Chapter 1 Overview

1.1 Background

"It is anticipated that approximately 3.5 billion people, which corresponds almost half of the total population of all over the world, will face serious water shortage in the year 2025", the UN Secretary General warned in his report on the water resources development, which was prepared for World Summit on Sustainable Development (WSSD) held in South Africa in August and September 2002.

The situation of water shortage is very critical in African countries, which have rapid population growth and urbanization. According to the World Health Organization (WHO), only 60% of the populations in the African countries have access to "safe water supply", which is much lower than the world average of 80%.

One of the biggest problems regarding water supply in African countries is the fact that the governments of these countries have limited incentives or resources to launch even small-scale water supply projects. The water supply problem is not only caused by limited water resources, but also by the facts that some government has not adequate financial, institutional and human resources to launch the appropriate water supply projects even though it recognises the need. As a result, most of the populations have been forced to drink unsanitary water. Therefore to ensure the safe water supply and improve the hygiene situation is a very critical challenge in order to address poverty alleviation in African countries.

The Government of Japan (GOJ) has promoted its official development assistance (ODA) in African countries giving top priority to the water supply sector in order to contribute to addressing basic human needs, improvement of living and hygiene conditions and poverty reduction. GOJ has implemented 1,347 projects[1] in the water supply sector since the year 1974. This is one third of all of Japan's ODA projects. In the action plan of the TICAD II (Tokyo International Conference on African Development II), GOJ officially announced that it would provide 90 billion yen for the African countries to improve their education, health and water supply sectors during the 5 years from 1998 to 2003. GOJ has contributed 53.1

[1] 1,347projects include development studies, project-type technical cooperation and grant aid projects.

billion yen up to the end of September 2001.

GOJ has conducted grant aid projects for construction of water supply facilities as well as technical assistance projects for institutional strengthening and awareness improvement among community members. The volume of input of Japan's ODA to the water supply sector in African countries is huge and, at the same time, the effectiveness and impact created by it are also substantial based on the number of beneficiaries and sustainable project operation bodies formulated through Japan's assistance in many of the African countries.

GOJ, as one of the leading international development partners in the water supply sector in Africa, organized "The Third World Water Forum" and "TICAD III" in Japan in the year 2003, both of which are important international conferences that aim at sustainable development in the water resources and poverty reduction sectors in African countries.

In the Third World Water Forum, which was held in Kyoto, Shiga and Osaka in March 2003, a "World Water Action Plan Paper" was prepared in order to realise "The World Water Vision" formulated in the Second Forum in Holland in 2000. The World Water Vision stresses the importance of "integrated water resources management" in sustainable development of the water resources sector. Having the slogan of "making water everybody's business", the Vision has four goals: a) equal provision with capacity and power for decision making on how to utilize water resources given to both genders and all community members; b) increase of crop productivity and production volume per drop of water; and c) preservation of biodiversity through appropriate water resources management.

Taking into account the importance of integrated water resources management, Japan International Cooperation Agency (JICA) has promoted water supply projects through integrated approaches that include not only facilities construction and procurement of equipment and materials, but also institutional strengthening and capacity building. These approaches are expected to lead to the establishment of a sustainable system of water resources development and a well organized water supply and management system in target areas. They will contribute also to increased awareness of community members, enhancement of their ownership, improvement of hygiene and living conditions, reduction of morbidity of communicable diseases etc.

A sustainable development system created through water supply projects

might function as "an effective entry point" for poverty reduction challenges in the communities. Changes of behaviour or attitude of community members, such as active participation in income generation activities through micro credit and/or NGO projects and community collaboration for health and basic education improvement, can be brought about as a result of the successful integrated approaches of water supply projects.

To prepare for the World Water Forum and TICAD III, JICA decided to conduct a thematic evaluation study on "Water and Poverty in Africa" (hereinafter, refer to as the Study) from October 2002 to evaluate their challenges and performances in the water supply sector in African countries and then to clarify the right direction of future collaboration based on lessons learned.

1.2 Evaluation Framework

The Study was conducted according to the evaluation framework shown below:

1.2.1 Objectives

The Study had the following objectives:

Through conducting an ex-post evaluation of JICA-supported projects and programs related to water supply development and targeting the poor in African countries, the Study is to a) review the effectiveness of applying the "integrated approach" and "sector-wide approach" in the water supply sector, and b) obtain the lessons and recommendations that could be expected to contribute to the improvement of future project formulation and planning activities.

In this Study, "integrated approach" means adopting multiple projects of various sectors related to water supply, such as education, health and sanitation, and income generation. "Sector-wide approach" means adopting multiple projects in the water supply sector only; such as construction of water supply facilities, community awareness, institutional strengthening, hygiene education etc.

1.2.2 Strategies

The Study applied the following strategies to attain the objectives

mentioned above:

(1) To take the evaluation methods and analysis viewpoints of "program evaluation" instead of evaluating the performance of individual projects;

(2) To choose groups of JICA-supported projects and activities that were implemented in a similar period, covered the same target area and shared the overall goals, i.e., they constitute a "quasi integrated approach". This is because only a limited number of challenges had so far been implemented as a JICA-supported program;

(3) To include data collection activities through participatory learning and action (PLA) tools to understand the views and comments of community members who were the main beneficiaries of the target approaches; and

(4) To feed the results of the Study back to not only the related agencies in Japan but also to the key agencies of the counterpart countries of the Study.

1.2.3 Target Area

Zambia and Zimbabwe were selected as target countries for the Study. The selection criteria of the target countries were as follows:

(1) Countries that have a higher poverty rate among the Sub-Saharan countries.

(2) Countries that face serious water-shortages and complicated problems partly or mainly caused by difficulties in providing safe water supply, such as high morbidity from water-born communicable diseases, poor hygiene, limited maternal and child health care, poor accessto primary schools, etc.

(3) Countries that are high priority recipients of Japan's ODA to Africa as well as the DAC new development strategies.

(4) Countries that address poverty problems in isolated villages and in highly populated semi-urban areas, which are considered as typical settings for poverty in African countries.

(5) Countries where JICA has delivered aid with an integrated approach and/or sector-wide approach.

(6) Countries that promote decentralization policies; where water supply projects are conducted by local government and communities.

1.2.4 Target Projects/Programmes

The projects and/or programmes related to water supply were considered as an integrated approach to be evaluated in the Study.

In Zimbabwe, "Binga District Rural Water Supply Project" was selected as the target project. The project included awareness campaigns for community members and formulation of water point committees for O&M as well as construction of boreholes as described in 3.1.1.

In Zambia, "Water Supply Project in Satellite Area of Lusaka", "Lusaka District Primary Health Care Project" and "George Community Empowerment Programme" were considered as an integrated programme because of their correlation and selected as the target programme to be evaluated. These three projects included pilot activities of primary health care and participatory water supply to enhance sustainability of water supply facilities construction project as described in 3.1.1.

1.2.5 Evaluation Questions

The evaluation questions and the sub-questions of the Study were as follows:

Evaluation Questions:

In the Sub-Saharan countries, have the integrated approaches and the sector-wide approaches been more effective to realise sustainable safe water supply systems for the poor population when compared with the traditional engineering oriented approaches?

Sub-questions:

(1) How does an integrated approach and/or sector-wide approach need to be designed and implemented in order to contribute to the "realization of sustainable safe water supply" in the Sub-Saharan countries more efficiently and effectively?

(2) How does an integrated approach and/or sector-wide approach need to be designed and implemented in order to ensure that its impacts attain

and enhance the overall goals such as living condition improvement among poor families, poverty reduction etc. regarding water supply projects as entry points of capacity building for community development?

(3) What are the required or desirable social and economic conditions of recipient country governments and/or communities to ensure that an integrated approaches or sector-wide approaches will function effectively for the poor population of an African country?

1.2.6 Evaluation Steps

The steps used in the Study to evaluate the two different approaches are shown in Figure-1.

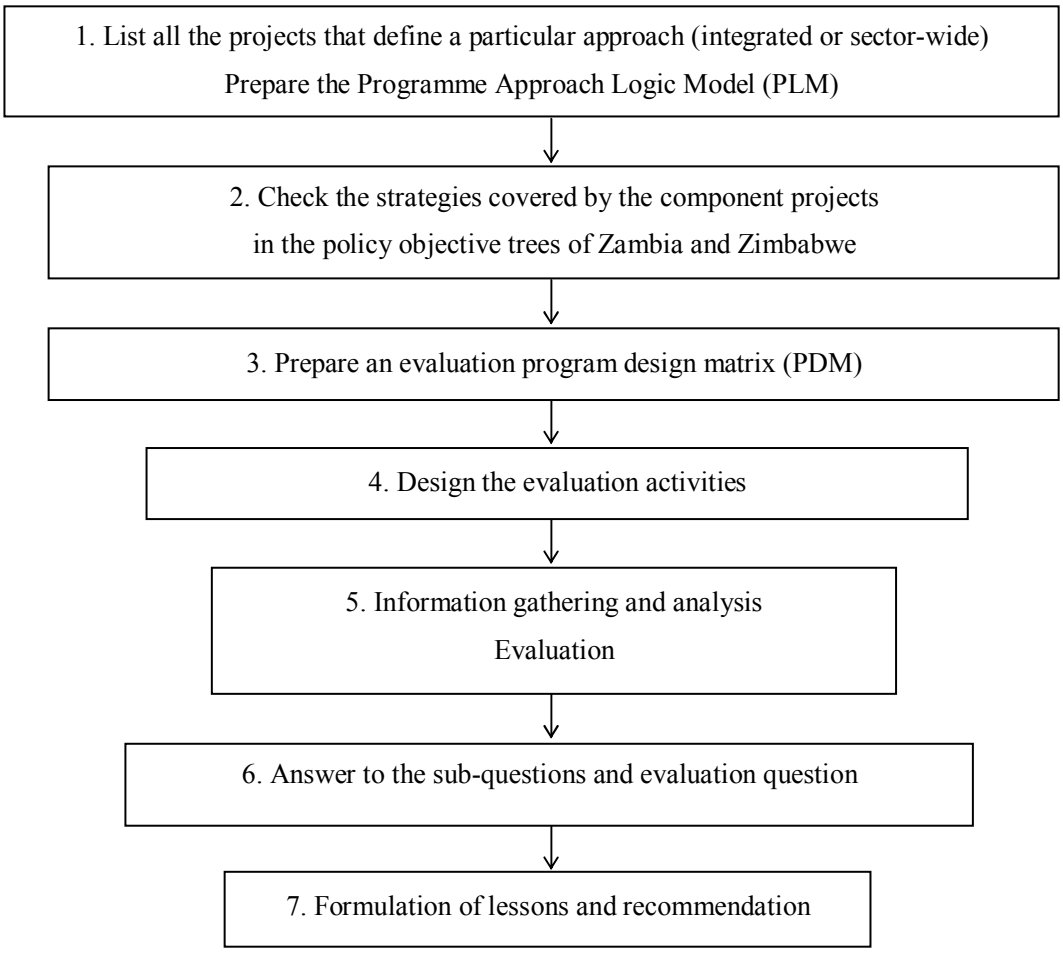

Figure-1 Evaluation Steps Used

1.3 Evaluation Team and Survey Schedule

1.3.1 Evaluation Team

Members of evaluation team were as follows.

	Name	Organization	Period	Country
Team Leader/ Social Impact Analysis	Masami Watanabe	KRI International Corp.	10 Nov.2002 to 19 December 2002	Zimbabwe, Zambia
Water Supply/ Social Impact Analysis	Mikiko Azuma	KRI International Corp. (Japan Techno Co., Ltd.)	10 Nov.2002 to 19 December 2002	Zimbabwe, Zambia
Methodology for Evaluation	Yoko Ishida	KRI International Corp.		
Supervisor	Kaoru Suzuki	Japan International Cooperation Agency	10 Nov.2002 to 20 November 2002	Zimbabwe
Supervisor	Nobuko Nakamura	Japan International Cooperation Agency	30 Nov.2002 to 17 December 2002	Zambia

1.3.2 Survey Schedule

The schedule of the Study was as follows. Detailed field survey schedule is shown in Appendix 2.1.

(1) 1st Activities in Japan **(October - November, 2002)**	Preparation and Information Gathering: a. Preparation of Inception Report b. Formulation of the Evaluation PDM (Project Design Matrix) c. Preparation of the Evaluation Grid d. Information gathering in Japan e. Preparation of the 1st visit to Zimbabwe and Zambia

↓

(2) 1st Visit to Zimbabwe and Zambia **(November to December, 2002)**	Data Collection and Workshops: a. Explanation and discussion with the Governments of Zimbabwe and Zambia b. Preparation of Participatory Rural Appraisal (PRA) workshops c. Preparation of questionnaire survey d. Collection and sorting of questionnaire forms e. Implementation of PRA workshops f. Discussion with the Government of Zimbabwe and Zambia

↓

(3) 2nd Activities in Japan **(December 2002 - January 2003)**	Analysis and Report Preparation: a. Data analysis and evaluation b. Preparation of Progress Report c. Production of Final Report

↓

(4) Evaluation Seminars **(tentatively; May 2003)**	Dissemination of Evaluation Results a. Preparation of evaluation seminars b. Evaluation seminar in Zambia and Zimbabwe c. Evaluation seminar in Japan d. Preparation of Seminar Report

1.3.3 List of Interviewees

List of interviewees in field survey is shown in Appendix 2.2.

Chapter 2 Overview of the Target Countries

2.1 Zimbabwe

2.1.1 Socio-economic Conditions

Before independence, Zimbabwe had two social and economic structures: one, a mass of black subsistence farmers who lived on poor land in an unfavourable natural environment; and the other, a small number of white Zimbabweans who were in managerial positions in the mining sector or who had large commercial farms and ranches benefiting from fertile land. Urban areas were also divided: the majority of black people living in densely populated areas where social infrastructure was not developed, while white people lived in spacious residential areas with well-provided social infrastructures.

Zimbabwe won independence from Britain in 1980. Despite the above mentioned socio-economic background, the country was rich in mineral resources such as gold, nickel, coal, etc., and its basic infrastructure was well developed compared to neighbouring countries and the country had relatively balanced industries including agriculture, manufacturing and mining, therefore it had better potential for economic development than most other Sub-Saharan countries. Since independence, without seeking violent repatriation of the white population, Zimbabwe sought economic development under moderate socialism, addressing social imbalances by promoting education and health services for the majority of the people.

However, a financial imbalance started to occur in the mid-1980s and economic growth slowed down. In the 1990s the economic growth rate sank lower than 2%, which was lower than the population growth rate. Supported by the World Bank and IMF, the Government introduced the Economic Structural Adjustment Programme (ESAP 1991-1995), which included relaxation of trade and price controls, privatization of national enterprises and various deregulations, and shifted the policy from the controlled economy of the 1980s towards a free economy. Since then, the Government has continued to promote deregulation, price liberalization and privatization in line with the structural policy, endorsing the Second Economic Structural Adjustment Plan, Zimbabwe Programme for Economic and Social Transformation (ZIMPREST 1996-2000). ZIMPREST aimed at reducing the rate of financial deficit to GDP from 10% to 5%, and

achieving 6% average annual GDP growth rate from 1996-2000.

In March 1992, a Land Acquisition Act was adopted to provide for the acquisition of land owned by commercial white farmers. But the progress of the land redistribution was very slow partly because the Act was opposed by the commercial farmers' union composed of large-scale white farmers and the Government did not have adequate resources and the budget was not adequate to purchase the land. Since February 2000, occupation of white-owned farms by war veterans started taking place.

Since 1998, Zimbabwe's economy has been deteriorating with sudden depreciation of the local currency and a lack of foreign currency, which has lead to shortages of fuel, a high inflation rate and worsening unemployment as well as political and social unrest and tension with the international community caused by disagreement on land reform. Although the Government tries to promote economic recovery measures endorsing the Millennium Economic Recovery Program (MERP), this does not seem to have been very successful.

The socio-economic indicators of Zimbabwe are summarized as in Table 2-1.

Table 2-1 Socio-economic indicators in Zimbabwe (1999)

Population (thousand persons)	11,904
GNP (million US$)	6,302
GNP per capita (US$)	530
Rate of the population whose daily income is lower than US$1.00	36% (1990-91)
Life expectancy (year)	40
Infant mortality rate (per 1000 births)	70
Maternal mortality rate (per 100,000 births)	400 (1990-99)
Adult illiteracy rate	Male: 8% Female: 16%
Net enrolment rate of primary education	——
Rate of the population who have access to safe water	85%

("ODA Data Book", 2001, Ministry of Foreign Affairs, Japan)

2.1.2 Poverty Reduction Strategy

The Government introduced the Poverty Alleviation Action Plan in 1995. As part of this plan the Poverty Assessment Survey Study (PASS) was presented in 1998. According to the study 61% of the population was living below the poverty line. In the urban area the proportion below the poverty line was less than 39%, while in the rural area 75% were living below the total consumption poverty line (TCPL). It was found that 84% of the people

living in communal areas, 70% in resettlement areas and small-scale commercial farms, and 57% in large-scale commercial farms were living below the line. While 40% of male-headed households were living below the food poverty line (FPL), in female-headed households (31 % of all the households) it was 57%. In Binga District, 92% of the people were found to be living below the total consumption poverty line (TCPL), which was the worst in the country.

The Poverty Alleviation Action Plan is a comprehensive poverty alleviation plan including a variety of components. The Plan targets the following 4 sectors:

1) Community Development (community based poverty alleviation projects, training and capacity building, labour-intensive public works, livelihood improvement targeting women and young generations);
2) Development of small-scale enterprises and the informal sector;
3) Poverty evaluation and monitoring; and
4) Social Safety Net (health, education and food security)

Although some Government officials are interested in the introduction of a PRSP (Poverty Reduction Strategic Paper), the World Bank has not assisted arguing that the country's macro-economic prospects are unclear.

2.1. 3 International Assistance

(1) Japan's ODA

Considering Zimbabwe's efforts towards democratization, economic structural adjustment reforms and its ownership in development, Japan has considered the country to be one of the priority countries in Africa. Japan has promoted assistance in such sectors as food aid and increasing food production as well as in providing basic human needs and basic infrastructure.

The Japanese Government has set the following as priority sectors: 1) provision of industrial development linked to income generation; 2) health and medicine; 3) agricultural development in communal and resettlement areas; and 4) environmental conservation including water. This prioritization was based on studies on the current situation and major issues in development, Zimbabwe's development plans and policy dialogues between the Zimbabweans and the comprehensive economic

cooperation mission dispatched in January 1998 as well as the fact that Zimbabwe is one of the DAC's new development strategic priority countries. JICA also sets the above four sectors as priority sectors.

Among the above four priority sectors, water supply projects come under the fourth, environmental conservation including water. Following the policy of DAC's new development strategy and TICAD II, sustainable environment management was given high priority, including protection from desertification and land degradation, forest resource management, and protection of bio-diversity. Among other things, assistance will be given to put the Zimbabwe Environment Action Plan into effect and to secure water resources in both urban and rural areas.

JICA positions assistance to water supply provisions in Zimbabwe as described in the program tree below. The Binga District Rural Water Supply Project (1997-1999) is the only water supply project that has been conducted in Zimbabwe by the Japanese Government since 1996.

