

**THE OUTLINE DESIGN STUDY REPORT**  
**ON**  
**THE PROJECT FOR THE CONSTRUCTION**  
**OF**  
**SECONDARY SCHOOLS**  
**IN**  
**THE KINGDOM OF LESOTHO**

**February 2008**

**JAPAN INTERNATIONAL COOPERATION AGENCY**  

---

**FUKUNAGA ARCHITECTS-ENGINEERS CO.LTD**

GM
JR
08-016

## **PREFACE**

In response to a request from the Government of Lesotho, the Government of Japan decided to conduct an outline design study on the secondary school construction plan of Lesotho and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Lesotho a study team from August 4 to September 2, 2007. The team held discussions with the officials concerned of the Government of Lesotho, 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 Lesotho from December 13 to 22, 2007 in order to discuss a draft outline 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 Lesotho for their close cooperation extended to the teams.

February 2008

Masafumi Kuroki

Vice President

Japan International Cooperation Agency

February 2008

## **LETTER OF TRANSMITTAL**

We are pleased to submit to you the outline design study report on the secondary school construction project in Lesotho.

This study was conducted by Fukunaga Architects-Engineers, under a contract to JICA, during the 7-month period from July 2007 to February 2008. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Lesotho and formulated the most appropriate outline 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,

Shigeru Ogura

Project manager,

Outline design study team on

the Project for the Construction of Secondary  
Schools in the Kingdom of Lesotho

Fukunaga Architects-Engineers Co., Ltd.

## SUMMARY

### 1. Overview of the country

The Kingdom of Lesotho (“Lesotho”) is a small country entirely surrounded by the Republic of South Africa (“South Africa”). It has an area of approximately 30,000 km<sup>2</sup> and a population of approximately 1.88 million (as of 2006). The entire country, including its capital, Maseru, is located in mountainous land at elevations ranging from 1,000 to 3,480 m above sea level, in the Drakensberg Mountains. Affected significantly by these geographical conditions, the country has a continental climate with large diurnal and annual temperature ranges. The annual mean temperature is 15.2°C in the plains, while the corresponding figure in the high mountains (Highlands) is 7°C. There are also large regional and seasonal variations in precipitation. Rainfall is concentrated in the seven summer months, from October to April. In Lesotho, approximately 4,000 tons of soil are allegedly washed away every year through soil erosion caused by short but heavy downpours. The loss of arable land, which comprises only 12 % of the entire area of the country, due to the soil erosion has become a social problem because of its great impact on the country’s economy.

In Lesotho, both the per capita GDP and the economic growth rate remain at the low levels of US\$ 810 in 2005 and 2.8% from 2001 – 2005, respectively. As to the industrial structure, though primary, secondary and tertiary industries contribute 16.2, 45.4 and 38.3% of GDP respectively, the majority of the people are engaged in agriculture and stock-raising, and many of them are subsistence farmers. The country does not have significant natural resources except for diamonds (the yield of which has been unstable) and water resources. Development in other industrial sectors is stagnant except in small-scale light industry. These conditions have led to a huge excess of imports, most of which is compensated for by the remittances of migrant workers working in South Africa. Meanwhile, the revenue from the “Southern African Customs Union” between four countries in the region (South Africa, Botswana, Namibia and Swaziland) accounts for 50% of national revenue. Thus, the country’s economy depends heavily on other countries in the region. In addition, as the currency, the Maloti, is pegged to the South African Rand, the effects of the inflation expected from the hosting of the World Cup by South Africa in 2010 are expected to affect Lesotho. Moreover, the high HIV/AIDS infection rate, 30% among adults, and the falling population are expected to have a significant impact on the economy of Lesotho.

### 2. Background, History and Overview of the Requested Project

Secondary education in Lesotho is a five-year educational course for students aged 13 to 18 years who have completed primary education. At present, though both the gross and net enrollment ratios (NER) in secondary education remain low at 39.1 and 25.4%, respectively (2005, Ministry of Education and Training (MOET)), the number of students has been increasing at a rate of approximately 7.5% per year (which corresponds to an increase of approximately 2.0% per year in the gross enrollment ratio (GER)) since 1999. To cope with the increase, MOET is not only constructing new classrooms but also taking measures such as the use of some primary school classrooms by secondary schools. In addition to the

above-mentioned trends, the introduction of Free Primary Education (FPE) in 1999 raised GER and NER in primary education to 126.2 and 83.2%, respectively (2005, MOET). As the students benefiting from FPE are expected to start enrolling in secondary school in 2007, there is expected to be a significant increase in the demand for secondary education facilities from 2007 on.

In addition, as most of the country is located in the high mountains, access to rural villages not located along major trunk roads is extremely poor. Many of the existing secondary schools both in the capital, Maseru, and in rural towns are equipped with student dormitories for students from remote areas and for HIV/AIDS orphans. However, the students accommodated in the existing dormitories are forced to live in a poor environment, with more than ten students accommodated in a single dormitory room. Furthermore, the absolute insufficiency of accommodation capacity in the dormitories forces many students to board at houses near their school. Such conditions have been a factor hindering enrollment in secondary education. Many students at schools with no cooking or dining facilities face additional difficulty particularly in the rainy season and in the winter, as they have no option but to take their meals, which in Lesotho are provided by the schools to all secondary school students, outdoors.

From an analysis of the current situation described above, MOET estimates that an additional 3,622 classrooms will be needed by 2015. MOET gives the highest priority to improvement in access to secondary education through the construction of secondary schools equipped with dormitories and a kitchen/dining hall (cum-multi-purpose hall) in remote areas and densely populated areas. However, as it is impossible for the Government of Lesotho (GOL) to achieve this target of facility development from its own budget, assistance from donors including Japan is required. Under these circumstances, GOL submitted to the Government of Japan (GOJ) a request for Grant Aid Cooperation in secondary school construction.

In response to this request, in February 2007 GOJ implemented a preliminary study in which the study team studied the background and necessity of the request, the educational policies of GOL and the practicability of the school construction using low-cost designs in accordance with local specifications. The study confirmed the relevance of the construction of secondary education facilities in response to the increase in demand for them and concluded that no significant problem was expected from the implementation of this project using low-cost designs based on local specifications.

The request at the time of the feasibility study includes the construction of one school in each district (total of ten secondary schools), each to be equipped with ten ordinary classrooms, a science laboratory, an ICT Training Room, a workshop (for metalwork and woodwork), a Home Economics Training Room (for cooking and sewing), a science laboratory (for physics, chemistry and biology), a library, a staff room, toilets (16 booths), dormitories for boys and girls (each with an accommodation capacity of 60), a kitchen/dining hall (cum multi-purpose hall) and staff houses (two housing blocks).

### **3. Summary of the Study Results and Content of the Project**

After examining the results of the preliminary study, GOJ decided to dispatch an outline design study team for the purpose of studying the necessity and relevance of the project and preparing an outline design. In accordance with this decision, the Japan International Cooperation Agency (JICA) dispatched

an outline design study team to Lesotho from August 4th to September 2nd, 2007. The team confirmed and discussed with MOET, the project implementing agency of GOL, the content of the request. In addition, the team studied the local construction industry, the conditions of the sites and similar projects, evaluated and considered carefully the necessity and relevance of the project and the scale and details of the facilities, and prepared a draft outline design. The team compiled the results of the study into the Summary of Outline Design. From December 13th to 22nd, 2007, the team explained the content of the Summary of Outline Design to the GOL personnel involved in the project and had discussions with them in Lesotho. The outcomes of the discussion have been incorporated into the draft outline design in the preparation of this Outline Design Study Report.

As this project is to be implemented with funds from Grant Aid for Community Empowerment (GACE), the aim will be to achieve significant cost reduction and improved efficiency through improved competitiveness; in addition the work will be executed in accordance with local designs and specifications and with maximum utilization of local companies and locally available materials and equipment.

### **3.1 Selection of Project Sites and Components**

Of the total of ten candidate schools, one for each district, included in the original request for this project, seven schools (in Leribe, Maseru, Berea, Quthing, Butha-Buthe, Mokhotlong and Mafeteng) were selected for this project because of the high demand for classrooms predicted in the demand projection. The demand projection shows a shortage of 26 to 168 classrooms in 2011 in each of these districts. In addition, the planned project sites are situated mainly in major cities in the respective districts and the number of pupils attending existing primary schools within a radius of 10 km of the sites exceeds the number of students attending existing secondary schools within the same areas by a large margin.

The basic components of this project are six ordinary classrooms, an integrated science laboratory, an ICT training room, a staff room, toilets and staff housing, these being the minimum requirements stipulated in the secondary education curriculum of Lesotho. Student dormitories and kitchens/dining halls (cum-multi-purpose halls) are to be constructed with the housing facilities required for the operation of schools in the capital, Maseru, and in the mountains as the basic components.

**Table 1 Scale of the project facilities**

Area	Project site	Details of facilities	
Ordinary areas	Leribe	Two-classroom building/ four-classroom building (a total of six classrooms), Integrated Science Laboratory/ ICT Training Room Building, Staff Room Building. Combined Toilets (17 booths), a Principal's house and staff houses	
	Berea		
	Butha-Buthe		
	Mafeteng		
The capital and mountain areas	Quthing		Boys' dormitory (60 beds) Girls' dormitory (60 beds) Kitchen/Dining Hall (cum-multi-purpose hall)
	Mokhotlong		
	Maseru (the capital)		

**Table 2 List of equipment (educational furniture) (per room)**

Ordinary classroom	Individual desks and chairs for student: 40, desk and chair for teacher: 1 each
Integrated Science Laboratory	Stools for students and teacher: 43, chair for teacher: 1
ICT Training Room	Tables for personal computers: 20, Chairs for students: 40, desk and chair for teacher: 1 each
Staff Room	Desks for teachers: 4, Tables for teachers: 4, Chairs for teachers: 19 (two types)

### 3.2 Basic Design of Facilities

In establishing the design specifications, in principle the specifications equivalent to the standard designs, specifications and equipment of MOET will be adopted. However, as some of the sites are located in the mountains where the natural conditions are harsh, upgraded specifications will be adopted in order to provide main structures and roofs with strength and durability, so as to minimize the need for repair after completion of the construction.

### 3.3 Implementation Organization

In accordance with the Agreed Minutes of Procedural Details (A/M) attached to the Exchange of Notes (E/N) between GOJ and GOL, GOL and the Procurement Management Agent (PMA) will conclude the Procurement Management Service Contract. PMA will organize an implementation organization with the Education Facilities Unit (EFU) of MOET as the implementing agency and implement the project. In this project, trouble-free project implementation is expected because the number of schools to be constructed is small, the standard designs are well-established and EFU has sufficient personnel for the design and execution of the project. The two governments will establish an Inter-Governmental Council to discuss and coordinate the scope of support and details of the project. The council will be chaired by a representative of GOL. Representatives of JICA South Africa Office and PMA will attend the council meetings as advisors. From GOL, representatives of MOET, the Ministry of Finance and the Ministry of Foreign Affairs will attend the council meetings.

### 3.4 Software Component

No software component will be implemented in this project because GOL has an excellent facility operation, maintenance and management system, and it would be difficult to implement a software component during the project period at all the schools newly established in this project.

### 3.5 Construction Period and Estimated Costs of the Project

The construction period of this project will be approximately 19 months. After the conclusion of the Procurement Management Service Agreement, PMA will establish the design supervision system utilizing EFU. Then, detailed design and tender documents will be prepared and a contractor and a furniture supplier will be selected. The 19 months will consist of a period of approximately three months from the conclusion of the Procurement Management Service Contract till the commencement of the construction work; a period of 15 months for the construction work including the preparation period; and a period of one month for the removal of temporary structures, unused materials and equipment.

**Table 3 Project Implementation Schedule**

Fiscal year	FY2007	FY2008										FY2009										
Calendar year	2008											2009										
Calendar month	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10		
Number of month	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Procurement Management Agent		△ Procurement Service Management Contract																				
		Procurement																				
Detailed design/execution management (EFU)		Study/design		Execution supervision																		
Contractors			Selection											Execution								
Lots 1-7			Selection											Execution								
Lot 8-14			Selection											Execution								
Furniture supplier												Manufacturing, transport and installation										



### **3.6 Examination of the Relevance of the Project**

The following impacts are expected from the implementation of this project:

1) Expansion of the opportunity to enroll in secondary school

The construction of 42 classrooms in this project will increase the enrollment ratio in secondary education by providing an opportunity to receive secondary education to 1,680 additional primary education graduates in the project areas facing difficulty in secondary education enrollment because of poor access to the schools and shortage of classrooms.

2) Improvement of access

This project will contribute to the reduction of regional disparities in access to secondary education by including two of the four districts in the mountains, which have access problems and high demand for educational facilities, among the ten districts in the entire country. The construction of three secondary schools with student dormitories and kitchens/dining halls (cum-multi-purpose halls) in the capital, Maseru, and the mountains is expected to enable 360 children, who would otherwise have difficulty in commuting to school, to attend secondary school while staying in the dormitories. Meanwhile, the construction of staff housing with the schools in the capital and in the mountain areas with poor housing conditions, will facilitate the assignment of teachers, who would otherwise tend to be reluctant to work in areas with poor housing conditions, such as remote areas, to these schools.

3) The installation of a total of seven new Combined Flush Toilets (17 booths per toilet), one per school, is expected to improve the sanitary environment. Consolidation of water-using facilities under the improvement plan of this project will facilitate maintenance and management of the facilities.

These impacts are expected to increase the enrollment ratio in secondary education and to improve the quality of secondary education in Lesotho. It is considered appropriate to support this project with Grant Aid Cooperation of Japan as it is expected to contribute to improvement of BHN among the general public. Furthermore, the system covering the operation, maintenance and management of this project of GOL is considered to be trouble-free as they have sufficient personnel and financial resources for the system. Under this system, it is considered possible for this project to be implemented smoothly and effectively.

# CONTENTS

Preface

Letter of Transmittal

Summary

Contents

Location Map / Perspective

Figures and Tables

Abbreviations

Chapter 1	Background of the Project.....	1
1-1	Background and Overview of the Request.....	1
1-1-1	Background of the Request.....	1
1-1-2	Overview of the Request.....	2
1-1-3	Trends in Japan’s Assistance.....	3
1-2	Trends in Assistance of Other Donors.....	4
1-3	Circumstance of the Project Site.....	5
1-3-1	Natural Conditions.....	5
1-3-2	Environmental and Social Considerations.....	7
Chapter 2	Contents of the project.....	9
2-1	Basic concept of the Project.....	9
2-1-1	Overall Goal and Project Purpose.....	9
2-1-2	Basic Concept of the Project.....	10
2-1-3	Environmental and Social Considerations.....	10
2-2	Outline Design of the Requested Japanese Assistance.....	10
2-2-1	Design Policy.....	10
2-2-1-1	Basic Policy.....	10
2-2-1-2	Policy for Natural Conditions.....	11
2-2-1-3	Policy for Socioeconomic Conditions.....	12
2-2-1-4	Policy for the Construction Project.....	12
2-2-1-5	Policy for Use of Detailed Design/Construction Supervision Consultants.....	12
2-2-1-6	Policy for Use of Local Constructors.....	13
2-2-1-7	Policy for Maintenance/Management Capacity of Implementing Agency.....	13
2-2-1-8	Policy for Setting Quality of Facilities and Equipment.....	14
2-2-1-9	Policy for Work Period.....	14
2-2-1-10	Environmental and Social Considerations.....	14
2-2-2	Basic Plan (Facility Plan).....	15
2-2-2-1	Selection of School Construction Sites and Determination on Scale of Work.....	15
2-2-2-2	Local Specifications and Plan for Their Improvement.....	18

2-2-2-3	Architectural Design .....	19
2-2-2-4	Educational Furniture.....	27
2-2-2-5	Comparison between Grant Aid for General Projects and Grant Aid for Community Empowerment (GACE).....	28
2-2-3	Outline Design Drawing (Site Plans/Preliminary Drawings).....	31
2-2-4	Implementation Plan .....	32
2-2-4-1	Implementation Policy .....	32
2-2-4-2	Implementation Conditions (Contractual Matters, Dispute Resolution, etc.) .....	34
2-2-4-3	Scope of Works.....	35
2-2-4-4	Consultant Supervision .....	37
2-2-4-5	Quality Control Plan .....	39
2-2-4-6	Procurement Plan .....	39
2-2-4-7	Implementation Schedule.....	40
2-2-4-8	Software Component Plan.....	41
2-3	Obligations of Recipient Country .....	43
2-4	Project Operation Plan.....	43
2-4-1	Operation Plan .....	43
2-4-2	Maintenance/Management Plan.....	44
2-5	Other Relevant Issues .....	45
2-5-1	Initial Cost Estimation .....	45
2-5-2	Operation and Maintenance/Management Costs.....	46
2-5-2-1	Operation Cost .....	46
2-5-2-2	Maintenance/Management Cost.....	46
Chapter 3	Project Evaluation and Recommendations.....	48
3-1	Project Effects .....	48
3-2	Problems and Recommendations.....	49
3-2-1	Problems .....	49
3-2-2	Recommendations.....	49
3-3	Appropriateness of Project .....	50
3-4	Conclusion.....	50

# LOCATION MAP



- SITES**
- ① LERIBE
  - ② MASERU
  - ③ BERE A
  - ④ QUTHING
  - ⑤ BUTHA-BUTHA
  - ⑥ MOKHOTLONG
  - ⑦ MAFETENG

- LESOTHO**
- INTERNATIONAL BOUNDARY
  - DISTRICT BOUNDARY
  - NATIONAL CAPITAL
  - DISTRICT CAPITAL
  - TOWN, VILLAGE
  - ROAD
  - RIVER
  - PROJECT SCHOOLS
  - DISANCE FROM MASERU

## PERSPECTIVE



The Outline Design Study on the Project for the Construction of Secondary Schools in the Kingdom of Lesotho

Four-classroom Building

# LIST OF FIGURES AND TABLES

## FIGURES

Figure 1-1	Precipitation in the Lowland and Highland .....	7
Figure 1-2	Monthly Temperatures in the Lowland and Highland.....	8
Figure 2-1	Floor Plan of Four-Classroom Building.....	20
Figure 2-2	Floor Plan of Two-Classroom Building .....	20
Figure 2-3	Floor Plan of Administration/Staff room Building.....	21
Figure 2-4	Floor Plan of Integrated Science Laboratory/ICT Training Room Building.....	21
Figure 2-5	Floor Plan of New Combined Toilet .....	22
Figure 2-6	Floor Plan of Kitchen/Dining Hall (cum-multi-purpose hall).....	22
Figure 2-7	Floor Plan of Dormitories .....	23
Figure 2-8	Floor Plan of Staff Houses .....	23
Figure 2-9	Implementation Organization.....	33

## TABLES

Table 1-1	Order of Priority among the Sites in the Request.....	2
Table 1-2	Facility Components .....	3
Table 2-1	Demand Forecast for Each District .....	15
Table 2-2	Projection of the Numbers of Enrolled Students.....	17
Table 2-3	Improvement Plan .....	18
Table 2-4	Required Area of Each Building (Construction Area) .....	24
Table 2-5	Area of the Educational Facilities by District and Building .....	25
Table 2-6	Educational Furniture.....	25
Table 2-7	Comparison Table .....	29
Table 2-8	Required Man-months of EFU Staff.....	33
Table 2-9	Lot Division .....	36
Table 2-10	Number of Days Required for the Site Visits .....	38
Table 2-11	Material Test.....	39
Table 2-12	Sources of Procurement of Materials.....	40
Table 2-13	Overall Work Schedule .....	40
Table 2-14	Required Processes .....	41
Table 2-15	Overall Implementation Schedule (Draft).....	42
Table 2-16	Obligations of Recipient Country .....	43
Table 2-17	Frequency of Maintenance of Facilities.....	44
Table 2-18	Expenses to be Borne by the Lesotho Side .....	45
Table 2-19	Salaries for Teaching and Clerical staff .....	46

Table 2-20 Maintenance/Management Cost for Buildings..... 46

## ABBREVIATIONS

The Project for the Construction of Secondary Schools in the Kingdom of Lesotho

AfDB	African Development Bank
AIR	Apartment Intake Rate
A/M	Agreement of Memorandum
BHN	Basic Human Needs
BQ	Bill of Quantity
BS	British Standard
CAD	Computer Aid Design
COSC	Cambridge Overseas School Certificate
DTEP	Distance Teacher Education Program
ECCD	Early Childhood Care and Development
EFU	Education Facilities Unit
EMIS	Education Management Information System
E/N	Exchange of Notes
ESSP	Education Sector Strategic Plan
FA-FE	Form A-E
FPE	Free Primary Education
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IMF	International Monetary Fund
IT	Information Technology
JC	Junior Certificate
LCE	Lesotho College of Education
LEC	Lesotho Electric Company
LDTC	Lesotho Distance Teaching Centre
M	Maloti
M/M	Man Month
MOET	Ministry of Education and Training
NIR	Net Intake Rate
NUL	National University of Lesotho
PSCV	Project Support and Coordination Unit
PSLE	Primary School Leaving Examination
PRSP	Poverty Reduction Strategy Paper Lesotho
R	Rand
RWS	Rural Water Supply
S1-7	Standard 1-7
SABS	South Africa Bureau of Standard
TVET	Technical and Vocational Education Training
WASA	Water and Sewerage Authority
WEP	World Education Program
WTO	World Trade Organization



# **CHAPTER 1 BACKGROUND OF THE PROJECT**

# **CHAPTER 1 BACKGROUND OF THE PROJECT**

## **1-1 Background and Overview of the Request**

### **1-1-1 Background of the Request**

In Lesotho, the education sector is considered as one of the highest priority sectors in “Poverty Reduction Strategy” made public in 2003. In a national strategy prepared in 2004, “Lesotho Vision 2020,” education is also given the highest priority for the purposes of creating “a stable democracy and a nation at peace with a healthy and well-developed human resource base” and aiming at economic development. In particular, importance of lifelong education, vocational and technical training and entrepreneurship training is emphasized for the creation of human resources with productive labor forces and, accordingly, improvement of access to high-quality compulsory education (up to late secondary education) is considered as an issue of the highest priority.

On the basis of the above-mentioned national plans, the Education Sector Strategic Plan for 2005-2015 (ESSP 2005-2015) was prepared in March 2005 as an overall plan in the education sector. ESSP states improvement of access through construction of schools in remote areas and densely populated areas as an issue of the highest priority in secondary education and sets a target of achieving 85% of the gross enrollment ratio (GER) in secondary education by 2015. Free Primary Education (FPE) introduced in 2000 increased the number of pupils enrolled in primary education by 12.5% and the gross and net enrollment ratios (NER) to 126.2 and 83.2%, respectively (in 2005, the Ministry of Education and Training (MOET)) and, since then, GER has continued increasing steadily at an annual rate of 1 to 3%.

