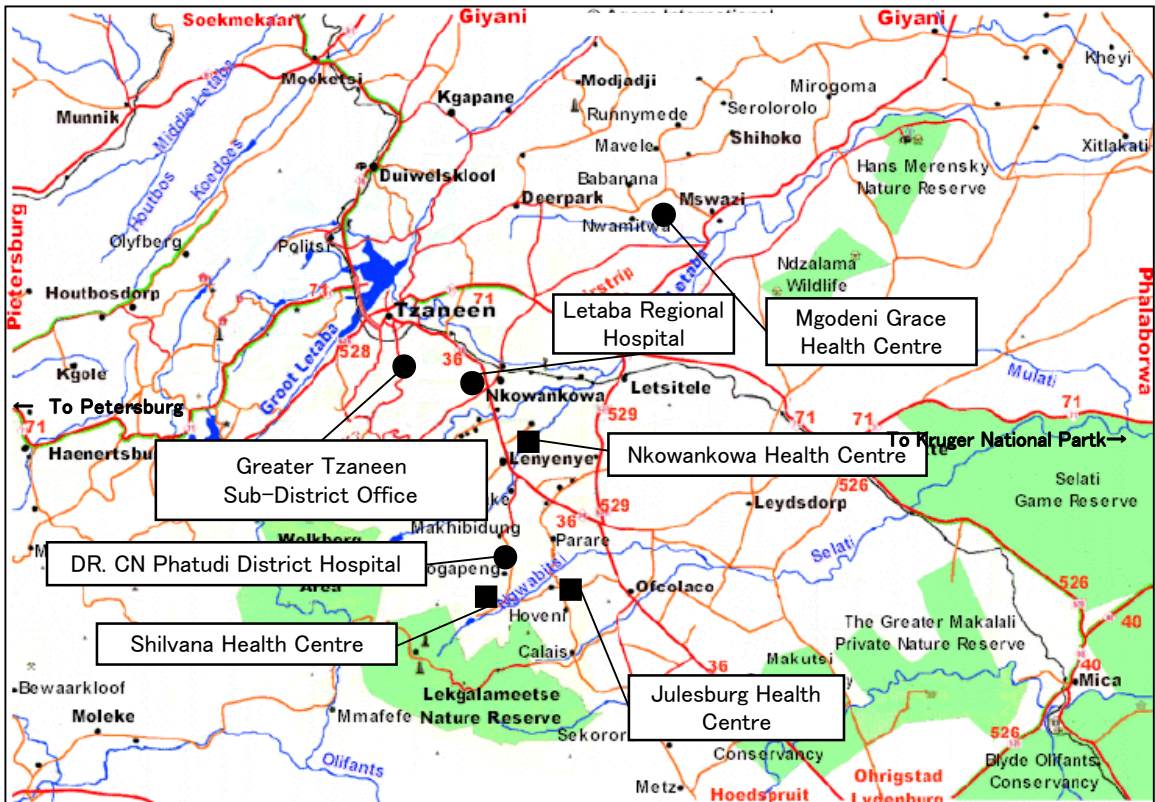
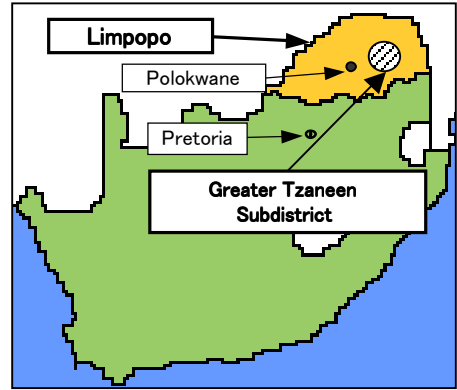
Very truly yours,



Yoji ISHIKAWA
Project manager,
Basic design study team on
the Project for Improvement of Health
Facilities in the Limpopo Province
in the Republic of South Africa

The Joint Venture between
International Total Engineering Corporation and
Yamashita Sekkei inc.

