

**JAPAN INTERNATIONAL
COOPERATION AGENCY**

**MINISTRY OF LOCAL GOVERNMENT
AND HOUSING,
REPUBLIC OF ZAMBIA**

**THE STUDY
ON
ENVIRONMENTAL IMPROVEMENT
OF
UNPLANNED URBAN SETTLEMENTS
IN
LUSAKA**

FINAL REPORT

Volume 1 (Summary)

July 2001

**NIPPON KOEI CO., LTD.
GLOBAL LINK MANAGEMENT, INC.**

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ON
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PREFACE

In response to a request from the Government of the Republic of Zambia, the Government of Japan decided to conduct a Study on the Environmental Improvement of Unplanned Urban Settlements in Lusaka in the Republic of Zambia and entrusted to study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Isamu Asakura of Nippon Koei Co., Ltd. and consist of Nippon Koei Co., Ltd. and Global Link Management Inc. to the Republic of Zambia, five times between March 1999 and June 2001.

The team held discussions with the officials concerned of the Government of Zambia, and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

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

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Zambia for their close cooperation extended to the study.

July, 2001



Kunihiko Saito
President
Japan International Cooperation
Agency

July, 2001

Mr. Kunihiro Saito
President
Japan International Cooperation Agency
Tokyo, Japan

Subject: Letter of Transmittal

Dear Sir,

We are pleased to submit herewith the Final Report of the “The Study on Environmental Improvement of Unplanned Urban Settlements in Lusaka, the Republic of Zambia”. This study was conducted by Nippon Koei Co., Ltd., in association with Global Link Management Inc., under a contract to JICA, during the period from March 1999 to June 2001. The Report consists of Summary, Main Text and Appendix.

The report presents a sustainable action area plan for environmental improvement in unplanned urban settlements of Lusaka, which is reflected by the results of implementation, monitoring and evaluation of the pilot projects carried out by community participation approach, selected priority projects as well as development guidelines of living environment improvement.

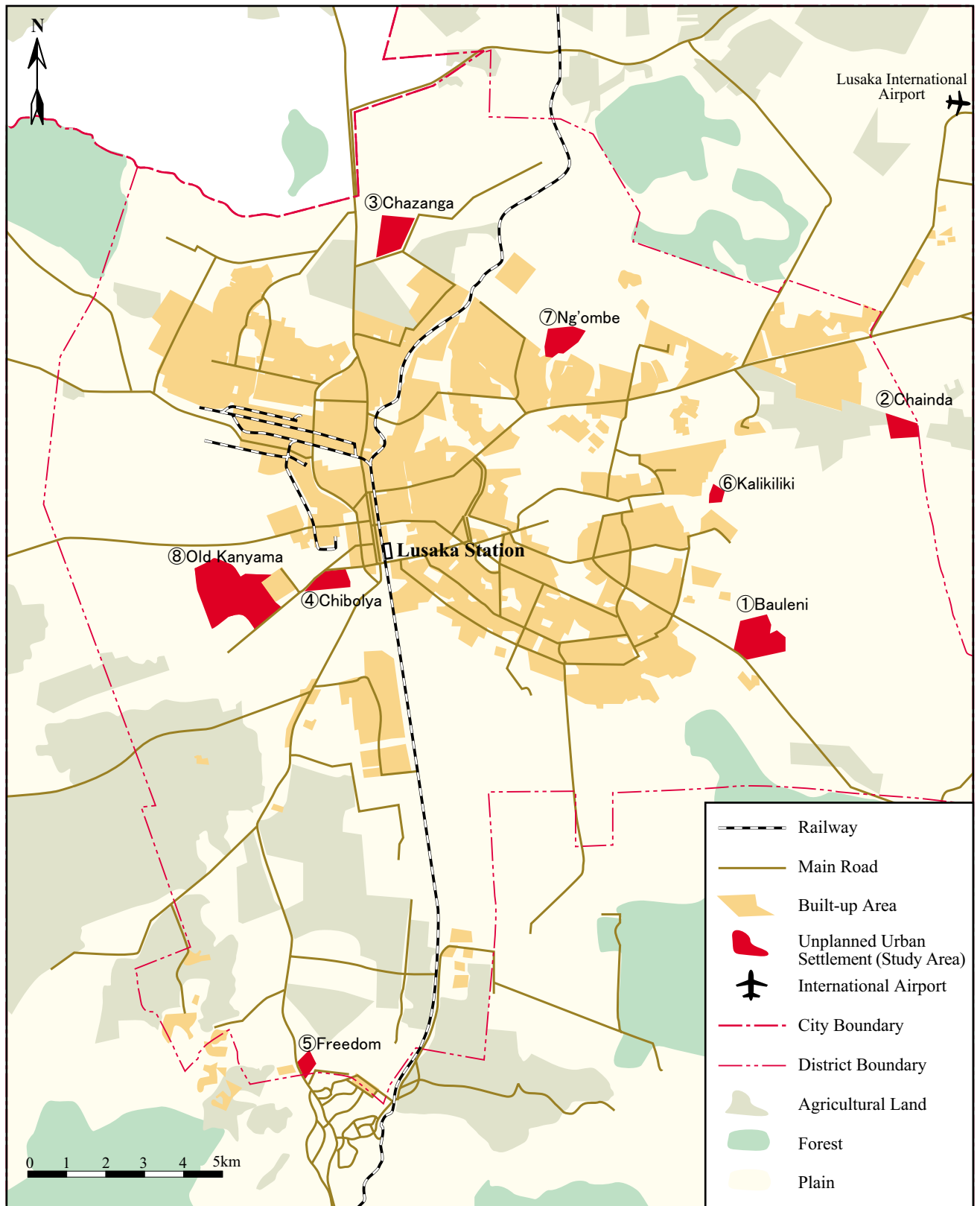
We would like to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs. We are also most grateful for the cooperation and assistance from the officials concerned in Zambia, the JICA Zambia office, and the Embassy of Japan in Zambia. The Final Report is a fruit of excellent collaboration of all participants in this Study.

We hope that this report will contribute to improve living environment of Lusaka City and all over Zambia.

Yours Faithfully,



Isamu ASAKURA
Team Leader, JICA Study Team
The Study on Environmental Improvement of
Unplanned Urban Settlements in Lusaka,
the Republic of Zambia



Location Map of the Study Area

INTRODUCTION

Authority

This is the Final Report on the Study on Environmental Improvement of Unplanned Urban Settlements in Lusaka prepared in accordance with the Scope of Work (S/W) concluded on October 19, 1998, between the Ministry of Local Government and Housing, Republic of Zambia and the Japan International Cooperation Agency (JICA).

Background of the Study

The city of Lusaka, Capital of the Republic of Zambia, is undergoing rapid urban growth due to incessant inflow of population from rural areas and enhanced urban activities of citizens. The population of the city was estimated at about 1.6 million as of 1995. However, the public services provided by the Government are insufficient to cater to rapidly increasing population.

Most of the new migrants are living in unplanned urban settlements, called ‘Compounds’, which are disorderly developed by them. Compounds are located in the periphery of the city and inhabited by mainly low-income people with a total population of approximately one million. Their living standard is quite low with insufficient provision of social services such as public transport, utilities and garbage collection.

The city of Lusaka compiled “The Greater Lusaka Development Plan” in 1975. However, most of the development concepts proposed in the plan have not been realized.

Therefore, the city’s development during the last few decades had been conducted without any development guidelines or scenario integrated by a master plan. This fact has resulted in the unbalanced and fragmented implementation of urban development projects by the Government and has degraded the environment of the city.

On the other hand, projects to improve social services have been carried out by the community in association with international donors and Non-government Organization (NGO). However, the projects are not comprehensively carried out due to insufficient cooperation between the community and responsible government bodies such as the city council.

It is urgent and imperative for the city of Lusaka to formulate comprehensive and effective models for the consistent improvement of the living environment in unplanned urban settlements.

Under such circumstances, the Government of the Republic of Zambia (GRZ) requested the Government of Japan (GOJ) for technical cooperation to prepare action area plans, guidelines for social services improvement and short term programs and projects for unplanned urban settlements. The GOJ agreed to study the unplanned settlements. The implementation of this, entitled “The Study on Environmental Improvement of Unplanned Urban Settlement in Lusaka” was entrusted to the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation program of the Japanese Government.

The Study was commenced by a JICA Study Team organized by JICA in March 1999. The area covered by the Study has the unplanned urban settlements, defined as the combined jurisdiction of eight compounds: Bauleni, Chainta, Chazanga, Chiboliya, Freedom, Kalikiliki, Ng’ombe and Old Kanyama.

Study Area

The area to be covered by the Study is the unplanned urban settlements (UUSs), defined as the combined jurisdiction of eight UUSs :Bauleni, Chainta, Chazanga, Chiboliya, Freedom, Kalikiliki, Ng’ombe and Old Kanyama.

Study Objects

The objectives of the study, as agreed on by GRZ and JICA , are:

- (1) to formulate Action Area Plans for eight UUSs ;
- (2) to prepare guidelines for living environment improvement ; and
- (3) to prepare priority projects for the short-term development.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Action Area Plan

The integrated development covering various sectors of water supply, road and drainage improvement, primary education, health care, waste disposal, shall be done for the environment improvement of UUSs. The master plan, called the action area plan in the Study, was designed to realize appropriate social services in the target 8 UUSs by implementation of integrated development. It means that every social service except for the already developed by the donors and NGOs were planned to develop in the action area plan.

In this context, the water supply system improvement, health education, VIP toilet development, health center development, garbage disposal, community school development, and road and drainage improvement were planned for the environment improvement of 8 UUSs in the action area plan.

2. Plan of Priority Projects

It is agreeable that every projects proposed in the action area plan can not be implemented simultaneously due to the financial, time and human resources constraints. Therefore, the Study proposed the plan of priority projects to be implemented preferentially. The JST judged that sanitary environment improvement as well as primary education enhancement, the basic elements of the social service, shall be the priority projects in consideration of the community needs and present situation of the target UUSs.

In detail, following projects are proposed as the priority projects.

- water supply system improvement
- health and hygiene education
- VIP latrine development
- Sub-health center development
- Garbage disposal
- Community school development
- Community center development (for community empowerment facility and water levy collection facility)

3. Implementing Program

- (1) The improvement of sanitary condition and the primary education enhancement are the priority projects. However, simultaneous implementation of all priority projects seems difficult due to the financial, time, and human resources constraints and phasing development of the priority projects is necessary.
- (2) The water supply system development of Ng'ombe, Freedom, Kalikiliki, where no system is serving, are selected as the short-term priority projects. In line with the water supply system development in the three UUSs, the health and hygiene education, VIP latrine development, garbage disposal, sub-health center and community center development are selected as the short-term priority projects. Moreover, the health and hygiene education and VIP latrine development in Chainda, Chibolya, Old Kanyama, where water supply systems are already developed by cooperation of NGOs, are recommended as the short-term priority projects. Further the community school development for the primary education enhancement is also recommended as the short-term priority projects.
- (3) The short-term priority projects will be implemented by two phases. In Phase 1 during three years from 2002 by 2004, the water supply system development, health and hygiene education, VIP latrine development, and the community center development were planned to implement in Ng'ombe where the population is large and top urgency is admitted. Among three UUSs with the developed water supply system, Chainda was selected to implement the health and hygiene education, VIP toilet development, and garbage disposal and Chibolya for the sub-health center development in the short-run to respond to the strong needs. Concerning the community school development, Chainda, Chazanga, Freedom, Kalikiliki were selected to develop during phase 1 in consideration of the urgent needs.
- (4) In phase 2 from 2005 by 2007, remaining priority projects such as water supply facility development in line with health and hygiene education, VIP latrine development, garbage disposal, sub-health center and community center development in Freedom and Kalikiliki are proposed to implement.

4. Finance Arrangement for the Priority Project Implementation

Although economic internal rate of return (EIRR) of water supply projects in the short-term priority projects is estimated at 3.7%, it is sufficiently expected to

contribute environmental improvement of UUS in Lusaka by means of qualitative analysis. Concerned with financial internal rate of return (FIRR), any cases of water supply projects show no positive rate of return, which is financially unfeasible with far lower than the investment opportunity rate for the private investment. This means the investment is recommendable but the public investment is necessary.

Since the local public finance is not available due to the financial constraints of LCC, the international aid is the sole measure to arrange the finance for the implementation of the projects. Japanese grant aid, counter value fund, grass root grant aid, and other donor's grant aid and loan, as well as NGO's grant aid will be finance to be discussed for the arrangement.

Recommendations

1. Recommendation on Development Method

(1) Necessity of Integrated Development

Considering that the environmental improvement in UUS shall be effective and efficient when the integrated development of social services are done, it is apparent that the integrated development by the water system improvement, health and hygiene education, garbage disposal system improvement, sewage disposal system improvement, and drainage improvement will improve sanitary condition of UUSs drastically, and development of community school in line with water supply system development as well as garbage disposal improvement will make the project more efficient, for instance.

Therefore, it is strongly recommended that the integrated development of the environmental improvement projects be done for the UUSs.

(2) Implementing Organization

- 1) Social service development in UUSs should be carried out by community participation in order to attain the sustainability in the operation and maintenance work and management of developed system, as well as the prevention of vandalism. For the purpose of this, participation in the project planning, participation in the construction work by voluntary basis as well as employed labor basis, participation in the project evaluation, participation in the O/M and management skill training shall be necessary for the community. The community participation method is the only way to nourish the ownership sense and

understanding of responsibility.

It should be paid due attention that the pilot projects, conducted in the Study, verified that the voluntary basis participation was not inevitable to nourish the ownership sense of the community, if the community participate in the projects from the start of the project.

- 2) ABO such as Resident Development Committee (RDC) represents the community. The members of RDC, Zone Development Committee (ZDC) under RDC, and sub-committee such as water committee or education committee will participate in the projects directly. More direct participants should be invited in addition to those representatives. For instance, the residents along road should participate in the road improvement project.
- 3) Public organization who will play major role for the project implementation will be the Peri-urban Section of the Housing Department, LCC. However, the Peri-urban Section is evaluated weak to cope with the integrated projects implementation, so the set-up of a Task Force is recommendable by the participation of relevant organizations for the purpose of the smooth and efficient implementation of the projects. In the Task Force, chief of Peri-urban Section as the chairperson, staff responsible for target UUSs, representatives of the community, subcontractor of the project such as NGO, contractor, supervising consultant, relevant department staff of LCC, and relevant ministry staff from MOE and MOH will participate in for coping with problems, decision making, progress management of the projects.
- 4) To make the Peri-urban Section to play main core role in the Task Force, enhancement of the Peri-urban Section such as manpower strengthening. Thinking that only five staff are carrying daily service for 27 UUSs under management of a manager and an assistant manager in the Peri-urban section, specific staff who can engage in the project implementation exclusively will be necessary. In addition, recruit of a water technician will be necessary in the Peri-urban Section considering that the water supply system improvement project is the most important. The number of water engineers responsible for the UUS is limited in LWSC and the service for UUS area is insufficient. Therefore, allocation of a water engineer in the Peri-urban Section to specifically work for projects proposed in the Study will be necessary for the

success of the water supply system improvement project. At the same time, a specialist for community school development as well as management will be necessary in consideration of the limited staff of the Ministry of Education.