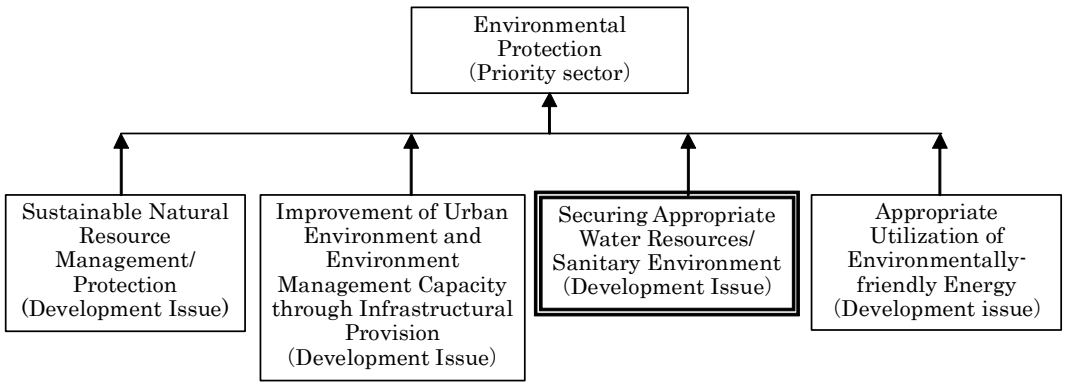

Figure2-1 Programme Tree in Environmental Protection in Zimbabwe

(2) Other International Development Partners

There has been mixed reactions by International Development Partners to the political development in Zimbabwe. While some have reduced the amount of assistance, others have withdrawn altogether, and yet others have continued with support in selected areas only such as humanitarian aid.

2.1.4 Development Issues in Water Supply Improvement

The Ministry of Local Government and National Housing and the Ministry of Local Resources and Water Development have been promoting sanitary education and water supply in rural areas for over 10 years. As provision of safe water is a prerequisite for resettlement, water supply projects are

urgently needed for smooth implementation of the Land Reform Programme. The Integrated Rural Water Supply and Sanitation Programme (IRWSSP) has been implemented since 1987. In 2002, the water coverage rate in rural areas was 80%, which was a large increased from the previous 25%. However, it is expected that the coverage rate might have decreased recently due to the increase in the number of areas requiring water supply services under the resettlement programme.

In 1998 the new Water Act was put into effect and subsequently became an establishment of the Zimbabwe National Water Authority (ZINWA), which operates water resources development and water supply services on a commercial basis. The catchment committees, formed in each of the seven river basins, are given authority to issue water permits to water users. As for rural water supply, ZINWA and District Development Fund (DDF) are in charge of borehole construction, while beneficiary communities are responsible for operation and maintenance of the facilities, including collecting maintenance fees, based on the Community Based Management (CBM) system under the support of the Rural District Council (RDC).

2.2 Zambia

2.2.1 Socio-economic Conditions

In 1991, an election was held under the multi-party system in Zambia. Mr. Chiluba, the party leader of MMD won the presidential election over President Kaunda and MMD won the parliamentary election over UPND led by President Kaunda. The election was regarded as a successful example of democratization in Africa as the election and subsequent political power shift took place smoothly without any disorder.

As for the Zambian economy, as a result of the introduction of the Structural Adjustment Programme (SAP) by the Chiluba administration, some macro-economic indicators were improved, such as the reduction in financial deficit and stabilization of inflation. The Government is trying to diversify industries including agriculture, and has increased the export ratio of non-traditional goods to all exports, which reflected the past mono-cultural economy depending largely on copper. However, there are many issues still to be tackled such as the fall in social indicators due to the introduction of SAP and the state of severe poverty, especially in rural areas. GNP per capita amounts to USD 370 (1997), which is far below the average figure of Sub-Saharan African countries (USD 500). Furthermore,

as the average annual GDP growth between 1990 and 1997 was only 1.0% while the population growth rate was 1.2 %, the real GDP per capita has been decreasing.

The sale of the Zambian Copper Authority was concluded in March 2000, and the increase in production, employment and re-vitalization of the mining industry are expected through the future capital injection. The economic growth rate in 2000 was 3.5 %, which suggests some recovery.

Zambia is a country where the urbanization rate is very high compared with other Sub-Saharan African countries, standing at 43.6%. Areas with rapid population increase are unplanned settlements in areas surrounding large cities where infrastructure has not yet been developed. For the last 20 years, such unplanned settlements are the centre of population growth, and in large cities the population in unplanned settlements accounts for 80% of the total urban population, largely exceeding that of formal residential areas. There are 33 unplanned settlements in Lusaka, whose population accounts for more than 60%of the total. In such unplanned compounds, there is no access to public services and provisions for the living environment are minimal, resulting in unsanitary conditions.

The socio-economic indicators of Zambia are summarized as in Table 2-2.

Table 2-2 Socio-economic indicators in Zambia (1999)

Population (thousand persons)	9,881
GNP (million US$)	3,222
GNP per capita (US$)	330
Rate of the population whose daily income is lower than US$1.00	63.7% (1998)
Life expectancy (year)	38
Infant mortality rate (per 1000 births)	76
Maternal mortality rate (per 100,000 births)	650 (1990-99)
Adult illiteracy rate	Male: 15% Female: 30%
Net enrolment rate of primary education	75% (1997)
Rate of the population who have access to safe water	64% (2000)

("ODA Data Book", 2001, Ministry of Foreign Affairs, Japan)

2.2.2 Poverty Reduction Strategy

In Zambia the proportion of the population under the poverty line in urban areas has been assessed at 46.0% (1996), and in rural areas, 82.2% (1996). The proportion of the population that has access to safe water is as low as 38% (1990-1997), and 25% of the population does not have access to health

services. The Government defines the poverty line as an income of about USD 20 per month (1996), which implies that about 70% of the whole population lives below the poverty line.

The Government presented the National Poverty Reduction Strategy Framework in May 1998 and the Poverty Reduction Action Plan was prepared by the Ministry of Social Development and Welfare in collaboration with the World Bank and the UNDP in 1999. However, the PRSP was prepared while the Plan had not officially been adopted.

The PRSP focuses on the following eight issues: 1) Macro-economy, 2) Agriculture/Rural Development, 3) Tourism, 4) Mining, 5) Industry, 6) Governance, 7) Health, and 8) Education. In March 2003, the PRSP covering the period 2002-2004 was presented.

2.2.3 International Assistance

(1) Japan's ODA

Japan provides assistance to Zambia based on the following facts: 1) Zambia is an important member country of OAU and other organisations, taking a leading role in the southern African region; 2) The country is promoting structural adjustment measures, supported by the World Bank and the IMF, such as liberalization of monetary regulations, privatization of national enterprises and abolition of various price controls; 3) The country is an important supplier of copper and cobalt to our country; and 4) The country and Japan have been in an amicable relationship.

In April 2002, as the result of the meeting between the Government of Zambia and the comprehensive economic cooperation mission dispatched from Japan, the two governments agreed with the following as Japan's priority fields for assistance to Zambia. Japan's priority fields were selected based on the themes in the 'Poverty Reduction Action Plan', considering Japan's economic cooperation schemes, the ODA mid-term policy, and the 'Tokyo Action Plan' of TICAD II. These priorities are:

1) Support for poverty alleviation measures centring on rural development
2) Improvement of cost-effective health and medical services
3) Support for formulation of a balanced economic structure
4) Human resource development and institutional building for sustainable development

5) Promotion of regional cooperation

JICA's assistance for the provision of water supply services in Zambia comes under item 2) 'cost-effective health and medical services' of the above priority sectors. The position Japan's assistance is as shown in the program tree below:

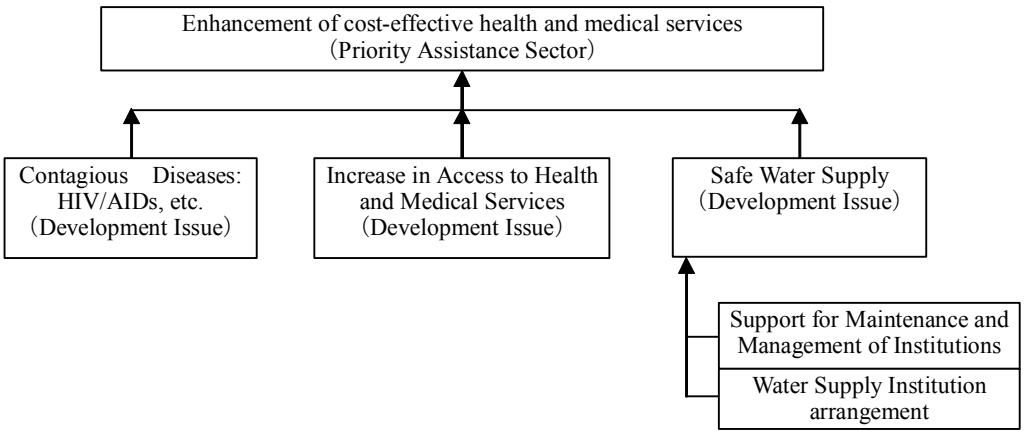

Figure2-2 Programme Tree in Health and Medical Services in Zambia

(2) Other International Development Partners

In Zambia, development assistance coordination has been promoted under the Government's ownership. Donor coordination meetings are held regularly in such sectors as health, agriculture, roads and technical training. Regarding the earlier mentioned PRSP; its final report was published in March 2003 with donors' support.

Responding to this report, a consultative group (CG) meeting was held under the title of 'Mobilizing for Sustained Economic Growth and Poverty Reduction' in July 2002. During the meeting, the following issues were raised as the challenges which Zambia should tackle for poverty reduction and economic growth in the medium term: 1) establishment of a sustainable macro-economic environment; 2) reduction of internal and external deficit; 3) sustainable economic diversification including food security; 4) promotion of good political and economic governance; and 5) measures against HIV/AIDS contagious diseases.

The following are the development assistance policies of each donor country raised during the CG meeting: 1) the US supports activities for increasing suffrage of the population and promoting economic growth through enhancing food security, health, and education, with its pillars being economic growth, agriculture, trade, global health, democracy, conflict prevention, and humanitarian assistance; 2) Great Britain assists Zambia in such sectors as food aid and HIV/AIDS prevention measures; 3)

Denmark will continue to support sectors such as education, food security, infrastructure, roads, health and environment under project-type assistance and technical assistance schemes; 4) Germany's priorities are on water and sanitation, decentralized rural development in the Southern Province, and strengthening of civil society; and 5) The World Bank will assist with arrangement of the macro-economic framework, successful implementation of PRSP, good governance, and achieving project sector-specific conditions.

2.2.4 Development Issues in the Water Supply Sector

While the Ministry of Energy and Water Development is in charge of water resources development, the Ministry of Local Government and Housing is responsible for implementation of water supply projects and coordination among the donor community, NGOs and related organizations for the development of infrastructures. The Ministry of Local Government and Housing prepared the 'Peri-Urban Area Water Supply and Sanitation Strategy', to improve water supply services in unplanned settlements of urban areas. The Strategy aims at developing water supply and sanitation services in all the unplanned settlements. The Strategy includes adoption of a demand-driven approach, implementation of integrated sanitary service projects, clarification of community responsibilities and community selection criteria, community participation and management, and consideration for women and children.

The NWASCO, which regulates the water supply and sanitation services in urban areas and supervises commercial water utilities in urban areas, has prepared the 'Guideline of Water Supply for Low-income Urban Areas', which is aimed at alleviating water and environment related problems in unplanned settlements. The Guideline recommends the introduction of small-scale water supply schemes using an efficient kiosk method.

In the future, water supply projects targeting urban poor will be implemented based on the above Strategy and Guideline.

Chapter 3 Study Procedures

3.1 Preparatory Work in Japan

3.1.1 Selection of Target Project/Programme

(1) Zimbabwe

Japan has contributed to the provision of rural water supply in Zimbabwe since the country's independence. Over a period of 10 years starting in 1983 the grant aide Rural Water Supply Project (Phases I-III) assisted Zimbabwe with construction of borehole water supply facilities in the provinces of Midlands and Mashonaland East by providing drilling machines and construction materials and through transfer of technology to Zimbabwean counterparts. Between 1997 and 1999 Japan implemented the Binga District Rural Water Supply Project in the Matabeleland North Province. Binga is one of the least developed districts in Zimbabwe; its poverty rate is high and water and sanitation facilities are poorly developed. The following Table 3-1 is a summary of the rural water supply projects assisted by Japan.

Table 3-1 Rural Water Supply Projects Assisted by Japan

Project Name	Period	Input	Target Area	Summary
Rural Water Supply Project (Phase I)	1983-1985	80 billion Yen	5 districts in Midlands	・ Procurement of borehole drilling equipments (2 sets) ・ Construction of 81 borehole water supply facilities
Rural Water Supply Project (Phase II)	1988-1989	52 billion Yen	6 districts in Midlands	・ Procurement of borehole drilling equipments (1 set) ・ Dispatch of technical expert
Rural Water Supply Project (Phase III)	1994-1995	94 billion Yen	2 districts in Mashonaland East	・ Procurement of borehole drilling equipments (2 sets) ・ Construction of 40 borehole water supply facilities
Binga District Rural Water Supply Project (Phase I)	1997-1998	56 billion Yen	Binga District in Matabeleland North	・ Procurement of borehole drilling equipments (1 set) ・ Construction of 5 borehole water supply facilities ・ Formation of 5 Water Point Committees
Binga District Rural Water Supply Project (Phase II)	1998-1999	17 billion Yen	Binga District in Matabeleland North	・ Construction of 25 borehole water supply facilities ・ Formation of 25 Water Point Committees

The Binga District Rural Water Supply Project included awareness campaigns for community members and formation of water point committees for O&M of water facilities in parallel with the construction of

borehole water supply facilities. These activities were sub-contracted to SCF, an NGO experienced in the field of water supply in Binga District, and they implemented their tasks for around 40 communities including the ones for whom the water supply facilities were constructed by Japan during the project period. The study team decided to evaluate this Project which had a soft component of community empowerment together with construction of water supply facilities.

During the preparatory work in Japan it was planned to evaluate the above mentioned Binga District Rural Water Supply Project together with the Reproductive Health Care Project[1], which is being implemented by the Save the Children Fund (SCF) and funded by JICA as a community empowerment program in Binga District. However, in the course of information gathering in Zimbabwe, it became apparent that putting these two projects into one integrated program was not appropriate because: the wards where borehole water facilities were constructed by Japan did not coincide the wards where SCF were implementing the Reproductive Health Care Project even though they were in Binga District; and there were no direct links between the two projects in terms of project objectives and formation of the projects.

The summary of the Project is shown in Table 3-2 (at the end of Chapter 3). The project purpose was to supply safe water in target areas in a sustainable manner and the target group was around 84,000 people living in the 12 wards where water supply facilities were most urgently needed in Binga District. Activities of the project may be summarised as shown in Figure 3-1.

[1] The project aims to reduce the risk of infection by HIV/AIDS though youth awareness and an education campaign targeting youth.

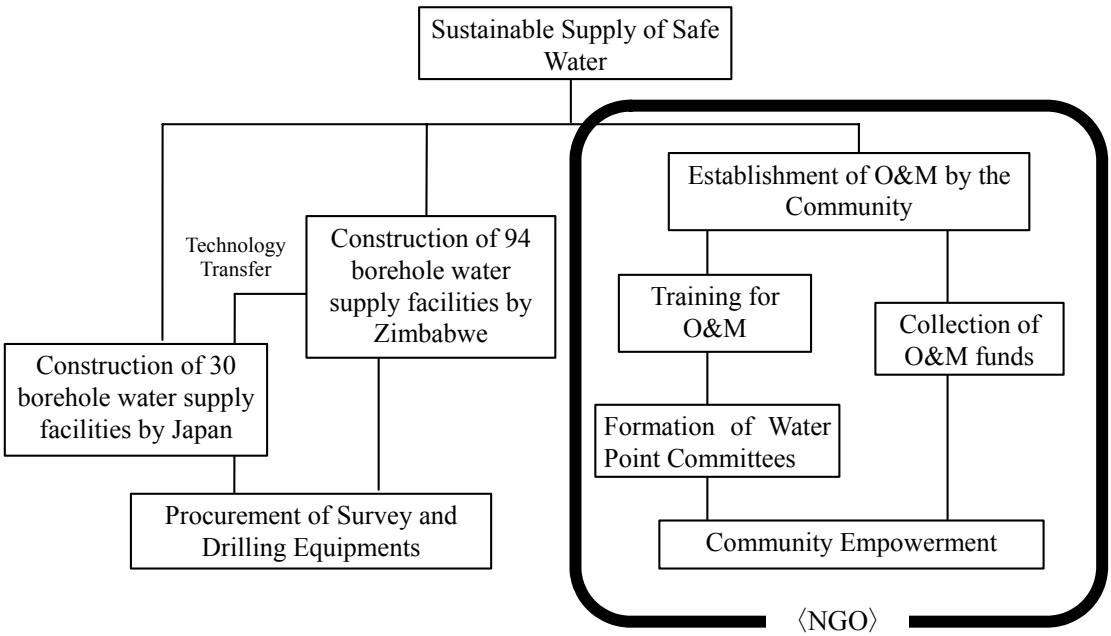

Figure 3-1 Binga District Rural Water Supply Project

(2) Zambia

The Government of Japan assisted in implementing several projects in the peri-urban areas of Lusaka, where the population consists mainly of low-income people. Table 3-3 summarises the projects that targeted the peri-urban areas of Lusaka. The target area of each project is indicated on the project location map at the beginning of the report.

Table 3-3 Projects in the Peri-urban Areas of Lusaka Assisted by Japan

Project	Scheme	Implementation Period	Target Area	Project Summary	Links with other Projects
1. Water Supply Project in Satellite Area of Lusaka	Grant Aid	B/D 1993.3-1993.10 Implementation 1994.4-2000.3	George Complex	Construction of piped water system with ground water as water source in order to supply safe water in a sustainable manner to the target area where water born diseases such as cholera were prevalent.	Establishing O&M setup of water supply system was implemented in cooperation with CARE, an NGO which was then operating in the area funded by DfID.
2. Lusaka District Primary Health Care (PHC) Project	Project Type Technical Cooperation	RD Entry 1997.2 Implementation 1997.3-2002.3	Lusaka District (pilot project in a part of George Compound (Proper))	To improve PHC management system in Lusaka District, activities such as: promotion of community based PHC activities; promotion of school health activities; and strengthening of	George Compound, where the water supply system was provided by the above project, was selected as the pilot area for the community based PHC activities. Activities such as

Project	Scheme	Implementation Period	Target Area	Project Summary	Links with other Projects
				referral system were carried out. The second phase of the project started in July 2002.	improvement of safe water usage and sanitary conditions, and growth monitoring of children were carried out with participation of community members.
3. George Community Empowerment Programme (GCEP)	Community Empowerment Programme	1999.10-2003.1	George Complex	For sustainable O&M of the above water supply system under the partnership of Area Based Organisations, Lusaka City Council and Lusaka Water and Sewage Company, capacity building of these organisations and improvement of management system was carried out.	For health education co-ordination was made concerning its approach with the above project.
4. Construction of Basic Schools in Lusaka District	Grant Aid	B/D 1998.2-1998.3 Implementation 1998-2000	Bauleni, John Laing, N'gombe, Mumana, Chainda, Libala, Balastone, Kabulonga	Construction of basic schools to increase the opportunities of basic school education.	Some of the schools were constructed in the areas where pilot projects of the development study were implemented. There was no connection during the planning and implementation of these projects.
5. Study on Environmental Improvement of Unplanned Urban Settlements in Lusaka	Development Study	1999.3-2001.6	Bauleni, Chainda, Chazanga, Chibolya, Freedom, Kalikiliki, N'gombe, Old Kanyama (pilot projects in Bauleni, Chiboliya & N'gombe)	It was to draw up a model for projects which aims to improve living environment in unplanned settlements in cooperation between the community and Lusaka City council. In the pilot areas based on the needs of the community the integrated plan for improvement of living environment was prepared and the project was implemented and evaluated with the participation of the community.	No particular link with other projects.

