

**OUTLINE DESIGN STUDY REPORT
ON
THE PROJECT
FOR
CONSTRUCTION OF PRIMARY SCHOOLS
IN OROMIA REGION
IN
THE FEDERAL DEMOCRATIC REPUBLIC OF
ETHIOPIA**

October 2007

JAPAN INTERNATIONAL COOPERATION AGENCY

MOHRI, ARCHTECT & ASSOCIATES, INC.

PREFACE

In response to a request from the Government of Federal Democratic Republic of Ethiopia, the Government of Japan decided to conduct an outline design study on the Project for Construction of Primary Schools in Oromia Region and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Ethiopia a study team from April 8 to May 5, 2007.

The team held discussions with the officials concerned of the Government of Ethiopia, 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 Ethiopia 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 Federal Democratic Republic of Ethiopia for their close cooperation extended to the teams.

October, 2007

Masafumi Kuroki
Vice-President
Japan International Cooperation Agency

October, 2007

Letter of Transmittal

We are pleased to submit to you the outline design study report on the Project for Construction of Primary Schools in Oromia Region.

This study was conducted by Mohri, Architect & Associates, Inc., under a contract to JICA, during the period from April, 2007 to October, 2007. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Ethiopia 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,

Hisafumi Michikawa
Project Manager,
Outline design study team on
the Project for Construction of Primary
Schools in Oromia Region
Mohri, Architect & Associates, Inc.

Summary

1. Brief Overview of the Country

The Federal Democratic Republic of Ethiopia (hereinafter referred to as “Ethiopia”) is an East African country with an area of 1.1 million Km² (3 times as large as Japan) and a population of 71.3 million. Oromia Region, where the Project is implemented, is the largest region of the country, with an area of 0.35 million Km² (32% of the entire area of the country) and a population of 23.7 million (33% of the total population of the country). The region is located in the geographic center of the country. Most of the three zones, Shawa North, Herarge West, and Arsi East, where the Project specifically intervenes, are highlands of altitude 2,000 m or more above sea level. Some areas of Arsi East Zone are located in the Great Rift Valley, however, their altitude is still 1,600 m or higher. In Oromia Region, the temperature fluctuates little throughout the year. The rainy season lasts about 7 months a year and the average annual precipitation is 1,200 mm in Addis Ababa.

The Ethiopian economy suffered due to famines brought on by droughts, and the civil war in the mid-1980s. In 1991, a new economic policy “Agricultural Development Led Industrialization” was presented emphasizing the importance of the private sector, deregulation, and decreased governmental controls. Reviewing the 1991 plan, the government in 1995 enacted the “Plan for Development, Peace and Democracy (In short: a 5-year National Development plan)” that prioritizes the improvement in the areas of agricultural production, education, roads, and public health. The economy was recovering, recording an average real rate of economic growth rate of 6% per-year and an inflation rate of less than 5%.

Nevertheless, in 1998, because of the decrease in agricultural production caused by drought, and the worldwide slump in the price of coffee - one of the main Ethiopian export products-, the GDP growth rate turned negative. In addition, refugees and evacuees fleeing border conflicts with Eritrea negatively impacted the Ethiopian economy. In order to tackle those post-conflict economic issues, the Government of Ethiopia presented “the Second 5-year National Development Plan” in 2000. Based upon this plan, the government enacted “the Poverty Reduction Strategy Paper (PRSP)” in 2002, established “the New Coalition for food Security in Ethiopia” in 2003, and presented “A Plan for Accelerated and Sustainable Development to End Poverty (PASDEP)” in 2006. Currently, food security and poverty reduction are the top priorities in Ethiopia.

The primary industry, the secondary industry, and the tertiary industry account for 47.7%, 13.3%, and 39.0% of 2005 GDP respectively in Ethiopia. In 2005, the GDP was US\$ 11.17 billion and the per-capita GDP was US\$ 157.

2. Background and Outline of the Project

The Government of Ethiopia has realized that education plays a crucial role in the

reduction of poverty, and thus implemented the Education Sector Development Program (ESDP), which was carried out from 1997 to 2001. As the result of the Program, its Gross Enrollment Ratio (GER) was remarkably improved from 34.7 % (1997) to 79.2% (2005).

However, the quality of education in the country has fallen even as the GER has improved. Crowded classrooms have been observed all over the country. Schools in rural areas have been operating under a severe lack of classrooms and textbooks. Some villages have no schools. The second cycles of the primary education (5-8th grade) or higher grades badly need more classrooms and qualified teachers. Thus the government is concerned about the quality side of the school education.