Meanwhile, the enrollment ratio in secondary education remains at a low level. GER and NER were 39.1 and 25.4%, respectively (in 2005, MOET). There are many children who have managed to complete primary education under FPE and have to give up the hope of enrolling in secondary education because of financial difficulty. The number of the “Out of School” children, who have completed primary education and have not enrolled in secondary education, is estimated at as many as 4,000 to 5,000. MOET considers that basic education includes secondary education and is planning to partially introduce “Rationalization of School Fees,” which aims at reducing school fees in 2008. As FPE and “Rationalization of School Fees” are expected to increase the number of children enrolled in secondary education in future, demand for secondary education facilities is expected to increase significantly.

Under these circumstances, MOET predicts that the shortage of classrooms will reach 3,622 in 2015 and considers improvement of access by the construction of secondary schools with student dormitories and kitchens/dining halls (cum-multi-purpose halls) in remote areas and densely populated areas as an issue of the highest priority. However, as the budget of the Government of Lesotho is insufficient to achieve the target of such facility development, support from donors including Japan is required. The above-mentioned circumstances led the Government of Lesotho to make a request to the Government of Japan for Grant Aid Cooperation for the construction of secondary schools.

Upon receipt of the request, the Government of Japan implemented the preliminary study in February

2007 to confirm the background and necessity of the requested project and the education policies of the Government of Lesotho and to investigate the possibility of implementing school construction using low-cost designs based on local specifications. The study not only confirmed the appropriateness of the construction of educational facilities for secondary schools in response to the increasing demand for secondary education facilities, but also concluded that no significant problem was expected from implementation of this project using low-cost designs based on local specifications.

### 1-1-2 Overview of the Request

The request at the time of the preliminary study included construction of a secondary school equipped with ordinary classrooms, a laboratory, student dormitories, etc. in each of the following ten districts. Although it also included request for educational equipments, both sides agreed upon excluding the equipment from the project because of the budgetary constraint of GOJ.

Sites in the request: All ten districts in Lesotho

The order of priority among the sites in the request was decided using the following priority criteria:

- 1) There is no public secondary school in the district.
- 2) It is located in a remote area with poor accessibility.
- 3) The number of students per class is large.

The order of priority among the sites after their re-evaluation with the above criteria is shown below.

**Table 1-1 Order of Priority among the Sites in the Request**

Priority	Project Area
1	Quthing
2	Butha-Buthe
3	Qacha's Nek
4	Mafeteng
5	Mokhotlong
6	Thaba-Tseka
7	Leribe
8	Berea
9	Mohale's Hoek
10	Maseru

In terms of facility components, the request included three types of schools, four schools with emphasis on science and technology, four schools with emphasis on technical training and two ordinary schools.

**Table 1-2 Facility Components**

Facility component	Remarks	Equipment
<b>A. Basic components</b>		
Ordinary classroom	10 classrooms (number of students: 400)	Furniture
Science Laboratory	1 (for general science)	Furniture
Library	1	Furniture
ICT Training Room	1 (40 people)	Furniture
Toilets (for students)	6-booth toilet (Pit latrines, for boys) 6-booth toilet (Pit latrines, for girls)	
Toilets (for teaching staff)	4-booth toilet (Pit latrines)	
Kitchen/Dining	1 (120 people) can be used as multi-purpose hall	Furniture
Administration Building (Principal's Office, Deputy Principal's Office, Accounting Office, Secretary's Office and toilets)	1 (Flush toilet)	Furniture
Staff room	1	Furniture
Principal's house	1	
Staff houses	1 (2 persons)	
Student Dormitories	2 dormitories (120 people) (boys:60, girls:60)	Furniture
<b>B. Specific component in accordance with the needs of each school</b>		
Specialized classrooms for specific subjects	Science laboratory (for physics, chemistry and biology)	Furniture
	Workshop (for woodwork and metal work)	Furniture
	Home economics training room (for cooking and sewing)	Furniture

### 1-1-3 Trends in Japan's Assistance

Japan has provided Lesotho with assistance mainly of Grant Aid for Increased Food Production and Acceptance of Trainees in health, medical care, education, agriculture, etc. every year. The cumulative amount of implemented assistance up to 2004 reached 7.414 billion Yen (709 million Yen of Technical Cooperation and 6,705 million Yen of Grant Aid Cooperation). The assistance concentrated on the primary education sector has been provided under Grant Assistance for Grass-roots Projects since its launch in Lesotho in 1995. Yen Loan has not been provided to Lesotho.

The following projects have been implemented in Lesotho under Grant Aid for General Projects.

- In 1995 Water Supply and Sanitation Project for Primary Schools (723 million Yen)
- In 2001 Project for Infrastructural Support and Educational Equipment Supply to National Teacher Training College in Maseru (573 million Yen)
- In 2004 The Project for Construction of Primary Schools (1,006 million Yen)

These projects under the scheme of Grant Aid for General Projects were highly evaluated by MOET as design proposals which took into consideration ease of facility operation and management and reliable

construction within a limited construction period.

## **1-2 Trends in Assistance of Other Donors**

### **(1) Irish Aid**

Irish Aid was established in 1975 in Lesotho and started official assistance programs. Since then, Irish Aid has provided assistance in the construction of small schools in areas with harsh conditions, in addition to assistance in the education sector (targeting areas in which children have to walk more than 5km to school) and the health/sanitation sector. Its annual budget for the period of 2005-2007 was 2.3 million Euros. While the budget for the next year on is under consideration, it plans to provide assistance in five sectors.

Actual implementation of the school construction has been undertaken by the Education Facilities Unit (EFU) of MOET as in the projects supported by the World Bank. Therefore, all the rules and procedures of procurement used in the project implementation are in accordance with the rules of GOL. EFU has performed its duties well and caused no problem such as delay in construction. The implementation period and contents of the assistance of Irish Aid are as follows:

In 2000	Designed schools in accordance with the process of GOL
In 2001	Shift to a new construction method
In 2002-2004	Construction of nine classrooms (three classrooms x three schools) in the three year
In 2005	Completion of the school construction project
In 2007	Implementing a project of construction of girls' dormitories at secondary schools in the areas in difficult conditions (with the fund from Cyprus)
From 2008	After the completion of Phase I, Phase II is planned.

In addition to the above-mentioned, Irish Aid has provided assistance in secondary education in the form of distribution of textbooks (12 million Maloti) and awarding of bursaries (6 million Maloti). Irish Aid has no plans to resume its school construction project.

### **(2) The World Bank**

The World Bank is implementing Second Education Sector Development Project. In the period from July 2003 to December 2007, a total assistance of US\$ 21 million was invested in primary education, secondary education, vocational training, tertiary education and pre-school education in the proportions of 65%, 25%, 5%, 3% and 2%, respectively. In addition, the World Bank is implementing projects of the following contents.

1. Awarding of bursaries
2. Construction of DTEP database
3. Implementation of needs assessments
4. Implementation of a pilot project for out-of-school children (Targeted Equity-Based Program)

5. Development of teaching materials
6. Implementation of workshops for the inspectors and advisors
7. Implementation of workshops for 500 school principals and 30 members of School Board for the improvement in school management

In the area of primary school facility development, the World Bank is assisting construction of 252 classrooms and provision of required materials and equipment in four districts. The construction of primary schools is still on-going and construction work was being executed at nine sites (a total of 43 classrooms in six new schools and extension of three existing schools) in 2007.

### (3) UNICEF

At present, the increase of orphans who lost their parents to pandemic HIV/AIDS or who were abandoned by their parents who went to work in South Africa has been a problem in Lesotho and UNICEF is planning to provide these orphans with assistance in school enrollment. With the aim of awarding of bursaries to 6,000 most deserving orphans among the orphans who lost both parents, UNICEF is implementing a needs assessment study. If GOL starts implementing the planned “rationalization of school fees” in January 2008, for children those who were forced to drop out of school, UNICEF also intends to implement provision of bursary assistance and distribution of uniforms in close coordination with the government’s policy.

For the poor and children in poverty who will not benefit from the UNICEF project, measures such as the assistance in primary education in the high mountains of WEP and establishment of a parliamentary committee on “orphans and children in poverty” have been taken.

### (4) African Development Bank (AfDB)

From 2000 to 2002, AfDB implemented Basic Education Improvement (Education II) Project. It included construction of classrooms, staff rooms and toilets, provision of furniture and teaching materials and re-training of teaching staff and principals in the primary education sector and construction of laboratories in the existing secondary schools in the secondary education sector.

At present, AfDB is planning Education Quality Enhancement (Education III) Project, a five-year plan including improvement in access to education, expansion of employment opportunities and project operation. Though it contains a plan for constructing 17 secondary schools, commencement date for the construction has not been set.

## **1-3 Circumstance of the Project Site**

### **1-3-1 Natural Conditions**

#### (1) Topography and geology

Lesotho is entirely surrounded by South Africa and located in the Drakensberg Mountains at an elevation

of between 1,000 and 3,480m above sea level. The capital, Maseru, is at the elevation of 1,500m. The highest peak in the country is Mount Thabana Ntlenyana (at the elevation of 3,482m), which is also the highest mountain in Southern Africa. The River Orange is the major river and its source is located near the border with South Africa. Although the project site in Mokhotlong District in the mountains is on a slope, a deliberate site planning of the facilities will enable the construction work.

The geology consists of sedimentary rocks classified into Karroo formation of the Mesozoic era derived mainly from continental sediment. As the area has been scarcely affected by the tectonic movement, nearly horizontal strata are observed.

## (2) Climate

Lesotho has a continental climate affected significantly by the topographic conditions with large diurnal and annual temperature ranges.

### 1) Temperature

The mean annual temperature in the Lowland is 15.2°C, while that in the Highland is 7°C. The mean high temperatures in January, in which the highest temperature of the year is observed, are 32 and 20°C in the Lowland and Highland, respectively, while the mean low temperatures in June, in which the lowest temperature of the year is observed, are -3 and -8.5°C in the Lowland and Highland, respectively.

### 2) Rainfall and Snowfall

There are large regional and seasonal variations in precipitation. The Senqu Valley near Qacha's Nek receives annual precipitation of around 500mm, while the northern mountain area receives annual precipitation exceeding 1,200mm in rain and snow. Rainfall concentrates in the seven months in the summer from October to April. The peak of rainfall with monthly precipitation of 100mm or more and the number of days with precipitation of 5mm or more in a month of six or more is observed in the period from December to February in almost all locations in the country.

### 3) Wind

The mean monthly wind speed is smallest in October at 1.4m/second and largest in August at 8m/second. Westerly wind from the direction of 200° to 300° prevails in Lesotho. The wind with the speed of 20m/second is occasionally observed at the time of thunderstorm in the summer.

### 4) Soil Erosion and Ground

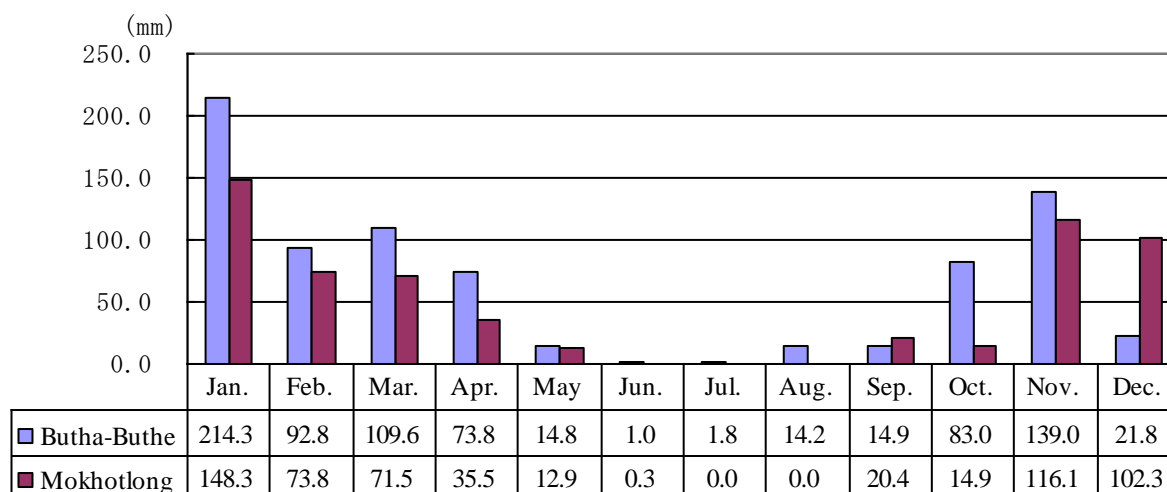
Soil erosion caused by short downpours allegedly causes outflow of approximately 4,000tons per year of soil. The impact of the loss of the arable land which composes only 12 % of the total area of this country on the economy is so significant that it has even become a social problem.

As the field study revealed that foundations of some of existing school buildings were partially exposed through soil erosion of the ground around the buildings by rainwater, gutters around the buildings to divert rainwater may be required for their protection in some cases. It is concluded that, with exception of the site in Butha-Buthe which is situated on a river shore, there is no need for the survey on bearing capacity of soil as the planned buildings are single-storied.

### 1-3-2 Environmental and Social Considerations

The National Environment Secretariat of the Ministry of Tourism, Environment and Culture makes an assessment and direction on buildings having a total floor area of over 500m<sup>2</sup> in accordance with the Environmental Law enacted in 2001. The regulations on buildings under the Environmental Law were originally established to prevent environmental pollution caused by sewage from large-scale plants, but no strict limitations are imposed on school buildings. However, the urban areas are overpopulated while the public sewage facilities are not fully provided except in part of the metropolitan city of Maseru. Therefore, the National Environment Secretariat is making the direction on sewage treatment especially for facilities that gather a number of people, such as schools.

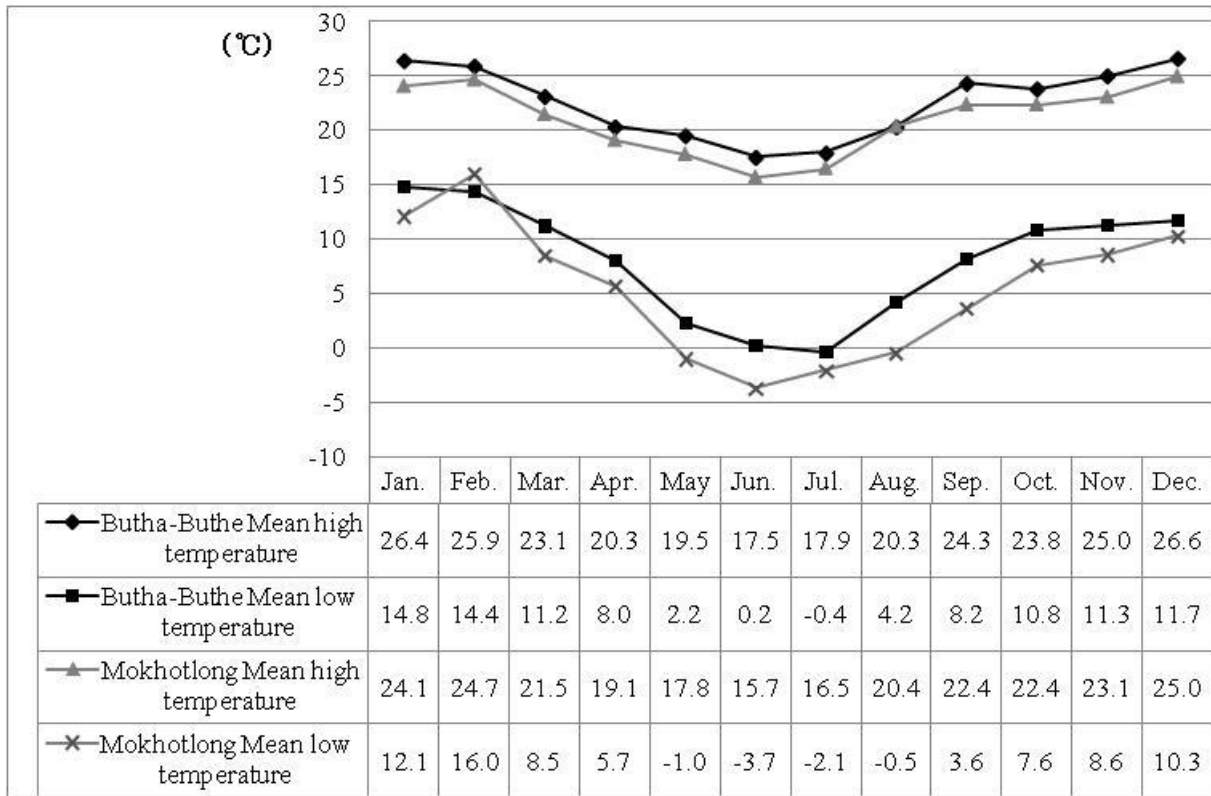
In this Project, there are some sites located in the city areas, but the layout plan for toilet infiltration tanks will be considered for the surrounding environment and eventually, the adoption of storage or dipping-up method, but not the infiltration method will be examined. In the detailed design stage, this matter will be fully discussed with the National Environment Secretariat.



Source: Lesotho Meteorological Services

**Figure 1-1 Precipitation in the Lowland and Highland**





Source: Lesotho Meteorological Services

**Figure 1-2 Monthly Temperatures in the Lowland and Highland**

## **CHAPTER 2 CONTENTS OF THE PROJECT**

## **CHAPTER 2 CONTENTS OF THE PROJECT**

### **2-1 Basic concept of the Project**

#### **2-1-1 Overall Goal and Project Purpose**

The Kingdom of Lesotho (hereinafter called “Lesotho”) has determined the development of human resources as one of the most important issues under its high-level plan “Lesotho Vision 2020”, and set the goal of 85% as the gross rate of attendance at lower secondary schools by students who have completed primary education under the “Educational Sector Strategic Plan (ESSP 2005-2015)”.

Secondary education in Lesotho is a five-year curriculum for children aged 13 - 18 years who have graduated from primary school. At present, the gross and net enrollment ratios in secondary education remain at the low level of 39.1% and 25.4%, respectively (MOET, 2005). However, the number of children in secondary education has been increasing at the rate of approximately 7.5% per year (or annual gross enrollment ratio of approximately 2.0%) since 1999. To cope with this increase, MOET is constructing new classrooms and letting secondary schools use some classrooms in existing primary schools. In addition, the introduction of Free Primary Education (FPE) in 1999 has led to an increase in the gross and net enrollment ratios in primary education of up to 126.2% and 83.2%, respectively (MOET, 2005). As the children who benefited from FPE will start attending secondary schools in 2007, a sharp increase in demand for secondary education facilities is expected from 2007 on.

Furthermore, as the majority of the country is located in the high mountains, access to rural agricultural areas is extremely difficult except for the areas along the major trunk roads. Therefore a large number of existing secondary schools, regardless of whether they are in Maseru or in regional cities, have student dormitories available for students from remote areas and HIV/AIDS orphans. However, students are forced to live in very poor conditions in the existing dormitories as more than ten students are accommodated in one room. Many students are also forced to find lodgings in the area around their schools. Such conditions have become a factor hindering enrollment in secondary education. Many students at secondary schools without a kitchen, dining hall, etc. are faced with additional difficulties in their school life especially during the rainy season and the winter as they have to eat the meals which are provided to all of them by the schools in Lesotho outdoors.

Under such circumstances, MOET predicts that the shortage of classrooms will reach 3,622 in 2015 and considers improvement of access to secondary education by constructing secondary schools equipped with student dormitories in remote areas and densely populated areas as an issue of the highest priority. However, as the budget of the Government of Lesotho is insufficient to achieve the target of such facility development, support from donors including Japan is required. In particular, the seven districts included in this project are areas in which an increase in the number of students is expected in future.

In these circumstances, this Project has set the overall goal of improving the environment for secondary education and the attendance rate in Lesotho and the project purpose of improving access to secondary education through the construction of new secondary schools.

## **2-1-2 Basic Concept of the Project**

To attain the above upper objective, this Project is intended to construct ordinary classrooms, Integrated Science Laboratory/ICT Training Room, teachers' rooms, New Combined Toilets, Dining Halls/kitchens/multi-purpose halls (capacity of 120 persons), boys' dormitories (capacity of 60 boys), girls' dormitories (capacity of 60 girls), Principal's House, Staff House (for 2 persons) at the new secondary school sites in 7 Districts having the higher priority (Leribe, Maseru, Berea, Quthing, Butha-Buthe, Mokhotlong and Mafeteng) of 10 Districts (before the Study) in the entire country of Lesotho.

## **2-1-3 Environmental and Social Considerations**

At the sites of this Project, most of terrain is gently sloping, and no large-scale land development and no large change of natural environment will be made. Also, no forced removal of residents will be conducted by implementing this Project. So, there will be no negative impacts on the social aspects.

## **2-2 Outline Design of the Requested Japanese Assistance**

### **2-2-1 Design Policy**

This Project will be implemented making effective use of the grant aid for community empowerment. Construction work based on the local specifications and engineering design, local contractors and locally procured equipment and materials will be used positively. Furthermore, this Project will be planned and executed as a tie-up with EFU, MOET which has been engaged directly in the school construction projects under the assistance of the World Bank, Irish Aide, African Development Bank, etc. without causing any problems in order to seek for higher competition among contractors and substantial cost reduction and efficiency in comparison with general grant aid assistance. However, the components for cooperation may be changed as a result of the detailed design study.

#### **2-2-1-1 Basic Policy**

##### (1) Selection of schools for cooperation

Schools for cooperation shall be selected according to the following criteria:

- A demand projection shall be conducted to understand the state of the classroom shortage.
- The shortage of classrooms shall be used as the basis for assigning priority.

##### (2) Scale of Cooperation

- The decreasing rate of population growth shall be considered.
- The number of classrooms shall be calculated based on the classroom size and capacity (40 persons) defined in the Standard Design.
- The scale of cooperation shall be examined in consideration of the secondary school system. Furthermore, the appropriateness of including higher secondary education (FD-DE) in this project shall be examined.

(3) Components for Cooperation

- Only those components which are expected to have a positive impact as facilities of secondary education and which are essential under local conditions shall be included.
- Components shall be classified into those directly related to education and those incidental to it and then further grouped by their priorities including their levels of importance.

**2-2-1-2 Policy for Natural Conditions**

(1) Topology and Geology

The phenomenon of soil erosion has appeared partly at the project sites at Maseru and Butha-Buthe. The site areas are so broad that no impending danger is foreseen, but it is planned to take a countermeasure against erosion advancement such as earth retaining at Lesotho's cost. No earthquake occurrences and no damage of buildings due to earthquakes have been reported in Lesotho. In this Project, all the buildings are planned to be constructed as one-storied houses, taking account of shortening the work period for cost reduction, and basically structural calculations will not be made.

(2) Climate

1) Air temperature

The first day and the last day on which frost was observed in flat terrain were May 18 and September 6 respectively. The first day and the last day on which frost was observed on highlands were February 16 and November 19 respectively. From this observation data, the meteorological station in Lesotho calls the public's attention to freezing for 111 days in flat terrain and for 276 days in highlands. Therefore, the execution plan will be prepared with special attention to concrete placing and curing work.