From further information on the circumstances of the planning and implementation of the above listed projects, it was found that the three projects implemented in George Compound (Proper), one of the settlements

forming the George Complex, had links with each other during the planning and implementation process. The PHC pilot project and GECP were implemented with the aim of making the benefits provided by the construction of water supply facilities more sustainable. In this way, a synergistic effect was sought from these three projects by coordinating the activities throughout the process of their planning and implementation. Therefore, in this evaluation exercise these three projects were grouped together to be evaluated as a single programme, "Programme for Improvement of Living Condition in George Compound". The projects are: Water Supply Project in Satellite Area of Lusaka; George Community Empowerment Programme; and Lusaka District Primary Health Care Project.

Activities in this programme are summarised in the following diagram (Figure 3-2).

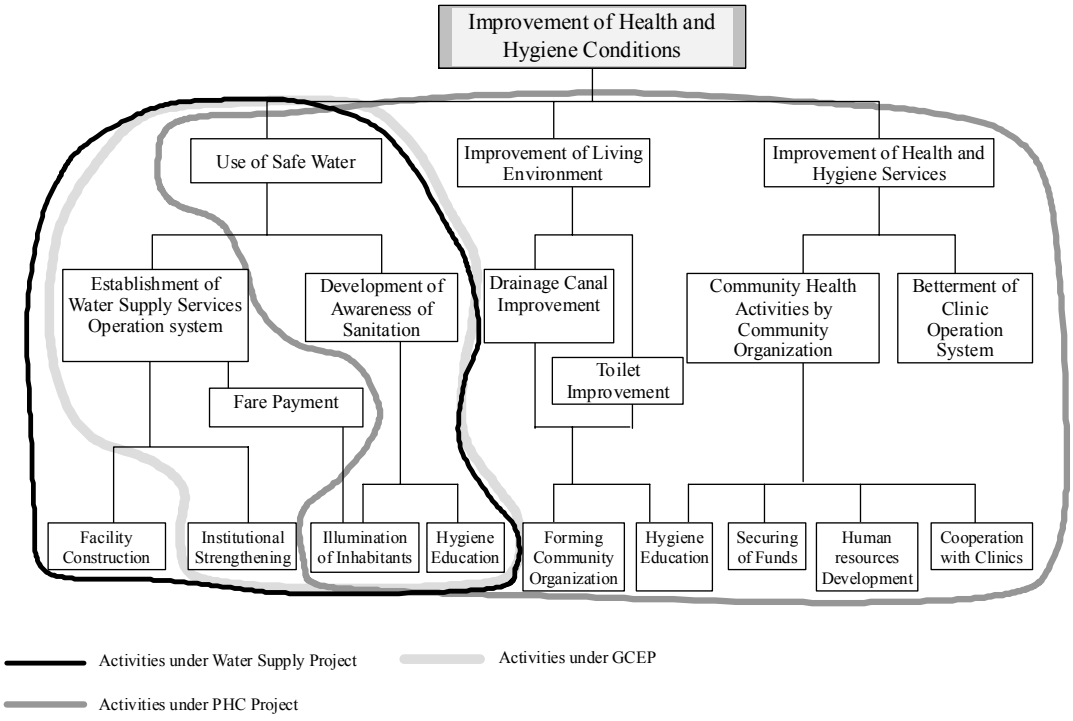

Figure 3-2 Programme for Improvement of Living Conditions in George Community

Under the development study, pilot projects were conducted for improvement of the living environment with an integrated approach. Due to the limited target area and time frame applied for the pilot projects it was considered difficult to measure the impact on the community in this evaluation. Therefore, these pilot projects, which were also implemented in the peri-urban areas of Lusaka for the improvement of living conditions

with community participation, are compared with the target programme for drawing lessons and recommendations. Similarly, the construction of the basic school project, which had no specific links with the projects in George Compound, are studied from the viewpoint of sustainability and impact of the water supply project in unplanned settlements.

The Programme Approach Logic Model (PLM) is shown as Table 3-4 (at the end of this Chapter) for the summary of projects which were included within the target programme: Programme for Improvement of Living Conditions in George Compound.

3.1.2 Preparation of Evaluation Design

During the preparatory work in Japan, the Study team prepared the PDMe (Project Design Matrix for Evaluation) and the Evaluation Grid to identify detailed survey items and to formulate evaluation design.

(1) Zimbabwe

The study team made the PDMe of the Binga District Rural Water Supply Project based on the project's Basic Design Report and Completion Report shown in Table 3-5 (at the end of this Chapter). As described in Chapter 1 this study was to evaluate the project/programme in view of: a) Sustainability of safe water supply; b) Impact on the improvement of the living conditions of the poor, c) Applicability of the approach to other countries and regions. Based on the PDMe the Evaluation Grid was prepared according to these three evaluation items as well as the performance and implementation process. The Grid described required information/data, a data source and means of survey (refer to the table A-9.1 in Appendix 9).

Based on the Evaluation Grid and the information gathered during the preparatory work in Japan, the field survey activities were designed as follows:

Table 3-6 Field Survey Methods (Zimbabwe)

Survey Method	Surveyor	Target	Location
1. Interview and Document Review	Study Team	a. Related Government Agencies b. Related Agencies in Binga c. Major Donors and NGOs	Harare, Bulawayo Binga Harare
2. Observation of Water Supply Facilities and Hearing from the Community in Sample	Study Team	10 Borehole Water Supply Facilities which Japan constructed under the Project	Binga

Survey Method	Surveyor	Target	Location
Villages			
3. Questionnaire Survey in Sample Villages	Local Consultants	8 villages where borehole water supply facilities were constructed by Japan and 2 villages where no facility was constructed (20 households/village)	Binga
4. PRA in Sample Villages	Local Consultants Study Team	2 villages where borehole water supply facilities were constructed by Japan	Binga

(2) Zambia

The Study team prepared the PDMe (Table 3-7 at the end of this Chapter) and the Evaluation Grid (refer to the table A-9.2 in Appendix 9). Based on the information collected during preparatory work in Japan and the Evaluation Grid prepared, a field survey design was prepared as follows:

Table 3-8 Field Survey Methods (Zambia)

Survey Method	Surveyor	Target
1. Interviews and Document Review	Study Team	・ Related Government Ministries ・ Implementing Agencies of Projects ・ Major Donors and NGOs
2. key Informant Interviews in Sample Communities	Study Team	・ Area or Community Based Organisations ・ Schools and Health Centres
3. Questionnaire Survey in Sample Communities	Local Consultants	・ Community Members
4. PRA in Sample Communities	Local Consultants, Study Team	・ Community Members and Tap Leaders/Attendants

3.1.3 Data Collection in Japan

During the preparatory work in Japan, relevant project reports were reviewed. When possible, information was collected by interviewing people, who are/were involved in the project implementation, on the issues such as planning and implementation of the project, links and coordination with other projects and methods of community participation. Table 3-9 shows the list of people interviewed during the preparatory work in Japan.

Table 3-9 Interview List in Preparatory Work in Japan

Project	Assignment	Interviewee (organisation)	Assignment Period
George Community Empowerment Programme (Community Empowerment Programme)	JICA Expert: Socio-economist	Mr. Naoto Mori (Japan Techno)	1999.10-2003.3
Lusaka District Primary Health Care Project (Project Type Technical Cooperation)	JICA Expert for the Project: Health Education	Ms. Miki Seno (former AMDA staff)	1998.7-2001.7
Study on Environment Improvement of Unplanned Urban Settlements in Lusaka (Development Study)	Consultant: Community Participation	Ms. Tomoko Honda (Global Link Management)	1999.3-2001.4

3.2 Field Survey in the Target Countries

3.2.1 Zimbabwe

(1) Explanation and Discussion with the Government of Zimbabwe

With the help of the JICA Zimbabwe Office, a joint meeting was held with related government ministries at the start of the field survey. At the meeting, the study team explained the objectives and the outline of the evaluation and requested assistance in conducting the study and the participants rendered advice and comments on the contents of the study. The Minutes of Discussions were prepared and signed by the Ministry of Finance and Economic Development and the JICA Study Team (the Minutes and the list of participants are attached as Appendix 1).

At the request of the Binga Rural District Council, a meeting was held in Binga prior to the commencement of the field survey inviting related agencies. The schedule of the field survey is attached as Appendix 2.

(2) Interview with the Person Concerned and Information Gathering

Interviews were conducted with the person concerned from the related government agencies, related agencies in Binga District and major donors and NGOs. The interviewees' list and the collected document list are attached as Appendix 3 and 4, respectively.

(3) Observation of Water Supply Facilities and Hearing from the Community in Sample Villages

As the data on the current status of borehole water supply facilities, which were constructed by the Project, was not available at the DDF provincial

office in Bulawayo or Binga RDC at the time of field survey, the study team visited 10 out of 30 facilities listed on the project completion report collected in Japan. In addition to observation of the facilities, a hearing was conducted by the users whenever it was possible. The result is found in Chapter 4.

(4) Questionnaire Survey in Sample Villages

In order to understand the impact of borehole water supply facilities on the community and the status of O&M of the facilities, a questionnaire survey was conducted with beneficiaries and non-beneficiaries in the area. The survey was sub-contracted to PlanAfric, a local consulting firm, and they conducted pre-testing of the questionnaire, training of assistants, preparation of logistics, the actual interview survey and screening of the results. The questionnaire was prepared by the study team and revised based on the results of the pre-test in the field and the comments from the local consultants. The questionnaire form is found as Attachment 5 at the end of the report.

Under the Project, 30 borehole water supply facilities with hand pumps were constructed in 18 villages in 5 wards (Binga District is comprised of 21 wards) by the Japanese team. Due to time constraints, the study team selected four wards, which were relatively easy to reach, out of the above five wards. In each ward, two villages were selected where water supply facilities were constructed (eight villages altogether) and a further two villages were selected from a ward where facilities were not provided under the Project as sample villages for the survey. Population and number of households of the sample villages are shown in Table 3-10 and indicated on the map shown at the beginning of this report.

Table 3-10 Population and number of households in the sample villages

Villages	Ward	Village	Population	Household
Beneficiary villages*1	Sinansengwe	Mucheni	988	180
		Chitete	414	83
	Sinakoma	Nampande	573	168
		Gande	996	173
	Manjolo	Manjolo	586	111
		Dumbwe	550	150
	Sikalengwe	Damba	1556	299
		Delanpuli	792	187
Control village	Saba-Lubanda	Chabubuluka	2717	330
		Mupumbe	471	56

Binga RDC(1994)
*1: Not all habitants are beneficiary of borehole.

A questionnaire survey was conducted with 20 households in each sample village (altogether 200 households). Women were selected as respondents when possible as most of the household chores, including fetching water, are often done by women and therefore it was deduced that women would be more sensitive to changes in the living environment.

The questionnaire survey was planned to be commenced by the local consultants prior to the JICA study team's arrival in Binga. However, Binga RDC requested the JICA study team to explain the objectives and contents of the study prior to the survey, which caused a little delay.

Binga RDC also requested that survey assistants be selected from people that it recommended; consequently survey assistants prepared and trained by the local consultants had to be dismissed. As many women in Binga do not speak the official languages of Ndebele or Shona, survey assistants were to ask questions in Tonga, though their responses were recorded in English.

(5) PRA in Sample Villages

PRA was conducted in two villages where borehole water supply facilities were constructed in order to understand the project's impact on villagers, the status of O&M of the facilities by the community, and the characteristics of the community. The PRA exercise was also sub-contracted to PlanAfric, the local consultancy that conducted the questionnaire survey.

During the discussion with Binga RDC, some issues that might be politically sensitive were deleted from the PRA guideline prepared by the study team. The revised PRA guideline (Attachment 7) indicates the schedule, participants and the tools. In each village a 2-day exercise was conducted using tools such as semi-structured interviews, resource/social mapping, wealth ranking, etc.

3.2.2 Zambia

(1) Explanation and Discussion with the Government of Zimbabwe

With assistance from the JICA Zambia Office a joint meeting was held with the related government and non-government agencies for the discussion of the inception report at the beginning of the field survey. The study team explained the objectives and the outline of the evaluation, requested assistance for the field survey and discussed the contents of the survey with

the participants. The Minutes of Discussions (M/D) were prepared, including the issues discussed during the joint meeting and signed by the Ministry of Finance and National Development, JICA and the Study Team. The M/D and the list of participants are shown as Attachment 1 at the end of the report.

(2) Interview with the Person Concerned and Information Gathering

Interviews were conducted with the person concerned from the related government agencies, implementing agencies and major donors and NGOs. The interviewees' list and the collected document list are attached as Appendix 3 and 4, respectively.

(3) Selection Criteria for Sample Communities

To understand the views of the community on the project performance, implementation process, sustainability of water supply, impact on improvement of living condition of the community and the applicability of the approach, different surveys were conducted including key informant interviews, questionnaire surveys, PRA and site visits. Since the target areas of the projects were widely spread around Lusaka, George, Bauleni and Kalikiliki were selected as sample compounds for the above surveys based on the following selection criteria:

- Areas where assistance was rendered only in the water supply sector （Sector Approach）
- Areas where assistance was rendered in the water supply sector as well as in other sectors (Integrated Approach）
- No assistance was rendered in the water supply sector （No Assistance）

When an unplanned settlement in Lusaka is legalised by Lusaka City Council, based on the Constitution for Area-Based Organisation, it is necessary to form a Residence Development Committee (RDC), which functions as an interface between the local authorities and the community for finding, planning and implementation of development projects pertinent to the community. As a first step, the city council divides the compound into zones comprised of an approximately equal number of households. A Zone Development Committee is formed by electing members in each zone. Then all of the Zone leaders, who are the representatives of the zones, form the RDC. Needs of the community, such as improvement of the living environment are first put together at zone

level and the zone leader will bring up the issues at the RDC meeting and form an action plan for the community as a whole.

As compounds are fairly large, sample zones were selected for PRA and the questionnaire survey following the above mentioned selection criteria was executed. Table 3-11 shows the scope of field survey and the sample compound and sample zones.

Table 3-11 Scope of Field Survey

Sample Compound	Category	Questionnaire Survey		PRA	Interventions					
		Sample Area	# of Sample Household	Sample Area	Water Supply	O&M	Hygiene Education	Health	School	Micro Finance
1. George Complex	Integrated Approach	George Proper (Zone 2-11) Pilot project target area under the PHC Project	40 HHs	George Proper (Zone 10, 11)	A	A+C+F	A+B+F	B	-	B+C+F
2. George Complex	Sector Approach	Area 5 (Zone 16, 21, :27) and Area 7 (Zone 14, 15, 26) Target area of water supply project excluding the area where PHC pilot project was implemented	40 HHs in Area 5 14 HHs in Area 7	Area 5 (Zone 16, 21) Area 7 (Zone 15, 26)	A	A+C+F	A+C+F	-	-	C+F
3. Bauleni	Integrated Approach	Zone 7, 8, 13: pilot project target area under the Development Study	40 HHs	Zone 7, 8, 13	D	D	D	-	E	D
4. Kalikiliki	No Assistance	Whole Area	40 HHs	—	-	-	-	-	-	-

Project
A: Water Supply Project in Satellite Area of Lusaka
B: Lusaka District Primary Health Care Project
C: George Community Empowerment Programme
D: The Study on Environmental Improvement of Unplanned Urban Settlements in Lusaka
E: The Project for Construction of Basic Schools in Lusaka District
F: Cooperation with other donors/NGOs

(4) Key Informant Interviews in Sample Communities

a. Area or Community Based Organisations

- In each unplanned settlement, a semi-structured interview was conducted with RDC members regarding the formation and social structure of he community, community participation in planning, implementation, management and O&M of the programme and the relationship with local government agencies and other stakeholders. All the existing RDCs were dissolved when Lusaka City Council (LCC)) revised the Constitution for Area Based Organisations in January 2002 after discussions with related organisations. At the time of the field survey, the LCC was initiating formation of new RDCs based on the new constitution and providing leadership training. As in George and Kalikiliki,

the new RDC members were interviewed as RDC members were already selected. On the other hand, Bauleni was at the stage when zone representatives were being elected prior to the election of RDC members and the study team interviewed the task force members who were promoting the election process together with LCC.

- Further, in George Complex, information was gathered from the Water Management Committee under the RDC and the George Community Environmental Health Committee under the health centre on their activities and methods of community participation. In Bauleni Compound, RDC and tap attendants provided information on O&M and the management system of the water supply facility and the method of water fee collection. Both RDCs and sub-committees had some members who were familiar with the circumstances when the project was implemented.

b. Schools and Health Centres

- In George Compound (proper), the George Central Basic School and a community school run by the Salvation Army were visited to gather information on the schools' enrolment capacity, the schools' view on the true impact of the projects implemented in the compound for improvement of the living environment and on the enrolment. In Bauleni, similar information was collected from two basic schools, one of which was constructed with Japanese assistance.

- At the George Central Clinic, the Bauleni Health Centre and the Mtendere Health Centre (Kalikiliki has no health centre in the compound and the service is provided by Mtendere Health Centre which is situated in the neighbouring compound of Mtendere), information was collected on the changes in occurrence of water born diseases among patients, existing sanitation facilities, the hygiene practices of the people in the compound, progress of health, hygiene education, participation of community groups, and coordination with other projects, if any.

(5) Questionnaire Survey in Sample Communities

A questionnaire survey was conducted in sample communities in order to understand the projects' impacts on the living and hygienic conditions of the community and the current O&M status of the water supply system. The

survey was sub-contracted to Waterpoint, a local consultancy specialized in social surveys. Under supervision of the chief of the questionnaire survey, 10 assistant surveyors conducted interviews based on the questionnaire forms with 200 sample households. The questionnaire was prepared by the study team and finalized based on the result of the pre-test and the comments from the local consultants. The revised questionnaire is found as Attachment 5 at the end of the report.

The following criteria were applied for sampling:

a. Respondents must have been living in the study area for more than 5 years

b. More than half of the respondents must be female

The former criterion was necessary in order to measure the impact of the project. To compare the pre- and post-project conditions of the survey area, it was desirable to seek information from people who had been living in the community before the project. However, as in the peri-urban areas of Lusaka, people tend to move around; a minimum of 5 years was set as a reasonable period of residence in the community. The latter criterion was set from the understanding that women would be more sensitive in noticing the changes of the living conditions as household chores including fetching water are generally done by women in the target area.