In order to address the above-mentioned issues, the Ethiopian government launched the Education Sector Development Program phase II from 2002 to 2004 (ESDP-II), and ESDP-III from 2005 to 2009 with objectives of improving the quality of education, increasing the GER in remote areas, utilizing and expanding alternative basic education, developing the educational planning capacities as well as management capacities of district education officers while promoting the national policy of decentralization.

Against this backdrop, the Government of Ethiopia set out the “Project for Construction of Primary Schools in Oromia Region” and requested the Government of Japan in August 2005 to financially assist the Project under the Grant Aid scheme. Oromia Region, the largest region of all, is located in the center of the country, surrounding Addis Ababa. Due to these geographic reasons, cooperation in the region is considered highly effective in terms of scale and possible spillover effects to other regions. In addition the Government of Japan is providing a Technical Cooperation project in this region, the “Community-Based Basic Education Improvement Project (ManaBU Project)” that focuses on 9 Woredas in 3 Zones to establish a model of the community-based sustainable school construction and maintenance in rural areas where a drastic increase in enrollment is needed. Moreover, “The Project on Increasing Access to Quality Basic Education through Developing School Mapping and Strengthening Micro-planning in Oromia Region (SMAPP Project)” that targets 117 Woredas in 8 Zones to strengthen the “School-Mapping” and capacity-building of the Woredas for the “Micro Planning” has been conducted.

Based on the above background, the Government of Japan conducted the Preliminary Study in July 2006 and confirmed the necessity and appropriateness of the Project. Also, the Study determined the possibility of implementing the Project under the Grant Aid for Community Empowerment scheme that assumes use of local consultants and contractors.

Initially, the Project targeted 117 Woredas in 8 Zones, and included construction of school facilities and teachers’ hostels at new and existing schools, provision of a water supply system, and procurement of educational furniture, science kits and other necessary educational materials. However, as a result of the Preliminary Study, it was agreed that the Project does not include refurbishment of existing school facilities, science laboratories, teachers’ residences and science kits. Moreover, the following 3 types are agreed as the facility plans, because Oromia Educational Bureau (hereinafter referred to as “OEB”) has the standard design for them.

TYPE 1: Upgrade from 1st Cycle School (G1~G4) to Complete School (G1-G8)

TYPE 2: Expansion at Complete Schools

TYPE 3: Establishment of New Complete Schools

The table below summarizes the request.

The number of requested schools and classrooms

Zone	Type 1		Type 2		Type 3		Total	
	School	Classroom	School	Classroom	School	Classroom	School	Classroom
Shawa North	30	120	20	160	13	104	63	384
Herarge West	26	104	17	136	8	64	51	304
Arsi East	20	80	13	104	4	32	37	216
Total	76	304	50	400	25	200	151	904

3. O Outline of the Study Results and Overview of the Project

Evaluating the results of the Preliminary Study, the Government of Japan determined to dispatch an Outline Design Study Team to Ethiopia to further study the necessity and appropriateness of the Project and to design the Project outline. Given this governmental decision, JICA sent the Outline Design Study Team to Ethiopia from April 8, 2007 to May 5, 2007. The team had a series of discussions and confirmed the contents of the request with OEB. Moreover, the team researched the construction industry, conducted site surveys, and interviewed with concerned parties of the requested schools. Based on these surveys in Ethiopia, the team evaluated the necessity and appropriateness of the Project, analyzed the size and contents of school facilities, and put together the Outline Design Study Draft Report. Then, from August 20 to August 25, 2007, the team revisited Ethiopia to discuss the Draft Report with the concerned parties of the Ethiopian side.

The Project is implemented under the Grant Aid for Community Empowerment, adopts the Ethiopian standard specifications and designs, uses local contractors and materials, facilitates competition among local contractors, and thereby aims to realize cost reduction and effectiveness compared to projects under the General Grant Aid. The Study results are summarized in: 1) the priority school list; 2) the architectural plans of facilities; 3) the implementation plan, and; 4) the Soft-Component plan.

3-1 Setting the Priority School List

At the Outline Design Study stage, first of all, requested schools listed up by OEB utilizing Micro-Planning (the outcome of SMAPP which had been aided by Japan), were prioritized. Secondly, schools belonging to Woredas located where there is public security

concern were excluded, and a school which is geographically isolated from other requested schools was also removed from the list, as it was considered inefficient in terms of construction and supervision work. Lastly, considering the limited resources, we put together the priority school list that tentatively includes 57 schools.