2. Recommendation on Sustainability

- (1) It is concluded based on the experience of the pilot projects that minimum 6 months care after the project implementation will be inevitable even though the projects are self-sustained by the community. In the beginning stage of self-operation and management by community, several problems and obstacles will happen and the community can not cope with. For instance, the saving of the water levy is not enough and the community can not treat sudden default of system at the start-up stage of the system. Although one year guaranty is available by the contractor of the project, urgent treatment will not be available and support by the donors is necessary during at least 6 months.
- (2) Inspection system for the operation and management situation of the implemented projects should be developed for the purpose of transparency of fund use. Even the community basis operation and management should be carefully supervised, especially on the audit of the levy account of the water supply system. Development of Inspection program and training of the inspection staff to be stationed in Peri-urban Section, LCC should be done by the cooperation of the Legal Department, the Finance Department and the Housing Department, LCC.
- (3) The community should carry out operation and management work of the implemented projects with the assistance of the public support from LCC and relevant governmental organizations. The community, for instance, dispatches the tap attendant and accountant for the levy management of water supply system. This community participation system in the operation and management induces 100 % cooperation of the community and guarantee the sustainability of the water project.
- (4) Skill and know-how are necessary for the operation and management of the implemented projects. Therefore, training of the community member concerning those skills and know-how should be done during the project implementation. Repairing skill, accounting and bank account management know-how, fund raising measures know-how, personnel affairs management know-how, etc. will be important. Theoretical learns and field training will

be useful for the practical training of the community members concerning the operation and management of the projects.

- (5) For development sustainability, it is necessary to establish the monitoring and evaluation system for O&M of the proposed projects. Continuous evaluation utilized by quantitative indicators and measures to be improved for the projects will contribute to enhance significance and values of the projects.

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ABBREVIATIONS

1, Organizations

(1) International Organizations

ADB	Asian Development Bank
CIDA	Canadian International Development Agency
IMF	International Monetary Fund
JICA	Japan International Cooperation Agency
OECD	Organization for Economic Cooperation and Development
SIDA	Swedish International Development Agency
SLP	Sustainable Lusaka Programme
UNICEF	United Nations International Children's Emergency Fund
WFP	World Food Programme
WHO	World Health Organization

(2) Governmental Organizations

CBH	Central Board of Health
DEO	District Education Office
DHMT	District Health Management Team
GRZ	Government of the Republic of Zambia
LCC	Lusaka City Council
LCC-DPH	Lusaka City Council (Department of Public Health)
LDHB	Lusaka District Health Board
LDHMT	Lusaka District Health Management Team
LWSC	Lusaka Water & Sewerage Company
MLGH	Ministry of Local Government and Housing
MOCDS	Ministry of Community Development and Social Services
MOE	Ministry of Education
MOF	Ministry of Finance and Economic Development
MOH	Ministry of Health
NWASCO	National Water and Sanitation Council
PHD	Public Health Department
ZCCM	Zambia Consolidated Copper Mines

(3) NGOs

AMDA	Association of Medical Doctors of Asia
CIM	Challenge International Ministry
HUZA	Human Settlements of Zambia
PPAZ	Planned Parenthood Association of Zambia
PROSPECT	Programme of Support for Poverty Elimination and Community Transformation
PULSE	Peri-Urban Lusaka Small Enterprise Development Project
PURCH	Peri-Urban Community Health Project
PUSH	Programmes Urban Self-Help
PoCMUS	Promotion of Community Managed Urban Services

WVI	World Vision International
ZCSS	Zambian Community School Secretariat
ZOCS	Zambia Open Community School

2, Others

ABO	Area-Based Organization
ADaT	Agape Development and Training Consultants
APU	Academic Production Unit
BASICS	Basic Support for Institutionalized Child Survival
BHN	Basic Human Needs
BOP	Balance of Payment
CAP	Community Action Planning
CBD	Central Business District
CBD	Central Business District
CBHP	Community Based Healthcare Provider
CBO	Community Based Organization
CDO	Community Development Officer
CE	Continuing Education
CFP	Community Family Planning
CG	Consultative Group
CHHP	Community Health and Hygiene Promoter
CHW	Community Health Workers
CIF	Community Initiative Funds
CP	Community Participation
DAC	Development Assistance Committee
EC	Education Committee
EFA	Education for All
EHF	Environmental Health Facilities
EHT	Environmental Health Technician
EIA	Environmental Impact Analysis
EIRR	Economic Internal Rate of Return
EPM	Environmental Planning and Management
ESAF	Enhanced Structural Adjustment Facility
FFW	Food for Work
FIRR	Financial Internal Rate of Return
FODEP	Foundation for Domestic Process
FP	Family Planning
FZR	Forum of Zonal Representatives
GDP	Gross Domestic Product
GITI	Gastrointestinal Tract Infections
GSP	Galvanized Steel Pipe
HC	Health Committee
HEG	Health Educators Group
HHCIP	Health and Hygiene Conditions Improvement Project
HI	Health Inspectors
HIPC	Highly Indebted Poor Countries
IEC	Information Education Communication

IEE	Initial Environmental Examination
IGAs	Income Generation Activities
JST	JICA Study Team
KAP	Knowledge Attitude Practice
LA	Local Authority
LCG	Latrine Construction Group
MCH	Maternal & Child Health Care
MOU	Memorandum of Understanding
MP	Member of Parliament
NGO	Non Governmental Organization
NHC	Neighborhood Health Committees
O&M	Operation & Management
ODA	Official Development Assistance
OPD	Out-Patient Department
PCM	Project Cycle Management
PDM	Project Design Matrix
PEP	Polyethylene Pipe
PHAST	Participatory Hygiene and Sanitation Transformation
PHC	Primary Health Care
PIP	Public Investment Programme 2000-2002
PLA	Participatory Learning and Action
PMC	Project Management Committees
PRGF	Poverty Reduction Growth Facility
PSRP	Public Service Reform Programme
PTA	Parental-Teacher Association
PVC	Polyvinylchloride Pipe
PWAS	Public Welfare Assistance Scheme
QOL	Quality of Life
RC	Roads Committee
RCCO	Revenue Contribution to Capital Outlay
RDC	Resident Development Committee
SCDP	Sustainable Community Development Programme
SCP	Sustainable Cities Programme
SFH	Society for Family Health
SHCC	School Health Coordination Committee
SHEFA	Shelter for All
SIDO	Small Industries Development Organization
SLP	Sustainable Lusaka Project
SWAZ	Society for Women and Aids in Zambia
TA	Tap Attendant
TB	Tuberculosis
TOT	Training of Trainers
UFW	Unaccounted for Water
URTI	Upper Respiratory Tract Infections
UUS	Unplanned Urban Settlements
VAT	Value Added Tax
VIP	Ventilated Improved Pit

VIS	Village Industrial Service
WASHE	Water Sanitation Health Education
ZAMSIF	Zambia Social Investment Fund
ZDC	Zone Development Committee

MEASUREMENT UNITS

Extent

cm^2 = Square-centimeters (1.0 cm x 1.0 cm)

m^2 = Square-meters (1.0 m x 1.0 m)

km^2 = Square-kilometers (1.0 km x 1.0 km)

a. = Are (100 m^2 or 0.01 ha.)

ha. = Hectares (10,000 m^2)

ac = Acres (4,046.8 m^2 or 0.40468 ha.)

Length

mm = Millimeters

cm = Centimeters (cm = 10 mm)

m = Meters (m = 100 cm)

km = Kilometers (km = 1,000 m)

Currency

US\$ = United State Dollars

US\$1.0 = J¥116 = Kwacha 2,500

J¥ = Japanese Yen

Kwacha = Zambian Kwacha

Others

Lpcd = liter per capita per day

kgpcd = kilogram per capita per day

Volume

cm^3 = Cubic-centimeters
(1.0 cm x 1.0 cm x 1.0 cm
or 1.0 m-lit.)

m^3 = Cubic-meters
(1.0 m x 1.0 m x 1.0 m
or 1.0 k-lit.)

lit., 1 = Liter (1,000 cm^3)

Weight

gr. = Grams

kg = Kilograms (1,000 gr.)

ton = Metric tonne (1,000 kg)

Time

sec. = Seconds

min. = Minutes (60 sec.)

hr. = Hours (60 min.)

d = day

1. SOCIAL AND ECONOMIC CONDITION OF ZAMBIA AND LUSAKA

1.1 Social and Economic Condition of Zambia

(1) Population of Zambia and Lusaka

The population and annual growth rate by province, urban/rural in the 1969-1990 period are shown in the following table. The total population in Zambia reached about 7.4 million in 1990. The total population grew at average annual rates of 3.1% and 2.7% during the 1969-1980 and 1980-1990 intercensal periods, respectively. In the same respective periods, the urban population grew at annual rates of 9.3% and 2.6%, while those of rural were 0.5% and 2.8%, respectively. In comparison with the growth rates of the total and the rural population, those of the urban population were extremely rapid in the first intercensal period but declined slightly in the 1980-1990 period. It is considered that migration shifted from the urban area to the rural area due to the congestion in the urban area as well as stagnant of the economy. However, the urban population growth of the capital Lusaka shows the higher rate than national average.

Population and Annual Growth Rate of Zambia and Lusaka, by Urban/Rural (1969-1990)

Province		Population (1969)	Population (1980)	Population (1990)	Annual Growth Rate (%) (1969-1980)	Annual Growth Rate (%) (1980-1990)
Lusaka	Urban	-	551,367	830,238	-	4.2
	Rural	353,975	139,687	156,868	8.1	1.2
	Total	353,975	691,054	987,106	6.3	3.6
Zambia	Urban	852,236	2,258,520	2,905,283	9.3	2.6
	Rural	3,204,759	3,403,281	4,477,814	0.5	2.8
	Total	4,056,995	5,661,801	7,383,097	3.1	2.7

Source: Internal Migration and Urbanization, Aspects of 1990 Census of Population

(2) Economy of Zambia

The major economic indicators in Zambia are shown in the following table. Economic activities recovered significantly in 1996, with real GDP (Gross Domestic Product) expanding by 6.6%. The turnaround in economic activities was caused by the near doubling of the maize harvest following favorable rains during the 1995/96 crop season, strong growth in nontraditional exports, and higher metals production. In spite of a smaller maize harvest and a decline in metal production, GDP grew by an estimated 3.3% in 1997, due mainly to the strong growth of nontraditional exports and tourism. Besides, the tightening of monetary policy contributed to a steady decline in the rate of inflation from 35.2% in 1996 to 18.6% in 1997.

There was a downswing in the performance of the economy in 1998. GDP in real terms declined by about 2% due to a sharp deterioration in the public finances. The decline in economic activities was recorded across most of the major sectors of the economy such as agriculture and mining. Despite a generally tight monetary policy stance, there was an upswing in inflation, closing at 30.6% in 1998 from 18.6% in 1997. The resultant effect of the decline in the economy and the deteriorating financial conditions was a slump in welfare as real per capita GDP, private consumption and formal sector employment.

Major Economic Indicators in Zambia

Major Economic Indicators	1995	1996	1997	1998	1999*
1. Gross Domestic Product (Billion Kwacha)					
(1) At Current Prices	2999	3951	5141	6033	7522
(2) At Constant (1994) Prices	2185	2329	2406	2360	2418
2. Per Capita GDP (Thousand Kwacha)					
(1) At Current Prices	329.2	418.1	525.7	597.3	721.2
(2) At Constant (1994) Prices	239.8	246.4	246.0	233.7	231.8
3. Real GDP Growth Rate (%/year)	2.5	6.6	3.3	1.9	2.4
4. Inflation (%/year)	46.0	35.2	18.6	30.6	20.6

Source: Selected Socio-Economic Indicators 1999, Central Statistical Office, Lusaka

*: Preliminary

1.2 Central Government Public Finance

According to the preliminary reports by the Ministry of Finance and Economic Development (MOF) on its Economic Reports, January 2000 and 2001, the balance of the Government actual budget are recorded with a small surplus for the year 1999 and a small deficit for the year 2000 before accounting for the external grants received, as shown in the following table.

Central Government Budget Performance for 1999 & 2000

(Billion Kwacha)

	FY1999		FY2000	
	Budget	Actual (%)	Budget	Actual (%)
Tax Revenues	1,400	1,271 (91)	1,630	1,740 (107)
Income Taxes	480	481 (100)	595	634 (108)
Excise Duty & VAT	532	474 (89)	571	509 (89)
Trade Taxes	388	316 (81)	464	597 (129)
Non-Tax Revenue	60	29 (48)	29	22 (76)
Total Revenue	1,460	1,300 (89)	1,659	1,762 (106)
Current Expenditure	1,013	996 (98)	1,481	1,533 (104)
(Interest on Public Debt)	(70)	(103) (147)	(142)	(140) (99)
Capital Expenditure	317	123 (39)	172	228 (133)
Payment of Arrears	23	122 (530)	44	92 (209)
Total Expenditure	1,353	1,241 (92)	1,697	1,853 (109)
Balance	107	59 (55)	-38	-91 (239)

Source: Economic Reports 2000 & 2001, Ministry of Finance and Economic Development

2. SOCIAL SERVICES AND INFRASTRUCTURE IN UUS

2.1 Health/Public Health Situation

Health Centers for the eight unplanned urban settlements and their characteristics are summarized as below:

Characteristics of Health Centers in/near Study Area

UUS	HC for the community	Type of HC	Services	Active community health organization	Needs felt by clinic
Old Kanyama	Kanyama	1 st referral 24h	MCH, OPD, IP, Lab, Maternity	PE,TBA, NHC	Drugs
Chibolya	Kanyama			NHC	Drugs
Chazanga	Chipata Mandebu	Large,24h Small, 10.5h	MCH, OPD, IP, MCH, OPD, Lab	CHW (Mandebu)	Health Post
Chainda	Chainda	Medium, 10.5h	MCH,OPD No Maternity	Few CHW, NHC	Renov. Maternity room
Bauleni	Bauleni	Small,8.5h	MCH,OPD No Maternity	NHC	Maternity Water(clinic)
Kalikiliki	Mutendere	Medium,8.5h	MHC,IP(OP D for under5) ,Lab	PE (Mutendere)	Health Post
Ng'ombe	Ng'ombe	Medium,10.5 h	MCH,OPD No Maternity	CHW, NHC	Lab Lecture room
Freedom	Mt.Makulu Chilanga	Small, 10.5h Large, 24h	MCH,OPD IP, Lab, Maternity		Health Post

Source: interview with managerial staff at each health center

2.2 Education

In the unplanned urban settlements (UUSs) surveyed, access to basic education (particularly lower and middle level) is not satisfactory to those school-aged children. As shown in the following table, there are only 3 settlements that have government basic schools in the communities. Despite the plans to establish additional basic schools in Ng'ombe and Bauleni by Japanese Grant Aid Scheme, there are still serious problems facing concerning the absolute lack of school facilities. Most of the settlements have community schools but their size and capacity to accommodate children are too small to meet all the needs in the communities.

The survey also revealed that illiteracy among school-aged children and youth are very evident in comparison with upper middle or senior adults. This illustrates how the lack of access to school education greatly affects the country's human development in the future.