Survey results are referred in the Chapter 4 and summarised as Attachment 6 at the end of the report.

(6) PRA in Sample Communities

For some survey items, qualitative information was collected by conducting PRA in addition to quantitative information gathered by questionnaire survey. Participants were men and women selected among community members and tap leaders and tap attendants who operate communal taps.

PRA was also sub-contracted to Waterpoint, a local consulting firm. A team of one facilitator and 2 assistants led the workshop according to the PRA guideline (Attachment 7) prepared by the study team.

Findings from PRA are referred in Chapter 4 and the summary is found as Attachment 8 at the end of the report.

Table 3-2 PLM on Rural Water Supply project in Binga District in Matabeleland, North Province

Project Title	Overall Goal	Project Purpose	Output	Input	Implementation Agency	Project Period	Target Area	Target Group
The Rural Water Supply Project in Binga District in the Republic of Zimbabwe (Japanese grant aid)	To improve hygiene and health conditions of the people in the target area.	To supply safe drinking water in a sustainable way to the people in the target area.	1. 124 boreholes with hand pumps are constructed and yield sufficient water both in quantity and quality. 2. Technique of geophysical prospecting and drilling by the Zimbabwean counterparts are improved. 3. Capacity of the target community is improved in terms of operation and maintenance of borehole water facilities. 4. Awareness of the communities in hygienic behavior and practice is improved.	1. Japanese consultants 2. Zimbabwean counterparts 3. Japanese contractors 4. Survey and drilling equipment and other borehole construction materials 5. E/N ceiling of 56 million Yen (Phase 1) and 17 million Yen (Phase 2)	Department of Water Development, Ministry of Rural Resources and Water Development After the water sector reform in 2000, Zimbabwe National Water Authority (ZINWA) has become the implementing agency	Basic Design: 1997.1-1997.6 Implementation Phase I: 1997.7-1999.2 Phase II: 1998.8-1999.12	Binga District, Matabeleland North Province Japanese contractor constructed 30 boreholes in 5 Wards (Muchesu, Sinakoma, Sikalenge, Sinansengwe and Manjolo) in Binga District	Approximately 84,000 people in Binga District (of which 31,000 people are estimated to be directly benefited from the boreholes) Approximately 7,500 people benefit from the 30 boreholes constructed by Japanese contractor.

Table 3-4 PLM on Programme for Improvement of Living Condition in George Compound

Project Title (Project Scheme)	Overall Goal	Project Purpose	Output	Input	Implementing Agency	Project Period	Target Area	Target Group
The Water Supply Project in Satellite Area of Lusaka (Grant aid)	Environmental sanitation in the target area will be improved.	Safe water will be supplied to the target group in sustainable manner.	1. Basic design of the Project is formulated. 2. Water supply schemes with the satellite system are operational. 3. Equipment for operation and maintenance is installed in the implementing agency. 4. The operation system of the water supply service by the LWSC George Office is established. 5. Sense of ownership of water supply system by the target group is enhanced. 6. The system for the target group to participate in the operation and maintenance is established in a manner of collaboration with the implementing agency.	Human resources: 1. Japanese consultants 2. Japanese/ local constructor & supplier 3. Counterpart staff Equipment: 1. Equipment for operation and maintenance Fund:	Responsible organisation: MLGH, LCC Implementing agency: LWSC	Basic Design: 02/09/1993- 02/10/1993 Implementation Phase 1: 04/1994-03/1996 Phase 2: 08/1994-03/1996 Phase 3: 08/1997-03/1999 Phase 4 08/1998-03/2000	George Complex, Lusaka	Approx. 130,000 residents of George Complex (2003)
Lusaka District Primary Health Care Project (Project-Type Technical Cooperation)	The overall health status of community members of the Lusaka District will be improved.	The management system of primary health care service in Lusaka District will be improved in line with the Zambian Health Reform Policy and the Strategic Plan.	1. The community-based PHC programmes are improved in the pilot area. 2. The referral system is operated effectively between the different levels of health care in Lusaka District. 3. School health services are effectively in operation.	Human resources: 1. JICA experts 2. Counterpart staff Equipment: 1. Vehicle 2. Equipment and materials for administration 3. Clinical and laboratory equipment Fund:	Responsible organisation: Ministry of Health Counterpart organisation LDHMT	Record of Discussion: 17/02/1997 Implementation: 17/03/1997- 16/03/2002	Lusaka District Pilot Area: George compound	Health service providers ・ LDHMT staff ・ Health centre staff ・ Community organisations in the pilot compound (George))
George Community Empowerment Programme (Community Empowerment Programme)	Poverty of women and men in George Complex will be alleviated.	The management and utilisation of water supply services will be improved through partnership between Area-Based Organisation, LWSC and LCC.	1. Management system is strengthened for improved sustainability and participation with gender consideration. 2. Community awareness and acceptance of scheme management are enhanced. 3. An effective and participatory operation and maintenance system is established. 4. Feasible solution is devised to shallow wells problem in conjunction with JICA PHC Project.	Human resources: 1. JICA expert 2. CARE Programme staff 3. CARE Project manager Equipment: 1. Office equipment Fund:	Responsible organisation: LWSC Implementing NGO: CARE-PROSPECT	10/1999 – 01/2003	George Complex, Lusaka	Residents of George Complex

Table 3-5 PDM for Rural Water Supply project in Binga District in Matabeleland, North Province

Programme Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal: Health and hygiene conditions of the people in the target area will be improved.	・Decreased infant mortality rate in the target area ・Decreased occurrences of water-born diseases in the target area	・Record at the health centre ・Statistics at the health centre and information from community members	・Overall political and economic conditions of the country will be stable. ・Provision of health services will be improved in the target area.
Project Purpose: Safe drinking water will be supplied to the people in the target area in a sustainable way.	・Increased water coverage rate ・Increased number of water facilities in use	・Record at RDC ・Record at RDC	・Socio-economic conditions will not deteriorate further in the target area.
Output: 1. 124 boreholes with hand pumps are constructed and yield sufficient water both in quantity and quality.	1-1 Number of boreholes with hand pumps constructed by the Japanese and Zimbabwean sides. 1-2 Quality and quantity of water supplied.	1-1 Completion report and record at ZINWA and RDC 1-2 Completion report and information from community members	・Hydrological conditions of the target area will not get worse due to the drought.
2. Technique of geophysical prospecting and drilling by the Zimbabwean counterparts are improved.	2-1 Success rate of drilling by the Zimbabwean counterparts. 2-2 Progress of the construction works according to the plan.	2-1 Record at ZINWA 2-2 Record at ZINWA	
3. Capacity of the target communities is improved in operation and maintenance of the borehole water facilities.	3-1 Action taken by the water point committees for preventive maintenance and repair of hand pumps. 3-2 Contribution from the community members for daily operation and maintenance of the water facilities.	3-1 Information from water point committees and community members 3-2 Information from water point committees and community members.	・RDC will establish and provide support services for the communities.
4. Awareness of the communities in hygienic behavior and practice is improved.	4-1 Improved practice by the community members in terms of safe transport and storage of water and cleaning of surrounding area of water point. 4-2 Improved practice by the community members in terms of hand washing.	4-1 Information from community members 4-2 Information from community members	
Activities: ・Formulation of Basic Design of the Project. ・Procurement of survey and drilling equipments and materials. ・Technology transfer in geophysical prospecting and drilling works through construction of 30 boreholes by Japanese contractor. ・Construction of remaining 94 boreholes by Zimbabwe government. ・Sensitization of community leaders. ・Formation and training of Water Committees. ・Health and hygiene education to the community members.		**Input:** Human resources: ・Japanese consultants ・Counterparts ・Japanese contractor Equipment: ・Survey and drilling equipment and materials ・Vehicles ・Hand pumps	・Transport and custom clearance of the procured equipment are carried out on schedule. ・Trained counterpart personnel will continue to work for the project. **Pre-conditions:** ・Political and economic conditions will allow the project to continue according to the plan.

Table 3-7 PDM for Programme for Improvement of Living Condition in George Compound

Programme Summary	Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal: Community-based initiatives will be applied to other areas related to improvement of the living conditions and livelihood by the Area-Based/ Community Based Organisations and local authority with utilising lessons learnt from the existing interventions.	・ Increased number of projects for improvement of living conditions in the target area with community participation ・ Status of mobilisation of resources by the ABO/ CBO fro community development activities	・ Action plan of LCC, Business plan of other service providers and NGO, information from ABO/CBO ・ Information from LCC, health centre, and ABO/CBO	・ LCC and other legislative organisations will control the development and upgrading of peri-urban areas with proper allocation of resources and obligation of the regulations.
Programme Purpose: Health and hygiene conditions of the community members in the target area will be improved.	・ Decrease of infection rate of the water-born diseases in the target area ・ Decrease of infant mortality rate in the target area ・ Decrease of malnutrition of children ・	・ Statistics, record at health centre, information from community members ・ Statistics, record at health centre ・ Record at health centre	・ Knowledge on lessons learnt and experiences from the community-based interventions will be succeeded within the Area-Based/ Community-Based Organisations in the target area. ・ The Government of Zambia will maintain the policy on improvement of the environmental and living conditions of the peri-urban areas in partnership with the community members.
Output: 1. Water supply services are utilised by the community members in the target area in sustainable manner.	1-1 Increased number of users in different socio-economic categories 1-2 Payments from users meeting the operation and maintenance costs 1-3 Quantity of water supply/capita/day	・ Monitoring record at LWSC and NGO ・ Monitoring record at LWSC ・ Monitoring record at LWSC	・ Socio-economic environment of the target area will not decline to an extent which they cannot afford to use the basic social services. ・ Condition of groundwater provided will not worsen to affect sustainable operation of the water scheme. ・ Service providers will continue provision of services in the target area.
2. Community-based primary health care services are operated in sustainable manner.	2-1 Increased number of staff for health centre/ community health workers in the target area and improvement of their capacity 2-2 Status of monitoring by the community health workers	・ Report from LDHMT, record at health centre ・ Report from LDHMT, record at health centre, information from CHWs
3. Knowledge and behaviour of the community members are improved in terms of relation between water, sanitation and hygiene.	3-1 Practice to maintain/ improve water quality at household 3-2 Hygienic practice for drawing, carrying, storing and drinking water 3-3 Utilisation of different water sources in compliance with the usage 3-4 Practice to improve environmental sanitation at household level (proper excreta disposal and household waste disposal)	・ Monitoring records by LCC/LDHMT/health centres, information from community members ・ Monitoring records by LCC/LDHMT/health centres, information from community members ・ Monitoring records by LCC/LDHMT/health centres, information from community members ・ Monitoring records by LCC/LDHMT/health centres, information from community members ・
4. Area-Based/ Community-Based Organisations are enabled to identify the felt needs of the community and take initiatives for realisation of improvement of the living conditions in partnership with local authority and other stakeholders.	4-1 Status of community participation in decision-making on the projects for improvement of the living conditions 4-2 Status of implementation of the action plans elaborated by the ABO/CBO 4-3 Extent of trust in the ABO/CBO by the local authority and community members	・ Information from LCC, ABO/CBO and community members ・ Information from ABO/CBO ・ Information from LCC, LWSC, health centre and community members	

Activities:	Input:
The Water Supply Project in Satellite Area of Lusaka (Grant aid)	Human resources: 1. Japanese consultants, 2. Japanese/ local contractors and suppliers, 3. Counterpart staff Equipment: 1. Equipment for operation and maintenance Fund:
Lusaka District Primary Health Care Project (Project-type technical cooperation)	Human resources: 1. JICA experts, 2. Counterpart staff Equipment: vehicle, equipment and materials for administration, clinical and laboratory equipment Fund:
George Community Empowerment Programme (Community Empowerment Programme)	Human resources: 1. JICA expert, 2. NGO Programme staff, 3. NGO Project manager Equipment: Office equipment Fund:

Chapter 4 Overview of the Results

4.1 Zimbabwe

The outcomes of the Study are summarized and shown in Table A-10.1 in Appendix 10. Table 4-1 (at the end of this chapter) presents the achievements of the Binga Rural Water Supply Project in PDMe format. The main outcomes of the Study are described in this chapter according to the evaluation items in the evaluation grid shown in Table 3-6.

4.1.1 Achievements

Under the Binga Rural Water Supply Project, survey and drilling equipment and materials were procured and 30 borehole water supply facilities with hand pumps were constructed as a technical transfer. Sensitization meetings and workshops on community based management (CBM) were organized for community leaders and villagers, and a Water Point Committee was formed at each water point (bold lines in Figure 4-1). The Project purpose, however, was not yet achieved because a community based management system had not been established and borehole construction by the Government of Zimbabwe had been delayed for various reasons.

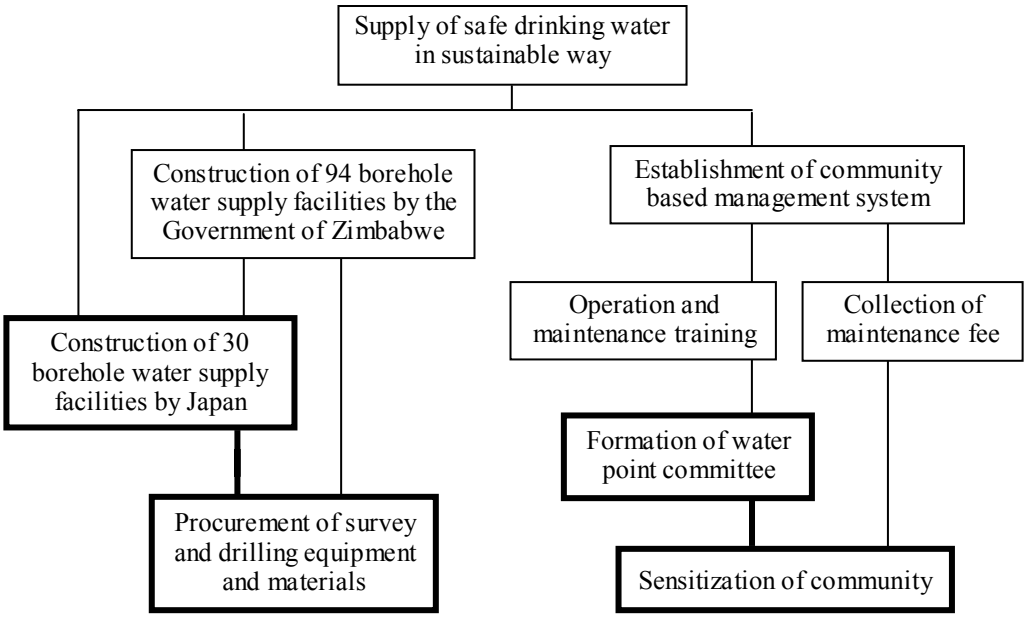

Figure 4-1 Binga Rural Water Supply Project

(1) Access to Safe Drinking Water

In the target area, common sources for drinking water are rivers and shallow wells dug near the river. These water sources are used both by the villagers

and livestock, thus the water is contaminated. As rivers and shallow wells often dry up in the dry season, it was the desire of the community ever since the relocation, to secure safe water all through the year.

Thirty borehole water supply facilities with hand pumps were constructed under the Binga Rural Water Supply Project. According to the result of the questionnaire survey in 10 sample villages, in the eight villages with borehole construction, the number of borehole users increased sharply, from 10.6% to 73.8% in 5 years, whereas in the two villages without borehole construction it remained at 17.5%. The habitants' accessibility to safe water was improved in the villages, where the borehole water supply facilities were constructed.

Table 4-2 Water Sources by Village（comparison with 1997）

Water source	Villages with borehole constructed				Villages without borehole constructed			
	Present		In 1997		Present		In 1997	
	persons	%	persons	%	persons	%	persons	%
Borehole/Deep well	118	73.8	17	10.6	7	17.5	1	2.5
Shallow well	41	25.6	123	76.9	28	70.0	29	72.5
River, reservoirs	1	0.6	20	12.5	5	12.5	10	25.0
Total	160	100	160	100	40	100	40	100

Prepared by the JICA Study team（November 2002）

(2) Operation of the Water Supply Facilities Constructed

According to the basic design study report (1997), prior to the Project there were 107 boreholes in total in the target area of 12 Wards of Binga District. Although there is no description on the operational status of the facilities in the report, water coverage of the target area was calculated at 31.7 % based on the above figure[1]. The project had constructed 30 borehole water supply facilities with hand pumps by October 1999. The number of boreholes in each ward in 1997 and 2002 is shown in the Table 4-3.

According to Table 4-3, the number of boreholes in the target areas increased from 107 to 144 in the last 5 years. From that figure, the current water coverage rate is calculated at 39.7 %, an increase of 8 % compared with the coverage rate before the project implementation. However, the real water coverage rate stands at 29 %, as 39 boreholes (27 %) out of 144 are currently out of order.

[1] The number of water supply facilities×250 (people)/population

Table 4-3 The Number of Boreholes and Their Operational Status

	Ward	1997		2002			
		Population	BH	Population	BH	Operational	Non-operational
1	Sianzyundu	9,262	13	10,008	16	13	3
2	Muchesu	4,515	2	4,878	5	2	3
3	Sinamagonde	13,751	28	14,859	33	29	4
4	Dobola	9,926	18	10,726	21	16	5
5	Tinde	4,576	9	4,945	12	7	5
6	Saba-Lubanda	7,006	4	7,570	7	4	3
7	Sinansengwe	3,940	7	4,267	11	8	3
8	Sinakoma	5,039	7	5,445	7	4	3
9	Sikalengwe	6,381	2	6,895	3	2	1
10	Manjolo	4,550	4	4,917	12	8	4
11	Chunga	8,301	3	8,625	3	3	0
12	Sinamapande	6,951	10	7,511	14	9	5
	Total	84,197	107	90,646	144	105	39

The figures in 1997 were from the Basic Design Study Report and that of 2002 were from Binga RDC.

4.1.2 Implementation Process

Figure 4-2 below shows the implementation process of project activities.

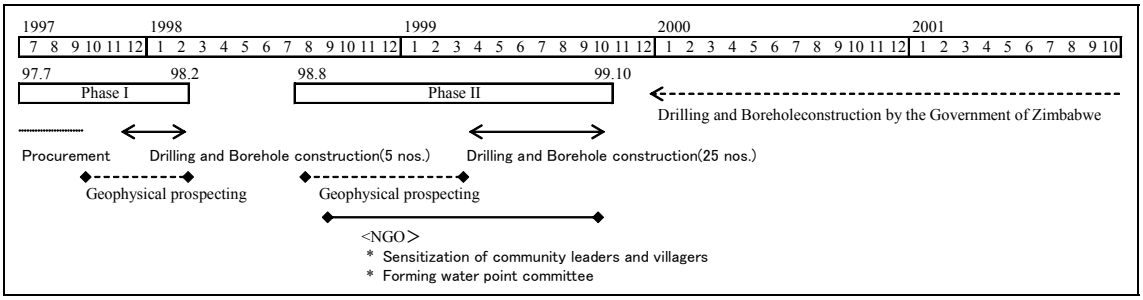

Figure 4-2 Implementation Process of Binga Rural Water Supply Project

(1) Timing, Volume and Level of Input

As shown in Figure 4-2, procurement of drilling equipment and materials and construction of 5 borehole water supply facilities for transfer of technology were implemented in Phase I and an additional 25 facilities were constructed in Phase II under the Project. The consultant team sub-contracted the component of community sensitization and formation of water point committees to SCF, an NGO which had long experience in the field of water supply in Binga district. SCF conducted awareness meetings and workshops for community leaders and villagers in 18 villages and formed 30 water point committees during their contract period of one year. One year, however, was not enough for the community to fully understand the importance of CBM and

to establish a system of operation and maintenance (O&M) of the facility and the collection of maintenance fees. Follow up meetings for the villagers and water point committees were not organized after the Project.