At the Detailed Design Study stage, if the number of classrooms in shortage is less than the number of classrooms to be constructed at schools using the calculation base 50 students per classroom, such schools will be excluded from the list and the lower priority ranked schools move up one by one in the list. To add, if any other issues are found during the site survey at the Detailed Design Study stage, including construction cost fluctuation, it is possible that the number of Project schools will be modified.

Regarding the components, in principle, standardized components will be provided type-by-type as OEB requests, regardless of the degree of classroom shortage among the schools.

Planned Components for Each Type

Type		1 Upgrade	2 Expansion	3 Newly construct	
Facility	Classroom	4	8	8	
	Administrative Rooms	Director's Room	0	0	1
		Secretarial Room	0	0	1
		Staff Room	1	0	1
		Store	1	0	1
	Pedagogical Center	Approx. a half size of standard plan of MOE	Approx. a half size of standard plan of MOE (Necessity of the Pedagogical Center is decided at the time of Detailed Design)	Approx. a half size of standard plan of MOE	
Library	A half size of standard plan of MOE	A half size of standard plan of MOE (Necessity of the Library is decided at the time of Detailed Design)	A half size of standard plan of MOE		
Latrine	Girls': 4 holes Boys': 4 holes	Girls': 8 holes Boys': 8 holes	Girls': 8 holes Boys': 8 holes Staff: 4 holes		
Mechanical & Electrical	Water Supply System	Faucets and water tank (Rain water collection system will be installed at the sites where no public water supply are available at the time of Detailed Design stage of the Project)			
	Electric System	Electric system will be included only if the town/village of the construction sites are electrified at the time of the Detailed Design stage of the Project			
School Furniture		Supplied according to the facility components			

Components and Scopes of the 57 Tentative Priority Schools

Zone	School	Classroom	Directors' Room (incl. secretary)	Staff Room	Store	Pedagogical Center	Library	Latrine (Number of booths)			
								Girl's	Boys'	Staff	
Shawa North	Type 1	11	44	0	11	11	11	11	44	44	22
	Type 2	8	64	0	0	0	8	8	64	64	0
	Type 3	6	48	6	6	6	6	6	48	48	24
	Sub-total	25	156	6	17	17	25	25	156	156	46
Herarge West	Type 1	9	36	0	9	9	9	9	36	36	18
	Type 2	7	56	0	0	0	7	7	56	56	0
	Type 3	2	16	2	2	2	2	2	16	16	8
	Sub-total	18	108	2	11	11	18	18	108	108	26
Arsi East	Type 1	7	28	0	7	7	7	7	28	28	14
	Type 2	6	48	0	0	0	6	6	48	48	0
	Type 3	1	8	1	1	1	1	1	8	8	4
	Sub-total	14	84	1	8	8	14	14	84	84	18
Total		57	348	9	36	36	57	57	348	348	90

Outline of furniture

Room	Furniture
Classroom	Combined desk (for 2 pupils), Teacher's table, Teacher's chair, Blackboard, Notice board
Staff Room	Office table, Teacher's table, Teacher's chair, Notice board, Filing cabinet
Director's Room	Office table, Teacher's table, Teacher's chair, Shelf
Secretary Room	Typist table, Teacher's chair, Filing cabinet
Store	Tablet chair, Store shelf
Library	Periodical stand, Library table, Teacher's chair, Library shelf, Office table, Filing cabinet, Notice board
Pedagogical Center	Teacher's Table, Teacher's chair, Workbench, Stool, Shelf, Blackboard

3-2 Outline Design of Facilities

From the viewpoint of the basic policy of the Grant Aid for Community Empowerment that uses the local standard, design, contractors, and materials, the Project basically adopts the OEB high standard design (reinforced concrete structure + concrete hollow block). However, we improve some parts of the design, and scale down the size of a pedagogical center and a library, considering actual use.

3-3 The Implementation Plan

OEB, as the Client of the Project, signs the Procurement Management Contract with a Japanese Procurement Management Agent in accordance with the Agreed Minutes on Procedural Details (A/M), which is attached to the E/N. In principle, the Project will be implemented under smooth cooperation between OEB and the Procurement Management Agent. In order to complement the cooperation, a governmental committee is organized to address and

coordinate issues arising during the Project implementation. The committee chair is to be a representative from OEB. From the Japanese side, a representative from the Embassy of Japan is to take a part in the committee. If necessary, BoFED, MoFED, and MoE will join. In addition, representatives from JICA Ethiopia Office and the Procurement Management Agent will join as observers.