School Allocation of Formal and Non-formal in 8 Compounds

Name of Settlement	Formal School	Non Formal School
Old Kanyama	New Kanyama (G1-9)	New Kanyama open community school (ZOCS) Kanyama Corps community School (Salvation Army) Kanyama Rocs (ROCS) Kanyama Community School (LCC)
Chibolya	Chibolya Middle (G1-7) New Kanyama (G1-9)	HUZA Pre-school Chibolya Community school (ZOCS) Chibolya Community school (Wisdom Apostolic Faith) Chibolya Community school (Freemind Literacy Club)
Chazanga	None	Chazanga community school (RODF) Chazanga Tambalala (Chazanga Lusaka)
Chainda	Chelston * JICA granted a basic school	Chainda community school (World Vision) Chainda open community school (CARE) Chelston open community school (ROCS)
Bauleni	Bauleni Middle (G1-7) * JICA granted a basic school	Bauleni open community school (ZOCS) (ZOCS)
Ng'ombe	None at the moment, * JICA granted a basic school	Community school (CCF) Pre-school (HUZA) Ng'ombe community school (Rudolf) Ng'ombe open community school (ZOCS) Ng'ombe community school (YOCAS)
Kalikiliki	Kalingalinga Middle (G1-9)	N/A
Freedom	None	Freedom community school (Mimosa Chilanga HBC)

2.3 Economic Situation and Income Generating Activities

In the UUSs surveyed, major economic activities for females are petty trading, brewing and selling, tailoring, food making and selling, maid, and males are engaged in carpentry, petty trading, bricklaying, welding, blacksmith, plumbing, mechanic, security guard and driver. There are only a small handful of people who are involved in the formal sector.

The following table provides an estimate of average monthly income from the Resident Development Committee (RDC) members interviewed in eight settlements. There is a question about the validity of this table simply because of very few samples and figures from only a handful of community representatives. Yet, there are slight differences among settlements though all settlements earn less than Kwacha 100,000/household/month.

Average Monthly Income in Eight Unplanned Urban Settlements

Unit: Kwacha

Bauleni	Chainda	Chazanga	Chibolya	Freedom	Kalikiliki	Ng'ombe	Old Kanyama
75,000	100,000	(No RDC)	70,000	100,000	50,000	95,000	70,000

Source: Hearing from the RDC members, JST, July 1999

Micro credit and other anti-poverty programs are safety net instruments for the poor population. The governments, many NGOs and donor agencies, private companies currently implement the micro credit projects for the purpose of fostering the small scale enterprise, increasing incomes, empowering the poor, and mobilizing community participation by group formation. CARE PROSPECT and PULSE play a leading role in this sector, and meet with success in terms of its impact and sustainability. There are more than 10 organizations and groups that operate the micro credit programs in Lusaka City.

2.4 Water Supply System

The Lusaka Water and Sewerage Company (LWSC) under LCC manages the water supply system in the City. The average daily supply is estimated at 190,000 m³/d based on the activities of LWSC in 1998. The water sources consist of approximately 47% groundwater sources equivalent to 90,000 m³/d and 53 % surface water sources equivalent to 100,000 m³/d.

The existing conditions of water supply in the 8 unplanned urban settlements are summarized. From the result of the existing condition survey, it is clear that the service level of infrastructures in the 8 unplanned urban settlements is awfully poor as described below.

LWSC supplies water to Bauleni, Chainda, Freedom and Ng'ombe by means of the satellite system, and to Chibolya and Kalikiliki with the network system but its service cannot cover the whole area of each settlement due to lack of water sources' capacity. LWSC charges households a fixed amount for water supply using tap attendants. Chainda has been expanding the water supply system in cooperation with the World Vision and LWSC. HUZA also set up water supply for the training center and the communal school in Bauleni.

In Chazanga there are only 3 communal deep wells with hand pumps for public use and dug wells for private use and since these wells run dry during dry season the public are compelled to get drinking water from surrounding water sources, such as water vendor and farm wells. Old Kanyama has one borehole with a pump and an elevated tank under assistance of HUZA and there are 16 public taps servicing 10% of the total area. Tap attendants, who are selected by the water committee, collect a water charge from users.

The existing conditions of water supply at each settlement are summarized in the following:

Existing Conditions of Water Supply at Each Settlement

UUS	Water Demand (m ³ /d)	Served/Total Area (ha)	Existing Conditions
Bauleni	900	76/128	<ul style="list-style-type: none"> - Supplied by LWSC - 2 boreholes for public & 1 well for school - 11 public taps and individual connections - Low quantity (unit consumption: 9.6 lpcd) - Low pressure and large leakage
Chainda	340	63/63	<ul style="list-style-type: none"> - Supplied by LWSC - 2 boreholes & 1 well with hand pump - 39 public taps (436 persons/tap) - Unit consumption: 18 lpcd
Chazanga	580	2/30	<ul style="list-style-type: none"> - 3 communal well with hand pump - A few dug wells - Wells run dry during dry season - Potential of underground water is low
Chibolya	700	12/46	<ul style="list-style-type: none"> - Supplied by LWSC - 12 public taps and illegal connections - Western part is not supplied
Freedom	180	13/43	<ul style="list-style-type: none"> - Supplied by LWSC - 1 borehole & 6 public taps (2 breakdown taps) - Low quantity (unit consumption: 9.3 lpcd) - Eastern part is not supplied
Kalikiliki	160	12/61	<ul style="list-style-type: none"> - Supplied by LWSC (net work) - 1 public tap and 7 individual taps - 4 hand pumps is out of order - Northern part is not supplied
Ng'ombe	600	27/91	<ul style="list-style-type: none"> - Supplied by LWSC - 1 borehole & 13 public taps, 4 communal hand pumps - Low quantity (unit consumption: 1.2 lpcd) - Eastern part is not supplied
Old Kanyama	1,140	50/500	<ul style="list-style-type: none"> - Supplied by HUZA - 1 borehole and 16 public taps - Northern part is not supplied

Note: As of September, 1999

2.5 Road and Drainage System

Almost all roads are of 5 to 9m in width, of single- or dual carriageway, and without side-ditches installed.

The primary roads in UUS linking to the national trunk roads, have a small volume of traffic (below 50 pcu/day¹) comprising mini-bus, goods vehicle to the markets and so forth. The secondary and tertiary roads in UUS seldom have passing vehicles, except for pedestrians.

The secondary/tertiary roads in UUS consist mostly of earth roads without side-ditches, which are affected by the submergence during the rainy season, leading to the destruction of road surfaces. Part of the secondary/tertiary roads has been improved into gravel roads with open ditches; however, provided open drainage systems are not functioning by the accumulated sand/earth/rubbish due to lack of maintenance work.

Except for the road sections where the Programme Urban Self Help (PUSH) have provided side-ditches, there exists no drainage system up to an outlet. In some area side-ditches can be found, but these were excavated by the residents so as to prevent water from intruding to each homestead.

In Chibolya and Old Kanyama, there is no drainage outlet within UUS. Extension of drainage system up to an outlet requires, 450m in Chibolya and 700m in Old Kanyama, respectively. It is foreseen that the outlet connection will be costly, due to a long distance extension in the flat topography, even if a gentle-slope drainage system is applied. Accordingly, a drainage plan covering not only the objective UUS but also all of the surrounding environs will be required.

With regard to Ng'ombe, Bauleni, Kalikiliki and Chazanga, the drainage system might be provided up to an outlet, since there exists an outlet nearby.

2.6 Sewerage System

The wastewater collection and treatment are managed by LWSC. Storm water and wastewater are collected separately. Storm water is collected by open channel managed by the road department of LCC.

Eight settlements have no sewerage network system for domestic wastewater. Almost all of the residents have their own private toilet, a pit latrine type, in order to

¹ pcu: passenger car unit

treat their night soil. Gray water generated from households is discharged to their own plots or roads and rivers near their houses.

Public toilets for market are provided at 3 settlements: Bauleni, Chibolya and Old Kanyama. Public schools that have toilets with a septic tank were newly constructed at Bauleni and Ng'ombe in 2000, and at Chainda school are planned for construction 2001. In Chazanga and Chibolya, a communal school has a toilet with a pit latrine.

2.7 Solid Waste Management

The Department of Public Health under LCC is responsible for collection and final disposal of solid waste in Lusaka City. A large amount of solid waste is left on several street corners even in the urban area, which means necessary collection operations are not being performed by LCC.

8 UUSs don't get public service for waste collection since collection service capacity of LCC is low. Almost all the garbage and refuse generated from residents in settlements are illegally dumped at the public areas, rivers and roads adjacent to their houses. A few households have a garbage pit on their plot. LCC, in conjunction with NGOs and other organization, is currently in the process of initiating a strategy to educate people in the peri-urban and develop an effective garbage collection system with community participation.

The existing conditions in connection with solid waste collection and generation are identified at each settlement below:

Existing Condition of Solid Waste

	Generation (kg/d)	Container (Midden Box)	Disposal	Remarks
Bauleni	13,500	No	Illegal dumping	Unsanitary at a market especially
Chainda	5,100	No	Private pit/Illegal	Hygienic education/campaign is introduced under World Vision
Chazanga	8,700	No	Private Pit/Illegal dumping	Hygienic education/campaign is not introduced yet
Chibolya	10,500	No	Illegal dumping	Dumped on the roads and bad living condition during rain
Freedom	2,700	No	Illegal dumping	Dumping on the roads
Kalikiliki	2,400	Yes	Illegal dumping	Not collected & disposed due to no willingness to pay
Ng'ombe	9,000	Yes (for market)	Illegal/Communal collection	Acting under SLP
Old Kanyama	17,100	Yes	Illegal/Communal collection	Not collected & disposed due to no willingness to pay and bad living condition during rain

3. ANALYSIS OF PARTICIPATORY DEVELOPMENT PROJECTS IN UUS IN LUSAKA

3.1 Local Authority Level

Social services in UUS are carried out by the intervention of several organizations as shown in following table.

Organization in Charge for Social Service in UUS

Social service	Organization in charge
1. Land development, administration, building permit, etc.	City Planning Dep. of LCC
2. Legalization of UUS	City Planning Dep. of LCC
3. Development of community organization such as RDC	Housing and Social Service Dep. of LCC
4. Research of community	Housing and Social Service Dep. of LCC
5. Development and improvement of social services in UUS	Housing Dep. of LCC, Public Health Dep. of LCC, LWSC, relevant Ministries, NGO
6. Operation and management of social service	Ditto + community
7. Networking among donors and NGO (Forum)	Housing and Social Service Dep. of LCC

Departments of LCC shall play significant roles in the development and improvement of social services in UUS. Following is the evaluation summary of played role of LCC in the pilot projects, of which the contents were explained in Chapter 4 detailedly.

LCC's Performance in the Pilot Project

Role	Evaluation	Reason
1. Coordination between RDC and NGO as well as contractors		LCC Peri-urban section coordinated well between the community and NGOs, contractors.
2. Land problem solution		LCC Planning Department works well for the solution of land tenure problem.
3. Training of community		Technical training such as water facility operation, road repairing was done by Engineering Department, LCC and LWSC.
4. Technical support for design of building, road, drainage		Engineering Department played good role in pilot project implementation.
5. Workshop (Project planning, evaluation)		LCC Peri-urban section as well as Engineering Department initiated the workshop.
6. Donor forum		Housing Department initiated the Forum for UUS improvement.

3.2 Community Level

(1) Resident Development Committee (RDC)

Within each settlement, there are various community organizations. In the very forefront is RDC (Resident Development Committee) whose major role is to facilitate development and implement the development projects.

When the Government recognizes a settlement as legal, LCC starts the process of the area survey and organization of RDC (Figure 3.1).

The concept of establishing a democratic RDC was first introduced by CARE around 1994, but now is integrated into LCC as its standard operational system.

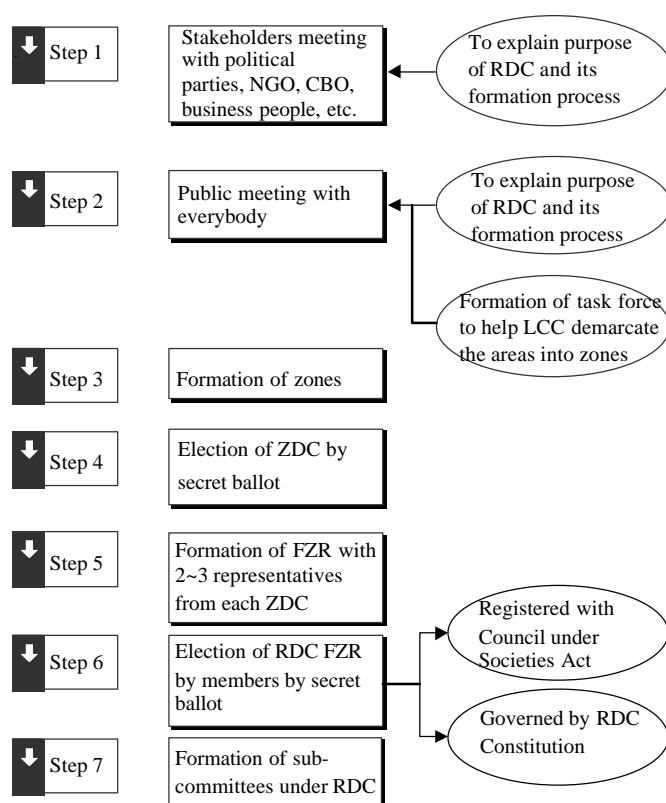


Figure 3.1 Community Organization

(2) Zone Development Committee (ZDC)

Each settlement is divided into zones. Zone Development Committee (ZDC) normally consists of 10 people democratically elected by the zone residents. Two to three representatives from each ZDC make up Forum of Zone Representatives (FZR). FZR is a body whose major role in the settlement is policy-making. RDC, normally of between 10-15 members, is formed with the elected representatives from FZR. The structure for a democratically elected RDC is shown in Figure 3.2.

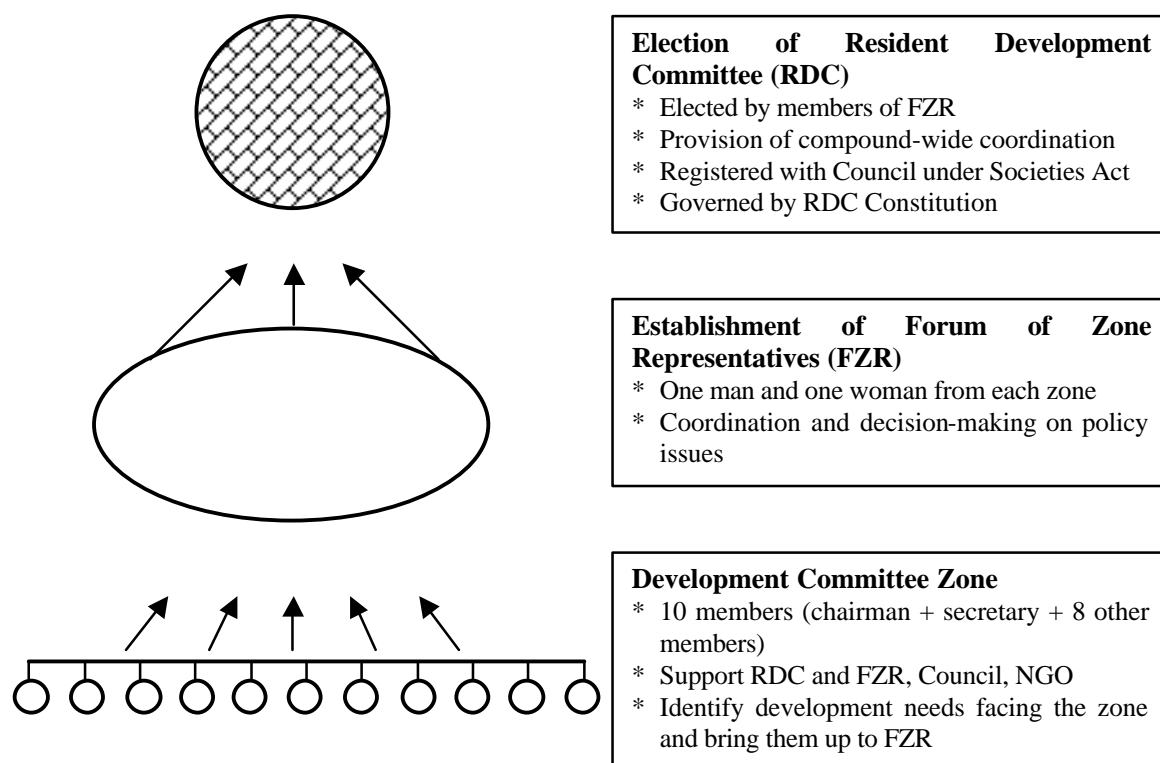


Figure 3.2 Structure for Democratically Elected RDC

(3) Community Based Organizations (CBO)

In many settlements, sub-committees are organized under RDC. Most commonly found are neighborhood watch committee, water committee, and health committee. They are established on the basis of the identified needs and the executive members of RDC determine the detailed roles of the sub-committees.