2) Rain and snowfall

The main highway from Maseru to Mokhotlong has a traffic shutdown for about one week twice a year due to snowfall in the mountainous areas. As this affects the work schedule, the work schedule will be planned taking into consideration the period of transporting equipment and materials to the project sites.

### 3) Wind

Especially for the highland areas (Quthing and Mokhotlong), design will be examined for the method of fixing roof materials against strong winds.

#### **2-2-1-3 Policy for Socioeconomic Conditions**

Lesotho is affected by the World Cup 2010 in its neighboring country, South Africa and is suffering a remarkable rise in prices. Therefore, the entire work period will be shortened to minimize the impact of the price rise. This project will use as its basis local standard designs of school facilities utilizing local resources and based on local specifications and designs. Meanwhile, the quality of the work will be improved by improving the local specifications and environmental considerations will be incorporated in the planning. When preparing the plan, an effort will be made to reduce the maintenance and management expenses, taking into consideration the economic conditions in the region.

#### **2-2-1-4 Policy for the Construction Project**

Of the materials used for this Project, products of Lesotho origin are stone, gravel, sand and concrete blocks. All the remaining material and equipment are available in Maseru and the countries from which the imported equipment and materials are imported are limited to the 5 countries (Lesotho, South Africa, Botswana, Namibia and Swaziland) under the Southern African Customs Union (SACU) (but approximately 100% products from South Africa), and the transportation distance and customs clearance procedures have little influence on the procurement plan and the work period. The quality of the project under grant aid for community empowerment has been evaluated to be sufficient as a result of detailed examination into the quality items established by the MOET Standard Designs including the detailed design documentation and specification documents, which will be applied to this Project accordingly. The improvement plans to be formulated will be limited to the minimum necessary items taking account of the importance of avoiding any confusion that may be caused at the sites by changing the engineering methods that the local constructors are familiar with.

#### **2-2-1-5 Policy for Use of Detailed Design/Construction Supervision Consultants**

The idea of utilizing MOET or, more specifically, EFU, for work usually performed by local consultants in project implementation will be considered. The following are the practical works in detailed design and consultant supervision generally performed by the consultants.

- (1) Site survey (preparation of site survey drawings, and measurement of bearing capacity of soil if necessary), and layout plan adjustment.
- (2) Preparation and arrangement of detailed design documentation (editing, modification)

- (3) Assistance in tender jobs
- (4) Consultant supervision

Meanwhile, in this project,

- (1) EFU is the organization responsible for facility planning and project implementation established in the Department of Planning, MOET, which has the capacity to perform consultancy works related to implementation of facility planning in place of consultants. It has a budget, equipment and human resources appropriate for its scope of work and has ample experience in detailed design, tenders and consultant supervision in construction of educational facilities by the ministry and donors. EFU is the only body with experience in detailed design, tenders and consultant supervision based on the Standard Designs and the quality of the existing facilities constructed under the supervision of EFU is high.
- (2) The number of schools to be constructed is only seven and the site planning is to be done in the outline design. The Standard Designs of MOET have a wide scope of application as they can be applied almost as they are. As all the buildings are designed as single-storied buildings, limited work will be required for measurement of the bearing capacity of the soil. Thus, the amount of consultancy work in the detailed design will be small.

As mentioned above, the amount of work in the detailed design for this project is less than for ordinary projects. In terms of supervisory work during construction, EFU is fully capable of taking responsibility for the consultant supervision required by this project. As its capacity to maintain the quality of work is high, there is no need to employ another public inspection organization.

MOET has already agreed to include the detailed design and consultant supervision in the scope of work of the Government of Lesotho and promised free support from its legal experts for this project.

#### **2-2-1-6 Policy for Use of Local Constructors**

Most local constructors are based in the metropolitan city of Maseru. They dispatch their site managers, construction engineers and skilled workers from Maseru to the planned project sites located in remote or mountainous areas, where they employ site workers for construction locally. As a result of the investigation of an implementing system, activity conditions, budgets, and workmanship of the constructed facilities implemented by EFU and MOET under the assistance of other donors, it has been made clear that the quality required for this project will be fully secured by the use of that system and the local constructors.

#### **2-2-1-7 Policy for Maintenance/Management Capacity of Implementing Agency**

The officials in MOET and its EFU are highly conscious of operation and maintenance of facilities, which are put in order and used cleanly. However, there are some schools in which they do not take full care of some places (such as cracks in walls) due to lack of budget. Therefore, it is planned to reduce the maintenance costs in this Project. When the construction of the primary schools supported by Grant Aid for General Projects of Japan was completed, the maintenance manuals were handed over to the primary schools. Maintenance of facilities, including those in secondary schools, has been implemented in accordance with the manuals.

#### **2-2-1-8 Policy for Setting Quality of Facilities and Equipment**

The facilities and educational furniture and equipment are planned in accordance with the design standards of MOET used for other projects under the assistance of other donors (Irish Aid, the World Bank and the African Development Bank) without causing any problems.

#### **2-2-1-9 Policy for Work Period**

In regard to the work lots, it is deemed to be appropriate that 1 or 2 sites will be assigned to each constructor, taking into consideration the capacity of each local constructor. Most local constructors are based in Maseru, but the project sites are distributed widely. Only two pairs of sites, Maseru/Berea and Leribe/Butha-Buthe, can be combined from the viewpoint of locations among 7 sites. On the contrary, the sites including student dormitories, Dining Halls (cum multi-purpose hall) and teachers' houses can be divided into a maximum of 15 lots including one lot of educational furniture for all the sites because it is expected to plan the method of placing separate orders of those components. The entire work period of this planned project is set at a total of approximately 19 months, consisting of one month for the establishment of the procurement management agent, detailed design and preparation for the tender, two months for the selection of contractors, 15 months for construction including a preparatory period and one month for demobilization of the procurement management agent.

#### **2-2-1-10 Environmental and Social Considerations**

The National Environment Secretariat of the Ministry of Tourism, Environment and Culture makes an assessment and direction on buildings having a total floor area of over 500m<sup>2</sup> in accordance with the Environmental Law enacted in 2001. The regulations on buildings under the Environmental Law were originally established to prevent environmental pollution caused by sewage from large-scale plants, but no strict limitations are imposed on school buildings. However, the urban areas are overpopulated while the public sewage facilities are not fully provided except in part of the metropolitan city of Maseru. Therefore, the National Environment Secretariat is making the direction on sewage treatment especially



for facilities that gather a number of people, such as schools.

In this Project, there are some sites located in the city areas, but the layout plan for toilet infiltration tanks will be considered for the surrounding environment and eventually, the adoption of storage or dipping-up method, but not the infiltration method will be examined. In the detailed design stage, this matter will be fully discussed with the National Environment Secretariat.

## 2-2-2 Basic Plan (Facility Plan)

### 2-2-2-1 Selection of School Construction Sites and Determination on Scale of Work

#### (1) Selection of target schools

The scale of cooperation shall be determined based on the shortage of classrooms in the districts. The shortage of classrooms shall be derived from the number of students in 2010, the end year of this Project, on the assumption that there are 40 students per class.

As a result of consultation with MOET, seven districts with a high demand for classrooms (one school each) have been selected as the target sites.

**Table 2-1 Demand Forecast for Each District**

	Number of Students							Number of classrooms			
	Actual			Estimated				2006	2010		
	2004	2005	2006	2007	2008	2009	2010	Existing number of classrooms	Required number of classrooms	Shortage in number of classrooms	Order
Butha-Buthe	6471	6996	7079	7775	8445	8877	9066	173	227	54	6
Leribe	18771	19218	19316	20903	22365	23155	23284	484	583	99	2
Berea	9991	11558	12059	13556	15062	16189	16896	325	423	98	3
Maseru	22972	23638	23955	26102	28125	29328	29709	587	743	156	1
Mafeteng	9951	11187	11079	12168	13216	13893	14188	290	355	65	5
Mohale's Hoek	5967	6021	5994	6479	6925	7161	7192	177	180	3	10
Quthing	5805	5110	5524	6067	6590	6927	7074	105	177	72	4
Qcha's Nek	2910	3261	3479	4029	4601	5074	5424	94	136	42	8
Mokhotlong	2655	3129	3316	3746	4181	4514	4731	71	119	48	7
Thaba-Tseka	2972	2978	2744	3014	3273	3441	3514	72	88	16	9
Total	88142	93096	94545	103838	112783	118558	121077	2378	3031	653	

Districts not targeted in the project

Source: Ministry of Education and Training EMIS Annual Report 2006 and Population Census Projection 1966 (calculated from these sources)

#### (2) Determination on scale of work

1) While the initial request was for 10 classrooms for five grades in secondary education, this Project shall cover six classrooms for three grades in lower secondary education because of the following reasons:

- The introduction of FPE increases the number of primary school graduates and, consequently, the demand for secondary education.

- Due to a low promotion rate, the ratio of students in the lower to higher secondary education is 3:1 and is not improving year by year.
- Assuming that there are 40 students in FA (Form A), the calculated number of students is 18 in FD and 12 in FE, making the specified classrooms too wasteful.

It is one idea to meet the demand, for example, by using temporary facilities until the promotion rate is improved. Regarding this matter, MOET declared a new policy of constructing higher secondary education facilities by its own efforts and has agreed to limit the scope of this Project to lower secondary education facilities.

## 2) Selecting components

The adjustable components agreed upon in the preliminary study have been excluded from the scope of the project partly because MOET has given higher priority to the number of schools to be constructed than to provision of the complete components and it has not finalized the basic plan for the characteristics and regionalities of the schools in relation to the curriculum. Thus, the following were selected as the project components.

- **Basic components:**  
(Educational facilities)  
(Priority Level 1)                                Priority level 1 is given to the components required for functional operation of the secondary schools, namely, ordinary classrooms (Two- and Four-Classroom Buildings), Staff Room/Administration Building, Combined Toilets, Integrated Science Laboratory/ICT Training Room Building which consists of special classrooms, *i.e.* a laboratory for a core science subject and an ICT Training Room which was given a high priority by MOET in their request, and educational furniture.
- **Incidental components 1:**  
(Housing facilities)  
(Priority Level 2)                                Incidental Components 1 are for the schools in the three districts with a high demand for housing facilities, *i.e.* the school in the capital, Maseru, which attracts many students from all over the country, and the schools in Quthing and Mokhotlong in the mountains, which have large numbers of long-distance commuting students. Incidental Components 1 consist of Dining Halls/Kitchens (cum-Multi-purpose Halls), student dormitories, principals' and staff housing. The priority of Incidental Components 1 has been lowered to level 2.
- **Incidental components 2:**  
(Housing facilities)  
(Priority level 3)                                Incidental Components 2 are for the schools in the remaining four districts, namely Leribe, Berea, Butha-Buthe and Mafeteng. They consist of principals' and staff housing. The priority of Incidental Components 2 has been lowered to level 3.

**Table 2-2 Projection of the Numbers of Enrolled Students**

	Actual figure								Projection				
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Population of six-year-old children	56466	56692	56805	55669	54556	53465	52395	51348	50321	49314	48328	47361	46414
Population of 6-12-year-old children	382964	384496	385265	377560	370008	362608	355356	348249	341284	334458	327769	321214	314789
Population of 13-15-year-old children	150475	151077	151379	148352	145385	142477	139627	136835	134098	131416	128788	126212	123688
S1	67767	118828	97469	86643	84412	81234	78232	77550	75224	72967	70778	68654	66595
S2	61225	57046	89929	81915	75314	70598	68565	65713	64573	62636	60757	58934	57166
S3	56659	55888	50424	78981	73578	67804	65592	64208	59508	58476	56722	55020	53369
S4	55027	54454	53451	47819	72075	68333	64266	62866	60661	56221	55246	53589	51981
S5	46126	47250	46951	45769	43119	59598	59224	57085	54430	52522	48677	47833	46398
S6	39321	39796	40761	40866	40954	39086	50295	51316	49806	47490	45825	42471	41734
S7	38754	37424	35979	36628	40268	40356	36104	46117	48133	46717	44545	42983	39837
FA	22280	22361	24737	26226	25953	27656	29562	28854	36856	38468	37336	35600	34352
FB	19374	19230	18632	20331	21545	22352	23311	24358	24187	30895	32246	31298	29842
FC	14342	13650	14667	14284	14991	16065	16501	16830	18015	17889	22850	23849	23147
FD	9798	11026	11881	12140	12380	13304	14674	14910	14517	15539	15430	19710	20572
FE	6643	6725	8002	8149	8235	8765	9048	9593	10263	9992	10696	10621	13566
Number of children enrolled in primary schools	364879	410686	414964	418621	429720	427009	422278	424855	412336	397029	382550	369484	357080
Enrollment ratio of six-year-old children	1.20	2.10	1.72	1.56	1.55	1.52	1.49	1.51	1.49	1.48	1.46	1.45	1.43
Gross enrollment ratio in primary schools	0.95	1.07	1.08	1.11	1.16	1.18	1.19	1.22	1.21	1.19	1.17	1.15	1.13
Number of students enrolled in secondary schools	55996	55241	58036	60841	62489	66073	69374	70042	79058	87252	92432	90746	87341
Gross enrollment ratio in secondary schools	0.37	0.37	0.38	0.41	0.43	0.46	0.50	0.51	0.59	0.66	0.72	0.72	0.71
Number of students enrolled in secondary and high schools	72437	72992	77919	81130	83104	88142	93096	94545	103838	112783	118558	121077	121479
The number of classrooms required at secondary and high schools								2364	2596	2820	2964	3027	3037

Ratio of change in number of students at S1		1.75	0.82	0.89	0.97	0.96	0.96	0.99	Average
Ratio of change in number of students at FA		1.00	1.11	1.06	0.99	1.07	1.07	0.98	
Ratio of change in number of students at FC		0.95	1.07	0.97	1.05	1.07	1.03	1.02	
Ratio of change in number of students at FE		1.01	1.19	1.02	1.01	1.06	1.03	1.06	
Promotion ratio	S1-S2	0.84	0.76	0.84	0.87	0.84	0.84	0.84	0.83
	S2-S3	0.91	0.88	0.88	0.90	0.90	0.93	0.94	0.91
	S3-S4	0.96	0.96	0.95	0.91	0.93	0.95	0.96	0.94
	S4-S5	0.86	0.86	0.86	0.90	0.83	0.87	0.89	0.87
	S5-S6	0.86	0.86	0.87	0.89	0.91	0.84	0.87	0.87
	S6-S7	0.95	0.90	0.90	0.99	0.99	0.92	0.92	0.94
	S7-FA	0.58	0.66	0.73	0.71	0.69	0.73	0.80	0.80
	FA-FB	0.86	0.83	0.82	0.82	0.86	0.84	0.82	0.84
	FB-FC	0.70	0.76	0.77	0.74	0.75	0.74	0.72	0.74
	FC-FD	0.77	0.87	0.83	0.87	0.89	0.91	0.90	0.86
	FD-FE	0.69	0.73	0.69	0.68	0.71	0.68	0.65	0.69

	Census 1996		Census 2006	
	1996	Projection for 2006	2006	
Butha-Butha	116976	141054	109529	0.9363
Leribe	319801	429306	298352	0.9329
Berea	258256	360236	256496	0.9932
Maseru	412986	571262	429823	1.0408
Mafeteng	225258	259658	193682	0.8598
Mohale's Ho	194575	225578	174924	0.8990
Quthing	134107	151959	120502	0.8986
Qacha's Nek	76607	86915	71876	0.9382
Mokhotlong	90840	92589	96340	1.0605
Thaba-Tsek	135839	138588	129137	0.9507
	1967241	2457145	1880661	0.9560

Source: EMIS Annual report 2006 (MoET)

Note: The population data were prepared mainly using "Population Census Projection 1966" and the data of "Census 2006 (Preliminary Report)" were also taken into consideration in the data preparation.

### 2-2-2-2 Local Specifications and Plan for Their Improvement

The principle of Grant Aid for Community Empowerment is effective use of local resources. The policies of component design and execution will also incorporate use of locally accumulated technology and experience. Therefore, in the improvement plan to be proposed, preference will be given to the specifications which can be achieved with the technical capacity and experiences of the local engineers.

**Table 2-3 Improvement Plan**

	Local specifications	Improvement plan
1. Modification of the shape of foundation	Individual footings are used for all the buildings except the staff houses. Individual footings may cause inconvenience such as uneven settlement caused by soil erosion.	A contractor should be able to execute sheet footings as they are to be used for the staff houses in the standard design. As the individual footings are to be installed at intervals of 1.6m as specified in the standard design, a large number of the footings will be required. Therefore, the modification from individual to sheet footings will not change the amounts of the earth and concrete work significantly and, thus, will have little effect on the estimation.
2. Improvement in truss material arrangement	When a location of a traverse wall at an end of the building or partition wall coincides with that of a truss, the truss is installed along the wall.	A truss can be replaced by purlin supports installed at the edges or top of the wall.
3. Roof reinforcement as a measure against strong wind	Seven purlins are fixed on trusses at an interval of approximately 800 mm on either side of the 8m-span Classroom Building and roofing materials are fixed directly on the purlins. There is no fascia.	The lifting force of wind directly acts on roofing materials. In order to increase the fixing of roofing materials to the substrate, the interval between the purlins will be modified to approximately 600mm and nine purlins will be used on either side. Theoretically, this modification will increase the fixing by approximately 25%. Wooden fascia boards will be installed at the edges of the roof for the protection of truss materials and roof materials.
4. Area of Staff Room/Administration Building	The Staff Room/Administration Building includes a library and an exterior space.	The library and part of the exterior space will be eliminated from the Staff Room/Administration Building and the staff room will be expanded by two spans, or 3.2m, taking into consideration the number of teachers (16) required for a five-year secondary school with ten classrooms after construction of an additional four classrooms.
5. Integration of components	Individual buildings such as Science Laboratory Building	Integration of Science Laboratory and ICT Buildings. The integration is meant for economy and convenience by

		simplification of lines of traffic.
6 . Integration of systems using water	Individual structures for New Combined Toilets for boys, girls and staff.	Three structures, as well as their waste water treatment systems, are to be integrated. Flush toilets are to be installed. Possibility of introducing toilet facilities for the disabled is to be considered. The plan is to be made economical and rational.

### 2-2-2-3 Architectural Design

#### 1) Site Plan

Although each of the seven sites has different site conditions, the following basic policy for rational site planning will be followed.

1. Lines of traffic of teachers and students between classrooms and other facilities will be taken into consideration in the planning.
2. Distances between buildings and the directions of the buildings will be determined so as to guarantee appropriate indoor environment, such as good ventilation and lighting. It is advisable to construct buildings in the east-west direction with windows on the south and north sides for preventing glaring morning sunlight from entering the classrooms and for sufficient lighting in the winter.
3. Many of the sites are located on slopes. However, large-scale site levelling work cannot be expected in the scope of work of the counterpart. Therefore, while taking the above-mentioned building direction into consideration, the buildings will be sited as closely as possible along the contour lines to minimize the earth work including filling and cutting.
4. As this project is only for the three grades of the lower secondary education, the site plan will take future extension work for the two grades of the higher secondary education into consideration.
5. Locations of the New Combined Toilet, septic tank, and infiltration trench will be decided after assessing their impact on the environments inside and outside the site by, for example, confirming relative locations of wells and springs in the surrounding area, and taking the impact into consideration.
6. At sites in which rainwater is causing soil erosion, special attention will have to be paid to the rainwater drainage plan in the sites not only to ensure the safety at the construction sites but also to prevent construction of facilities in this project from causing new soil erosion in the surrounding area.

#### 2) Floor Plan

The Standard Design of the Ministry of Education and Training has been adopted by all the other donors working in Lesotho, including the World Bank, Irish Aid and the African Development Bank. EFU is expected to take responsibility for the detailed design and consultant supervision under the

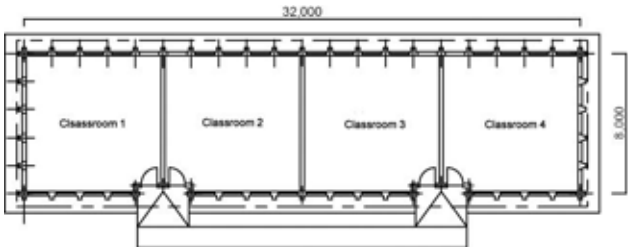
principle policy of Grant Aid for Community Empowerment (GACE) of the maximum use of local resources. Therefore, adoption of the Standard Design is likely to facilitate the progress of the work as EFU have accumulated much experience in working with the design. After close examination of the Standard Design, we have come to the conclusion that, except for the points raised in the improvement plan, it has no particular problem and, thus, have adopted it in principle.

In the MOET Standard Design, all the buildings except staff houses are composed of the modules demarcated by columns installed at 1.6m intervals. While the length in the span direction of the classroom buildings is fixed at five inter-column spans, 8.0m, the length (or number of spans) in the girder direction differs in accordance with use and layout of buildings.

**A. Classroom Buildings**

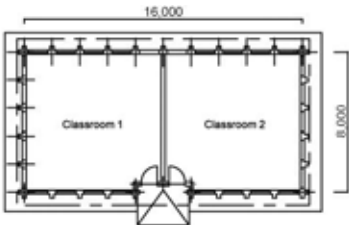
From the MOET Standard Design, the Four-classroom Building and the Two-classroom Building will be adopted.

The standard dimensions of a classroom are five spans both in the width and the length directions, or 8.0m x 8.0m measured at the center lines of the columns. The area inside the classroom obtained by deducting the area corresponding to the thickness of the wall and the entrance space is approximately 60.0m<sup>2</sup>. This figure corresponds to a floor area of 1.5m<sup>2</sup>/student assuming 40 students per class. Each student will use an individual desk and chair. A desk and a chair for the teacher will be installed in front of a blackboard. A blackboard will be installed on the front wall of the classroom.



**Figure 2-1 Floor Plan of Four-Classroom Building**

Each classroom is 8m x 8m.  
 4 classrooms each accommodating 40 students  
 A total of 160 students are accommodated.



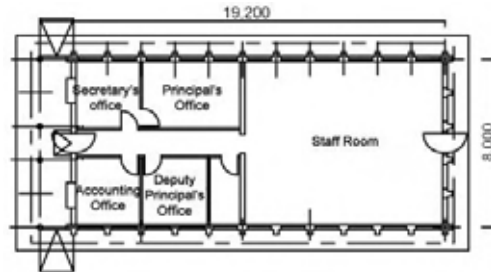
**Figure 2-2 Floor Plan of Two-Classroom Building**

Each classroom is 8m x 8m.  
 2 classrooms each accommodating 40 students  
 A total of 80 students are accommodated.