The Procurement Management Agent assigns Japanese engineering staff who instruct the local consultants during the Detailed Design and Construction Supervision stages, and a soft component supervisor who supervises the Soft Component. In order to execute the Project, the Procurement Management Agent will sign procurement agreements with local Detailed Design/Construction Supervision Consultant, contractors, furniture suppliers, and NGO or consultant who carries out the Soft Component. In addition, the Procurement Management Agent contracts with a procurement adviser to establish a technical support system regarding the tenders. Moreover, a lawyer from a local law firm will be hired to set up a support system in legal aspects such as contracts. On the Ethiopian side, the OEB responsible for implementation organization of the Project, the “Planning, Research and Project Division” will be in charge of the Project and cooperate with the Procurement Management Agent.

3-4 Soft Component Plan

Through the Study, we determined that school members lack sufficient know-how and awareness regarding facility maintenance, that latrines and classrooms are not cleaned well, and that students do not have basic knowledge about basic hygiene and how to use latrines. In order to ensure that constructed facilities are used and maintained properly, the Project implements its Soft Component, consisting of activities to raise awareness for: (1) understanding about the importance of facility maintenance; (2) implementing proper cleaning; and, (3) learning how to use latrines while practicing fundamental hygiene.

In many schools, pictures and slogans for educational and awareness-raising purposes are drawn on the classroom walls¹ of the schools. As wall pictures are catchy, highly communicative, and long-lasting, this soft component will adopt wall pictures as the means of raising awareness.

4. Project Implementation Period and Rough Estimation of the Project Cost

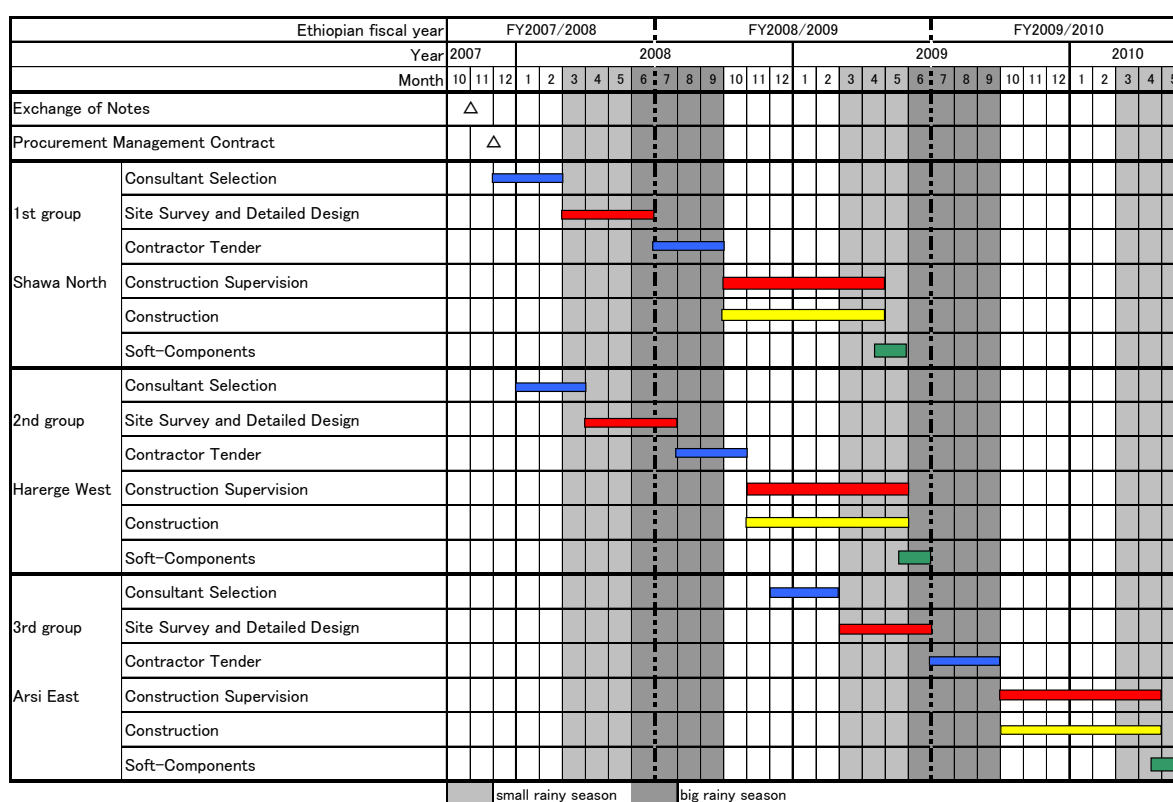
The Project period is assumed to take 30 months. After the Procurement Management Agent Contract, in order to establish the design and supervision system of the Procurement Management Agent, a procurement advisor and a lawyer are selected. Then, a Detailed Design/Construction Supervision Consultant for Shawa North Zone, the first group of all, is selected (3.0 months), the Detailed Design is conducted and tender documents are prepared (4.0 months), contractors and furniture suppliers are selected in the tenders, and the facilities are