Equally prominent in the settlements are what are called CBO, community-based organizations, such as church, women's group, youth group, and market committee, among others. They are formed voluntarily by the residents with a common interest and a specific purpose.

A Project Cycle Management (PCM) Workshop organized by the JICA Study Team (JST) indicated that RDC could actually play vital roles in project implementation. The major roles suggested include (1) decision-making, (2) management, (3) facilitation, (4) leadership, (5) mobilization of community, (6) representation of community, (7) linkage between community and local authority/others.

4. PILOT PROJECTS IN THREE UUS

4.1 Implementing Procedure of Pilot Projects

Pilot projects were carried out to check the practicability and viability of social service development in UUS. Participatory method was taken in the pilot project planning and implementation to assure the sustainability of the development projects.

The pilot project was commenced from the selection of target UUS suitable for the project followed by subsequent steps as shown below.

- Plan making of pilot project
- Baseline survey on selected UUS
- Implementation of pilot project
- Training of community as well as LCC staff
- Evaluation of pilot project
- After care of pilot project

Detailed implementing work flow is shown in Figure 4.1.

4.2 Selection of Three UUSs

Seven pilot projects were carried out in three UUS in this Study to examine the effective and practical method of the social service development by community participation.

The following three criteria are assumed for selection of UUS for pilot projects.

- Capacity of community participation
 - Status of community organization
 - Willingness of community people to participate (potential capacity for implementation, maintenance capacity, and gender awareness of community)
- Presence and capacity of LCC organization
- Presence of other donor and possibility of coordination

Scores evaluated by the status of community organization and willingness of community participation are presented below.

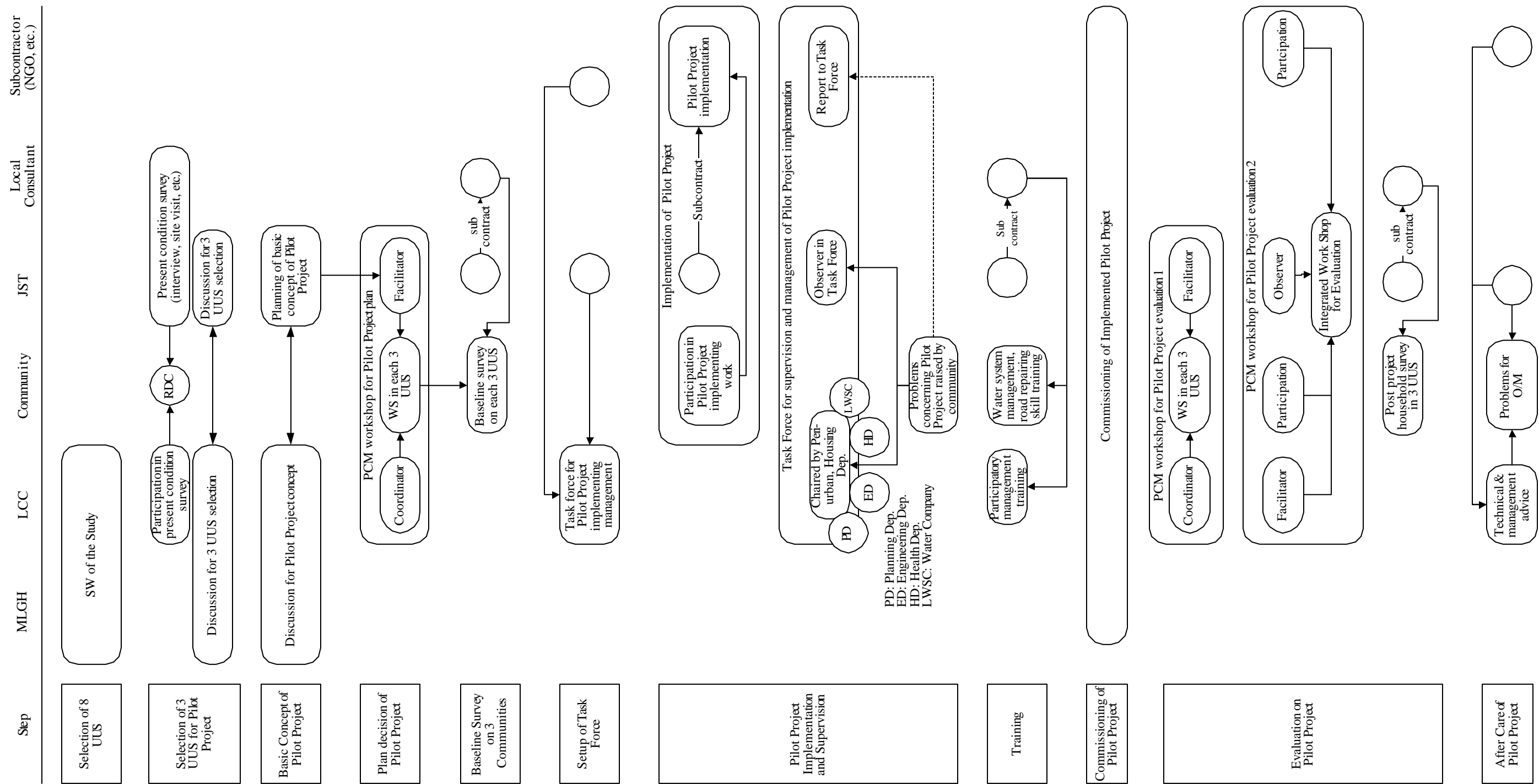


Figure 4.1 Implementing Work Flow of Pilot Project

UUS	Status of Community Organization		Willingness of Community			
			Potential Capacities in Implementation of Projects	Infrastructure Maintenance	Gender Awareness	Total
Bauleni	✓✓✓✓	4	✓✓✓✓	✓✓✓	✓✓✓	10
Chainda	✓✓✓✓	4	✓✓✓✓	✓✓✓✓	✓✓✓	11
Chazanga	✓✓	2 ✕	✓✓	✓	✓✓✓✓	7
Chibolya	✓✓✓✓	4	✓✓✓	✓✓	✓✓✓✓	9
Freedom	✓	1 ✕	✓	✓	✓	3 ✕
Kalikiliki	✓✓✓	3	✓✓✓✓	✓✓	✓✓	8
Ng'ombe	✓✓✓✓✓	5	✓✓✓✓✓	✓✓✓✓	✓✓✓✓✓	14
Kanyama	✓✓✓	3	✓✓✓✓	✓✓✓✓	✓✓✓✓✓	12

Note Highest = 5 ticks Average = 3 ticks Lowest = 1 tick

Status of LCC organization is evaluated as shown below.

UUS	Status of LCC organization	UUS	Status of LCC organization
Bauleni		Freedom	
Chainda		Kalikiliki	
Chazanga		Ng'ombe	
Chibolya		Old Kanyama	

Bauleni, Chainda, Chibolya, Ng'ombe, and Old Kanyama can be selected as priority sites for the pilot projects after the assessment of above consideration.

Furthermore, the following donor presence in UUS should be taken into consideration.

- World Vision closely cooperated to supply enough water in Chainda
- CARE PROSPECT is planning to develop water supply service covering the whole area of Old Kanyama.

Thus these two UUSs were excluded from the priority target of the selection and Bauleni, Chibolya, and Ng'ombe were consequently selected as priority sites for the pilot projects.

Table 4.1 shows the results of UUS selection with needs assessment.

4.3 Selection of Pilot Projects in Three UUSs

Several kinds of pilot projects were conceived to cover multi-sectoral scheme.

Principles for the selection of the pilot studies were:

- To carry out various kind of pilot projects order to test the necessity and effectiveness for integrated social services,

- Not only the results of needs assessment of RDC, but also needs of relevant organizations and the assessment by JST would be referred to in the decision of pilot projects,
- Results of development projects done by the other donors/NGOs would be taken into consideration for the design of the pilot projects, and
- Duplication with another development projects being carried out by the other donors/NGOs would be avoided.

Selected pilot projects are summarized in the table below and shown in Table 4.2 in detail.

Selected Pilot Projects

	Bauleni	Chibolya	Ng'ombe
Needs assessment by RDC	1. Water 2. Maternity clinic 3. Income generation 4. Garbage 5. Security	1. Water 2. Clinic 3. Security 4. Secondary school 5. Road & Drainage	1. Water 2. RDC Office 3. Road 4. Market improvement 5. Police post
Needs from relevant organizations		• Community school	
Idea of JICA Study Team	• Health and sanitary education program • Home VIP latrine development	• Health and sanitary education program • VIP latrine development	

Note: Items in block represent selected pilot projects.

Table 4.1 Evaluation on the 8 Unplanned Urban Settlements

Name of UUS	Characteristics of UUS	Community Participation		LCC Organization in UUS	Presence of Major Donors (in parenthesis: completed)	Needs for Social Services by Priority		Selection for Pilot Study
		Status of community organization	Potential capacities in implementation			Existing data/information	Latest interview to RDC	
Bautleni	<ul style="list-style-type: none"> 45,000 population Country side location Large dwelling plot Upgraded UUS 				1. HUAZ 2. SWAZ 3. SHEFA 4. (PUSH)	1. Water 2. Garbage 3. Maternity clinic 4. Road 5. Police office	1. Water 2. Maternity clinic 3. Income generation 4. Garbage 5. Security	
Chainda	<ul style="list-style-type: none"> 17,000 population Country side location Large dwelling plot 				1. World vision 2. PUSH	1. Poverty 2. School 3. Security 4. Unemployment 5. Clinic (lack of devices)	1. School 2. Security 3. Maternity clinic 4. Unemployment 5. Poor housing	
Chazanga	<ul style="list-style-type: none"> 29,000 population Country side location Large dwelling plot Next to Cipata 	×			PROSPECT	1. Water 2. School 3. Road 4. Clinic 5. Police post	1. Security 2. Basic School 3. Road 4. Water 5. Illiteracy	
Chibolya	<ul style="list-style-type: none"> 25,000 population Central city location Congested dwellings Flat land Rocky geology 				1. HUAZ 2. ZOCS 3. CARE/PROSP ECT in 2001 4. SLP	1. Water 2. Security 3. Local clinic 4. Garbage 5. Road & drainage	1. Water 2. Clinic 3. Security 4. Secondary school 5. Road & Drainage 6. Garbage	
Freedom	<ul style="list-style-type: none"> 9,000 population Facing Great North Road Congested dwellings Hilly land 	×	×		1. HUAZ	1. Water 2. Health facility 3. Garbage 4. Poor sanitation 5. School	1. Water 2. Clinic 3. Road & Drainage 4. Garbage 5. Poor housing	
Kalikiliki	<ul style="list-style-type: none"> 8,000 population Congested dwellings Hilly land 				1. SLP 2. (PUSH)	1. Water 2. Clinic 3. School 4. Road 5. Police	1. Clinic 2. School 3. Road & drainage 4. Security 5. Public transport	
Ng'ombe	<ul style="list-style-type: none"> 30,000 population Congested dwelling Rather undulated land 				1. SLP 2. HUAZ 3. SCDP	1. Water 2. Road 3. Garbage 4. Poverty 5. Education	1. Water 2. RDC Office 3. Road 4. Market improvement 5. Police post/1 6. Garbage	
Old Kanyama	<ul style="list-style-type: none"> 57,000 population Upgraded UUS Central city location Congested dwellings Flat land Rocky geology 				1. CARE -PROSPECT -PULSE 2. (HUAZ)	1. Water 2. Security 3. Poverty 4. Clinic 5. Road	1. Water 2. Security 3. Income generation 4. Road 5. Clinic	

Legend of community participation and LCC organization:
 Remark /1 Police station in Ng'ombe is under construction.

Abbreviation:
 LCC: Lusaka City Council
 SLP: Sustainable Lusaka Program
 HUAZ: Human Settlement of Zambia

UUS: Unplanned Urban Settlement
 SCDP: Sustainable Community Development Program
 ZOCS: Zambia Open Community Schools

Legend of Selection:

RDC: Resident Development Committee
 SHEFA: Shelter for All
 SWAZ: Society for Women and Aids in Zambia

Table 4.2 List of Pilot Projects

Intervention		Bauleni (45,000 pop.)	Chibolya (25,000 pop.)	Ng'ombe (30,000 pop.)
1	Water supply system development project	Zones 8 and 13 (10 tap stands for 4,000 pop.)	Zones 4 and 5 (5 tap stands for 4,000 pop.)	SLP started pilot project with 70 m depth borehole
2	Road and drainage improvement project	ROAD improvement major roads in 1998.	Very expensive due to the discharge outlet, rocky geology	1st Priority Road (630 m with the total width of 6.0m)
3	Income generation program	Micro finance	PRSOTECT plans	HUZA is working
4	Health and sanitation improvement program	4.1 Environmental health and sanitation education program	20 members (community health education)	-
		4.2 Home latrine development	12 members in Chibolya middle School	-
5	Education improvement program	Community school enhancement	10 members	-
		Developed by French aid	2 classrooms with an office and a store room	Existing

Note: /1 Environmental health and sanitation education is prerequisite for home latrine development.

~ : Selected Pilot Projects/Programs

4.4 Plan and Implementation of Pilot Projects

4.4.1 Water Supply System Improvement Project in Bauleni

(1) Plan Framework

The development plan of the projects was formulated according to the following framework. Layout plan for the development of water supply systems in Bauleni is illustrated in Figure 4.2.

Plan Framework of Bauleni Water Supply Pilot Project

Description	Bauleni
Served Area (Zones)	Zones 8 and 13
Served Population	4,000
Number of Households	400
Designed Unit Water Consumption (lpcd)	20
Water Demand (m ³ /d)	80
Water Source	Deep Borehole
Design Water Yield at Borehole (l/sec)	10
Number of Public Tap Stands (unit)	10
Minimum Residual Water Height (m) at Public Tap	5
Served Population per a Public Tap Stand	400
Length of Distribution Pipeline (m)	1,000

(2) Implementation

Design works were carried from December 1999 to March 2000. At the design stage, the residents were interested to contribute to the siting of borehole, public tap stands, elevated tank and pipelines route. During the design stage, residents participated in discussions about community participation to be conducted at the construction stage.