Location Map



Greater Tzaneen Subdistrict Map

PROJECT SITES FOR CLINICS



LETSITELE CLINIC



MOHLABA CLINIC



MAAKE CLINIC

PROJECT SITES FOR VISITING POINT SHELTERS



BURGERSDORP



KHUJWANA



MOGOLOBOTO-2



PHARARE



PERSPECTIVE (LETSITELE CLINIC)



PERSPECTIVE (MOHLABA CLINIC)



PERSPECTIVE (MAAKE CLINIC)

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Abbreviations

| | |
|----------|---|
| ANC | African National Congress |
| CCLLO | Chief Community Liaison Officer |
| CEO | Chief Executive Officer |
| CSIR | Council for Scientific and Industrial Research |
| DFID | Department for International Development |
| DOTS | Directly Observed Treatment, short course |
| EMS | Emergency Medical Services |
| EU | European Union |
| HBC | Home Based Care |
| HIV/AIDS | Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome |
| ICU | Intensive Care Unit |
| MTEF | Medium Term Expenditure Framework |
| NDOH | National Department of Health |
| NGO | Non-Governmental Organization |
| NHLS | National Health Laboratory Services |
| PHC | Primary Health Care |
| PPP | Purchasing Power Parity |
| RDP | Reconstruction and Development Programme |
| SABS | South Africa Bureau of Standards |
| SD | Sub-District |
| STD | Sexually Transmitted Diseases |
| UNDP | United Nations Development Plan |
| UNICEF | United Nations Children's Fund |
| USAID | The United States Agency for International Development |
| VCT | Voluntary Counselings and Testings |
| WB | World Bank |

Summary

Summary

Situated in the southernmost tip of the African continent, the Republic of South Africa has a population of 45 millions on the land of 1,219 thousands square kilometer. The Limpopo Province, found in the northernmost tip of the country borders upon Botswana, Zimbabwe and Mozambique. Although the major health indicators of the Limpopo Province favorably exceed the national average, the number of people living below the poverty line is outnumbered only by the Eastern Cape Province, and per capita income and the unemployment rate are the worst in the country. Thus, the Limpopo Province can often be referred to as one of the poorest province in the country.

The Greater Tzaneen Sub-District, the project site of the Requested Japanese Assistance, is situated east of Polokwane, the capital city of the province. With a population of 380 thousands on a 3.24 thousand square kilometer land, the Sub-District favorably outnumbers the national and provincial average of major health indicators. Still there is inequality in access to health services in this province due to regional and social surroundings. Mobile clinic activities for mountain villages or remote areas are often suspended in the rainy seasons because of their vehicle that are too old to run on an unpaved road. Also, in the Limpopo province where the Sepedi, Shangaan and Venda are the majority while the Zulu and Khosa are the minority, and where the peoples of those tribes were forced to live in their homelands until 1994, there still exist a sense of distrust among health staff and people deeply rooted in their heart. For that reason, careful attention should be paid in providing health services.

Regarding disease structure, there are more malaria patients in the province than national average. There are also more STDs (sexually transmitted diseases) and diarrhea as well as nutrition related diseases such as low weight birth and iodine deficiency, etc. Although five most common cause of death are respiratory disease, heart disease, AIDS, tuberculosis and still birth, health staffs say indirect cause of death for respiratory disease and tuberculosis are AIDS.

In response, the Limpopo Department of Health and Welfare (DOHW) drafts a strategic plan in accordance with Health Sector Strategic Framework set forth by the National Department of Health. The strategic plan

for April 2003 – March 2004 consists of the following programmes.

- 1 Health Administration
- 2 District Health Services
- 3 Emergency Medical Services
- 4 Provincial Hospitals
- 5 Central Hospitals – Provincial Tertiary Services
- 6 Health Sciences and Training
- 7 Health Care Support Services
- 8 Health Facilities Management

Considering the number of diseases that can be treated by primary health care, importance of health education for those disease and necessity of delicate consideration in providing health services, the Limpopo DOHW has put a great deal of effort into primary health services (clinic, health centre and mobile clinic for those who are left out of accessibility to health services geographically and socially), secondary health services (regional hospital to accept the patients referred from primary health facilities) and strengthening of the referral system between those primary and secondary health facilities. Of eight strategic plans above, the Limpopo DOHW uses more than half of their budget for “2. District Health Services” for primary health services and “4. Provincial Hospital” for secondary health services.

Despite their effort, equipment in health centres and clinics have got too old and lack of equipment maintenance system in hospital has caused inappropriate use and renewal of equipment. As vehicles for mobile clinic are getting older, geographical and social inequality in accessibility to health services still remain unsolved.