¹ For example, Maps of Africa, Structure of the Heart, Life of a fly, Periodic table of elements, and Slogans for preventing HIV

constructed (7.0 months). About 3.5 months before the construction finishes, an NGO or a consultant for the Soft Component is selected, and Soft Component activities are implemented shortly before the construction ends (1.5 months). A month later, this whole series of activities will be implemented in Herarge West Zone, which falls in the second group. As to the activities in Arsi East Zone, the third group, these will be started a year later than those of the first group in order to avoid problems related to construction activities during the rainy season.

The Project cost is roughly estimated at 1,239 million Japanese Yen. (the Japanese side bears 1050 million Japanese Yen and the Ethiopian side bears 189 million Japanese Yen.)

The Project Schedule



4. Relevance of the Project

By implementing the Project, the following direct effects are anticipated.

- (1) By upgrading 1st Cycle (G1-4) schools to complete (G1-8) schools, and constructing 108 classrooms for 27 Project schools, an additional 5,400 students can be enrolled.
- (2) At 21 existing complete schools that are short of classrooms, by constructing 168 classrooms, an additional 8,400 students can be enrolled.
- (3) At 9 Project schools located in areas without schools nearby, by constructing 72

classrooms, an additional 3,600 students can be enrolled.

- (4) School members have little awareness and lack know how regarding facility maintenance. By implementing the Soft Component to raise awareness through a preventative maintenance workshop, the facilities provided will be used and maintained properly.
- (5) In rural areas, students do not know how to use latrines and thus school latrines are not hygienic. By teaching how to use latrines and basic hygiene in the Soft Component, the latrine provided will be properly used and the basic hygiene knowledge will be shared.

In order that the facilities provided in the Project are used continuously and effectively, OEB is requested to address the following issues.

- (1) The Project schools must be staffed with the necessary number of teachers and staff.
- (2) The Project schools must accept the appropriate number of students and divide them into classes properly.
- (3) The Project schools must be provided with the necessary operational and maintenance budget.

OEB has already promised to address the above three items. With the issues overcome, at 57 Project schools, about 17,400 students can study in a sound leaning environment and thereby the Project contributes to the improvement of educational quality as stated in ESDP-III, the foundation of OEB policy. As stated, since the Project is expected to produce many important effects, and simultaneously, the Project widely contributes to BHN of community residents, it is confirmed appropriate to assist in a part of the Project using the Grant Aid. In addition, it is confirmed that Ethiopian side has sufficient manpower and finance to operate and maintain the Project facilities, and therefore, no problems are anticipated. Hence, the Project is considered to be implemented smoothly and efficiently.