**B. Administration/Staff Room Building**

Regarding the Administration/Staff Room Building in the MOET Standard Design, we removed a total of 10 spans, 16 meters long, including nine spans of the library and one span of the external space and added two spans, 3.2 meters long, of administration/staff room to come up with an improved plan, which has the principal's office, secretary's office, deputy principal's office,

accounting office, storeroom, and staff room that have been agreed upon. The Standard Design drawing assumes accommodation of 16 teachers, including those for the four additional classrooms to be constructed, in this staff room.

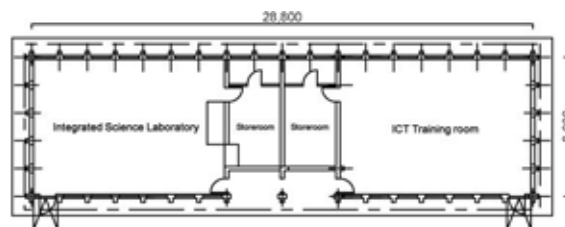


**Figure 2-3 Floor Plan of Administration/Staff Room Building**

**C. Integrated Science Laboratory/ICT Training Room**

An ICT training room with the same size as the laboratory (classroom) will be attached to an Integrated Science Laboratory of the MOET Standard Design. The Integrated Science Laboratory will consist of a laboratory (classroom), a preparation room and a storeroom and the laboratory will be equipped with fixtures such as laboratory sinks, laboratory benches and cabinets and will accommodate a class of 40 students. In order for 40 students to take the lessons simultaneously, the counterpart plans to install 41 personal computers, including one for the teacher, in the ICT Training Room and to have a storeroom attached to the training room. The ICT training room will be equipped with long tables for students at the ratio of a table to two students and a long table for accessory equipment such as a printer. A blackboard will be installed in the room.

The length in the girder direction of the laboratory (classroom) will be seven spans, two spans, or 3.2m, longer than the ordinary classroom. Although there is no approved Standard Design drawing of the ICT training room, the floor plan drafted by EFU has been adopted.

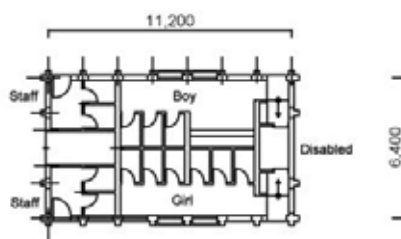


**Figure 2-4 Floor Plan of Integrated Science Laboratory/ICT Training Room Building**

**D. New Combined Toilet**

The separate floor plans of the toilets for boys, girls and staff of the Standard Design have been consolidated and a toilet for the disabled has been attached. The New Combined Toilet will consist of three booths and three urinals for boys, six booths for girls, one booth and one urinal

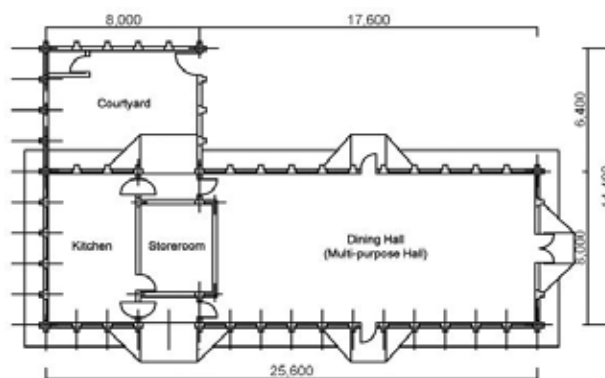
for male staff, two booths for female staff, a booth for the disabled and storage space. The flush-type wastewater treatment system will be used in the New Combined Toilet as in the Dormitories and Kitchen. The 1.6m-wide modules used in the Classroom Buildings will be used in the floor composition of the toilet.



**Figure 2-5 Floor Plan of New Combined Toilet**

E. Kitchen/Dining Hall (serving also as a multi-purpose hall) Building

The MOET Standard Design will be adopted. This facility will consist of a Dining Hall, Kitchen, a storeroom and a courtyard for cooking equipped with a toilet. The Dining Hall will have a capacity of 120, who will sit at both sides of long tables with the width of 70cm. It will also be used as a multi-purpose hall. The Kitchen will be equipped with cooking tables, sinks and coal stoves (cookers).

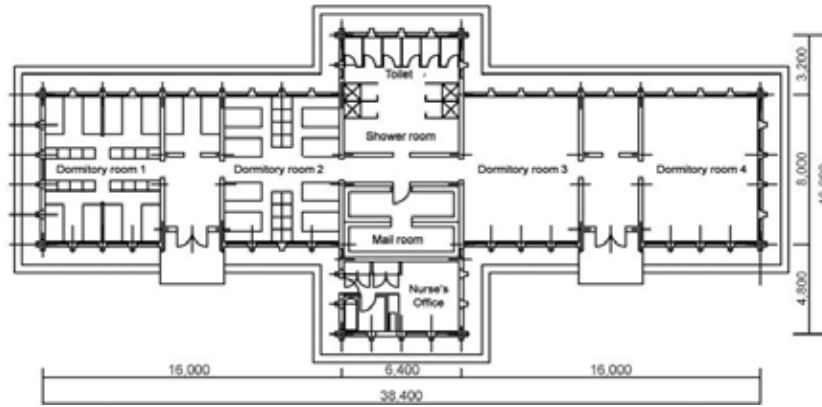


**Figure 2-6 Floor Plan of Kitchen/Dining Hall (cum-multi-purpose hall)**

F. Student dormitories for boys and girls

The MOET Standard Design will be adopted. The Nurse's Office, water-using facilities, Superintendent's Office and Mail Room will form the central part of the dormitory. An entrance hall and two dormitory rooms will be located on either side of the central part. The counterpart will install bunk beds in the dormitory rooms and a steel rack in the Mail Room to ensure accommodation capacity of approximately 60 students.





**Figure 2-7 Floor Plan of Dormitories**

G. Principal's Houses and Staff Houses

The MOET Standard Design will be adopted. These buildings are the only stone masonry buildings in the Standard Design. A house will consist of entrance halls, two bedrooms, a living room with a fireplace, a dining room, a kitchen, and a bathroom. The kitchen will be equipped with a sink, a cooking table, and hanging shelves and the bedrooms will have a walk-in closet. The same plan will be used for Staff Houses and Principal's Houses. Two staff members will occupy each house.



**Figure 2-8 Floor Plan of Staff Houses**

The table below shows the required area of each building (construction area).

**Table 2-4 Required Area of Each Building (Construction Area)**

Building name	Room name	Room dimensions (Measured at the center lines of walls)		Construction area	Remarks
		Span direction	Girder direction		
Ordinary Classrooms	Classroom	8.0m	8.0m	64.00m <sup>2</sup>	Including (external) entrance space
		Two-classroom building		128.00m <sup>2</sup>	
		Four-classroom building		256.00m <sup>2</sup>	
Administration and Staff Room	Principal's Office	3.2m	4.8m	15.36m <sup>2</sup>	
	Secretary's Office	3.2m	3.2m	10.24m <sup>2</sup>	
	Deputy Principal's Office	3.2m	3.2m	10.24m <sup>2</sup>	
	Accounting Office	3.2m	3.2m	10.24m <sup>2</sup>	
	Storeroom	3.2m	1.6m	5.12m <sup>2</sup>	
	Staff Room	8.0m	9.6m	76.80m <sup>2</sup>	
	Passageway	1.6m	8.0m	12.80m <sup>2</sup>	
	Terrace	8.0m	3.2m	25.60m <sup>2</sup>	
Administration and Staff Room: Subtotal				166.40m <sup>2</sup>	
Integrated Science Laboratory	Laboratory	8.0m	11.2m	89.60m <sup>2</sup>	
	Preparation Room	4.8m	3.2m	15.36m <sup>2</sup>	
	Storeroom	1.6m	3.2m	5.12m <sup>2</sup>	
	Porch	1.6m	3.2m	5.12m <sup>2</sup>	
Integrated Science Laboratory: Subtotal				115.20m <sup>2</sup>	
ICT Training Room	ICT Training Room	8.0m	11.2m	89.60m <sup>2</sup>	
	Office	4.8m	3.2m	15.36m <sup>2</sup>	
	Server Room/Storeroom	3.2m	3.2m	10.24m <sup>2</sup>	
	ICT Training Room: Subtotal				
Kitchen and Dining Hall (cum multi-purpose hall)	Dining hall	8.0m	17.6m	140.80m <sup>2</sup>	Excluding the protruded part of the storeroom
		4.8m	0.8m	3.84m <sup>2</sup>	
		Subtotal		136.96m <sup>2</sup>	
	Storeroom	4.8m	4.0m	19.20m <sup>2</sup>	No roofs, including a Toilet for kitchen staff
	Kitchen	8.0m	4.8m	38.40m <sup>2</sup>	
	Courtyard for cooking	6.4m	8.0m	51.20m <sup>2</sup>	
	Porch	1.6m	3.2m	5.12m <sup>2</sup>	
Passageway	1.6m	3.2m	5.12m <sup>2</sup>		
Kitchen and Dining (cum multi-purpose hall): Subtotal				256.00m <sup>2</sup>	
Student Dormitory	Dormitory rooms	8.0m	6.4m	51.20m <sup>2</sup>	Including (external) entrance space
		×4		204.80m <sup>2</sup>	
	Entrance hall and sickroom	8.0m	3.2m	25.60m <sup>2</sup>	
		×2		51.20m <sup>2</sup>	
	Washing Room	6.4m	6.4m	40.96m <sup>2</sup>	
	Passageway	6.4m	1.6m	10.24m <sup>2</sup>	
	Post Box Room	6.4m	4.0m	25.60m <sup>2</sup>	
Matron's Office	6.4m	4.0m	25.60m <sup>2</sup>		
Student Dormitory: Subtotal				358.40m <sup>2</sup>	
Staff House	Dining/living rooms	2.97m	5.06m	15.028m <sup>2</sup>	
		3.77m	4.17m	15.721m <sup>2</sup>	
		Subtotal		30.749m <sup>2</sup>	
	Entrance halls	1.91m	2.80m	5.348m <sup>2</sup>	
		1.65m	1.70m	2.805m <sup>2</sup>	
		Subtotal		8.153m <sup>2</sup>	
	Kitchen	3.77m	2.54m	9.576m <sup>2</sup>	
	Bathroom	2.67m	1.91m	5.100m <sup>2</sup>	
	Bedroom 1	4.37m	3.77m	16.47m <sup>2</sup>	
	Bedroom 2	4.37m	3.77m	16.47m <sup>2</sup>	
	Verandah	2.00m	5.06m	10.12m <sup>2</sup>	
3.56m		3.27m	11.64m <sup>2</sup>		
Subtotal		21.76m <sup>2</sup>			
Staff House: Subtotal				108.29m <sup>2</sup>	
New Combined Toilet	Toilet for boys	3.20m	6.40m	20.48m <sup>2</sup>	
	Toilet for girls	3.20m	6.40m	20.48m <sup>2</sup>	
	Toilet for female staff	2.50m	3.20m	8.00m <sup>2</sup>	
	Toilet for male staff	2.50m	3.20m	8.00m <sup>2</sup>	
	Toilet for the disabled	2.00m	1.60m	3.20m <sup>2</sup>	
	Storeroom	1.40m	3.20m	4.48m <sup>2</sup>	
	Passageway	1.60m	1.60m	2.56m <sup>2</sup>	
Passageway	2.80m	1.60m	4.48m <sup>2</sup>		
New Combined Toilet: Subtotal				71.68m <sup>2</sup>	

**Table 2-5 Area of the Educational Facilities by District and Building**

Lot	District	Facility	Two-Classroom		Four-Classroom		Integrated Science Laboratory + ICT Training Room		Number of Ordinary Classrooms	Number of Special Classrooms	Total number of classrooms	Staff Room/ Administration Building		Combined Toilet		Kitchen/Dining Hall (cum Multi-purpose Hall)		Student Dormitory		Staff House		Total (m <sup>2</sup> )		
			Quant.	128.00	Quant.	256.00	Quant.	230.40				Quant.	166.40	Quant.	Booth	71.68	Quant.	256.00	Quant.	358.40	Quant.		108.29	
1.	Leribe		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
2.	Maseru		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
3.	Berea		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
4.	Quthing		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
5.	Butha-Buthe		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
6.	Mokhotlong		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
7.	Mafeteng		1	128.00	1	256.00	1	230.40	6	2	8	1	166.40	1	17	71.68						5	852.48	
8.	Leribe																	-		-	2	216.58	2	216.58
9.	Maseru																1	256.00	2	716.80	2	216.58	5	1,189.38
10.	Berea																	-		-	2	216.58	2	216.58
11.	Quthing																1	256.00	2	716.80	2	216.58	5	1,189.38
12.	Butha-Buthe																	-		-	2	216.58	2	216.58
13.	Mokhotlong																1	256.00	2	716.80	2	216.58	5	1,189.38
14.	Mafeteng																	-		-	2	216.58	2	216.58
Total (m <sup>2</sup> )			7	896.00	7	1,792.00	7	1,612.80	42	14		7	1,164.80	7	119	501.76	3	768.00	6	2,150.40	14	1,516.06	58	10,401.82

Note: Kitchens/Dining Halls (cum multi-purpose hall), Student Dormitories and Staff Houses have their own toilets within the buildings.

25

The educational furniture will be provided only in the ordinary classrooms, integrated science laboratories/ITC Training Rooms and Staff Rooms.

**Table 2-6 Educational Furniture**

Usage	For students				For teachers				
	Desk	Chair	Table 600 x 1500	Stool	Desk	Table 600 x 1500	Chair	Chair	Stool
	Model number	BF15	BF14	BF30	BF43		BF43	AF212	BF30
Quantity (per school)	40x 6	40x 6 +40	20	40	6 +1 +4	4	6 +2 +16	3	3
1. Leribe	240	280	20	40	11	4	24	3	3
2. Maseru	240	280	20	40	11	4	24	3	3
3. Berea	240	280	20	40	11	4	24	3	3
4. Quthing	240	280	20	40	11	4	24	3	3
5. Butha-Buthe	240	280	20	40	11	4	24	3	3
6. Mokhotlong	240	280	20	40	11	4	24	3	3
7. Mafeteng	240	280	20	40	11	4	24	3	3
Total	1680	1960	140	280	77	28	168	21	21

### 3) Section/Elevation Plan

Roof shapes at the gable ends

We have seen two types of school buildings, those with eaves at the gable ends and those without eaves and with the gable walls protruding as parapets, during the inspection of existing school buildings. In this project, the design with eaves will be adopted to all the buildings in consideration of water leakage prevention. As some of the sites in this project are located in high mountains in which strong wind is expected, we propose an improvement plan to alleviate the effect of the lift of strong wind on the roofs. (See Table 2-3 Improvement Plan on page 18 for reference)

### 4) Structural Plan

#### A. Standard

In accordance with the Building Control Act enacted in 1995, Building Control Regulations came into force in 1999. SABS (The South African Bureau of Standard) and BS (British Standard) are used as standards for materials in Lesotho.

#### B. Ground

As all the buildings in this project will be single-storied, we found no need to examine bearing capacity of soil from our observation of the actual conditions of the sites, in principle. However, as the site in Butha-Buthe is located on the riverside and soil erosion is found in part of the site, a study of the ground (bearing capacity of soil) is to be carried out at the site as a precautionary measure.

#### C. Design load

As there is no record of earthquakes, seismic force is not considered in the Standard Design. It will not be considered in the improvement plan either. As there is no record of damage caused by wind on the existing school buildings constructed in accordance with the MOET Standard Design even in the high mountains with strong winds, wind force seems to have been considered to a certain extent in the MOET Standard Design. However, as wind force data are only available from a few meteorological stations in the country, there is no data for the specific areas of our concern. Therefore, wind forces larger than those in the Standard Design will be assumed at the sites in Quthing, located at the top of a table mountain, and Mokhotlong, at which frequent occurrence of strong wind was reported during the interviews at the site.

#### D. Materials

The Specifications of the MOET Standard Design stipulate the specifications for the materials to be used. We will follow the specifications in this project. The major components of the specifications are as follows:

Concrete	Foundation	20 N/mm <sup>2</sup>
	Floor slab	25 N/mm <sup>2</sup>
	Columns, beams, etc.	30 N/mm <sup>2</sup>

Reinforcing Bar BS No. 4449 (Steel for Reinforcement of Concrete) or No. 4461  
SABS No. 920 (Steel Bars for Concrete Reinforcement)

## **5) Equipment Plan**

The MOET Standard Design applies to equipment as well as buildings. As the MOET Standard Design is considered as the standard for school construction in Lesotho, it will be followed, in principle, in this project except for the issues raised in the Improvement Plan.

### **A. Electric facilities**

The MOET Standard Design will be followed in the execution of the lighting facility, wall receptacle installation and incoming panel works.

### **B. Water supply and drainage facilities**

The Standard Design will be followed in the execution of the water/hot water supply facility and drainage facility (including rainwater drainage, septic tank and infiltration trenches) works. As the Improvement Plan recommends flush toilets, the septic tank and infiltration trenches will be attached to the New Combined Toilet.

## **2-2-2-4 Educational Furniture**

The scope of this project will include only educational furniture. Furniture for Principals' and Staff Houses will not be included in the scope. An agreement was reached with the counterpart on inclusion of the furniture of the Dining Hall and Dormitories, which was in the original request, in the scope of work of the counterpart to prioritize facility construction.

The MOET Standard Design is to be followed for the furniture referred to in the design. As the Standard Design has no provision for tables, the specifications of tables generally used in Lesotho will be followed.

## **2-2-2-5 Comparison between Grant Aid for General Projects and Grant Aid for Community Empowerment (GACE)**

As no project for the construction of secondary schools has been implemented under Grant Aid for General Projects in Lesotho, a comparison was made with “The Project for the Construction of Primary Schools” implemented in 2004 – 2005.

### **1) Comparison of the Floor Plans**

The dimensions of the classroom are 8m x 8m by the measurement taken at the center lines of the walls in both cases. However, while “The Project for the Construction of Primary Schools” assumes accommodation of 50 pupils in one classroom, the Standard Design for secondary schools assumes accommodation of 40 students. Thus, the latter will be followed in this project.

### **2) Comparison of the Elevation Plans**

With regard to the specifications of the exterior, the primary schools were constructed with colored anti-corrosion-specification metal roofing sheets and brick masonry walls, while corrugated galvanized iron roofing sheets and stone masonry walls will be used in this project in consideration of the availability of certain construction materials in the mountains.

### **3) Comparison of the Section Plans**

In the primary school construction project, many two-storied school buildings were constructed. Meanwhile, only single-storied buildings will be constructed in this project because of ample space available at the construction sites, many of which are located in rural areas, and for the shorter construction period. Although concrete beams were used in the primary school construction, the commonly used U-block beams of the local specifications will be used in this project in consideration of the level of skill of local contractors.

### **4) Comparison of the Forms of the Foundation**

For prevention of uneven settlement which is considered to be the cause of cracks in the walls of existing school buildings, sheet footings will be adopted in this project as an improvement plan as was the case with the primary school construction project.

### **5) Comparison of Finishing Materials**

While heat-insulation boards were used as heat-insulation materials on the ceilings in the primary school construction project, heat-insulation sheets as specified in the MOET Standard Design will be used in this project. This decision is taken in consideration of the work period and the skill level of the contractors. While the primary schools have interior walls with an exposed brick surface and mortar floors with an iron trowel finish, the secondary schools to be constructed in this

project will have interior walls of stone masonry with a mortar and paint finish and floors with tile facing on the concrete slabs.

## 6) Comparison of Other Components

School-specification steel sashes will be used in the openings of the buildings in this project as was the case in the primary school construction projects. While steel flush doors were used for some of the exterior doors of the Administration/Staff Room Buildings in the primary school construction projects, wooden doors as specified in the Standard Design will be adopted in this project. In this project, wooden trusses will be installed at the same intervals as in the Grant Aid for General Projects.

The table below (Table 2-7) shows a comparison of this project with a similar project in a country in the same region, “The Project for the Construction of Cuamba Teacher Training Center” in the Republic of Mozambique, as well as the above-mentioned “Project for the Construction of Primary Schools.”