The project was completed on September 27, 2000. Some construction works, such as backfill and wall construction, were carried out by residents. Almost all works were done according to the plan under supervision of JST. Results of the implementation of the pilot project are summarized below comparing with the plan.

Implementation Result

Framework	Plan	Result
Served area (Zones)	2 (Zones 8 & 13)	3 (Zones 7, 8 & 13)
Number of registered households	400	294 (74%)
Number of public tap stands	10	10
Production/consumption (m ³ /d)	85/80	61/59

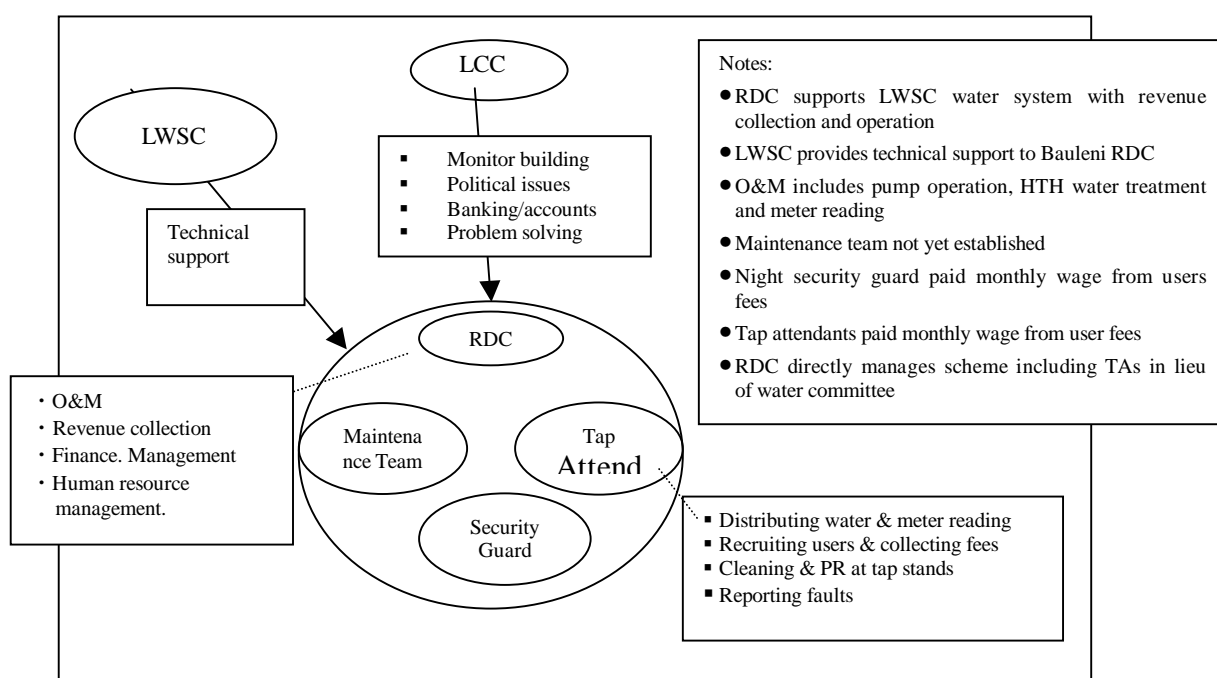
(3) Training Provided under Project

Community training under the Bauleni water pilot project is shown below.

Type (provider)	Days	Participants	Purpose	Contents
Community water management training (by local consultant)	5	RDC & Tap Attendants (TAs) (20 members)	Provide community with financial and management skills to run new water system	Community participation Team and team-building skills Conflict resolution Project planning and management Project proposal writing Resource mobilisation Financial management Levy and levying methods
Water system operation and maintenance training (LWSC)	3	RDC & TAs (13 members)	Provide community with technical skills for O&M of new water system	Water production Water distribution Water quality Plumbing Safety
Field trip to other Lusaka settlements to observe water system management	1	RDC & TAs (12 members)	Provide community with opportunity to observe the O&M systems in other settlements and discuss details with managers	Kamanga—Irish Aid project Ng'ombe—Rotary International and LWSC Chipata—CARE Prospect George—LWSC

(4) Water System Management Structure

The following structure is being put into place for management of the Bauleni water pilot project. The stakeholders are represented in the ovals, with their main roles and responsibilities shown in the rectangles. Arrows indicate support provided and in the case of LWSC and RDC, there is a reciprocal relationship with LWSC providing technical support to Bauleni RDC and the RDC working for revenue collection and operation of their water supply system.



(5) Cost Recovery System

Following levy is collected by Tap Attendant (TA) under RDC for the maintenance and future replacement payment.

- Membership fees: Kwacha 5,000/year or 500/month
- Water levies: Kwacha 3,000/household/month for 10 x 20-liter containers/day
- Building levy (charged to those constructing new homes): Kwacha 10,000/month

4.4.2 Water Supply System Improvement Project in Chibolya

(1) Plan Framework

The development plan of the projects was formulated according to the following framework. Layout plan for the development of water supply systems in Chibolya is illustrated in Figure 4.3.

Plan Framework of Chibolya Water Supply Pilot Project

Description	Chibolya
Served Area (Zones)	Zones 4 and 5
Served Population	4,000
Number of Households	400
Designed Unit Water Consumption (lpcd)	20
Water Demand (m ³ /d)	80
Water Source	Deep Borehole
Design Water Yield at Borehole (l/sec)	10
Number of Public Tap Stands (unit)	5
Minimum Residual Water Height (m) at Public Tap	5
Served Population per a Public Tap	800
Length of Distribution Pipeline (m)	1,000

(2) Implementation

Design works were carried out from December 1999 to March 2000. At the design stage, residents were interested to contribute to siting of the borehole, public tap stands, elevated tank and pipeline routes under supervision of both JICA Study Team and CARE PROSPECT. During the design stage, residents participated in discussions about community participation in construction.

The construction works commenced in June 2000 and the project was completed on November 15, 2000. Residents conducted the works of backfilling and wall construction based on community participation according to the JST approach and helped to lay pipes under instruction of CARE PROSPECT.

Almost all works except those of CARE PROSPECT's portion were done according to the plan. Actual serviced areas consists of Zones 4, 5 and 6 since a

tap location was changed from Zone 5 to Zone 6 as a result of adjustment of both plans between JST and CARE PROSPECT. The official operation of the water supply started on December 1, 2000. Results of the implementation of the pilot project are summarized below comparing with the plan.

Framework	Plan	Result
Served area (Zones)	2 (Zones 4 & 5)	3 (Zones 4, 5 & 6)
Number of registered households	400	1,189
Number of public tap stands	5	5
Production/consumption (m ³ /d)	85/80	49/45

(as of February 2001)

(3) Community Participation in Construction Works

Chibolya residents had a larger role in project implementation than originally planned due to the following CARE PROSPECT's approach. The following table shows the division of construction work:

Contractor	Community
1. Drilling borehole	1. Selection of water points
2. Borehole starter room and wall fence	2. Construction of water points
3. Erection of tank and wall fence	3. Soakaway construction
4. Pipelaying (borehole to tank and 5 "JST" water points)	4. Connection of water points
5. Rising main and distribution network trenching	5. Pipe laying
6. Power supply to borehole	6. Backfilling of trenches

(4) Training Provided under Project

JST proceeded with their original plan of hiring subcontractors to train the community in O&M and Financial Management. The following training was provided:

Type (provider)	Days	Participants	Purpose	Contents
Community water management training (Local Consultant)	5	RDC, Water Committee (WC) & 5 Tap Attendants (TAs) for zones 4, 5 & 6 (20)	Provide community with financial and management skills to run new water system	Community participation Water committee formation and roles Monitoring and evaluation Proposal writing Financial and management options (CARE PROSPECT model) Conflict resolution Sustainability Bookkeeping and simple accounts
Water system operation and maintenance training (LWSC)	3	RDC & TAs from other zones (13)	Provide community with technical skills for O&M of new water system	Water production Water distribution Water quality Plumbing Safety
Follow-up O&M training (JST and Local Consultant)	½ day	RDC, WC & TAs (24)	Provide hands-on training following operation	O&M: system parts, daily, weekly, monthly & bi-annual tasks, water supply and health

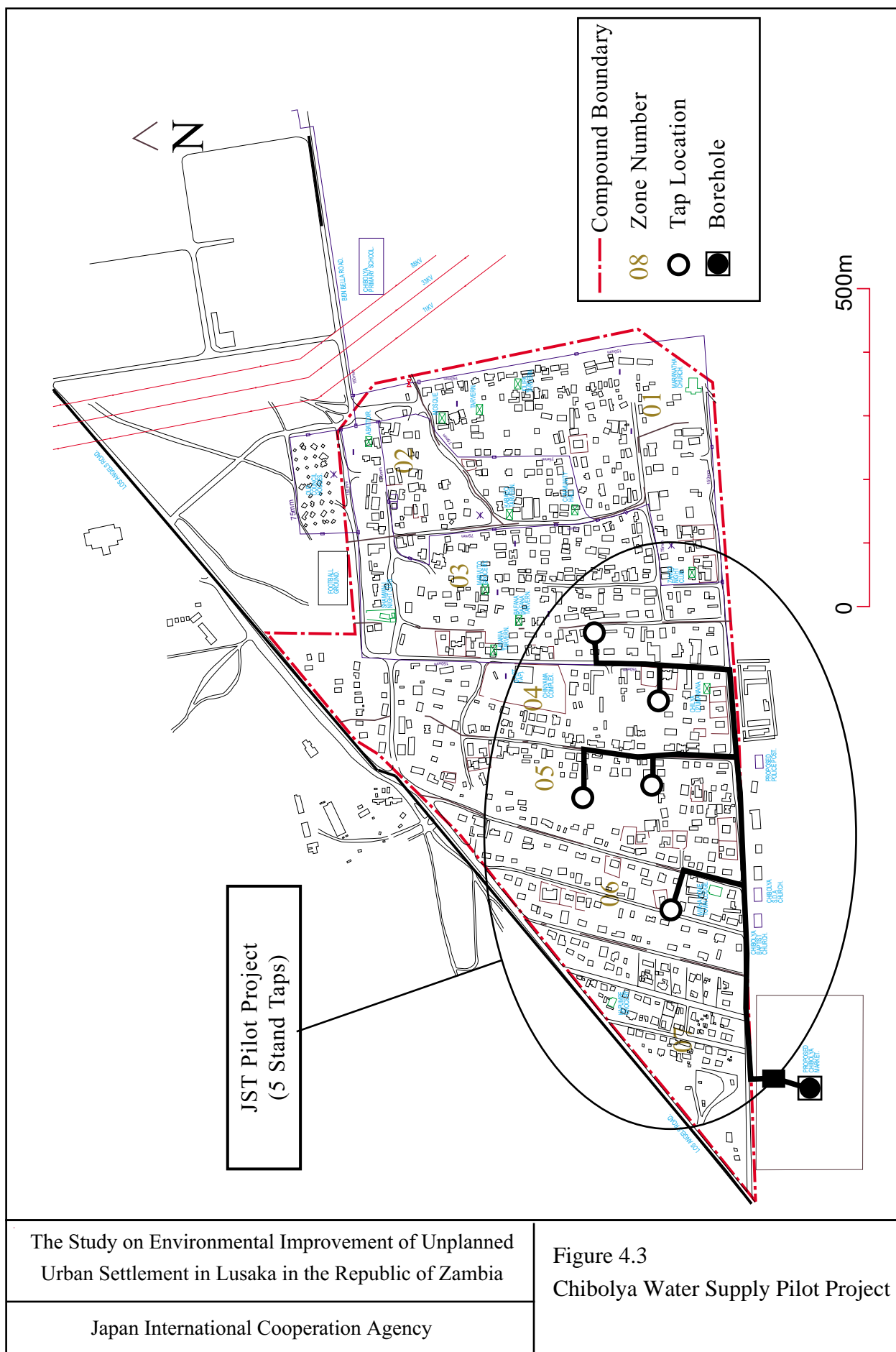
CARE PROSPECT also provided 10 half-days of ABO training and 3 days Participatory Learning and Action (PLA), and arranged an exchange visit to George compound.

(5) Cost Recovery System / Temporary Financial Management System

Since the completion date of the whole compound water system is not yet known, it was decided to make arrangements for a temporary system to operate for four months (December 2000 to March 2001). The following was agreed upon with CARE PROSPECT, JST, and the community:

- Payment method and water levies: Kwacha 3,500/household/month for 8 or 10 containers (20-liter) or Kwacha 50/container. All payments would be made in advance to a cashier at a cash collection point. User cards would be issued for monthly users and tickets to those who buy per container.
- Cashier: Suitably qualified person would be selected from the community and paid a minimum wage. Community to develop conditions of service and make selection with support of CARE PROSPECT and JST.
- Cash collection point: Fees would be collected at the taps by the TAs, who hold a receipt book and waist pouch to carry cash. The cashier would travel from tap to tap to collect cash at mid-day and again at closing hours in the evening. (CARE PROSPECT is funding the construction of a Community Office which will have an office for water scheme management.)

TAs are stationed at the four taps during operating hours to collect levies (Chibolya residents are in the habit of paying by container rather than a monthly fee), give receipts and oversee water collection. Key members of the RDC and WC have taken responsibility to ensure the smooth operation of the taps on a temporary basis. They are in close contact with CARE and LCC, and also visit the tap stands to oversee the work of the TAs and maintain contact with resident consumers. They are taking responsibility for security, banking, maintenance and following up on any issues that need addressing.



4.4.3 Road and Drainage Improvement Project in Ng'ombe

(1) Implementation Plan

From results of discussion with LCC, RDCs and residents of Ng'ombe, the following concepts and policies were decided to implement a pilot project for the improvement of road and drainage in Ng'ombe.

- Development of proper drainage,
- Rehabilitation of the existing surface condition,
- Implementation of the projects based on community participation,
- RDCs leading community participation activities,
- Executing of design and construction works by a contractor under supervision of the JICA Study Team and LCC.

The project plan was formulated in accordance with the framework shown in the table below. Location Map and typical cross section for the improvement of the road and drainage at Ng'ombe is illustrated in Figure 4.4.

Road and Drainage Improvement Pilot Project at Ng'ombe

Description	Contents
Target Road	Priority No.1 Road at Ng'ombe chosen by RDC
Road Length	Approximately 630m
Carriageway Width	4.0m
Proposed Total Width including open drainage	6.0m
Drainage Type	Open Drainage (sodding) both side
Pavement Type	Gravel Pavement
Control Point for the determination of the proposed alignment	Existing electricity poles and Houses (No house compensation and no relocation of public utilities)

(2) Community participation in road works

Community participation in the Ng'ombe road pilot project is summarized below.

Community Role in Road Works

Work	Community role
Clearing drains and cutting hedges	Voluntary labor provided by about 30 people (majority women) living along the road
Excavation of trenches	<ul style="list-style-type: none"> 20 – 53 laborers hired from community at minimum wage (majority women) Roads Committee (RC) Chairman was employed as supervisor of works Provided tools (on hired basis)
Installation of culverts	20 laborers hired by subcontractor
Gravel works	10 laborers hired to remove gravel from ditches (gravel was sprayed by grater)
Masonry works & stone pitching	By subcontractor RC learnt masonry works & stone pitching
Pedestrian crossing slabs (original batch)	<ul style="list-style-type: none"> Procured and delivered by contractor Community assisted the contractor with installation
Pedestrian crossing slabs (replacement)	Constructed by Roads Committee as training exercise with JST, LCC and subcontractor
Speed humps (4 total)	Built with RC as on-the-job training exercise carried out by contractor and LCC
Stone pitching and sodding of remaining drains	RDC carried out the work.