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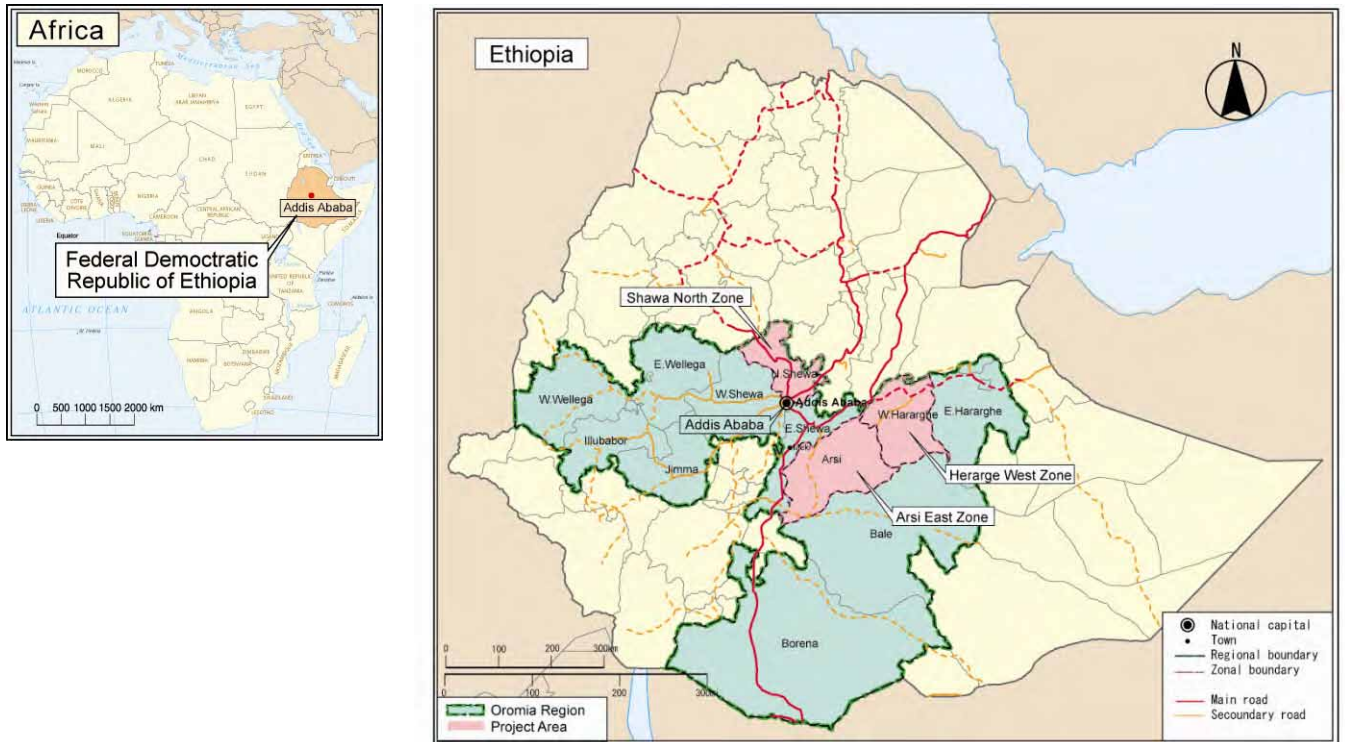
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