According to the basic design study report in 1997, DDF and RDC should be responsible for O&M of the facilities as well as community sensitization. However, from the current situation of Zimbabwe it is difficult for DDF and RDC to implement training programmes and institutional strengthening without financial support by donors.

Transfer of technology on geophysical prospecting and drilling were provided to field engineers of ZINWA (previously DWD), a counterpart organisation of the Project, whereas no support was given to DDF or Binga RDC which were to support communities for O&M of the facilities in the field.

(2) Delay of Project Implementation by the Government of Zimbabwe

Construction of 30 borehole water supply facilities was completed by Japan in October 1999. The Government of Zimbabwe was to continue to construct the remaining 94 water supply facilities using the machines and equipment provided by the Project, though so far little progress has been made. According to ZINWA's record, drilling has been tried at 34 locations since 2000 up to the time of field survey and only 10 of them were successful. ZINWA attributed this low success rate to the following two reasons: 1) difficult hydrogeological conditions of the target area; and 2) method of pre-siting by the community.

According to ZINWA, due to the tight schedule of the Project, the Japanese team selected locations where hydrogeological conditions were relatively favourable for drilling while the condition of the remaining areas are more difficult. ZINWA will try a deeper drilling as an experiment to examine the potential. Regarding the second issue, pre-siting of the drilling points was done in a participatory manner: first, the community selects three locations for a borehole (pre-siting), then geophysical prospecting is done at those three locations, and at the location with highest potential, drilling starts. Therefore, many of the locations were not in the best hydrogeological position. In the future, ZINWA will try to persuade communities to select locations in accordance with hydrogeological conditions explaining to them the reasons for the past failures.

The reasons why the project implementation was delayed were attributed to 1) budgetary problems; and 2) shortages of fuel. No drilling was done in 2000 because no budget was appropriated whereas Z$5million in 2001 and Z$20million in 2002 were budgeted. ZINWA allocates internal funds till the budget is disbursed in order to overcome the delay. Although Z$30 million has

already been committed for the year 2003, this amount will not be enough to fulfil the target because of the high inflation rate in recent years according to ZINWA. Current severe fuel shortages because of a shortage of foreign currency in Zimbabwe also might delay the future progress.

As described above, although ZINWA is willing to continue the Project, it is facing many problems. Considering the current situation that the progress is vastly delayed, the project objective and overall goal will not be achieved in the near future.

4.1.3 Sub-Question I: Sustainability of the Water Supply Project

(1) From Technical Viewpoints

The borehole water supply facilities constructed by Japan have Bush Pump Type B hand pumps, which were developed and standardized in Zimbabwe, a washing slab and a cattle trough at the nearby site. Bush pump components are produced in the country; therefore, it is easier to purchase the equipment and spare parts compared with the other types of hand pumps. However, maintenance of bush pumps needs to be handled by technicians with some special maintenance tools. To promote a community based operation and maintenance system, it is necessary to introduce the hand pump structures which are easy to handle even for community members.

Findings from the site visits to 10 borehole water supply facilities are summarised in Table 4-4. Although there was only one borehole that was not in use due to break down, there were a few that were not fully utilized because pumping was too difficult.

Table 4-4 shows 5 out of 10 boreholes visited during this evaluation survey are functioning and being fully used by the communities. The other boreholes have problems with pumping systems. Additionally, the success ratio of the well digging remains low after the completion of the Japan's assistance. Therefore, it is necessary to review the technical relevance to continue the current project of water supply construction as originally planned in Binga District.

Table 4-4 Conditions of Water Supply Facilities constructed by Japan during the Project Period

Village	Location	Usage	Water Point Committee	O&M of the Water Supply Facilities
1. Gande	Gande	In use No hand pump break down since construction Adequate yield of water	No	At the beginning a monthly maintenance fee of Z$20 per household was decided though many have not paid. The fee was reduced to Z$10 in 2002. Villagers have repaired the wooden fence, which was destroyed by cattle.
2. Chitete	Chitete	In use No hand pump break down since construction Adequate yield of water	Yes	It was agreed to collect a monthly fee of Z$20 per person though it is not practiced. The water point committee's activity is limited to sweeping the surrounding area.
3. Delampuli	Delampuli	In use No hand pump break down since construction	Yes	The water point committee sweeps the surrounding area and repairs the fence. The committee also collected a maintenance fee of Z$5 per person. Although there is a villager who was trained for hand pump repairs, they call for DDF as he was not given appropriate tools
4. Damba	Damba	Partially in use Though no hand pump breakdown since the construction, pumping is hard and takes long time. Because of this problem some use water from the nearby river unless it is dried up and use the borehole only when river dries up as there is no alternative.	Yes	No information
5. Mucheni	Mucheni I	In use No hand pump breakdown since construction	Yes	At the time of construction Z$5 per household was collected though since then no maintenance fee has been collected. Wire net from the surrounding fence was stolen and only metal poles are left. Water point committee members were not trained for O&M of the facility and only a pipe and a driver were provided as tools. There is no pump minder in the neighbouring area.
6. Mucheni	Mucheni School	Not in use The pump broke down in August 2001.	No	It is not repaired as there is no pump minder in the area.

Village	Location	Usage	Water Point Committee	O&M of the Water Supply Facilities
7. Manjolo	Manjolo School	Not in use As it takes more than an hour of pumping by several men before water comes out, people stopped using it in 2001.	No	The borehole as well as the washing slab at the school premises shows no trace of use. The surrounding fence is intact. 900 children in the school use an old deep well 400 metre away.
8. Dumbwe	Dumbwe	Partially in use As it takes long time for pumping before water comes out, villagers use water from the river during the rainy season. The borehole is mainly used between June and September when the river dries up.	Yes	At the time of construction Z$3 was collected from villagers of 18years or above and the money is still kept by the water point committee. Though the fee is supposed be collected every month, it is not practised as it is not well used due to difficult pumping. No assistance was sought from DDF or pump minder.
9. Blawayo Kraal	Matongo	In use No hand pump breakdown since its construction.	Yes	In 2001 a monthly fee of Z$5 was collected. This year due to deteriorated economic situation from droughts fees are not collected. The surrounding area is well looked after and the fence is intact. The water point committee has never been trained and only tools provided were a pipe and a driver.
10. Chuvwepu	Nampande	In use Though no hand pump breakdown pumping is difficult and takes long time before water comes out. Women have to work in groups to pump water.	Yes	At the time of construction Z$2 per person was collected and the money is still kept with the water point committee though fee is no longer collected. Villagers together with the water point committee members clean the surrounding area and repair the fence.

JICA Study Team（November 2002）

(2) From Financial Viewpoints

As shown in Sub-section 4.1.2, the Government of Zimbabwe was to continue to construct the remaining water supply facilities using the machines and equipment provided by the Project. There was no budget from the central government in 2000, however, Z$5million was allocated in 2001 and Z$20million in 2002. Z$30million have already been promised for 2003. Although the inflation rate is very high, the central government is expected to provide a certain amount of budget for water supply construction project in Binga District. On the other hand, the budget for maintenance, community awareness and institutional strengthening, which are the important activities to improve the project sustainability, has not been secured yet.

The previously so-called three-tier-system was practiced under the leadership of the DDF for the O&M of water points. A Water Point Committee, which is

composed of borehole users, was to take every day care of the pump and to keep the surroundings clean. When the pump becomes out of order, pump minders, who were trained and paid by the DDF, attend the pump for repair. In case of more serious problems and breakdowns, the DDF Maintenance Team was called for repair. The cost and spare parts necessary for the repair were covered by the funds allocated from the central government to the DDF of each District. However, as the governmental expenditures were cut due to the adoption of the Structural Adjustment Policy, the system led by the DDF became non-operational. Since the mid-1990s, as an alternative method to the three-tier-system, Community Based Management (CBM) was introduced. Under the CBM system, local communities are primarily responsible for construction and maintenance of water supply and sanitary facilities and they also bear the cost for their operation and maintenance.

According to the site survey, the members of the water point committees were advised, during the construction period, to collect maintenance fee from the users for future breakdowns of the facilities. Some of the committees did collect some fees for a while; however, currently, none of the water point committees interviewed collect fees from their users. This is due to serious economic conditions caused by the severe drought in the area. At the same time, the high inflation rate discourages them from collecting money for unknown possible future breakdowns.

In some areas in Binga, where SCF has been conducting a CBM water supply and sanitation pilot project with the financial assistance from DfID, it is reported that the collection ratio of the maintenance fees has been relatively good. However, it is not clear if we can apply this pilot project to the other areas in Binga. Considering the financial sustainability, it is necessary to reconsider if the CBM system is really appropriate in this area, where more than 91% of the households are classified as poor or the poorest

(3) From Institutional Viewpoints

The basic design study report on the Binga District Rural Water Supply Project notes that the O&M and management system for the water points was not established in Binga and therefore support should be provided for community sensitization, which would be undertaken by the Government of Zimbabwe. During the implementation stage, activities such as community sensitization and formation of Water Point Committees for O&M of the facilities was sub-contracted to SCF, an NGO that had long experience in water sector assistance[2]. Targeting the wards where borehole water supply facilities would

[2] According to the report compiled by SCF, a consignment agreement with a Japanese consultant was signed in September 1998 thus their activities, such as community sensitization and formation of Water Point Committees were launched from the Phase II.

be constructed under the Project, SCF conducted awareness meetings on CBM for community leaders such as councillors, chiefs and village heads. Then SCF organized meetings with villagers to discuss their water-related issues and health and hygiene issues, and initiated the formation of Water Point Committees.

Out of 10 borehole water supply facilities visited by the Study Team, 8 had water point committees. The committee is usually composed of 7 members: a chairperson, an assistant chairperson, a secretary, an assistant secretary, a treasury and other 2 members. In most cases more than half of the members were female, which was attributed to the fact that drawing water was considered a female's task and therefore it was more convenient for a female to manage the facility and its surroundings.

However, according to the site survey of the facilities and interviews from the community, it was found that little was done regarding the O&M of the facility except for sweeping the surroundings and repairing the fence. Regular check-up and maintenance of the pump and collection of maintenance fees were hardly practiced by any of the water point committees. Although water point committees exist, most members were not trained on the O&M nor provided with tools necessary for the maintenance. There were some members who were not sure what tasks were expected from them. In both villages where PRA was conducted, the villagers complained that they did not know who to report to or how to repair the pump in case of break down. In Mucheni village one of the 2 borehole facilities broke down in August 2001, and it was left idle as there was no pump minder in the neighbourhood.

In line with the government's decentralization policy, the responsibility for planning and implementation of water supply and sanitation services within the district was transferred to RDC. However, Binga RDC has no financial or human resources to assist the community in establishing an O&M system for the existing facilities or constructing new water supply and sanitary facilities.

In summary it is said that although water point committees were formed at each facility, O&M systems capable of coping with possible future breakdowns of the facilities are yet to be established. The reasons for this weak O&M system may be attributed to: 1) not enough time was provided for the implementation agency (SCF) to conduct adequate activities to train water point committees for O&M of the facility; 2) no follow-up meetings or workshops were organized for the water point committees by SCF or RDC; 3) in many cases, tools necessary for maintenance were not provided to the committee; 4) many of the community members do not fully understand the concept and practice of CBM ; and 5) RDC does not have an appropriate

system to support the community.

4.1.4 Sub-Question II: Impact on Poverty Reduction

The result of the questionnaire survey shows the proportion of inhabitants who answered that diarrhoea and skin disease had decreased in 5 years was higher in the villages with borehole construction. However, for eye disease, no significant difference was found (Table 4-5).

Table 4-5 Occurrence of Water-born Disease by Villages (comparison with 5 years ago)

Disease	With deep well (n=160)						Without deep well (n=40)					
	Increased		Decreased		No change		Increased		Decreased		No change	
	Person	%	Person	%	Person	%	Person	%	Person	%	Person	%
Diarrhoea	48	30.0	94	58.8	18	11.3	13	32.5	19	47.5	8	20.0
Eye disease	53	33.1	90	56.3	17	10.6	14	35.0	23	57.5	3	7.5
Skin disease	20	12.5	123	76.9	17	10.6	9	22.5	24	60.0	7	17.5

JICA Study Team (Nov. 2002)

Even in the villages where boreholes were drilled, some villagers living far from the borehole are not able to use the facility, and some facilities are not functional. Therefore, not all the villagers use water from the borehole facility. Whereas, some people in the village, which was not included in target area of the Project, may be using water from an existing borehole in the village or a borehole in the neighbouring village. Table 4-6 presents a comparison between borehole users and non-borehole users. Percentages of respondents who stated that diarrhoea, eye disease and skin disease had decreased in the 5 years were 72.8%, 65.6% and 84%, respectively, among borehole users whereas it was 29.3%, 41.3% and 56% among non-borehole users. Especially, reduction of diarrhoea was significantly different. It may be concluded that the occurrence of water-born diseases had decreased among borehole users. Reduction of diarrhoea and bilharzias was also highly appreciated in Gande and Mucheni villages during the PRA exercise.

Table 4-6 Occurrence of Water-born disease by water sources (comparison with 5 years ago)

Disease	Borehole users (n=125)		Non-borehole users (n=75)	
	Decreased		Decreased	
	Person	%	Person	%
Diarrhoea	91	72.8	22	29.3
Eye disease	82	65.6	31	41.3
Skin disease	105	84.0	42	56.0

JICA Study Team (Nov. 2002)

Fetching water is normally a task for women and girls in Binga. The result of the questionnaire survey shows that most of households answered women or girls to the question "who usually fetch water in your family?" as shown in Table 4-7.

Table 4-7 "Who usually fetch water?" (Multiple answers possible)

Category	No of Households	%
Men	5	2.5
Women	173	86.5
Boys	12	6.0
Girls	88	44.0
Total	200	-

JICA Study Team (Nov. 2002)

Although the number of households which use boreholes increased from 18 households to 125 households in 5 years, only 52 respondents, which was 1/3 of the borehole users, noted a reduction of time for fetching water. Construction of boreholes does not necessarily reduce the time for fetching water as it depends on the location of the water point in relation to the house and some may rather go to a borehole even it is farther in order to draw safe water. Out of 52 respondents who answered that time for fetching water was reduced, 78% spend the saved time doing other household work such as cooking and cleaning, 25% working in the field and the garden, and 11.5% making handcrafts such as straw mats and baskets. Three respondents noted that girls are now spending more time studying. In Gande where PRA was conducted, some villagers said that before the borehole was constructed, women went to shallow wells near the river early in the morning or at midnight before wells were dried up and on some occasions women were attacked by wild animals. As the borehole is now located near the homestead, no such accident has happened in recent years.

4.1.5 Sub-Question III: Applicability of Integrated Approaches

The history, structure and socio-economic environment of target communities were analyzed to explore the applicability of an integrated approach in other areas.

Unlike other parts of Zimbabwe where the Shona and Ndebela are the two major tribes, 95% of the population in Binga district is from the Tonga tribe. The local language used in the area is Tonga and some women do not understand any of the country's official languages, English, Ndebele and Shona. Tonga people were forced to move from the Zambezi River basin to the current area due to the construction of the Kariba Dam in 1957.

At the time of relocation, the colonial government promised to provide the community with safe drinking water, a food supply and health services. According to the community, however, these promises were not kept, except for initial food distributions. Since 40% of the land in Binga district is classified as wildlife sanctuaries, national parks and reserved forests, these relocated people lost the basis of their livelihood, which was previously hunting, fishing and riverine gardening in the Zambezi River basin. The average annual rainfall in the area is as low as 450 – 800 mm and most land is classified in the three poorest land use categories, III to V, which is only suitable for livestock rearing and cultivation of drought-resistant plants. Since their relocation, they experienced severe droughts and food shortages in 1961/62, 1967, 1982/83, 1991/92 and 2002. As there were few employment opportunities in the district, many men sought employment in urban areas such as Bulawayo and Harare when labour forces were still in demand. With its remoteness and poor infrastructure, Binga is considered to be one of the least developed areas in Zimbabwe.

The Household Poverty Assessment in 1995 revealed that 91% of the households in Binga were classified either as poor or the poorest, which was the worst in Zimbabwe. According to the 1992 census, the literacy rate in Binga was 49%, which was well below the national average of 75%, and that of women was as low as 38%. This may be attributed to their traditional way of thinking, which discourages girls from having an education as well as lack of schools in the neighbourhood. The National Health Profile in 1999 showed 19.1% of the children were below standard weight per age, which was, again, the worst in Zimbabwe.

In southern Africa including Zimbabwe, two consecutive years of drought was causing serious food shortages in the country at the time of this study. Binga is one of the districts hardest hit by the drought in Zimbabwe. It was reported that food shortages resulted in death in the district as emergency food distribution was temporarily suspended. It is therefore important to consider the social and natural uniqueness of Binga when considering the future of water supply provisions in the area.

4.2 Zambia

The outcomes of the Study are summarized and shown in Table A-10.2 in Appendix 10. Table 4-8 (at the end of this chapter) presents the achievements of the Programme in PDMe format. The main outcomes of the Study are described in this chapter according to evaluation items in the evaluation grid shown in Table 3-9.

4.2.1 Achievements

The Water Supply Project for Satellite Areas of Lusaka under the Japanese grant aid divided George Complex into 8 service areas. Each received a piped water supply scheme with a borehole as the water source. In parallel, operation and maintenance systems were established through setting up the George Main Division as the management body and facilitating participatory operation and maintenance by the user communities at the public tap level. A users' hygiene education program was also undertaken. The consultant in charge facilitated planning for organisational management of the George Main Division that serves water supply services and to advise staff employment and training in cooperation with Lusaka Water and Sewerage Company (LWSC), the executing agency of the project. In addition, the consultant conducted socio-economic surveys at household level and community sensitisation together with staff of Lusaka City Council (LCC) seconded to George Main Division. Further, after the 2nd phase of the project, community participation was promoted for operation and maintenance of the water supply services in collaboration with CARE who had supported capacity building of George RDC.

The pilot project of the PHC Project under the project-type technical cooperation scheme was implemented aiming at improving community-based PHC activities. The PHC Project came into realisation in expectation that utilisation of a safe water supply and hygiene education would work in synergy, taking advantage of water supply facilities constructed in George Complex under the aforementioned grant aid. Therefore, the target area of the pilot project chosen for PHC activities was George Proper, one of the settlements in George Complex. The project ended its cooperation period in March 2002 followed by the 2nd phase which started in July 2002. This incorporated a health improvement project for under-5 children, applying experience from PHC activities in George Proper under the 1st phase of the project.