**Table 2-7 Comparison Table**

Item		The Project for the Construction of Secondary Schools in the Kingdom of Lesotho (Outline Design)	The Project for the Construction of Primary Schools in the Kingdom of Lesotho (Grant Aid for General Projects)	The Project for the Construction of Cuamba Teacher Training Center in the Republic of Mozambique (Grant Aid for General Projects)
Scale of building	Classroom Building	14 with a total of 42 classrooms	40 with a total of 229 classrooms, Principals’ Offices, storerooms and staff rooms	Two with a total of 8 classrooms
	Integrated Science Laboratory/ICT Training Room Building	Seven (two classrooms and two storerooms per building)	N/A	N/A
	Staff Room/ Administration Building	Seven (Principal’s office, Deputy Principal’s office, secretary’s office, accounting office, staff room and storeroom per building)	N/A	Two with a Principal’s office, Deputy Principal’s office, conference room, toilets, staff room and a nurses’ office per building
	Combined Toilets	Seven (3 booths and 3 urinals for boys, 6 booths for girls, 1 booth and 1 urinal for male teachers, 2 booths for female teachers and 1 booth for the disabled per toilet)	79 (2 booths and 5 urinals for boys, 6 booths for girls, 1 booth for male teachers and 1 booth for female teachers per toilet)	One (4 booths and 8 urinals for boys, 9 booths for girls, 3 booths for male teachers and 3 booths for female teachers)
	Kitchen/Dining Hall (cum-Multi-purpose Hall)	Three (kitchen, pantry, dining hall, courtyard and toilets in each)	N/A	One (kitchen, pantry, dining hall, locker room and courtyard)

	Student Dormitory	Six (4 bedrooms, 2 nurses' offices, showers/toilets, collection and delivery room and superintendent's office per dormitory)	N/A	Two with 15 bedrooms, showers/toilets and superintendent's office per dormitory
	Housing for teaching staff	14 (with two bedrooms)	N/A	Two (with three bedrooms) Five (with two bedrooms)
	Library Building	N/A	N/A	One (library and PC room)
	Special Classroom Building	N/A	N/A	One (natural science laboratory and art classroom)
	Music Building	N/A	N/A	One (music classroom, storeroom for musical instruments and storeroom)
	Gymnasium	N/A	N/A	One (arena, locker rooms and showers)
	Education Laboratory Building	N/A	N/A	One (3 booths and 4 urinals for boys and 6 booths for girls)
	Guard Room	N/A	N/A	One (guard room and locker room)
	Water Supply	Integrated Science Laboratory, Combined Toilets, Kitchen/Dining Hall, Student Dormitories and staff housing	Nine storage tanks	Water tank, pump room and elevated water tank
Floor Plan – Classroom	Dimensions of classroom	8.0m×8.0m (measured between the center lines of the walls)	8.0m×8.0m (measured between the center lines of the walls)	8.4m×7.0m (measured between the center lines of the walls)
	Floor area of classroom	64.0 m <sup>2</sup>	64.0 m <sup>2</sup>	58.8 m <sup>2</sup>
	Number of students/pupils per classroom	40	50	40
	Floor area/student or pupil	1.60 m <sup>2</sup>	1.28 m <sup>2</sup>	1.47 m <sup>2</sup>
Section Plan	Doors, Classroom	One	One	One
	Windows, Classroom	Eight	Eight	Five
Structure	Structure	Reinforced concrete blocks	Reinforced concrete blocks	Reinforced concrete blocks
	Structural Material - Cement	20N/mm <sup>2</sup> , 25N/mm <sup>2</sup> , 30N/mm <sup>2</sup>	25N/mm <sup>2</sup>	SABS 32.5MPa
	Structural Material - Aggregate	Coarse aggregate, river sand	Coarse aggregate, river sand	Coarse aggregate, river sand
	Structural Material – Reinforcing bars	SABS No.920	420N/mm <sup>2</sup> , 400N/mm <sup>2</sup>	Plain bars, deformed bars and lattice bars
	Structural Material – Steel materials	N/A	N/A	Steel H-beams, channels and lip channels
	Stories	Single-storied	Two-storied	Single-storied
	Ceiling height	2,300 (eaves height)	3,000mm (first floor) and 2,760mm (second floor)	Slanted ceiling
	Roof type	Gable roof protected by overhanging eaves	Gable roof with extension of edge	Penthouse roof
	Foundation	Reinforced concrete continuous footing	Reinforced concrete continuous footing	-
	Wall	Stone masonry	Bricks (unglazed)	Concrete blocks
	Floor	Concrete	Reinforced concrete	Concrete and tiles
Roof frame	Wooden trusses	Wooden trusses	Steel trusses	
Purlin	Wooden	Wooden	Steel	



	Opening	Door	Wooden	Wooden and steel	Wooden
		Window	Steel sashes	Steel sashes	Wooden sashes
Finish	Exterior	Roof	Corrugated galvanized iron sheets	Single roof covering with colored metal sheets of anti-corrosion specifications	Corrugated galvanized iron sheets
		Wall	Stone masonry	Bricks (unglazed)	Concrete block decorative masonry, painted
		Foundation	Stone masonry	Mortar with metal trowel finish	
	Interior	Ceiling	Heat insulation sheet facing	Heat insulation board facing (upper floor)	Wooden panels or none
		Wall	Mortar, painted	Bricks (unglazed)	Mortar, painted
		Floor	Plastic sheet facing	Mortar with metal trowel finish	Tiles and concrete with metal trowel finish

### 2-2-3 Outline Design Drawing (Site Plans/Preliminary Drawings)

(Appendix-7 Site Planning Drawings/Appendix-8 Standard and Draft Improved Design Drawings of MOET)

## **2-2-4 Implementation Plan**

### **2-2-4-1 Implementation Policy**

Implementation of this project will require approval of the Japanese Cabinet and conclusion of the Exchange of Note (E/N) between the Governments of Japan and Lesotho. In accordance with the Agreed Minutes (A/M) attached to E/N, MOET and a procurement management agent will conclude a procurement management service contract. After the conclusion of E/N, the Governments of Japan and Lesotho will establish an Inter-Governmental Council. The representative of the Government of Lesotho will chair the council and the representatives of JICA South Africa Office and the procurement management agent will attend the council meetings as advisors. The Inter-governmental Council will discuss and coordinate issues concerning the project being implemented.

The procurement management agent will procure contractors and a furniture supplier required for the project implementation using the order specifications (draft) provided in this outline design. Local consultants are usually employed in projects under GACE. However, a local consultant will not be employed in this project for the reasons listed below. Instead, EFU, the body of MOET responsible for implementation of the facility construction, will perform the final design and consultant supervision.

- 1) The detailed drawings and specifications required for the execution have been fully developed.
- 2) The contents of the improvement plan are so simple that not much effort will be required for the preparation and modification of the drawings and the preparation of orders.
- 3) EFU is familiar with the works at the commencement of construction including site surveys and preparation of site planning drawings and has sufficient capacity to perform the duties after the commencement of works.
- 4) The layout drawings will be made in the outline design.

The procurement management agent, as a trustee of the responsible agency, will manage the main operations of this Project to ensure proper and smooth implementation of the main contract components and, as the management agent for the Lesotho government, will conduct fund management including the tender, contract, and payment operations and negotiate and coordinate with the Lesotho government during the construction period.

The implementation of this Project requires the numbers of man-hours listed below. However, the man-hours required for the works of EFU will be within the scope of the work of the Government of Lesotho based on the results of consultation with MOET.

General management of the procurement management agent (Category 2, one person): 19M/M (19

months including one month of preparation and one month of withdrawal)

Engineer of the procurement management agent (Category 3, one person): 5.5M/M (5.5 months including 1.5 months of intermediate inspection and one month of completion inspection)

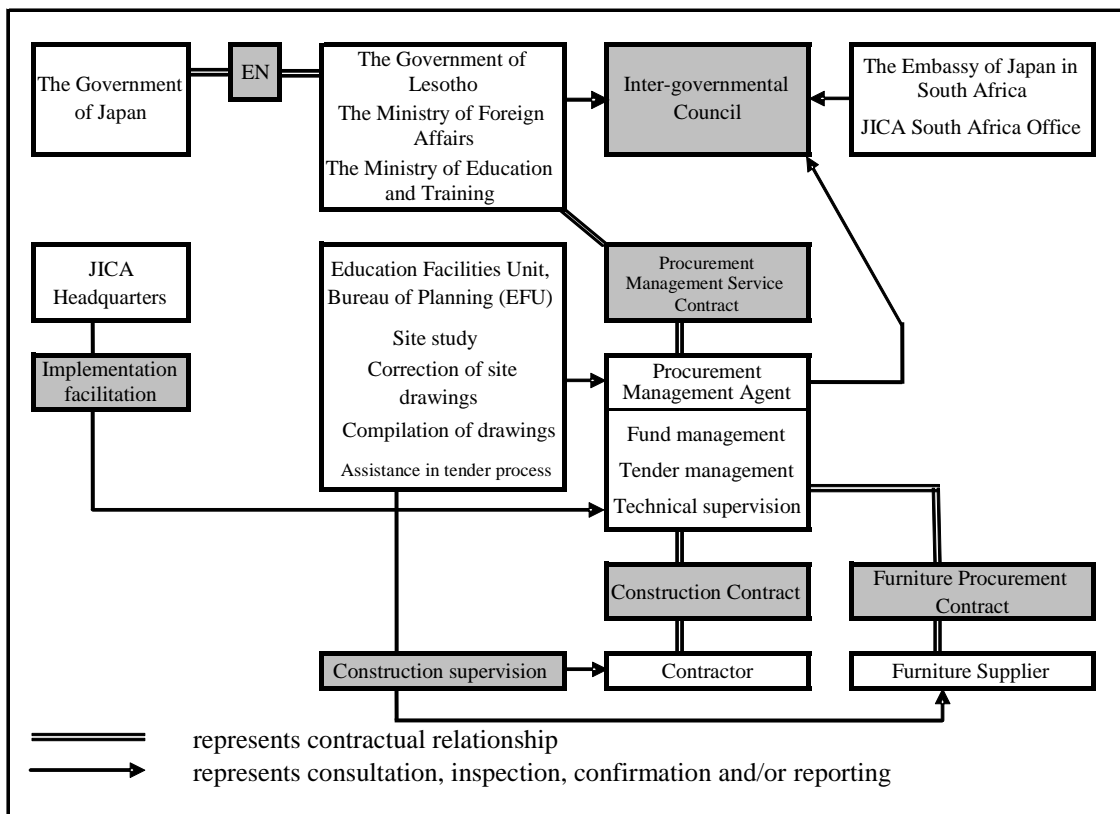
Tender-related operations (one EFU contract expert): 1.5M/M

Detailed design (one EFU design engineer): 1.0M/M

Consultant supervision (two EFU engineers for consultant supervision): 30.0M/M

**Table 2-8 Required Man-months of EFU Staff**

Architect of EFU		Contract specialist of EFU	
Details of work	Required period	Details of work	Required period
Site confirmation	One week	Familiarization with the contents of the tender documents	Two weeks
Adjustment of the specifications and change order planning	One week	Master plan for revision of the tender documents	One week
Preparation of change orders and drawings	One week	Preparation of revised particulars and coordination with the architect	One week
Proofreading and coordination with tender-related works	One week	Preparation	One week
		Coordination and proofreading	One week
Total	Four weeks	Total	Six weeks



**Figure 2-9 Implementation Organization**

## **2-2-4-2 Implementation Conditions (Contractual Matters, Dispute Resolution, etc.)**

### **(1) Tender and Contract Conclusion**

As EFU has conducted open tender for the selection of contractors for school construction projects supported by the World Bank, Irish Aid, the African Development Bank and other donors in Lesotho, no serious problem is expected in the selection of contractors in this project. However, the majority of local contractors are accustomed to the locally practiced tender procedure. If the tender procedure of this project differs significantly from the local one, confusion may arise from the lack of ability of some contractors to adjust to the new system. Therefore, it is desirable to follow the locally used procedure as closely as possible. Meanwhile, if a different procedure has to be used, measures which are considered effective in avoiding such confusion, such as giving sufficient explanation of the differences at the briefing session of tender procedure, will be taken.

### **(2) Capacity of the Local Construction Firms and Setting of Work Period**

Reports on the results of educational facility construction projects by local construction firms under the Standard Design prove that the quality of their execution is high and free of major problems. One of the factors for this good performance is that the established Standard Design, through long-term use, has been generalized as a common knowledge and technology among the contractors. This observation has led us to believe the importance of minimizing the points to be raised in the Improvement Plan and making contractors fully understand its contents prior to the project implementation in ensuring the quality of work and preventing inadvertent mistakes.

The work period established in Lesotho is slightly longer than that established in Japan. In Lesotho, this slightly longer work period is in general use as a condition which does not overburden contractors and which does not give rise to trouble such as delay. When implementing a project under GACE, it will be an important factor for the success of the project to establish a work period with which local contractors can complete the work without overworking, instead of calculating it from theoretical figures or experience in Japan,

### **(3) Payment of Construction Costs**

Monthly payment is the most widely-used local method for payment of construction expenses. On the other hand, as contracts are concluded as lump-sum contracts and bills of quantities are not prepared, settlement of progress payment may be inaccurate. As a measure against such problems, documents required for consultant supervision including estimates for monthly payment for the completed part of the work will be prepared by a Japanese engineer during the preparatory stage of the construction work and agreement on the use of the documents will be reached with the contractors before the commencement of the work.

#### **(4) Additional Costs**

A lump-sum contract allows the appropriation of contingency funds derived from changes in the volume of work at the time of settlement as it is adopted for unexpected additional expenses during the work. Meanwhile, the policy for this project is to explicitly describe countermeasures against unexpected events in the contracts and to make the contractors adhere to them. A specific agreement has been reached that additional expenses which are expected to be incurred are to be borne by the Government of Lesotho.

#### **(5) Access**

It is necessary to fully consider the impact of road closure by snowfall in the winter (two to three weeks) and ice on the surface of the road on steep slopes and at sharp turns on the progress of the work at the sites in Mokhotlong and Quthing (the former, in particular,) and to establish work period and timing of deliveries of materials appropriately in accordance with the expected impact.

#### **(6) Legal Matters**

As MOET has become a party to construction contracts of self-funded projects as well as those funded by donors on many occasions, it has established a department handling legal matters within the ministry to solve problems related to these contracts. The ministry and the Japanese side have reached an agreement that this department will be able to support this project if the need arises.

#### **(7) Necessity of Involvement of an Official Inspection Institution**

EFU, which is to take responsibility for consultant supervision in this project, has sufficient experience and has accumulated results in the consultant supervision of school construction projects under the Standard Specifications and Standard Design of Educational Facilities which were prepared by revising the Standard Specifications prepared by the Ministry of Public Works of Lesotho. Therefore, we consider that there will be no need to employ an official inspection institution in this project.

#### **(8) Measures Against Asbestos**

No material which contains asbestos will be used in this project.

### **2-2-4-3 Scope of Works**

#### **(1) Lot Division**

In general, the larger the scale of work assigned to a lot, the larger the expected reduction in construction costs. However, as the seven sites in this project are widely spread over the entire country, the advantage expected from a large lot with one contractor taking charge of more than one site is unlikely to materialize. On the contrary, there is a need to consider the inefficiency caused by trying to control works uniformly at sites which are far apart from each other and the difficulty of

working in the mountains.

There are some 40 contractors in Lesotho registered with the Ministry of Public Works with experience in construction of educational facilities. There are 28 companies registered in the list of contractors of EFU. The size of the contractor determines the scale of the projects they can bid for. The contractors are classified into five ranks, from A to E, in descending order. Seven, six, eleven, one and three companies are classified into Ranks A, B, C, D and E, respectively. Twenty-four contractors of Rank C or above are eligible to bid for the ten lots, numbers 1 to 10, in Table 2-9 Lot Division, and all 28 contractors are eligible to bid for the four lots, numbers 11 to 14, in this project. In general, MOET implements projects with a lot assignment of 1-2 schools per contractor, which is almost the ideal ratio to promote fair competition. Lots will be established taking into consideration the type of facilities (either educational or housing facilities) and the priority level of the components and in such a way as to allow adjustment if the procurement management agent requires it.

As a result the discussion taking the above-mentioned points into consideration, the project was divided in a total of 15 lots. Among the 15, 14 are for construction work, a lot for educational facilities and a lot for housing facilities at each of the seven sites. The remaining lot is of procurement of educational furniture for all the sites.

The reasons for assigning procurement of the entire furniture to a single supplier are the small scale of procurement with a total quantity of approximately 4,000 pieces and total order amount of approximately 25 million Yen and the existence of many suppliers in Maseru and South Africa capable of handling this volume of furniture.

The lot numbers, excluding the lot of educational furniture, correspond to the priority rankings.

**Table 2-9 Lot Division**

Lot	Site	Facility contents	Remarks
1	Leribe	Two-classroom Building	Priority 1 Basic components: (Educational facilities)
2	Maseru	Four-classroom Building	
3	Berea	Integrated Science Laboratory/ICT	
4	Quthing	Training Room	
5	Butha-Buthe	Administration/Staff Room Building	
6	Mokhotlong	New Combined Toilet	
7	Mafeteng		
8	Quthing	Boys' and Girls' Dormitories	Priority 2 Incidental components 1. (Housing facilities)
9	Mokhotlong	Kitchen/Dining Hall	
10	Maseru	Principal's and Staff Houses	
11	Leribe	Principal's Houses	Priority 3 Incidental components 2. (Housing facilities)
12	Berea	Staff Houses	
13	Butha-Buthe		
14	Mafeteng		
15	All sites	Educational furniture	

## **(2) Tender Plan**

The tender will be conducted taking the following into consideration.

- The tender will be conducted as an open tender with eligibility restriction with ex-ante or ex-post qualification widely adopted in Lesotho.
- Tenderers will be required to have experience in construction of schools in accordance with the MOET Standard Design of Lesotho.
- Newspapers and the procurement page on the website of MOET will be used as the media to announce the tender and contractors in South Africa, which has close ties with Lesotho, will also be invited to the tender.
- The furniture, excluding fixtures, will be procured separately from the other materials and equipment. The furniture for all the sites will be procured in bulk.
- In principle, the tender for the 14 lots of similar contents will be held on the same day. Contractors will be allowed to bid on multiple lots. If the procurement management agent deems necessary, the tender for the lots of No. 8 to No.14 will be delayed by two weeks and a tender method with the condition, “the components of the lot may be subject to change” declared will be adopted.

### **2-2-4-4 Consultant Supervision**

The construction supervisors of EFU will perform consultant supervision with the Contract Manager of EFU as the manager of consultant supervision in the consultant supervision plan. In the consultant supervision system, the construction supervisors will compile reports and report to the field representative of the procurement management agent.

Assuming the required frequency of visits to each site by the construction supervisors as an average of twice a week (or three times a week at times of heavy work loads), the number of inspectors required for the supervision was investigated as described below. Two and three supervisors will be required at times of ordinary and heavy work loads, respectively. As EFU has six permanent inspectors, it will be able to assign some of them to this project without any problem. Assuming twice-weekly visits per site on average by the construction supervisors, the total number of site visits during the established 15-month construction period will be 120. There are 26 (on-site) control items required for this project; *i.e.* progress of the preparatory work, site confirmation, progress of the excavation, confirmation of the base of the excavation, progress of the leveling concrete casting, inspection of the bar arrangement for the foundation, witnessing of concrete casting, progress of the block work, progress of the U-shaped block work, inspection of the bar arrangement in the U-shaped block work, witnessing of concrete casting in the U-shaped block work, progress of the mortar work, progress of the fitting work, progress of the painting, progress of the floor compaction, inspection of the bar arrangement for the floor, witnessing of the concrete casting on the floor, inspection of the truss installation, progress of the roofing, acceptance test of the furniture, progress of the electric work, progress of the facility work, witnessing of the electric conduction inspection, witnessing of the water

flow test, the completion inspection and witnessing of the handing over. These two figures give four or more site visits per control item, which is considered sufficient as a consultant supervision system.

**Table 2-10 Number of Days Required for the Site Visits**

Site	Number of days required	Assuming the time spent at the site at an average of two hours, the numbers of days required for the site visit were calculated as shown on the left. By allocating four days in the field and one day at the office, one person can visit all the sites once in a week.
Mokhotlong	2.0	
Butha-Buthe		
Quthing	1.0	
Mafeteng		
Leribe	1.0	
Berea		
Maseru		
Total	4.0	



### 2-2-4-5 Quality Control Plan

The essential inspection items of the quality control in this project are shown in the table below. In addition, the site supervisors of EFU responsible for the consultant supervision will inspect the quality of work on the 18 check items in “Checklist for Quality Control on Construction Works” which they use in their daily work. Finally, finished work quality inspection will be conducted as part of quality control. Furthermore, Japanese engineers will offer a quality control workshop to persons in charge of site supervision before the start of construction in order to raise their awareness on quality control. The workshop will introduce the use of a quality control check sheet consisting of (1) control items, (2) inspection items, and (3) inspection frequencies to allow the trainees to understand how to maintain a uniform quality level for all the facilities by filling out a common-format check sheet. In addition, the basics of site supervision such as storing these check sheets and taking photographs to record every work item will be learned in this workshop.

**Table 2-11 Material Test**

Item	Test method	Time of the test	Criteria
Strength of concrete	Compressive strength test in accordance with SABS standard	On foundation and floor for each building	In accordance with SABS criteria
Strength of concrete blocks	Compressive strength test in accordance with SABS standard	Once for each supplier	In accordance with SABS criteria
Strength of reinforcing bars	Verification with mill sheets	For each type	In accordance with the criteria of the specifications
Size of reinforcing bars	Visual verification at the site	At every bar arrangement inspection	In accordance with the design drawings
Materials of wooden trusses	SABS Standard	At the delivery of materials	By certification stamps
Shape of wooden trusses	Measurement at the site	For each building	In accordance with the design drawings
Water flow (leak) test	SABS Test Standard	At the completion of the work	SABS criteria
Current flow (line leakage) test	SABS Test Standard	At the completion of the work	SABS criteria

### 2-2-4-6 Procurement Plan

The procurement plan of the project under GACE is at the discretion of the awarded contractors under the conditions of adherence to the standard specifications and prior approval by EFU. Nevertheless, we prepared the procurement plan shown below. All the construction materials and equipment are commercially available in Maseru, the capital of Lesotho. Most of the imported goods are from the

Republic of South Africa, a member of the same custom treaty union with Lesotho.

**Table 2-12 Sources of Procurement of Materials**

Materials and equipment	Local procurement			Remarks
	Lesotho	Japan	Third Country	
Sand and gravel	○			
Cement			○	South Africa
Concrete blocks	○			
Stone materials	○			
Semi-porcelain tiles			○	South Africa
Wood for structures			○	South Africa
Corrugated galvanized iron sheets			○	South Africa
Cement bargeboards			○	South Africa
Steel doorframes	○			
Wooden doors	○			
Steel window sashes	○			
Glass			○	South Africa
Cement plates			○	South Africa
P tiles			○	South Africa
Paints			○	South Africa
Materials for the equipment work			○	South Africa
Materials for the electric work			○	South Africa
Educational furniture	○			

Note: All the imported goods are from South Africa.

## 2-2-4-7 Implementation Schedule

### (1) Overall Schedule

An implementation schedule will be prepared for each of the following major components. As mentioned above, instead of hiring local consultants, staff of EFU will be utilized in the execution of the work at the detailed design stage.

**Table 2-13 Overall Work Schedule**

Component	Content	Duration
Preparation period	Procurement management service contract, establishment of offices and accommodation	1.0 month
Execution design	Site study, correction of the site plans: 0.5 month (if necessary) Finalization of the drawings and specifications: 0.3 month Preparation of Change Orders: 0.2 month	1.0 month
Selection of contractors	Official notice: 0.5 month Estimation : 1 month Evaluation : 0.5 month	2.0 months
Execution	14 lots The maximum duration will be 15 months	15.0 months

**(2) Execution Implementation Schedule**

A rational schedule which allows sufficient time to complete the work will be prepared taking the following into consideration.

- Climatic conditions (rainfall, snowfall, temperature and their impact on the access to the sites)
- Supervision (required inspections and handover)
- Degree of mechanization (almost entirely by manual labor with the exception of the use of concrete mixers)
- Labor conditions (effect of the state of construction business in South Africa, in particular)

**Table 2-14 Required Processes**

	(Category A) (Priority 1)	(Category B) (Priority 2)	Category C (Priority 3)
	<ul style="list-style-type: none"> <li>• Two-classroom Buildings</li> <li>• Four-classroom Buildings</li> <li>• Integrated Science Laboratory/ICT Training Room</li> <li>• Administration/ Staff Room Buildings</li> <li>• New Combined Toilets</li> </ul>	<ul style="list-style-type: none"> <li>• Boys' Dormitories</li> <li>• Girls' Dormitories</li> <li>• Kitchen/Dining Hall (cum multi-purpose hall)</li> <li>• Principal's Houses</li> <li>• Staff Houses</li> </ul>	<ul style="list-style-type: none"> <li>• Principal's Houses</li> <li>• Staff Houses</li> </ul>
Total floor area			
Preparatory work	1.0	1.0	1.0
Foundation work	1.0-2.5	2.0-2.5	1.0
Skeleton work	1.5-2.0	2.5-3.0	1.0-2.0
Roofing work	1.5-2.0	2.0-2.5	1.0-1.5
Interior work	2.0-2.5	2.0-3.0	1.0-2.0
Exterior work	1.0-1.5	1.0-2.0	0.5
Withdrawal	1.0	1.0	1.0
Total required months	12.5 months	15 months	9 months

**2-2-4-8 Software Component Plan**

Local residents and MOET have keen awareness of operation, maintenance, and management to such an extent that the facilities are properly managed and kept in a desirable condition. At the completion of the construction of primary school buildings under Grant Aid for General Projects of Japan, they were provided with a manual. Since then, they have maintained and managed the facilities in accordance with the manual. As various types of training courses are in preparation, we see no reason to include a software component in this project at the moment.