In March 2001, the Limpopo DOHW requested Japanese grant aid assistance which includes equipment procurement for 3 hospitals, 5 health centres and 21 clinics for the purpose of improvement of quality of health services, accessibility to health services and improvement of health indicators in the Greater Tzaneen Sub-District of Mopani District, former Halegratz District of Lowveld Region. Then construction of maternity ward and health education promotion centre in Van Velden District Hospital and construction of 3 clinics, namely Letsitele, Maake and Mohalaba, were added to the request.

In response to this request, the Japanese Government dispatched a basic design study team from March to April, 2003. The study team did a survey after confirmation of the project sites and change of denomination. The team also surveyed 16 possible visiting points for mobile clinic for construction of Visiting Point Shelter which had additionally been requested during the study for its importance in primary health care, and came to a conclusion that four visiting points (Burgersdorp, Khujwana, Mogoloboto-2 and Pharare) were suitable for construction.

On the day of signing of the Minutes of Discussion, however, the Limpopo DOHW strongly requested to shift the project site from Van Velden District Hospital to Nkhensani District Hospital in Greater Giyani Sub-district of Mopani District, saying Van Velden Hospital, located in the centre of the town, could not be as beneficiary to the people of lower class income as Nkhensani Hospital. Considering that Greater Giyani Sub-district was originally out of the scope and that no site survey had been conducted on that area, the study team could not but agree upon exclusion of Van Velden Hospital from the scope of the Requested Japanese Assistance.

The project sites finally agreed upon are as follows.

1) Sites for equipment procurement

- 1 regional hospital : Letaba
- 1 district hospital : Dr. C. N. Phatudi
- 4 health centres : Mugodeni Grace, Nkowankowa, Shiluvana, Julesburg
- 24 clinics : Carlotta, Dan, Dr. Hugo Nkabinde, Jamela, Khujwana, Lenyenye, Lephephane, Madumane, Mokgope, Mamitwa, Mariveni, Mogapeng, Mogoboya, Moime, Mokgwathi, Morapalala, Morutji, Motupa, Nyavana, Ooghoek, Ramotshinyadi, Tours, Tzaneen, Zangoma

2) Sites for equipment procurement and construction

- 3 clinics : Letsitele, Maake, Mohlaba

3) Sites for visiting point shelters construction

- 4 visiting point shelters : Khujwana, Mogoloboto-2, Pharare, Burgersdorp

Main equipment requested are as follows.

- Hospitals : ECG (electrocardiogram) apparatus, EEG (electroencephalogram) apparatus, Ultrasound apparatus, Infant incubator, Infant warmer, Syringe pump, Infusion pump, Neonatal monitor, Cardiotokograph, Doppler fetus detector, X-ray unit, Operation instrument set, High pressure steam sterilizer, Blood gas analyzer, Electrolyte analyzer, Dental unit, Slit lamp, etc.
- Health centres/Clinic/Mobile clinics : Height and weight scale, Autoclave, Diagnostic set, Infant warmer, Vaccine refrigerator, Blood pressure meter, Glucose meter, Hemoglobin meter, Doppler fetus detector, Audiometer, Vehicle for mobile clinic, etc.

Regarding “District Health Services” as important, the Limpopo DOHW has confirmed that all of the clinics are to be able to provide full PHC package by the end of March, 2005 and declared provision of 471 clinics open for 24 hours a day by the end of 2006. In accordance with those policy, the Project will be expected to improve the health services at the primary and secondary level in the Greater Tzaneen Sub-District through procurement of medical equipment for clinics and health centres and through procurement of medical equipment for hospitals to strengthen regional health referral system.

Inputs of the Requested Japanese Assistance shall be as follows.

- Procurement of equipment in Letaba Regional Hospital
- Procurement of equipment in Dr. CN Phatudi District Hospital
- Procurement of equipment in 4 Health Centres
- Procurement of equipment in 24 clinics
- Construction of 3 clinics and procurement of equipment
- Procurement of vehicles for mobile clinic
- Construction of 4 visiting point shelters
- Technical assistance by consultant (Management Method of Equipment Maintenance) at Letaba Regional Hospital)

Equipment Procurement

Equipment planning shall be based on provision of secondary (regional hospital) and primary (district hospital, health centres and clinics) health facilities targeting at assistance of their activities for improvement of health of the poor people in the Greater Tzaneen Sub-District. It also helps strengthen the referral system of regional health which is now not working properly, based on the present allocation of staff.