(3) Training provided under project

The following training was provided to the Ng'ombe community under the pilot project:

Type (provider)	Days	Participants	Purpose	Contents
Management (Local Consultant)	5	RDC and Roads Committee members (19)	Equip the RDC and roads committee with skills in leadership, planning and management	<ul style="list-style-type: none"> Sustainable community-based development Group dynamics Project planning and management Resource mobilization Financial management
Basic road maintenance (LCC Engineering Services Dept.)	2	RDC, Roads committee (15)	Provide participants with basic knowledge of structures, tools and maintenance activities used on roads	<ul style="list-style-type: none"> Introduction to basic road structures: purpose, defects & their causes Maintenance techniques for gravel roads (carriageway and drainage) Introduction to hand tools
Labour-based methods of gravel road construction and maintenance (LCC ESD)	2	RDC, Roads committee (15)	Same as above	<ul style="list-style-type: none"> Field trip to Linda compound to visit PUSH road project Definition of basic road infrastructure, common defects and maintenance techniques Labour-based reshaping Major reshaping and dragging Project organization
Road labour-intensive works (PUSH)	10	Roads committee (10)	Provide road committee members further practical training in community-based road construction	<ul style="list-style-type: none"> Measurements Setting-out and use of tools Stages in road construction Setting out of horizontal curves Vertical alignment Practice in road construction

(4) Roads Committee Management Plan

A Kwacha 500/household/month levy has been proposed by the RDC and Roads Committee to support road maintenance in the community. Collection has begun and Kwacha 160,000 was collected as of November 2000. The funds collected are being turned over to the RDC treasurer and when the amount is large enough an account will be opened. The RDC will keep a portion of the funds.

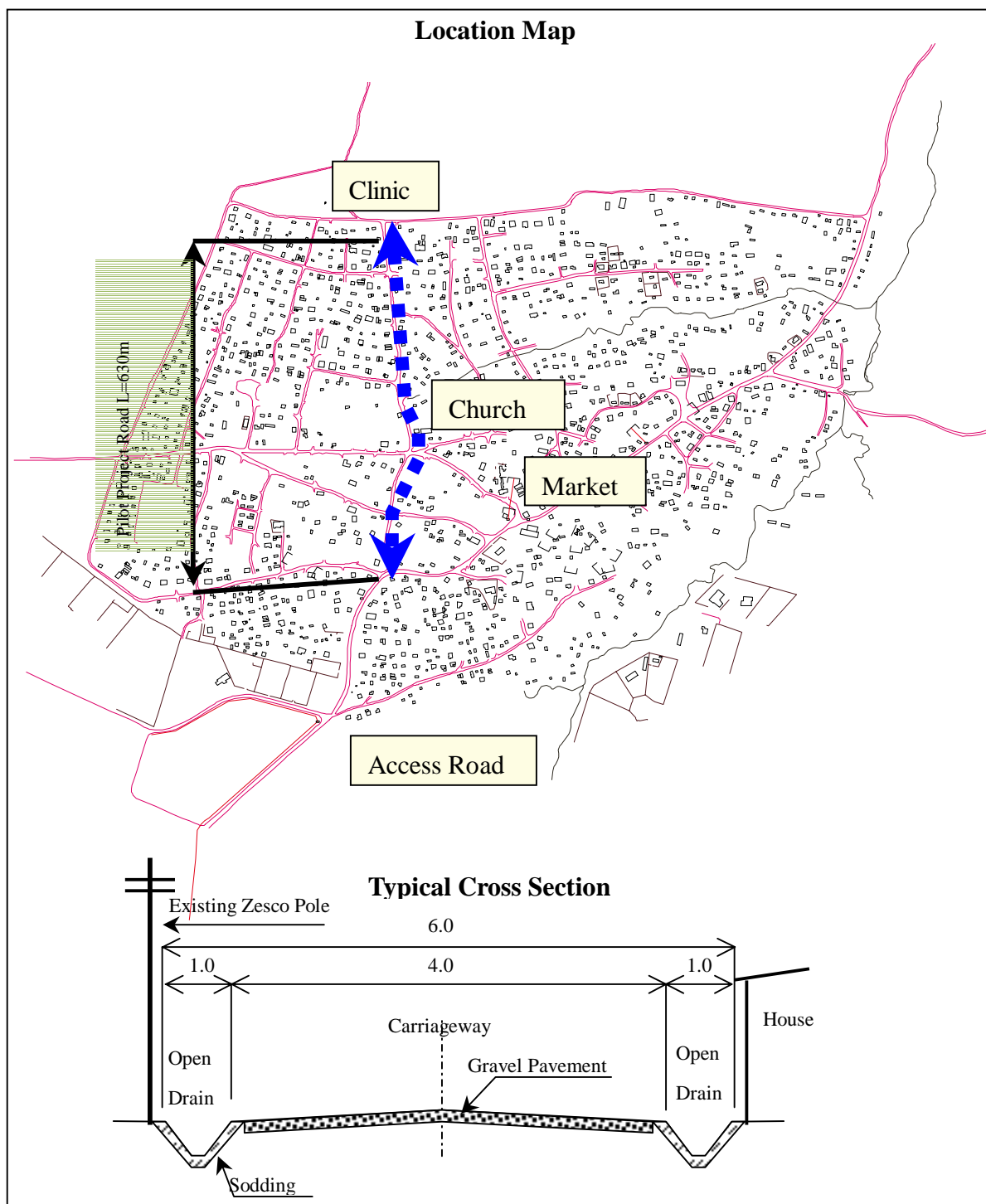


Figure 4.4 Location Map & Typical Cross Section

4.4.4 Health and Hygiene Conditions Improvement Projects in Bauleni and Chibolya

Health and Hygiene Conditions Improvement Projects (HHCIPs) in Bauleni and Chibolya conducted by JST were subcontracted to Africare (NGO). The pilot projects were divided into the following 3 components:

- Community-based Health and Hygiene Education in Chibolya and Bauleni
- School-based Health and Hygiene Education in Chibolya Middle School
- Home and Demonstrative Communal VIP Latrine in Bauleni and Chibolya

(1) Community-based Health and Hygiene Education in Chibolya and Bauleni

TOT (training of trainers) workshop

As the trainers would be the health educators for residents after the TOT workshop, the workshop was very significant.

Target	40 (20 from each settlement) members of the community (mainly those from initial targeted zones (Zone 8 and 13 for Bauleni and Zone 4 and 5 for Chibolya)) were targeted to become health educators.
Purpose	1) Acquire the knowledge of the transmission routes and prevention methods of water and sanitation related diseases so as to educate (train) others 2) Find the best methods of improving hygiene and sanitation in the community and come up with concrete solutions in a form of Work Plan
Facilitator	Africare staff, Health Center Staff (Bauleni and Kanyama) and health education staff at LCC (Department of Public Health)
Training contents (Key messages)	1) Identification of health problems in the community 2) Safe water supply (source of water, water handling, water storage) 3) Sanitation facilities (safe and sanitary latrine) 4) Personal and Environmental Hygiene (garbage, drainage) 5) Domestic and Food Hygiene (keeping domestic animals) 6) Participator Learning and Action and creating Work Plan
Form of training	<u>Days:</u> 7days Chibolya (December 16 th -24 th 1999), Bauleni (January 5 th -18 th 2000) <u>Time:</u> 8:30 (AM) - 16: 30 (PM) <u>Methods used:</u> lecture, group discussion, group exercise, community mapping

Note: NHC (neighborhood health committee)

Health Education Activities in the community

Major activities and verifiable indicators used and actually conducted in Chibolya and Bauleni are as below:

Activities	Indicators
1) Door-to-door health education	At least 25% of the targeted population in the targeted area in each settlement receive health educators' visit once or more
2) Drama performances to disseminate sanitation/hygiene messages	At least three drama performances in each settlement are performed

(2) School-based Health and Hygiene Education in Chibolya Middle School

Training workshop

Target	12 members (2 teachers, 1pupil and 9 members of the community)
Purpose	1) To equip the participants with knowledge on the basic WASHE (water and sanitation, health education) needs and the school health component 2) To analyze the present WASHE situation at the school 3) To equip participants with problem solving skills 4) To assist participants come up with a health/hygiene promotion Work Plan
Facilitator	Africare staff, CARE PROSPECT staff, Health Center Staff (Kanyama) and health education staff at LCC (Department of Public Health)
Training contents (Key messages)	1) Situation analysis to identification of health problems in the community 2) Safe water chain (source, collection & transportation, storage, treatment) 3) Sanitation facilities (safe and sanitary latrine) 7) Personal Hygiene (general care given to the body; hair, mouth, eyes etc.) 8) Environmental Hygiene (garbage, drainage, garbage) 9) Food Hygiene (safe food chain, or food hygiene) 10) Participator Learning and Action and Action Planning
Form of training	<u>Duration:</u> 3days Chibolya Middle School (May 19 th -21 st 2000) <u>Time:</u> 9:00AM-16: 30PM <u>Methods used:</u> lecture, participatory exercise, discussion

Activities

Since implementation period of this component was very short (2 months from middle of May, 2000 to middle of July, 2000), activities actually conducted were limited to the following items:

Activities	Indicators
1) Weekly meetings to monitor progress	Wednesday weekly meetings are held
2) Community mobilization	2 mobilization and sensitization meetings are held
3) Refuse disposal activities	2 refuse pits dug, 26 carton boxes sourced, 8 drums or bins sourced
4) Drama training	School drama group is trained for 3 sessions
5) Drama performances to disseminate sanitation/hygiene messages	2 performances done (at school and community)

(3) Home and Demonstrative Communal VIP Latrine Project

TOT (training of trainers)

Training for 20 (10 from each settlement) community based bricklayers, later named as LCG (latrine construction group), were conducted in combination with TOT for health educators. (First 5 days are joint session with health educators' training)

Target	20 (10 from each compound) members of the community (mainly those who have had bricklaying skills), not limited to those from targeted zones. Chibolya (4women, 6men), Bauleni (7women, 3men)
Purpose	1) Acquire the knowledge and skills to build good (safe and sanitary) latrine 2) Mobilize households acquire appropriate sanitary facilities
Facilitator	Africare staff (latrine technician)
Training contents	1) Features of a good pit latrine 2) Superstructure 3) Slab 4) Vent pipe 5) Siting of a latrine
Form of training	<u>Days:</u> 13days <u>Time:</u> 8:30 AM-16: 30 (PM) <u>Methods used:</u> lecture, group discussion, group exercise, practical

Activities

Breakdown of the activities done by the community (LCGs, RDC and beneficiaries) are summarized as below:

Building demonstration VIP latrines	In Chibolya and Bauleni, the project supplied all of the necessary materials to construct in total of 5 demonstration latrines (1 single and 2 double pit VIP latrines). Construction of the demonstration VIP latrines served as a valuable practical lesson for the bricklayers in residence who were able to construct these during the TOT.
Community sensitization	In Chibolya and Bauleni, LCGs and the RDC held the VIP latrine campaign within the communities. A door-to-door visit was undertaken with the combined efforts by the health educators whose role was to sensitize the community on the health benefits of the VIP and the expected contribution to be complimented by the beneficiaries.
Selection and agreement of beneficiaries	In Bauleni, the selection criteria for the beneficiaries are as below: 1) Permanent residents of the settlement 2) From the pilot zone areas, 3) Those who showed commitment to contribute and recommended by the RDC
Beneficiaries training	In Bauleni, on-site training was done to expose the beneficiaries to construction and maintenance skills during the construction of the pit latrines.
Procure/provide materials	Procurement of materials was done by Africare together with LCGs, and RDC was responsible for storing the building materials and issuing them to the Latrine Construction Group.
Construction	In Bauleni, the project provided the beneficiaries with 75% of the materials, such as cement, reinforcement wires and bars and fly screens, required to build the forty home latrines and two demonstration latrines. The beneficiary contributed the remaining 25% of the supplies needed in the form of labor, water, and sand. The number of targeted latrines to be constructed by the end of the pilot project was 2 demonstration latrines each in both Bauleni and Chibolya and 40 home latrines in the target zones of Bauleni.

4.4.5 Income Generating Project in Bauleni

(1) Organisations in Charge of Operation

A NGO, Association of Medical Doctors of Asia (AMDA) has assigned as an implementing agency. AMDA is responsible for the group formation, disbursement and management of loans, monitoring and evaluation. It is also a precondition that both LCC and RDC/CBOs are involved in the process of selection of beneficiaries, disbursement of loans, monitoring and evaluation.

(2) Process of Implementation

The project aimed at providing small loans, targeting women, adopting a group based lending system, mobilising small and frequent savings and setting interests for sustainable financial operation. Ninety-six beneficiaries were divided into two groups (Phase I & II groups). Each group has sub-groups that consist of five members with responsibility for lending, repayment and monitoring.

Criteria and Eligibility of Beneficiaries

AMDA gave guidance to RDC and the subcommittees on how criteria and eligibility of beneficiaries have to be set up. These include target group (women in Zone 8 & 13), business experience (type of business which is available in the community), income (low-income households), resident status (living in Bauleni more than 2 years), age (productive age) and negative record (no criminal and debt records).

Selection and Screening

RDC, ZDC and subcommittee (churches) cooperated to notice and advertise the induction of the project. The candidates having interest in the project submitted application forms together with references from RDC and Church members. About 100 people submitted applications in Phase I group, and 46 (50 in Phase II) were selected by strict screening. Leaders, secretary and treasurers were selected from each sub group (5 members) and these officers will be responsible for group operation.

Workshop and Development of Work Plan

After screening beneficiaries, two days workshops were conducted by AMDA in order to brief the objectives and principles of microfinance.

Business and financial Training

A credit officer in AMDA organised training to focus on business and financial management, community participation and mobilisation, group solidarity/responsibilities, and gender issues. The training has 12 sessions, which cover both theoretical lecture and group works.

Disbursement

After training was completed, all members were eligible to get loans. Loan ranged from Kwacha 200,000 to Kwacha 500,000 in Phase I, and Kwacha 300,000 in Phase II. As beneficiaries in Phase I complained the differentiated loan amounts,

Phase II was provided fixed amounts in order to avoid any frustration and sense of favouritism.

Reimbursement and Monitoring

After one month grace period, beneficiaries started to repay loans. Initially, each sub-group (leader) was required to be responsible for collection and repayment of loans.

Evaluation

The interim evaluation for Phase I was made in July by AMDA and beneficiaries. The final evaluation was conducted through individual interviews (household survey) by JST and AMDA and two-day evaluation workshops were organised by AMDA, groups of Phase I and II, LCC and JST when repayment due date came for Phase I. Following table shows the operation profile for Phase I & II.