**Table 2-15 Overall Implementation Schedule (Draft)**

Table 6-1

**Project Name: Project for the Construction of Secondary School in Kingdom of Lesotho**  
**Overall Project Progress Chart (Draft)**

**Progress Chart (Overall)**

Local Operation  
 Operation in Japan

Calendar year			2007		2008												2009													
Item	Fiscal year		FY2007			FY2008												FY2009												
	Calendar month		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10				
	Month number				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
MOF execution negotiation					○																									
	Cabinet deliberation				▽																									
Contract	Signing of Exchange of Notes (EN)																													
	Procurement management agent contract					▲																								
Execution design	Field study					■																								
	Detailed design					■	■	■																						
	Making of tender document					■	■																							
	Approval of tender document					■																								
	Invitation for bidding and PQ					▲																								
	Drawings handover and local briefing					■																								
	Tender									▲	▲																			
	Tender evaluation									■																				
	Vendor contract									▲																				
	Supervision of work (EFU)																													
Education activities																														
Construction process	Meteorologic characteristics																													
	Preparation and withdrawal																													
	Overall construction period																													
	Target areas and sites																													
	Completion inspection and handover																													
Consultant personnel plan	Personnel plan of Japanese engineers	Grade																												
		Supervision	2																											
		Architectural design engineer	3																											
	Total																													
	Locally hired people	Driver A																												
		Total																												
	EFU	Contract expert																												
		Design engineer																												
		SV. engineer																												
		SV. Engineer																												
Total																														
		DD+SV		Japan		Local		No. of visits		Total																				

## 2-3 Obligations of Recipient Country

The items directly related to this Project regarding the obligations of the recipient country are shown below. Of these items, it was agreed in the outline design study to implement the water supply prior to the tender implementation and the power distribution prior to the start of the construction work.

**Table 2-16 Obligations of Recipient Country**

No.	Item	Description	Remarks
1	Site preparation	Leveling of slopes and pulling up of roots	
2	Water supply	Feeding in of water pipes	
3	Power distribution	Low voltage or high voltage feed-in and transformer equipment	
4	Dining Hall utensils and furniture		
5	Fixtures and furniture for dormitories and houses	Lockers, beds, etc.	
6	Computers and associated equipment	41 computers per school, and printers and other devices	
7	Science laboratory instruments	One set of instruments by curriculum per school	
8	Fences, gates/doors and janitor booths		
9	External works	Parking space, plantation and sidewalks	

## 2-4 Project Operation Plan

### 2-4-1 Operation Plan

The operation of lower secondary schools will be undertaken by the inspectors of the Secondary Education Office, MOET and the Advisors of each District. The Advisor of each District will make visits about 2 times for guidance per half year to each school.

The number of teachers necessary to furnish lessons to 6 classes in the teacher deployment system of MOET is 9, and the total number of staff members required for this Project is 16 per school including one principal, one deputy principal, 4 clerical staff members and one janitor. It is desirable to deploy teachers trained to make effective use of the Integrated Science Laboratory and ICT Training Room in each school. The schools in Quthing, Mokhotlong and Maseru, which will be provided with dormitories and a kitchen/dining hall (cum-multi-purpose hall), will have 7 additional members including 2 superintendents and one licensed cook + 4 assistants.

All the schools planned under this Project will be newly constructed and the total number of teachers and clerical staff members required for this Project will be 133 (3 years after the opening of the schools in which the new students will obtain their FC (First Certificate)).

In Lesotho, there is a tendency that a new school may often receive new students exceeding the

complement under the pressure of applicants at the time of opening and this is one of the factors causing the applicants to have a feeling of inequality and disturbing the operation plan. Therefore, it is desirable that a detailed operation plan be formulated to operate each school by keeping the admission complement strictly and employing the teaching and clerical staff in stages for the period from the opening time until the complement of the facilities is satisfied as the new students are moved up to the higher grades.

**2-4-2 Maintenance/Management Plan**

(1) Facilities

The maintenance and repair of facilities will be planned and implemented by the school operation committee. The facilities to be newly built in this Project will be specified to be almost maintenance-free so that no major repair items will appear for about 10 years after construction. However, it is desirable to make the minimum necessary maintenance as described below in order to keep the facilities durable for a longer time.

**Table 2-17 Frequency of Maintenance of Facilities**

Item	Frequency	Remarks
Repainting of inner walls	Once per 10 years	
Repainting of trusses	Once per 10 years	
Repainting of fixtures	Once per 5 years	
Repainting of blackboards	Once per 2 years	

(2) New Combined Toilet

The New Combined Toilets will be cleaned periodically and the septic tanks will be subject to periodical treatment with chemicals and cleaning under maintenance agreements to be arranged with private cleaning companies. The treatment with chemicals will be required once per 3 months and the cleaning of a septic tank once per 2 years.

## 2-5 Other Relevant Issues

### 2-5-1 Initial Cost Estimation

(1) Estimation Conditions

- Time of estimation : September 2007  
Currency exchange rate : 1 Maloti = 1R = 18.29 yen  
Work period : As shown in the Work Schedule  
Others : This Project will be implemented in accordance with the grant aid program system of the Japanese Government.

(2) Expenses to be borne by the Lesotho side:

**Table 2-18 Expenses to be Borne by the Lesotho Side**

	Item	Amount (1,000 Maloti)	Remarks
1	Ground leveling, etc.	500	
2	Water supply	700	
3	Power distribution	200	
4	Utensils and furniture for Dining Halls	100	
5	Fixtures and furniture for dormitories	240	
6	Computers and associated equipment	2,500	
7	Scientific experiment instruments	200	
8	Gates/doors, fences and janitor booths	300	
9	External work	500	
	Total	5,240	

Note: The amounts except for water supply are roughly estimated. (These will be determined prior to the time of outline explanation.)

## 2-5-2 Operation and Maintenance/Management Costs

### 2-5-2-1 Operation Cost

The salaries of teaching and clerical staff which consist of the major expenses of the school operation cost are estimated based on the average salary amounts each for the principals, deputy principals and the clerical staff of a total number of teaching and clerical staff necessary for 7 schools to be newly constructed in this Project. The total estimated operation cost is as follows:

**Table 2-19 Salaries for Teaching and Clerical Staff**

Type of Job	Average Salary (M/M)	Required Number	Total (Maloti)
Principal	3,000	7	21,000
Deputy Principal	2,800	7	19,600
Teacher	2,500	63	157,500
Clerical member	1,800	35	63,000
Staff member (for dormitories and kitchen/dining hall (cum-multi-purpose hall))	2,000	21	42,000
Total		133	303,100

### 2-5-2-2 Maintenance/Management Cost

The required amounts for the maintenance/management plan as described above are as follows:

#### (1) Buildings

**Table 2-20 Maintenance/Management Cost for Buildings**

Item	Frequency	Yearly Expenses (General)/ Maloti	Yearly Expenses (incl. dormitories/ kitchen/dining hall (cum-multi-purpose hall))/ Maloti
Repainting of inner walls	Once per 10 years	4,000	6,500
Repainting of trusses	Once per 10 years	8,000	13,000
Repainting of fixtures	Once per 5 years	5,100	9,000
Repainting of blackboards	Once per 2 years	1,500	1,500
Total		18,600	30,000



(2) The New Combined Toilets

For the septic tanks for New Combined Toilets, the treatment with chemicals and cleaning will be made periodically under maintenance agreements to be arranged with private cleaning companies. The cost required for such works will include 1,000 Maloti for treatment with chemicals once per 3 months, 1,000 Maloti for cleaning once per 2 years. The yearly expenses per septic tank amount to 4,500 Maloti and the yearly expenses required for each school amount to 9,000 Maloti and for each school including dormitories and a kitchen/dining hall (cum-multi-purpose hall) and staff housing 22,500 Maloti.

(3) Yearly Maintenance/Management Cost

The total yearly maintenance cost for each of the schools which require the facilities to be constructed in this Project amounts to 27,600 Maloti or 52,500 Maloti (for each school including dormitories and a kitchen/dining hall (cum-multi-purpose hall) and staff housing).

The application for the budget required for repairs will be submitted by each school to MOET. No budget problem will appear in the maintenance plan because the yearly total budget amount of 120,000 to 140,000 Maloti will be provided to the new schools.

## **CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS**

## CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

### 3-1 Project Effects

In this project, a total of seven new secondary schools, one each in seven (Leribe, Maseru, Berea, Quthing, Butha-Buthe, Mokhotlong and Mafeteng) of the ten districts in Lesotho, (each with six classrooms (in a Four-Classroom Building and a Two-Classroom Building), an Integrated Science Laboratory/ICT Training Room Building, a Staff Room/Administration Building and Combined Toilets) will be constructed. In addition, the schools in Quthing and Mokhotlong in the mountainous region and the capital city Maseru shall be provided with a student dormitories (one building each for boys and girls), a kitchen/dining hall (cum-multi-purpose hall), a principal's house, and a staff house. This project is expected to achieve the following effects:

#### (1) Direct Effects

Current situation and problems	Measures taken in this project (Works included in the cooperation project)	Impacts and improvements derived from the project
There are children who have not been able to be enrolled in secondary education because of the lack of access to secondary education from primary education and lack of classrooms.	In the above-mentioned seven districts, a total of 42 classrooms, six per school, and a total of 14 Integrated Science Laboratories and ICT Training Rooms will be constructed.	In the above seven districts, 1,680 children not receiving education will go to secondary school.
In the mountains, the non-existence of a secondary school within walking distance and underdevelopment of the public transport system make enrollment in secondary schools difficult for children living in such areas.	Student dormitories and dining halls will be constructed at the three schools in the two districts in the mountains, Quthing and Mokhotlong, and in the capital, Maseru.	360 students who are having difficulty in going to school are expected to go on to secondary school.
In the Standard Design, the toilets for boys, girls and teaching staff are all pit latrines and each has its own structure.	The toilets for boys, girls, teaching staff and the disabled will be combined to consolidate the water-using facilities. The water supply facilities will be installed to enable installation of flush toilets.	Consolidation of the water-using facilities will facilitate their maintenance and management and installation of flush toilets will contribute to the improvement of the sanitary conditions.

#### (2) Indirect Effects

Current situation and problems	Measures taken in this project (Works included in the cooperation project)	Impacts and improvements derived from the project
The introduction of FPE has increased the demand for secondary education and the shortage of facilities has become apparent.	New secondary schools composed of 42 classrooms and other components will be constructed in the above-mentioned seven districts.	With the construction of classrooms, improvement of the quality of education at a certain level will be realized.
Establishment of government-run schools as model schools with high academic achievement is hoped for.	A secondary school composed of standard components will be constructed in the capital, Maseru.	The secondary schools to be established at sites with high demand are expected to expand and improve the quality of secondary education.

## **3-2 Problems and Recommendations**

### **3-2-1 Problems**

#### 1) Supply of equipment in the integrated science laboratory/ITC training room

Although the Lesotho government has agreed that this item should be implemented at the expense of the recipient country, some existing schools do not yet have necessary equipment. It is desirable to supply equipment appropriately in accordance with the installation standard upon completion of the facilities.

#### 2) Supply of furniture and equipment in the student dormitories and kitchen/dining hall (cum-multi-purpose hall)

The supply of furniture and equipment is not necessarily sufficient at the existing schools. This problem, although not directly concerning education, is important in giving incentives to students. Since this item should be implemented at the expense of the recipient country, in the same way as for the above item, and therefore it is desirable to supply equipment appropriately in accordance with the installation standard upon completion of the facilities.

#### 3) Appropriate assignment and training of teachers

MOET is required to assign teachers in time for the opening of the secondary schools to be constructed in this project. Sufficient consideration should be given to achieving quality improvement of current teachers including teacher training.

### **3-2-2 Recommendations**

#### 1) Construction of additional facilities for higher secondary education

This project is intended for three years of lower secondary education. However, the demand for two years of higher secondary education will gradually grow due to the influence of free-of-charge primary education. The "basic education" in Lesotho refers to the period of ten years until the completion of lower secondary education. On the other hand, the Ministry of Training and Education passed new educational legislation that sets twelve years of primary and secondary education as compulsory education, which was approved by the council (to take effect in January 2008). In the light of this situation, construction of additional facilities for higher secondary education is considered desirable from the viewpoint of both demand and educational policies. It is hoped that this problem will be resolved by the Lesotho government by its own efforts.

#### 2) Construction of special classrooms, etc.

Not many of the existing secondary schools in Lesotho are teaching all the subjects. One cause for this is the unavailability of facilities and equipment, in addition to the insufficiency in the number and

quality of special teachers. Regarding the current project, the Lesotho government first intended to "set up a government-run model school that can teach as many subjects as possible in each of the districts." This project is to realize part of the original request. In view of the original concept, it is desirable for the Government of Lesotho to convert the schools in this project into "model schools" by increasing the number of subjects taught in the schools through construction of special classrooms by self-help efforts. Such efforts are expected to further promote improvement of the secondary education environment in Lesotho, which is the goal of this project.

### **3-3 Appropriateness of Project**

In view of the expected effects listed in Section 4-1 and the following reasons, it is deemed appropriate to implement this project under Japan's grant aid scheme.

- (1) The beneficiaries of this project are general people including the impoverished people living in the high mountainous region.
- (2) The purpose of this project is the improvement of educational environments in the project target region, which is consistent with the improvement of BHN, education, and human resources development.
- (3) The content of this project is consistent with the purpose of the "Education Sector Strategic Plan (ESSP: 2005-2015) of the Lesotho government: "Constructing schools in remote and populated areas and improving access to them."
- (4) The "Grant Aid for Community Empowerment" system enables the efficient implementation of the project.
- (5) The facilities under this project are planned in accordance with the specifications based on the local standard design, can be maintained with the funding, personnel, and technology of the recipient country, and do not need any special technology.

### **3-4 Conclusion**

It has been found appropriate to implement this project as a cooperation project under Japan's grant aid scheme because it is expected to achieve considerable effects as described in the above and greatly contribute to the improvement of residents' BHN. Furthermore, MOET of Lesotho has both personnel and funding sufficient to operate and maintain without problems the facilities and furniture to be constructed and provided under this project.

Furthermore, it is anticipated that the purpose of this project can be achieved more efficiently if the problems and recommendations described in Chapter 3-2 are solved and implemented, respectively.

## **APPENDIX-1 MEMBER LIST OF THE STUDY TEAM**

### **(1) Outline Design Study**

Akihiko HOSHINO	Team Leader	Team Leader, Education and Vocational Training Team, Project Management Group II, Grant Aid Management Department, JICA
Kentaro NAGAI	Program Management	Education and Vocational Training Team, Project Management Group II, Grant Aid Management Department, JICA
Naoko ARAKAWA	Procurement Management	Project Management Department, JICS
Shigeru OGURA	Project Manager/ Architectural Planning/ Educational Matters	Fukunaga Architects-Engineers
Masaaki KOBAYASHI	Architectural Design	Fukunaga Architects-Engineers
Hirokichi SATO	Implementation Plan/ Procurement Management/ Project Cost Estimation	Fukunaga Architects-Engineers

### **(2) Explanation of Draft Report**

Shuji ONO	Team Leader	Resident Representative, JICA South Africa Office
Kentaro NAGAI	Program Management	Education and Vocational Training Team, Project Management Group II, Grant Aid Management Department, JICA
Yuzuru KUNDA	Procurement Management	Project Management Department, JICS
Shigeru OGURA	Project Manager/ Architectural Planning/ Educational Matters	Fukunaga Architects-Engineers
Masaaki KOBAYASHI	Architectural Design	Fukunaga Architects-Engineers

## APPENDIX-2 STUDY SCHEDULE

### (1) Outline Design Study

Date	Official Members			Project Manager/ Architectural Planning/ Educational Matters	Architectural Design	Implementation Plan/ Procurement Management/ Project Cost Estimation
	Team Leader	Procurement Management	Program Management			
	Akihiko HOSHINO	Naoko ARAKAWA	Kentaro NAGAI			
1	4-Aug.	Sat				Narita → Johannesburg
2	5-Aug.	Sun				Johannesburg → Maseru In Johannesburg: Request for procurement and estimates
3	6-Aug.	Mon				Discussion with the Ministry of Education and Training (MOET): Explanation of I/R, distribution of questionnaires and arrangement of the study schedule Johannesburg → Maseru
4	7-Aug.	Tue				Field study and interview at a high school facility Discussion with MOET: Days for implementation of studies at planned project sites, drawings for the construction of secondary schools and request for prioritization
5	8-Aug.	Wed				Making arrangements and discussion with the Projects Support and Coordination Unit (PSCU), MOET Field study at a project site in Maseru and inspection of a primary school constructed with Japanese Grant Aid
6	9-Aug.	Thu		Tokyo → Johannesburg		Making arrangements and discussion with the Education Facilities Unit (EFU), MOET Field study at a project site in Maseru and inspection of Thetsane High School
7	10-Aug.	Fri		Johannesburg → Maseru	Making arrangements with EFU, MOET/ Field study at the Lesotho Water and Sewerage Authority (WASA)	Same as in the left column Field study at the Lesotho Electricity Company (LEC)
				At MOET: Courtesy call by the official members of the team	Same as in the left column	Same as in the left column
8	11-Aug.	Sat		Field inspection of sites in Mafeteng, Mochale's Hoek and Quthing		Field inspection of sites in Mafeteng, Mochale's Hoek and Quthing
9	12-Aug.	Sun		Visit to and field study at a primary school in Maseru constructed with Japanese Grant Aid		Same as in the left column
10	13-Aug.	Mon	Tokyo → Johannesburg	At MOET: Discussion on the draft minutes	Same as in the left column	Making arrangements with EFU, MOET, on contractors, request for estimates, etc.
11	14-Aug.	Tue	Johannesburg → Maseru	At MOET: Discussion on the draft minutes		Making arrangements with EFU, MOET, on contractors, request for estimates, etc. Same as the left column
12	15-Aug.	Wed		At EFU, MOET: Discussion on the draft minutes		At EFU, MOET: Discussion on the draft minutes re: field study of project sites, the organization of EFU, bids, etc.
				At MOET: Discussion on the draft minutes		At MOET: Discussion on the draft minutes re: the scope of the work of the Government of Lesotho, selection of project schools, prioritization of the schools, contract with JICS, etc.
13	16-Aug.	Thu		At the Ministry of Finance and Development Planning (MFDP): Interview, tax exemption measures		Price survey: Furniture and electric appliances At MFDP: Interview, tax exemption measures
				At MOET: Conclusion of the Minutes of Discussions At EFU, MOET: Discussion of problems and past achievements		At MOET: Conclusion of the minutes At EFU, MOET: Discussion of problems and past achievements
14	17-Aug.	Fri		Maseru → Johannesburg	Price survey: request for estimates for furniture and inspection of factories At EFU, MOET: Correction of the drawings, etc.	Price survey: Request for estimates for furniture, electric appliances and vehicles Same as in the left column Price survey: request for estimates for furniture, inspection of factories
15	18-Aug.	Sat		Johannesburg → Hong Kong		Price survey/sorting of the collected materials
16	19-Aug.	Sun	Paris → Cotonou		Hong Kong → Narita	Sorting of the collected materials/Team meeting
17	20-Aug.	Mon				Field study in Mokhotlong
18	21-Aug.	Tue				Field study in Butha-Butha: Department of Lands, Surveys and Physical Planning (LSPP), Ministry of Home Affairs (MOHA) Field study of the sites in Leribe and Berea
19	22-Aug.	Wed				Field study in Quthing: WASA, Regional Water Authorities (RWAs), water tanks, availability of water supply, etc. Field study in Mafeteng: LSPP, MOHA
20	23-Aug.	Thu				At EFU, MOET: Study of bills of quantities for facilities At EFU, MOET: Salaries by job description, bills of quantities for facilities; price survey of water charges (WASA), electricity charges (LEC) and telephone charges.
21	24-Aug.	Fri				Price survey of air conditioners, collection of estimates from contractors and estimates for vehicles.
22	25-Aug.	Sat	Cotonou → Ouagadougou			Study of the estimates for office furniture, facsimiles, etc. In Berea: Visit to Sekhamanen Primary School (assisted by Grant Assistance for Grassroots Projects) In Leribe: Visit to Sechaba High School (assisted by AfDB) and Hlotenyane Primary School (assisted by the World Bank) Team meeting
23	26-Aug.	Sun	Ouagadougou → Paris			Sorting of the collected materials/Team meeting
24	27-Aug.	Mon		Paris → Narita		Collection of the estimates for office furniture, facsimiles, etc. At MOET: Discussion of the I/R questionnaires, results of field studies at the 3 sites, request for drawing data and request for letters
					(MOET): Making arrangements for designs and questionnaires	(MOET): Study of designs and prices and meteorological stations
25	28-Aug.	Tue				Making arrangements within the team LSPP, MOHA: Application for the construction permit Price survey of office, security guards and vehicle insurance At EFU, MOET: Discussion

26	29-Aug.	Wed				Education Planning Department, MOET: Request for collection of materials Making arrangements on EMIS (Educational Management Information System)	National Environment Secretariat (NES), Ministry of the Environment: regulations stipulated by the School Construction Environment Act and price survey of accommodation and office	Making arrangements for EMIS (Educational Management Information System), request for collection of materials and collection of estimates from contractors
27	30-Aug.	Thu				Collection of materials from the Education Planning Department, MOET Maseru → Johannesburg		
28	31-Aug.	Fri				Report to the Embassy of Japan and JICA South Africa Office	Same as in the left column	Collection of estimates from South African contractors
29	1-Sep.	Sat				Johannesburg → Hong Kong		
30	2 Sep.	Sun				Hong Kong → Narita		



## (2) Explanation of the Draft Report

レポート王国 中等学校建設計画 概略設計概要説明 行程案

			Official Members			Consultants			
			Shuji ONO	Yuzuru KUNDA	Kentaro NAGAI	Shigeru OGURA	Masaaki KOBAYASHI		
			Team Leader	Procurement Management	Program Management	(a) Project Management/ Architectural Planning/ Educational Matters	(b) Architectural Design		
1	13-Dec	Thu				Narita → Johannesburg			
2	14-Dec	Fri				Johannesburg → Maseru		Courtesy call to MOET/Explanation of the Draft Report on the outline design	
3	15-Dec	Sat				Supplementary Study			
4	16-Dec	Sun				Narita → Johannesburg		Supplementary Study	
5	17-Dec	Mon				Johannesburg → Maseru		Explanation of the Draft Report on the outline design	
6	18-Dec	Tue				Discussion with MOET		Supplementary Study	
7	19-Dec	Wed				Johannesburg → Maseru		Supplementary Study	
			Discussion with MOET						
8	20-Dec	Thu	Signing of the Minutes of Discussions						
			Field study at project sites (during the time reserved for discussion)						
			Maseru → Johannesburg						
9	21-Dec	Fri	Report to the Embassy of Japan			Maseru → Johannesburg			
					Johannesburg → Singapore				
					Johannesburg → Hong Kong				
10	22-Dec	Sat	Singapore → Narita		Hong Kong → Narita				
11	23-Dec	Sun							