On the other hand, the George Community Empowerment Programme (GCEP) started 3 months before the completion of the entire grant aid project for construction of water supply facilities. It followed up activities to strengthen the management system of water supply services undertaken in the grand aid project, with the aim of the enhancement of institutional capacity for sustainable operation of the water supply facilities. Planning of the programme involved LWSC, LCC, CARE and the consultant supervising the water supply project under the grant aid. CARE has been responsible for facilitating the planned activities based on the community empowerment programme scheme. In addition, the consultant in charge of the water supply project under the grant aid has been dispatched as a JICA short-term expert to LWSC during the

implementation period of the GCEP.

The GCEP was supposed to end in January 2003. However, due to the delay of RDC reformation, CARE PROSPECT, which is a mother body of the CARE GCEP unit, explained their intention to extend support for another one year to follow up the capacity building of RDC with a fund from PROSPECT after the cooperation from Japan would have been withdrawn.

Table 4-9 shows the rapid increase of persons who are using public taps. Most of the sample households surveyed with a questionnaire in George Proper belong to the area where the water supply from the piped water scheme constructed by the grant aid project started in the mid-1996. Therefore, unlike other areas, the public taps were already available 5 years ago. However, a certain number of households used the water from shallow wells or drew water illegally from the LWSC pipes that existed in areas neighbouring George Proper. The grant aid project covered the entire George Complex with a satellite water supply system, whereupon the old pipelines connected from the existing network were closed. This made an illegal connection impossible and was a factor that improved the usage of public taps. Meantime, a decrease of shallow well usage can be induced by expansion of awareness of the community members through hygiene education as stated before.

Table 4-9 Types of Water Sources for Potable Water (%)

	George Proper		Service Area 5		Service Area 7		Bauleni		Kalikiliki	
	Present	5 ys ago	Present	5 ys ago	Present	5 ys ago	Present	5 ys ago	Present	5 ys ago
Public Taps	97.5	65	93	55.8	90	50	95	65	72.5	52.5
Shallow Well	2.3	20.9	6	13.9	0	9.5	0	0	0	0
Illegal Connection to the existing pipeline	0	7	0	13.9	0	26.2	5	12.5	72.5	52.5
Borehole with Handpump	0	7	0	4.6	0	7.1	0	2.5	0	5
Others	0	0	1.3	11.6	0	7.1	0	20	26	27.5

(Questionnaire survey by JICA Study Team: 2002)

4.2.2 Implementation Process

Improvement of community-based water supply services and PHC activities as part of the programme were planned to utilise the constructed water supply facilities and maximise the benefits from such improved water supply. The chronological implementation schedule of each component is shown in Figure 4-3

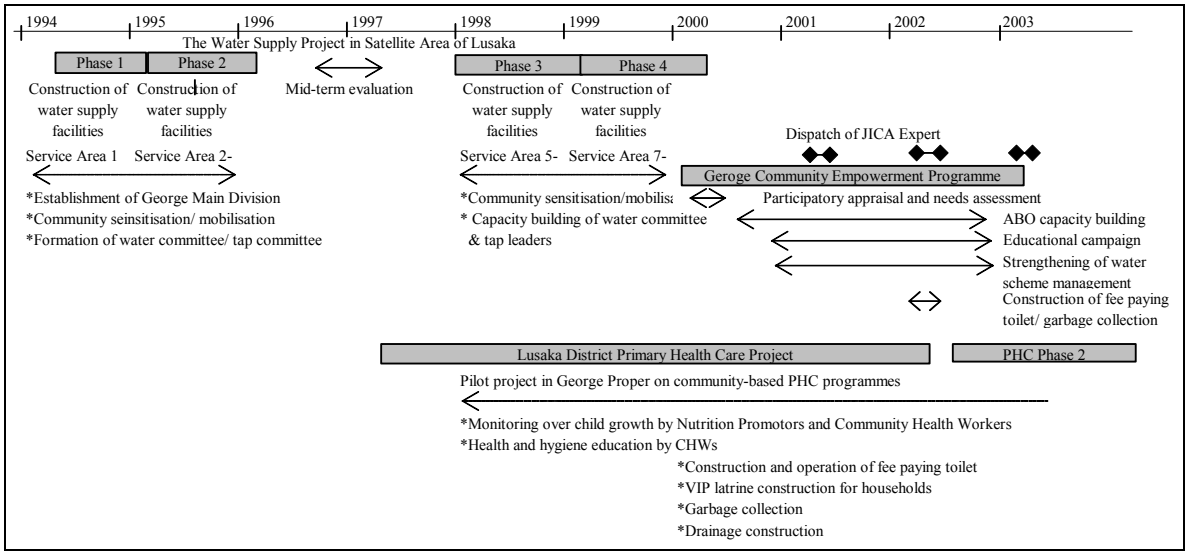

Figure 4-3 Programme for Improvement of Living Conditions for George Compound, Lusaka

Each component of the programme was undertaken in a timely manner, considering the social conditions of the target area. The water supply project was implemented to mitigate the cholera outbreaks by means of a safe water supply. The PHC project was designed to improve residents' health and hygiene environment in tandem with the water supply project. GCEP was established for the implementation of a participatory management system of the water supply services, which could not be achieved by the water supply project alone under the grant aid. It started to implement a follow up of the grant aid project and thus at the commencement, overlapped a part of the implementation period with the grant aid project.

The programme promoted participation of the Area-Based Organisations and other community-based organisations as an interface of the community and the local authorities. Coordination among the programme components has been done by the project staff at the operational level. However, it seems that there is a lack of communication among the area-based/community-based organisations and executing agencies of the projects due to the long absence of an RDC in charge of coordination of the development activities in the area.

4.2.3 Sub-Question I: Sustainability of Water Supply Projects

(1) From Technical Viewpoints

During the planning stage of the project, George Complex, which was located at the end of the obsolete water pipe networks of Lusaka City, had faced serious water problems including water shortage, decrease of water pressure and suspension of water supply. Considering these situations, the project chose stand alone water supply system covering only George Complex. This system

was expected to reduce the initial cost and maintenance fees.

50-60 households were served by one public tap. The location of the public taps was decided through PRA method in collaboration with water point committee members, which was then checked technically by the George Division and the local consultants. The project took a community participation approach in its planning step. Therefore, the facilities constructed by the project meet the needs of the community members and are easy to use and handle by them.

(2) From Financial Viewpoints

User fees cover the operation and maintenance expenses of water supply services so that George Division stays financially independent from Lusaka Water and Sewerage Company. The Division head, the Project Manager, is dispatched from LWSC and two Community Development Officers are seconded from the Peri-Urban Section of Lusaka City Council. Other staff of the Division for accounting and maintenance of water facilities are employed from George Complex itself on a project basis.

Personnel expenses are covered by the income from the water supply services, except for the Project Manger who is paid by LWSC headquarters. Running expenses for the facilities and maintenance costs such as pipe repairs are also paid from the revenue of the services. The technical staff from LWSC will repair breakdowns of pumps and other problems that cannot be taken care of by the staff of the Division. According to the interviews at the Division, costs for repairs have been borne by the LWSC Headquarters, but as of 2003 these would be paid by the George Division as well as from the service revenue.

Payment rate of user fees has been slowly rising since the commencement of the project in every service area. While it was 55% at the outset, it has stayed around 70% on average since January 2001. The operation is financially sound and sufficient to run the current scale of operation. It is difficult, however, to extend the facilities with the current financial capacity in order to serve more households, which are expanding into the peripheral areas of the existing settlement.

On the other hand, measures are needed to promote the utilisation of services by the poor who cannot afford the water and health service fees at present. Results of the questionnaire survey in George Proper revealed that among those who responded, some 33% of the households had difficulties in accessing the safe water, of which 28% said they could not pay the user fees. The difficulty in fee payment is rated as the most serious problem among users in other surveyed areas too.

George Division has considered a way to include into the service the

households that cannot afford the monthly payment of K3000, yet wish to use the public faucets. Results of the survey conducted by George Division elucidated that the people in this social stratum wish to pay per use, even when it costs more, as they cannot put K3000 aside every month even if that they have an income because they must use it for immediate needs. Therefore, it was decided to introduce the Flexible Payment System which allows users to choose either paying for water by the bucket through a kiosk system or the existing fixed monthly payment system. In the future, a pilot project for the kiosk system will be put on trial at one public tap in each zone in George Complex. Based on the results of monitoring the pilot project, a full introduction of the Flexible Payment System may be launched.[3]

At the planning phase of the water supply project, the socio-economic environment was taken into account to design a service level with feasibility in operation and maintenance. The user fees have also been set considering both users' ability to pay and general economic conditions, yet these could not address the predicament of the poorest of the poor to access water services. The revision of the payment system became the start of the improvement in this regard.

(3) From Institutional Viewpoints

The service is managed based on the agreement for a partnership between LWSC, George Main Division and the George Water Committee. George Main Division is responsible for customer services including user registration and complaint procedures as well as the financial and technical management for the entire scheme. On the other hand, each public tap is taken care of by selected tap leaders from the communities in terms of opening and closing of taps, control of the fee payment, daily maintenance of public taps and the surrounding areas. They report to George Main Division when a problem is found. They receive incentives from the Division every month, which is K500 per household that uses the public taps and have paid the user fee in the month. Campaigns for appropriate water usage and payment of user fees are also undertaken in collaboration between tap leaders and George Division. The Water Committee supervises activities of these tap leaders through Zone Water Monitors by Zones. They also consult with George Main Division about the water usage and operational and maintenance issues, and further, produce action plans. The Water Committee has taken part in water supply services with rotating members serving as the representative of residents in George

[3] The rate per 20 L container will be set at 25 K. When paid fixed price monthly, the water usage at the laundry facility is free. Thus, the paying for water per bucket is still more expensive than the fixed monthly charge. But considering the water from shallow well is sold at K50-100 per container in the suburban settlements, a good number of households would choose the system to buy water per container, LWSC and George Main Division said.

Complex since the commencement of the water supply project under the grant aid.

The effectiveness of community participation in service management is firmly understood by both the service provider and community-based organisations such as the Water Committee and the Neighbourhood Health Committee. However, as a matter of course, there are different opinions on the approaches and means of service operation among the service provider, community-based organisations and service users depending on their standpoints. The following table summarises their different opinions obtained from George Main Division, the Water Committee, Tap Leaders and community members through interviews, questionnaires and the Participatory Rural Appraisal (PRA).

George Main Division	The overall water supply services are managed by the George Main Division of LWSC and the operation and maintenance of public taps and laundry facilities are supervised by tap leaders. However, it is being discussed to what extent the legal ownership and facility operation should be transferred to the community as RDC and Water Committee have expressed that they would like to be involved in the service operation which are currently managed by the Division. Tap leaders have requested an increase in incentives as three quarters of tap leaders are female without paid work. There are gaps in understanding between the tap leaders and users in terms of the required service level of the public taps. The Main Division further facilitates improvement of the service provided by the tap leaders and cooperation from users.
George Water Committee	Capacity in community sensitisation and participatory approaches for management of water supply services and hygiene promotion has been improved through involvement in the project. They expect to learn know-how and technical skills about operation of water supply schemes to be involved more intensively in the service.
Tap leaders	There is a lack of regular communication with the Water Committee for solving problems at the public taps. Sometimes problems are not dealt with promptly by the Main Division, which causes frustration among users. Better incentives are also requested. Some tap leaders find it is difficult to spend time for both mornings and evenings at the tap because of their needs for income generation
Community members	Tap leaders should open the taps at the hour agreed among the George Main Division, community members and tap leaders. Longer opening hours are needed. Grace period for payment of user fee should be considered since even one-day delay of payment leads to banned use of taps at present.

The system of cooperation between the George Main Division and the Water Committee has been reviewed a few times so far. There is a need for regular reviews with both stakeholders to improve sustainability of water supply services as changes in external factors such as the socio-economic environment influence the payment and participation from the community members.

In George Complex, the George Main Division and the RDC/Water Committee run the water supply facilities in cooperation under the auspices of LWSC. Learning from these forms of project implementation in George, other unplanned settlements around Lusaka increasingly operate the water supply services with further transferred authorities and responsibilities for operation to the Area-Based Organisations. CARE PROSPECT is supporting strengthening a participatory approach for community development in 12 unplanned settlements around Lusaka.

In this context, the water supply is positioned, not as an ultimate goal but as an entry point to community development. While the constructed water supply facilities legally belong to LCC, a Water Board (Trust) is established consisting of the representatives from RDC in the settlement, residents, LWSC, LCC and CARE, which is entrusted by LCC with operation of the water supply services. A self-supporting accounting system is adopted for financial management run by the Water Board. The expenses for operation and maintenance and wages for operational staff employed from the communities are paid from the service revenue. Furthermore, part of the revenue is set aside for other community activities. In addition, if the severity of breakdown of the facilities is beyond the capacity of the communities, a contract is made with the service providers such as LWSC to receive repair services. Within the 10 unplanned settlements targeted for construction of water supply facilities by CARE PROSPECT, the operation has already started in 7 settlements with this Water Board system.

LCC and LWSC do not take charge of the entire service operation for the improvement of water supply in unplanned urban settlements as explained above. They principally give the communities the primary responsibility and support them in technical and policy forms. The operation system by the Water Board was started in July 2002. Both the local authority and the Area-Based Organisations expect that surplus revenue will become a financial source for other development activities in the communities through an appropriate service operation. It is effective to introduce projects that can produce regular income as an entry point for community development and to upgrade the communities' capacity for self-governance and management. This enables communities to autonomously manage the development issues in the area.

However, the water supply is a social service. It is important for local authorities and service providers to be involved in supervision and support the community-based service management in order to secure a stable service both in quality and quantity.

4.2.4 Sub-Question II: Impact on Poverty Reduction

(1) Improvement of health and hygiene conditions of the community members in target areas

A participatory rural appraisal (PRA) was conducted in the sampled survey areas including George Proper, a program target area. Through the analysis, community members summarised common diseases and their seasonal outbreaks in their residential areas as shown in Table 4-10. Common diseases in the program target areas, especially amongst the poor, are tuberculosis, diarrhoea (including cholera) and malaria. HIV/AIDS is also recognized as a growing disease among both the rich and poor.

Table 4-10 Disease Calendar in the Sample Areas, George and Bauleni

Seasons	Major Diseases
November－March (Rainy Season)	Malaria, Dysentery, Cholera, Common Diarrhoea among children, HIV/AIDS, TB, High BP
April－July (Dry, Winter)	Coughing, Sneezing, Pneumonia, Malaria, Asthma, HIV/AIDS, TB, High BP
August－October (Dry, Hot season)	Head aches, Scabies for children, Malaria, HIV/AIDS, TB, High BP

Through enhanced understanding of adequate hygiene practices and utilisation of water from a public tap, the program achieved a drastic decrease in occurrences of water borne diseases. Especially, cholera decreased from 70 per 10,000 cases in 1994 to 1 case in the year 2000.[4] According to the questionnaire survey results gathered in the sample communities, a number of households also observed downward trends in diarrhoea and cholera in particular, compared with five years before. These trends are similarly observed in not only George Proper, the program target area, but also other water supply service areas in George Complex as well as Bauleni, in which water supply facilities were constructed as a pilot project in the development study (Table4-11).

[4] Project Evaluation Report on the Lusaka District Primary Health Care Project（2000）

Table 4-11 Occurrence of Water-born Disease by Water Sources and Areas

(Comparison with 5 years ago) (%)

Survey Disease	George Complex			Bauleni	Kalikiliki
	George Proper	Service Area No. 5	Service Area No. 7		
Diarrhea	74.4	83.5	66.6	67.5	22
Cholera	74.4	86.0	69.0	70.0	18
Eye disease	62.8	76.6	61.9	55.0	19
Skin disease	55.8	74.4	61.9	60.0	19

The results of the questionnaire show that the reasons attributed to the decrease in diarrhoeal diseases are hygiene education in addition to access to safe water in every area surveyed in George Complex.

On the other hand, in terms of child health, approximately 70% of households answered that nutritional conditions of children have worsened compared to 5 years before due to fewer meals a day and the degrading quality of food aggravating living conditions. However, despite people's anxiety over the impact of the stagnating economy on living conditions, through implementation of the primary health care project, the underweight prevalence among under-5 children dropped from 23% in 1999 to 15% in 2000. And occurrences of measles decreased from 8.5 cases per 1,000 persons in 1999 to 1.8 cases per 1,000 in 2000.[5] From these results, it is deduced that even with distressing household level economic conditions, implementation of the community based primary health care project can be effective for recipient households to improve child health and prevent major diseases.

(2) Increase in participatory community development projects

a. Dissemination

To enable the basic services to take root in a sustainable manner, each component of the program has facilitated institutional building and environment creation in order for the community members to participate in management of services through Area-Based Organisations (ABO) in collaboration with the local authorities. Therefore, it is the long-term objective that the capacity and institutional set-up will succeed in creating facilities and planning for developmental issues under the leadership of the Area-Based Organisations as well as lobbying the local authorities and other external support agencies even after completion of each program component.

Reviewing the achievement so far in this regard, an operational set-up for community-based development projects has just been established with the

[5] Project Evaluation Report on the Lusaka District Primary Health Care Project (2000)

George Resident Development Committee (GRDC) as a central coordinative arrangement in 2002. Thus, actual realization requires further monitoring in the future.

Other than RDC, other community-based organisations have been formed to tackle specific issues within George Complex. Among others, George Environmental Health Committee (GEHC), which has been initiated and established by the community members through community-based primary health care activities, attempts to spread activities for improvement of environmental health beyond George Proper and to engage the GRDC in activities as an organisation representing residents in the George Complex. As an example, GEHC has a plan to construct VIP latrines for households with the support of small-scale grant aid from Japan. Further, the Drainage Committee which, similarly to GEHC, operates in collaboration with George Central Clinic, submitted a proposal for drainage construction to INSAKA program from CARE and secured funds in addition to finance from the PHC project.

The RDC is established in every unplanned settlement as an interface for the residents to develop living conditions after legalisation and regularisation of the area by Lusaka City Council (LCC). In George Complex, a RDC was organised with the help of CARE in the mid 1990s. Capacity building has been initiated in leadership skills and participatory approaches. The RDCs registered under the Social Act were delegated to coordinate among LCC and other concerned organisations in the area.

While being responsible for coordination of development activities, which are common benefits within the community, impartiality was a requisite for the RDCs to be detached from any specific political standpoints. However, in reality, it happened in a few areas, including George Complex, that interference from politicians such as ward councillors in the area or members' misconduct to pursue self-interests hindered the organisation's ability to perform its expected roles. Therefore, LCC decided to position the RDCs as an organisational layer legitimatised by the Local Government Act. A consensus of stakeholders on the revision of the regulations regarding RDC was reached in January 2002. The implication of this change is to strengthen a cooperative relationship between LCC and RDCs and to create the institutional arrangement within which LCC can properly intervene and instruct in case pressures from within and outside the RDCs cause confusion. RDCs are expected to produce development plans, allocate incoming resources in the area and negotiate with cooperative organisations such as community-based organisations, donors, NGOs and private service providers under the supervision of the

city council. Moreover, the Zone Development Committee (ZDC), from which RDC members are selected, is commissioned to expedite development activities as well as identify the needs of the residents within the zone[6].