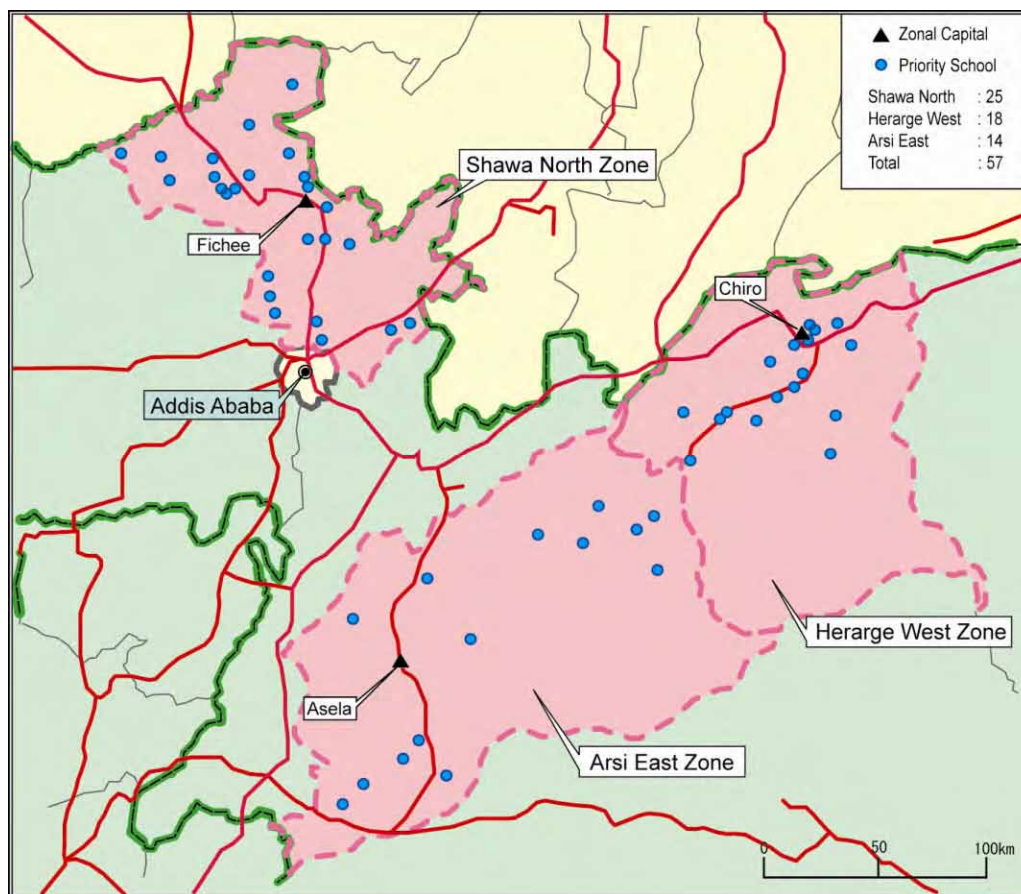
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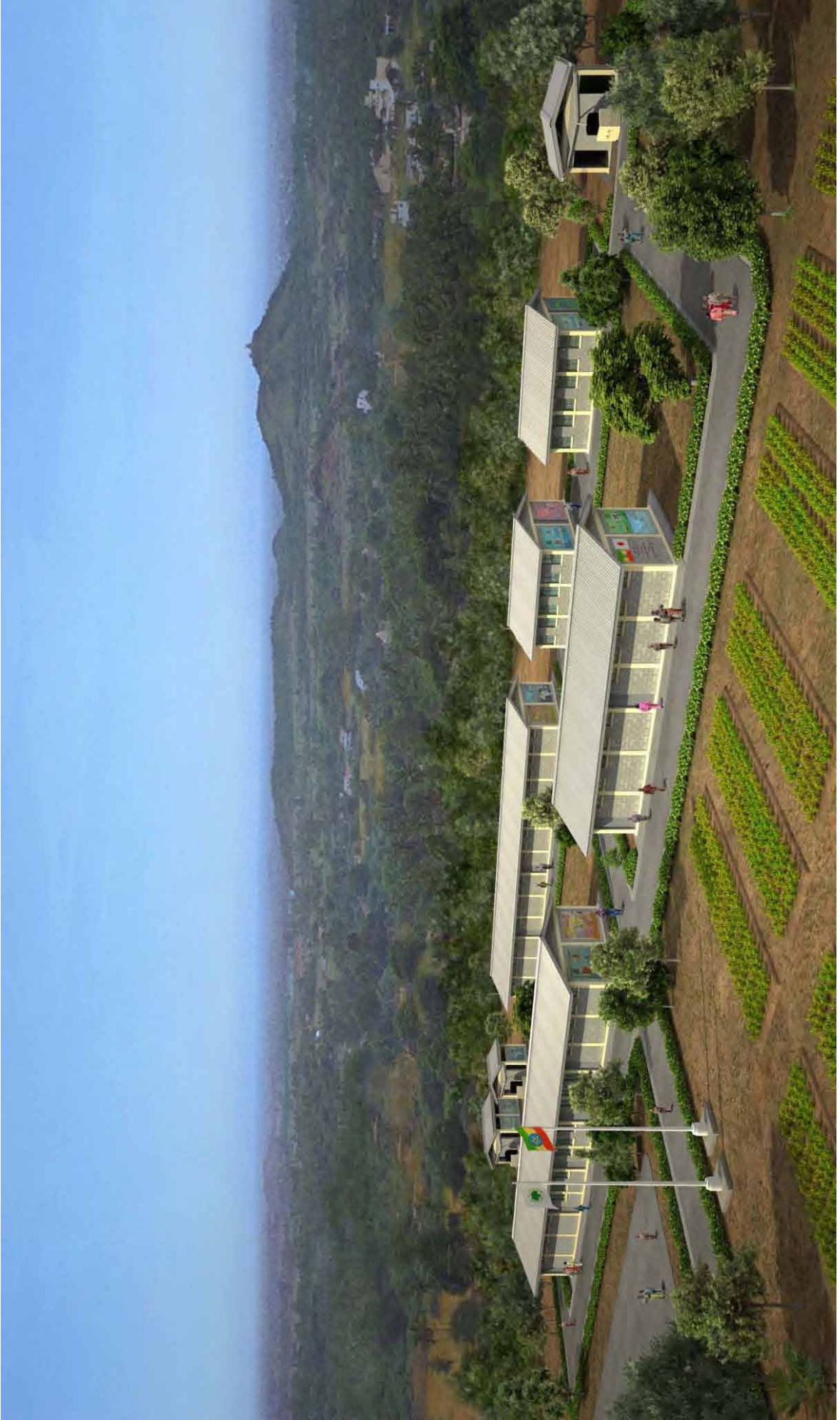
Location Map