## **APPENDIX-3 LIST OF PARTIES CONCERNED IN THE RECIPIENT COUNTRY**

1) Ministry of Education and Training

Ms. Ntsebe Kokome	: Principal Secretary
Mr. Odilon M. Makara	: Deputy Principal Secretary
Ms. Malerato Khoeli	: Chief Education Officer - Secondary Education
Mr. Taole John Masoabi	: Director - Planning
Mr. Phillip Mapetla	: Chief Education Officer - Teachers' Services
Dr. Kinandu Muragu	: Project Coordinator - PSCU (Projects Support and Coordination Unit)
Mr. Ratsiu Majara	: Chief Inspector, Central Inspectorate, Secondary Education Division
Mr. Ekabang Koma	: Special Services Manager
Mr. Motlatsi Ramakatane	: Contract Manager, EFU
Mr. Satchy A. Sivam	: Technical Advisor
Ms. Montseng Mofokeng	: Inspector Non-formal Education
Mr. Godfrey W. Kyama	: eGovernance Expert (Change Manager) attached to the Principal Secretary
Mr. Mosolani	: Chief of Planning Section - Planning

2) Ministry of Finance and Development Planning

Mr. J. T. Nteso	: Finance Manager, Public Debt Section
-----------------	--

3) Lesotho Revenue Authority

Ms. Maleshoane Morakabi	: Commissioner of Value-Added Tax
-------------------------	-----------------------------------

4) Ministry of Public Works and Transport

Mr. Karabo T. Marite	: Director of Planning
----------------------	------------------------

5) Relevant secondary school personnel

Mr. Thabi Sephelane	: Principal
---------------------	-------------

6) District Education Offices

Ms. Make Masellane Sehlabi	: Senior Education Officer, Leribe
Ms. Selikane	: Education Officer, Butha-Buthe
Ms. Nariti	: Senior Education Officer, Berea
Mr. Mabele	: Education Officer, Mokhotlong

7) District Administration Office

- Ms. Ntoampe : District Administrator, Berea
- 8) Department of Land, Survey and Physical Planning (LSPP)
- Ms. Maseton Makhetha : Chief Physical Planner, LSPP
- Ms. Liabo Tlali : Officer, LSPP Butha-Buthe
- Mr. Heshepe : Officer, LSPP Leribe
- Mr. Motebang Diaho : Officer, LSPP Mafeteng
- 9) National Environment Secretariat
- Mr. Stanley Motsamai Damane : Director
- 10) Water supply and sewerage services Water and Sewerage Authority
- Mr. Justicel Mohosho : Director of Engineering
- Mr. Ntsaba Edwin : Acua Manager, WASA Quthing
- 11) Electricity supplier LEC (Lesotho Electricity Company)
- Mr. Lerato Mpoble : Planning Supervisor
- 12) Attorney
- Mr. Letuka A. Molati : MOLATI CHAMBERS
- 13) Consultants
- Mr. Mohapi Makosholo : Murdoch Green Partnership (Lesotho)
- Mr. Moeketsi Kabeli : LETHOLA Cost Associates
- Ms. M. M. Lithakanyane : Quantum Quantity Surveyors (Pty) Ltd.
- Mr. L. Matamane : Molepe Quantity Surveyors

## APPENDIX-4 MINUTES OF DISCUSSIONS (M/D)

### (1) Outline Design Study

2008.8.16

**MINUTES OF DISCUSSIONS  
ON OUTLINE DESIGN STUDY ON THE PROJECT  
FOR THE CONSTRUCTION OF SECONDARY SCHOOLS  
IN THE KINGDOM OF LESOTHO**

In response to the request from the Government of the Kingdom of Lesotho (hereinafter referred to as "Lesotho"), the Government of Japan decided to conduct Outline Design Study on the Project for the Construction of Secondary Schools (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent the Preliminary Study Team (hereinafter referred to as "the Team"), which was headed by Mr. Akihiko Hoshino, Team Leader, Education and Vocational Training Team, Project Management Group II, Grant Aid Management Department, JICA to Lesotho and was scheduled to stay in the country from August 5, 2007 to August 30, 2007.

The Team held discussions with the officials concerned of the Lesotho Side and conducted field survey at the study area.


In the course of discussions and field survey, both parties have confirmed the main items described in the attached sheets.

Maseru, LESOTHO  
August 16, 2007



---

Mr. Akihiko HOSHINO  
Leader,  
Preliminary Study Team  
Japan International Cooperation Agency



---

Ms. Ntsebe KOKOME  
Principal Secretary,  
Ministry of Education and Training  
Kingdom of Lesotho

## ATTACHMENT

### 1. Objectives of the Project

The objectives of the Project are to improve educational environment and access to secondary education through the construction of facilities for secondary schools. Through achievement of these objectives, it is expected that the project will contribute to the improvement of the transition rate from primary education to secondary education, which is described as one of main targets of Education Sector Strategic Plan (ESSP).

### 2. Purpose of the Outline Design Study

- 2-1. Based on the result of the preliminary study in March 2007, the Japan side determined to conduct outline design study. The Lesotho side understood the result of the preliminary study and the purpose of the outline design study, which was explained by the Japan side with the Inception Report.
- 2-2. The implementation of the project will be finally determined by the government of Japan based on the result of the outline design study. The Lesotho side understood the condition for the implementation of the study.

### 3. Responsible and Implementing Organization

The responsible organization of the Project is the Ministry of Finance and Development Planning. The implementing organization of the Project is the Ministry of Education and Training. The organization chart of implementing organization is shown in ANNEX 1.

### 4. Project Sites

The priority of ten (10) candidate sites, which had been proposed in the preliminary study, was assessed based on educational indicators and feasibility of constructing works. Given the result of that study, both sides discussed the order of the candidate sites. As a result, both sides agreed on the project sites as shown in ANNEX 2. The consultant team is going to study the feasibility of these sites further.

### 5. Components of the Project

Both sides agreed that the components of the project are prioritized as described in ANNEX 3.

### 6. Japan's Grant Aid Scheme

- 6-1. The Lesotho side understood the Japan's Grant Aid Scheme for Community Empowerment described in ANNEX 4-1 and ANNEX 4-2, which were explained by the Team.
- 6-2. The Lesotho side assured to take the necessary measures, as described in ANNEX 5, for smooth implementation of the Project. The Japan side stressed the importance of the following works;
  - (1) Works to be done before the tender of the construction works by the Japan side;
    - Water Supply to the sites (for the schools with dormitories),
    - Construction of access roads, and
    - Leveling, etc.

ah

STC

(2) Works to be done for proper operation and maintenance of the facilities;

-Supply of electricity and water to the sites, and

-Landscaping, etc.

(3) Tax Exemption on construction works and procurement

6-3. The Japan side promised to estimate the cost of works done by the Lesotho side and inform the result in the next mission. The Lesotho side assured to secure the budget, and to propose the schedule of the works in the next mission.

#### 7. Framework of Project Implementation and Scope of Works

Both sides agreed on the following framework of implementation;

7-1. The Japan side will conclude the outline design on the above-mentioned prioritized sites and components. However, the project sites and components will be finalized with reference to the further study. The Japan side will report the result of the study in the next mission.

7-2. Japan's Grant Aid is extended in accordance with the "Exchange Notes" by the two governments concerned, in which the objectives of the project, period of execution, conditions and amount of Grant Aid, etc., are confirmed. The implementation flow of Grant Aid is shown in ANNEX 6.

7-3. After concluding the Exchange Notes, the Lesotho side shall make a procurement management service contract with Japan International Cooperation System (JICS). Based on "Procurements Guideline for Grand Aid for Community Empowerment" as shown in ANNEX 7, JICS shall conduct the following works;

(1) Administration of the Grant Budget

(2) Preparation for and evaluation tender

(3) Signing contracts with suppliers and service providers

(4) Procurement of necessary goods

(5) Payment to suppliers and service providers

(6) Assisting to organize committee meetings

(7) Management of the progress of the project

7-4. To implement the project smoothly, both sides confirmed to facilitate a committee composed of the government of Lesotho and the government of Japan. The members of committee shall be as follows;

(1) Representative of Embassy of Japan in South Africa or his/her deputy

(2) Representative of Ministry of Education and Training or his/her deputy

7-5. The detail design and the construction works will be implemented based on the contents of the Outline Design Study.

7-6. The Lesotho side shall support the detail design works and shall implement the supervision of the construction works.

#### 8. Schedule of the Study

8-1. The Consultant members of the Team will proceed to undertake further studies in Lesotho until 30<sup>th</sup> of August, 2007.

8-2. Based on the results of a field survey in Lesotho, the Team will continue the study in Japan until

*ah*

*[Signature]*

November, 2007. JICA will dispatch the draft report explanation mission to Lesotho in December 2007.

## **9. Other Relevant Issues**

### **9-1. Land Tenure for the Project**

The Japan side understood that land tenure of the candidate sites are assured except the site in Mafeteng. The Japan side requested to acquire land tenure in Mafeteng until the end of the study. The Lesotho side assured to obtain the legal documents concerning the land ownership and deliver it to the team by 30<sup>th</sup> of August, 2007.

### **9-2. Demarcation of the Project**

The Japan side explained the necessity of demarcations of the project sites. The Lesotho side explained to deliver the demarcations before the beginning of the field study, which will be started from 20<sup>th</sup> of August.

### **9-3. Design of the facilities**

Both sides agreed to design the facilities by utilizing the standard design of secondary schools. If necessary, the consultant team would modify the design based on the condition of the project sites.

### **9-4. Furniture provided by the project**

Both sides agreed that equipment provided by the project will be limited to the basic furniture which is essential for the educational facilities.

### **9-5. Components and Facilities**

If the cost of the project is reduced, the construction of additional facilities and the provision of additional equipment will be taken into consideration.

### **9-6. Soft Component**

In accordance with the current condition of the existing facilities and based on the above-mentioned purpose of the project, the Japan side suggested to exclude the soft component for the maintenance of the schools and to concentrate on the construction of facilities. The Lesotho side agreed to that suggestion.

### **9-7. Recurrent costs for the Project**

The Lesotho side assured to secure recurrent costs for the secondary schools, which are scheduled to be constructed by the Project.

**ANNEX 1: Organization Chart of Ministry of Education and Training**

**ANNEX 2: Candidate Sites for the Project and Priority**

**ANNEX 3: Facilities Requested by the Lesotho Side**

**ANNEX 4-1: The Japan's Grant Aid for Community Empowerment**

**ANNEX 4-2: Flow of Funds for implementation under the Japan's Grant Aid for Community Empowerment**

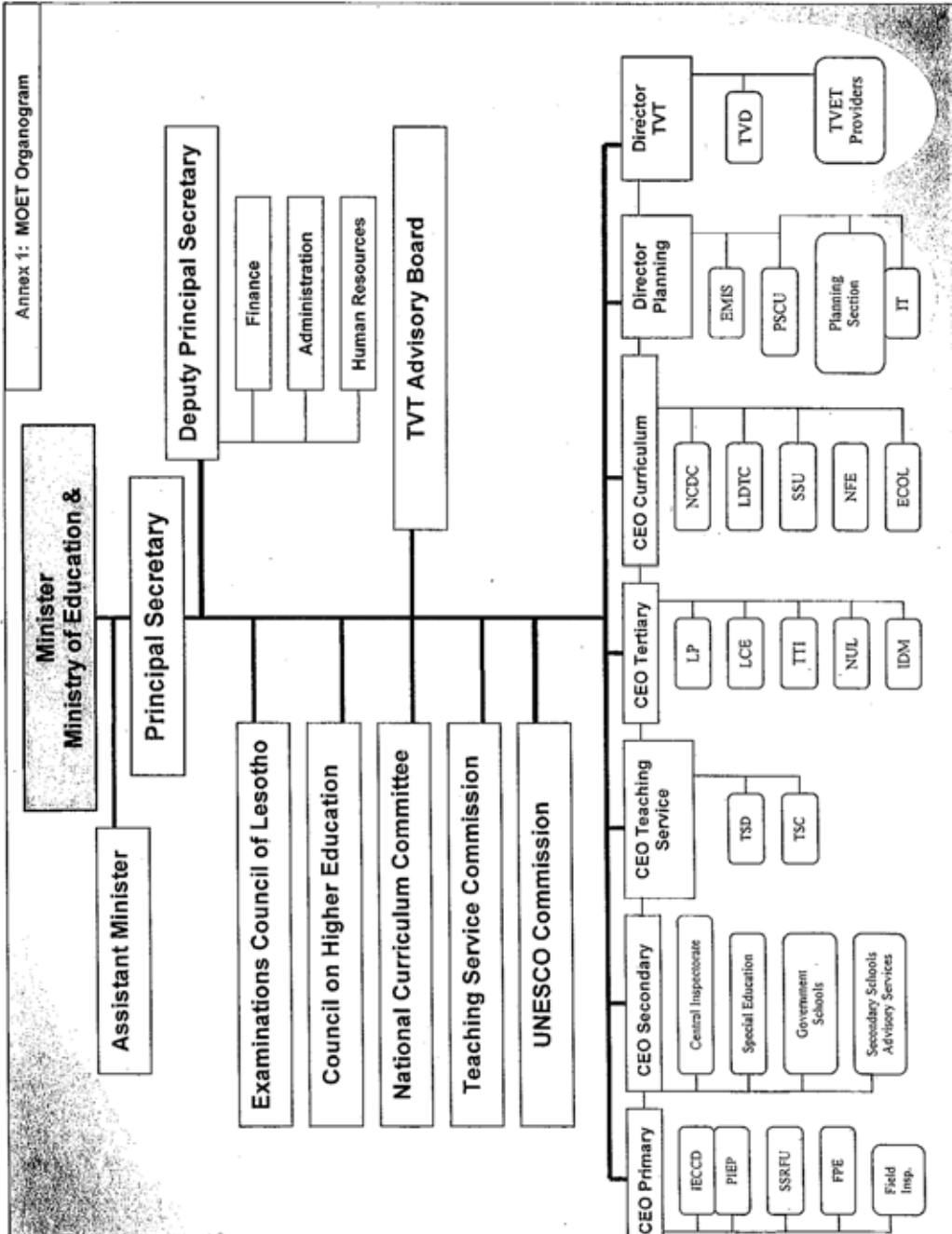
**ANNEX 5: Major Undertakings by each Government**

**ANNEX 6: Implementation Flow of Grant Aid for Community Empowerment**

**ANNEX 7: Procurement Guidelines for Grant Aid for Community Empowerment**

*ah*

*[Signature]*





ANNEX 2

**Candidate Sites for the Project and Priority**

Priority	District	Site
1	Leribe	Pitso Ground
2	Maseru	Masoe
3	Berea	Opposite DA's Office
4	Quthing	Moyeni Plateau
5	Butha-Buthe	Belo
6	Mokhotlong	Sheep Stud
7	Mafeteng	Matholeng

oh

de

**Annex 3**

**Facilities requested by the Lesotho Side**

Facilities	Facilities for 5 Schools in Low Land and Foothill	Facilities for 2 Schools in Highland
	Leribe, Maseru, Berea, Butha-Buthe, Mafeteng	Quthing, Mokhotlong
2 classrooms	A	A
4 classrooms	A	A
Integrated Science laboratory	A	A
ICT training room	A	A
New combined toilet	A	A
Administration and staff room	A	A
Dormitory		B
Kitchen & Dining		B
Principal's house		B
Staff house (2 bedrooms)		B

A: indispensable components for the project

B: second priority

*uh*      *lll*

**Annex 4-1**

**Japan's Grant Aid Scheme for Community Empowerment**  
**(Tentative)**

<Gist of the scheme>

As from FY2006, Japanese Government has introduced a new grant aid scheme called, "Grant Aid for Community Empowerment". It aims toward development of certain communities or regions in recipient country by empowering capability of the community as a whole to overcome various threats such as hunger, poverty, epidemics, etc. Multiple different components (construction of schools, roads, wells, or training etc) can be combined effectively to formulate one project. Single component project, for example, constructions of school classrooms in certain region by utilizing local resources are also possible. Contractors, suppliers or consultants are not confined to Japanese companies only, and construction can be done in line with local specification, which leads to cost reduction.

The new scheme has a number of important features which are different from those of Grant Aid for General Projects. Main features of the new scheme are as follows:

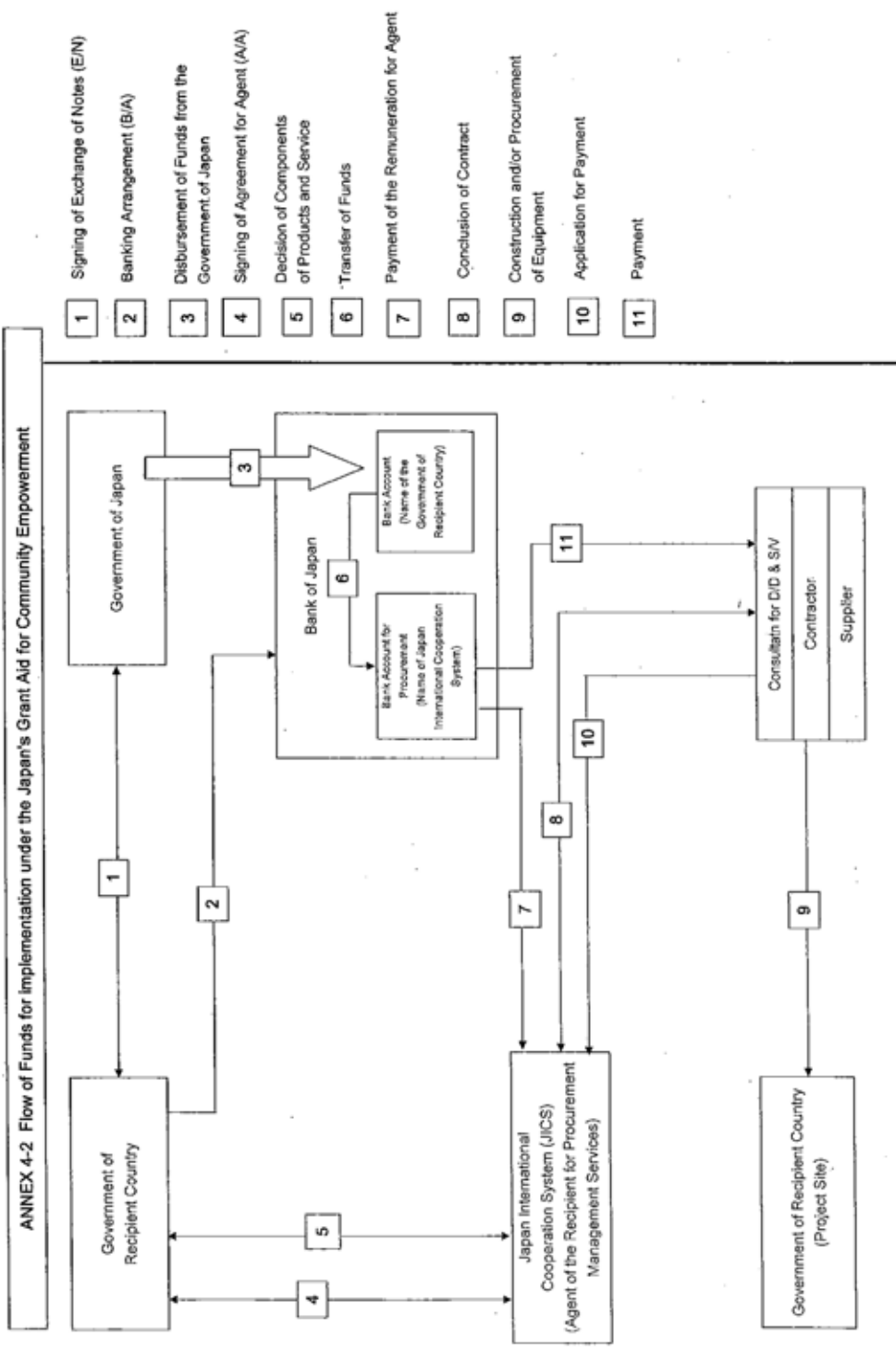
- (1) Contractors, suppliers or consultants are not tied to Japanese companies only, and construction can be done in line with local specification,
- (2) Multiple different components can be combined to formulate one projects,
- (3) Procurement Management Agent (Japan International Cooperation System (JICS) is assigned to undertake overall management of the grant (including fund management) on behalf of the recipient countries,
- (4) A project has simpler procedures and is commenced earlier than in the case of General Grant Aid type,
- (5) Local resources, such as suppliers, contractors, consultants, materials, work force, etc., may be utilized where necessary,
- (6) Local specifications may be applied to construction,
- (7) Japan International Cooperation Agency (JICA) is assigned to undertake outline design studies and project implementation promotion.

One important feature and principle of the scheme is adoption cost effectiveness. If contractors with reasonable technical standard available in the recipient or nearby countries, they can participate bidding for construction. (Standard of quality will be supervised by technical advice of consultants selected by Japanese side).

The new grant scheme, by empowering the community, thus seeks to enhance human security, an important vision for Japanese official development assistance.