Upon expiration of the tenure of the previous RDC in George Complex in October 1999, interference from politicians in the area caused confusion in connection with selection of a new RDC. Thereafter for about 3 years a RDC was not in place till July 2002 when a new committee was formed in accordance with the revised RDC regulation.[7] For these reasons, the expansion of community-based development activities that are dependant upon RDC have to wait for further progress in the future as stated at the beginning of the section.

At the time of the field study, a project unit for George Community Empowerment Program (GCEP） under CARE PROSPECT) , in collaboration with LCC and Lusaka Water and Sewerage Company (LWSC)was conducting a training course for RDC/ZDC and the Water Committee. As a part of the program, new members were selected as soon as the RDC was reorganised.. The interviews with members of RDC and the Water Committee showed that they understood their roles and responsibilities well. Members of the new RDC have been interviewed during the key informant interviews. They indicated that they expect to apply the same approaches and methodologies which have been used to facilitate the community-based activities in water supply projects and PHC activities directed by the Area Based Organisation, to other issues in the area such as road maintenance, drainage construction and hygiene improvement at markets.

b. Contributing Factors

For the expansion of community-based development activities led by RDC, it is effective that knowledge of past experiences and lessons learnt is accumulated in RDC and community-based organisations. The RDC Regulation stipulates the tenure of an RDC/ZDC to be 2 years. The

[6] Each unplanned settlement is divided into zones. Every zone forms a ZDC consisting of 10 members who are elected by the residents above 18 years old in the area. RDC consists of a representative from each ZDC. George Complex has 27 zones, hence 27 members of RDC among which there are 6 executive members.

[7] George RDC was subject to a new election in November 1999 after expiration of tenure in the previous month. However, ward councillors of the area formed RDCs in their affected areas within George Complex and this caused a delay in the election. LCC confirmed the need to reposition the RDC in the process of coordination of the stakeholders. An external consultant conducted Institutional Building and Governance Consultancy in June 2001 under the CARE PROSPECT which supported institutional building of LCC to implement the upgrading of the unplanned urban settlements. Based on the recommendation from this exercise, the existing RDC Regulation was revised and finalised in January 2002. As a consequence, all RDCs in unplanned settlements were dissolved and since February 2002, exercises for elections of new RDCs have been in process under the new RDC regulation.

committee will be up for re-election every 2 years. Therefore, in order for individual members to properly understand their roles and carry out their duties within the limited term of office, the accumulation of the lessons learnt from past experiences of RDC should not be disregarded in addition to each member's capacity building.

In the case of George Complex, despite the long absence of RDC as stated, the city council and other external support agencies have supported the community-based organisations in the water supply and health and hygiene sectors in strengthening their functions. In addition, community facilitators with experience as RDC members or the Water Committee members have been utilised to secure continuity in community activities and its facilitation methods and techniques. Facilitators help lay the groundwork for improvement of the living environment at the community level through such activities as training of new community leaders in the area, sensitising other residents and mediating conflicts among residents. A contributing factor for community-based development activities to continue to propagate in the area is an increase in trained community leaders who can be commissioned to give advice and mediate the communities' daily problems.

c. Negative factors

Negative factors are attributed to difficulty in mobilising resources within the communities for development activities because of the aggravating economic environment. Interviews with RDC revealed that it was difficult for the residents to become very involved in community activities both in terms of financial contribution and labour because they must prioritise activities for survival. The secretariat of ZAMSIF (Zambia Social Investment Fund) explained that this was also the case for ZAMSIF projects in the suburban areas, which have a precondition of communities' partial contribution in terms of materials and labour for the project initial investment.

First and foremost, to prevent frustration of community activities due to lack of resources, the community members must plan and design the projects reflecting their own needs with feasible measures. RDC Regulation states that community-based development activities in the peri-urban areas should aim at generating continuous results through management of the interventions identified from the perceived needs of the communities. For this purpose, the community members analyse their problems and make decisions on actions to be taken for improvement of those problems. It depends on how the community members can commit

themselves in this process and with various factors such as the social and economic conditions of the area and relations with the external organisations.

Taking Kalikiliki as an example, which was an illegal settlement until recently and hence received little support from external agencies for improvement of living conditions, there were no road bridges to connect with the adjacent area and no mini-bus operation, which is the main means of transportation for local residents. Construction of a bridge has been initiated by Kalikiliki RDC with materials and labour contributed by the residents. Once the bridge is completed, negotiations will lead to the launch of a mini-bus service by a private company. As seen in this example, feasibility of the plan will increase through building a system in which the community members are able to design community activities by themselves based on issues and needs in the area.

Secondly, insufficient resources to operate community-based organisations are also one of the constraints which hinder further development of community activities. Members of RDC/ZDC and the Water Committee work on a voluntary basis, yet there is a need for a budget for small operational expenses such as reporting and communications. Further, the Community Health Workers who work for PHC activities in cooperation with George Central Clinic are paid from clinic accounts, but only irregularly. Under these circumstances, stakeholders strive to secure a financial source for running expenses. The Water Committee and RDC in George Complex saved part of the revenues allocated from water supply services and the Fee-Paying Toilet Committee also raises funds for the community activities from a part of the user fee. On the other hand, the Neighbourhood Health Committee plans to generate income for activities through sales of soy-processed foods from community gardens and operation of a hammer mill. These financial back-up systems are needed to run the organisation properly after the program has left the area.

Finally, interference by politicians to appropriate community development activities for politics is another negative factor. In the delay of the reorganisation process of RDC/ZDC after dissolving the former RDC, there was confusion due to interference by the ward councillors. Taking account of the fact that this influenced the progress of development activities and residents' understanding in conjunction with the projects, it is of a vital importance to give careful consideration to political leaders' roles in the community development activities.

(3) Impact on Socio-economic Activities

As to the impacts on improvement of livelihood at household and poverty alleviation in the area, there were households that employed some kind of income generation activities and micro credit projects through the programme. However, the number was small and they were the only observable impact from the programme in this evaluation study. About the general economic environment of the area, questionnaires and PRA surveys revealed that the living conditions either remained the same or suffered a setback compared with 5 years before.

Although the programme does not aim directly at livelihood improvement, micro finances or income generating activities are offered in order to support the lives of community members who sacrifice their time for community activities. Tap Leaders who take care of the public taps and Community Health Workers who promote the health and hygiene education cannot be economically active during their service hours. Therefore, as an incentive for involvement in community activities and improvement of livelihood, CARE PROSPECT offers tap leaders training for business and funds management utilising micro finance as well as a group loan for those who have the need. Community Health Workers on the other hand receive training for tailoring with support from AMDA. There was even a woman among the tailoring trainees of AMDA whose income improved so much through her tailoring business that she hired someone for domestic work to involve herself in work outside the home.

The micro finance scheme by CARE PROSPECT initially targeted the poor in the general public. The tailoring training of AMDA also enlarged the target to the general community members apart from the Community Health Workers. It is however limited among the general public to those who know of these supporting schemes. PRA exercises revealed that many residents either did not know of the micro finance scheme, or even when they knew, the conditions were too severe for them to meet. Therefore, the funds were not accessible.

Some NGOs are currently implementing micro finance schemes in the George and Bauleni areas. The main ones are meant for those who are already engaged in some kind of business, thus the conditions are set at a high level such as with CARE PULSE. Other NGOs such as CARE PROSPECT and the Human Settlement of Zambia (HUZA) are offering micro finance for those who cannot meet the high conditions, yet only a limited number of residents have access to the information.

The participants in PRA expressed their hopes of finding a more flexible financing scheme. In addition to direct funds, they also welcomed

advancements of goods such as second hand clothes or poultry to start a busines.

(4) Gender

Opinions of the residents were gathered at ZDC consisting of 10 members. The RDC regulation stipulates that the ratio of men and women stays equal. The RDC also keeps an equal ratio of men and women. The gender aspect seems to be integrated in the organisational formation. RDC members have determined that participation of women is increasing in the decision making process for actual community activities.

Most workers for community activities such as Tap Leaders and Community Health Workers are women. Therefore, capacity building and income generating activities targeting these community leaders eventually benefit women.

Nevertheless, the need to understand the obstacles to women participating in the community activities is still high. As an example, there are reported cases that female Tap Leaders receive harassment or violence related to their gender. As a countermeasure, GCEP implements gender training for Tap Leaders as part of the programme. Voluntarily established gender groups conduct community sensitisation programme, provide legal support and report to the police any gender violence that has been directed at the Tap Leaders. There are an increasing number of cases that were solved by police involvement or by taking the case to court.

The aforementioned gender training is expected to create an environment in which women can secure their positions and rights as well as create an environment conducive to expressing their opinions. Further, these contribute to consolidate the groundwork of participation of women in the household and in society.

(5) Relationship between Community Based Organisations and the Local Administration

In the target area of the programme, the Community Development Officer seconded to George Main Division, staff of George Central Clinic and basic schools are offering administrative services to the community. RDC plays a coordinating role with these local administrations as a representative body of the community members. However in reality, community-based organisations exist for each social service sector such as water supply, health and education. These are the Water Committee, Neighbourhood Health Committee, and PTA. These organisations coordinate with the concerned local administrative sections to cooperate in provision of daily social services.

Through programme implementation, local administrations get the community based organisations involved to design countermeasures to address the development needs of the area. This results in the firm establishment of water supply and hygiene improvement projects. Further, local administrations, which had difficulty in conducting continuous monitoring and provision of advices to the communities due to lack of personnel and transport, could also have their burdens lightened through cooperation with community-based organisations.

(6) Donor Support

About 60% of the city's population resides in suburban areas of Lusaka. These settlements are taxed after procedures for legalisation and regularisation by Lusaka City Council. Improvement of the living environment of the unplanned settlements is the relevant policy issue for LCC as this leads to an increase in tax collection. However, the regular budgets of the concerned ministries are insufficient to cover the investment cost for development of these areas. LCC also experiences decreasing budget allocations from the central government and revenue from taxes, which makes it difficult to cover development of the settlements and coordination of interventions for upgrading social services. As a consequence, the development activities of the unplanned settlements tend to rely on support from donors and investment by private sectors.

Under these circumstances, the objective of this programme implemented through Japanese assistance has, to a certain extent, been met and recognised by the beneficiaries as stated at the beginning of this chapter. The effectiveness of the assistance is therefore, high. The programme encompasses support from Japan in terms of funds and technical cooperation and financial cooperation from the British Government. The contents of the support are summarised in Table 4-12.

Table 4-12 Contents of Donor Supports to the Programme

Project	Japan	UK
The Water Supply Project in Satellite Areas of Lusaka	• Technical cooperation to LWSC for formation of the basic design of the project • Grant aid for the project implementation	• Financial support to CARE for RDC establishment and capacity building as well as promotion of community participation in George Complex. Since 1995 CARE supported capacity building of George Water Committee and community members to participate in the community development activities in collaboration with the Japanese water supply project.

Project	Japan	UK
Lusaka District Primary Health Care Project	・ Technical cooperation by dispatching Japanese experts to Lusaka District Health Management Team	・ No collaboration
George Community Empowerment Programme	・ Financial support for activities conducted by CARE ・ Technical cooperation by dispatching a Japanese expert to LWSC	・ Financial support to CARE PROSPECT, which is mother body of the programme unit in charge of the GCEP

・ Other than the projects above, AMDA, a NGO, is facilitating income generating activities and literacy classes in conjunction with the PHC Project with funds of the volunteer funds of Ministry of Posts and Telecommunications, Japan.

As each programme component is supervised by different executing agencies, the cooperation from Japan also addresses different executing agencies. When these activities are looked at as a whole programme, it can be regarded as the assistance for improvement of living conditions of the George Proper in addition to the input by individual sectors. LCC has a policy that the development within the community has to be conducted based on the local needs and ownership of the residents under the coordination of RDC/ZDC. Considering this, the British government support given to CARE that aimed at community empowerment was also important in addition to the support to each sector from Japan. Institutional groundwork was realised through the activities of CARE in collaboration with the Japanese projects so that RDC would coordinate stakeholders of community development activities and ZDC. This reflected the needs of residents into the action planning. All this is in addition to each of the componenst improved in their respected sectors, which were water supply, primary health care and hygiene.

The World Bank and the European Union supported the upgrading of infrastructure in George Complex including the water supply facilities in 1980s and the outset of 1990s. However, there was no community involvement in the project design or implementation so that ownership among the residents was not fostered. This resulted in notable vandalism of public facilities. However, all executing agencies recognise that the incidence of vandalism to those facilities constructed through community participation in this programme is decreasing.

In addition to the sector approach, the programme enhanced its effectiveness when the activities were woven into the common development issue of strengthening self-governance of the area-based/community-based organisations

(7) Relation to the national and municipal development plan

According to the Transitional National Development Plan (2002-2006) issued

by the government at the end of 2002, the emphasis of the water supply and sanitation sector is to support the building of an integrated water resources management structure, a rural water supply and sanitation facilities. However, as touched upon in chapter 2, the Ministry of Local Government and Housing drew the 'Peri-Urban Area Water Supply and Sanitation Strategy' with support from the World Bank to realise the National Water Policy (1994). This was officially adopted by the government in August 2000. It was announced by the ministry and NWASCO that improvement of the water supply and sanitation in peri-urban areas was to be conducted in accordance with this strategy. The programme had been designed before the strategy paper was finalised, yet the principles of cost recovery by the beneficiaries on a commercial basis, participatory project planning and management, and the supportive roles of the local administrations and service providers agrees with the strategy paper.

On the other hand, while the hygiene practices related to water—such as hand washing and proper water collection, transport and storage—have seen a certain degree of improvement through the programme, the impacts of latrine improvement have not reached the entire area. The programme introduced VIP latrines for households and flushing public toilets at markets. The household latrines still remain as a pilot project. About five households share a VIP latrine to mitigate the cost of construction and maintenance as well as to address the limited space for the facilities in the peri-urban areas. The community members in the target area understand that the improved latrines are effective toward the improvement of hygiene conditions. Nevertheless, the results of interviews and PRA showed that there were opinions that cost sharing for construction and maintenance was difficult for them due to the aggravating economic conditions.

The 5-Year Strategic Plan (1999-2004) drawn up by LCC does not mention the policy concerning improvement of living environment for the unplanned urban settlements. Meanwhile, 'The Study on Environmental Improvement of Unplanned Urban Settlements in Lusaka' under the development study funded by Japan International Cooperation Agency (JICA) produced an implementation plan for improvement of living conditions of unplanned settlements as a product of the study. The City Council has a policy to follow the action plans by each area drawn in this implementation plan and embark on the short-term priority sectors. As part of its realisation, it is planned that a basic design study will be conducted in three unplanned settlements in order to formulate a framework for the grant aid from Japanese government. The importance of an integrated approach for planning of development activities based on the needs assessment of the community members is suggested in the guideline on implementation of the projects for improvement of living

conditions in peri-urban areas, which was produced together with the said implementation plan. The problems that the residents encounter and their needs are varied and these are inextricably interlinked with each other. Therefore, the core problem will not be solved if only partial measures are taken.

Taking the suggestions in the above lines into account, it is desirable that the issues would be extracted from the residents' needs and have the support of the City Council, donors and other external support agencies. They should also be based on the action plans developed by the RDC/ZDC in order to further apply the participatory approach experienced through this programme to other development issues.

4.2.5 Sub-Question III: Applicability of Integrated Approaches

In order to examine the applicability of the integrated approach, this section analyses the history, structure and socio-economic conditions of the target area of the programme.

George Complex was initially started from George Proper, an area of commercial farm owned by a white farmer during the colonial era.[8] In 1963, after the independence of Zambia, the influx of people increased and accordingly the area started to expand.

Currently, George Complex holds a population of some 100,000 in which George Proper accounts for about 35,400[9]. George Proper initially began with the illegal settlement of migrant workers. Therefore, in comparison with other areas in George Complex, which were provided the site and service by the LCC in the later stage, the housing is congested without proper land plotting. Many old residential areas, including George and Bauleni in unplanned settlements in Lusaka, originally started on a former commercial farm owned by a white farmer during the colonial era

While George Complex is among others located relatively near the city centre and thus many residents go to work in town, residents in Bauleni work at nearby commercial farms or are occupied by subsistence farming.

The leadership based on the traditional social structures and communities' solidarity is weak. The results of questionnaires and PRA implied that community activities are not actively undertaken. However, some cases of social safety nets provided by the church and self-help activities by women's groups are observable on a small scale.

[8] The Complex consists of 7 compounds including George Proper
[9] Based on the population survey conducted by the George Community Empowerment Programme

As to the community development projects in George Complex, the community participation approach as well as partnership between the community, the local authority and other stakeholders have been gradually established through the support from CARE and Japanese grant aid projects. Taking these experiences as an entry point, the groundwork for community empowerment and facilitation of community development has been fostered.

Moreover, "George Complex" was synonymous with cholera as well as an unsafe residential area with high crime rates. Therefore, the reason for the effectiveness of the programme approach aiming at improvement of health and hygiene conditions lies in matching the objectives of the programme with the needs of residents.

4.3 Comparison of the Studies between Zimbabwe and Zambia

4.3.1 Poverty in Isolated Rural Areas vs. Urban Poverty

The target community of the Binga District Rural Water Supply Project in Zimbabwe was the poor living in an isolated rural area along the Zambezi River, far from the capital city, while that of the programme in Zambia was the poor settlers in peri-urban areas of Lusaka, the capital city.

The condition of these two target areas can be described as a 'Vicious Circle of Poverty', as shown in the Figure 4-4 and 4-5 of the following page. The stars, which are marked in the figures, show the areas where the target project/program have made some impact for breaking down of the vicious circle of poverty.

In Zimbabwe, the provision of water supply facilities and the establishment of water point committees were implemented as integrated components of the project. The project has made some impact on the core issue of a "shortage of safe and adequate water supply" by addressing problems of limited areas such as "difficult access to water supply facilities", "burden of fetching water" and "occurrence of water-born diseases".

As for Zambia, a more comprehensive and integrated approach was taken including provision of water supply facilities, community empowerment, institution building and hygiene education. In addition to addressing the problems related to water supply, the programme extended its impact on the issues of: 1) improvement of living conditions and environmental health, tackling the problems such as "difficult access to information for improvement of living conditions" and "inadequate knowledge on health and hygiene"; and 2) awareness building towards improvement of living conditions and income

generation by addressing the issues such as “poor participation in community activities” and ”difficult access and negative attitudes towards micro-credit”.