Micro Finance Operation Profile

Number of Beneficiaries:	Phase I 46 (1 passed away) Phase II 50
Date of Disbursement:	Phase I 18 th February 2000 Phase II 16 th June 2000
Grace Period:	1 Month
Repayment Period:	32 Weeks
Loan Due Date	Phase I 4 th November 2000 Phase I 24 th February 2001
Range of Loans:	Kwacha 200,000 – Kwacha 500,000 (Phase I) Kwacha 300,000 (Phase II)
Amount of Loans:	Phase I Kwacha 17,915,000 Phase II Kwacha 15,000,000
Interest Rate:	10 %
Loan Insurance Fund:	5 % of Loans
Savings:	1 % of Loans on weekly basis
Training	12 sessions for 2 weeks before disbursement

4.4.6 Community School Project in Chibolya

(1) Organisations in Charge of Operation

The RDC, newly established Education Committee (EC) and PTA were supposed to contribute labour for construction and take responsibility for selection of pupils, teachers and school running. NGO (Challenge International Ministry: CIM) was appointed as an implementing agency in charge of delivery of construction materials, teachers training, and other supports regarding school management and running. LCC staff, a building manager and Community Development Officer (CDO) were also engaged in the supervision of construction and community mobilisation. Also the Ministry of Education and ZCSS (Zambian Community

School Secretariat) gave support by providing teacher training and textbooks and other technical guidance.

(2) Process of Community School Development

Organisational set-up for education and school development

Education Committee (EC) was set up in collaboration with RDC. EC play a main role in handling education issues in all community. EC and RDC selected PTA members which consisted of parents, teachers, RDC and EC Chairpersons.

Selection of pupils and teachers

EC and RDC first advertised the induction of the project and then the selection of children and teachers through posters and a loud speaker. 160 children were screened out according to the criteria (orphan, girls, and underprivileged). 6 teachers were also interviewed from many applicants in the community, and CIM and the community strictly examined their background (should have grade 12) for their appointment.

Teacher training

CIM in special cooperation with MOE provided teacher training. The courses covered 1-month of theoretical lectures and another 2 months of practical training in the Chibolya Basic School. As 2 teachers have dropped in midway, 4 have completed all required courses and now got qualification to teach.










Establishment of school management and running system


Basic ideas for school running were outlined in the Evaluation Workshop in November.

(3) Implementation

The following table shows the implementation work in the construction process.

Work Process (April – November 2000) of Chibolya Community School

Scope of Works	April	May	June	July	Aug	Sep	Oct	Nov
Formation of Education committee (New school)								
Selection of children (New school)								
Formation of PTA (New school)								
Development of Work Plan								
Selection of voluntary labours								
Selection of teachers								
Construction (School building, Security fence, VIP latrines, Water supply)								
Teachers' training								
Monitoring and Evaluation								

Monitoring 

Water Supply System Improvement Project in Bauleni



Tap Stand in Bauleni



Water Supply O/M Training
by LWSC



Water Tank of Pilot Project
in Bauleni

Water Supply System Improvement Project in Chibolya



Tap Stand in Chibolya



Water Tank of Pilot Project
in Chibolya



Water Meter installed on the Top of
Tap Stand, Chibolya

Road and Drainage Improvement Project in Ng'ombe



Ng'ombe Pilot Project of
Road Improvement



Stone Pitching in Drain of
Ng'ombe Pilot Project



Road Maintenance Training
in Ng'ombe

Health and Hygiene Conditions Improvement Projects in Bauleni and Chibolya



Women Bricklayer supervised by RDC member



Demonstrative Communal Double VIP Latrine in Chibolya



Health and Hygiene Education in Bauleni

Income Generating Project in Bauleni



Workshop for Microfinance



Tailoring



Weekly Repayment and Meetings

Community School Project in Chibolya



Construction Stage (July, 2000)



Community School in Chibolya



Classroom in the Chibolya Community School



Commissioning Ceremony in Bauleni (November 15, 2000)

4.5 Evaluation of Pilot Projects

(1) Evaluation Methodology

JST reviewed the pilot projects in terms of five evaluation criteria; “Efficiency”, “Effectiveness”, “Impact”, “Relevance” and “Sustainability. Evaluation exercises were carried out in October and November 2000 (July 2000 for Health and Hygiene Improvement Projects) in order to review the implementation process and assess results of the pilot projects.

Table 4.3 presents the indicators used to assess the five evaluation criteria in each project component. These indicators were developed for each of the five evaluation criteria and include indicators selected by the community for monitoring their project progress and those indicators described in the Project Design Matrix (PDM) prepared by JST at the beginning of the study.

Following methods of data collection and analysis were used in the evaluation:

- Analysis of community monitoring sheets, task force meeting minutes, and progress reports of subcontractors
- Focus group discussions
- Key Informant Interviews
- Structured interviews of beneficiaries (income generation and latrine projects)
- Participatory evaluation workshops (CAP workshop)
- Baseline/Post-project household surveys

Table 4.3 Evaluation Indicators used to Assess Five Evaluation Criteria in Each Project (1/2)

Project	Efficiency	Effectiveness	Impact	Relevance	Sustainability
Water	<ol style="list-style-type: none"> Community provides volunteer construction (skilled and unskilled) Training in O&M and financial management is sufficient, meets needs, and is cost efficient Water Committee (WC) is established under RDC according to schedule LCC/LWSC/JST/subcontractors/community collaborate to implement project Construction materials and technique are affordable, durable and appropriate 	<ol style="list-style-type: none"> Monthly monitoring is conducted by RDC/WC Simple maintenance is undertaken by community without external assistance Water supply system is managed by RDC/WC in collaboration with LCC There is no vandalism during and after construction Community is willing to pay water levy O&M system is developed and O&M resources (funds, technicians, tools) are provided 	<ol style="list-style-type: none"> RDC is better known in community due to project activities New RDC subcommittees are formed Politicians demonstrate support for RDC projects and activities Housing and population in the area of the water supply increases Daily water usage increases Distance to water source and collection time decrease Greater percentage of households have access to and use safe water supply Frequency of hand washing, bathing and laundry is increased 	<ol style="list-style-type: none"> Water supply meets priority need of community Project purpose is consistent with policies and strategies of MLGH/LCC/LWSC Project purpose and approach are consistent with other donors/NGOs Water infrastructure, water quality and service level meet LWSC standards 	<ol style="list-style-type: none"> RDC/WC are collecting and banking water levies (for recurrent costs, maintenance and capital replacement) Revenue collected is sufficient to cover expenses RDC/WC members are stable and understand and perform O&M roles Security system is established and functioning Tap Attendants are able and willing to carry out roles according to agreed upon conditions of service Water scheme managers have office/base to work from LCC/LWSC/Contractor/NGO provide necessary support to RDC/WC on technical, management and financial matters Necessary tools, backup spares and manuals are available for O&M
Road	<ol style="list-style-type: none"> Community provides volunteer labour for construction (skilled and unskilled) Training in O&M and financial management is sufficient, meets needs, and is cost efficient Road Committee (RC) is established under RDC Road and drainages are improved according to schedule LCC/JST/sub-contractors/community collaborate to implement project Construction materials and technique are affordable, durable and appropriate 	<ol style="list-style-type: none"> Monthly monitoring is conducted by RDC/RC Simple maintenance is undertaken by community without external assistance Road and drainages are managed by RDC/RC in collaboration with LCC There is no vandalism during and after construction Community is willing to pay road levy Garbage in ditch is properly disposed O&M system is developed and O&M resources (funds, technicians, tools) are provided 	<ol style="list-style-type: none"> RDC is better known in community due to project activities New RDC subcommittees are formed Politicians demonstrate support for RDC/RC projects and activities Access to community infrastructure and public transport is improved Business activities increase Sanitation is improved Traffic volume increases Vehicle speed and danger to pedestrians are increased 	<ol style="list-style-type: none"> Improved road meets one of priority needs of community Road meets expectations of community Project purpose is consistent with policies and strategies of MLGH and LCC Road project is integrated with other needs 	<ol style="list-style-type: none"> RDC/RC are collecting and banking road levies (for future maintenance expenses) Revenue collected is sufficient to cover expenses RDC/RC members are stable and understand and perform O&M roles Security system is established and functioning Community is willing to provide resources (money, tools, materials & labour) to maintain the road LCC officers provide on-going support
Community School	<ol style="list-style-type: none"> Material costs were cost effective than standard government school. Participation makes less labour cost. Construction materials are delivered on time. School facilities are built on time. Construction period is shorter than average school construction. 	<ol style="list-style-type: none"> Orphans, girls and underprivileged children are prioritised for enrolment Level of community participation in planning, construction process. Number of voluntary workers. Teachers' training is organised properly. 	<ol style="list-style-type: none"> Awareness of value and importance of education among community people. Number of children to be enrolled out of total out-of-school children. Community acquired enough skills of school construction. 	<ol style="list-style-type: none"> Meets the government policy of 'Education for All'. Match community's priority ranking in the survey. Meets the need of poor children and families. 	<ol style="list-style-type: none"> Organisational set-up (EC, PTA) to develop school School management and system are established. Enough capacity of PTA is foreseen Continuous support from experts, such as NGO, MOE and LCC.
Income Generation	<ol style="list-style-type: none"> High repayment rate. Low default rate. Low arrears rate. All operation and programs were completed on time. Loans amount is disbursed as planned 	<ol style="list-style-type: none"> Repayment rate reach 90% No misuse of loan fund. Proper and fair selection of beneficiaries. Group meeting is held every week. Beneficiaries follow constitution. Expenditure pattern is changed. 	<ol style="list-style-type: none"> Expenditure pattern is changed. Income is increased. Skills and knowledge of business and financial management are enhance. Beneficiaries feel more self-reliant and confidence. 	<ol style="list-style-type: none"> Match the national policy of 'poverty reduction' Meets the needs of poverty reduction in the community. Reach the poorest residents. 	<ol style="list-style-type: none"> Sustainability index Amount of revolving fund. Possibility of fund source from donors for next phase. Degree of group solidarity and responsibility. Group meeting on weekly basis. NGO can continuously provide financial and technical assistance.

Table 4.3 Evaluation Indicators used to Assess Five Evaluation Criteria in Each Project (2/2)

Project	Efficiency	Effectiveness	Impact	Relevance	Sustainability
Community-based Health and Hygiene Education	<ol style="list-style-type: none"> 1. A health educators group to facilitate the community health activities in place 2. Monthly progress monitoring is conducted by HEG and supervised by LCC 3. Monthly meetings are held independently by HEG/RDC 4. More than 25% of target population is covered under outreach household visits by HEG 5. Four health educational drama performances were conducted in the community 6. Satisfaction level on the course module (program) is more than 80% 7. Satisfaction level on the training manual (handouts) is more than 80% 8. Inputs are appropriate amount/quality 9. HEG members knowledge and skills are improved 	<ol style="list-style-type: none"> 1. Trained HEG members(20) continue working and dropouts are replaced 2. A workplan beyond the project period is developed and implemented by RDC/HEG 3. Door-to-door visits are continued by HEG after withdrawal of Africare 	<ol style="list-style-type: none"> 1. The model was applied to outside the target beneficiaries (other zones) 2. Health educators are empowered (respected by community/family) 3. Good cooperation between health educators& LCG to identify household who needs good VIP 4. HEG and NHC work hand in hand and it does not cause conflict 	<ol style="list-style-type: none"> 1. Project strategy is in line with current CBO (central board of health) policy on community volunteer 2. It satisfies needs felt not only by the community but also help community work done by the clinic 	<ol style="list-style-type: none"> 1. Incentive mechanism and operational cost for HEG to remain active is established 2. 80% of the trained HEGs continue educating the community 3. Active members to become health educators are reselected for expansion of the program
School-based Health and Hygiene Education	<ol style="list-style-type: none"> 1. A committee (composed of teachers, pupils and parents) to facilitate the school health activities in place 2. SHCC weekly meetings are held as scheduled 3. Satisfaction level on the course module (program) is more than 80% 4. Satisfaction level on the training manual (handouts) is more than 80% 5. Inputs are appropriate amount/quality 6. SHCC members knowledge and skills are improved 7. Two community mobilisation meetings were held as per planned 8. Two health educational drama performances were conducted in the school/community as per planned 	<ol style="list-style-type: none"> 1. Trained SHCC members(12 people) continue working and dropouts are replaced 2. A workplan for during and after the project period is developed and implemented by RDC/HEG 3. Health Education Activities are continued 	<ol style="list-style-type: none"> 1. The model was applicable to other schools 2. School and Community communication and collaboration is improved 3. SHCC and the community started communicating more and work hand in hand 	<ol style="list-style-type: none"> 1. The project strategy is in line with current MOE policy on child to child 2. It satisfies needs felt not only by the school but also assist work should be done by the clinic 	<ol style="list-style-type: none"> 1. Organizational income generating activities to generate operational cost for SHCC to remain active is established 2. Follow up action plan is made 3. Continuous follow up training and supervision is going to be held by CARE
Home/Demonstrative Communal VIP Latrine	<ol style="list-style-type: none"> 1. Forty-two(42)VIP latrines are installed as scheduled 2. Satisfaction level on the course module (program) is more than 80% 3. Satisfaction on the training manual (handouts) is more than 80% 4. 80% of the bricklayers (LCG; Latrine Construction Group) who received training remain active to build VIP latrines 5. Inputs are appropriate amount/quality 6. Input(construction materials) are provided at right timing 	<ol style="list-style-type: none"> 1. The strategy developed was acceptable to 80% of beneficiaries 2. Damage observed/reported on less than 20% of all VIP latrines installed by the community 3. Unsanitary conditions in less than 20% of all VIP latrines installed by the community 4. Utilization(or-willingness to use) of home VIP latrine is higher than 90% 	<ol style="list-style-type: none"> 1. The model is applied to outside the target beneficiaries 2. Value added houses are increased (+ impact for landlord) 3. Women bricklayers are empowered (generate income, respected by community/family) 4. Good cooperation between health educators& LCG to identify household who needs good VIP 	<ol style="list-style-type: none"> 1. The strategy is in line with current central and local government's policy on public health/water and sanitation 2. The model developed satisfies needs of the middle-high income family 3. The model developed satisfy needs of the low income family 	<ol style="list-style-type: none"> 1. LCGs continue building and training community for installation of VIP latrines in the community 2. LCG built organizational capacity 3. Supporting groups continue promoting VIP latrine and monitoring/supervision is properly implemented 4. Funding source for construction materials (50-80%range of the total cost) is ensured
Demonstrative Communal VIP Latrine	<ol style="list-style-type: none"> 1. Two VIP latrines (one double pit) are installed as scheduled at right site 2. Satisfaction level on the course module(program) is more than 80% 3. Satisfaction level on the training manual (handouts) is more than 80% 4. 80% of the bricklayers (LCG) remain active to build VIP latrines 5. Inputs are appropriate amount/quality 6. Input are provided at right timing 	<ol style="list-style-type: none"> 1. Damage is not observed on the communal demo VIP latrine installed 2. Unsanitary conditions not observed in the communal demo VIP latrine installed 3. Utilization of the communal demo VIP latrine is increased every month 	<ol style="list-style-type: none"> 1. The VIP latrine model is applied to outside the target beneficiaries 2. Bricklayers are empowered (generate income, respected by community/family) 3. Good cooperation between health educators & LCG to identify household who needs good VIP 4. The VIP latrine constructed is not vandalized 	<ol style="list-style-type: none"> 1. The strategy is in line with current central and local government's policy on public health/water and sanitation 2. The model developed satisfies needs of the community middle-high income family 	<ol style="list-style-type: none"> 1. LCGs continue building and training community for installation of VIP latrine technology 2. LCG is supervised by RDC and built organizational capacity 3. Supporting groups continue promoting VIP latrine and monitor/supervise the model is properly implemented 4. Funding source for construction materials for additional communal VIP latrines and home VIP latrines is determined 5. Additional communal latrine location is identified 6. Proposal for VIP latrine project in Chibolya is prepared

4.6 Evaluation and Lessons of Pilot Projects

The results of evaluation and lessons of the pilot projects are summarized below.