*ah*

*h*



## Annex-5

Major Undertakings by Each Government

No	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		•
2	To clear, level and reclaim the site when needed		•
3	To construct gates and fences in and around the site		•
4	To construct the parking lot	N.A.	N.A.
5	To construct roads		
	1) Within the Site	N.A.	N.A.
	2) Outside the site		•
6	To construct the buildings	•	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		•
	b. The drop wiring and internal wiring within the site	•	
	c. The main circuit breaker and transformer	•	
	2) Water Supply		
	a. The city water distribution main to the site		•
	b. The supply system within the site (receiving and elevated tanks)	•	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		•
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	•	
	4) Gas Supply		
	a. The city gas main to the site	N.A.	N.A.
	b. The gas supply system within the site	N.A.	N.A.
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building	N.A.	N.A.
	b. The MDF and the extension after the frame/panel	N.A.	N.A.
	6) Furniture and Equipment		
	a. General furniture	•	•
	b. Project equipment	•	
8	To bear the following commissions to the Japanese bank for the banking services based upon the B/A		
	1) Advising commission of A/P	N.A.	N.A.
	2) Payment commission		•
9	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	•	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		•
	3) Internal transportation from the port of disembarkation to the project site	•	
10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		•

*ali*

*File*

11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.		•
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant.		•
13	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment.		•

(B/A: Banking Arrangement)

*ab*

*File*

**ANNEX 6 Implementation Flow of Grant Aid for Community Empowerment**

1	Conclusion of Exchange of Notes (E/N)	The Government of Recipient Country and the Government of Japan conclude Exchange of Notes (E/N) after approval of the Grant for community empowerment by the Government of Japan.
2	Conclusion of Banking Arrangement ( B/A )	The Recipient Government and a bank in Japan (the Bank of Tokyo-Mitsubishi, UFB) conclude Banking Arrangement (B/A) to open an account in the name of the Recipient Government. The account is called 'Recipient Account'.
3	Disbursement of Funds	Following the E/N and B/A, the total amount of the grant is transferred into the 'Recipient Account'.
4	Conclusion of Agent Agreement ( A/A)	As soon as the Exchange of Notes (E/N) is signed, JICS concludes an Agent Agreement (A/A) with the Recipient Government. JICS will explain about procurement procedures, responsibilities of the Recipient Government and JICS, and remuneration of JICS as an Agent.
5	Transfer of the Grant Funds	Before starting procurement services, the grant funds are transferred from the 'Recipient Account' to 'JICS Procurement Account'. JICS then takes full responsibility for managing the grant funds until payment is completed for the procurement services. By signing Blanket Disbursement Authorization (BDA), the Recipient Government designates JICS as their representative and gives authorities to transfer all the funds under this project on behalf of the Recipient Government.
6	Payment of Agent's Fee	The Recipient Government shall pay JICS Agent's Fee for its services to be rendered pursuant to the Agent Agreement. Agent's Fee shall be paid to JICS from the fund transferred to 'JICS procurement account'.
7	Selection of a Consultant for Detail Design and Supervision	JICS selects a consultant for Detail Design and Supervision in the proper manner based on the research results of the Outline Design Study.
8	Selection of Contractors	JICS selects contractors, utilizing research results provided by the consultant.
	(1) Tender document preparation	JICS prepares tender documents for selecting contractors based on the research results and information provided by the consultant.
	(2) General Procurement Notice (GPN) and Pre-qualification of Prospective Tenderers	JICS advertises for tenders by means of GPN in widely read newspapers and JICS website. JICS then assesses the eligibility of registered companies for tender.
	(3) Tender and Tender Evaluation	JICS conducts a tender by International Competitive Bidding (ICB) or other appropriate manners. The tender is evaluated by JICS and a successful tenderer is determined based on agreement made among the concerned parties.
	(4) Conclusion of Contract	Contract is concluded between JICS and the successful tenderer.
9	Procurement of Goods	JICS procures equipment agreed to be procured for the project in the following manner.
	(1) Tender document preparation	Same as No. 8.
	(2) General Procurement Notice (GPN) and Pre-qualification of Prospective Tenderers	
	(3) Tender and Tender Evaluation	
	(4) Conclusion of Contract	
10	School Construction and Delivery of Goods	JICS informs the Recipient Government of the construction and delivery schedule. If any problem should occur, JICS cooperates with the Recipient Government, JICA and Japanese Embassy in order to solve the problem in accordance with a contract. The Recipient Government shall take necessary measures to ensure smooth customs clearance and tax exemption.
11	Payment for Goods and Services	When necessary documents for payment are submitted by a contractant (consultant, supplier, contractor), JICS examines their contents and, if satisfactory, makes payment from the 'JICS Procurement Account' to the contractant.
12	Implementation of Soft Component Program	In case that a soft component program is implemented, JICS selects NGOs or other agencies for its implementation, concludes a contract and makes a payment.

*ah* *Re*

(2) Explanation on Draft Report

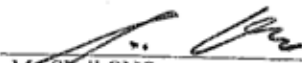
**MINUTES OF DISCUSSIONS**  
**ON OUTLINE DESIGN STUDY AND THE PROJECT**  
**FOR THE CONSTRUCTION OF SECONDARY SCHOOLS**  
**IN THE KINGDOM OF LESOTHO**  
**(EXPLANATION ON DRAFT REPORT)**

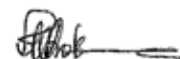
In August 2007, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched Outline Design Study Team on the Project for the Construction of Secondary Schools (hereinafter referred to as "the Project") to the Kingdom of Lesotho (hereinafter referred to as "Lesotho"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult the Lesotho on the components of the draft report, JICA sent to Lesotho the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Shuji Ono, Resident Representative, JICA South Africa Office to Lesotho and was scheduled to stay in the country from December 14, 2007 to December 21, 2007.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Maseru, LESOTHO  
December 20, 2007

  
\_\_\_\_\_  
Mr. Shuji ONO  
Leader,  
Outline Design Study Team  
Japan International Cooperation Agency

  
\_\_\_\_\_  
Ms. Ntsebe KOKOME  
Principal Secretary,  
Ministry of Education and Training  
Kingdom of Lesotho



## ATTACHMENT

### 1. Contents of the Draft Report of the Outline Design Study

The Lesotho side agreed and accepted the contents of the draft report proposed by the Japan Side.

### 2. Sites and Components of the Project

Both sides agreed that sites and components of the project are prioritized as described in ANNEX 1. If necessary, the list will be revised with reference to their priorities after the conclusion of the Exchange of Notes.

### 3. Japan's Grant Aid Scheme

The Lesotho side understood the Japan's Grant Aid Scheme for Community Empowerment, which was explained by the Team. For smooth implementation of the Project, The Lesotho side assured to take the necessary measures, as described in ANNEX 2-1 and ANNEX 2-2. The Japan side stressed the importance of the following works;

- (1) Implementation of detail design and supervising works,
- (2) Works to be done by the Lesotho side before the tender of the construction works by the Japan side,
  - Construction of access roads,
  - Construction of temporary fence,
  - Necessary measures against erosion,
  - Supply of electricity and water to the sites, and
  - Leveling etc.
- (3) Tax exemption on construction works and procurement, and
- (4) Contingency for the construction works.

### 4. Framework of Project Implementation and Scope of Works

4-1. The responsible organization of the Project is the Ministry of Finance and Development Planning.  
The implementing organization of the Project is the Ministry of Education and Training.

4-2. Procurement Procedures will be implemented in accordance with "Procurements Guideline for Grand Aid for Community Empowerment," which was attached in the Minutes of Discussion of the Outline Design Study.

4-3. To implement the project smoothly, both sides confirmed to facilitate a committee composed of the government of Lesotho and the government of Japan. The members of committee shall be as follows;

- (1) Representative of Embassy of Japan in South Africa or his/her deputy
- (2) Representative of Ministry of Education and Training or his/her deputy

4-4. The Implementation Chart is shown in ANNEX 3

S.O.

## **5. Final Report**

The Team will finalize the report based on this study and send it to Lesotho Side by February, 2008.

## **6. Other Relevant Issues**

### **6-1. Confidentiality of the Project Cost Estimation**

The Team explained the cost estimation of the Project as described in ANNEX 4. Both sides agreed that the Project Cost Estimation should never be duplicated or released to any outside parties before signing of all the Contracts for the Project. The Lesotho side understood that the Project Cost Estimation attached as Annex 4 is not final and is subject to change.

### **6-2. Land Tenure for the Project and Demarcation of the Sites**

The Lesotho side assured to obtain and deliver the legal documents concerning the land ownership for all the sites and demarcation of the site in Berea by the end of this study.

### **6-3. Recurrent costs for the Project**

The Lesotho side assured to secure recurrent costs for the secondary schools, which are scheduled to be constructed by the Project.

ANNEX 1: Sites and Facilities Requested by the Lesotho Side

ANNEX 2-1: Major Undertakings by each Government

ANNEX 2-2: Flow of Detail Design and Supervising works

ANNEX 3: Implementation Organization of the Project

ANNEX 4: Project Cost Estimation

S.O.



**ANNEX 1: Sites and Facilities requested by the Lesotho Side**

**Table 1: priority of the sites**

Priority ranking	Project area	Site name
1	Leribe	Pitso Ground
2	Maseru	Masoe
3	Berea	Opposite DA's Office
4	Quthing	Moyeni Plateau
5	Butha-Buthe	Belo
6	Mokhotlong	Sheep Stud
7	Mafeteng	Matholeng

**Table 2: priority of the Facilities**

Facilities	Facilities for 4 schools in Low Land and Foothill	Facilities for 2 schools in Highland	Facilities for 1 schools in Maseru
	Leribe, Berea, Butha-Buthe, Mafeteng	Quthing, Mokhotlong	Maseru
2 classrooms	A	A	A
4 classrooms	A	A	A
Integrated Science laboratory	A	A	A
ICT training room	A	A	A
New combined toilet	A	A	A
Administration and staff room	A	A	A
Dormitory		B	C
Kitchen & Dining		B	C
Principal's house	D	B	C
Staff house (2 bedrooms)	D	B	C

- A indispensable components for the project
- B 2<sup>nd</sup>. priority
- C 3<sup>rd</sup>. priority
- D 4<sup>th</sup>. priority

S.O.

*[Handwritten signature]*

**ANNEX 2-1: Major Undertakings to be Done by Each Government**

No	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot		●
5	To construct roads		
1)	Within the Site		●
2)	Outside the Site		●
6	To construct the building	●	
	Contingency in the Construction contract		●
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
1)	Electricity		
a	The distributing line to the site		●
b	The drop wiring within the site		●
c	Internal wiring	●	
d	The main circuit breaker and transformer	●	
2)	Water Supply		
a	The city water distribution main to the site		●
b	The supply system within the site		●
c	Internal work	●	
3)	Drainage		
a	The city drainage main (for storm, sewer and others) to the site		●
b	The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
4)	Furniture and Equipment		
a	General educational furniture	●	
b	Project equipment		●
8	To bear the following commissions to the Japanese bank for the banking services based upon the B/A		
	Payment commission		●
9	To ensure unloading and customs clearance at port of disembarkation in recipient country		
1)	Main (Air) transportation of the products to the recipient country	●	
2)	Tax exemption and custom clearance of the products at the port of disembarkation		●
3)	Internal transportation from the port of disembarkation to project site	●	
10	To bear by the all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●
11	Detail design		
12	Supervising Works		
13		Refer to ANNEX 2-2	

S.O.

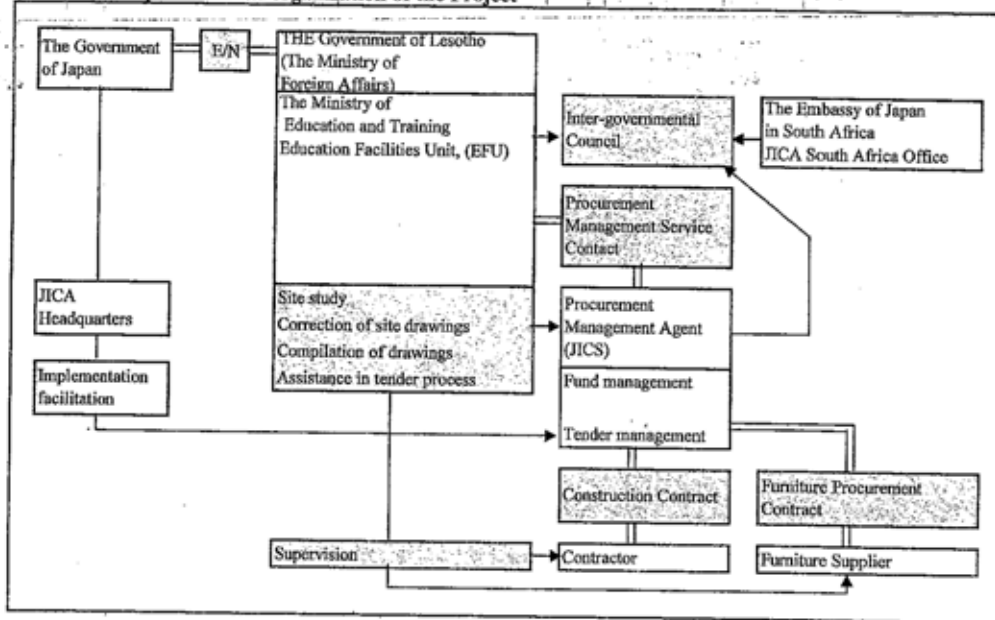
See

**ANEX 2-2: Flow of Detail Design and Supervising Works**

	MOBT	JICS (HQ)	JICS (LESOTHO)		EFU	CONTRACTOR
			MANAGER	ENGINEER		
1. Concluding Procurement Management Service			Drafting the Contract			
	Approval	Approval				
	Concluding Procurement Management Service Contract					
2. Detail Design and Preparation of Tendering			Confirmation of the contents of construction contract	Preparation of Tender and Contract documents	Preparation of Tender and Contract documents	
			Preparation of Notice and Tender	Preparation of detail drawings	Preparation of detail drawings	
			Verification of procedure of payment and its contents	Preparation of forms on completed amount report, etc.	Preparation of forms on completed amount report, etc.	
					Preparation of forms about contractor's bill	
	Approval	Approval				
3. Tendering			Notice		Assistance	
			Tender			Bidding
			Evaluation of Tender		Assistance	
	Approval	Approval				
			Determination of Contractor		Assistance	
4. Supervising (Monthly)					Supervision	Construction Work
					Monthly report	
					Verification of completed amount	
					Report on progress of works	
	Approval	Approval				
			Payment			
			Fund Management Report			

S.O.

**ANNEX3: Implementation organization of the Project**



===== represents contractual relationship  
 —————> represents consultation, inspection, confirmation and/or reporting

S.O.

*[Handwritten signature]*

## APPENDIX-5 OTHER RELEVANT DATA AND OBTAINED MATERIALS

### List of Reference Materials

Study Name: The Project for the Construction of Secondary Schools in the Kingdom of Lesotho - Outline Design Study

No.	Title	Form	Original/Copy	Publisher	Date of publication
1	EFU Lump Sum	Document	Copy	EFU, MOET	2007
2	Bill of Quantities (BQ) for Dormitories of EFU with Figures	Document	Copy	EFU, MOET	2007
3	BQ for Kitchen, Three-Classroom Block and Toilets in Primary Schools	Document	Copy	EFU, MOET	2007
4	Record of Quantities in Three- and Four-Classroom Blocks, Kitchen and Toilets	Document	Copy	EFU, MOET	2007
5	List of Contractors	Document	Copy	EFU, MOET	2007
6	Invitation for Bids (example)	Document	Copy	EFU, MOET	June, 2007
7	Examples of Announcement of Bids in Newspapers	Document	Copy	Public Eye, etc.	October, 2006
8	Examples of Progress Schedules	Document	Copy	SIGMA CONSTRUCTION, etc.	2006
9	Project Management Chart	Document	Copy	EFU, MOET	2007
10	Drawings of the Staffroom and Library	Document	Copy	EFU, MOET	October, 1996
11	Standard Construction Period	Document	Copy	EFU, MOET	2007
12	Standard Design Drawings	Document	Copy	EFU, MOET	2000 - 2007
13	SITE VISIT REPORT	Document	Copy	EFU, MOET	2007
14	Professional Services Fee Guidelines of the Republic of South Africa	Internet		Engineering Council of South Africa	2003
15	1996 POPULATION CENSUS PROJECTIONS	Document	Copy	UNFPA	1996
16	Excerpt from the PRELIMINARY CENSUS REPORT 2006	Document	Copy	Unknown (handed over by MOET)	2007
17	PHYSICAL PLANNING DIVISION DEVELOPMENT CONTROL CODE 1989	Document	Original	LSPP, Ministry of Home Affairs (MOHA)	1989
18	Draft Power Distribution Plan At The Site In Maseru	Document	Copy	LEC	2007
19	APPLICATION FOR PLANNING PERMISSION	Document	Copy	LSPP, MOHA	Unknown
20	Revision of salaries, wages and pensions	Document	Copy	Ministry of Public Works	April, 2007
21	PROCUREMENT MANUAL	Document	Copy	Government of the Kingdom of Lesotho	January, 2007
22	RECURRENT EXPENDITURE ESTIMATES 2007/2008	Document	Copy	Budget information system	2007
23	BACKGROUND TO THE 2007/08 BUDGET: A REVIEW OF ECONOMIC PERFORMANCE, 2000-2005; ECONOMIC PROSPECTS, 2006-2010; AND MEDIUM-TERM FISCAL FRAMEWORK,	Document	Copy	MINISTRY OF FINANCE AND DEVELOPMENT PLANNING	2006

	2007/08-2009/10				
24	Changes in Annual Budget of Each Ministry in the Period 2001 - 2006	Document	Copy	Unknown (handed over by MOET)	2007
25	EDUCATION SECTOR PUBLIC EXPENDITURE REVIEW 2006/2007 RECURRENT BUDGET FROM 2001/2002 TO 2006/2007	Document	Copy	MOET	2007
26	Percentage of education budget in each district	Document	Copy	MOET	2007
27	PROGRESS REPORT 2006/07	Document	Original	MOET	September, 2006
28	Government Recurrent Expenditure on Education by Sub-sector or Institution 2001/02-2006/07	Document	Copy		2006
29	Excerpt from the Budget Paper of MOET for the Year 2007/2008	Document	Copy	MOET	2007
30	Grants and Subscriptions (Recent projects for secondary schools)	Document	Copy	MOET	2007
31	LESOTHO HIGH SCHOOL PROSPECTUS	Document	Copy	Lesotho High School	Unknown
32	SUBVENTION GRANT ALLOCATION UNDER SECONDARY FOR 2007-2008	Document	Copy	MOET	2007
33	EFU Information	Document	Copy	PSCU, MOET	Unknown
34	PROJECT APPRAISAL DOCUMENT ON A PROPOSED CREDIT IN THE AMOUNT OF SDR15.4 MILLION TO THE KINGDOM OF LESOTHO FOR A SECOND EDUCATION SECTOR DEVELOPMENT PROJECT IN SUPPORT OF THE SECOND PHASE OF THE EDUCATION SECTOR PROGRAM	Document	Copy	The World Bank	April, 2003
35	AFRICAN DEVELOPMENT FUND APRAISAL REPORT EDUCATION QUALITY ENHANCEMENT PROJECT (EDECATION III) KINGDOM OF LESOTHO	Document	Copy	AFRICAN DEVELOPMENT FUND HUMAN DEVELOPMENT DEPARTMENT	February, 2007
36	STANDARD REQUEST FOR PROPOSALS Selection of Consultants	Document	Copy	World Bank	April, 2004
37	Ireland Aid Projects - May 2006	Document	Copy	Ireland Aid	May, 2006
38	UNICEF Annual Assistance Plan	Document	Copy	UNICEF	2007
39	EMIS Annual Report	Document	Copy	EMIS, MOET	2007
40	LIST of Secondary Schools by roll 2006, etc.	Electronic data	Copy	EMIS, MOET	2007
41	Africa Region Human Development Working Paper Series-No.101 Building Free Primary Education, Primary and Secondary Education in Lesotho Country Status Report	Document	Original	The World Bank	December, 2005
42	The Making of the Lesotho National Poverty Reduction Strategy (PRS)	Electronic data		DFIDSA-Lesotho	March, 2004



43	Lesotho Government Gazette Extraordinary Building Control Regulations Notice 1999	Document	Copy	Government of the Kingdom of Lesotho	January, 1999
44	KINGDOM OF LESOTHO POVERTY REDUCTION STRATEGY 2004/2005-2006/2007	Document	Copy	Government of the Kingdom of Lesotho	2006
45	EDUCATION SECTOR STRATEGIC PLAN 2005-2015	Document	Original	EFU, MOET	2005



THE KINGDOM OF LESOTHO  
MINISTRY OF EDUCATION AND TRAINING

ED/L/27

Date: August 29, 2007

Mr. Shigeru OGURA  
Project Manager  
Fukunaga Architects-Engineers  
2-12-31 kitaayama, Minatoku,  
Tokyo, 107-0061, Japan

**PROJECT NAME: THE PROJECT FOR THE CONSTRUCTION OF  
SECONDARY SCHOOLS IN THE KINGDOM OF LESOTHO**

Dear Sir,

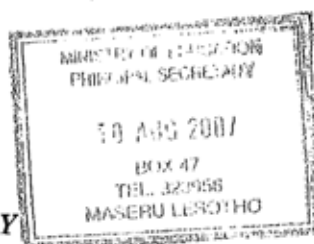
***Subject: Legal Undertaking between Ministry of Education and Training  
(MOET) and Japan International Cooperation System (JICS) on this Project***

With regard to the captioned project, we, the Ministry of Education and Training, do hereby commit ourselves that our Legal Division will support the Japan International Cooperation System (JICS) in case of any disputes between JICS and the Contractor or Supplier. To facilitate this, the role of the Ministry in this, will be defined in the Contract documents.

Yours sincerely

**NTSEBE KOKOME (MS)  
PRINCIPAL SECRETARY**

P.O. BOX 47 MASERU 100 LESOTHO  
pseducation@education.gov.ls



TEL: (+266) 22 313045

FAX 00266 22 310206



THE KINGDOM OF LESOTHO  
MINISTRY OF EDUCATION AND TRAINING

ED/L/27

Date: August 29, 2007

Mr. Shigeru OGURA  
Project Manager  
Fukunaga Architects-Engineers  
2-12-31 kitaayama, Minatoku,  
Tokyo, 107-0061, Japan

**PROJECT NAME: THE PROJECT FOR THE CONSTRUCTION OF  
SECONDARY SCHOOLS IN THE KINGDOM OF LESOTHO**

Dear Sir,

***Subject: Implementation Schedule for Preparation Work for this Project***

With regard to the captioned project, we, the Ministry of Education and Training, do hereby guarantee to implement the preparation work for this project as per the agreed programme and as defined in the Minutes of Discussion.

Yours sincerely

***NTSEBE KOKOME (MS)  
PRINCIPAL SECRETARY***



P.O. BOX 47 MASERU 100 LESOTHO  
pseducation@education.gov.ls

TEL: (+266) 22 313043

Fax 00266 22 310206



THE KINGDOM OF LESOTHO  
MINISTRY OF EDUCATION AND TRAINING

ED/L/27

August 29, 2007

Mr. Shigeru OGURA  
Project Manager  
Fukunaga Architects-Engineers  
2-12-31 kitaayama, Minatoku,  
Tokyo, 107-0061, Japan

**PROJECT NAME: THE PROJECT FOR THE CONSTRUCTION OF  
SECONDARY SCHOOLS IN THE KINGDOM OF LESOTHO**

Dear Sir

***Subject: Cooperation between Ministry of Education and Training (MOET) and  
Japan International Cooperation System (JICS) on this Project***

With regard to the captioned project, we, the Ministry of Education and Training,  
do hereby undertake to cooperate with JICS to do works on the detail design stage  
and to take lead in the supervision of the construction works for this project.

Yours sincerely

**NTSEBE KOKOME**  
**PRINCIPAL SECRETARY**



P. O. BOX 47 MASERU 100 LESOTHO  
pseducation@education.gov.ls

TEL.: (+266) 22 313045

Fax 00266 22 310206