Location of the Recipient Country and Project Area



Location of the Project Sites



Perspective

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Abbreviations

BOQ	Bill of Quantities
BoFED	Bureau of Finance and Economic Development
EBCS	Ethiopia Building Code Standard
EMIS	Education Management Information System
ESDP	Education Sector Development Program
HCB	Hollow Concrete Block
KETMB	Kebele Education and Training Management Board
ManaBU	Community-Based Basic Education Improvement Project
MoE	Ministry of Education
MoFED	Ministry of Finance and Economic Development
OEB	Oromia Education Bureau
PTA	Parent-Teacher Association
QS	Quantity Surveyor
RC	Reinforced Concrete
SMAPP	Project on Increasing Access to Quality Basic Education through Developing School Mapping and Strengthening Micro-Planning in Oromia Region
TOR	Terms of Reference
TTC	Teacher Training College
TTI	Teacher Training Institute
VAT	Value Added Tax
WEO	Wareda Education Office
WETMB	Wareda Education and Training Management Board
ZEO	Zonal Education Office

Chapter 1 Background of the Project

Chapter 1 Background of the Project

1-1 Background of the Request

Ethiopia is one of the least developed countries in the world, with a per capita GNI of US\$157 in 2005 and has attempted to reduce its level of poverty. To this end, the Government has emphasized the importance of education and implemented the Education Sector Development Program (ESDP), which was carried out from 1997 to 2001. As the result of the Program, its Gross Enrollment Ratio (GER) was remarkably improved from 34.7 % (1997) to 79.2% (2005).

However, the quality of education in the country has fallen even as the GER has improved. Crowded classrooms have been observed all over the country. Schools in rural areas have been operating under a severe lack of classrooms as well as textbooks. Some villages have no schools. The second cycles of the primary education (5-8th grade) or higher grades badly need more classrooms and qualified teachers. Thus the government is concerned about the quality side of the school education.

Moreover, some disparities have become apparent. The disparity in GER between boys and girls has widened. A regional gap in GER also has been observed. A high dropout rate and repetition rate are further difficult challenges. They have not yet to see marked improvement. Quality and efficiency in education still need to be improved.

In order to address the above-mentioned issues, the Ethiopian government launched the Education Sector Development Program phase II from 2002 to 2004 (ESDP-II), and ESDP-III from 2005 to 2009 with objectives to improve the quality of education, to increase the GER in remote areas, to utilize and expand alternative basic education, to develop the educational planning capacities as well as management capacity of district education officers while promoting the national policy of decentralization. The Government has thus begun to tackle the difficult problems that have not yet been improved.

Against this backdrop, the Government of Ethiopia planned “the Project for Constructing Primary Schools in Oromia Region” and requested the Government of Japan the Grant Aid in August 2005 to procure construction of primary schools and educational equipment for the said Project. Oromia Region, the largest region of all, is located in the center of the country, surrounding Addis Ababa. Due to these geographic reasons, cooperation in the region is highly effective in terms of scale and potential beneficial spillover effects to other regions.

1-2 Natural Condition

(1) Climate Condition

The temperature in Addis Ababa is shown in Table 1-1. The climate is quite comfortable

throughout a year, owing to highland in low latitude. Rain concentrates in small rainy season from March to May, and main rainy season from June to September. Almost the entire area of the three requested zones belongs to highlands more than 2,000 meters above sea level and has a climate similar to the one in Addis Ababa. However, some lower parts of Arsi are located at about 1,600 meters above sea level and feature relatively high temperature.

Table 1-1 Climate Data of Addis Ababa

Addis Ababa													N8°59' E38°48'		Altitude 2,324m	
Month	1	2	3	4	5	6	7	8	9	10	11	12	Average			
Temperature °C	15.8	16.9	18.0	17.9	18.2	16.8	15.4	15.6	16.0	16.0	15.4	14.8	16.5			
Precipitation mm	20.1	62.9	70.4	89.6	87.2	116.7	248.7	266.6	171.1	42.0	9.4	14.8	1,199.5			
Humidity %	47	52	48	55	53	68	80	79	72	48	48	46	—			

(2) Soil Condition

Refer to P. 2-26 for details.

(3) Earthquake Condition

Refer to P. 2-3 for details.

1-3 Environmental and Social Consideration

The Project does not need to attain larger land developments for construction, but just builds single-story school facilities within the primary school sites. There will be no negative impact on air, water, soil and ecosystem. Furthermore, there will be no forced resettlement of any people from the Project sites. Therefore, there is no negative environmental or social impact under the Project.