Evaluation & Lessons from Pilot Projects	
Water Supply	<ol style="list-style-type: none"> 1. Pilot scheme of Water supply system development by the community participation should be replicated to the other UUS. 2. Training of management skill and engineering skill should be carried out in the project. 3. Careful/detailed support should be inclusive in the project (soft component) for the operation and maintenance at the start-up stage. 4. Management system, especially including water levy collection system is important.
Road/Drainage Improvement	<ol style="list-style-type: none"> 1. Effect of road improvement in UUS is admixive in consideration of the extreme increase of traffic volume on the pilot road. Thus, trunk road improvement in UUS should be carried out paying due attention to following items. 2. CAP (Community Action Planning) Work Shop for project planning should be held more intensively than pilot project. Training of maintenance/ repairing skill for community is inevitable. 3. Design of the road improvement should be carefully discussed with the community considering the narrowness, needs of pedestrian deck, dust of gravel pavement, erosion of ditch, speed control, Crossing slab over ditch, etc.
Community Health Education School Health Education	<ol style="list-style-type: none"> 1. It is recommended that pilot program of health education of Bauleni/Chibolya should be replicated in the other UUSs. 2. Community health education as well as school based health education, which were verified effective for the sanitary and health improvement in UUS, should be carried out in line with development of water supply system, toilet improvement, and garbage disposal system. 3. In conjunction with school based health education, a sanitary facility improvement in school is necessary. 4. Seed money should be considered for Health Educator Group (HEG)'s sustainable activity.
Community/ Common Home VIP Latrine	<ol style="list-style-type: none"> 1. Needs for VIP (Ventilated Improved Pit) toilet was verified through the pilot project in Bauleni. 2. House owners took chance for upgrading of the house facility under the consultation with the tenants. 3. Only 10 VIP toilets were constructed in case of no subsidy in Chibolya. In this context, it can be said that replication of VIP toilet without subsidy is rather difficult. 4. Longer implementing period should be planned in consideration of management capacity of supervising organization and influence of rain for the action area plan. 5. Water quality contamination of existing shallow wells should be paid due attention.
Income Generation	<ol style="list-style-type: none"> 1. Lower repayment rate and insufficient revolving fund unveiled low efficiency and unsustainability. Also lack of group responsibilities could not achieve project purposes entirely. 2. However, impacts on beneficiaries are significant in terms of expenditure, skills & knowledge and self-reliance, and confidence. In response to the National goal and the community needs in poverty reduction, it is concluded that relevance is high. 3. As microfinance project should be evaluated for a long time, it is too early to evaluate whether the pilot project succeeded or not. It might be difficult to introduce microfinance immediately now in all areas unconditionally. After observing the results of Phase II in Bauleni, careful and long-term plans must be made only if there are high needs and strong feasibility for other communities, and NGOs to collaborate and availability of source of fund.
Community School	<ol style="list-style-type: none"> 1. Because this is the first RDC based community school, community voluntary labours were not so much promoted and inputs (costs) became less than planned. 2. However, SC in Chibolya was built and commissioned. RDC and PTA named the CS "Chibolya Community School". 3. Management/operation plan of Chibolya Community School was agreed among NGO (CIM) and RDC with PTA. Fund raising method for teachers salary, school text, consumable materials, etc. was also planned.
Others	<ol style="list-style-type: none"> 1. Community center including meeting room, RDC office, LCC site office, etc. are necessary for community management. Workshops for various kind of training for community empowerment will also be held in the community center. Levy collection office as well as sub-health center will be cooperatively developed. 2. Development of play garden and safety patrol system in UUSs are also strongly required by the community, though financial support of donors is difficult because of lower priority.

5. DEVELOPMENT GUIDELINES OF LIVING ENVIRONMENT IMPROVEMENT IN EIGHT UUS

5.1 Integrated Approach for Development in UUSs

Considering the complexity and diversity in UUSs, this Study discovered that the living standard in low-income settlements could not be improved unless Basic Human Needs (BHN) are ensured. BHN includes a set of potable water supply, sanitation, health, and basic education. Also, appropriate housing, other public services and support for economic promotion are precondition to enhance Quality of Life (QOL). As far as urban issues are concerned, these components should not be implemented separately, but rather in integrated way which may have a great impact if they have synergistic effect. Integrated approach is slightly different from multiple sector approach which often introduces and implements various types of projects separately under a wider theme such as city planning programme or regional development programme in order to achieve upgrading environmental conditions in the area as a whole, whereas integrated approach places great emphasis on how each project/sector under the programme (though it is not always programme approach) interacts with each other and creates several impacts by ‘integrating’ several components together. For example, water supply can be more effective and sustainable if a sanitation system (toilet facilities) and hygiene education can be provided at the same time. School is a place not only for basic education but also for awareness raising of health and sanitation for children and the entire community. Promoting economic activities enables people to pay the cost recovery of public services such as water supply or garbage collection so that sustainable community managed services can be ensured. Figure 5.1 schematically explains the interaction among different projects and the expected effects by integrating those projects in urban settlements.

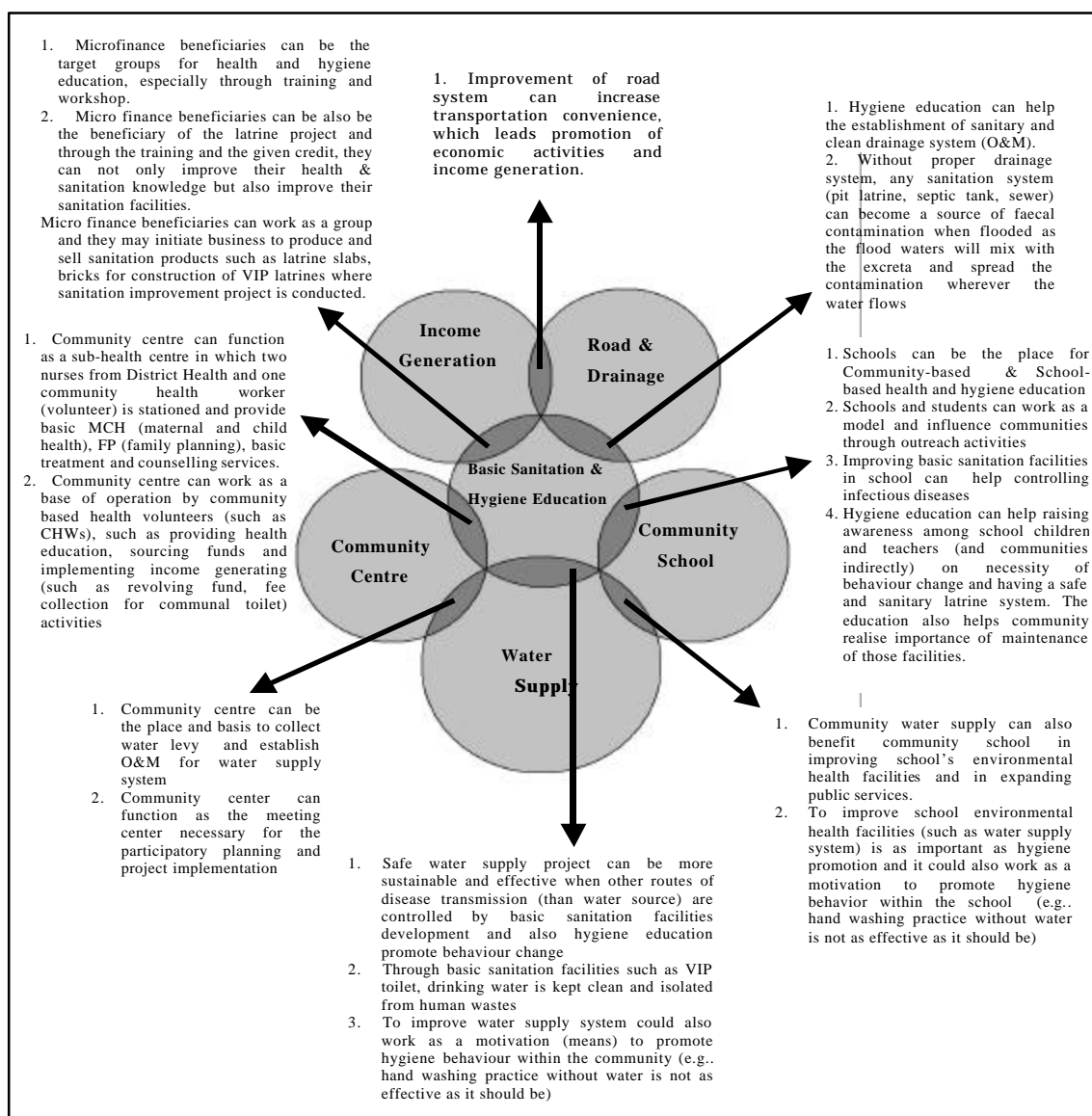


Figure 5.1 Synergic Effects by Integrated Approach

5.2 Priority Areas

In view of this, JST recommends that water supply with hygiene education is the most important and prioritised need followed by basic education for unprivileged out-of-school children.

Figure 5.2 shows the integrated approach and priority settings in the Action Area Plan.

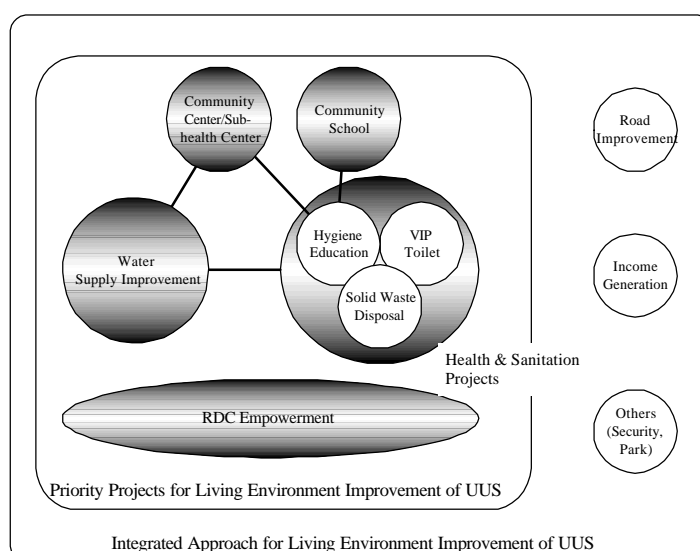


Figure 5.2 Integrated Approach and Priority Settings in the Action Area Plan

5.3 Community Participation and Capacity Building

(1) Community Participation

Community participation is a focal point to facilitate sustainable urban development. The key concepts of community participation involve ***Institutionalisation***, and ***Contribution***. These concepts are the determinants for active community participation and mobilisation in projects of urban settlements.

Institutionalisation aims at establishment of appropriate organisational structure in a community to implement a project and to sustain services in the long term. Community Based Organisations (CBOs) are community institutions to address people's problems and needs and set up goals collectively. Where there are no such community organisations, it is prerequisite to set up organisational structure before the Action Area Plans are launched to facilitate project implementation and sustain community managed services.

Contribution includes labour, time, materials, and cash provided by community people. Active community participation was demonstrated in the pilot projects. Besides labour and time contributions in the water and road projects, most of the beneficiaries of VIP Toilet project in Bauleni were able and willing to contribute construction materials together with skilled and unskilled voluntary labour.

Although the idea of contribution on a voluntary basis seems to be a universal principle in the context of community participation, it is a controversial topic at the same time and is indeed difficult to realise where community spirit is low and poverty is severe.

The key question is whether labour should be paid. Or it should be clarified who can be paid or cannot be paid and in what situations. The Study (pilot projects) recognised that particular people who were responsible for sustainable management of the project by dedicating their time, all day every day, needed to be provided a decent allowance. For management of community-based facilities, for example, the workforce will be more sustainable if provided with income or incentives for tasks such as Water Tap Attendants, Water Charge Collectors, Voluntary Health Educators, Bricklayers, Plumber, or Security Guards rather than being expected to work on a voluntary basis.

(2) Capacity Building

Capacity building implies organisational and technical support to enhance the capacity of community to operate infrastructure services and manage sustainable development. For instance, training and awareness building activities and low-cost technical development that can be sustained by community and LCC are part of capacity building. Establishment of systems and procedures concerning accountability of CBOs to community residents or cost recovery system for water supply, are also part of capacity building. In this regard, broad based skill and awareness development can give a great benefit for sustainable development.

Physical, material, and knowledge capacities include skill development and technologies of water supply, sanitation facilities and other infrastructure works. The training for those skills is developed through training and technical support by experts, LCC and relevant technical ministries. This type of training encourages the process of 'learning by doing'.

Knowledge capacities include financial management, accounting skills record keeping when projects need to collect cost recoveries and to secure funds.

Also, specific knowledge of health and sanitation/hygiene emphasises awareness building and changes of attitudes and practices, and training of teachers is of crucial importance in ensuring high quality of education.

Social and organisational capacities refer to community structure and system through which people make decisions, establish leadership, solving problems, or organise various social and economic activities. Having these capacities enable people to operate and manage their facilities and sustain community-managed services in the long term.

Social and organisational capacity building primarily focuses on training in the areas of leadership skills, community organisation and management, decision-making,

monitoring & evaluation, problem-solving, gender awareness, participatory development and so on. Community leaders are expected to be more accountable and transparent to residents through training.

Strengthening LCC is also crucially important. LCC plays an important role to support communities in terms of technical/engineering training and community mobilisation. Particularly, Community Development Officers (CDOs) are expected to be the key persons to enhance community's capacities, oversee all projects and coordinate relevant agencies/organisations on daily basis. For LCC staff, training in the area of institutional management, participatory methodology and proposal writing and community based monitoring and evaluation should be arranged regularly whenever new projects are planned and introduced in order to strengthen their capacities and achieve smooth project implementation.

5.4 Promoting Partnership

Partnership among all stakeholders is a key notion in the future of development in low-income urban settlements where participatory approach is concerned. Partnership concepts need to be at the forefront in designing community-managed services. All partners concerned should be fully engaged in partnership in ways which policy dialogue and participation process are endorsed.

Partnership means policy dialogue and communication beyond one particular partner alone. The partners involved should include not only communities and LCC, MLGH, but also interested NGOs, other related government ministries or expertise and both bilateral and multilateral donors.

Specifically, the Forum for UUS among the governments, donors and NGO must be regularly organised by the Housing Department in LCC.

Responsibilities and Contributions of Each Stakeholder

Stakeholder	Responsibilities and Contributions
Community	Participation and Contribution (Time, Labour, Skills, Meeting, Materials, Money), Monitoring & evaluation
LCC	Coordination role among all stakeholders, Human resource development, Technical advice, Training, RDC/CBOs formation, Linkage between community and donors, Infrastructure and land allocation, Monitoring and evaluation
MLGH	Agreement between donors and ministry, Policy guidelines, Coordinate and liaise between line ministries
Line Ministries and Related Organisations *	Technical advice, Policy guidance, Human resource development, Training, Monitoring and evaluation
NGOs	Project implementation, Training, Consultation on specific and technical issues, Community mobilisation, Sensitisation, Monitoring and evaluation, Advocacy
Donors	Financial cooperation, Coordination with LCC, MLGH and other line ministries, Monitoring and evaluation

* Line ministries and related organisations refer to the Ministry of Health, the Ministry of Education and Lusaka Water and Sewerage Company.