Outline of Equipment to be Procured

| Facility | | Major Equipment |
|-------------------------|-----------------------|--|
| Letaba Hospital | Emergency OPD | Instrument set for treatment |
| | Specialized OPD | ECG, Ultrasonic nebulizer |
| | OPD | Diagnostic set, Blood pressure monitor, Dental unit |
| | Pediatrics | Infant warmer, Infusion pump, Neonatal monitor |
| | Gynecology/Obstetrics | Doppler fetus detector, Vacuum extractor, Cardiotocograph |
| | Theatre | Operation instrument sets |
| | CSSD | High pressure steam sterilizer |
| | ICU | Infusion pump |
| | Radiology | X-ray apparatus, basic screening unit |
| Dr. CN Phatudi Hospital | Emergency OPD | Emergency cart, Defibrillator, Operation light, mobile with battery backup |
| | OPD | ECG, Blood pressure monitor, Ultrasound scanner |
| | Pediatrics | Infant warmer, Infusion pump, Neonatal monitor |
| | Gynecology/Obstetrics | Doppler fetus detector, Cardiotocograph |
| | Theatre | Resuscitation sets, Operation instrument sets |
| | Dental | Dental unit |
| Health Centre/Clinic | | Autoclave, Blood pressure monitor, Examination lamp, Infant warmer, Resuscitation set, Glucose metre, Delivery table |
| Mobile Clinic | | Vehicle for mobile clinic, Audiometre |

Building Construction

The facility plan is to be made with the intention of reducing initial construction cost as well as maintenance/running cost of the facility. In order to realize this, the building plan is to be made to the most suitable scale with unnecessary space eliminated. The plan should also be consistent with the Terms of Reference (Capital Works Planning Programme for the Department of Health & Welfare) issued by the Limpopo DOHW.

Facility Scale & Contents

| Facility | Land Area | Floor Area | Structure | Department |
|--------------------|---------------------|-------------------|-------------------------|--|
| Clinics | | | | |
| Letsitele | 6,834m ² | 367m ² | Reinforced Masonry | Reception/waiting area, Management, OPD, Maternity, Child/Maternal care, VCT |
| Mohalaba | 5,766m ² | 367m ² | Do. | |
| Maake | 7,422m ² | 367m ² | Do. | |
| V.P.Shelter | | | | |
| Burgersdorp | - | 100m ² | RC column, wooden truss | Waiting area, parking |
| Khujwana | - | 100m ² | Do. | Do. |
| Mogoloboto-2 | - | 100m ² | Do. | Do. |
| Pharare | - | 100m ² | Do. | Do. |

The Requested Japanese Assistance shall require 16 months including Detail Design. Estimated project cost is Japanese Yen 521 million (Japan's Grant Aid : 476 million, South African side : 45 million)

All of the project sites are to provide health services to the people of Greater Tzaneen Sub-District. Therefore, it can be said that target group of the project is 380,000 people, the whole population of the Greater Tzaneen Sub-District.

Through procurement of medical equipment and construction of facilities, the following outputs shall be expected.

- 1 Letaba Hospital : Number of radiography increased, Number of operation increased, Hospital functions as a secondary health facility restored, Maintenance system of medical equipment improved
- 2 Dr. CN Phatudi Hospital : Number of dental treatment increased, Number of operation and caesarean section increased
- 3 Health centres/Clinics : Effectiveness and efficiency of treatment improved, Waiting time of patient reduced
- 4 Mobile clinic : Number of visit (visitor) increased, Inequality in accessibility to health services diminished

Implementation of the Project is deemed appropriate for the following reasons.

- 1 Beneficiary group of the Project is the people living below the poverty line, most of which are the people in the former homeland.
- 2 The Project will contribute to improvement of basic human needs of the people through strengthening of PHC system at clinic level. It also helps implementation of the Limpopo DOHW's

most important program, District Health Services.

- 3 Implementation of the Project will not increase the operation and maintenance costs for the facilities since most of the procured equipment are renewal of the existing equipment, no highly sophisticated equipment are included, and the equipment planning is based on the number of presently available staff.
- 4 It is rationally judged that the Greater Tzaneen Sub-District is potentially able to implement the project and to seek the project objectives.

Yet, for achievement of the project objectives, it is necessary to overcome the following items.

- Establishment of equipment maintenance system within the hospital, based on the achievement of Technical Assistance by Consultant.
- Number of doctor and nurse remain the same as the present level.

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