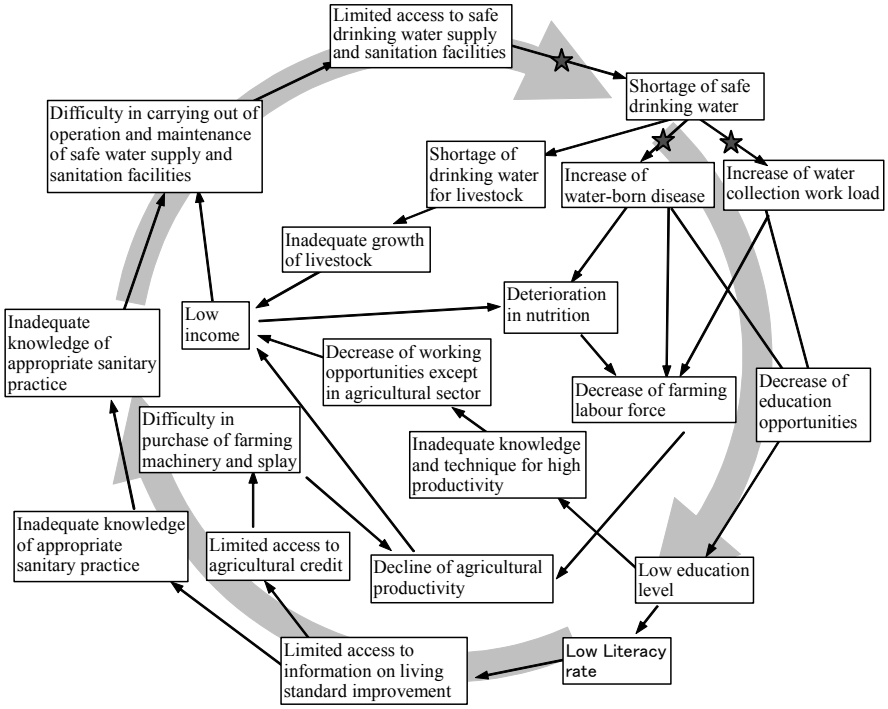

Figure 4-4 Vicious Circle of Poverty in Isolated Rural Area in Zimbabwe

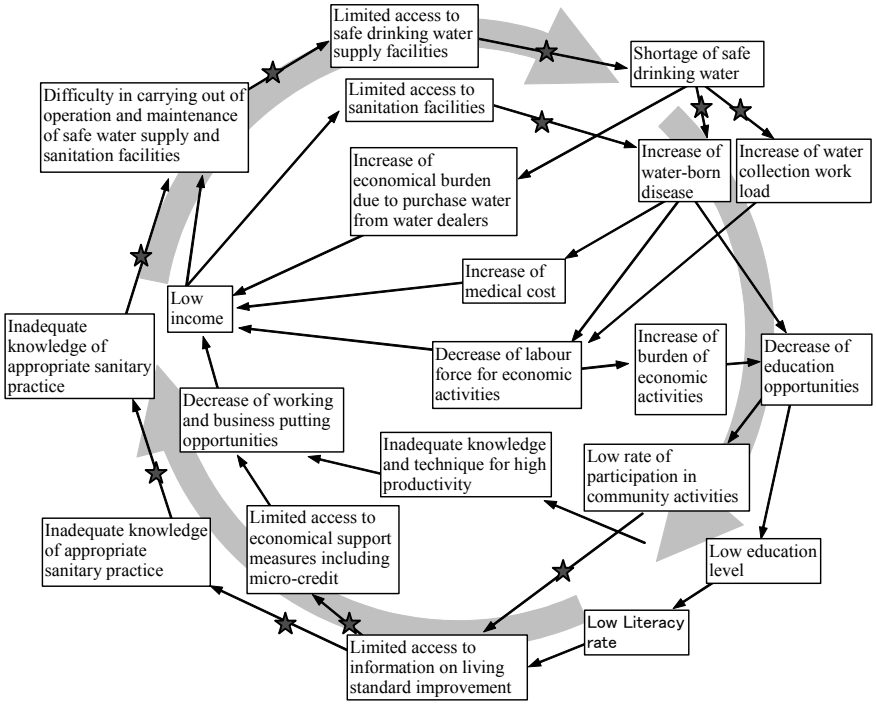

Figure 4-5 Vicious Circle of Poverty in Urban Area in Zambia

4.3.2 Conventional Grant Aid Assistance vs. Integrated Approach with Different Schemes

From the study results described in the previous sections, the two interventions evaluated show a significant contrast. The Binga Rural Water Supply Project in Zimbabwe included activities such as community sensitization and formation of water point committees in parallel with the construction of water supply facilities. However, the project principally fits in a conventional grant aid scheme, whose main components were procurement of equipment and materials and construction of facilities, and its implementation period was fairly short. The time provided was especially inadequate to build capacity in the community and community organisations towards O&M of the facilities, and no follow-up activities were organized. Support for the DDF and Binga RDC, which are to assist the community regarding O&M of the facilities, was not considered within the scope of the project thus no coordination was made with their future activities.

As for the programme implemented in George Compound, Zambia, activities such as community sensitization and institution building were conducted along with the construction of the water supply scheme. These activities followed the GCEP project in collaboration with local NGOs, using Japan's community empowerment program scheme. The assistance was extended for 3 years. The project aimed at strengthening the area based and community based organisations and establishing a management and O&M system for the water supply facility. Furthermore, a consultant specialized in community participation, who had been involved in the project since the construction of the water supply facilities, was assigned as a JICA short-term expert to visit the site regularly and continued carrying out activities such as supervision and coordination, preparation of a management plan for the water supply project and strengthening of area based organisations. Under the PHC Project activities, pilot projects in Georgia Compound were organised with the active participation of the community. The pilot projects included improvement of environmental sanitation, health and hygiene education, monitoring of children's growth and issuing dietary instructions. Though these activities targeted community members and organisations in George Compound, support was also given to the personnel of Lusaka City Council, Lusaka District Health Management Team and Lusaka Water and Sewage Company, which are the program's cooperating agencies.

The difference in support given to stakeholders of the target areas, and the resulting impacts can be summarized as in the Figure 4-6 and 4-7.

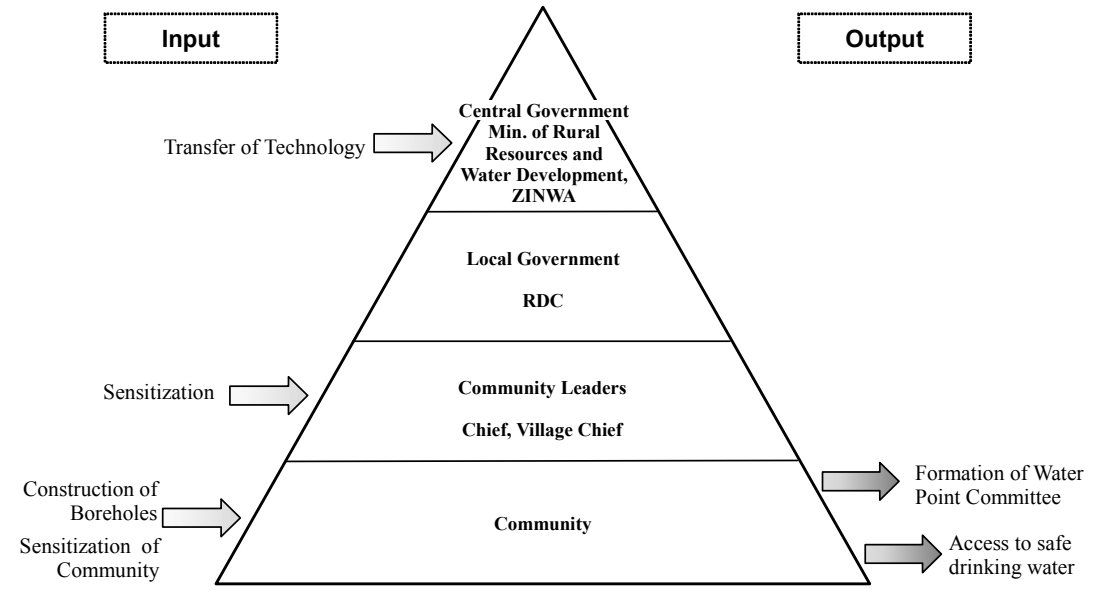

Figure 4-6 Input and Output of Binga Rural Water Supply Project

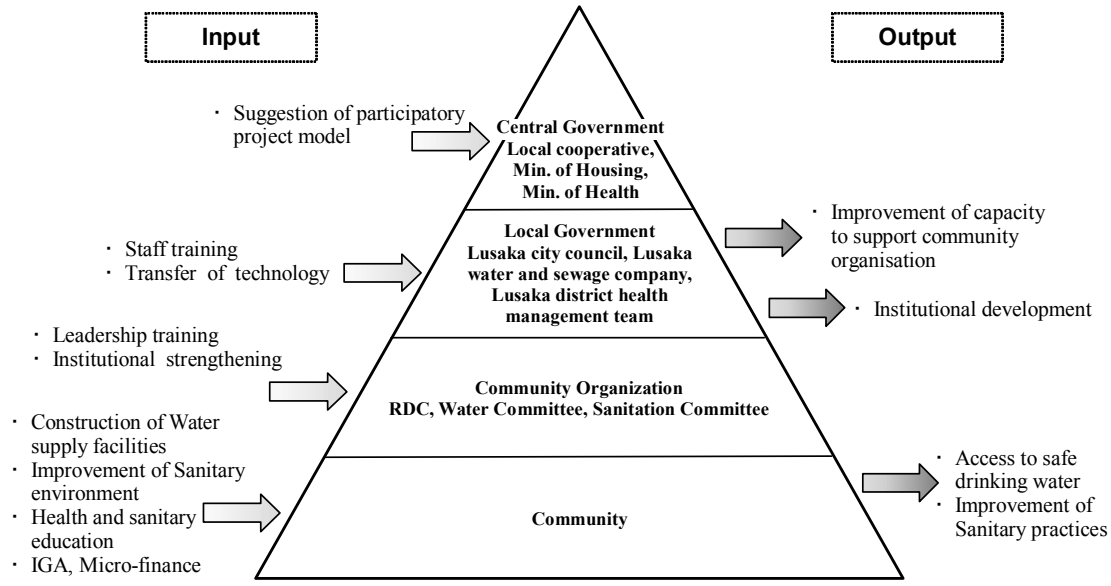

Figure 4-7 Input and Output of Programme for Improvement of Living Conditions for George Compound

Table 4-1 Achievements of Binga Rural Water Supply Project

Programme Summary	Verifiable Indicators	Achievement	External Factors	
			Assumptions	Actual
Overall Goal: Health and hygiene conditions of the people in the target area will be improved.	・ Decreased infant mortality rate in the target area ・ Decreased occurrences of water-born diseases in the target area	・ No impact observed (no reliable data) ・ Among the borehole users 72.5%, 65.5% and 84% indicated the decrease in occurrences of diarrhea, eye diseases and skin diseases, respectively.	・ Overall political and economic conditions of the country will be stable. ・ Provision of health services will be improved in the target area.	・ Political and economic conditions further deteriorated. ・ Additional rural health centers are being built but not completed. A pilot project for prevention of malaria is being implemented.
Project Purpose: Safe drinking water will be supplied to the people in the target area in a sustainable way.	・ Increased water coverage rate ・ Increased number of water facilities in use	・ Decrease from 31.7% to 29% due to non-functional boreholes. ・ The number of boreholes in the 12 wards increased from 107 to 144, though only 105 are functional.	・ Socio-economic conditions will not deteriorate further in the target area.	・ Socio-economic conditions in the area worsened due to 2 years of food shortage caused by drought.
Output: 1. 124 boreholes with hand pumps are constructed and yield sufficient water both in quantity and quality.	1-1 Number of boreholes with hand pumps constructed by the Japanese and Zimbabwean sides. 1-2 Quality and quantity of water supplied.	1-1 30 boreholes with hand pumps were constructed by Japanese side. Since then ZINWA has drilled 34locations but only 10 produced sufficient water. 1-2 Some boreholes were not used as pumping was very heavy (it could be due to low water table). A few people indicated water was not palatable.	・ Hydrological conditions of the target area will not get worse due to the drought.	・ Hydro-geological conditions prove to be difficult due to droughts.
2. Technique of geophysical prospecting and drilling by the Zimbabwean counterparts are improved.	2-1 Success rate of drilling by the Zimbabwean counterparts. 2-2 Progress of the construction works according to the plan.	2-1 Low rate of 10 out of 34. 2-2 No information was so fare obtained (wafting for information from ZINWA).		
3. Capacity of the target communities is improved in operation and maintenance of the borehole water facilities.	3-1 Action taken by the water point committees for preventive maintenance and repair of hand pumps. 3-2 Contribution from the community members for daily operation and maintenance of the water facilities.	3-1 Water point committees were formed at newly constructed water points. Little maintenance is applied, apart from sweeping the area and fencing. Capacity has not been built in the community. 3-2 Funds were collected at the beginning, but in most cases it has stopped.	・ RDC will establish and provide support services for the communities.	・ No support from RDC or DDF.
4. Awareness of the communities in hygienic behavior and practice is improved.	4-1 Improved practice by the community members in terms of safe transport and storage of water and cleaning of surrounding area of water point. 4-2 Improved practice by the community members in terms of hand washing.	4-1 For carrying water use of container with lid has increased from 10.5% to 43.5%. For water storage, keeping water in covered container inside the house has increased from 57% to 85.5%. 4-2 Improvement was made in frequency though not in the method.		

Activities:	Achievement:	Input:
・ Formulation of Basic Design of the Project.	・ Basic Design was formulated between January and June 1997.	Human Resources: ・ Japanese consultants ・ Counterparts ・ Japanese contractors Equipment: ・ Survey and drilling equipment and materials ・ Vehicles ・ Hand pumps
・ Procurement of survey and drilling equipments and materials.	・ Procured survey and drilling equipment and material were handed over to Zimbabwe in February 1998.	
・ Technology transfer in geophysical prospecting and drilling works through construction of 30 boreholes by Japanese contractor.	・ Five boreholes with hand pumps were constructed between November 1998 and February 1999. Twenty five boreholes with hand pumps were constructed between April 1999 and October 1999.	
・ Construction of remaining 94 boreholes by Zimbabwe government.	・ ZINWA drilled at 34 locations but only 10 were successful. Hand pumps were already placed for most of these 10 boreholes。	
・ Sensitization of community leaders.	・ SCF conducted sensitization meetings for community leaders on CBM including health and hygiene aspects between September 1998 and July 1999.	
・ Formation and training of Water Committees	・ SCF organized community meetings at target localities and facilitated the formation of water point committees. At all the 30 newly constructed water supply facilities water point committees were formed but training were not adequate in most cases.	
・ Health and hygiene education to the community members.	・ At community meetings SCF included the importance of adequate health and hygiene practices but there was little follow up after the water facility construction to the community members from SCF.	

Table 4-8 Achievements of Programme for Improvement of Living Conditions for George Complex, Lusaka

Programme Summary	Verifiable Indicator	Achievement	External Factors	
			Assumption	Actual
Overall Goal: Community-based initiatives will be applied to other areas related to improvement of the living conditions and livelihood by the Area Based/ Community Based Organisations (ABO/CBO) and local authority with utilising lessons learnt from the existing interventions.	• Increased number of projects for improvement of living conditions in the target area with community participation • Status of mobilisation of resources by the ABO/CBO for community development activities	• Intervention to improve environmental hygiene is being tried to expand into other areas of George Complex with an initiative by GEHC. • GEHC and Drainage Committee working with George Clinic submitted proposal respectively to funding agencies to access to funds for implementing the projects. Meanwhile, mobilisation of resources, especially in cash, from the community members is getting difficult due to economic constraints at households.	• LCC and other legislative organisations will control the development and upgrading of peri-urban areas with proper allocation of resources and obligation of the regulations.	• LCC is currently executing demolition of the illegal settlement under construction in peri-urban areas. Resources of LCC to implement the upgrading of peri-urban areas are still limited and they cannot issue effective measures to control the violation of regulations.
Programme Purpose: Health and hygiene conditions of the community members in the target area will be improved.	• Decrease of infection rate of the water-born diseases in the target area • Decrease of infant mortality rate in the target area • Decrease of malnutrition of children	• More than 60% of sample households indicated decrease of diarrhoea, cholera and eye diseases attributing to the access to clean water and improvement of hygiene conditions. Decrease of cases of cholera from 70/10,000 (1994) to 1/10,000 (2000). • No statistical data was obtained on infant mortality rate. • Around 70% of sample households in George Proper indicated the nutritional status of children as deteriorated compared with five years ago though underweight prevalence among uder-5 children decreased from 25% (1998) to 15% (2001).	• Knowledge on lessons learnt and experiences from the community-based interventions will be succeeded within the ABO /CBOs in the target area. • The Government of Zambia will maintain the policy on improvement of the environmental and living conditions of the peri-urban areas in partnership with the community members.	• Human resources who were trained and worked as the ABO/CBO members are appointed as the community facilitators to support RDC and other ABO/CBOs. Record keeping by RDC is still to be improved. • The Government of Zambia is maintaining the policy on community-based approach for improvement of living conditions of peri-urban areas.
Output: 1. Water supply services are utilised by the community members in the target area in sustainable manner.	1-1 Increased number of users in different socio-economic categories 1-2 Payments from users meeting the operation and maintenance costs 1-3 Quantity of water supply/capita/day	1-1 User of water services through communal tap as their water source for drinking increased to nearly 100% compared with five years ago (65%). Small portion of households still use shallow wells as the source for drinking water due to difficulty in paying user fee for water supply services. 1-2 Costs for operation and maintenance of water scheme are 100% covered by the payments from users. 1-3 Quantity of water supply is generally meeting the consumption	• Socio-economic environment of the target area will not decline to an extent which they cannot afford to use the basic social services. • Condition of groundwater provided will not worsen to affect sustainable operation of the water scheme. • Service providers will continue provision of services in the target area.	• Economic conditions of the country have worsened in five years attributed to soaring inflation, structural reform and droughts. • Drought in 2000/2001 partly affected the water level of groundwater to supply the target area. It has recovered to the appropriate level for operation. • LWSC continues operation of water supply services based on

Programme Summary	Verifiable Indicator	Achievement	External Factors	
			Assumption	Actual
2. Community-based primary health care services are operated in sustainable manner.	2-1 Increased number of staff for health centre/ community health workers in the target area and improvement of their capacity 2-2 Status of monitoring by the community health workers	2-1 25 CHWs were trained in the PHC project in addition to existing 26 members who also received refresher-training course. CHWs obtained adequate knowledge to plan and conduct health and hygiene programme for the community members resulting increase of activities by them under supervision by the health centre staff. 2-2 Due to increase of participation of CHWs in health monitoring in community, the workload of the health centre staff was reduced. They are trying to establish financial sources for CBOs to continue the activities.		the partnership agreement with the RDC/ Water Committee. The current management system was reviewed under the GCEP for further improvement.
3. Knowledge and behaviour of the community members are improved in terms of relation between water, sanitation and hygiene.	3-1 Practice to maintain/improve water quality at household 3-2 Hygienic practice for drawing, carrying, storing and drinking water 3-3 Utilisation of different water sources in compliance with the usage 3-4 Practice to improve environmental sanitation at household level (proper excreta disposal and household waste disposal)	3-1 Household treating drinking water at household decreased about 40% compared with five years ago. Using chlorine becomes common method for water treatment than boiling in expectation effectiveness and easiness for handling. 3-2. Container with a lid is the most prevalent type of vessel for drawing, carrying and storing water. 3-3. Most of the households use water from communal tap for both drinking and washing though use of shallow well for washing and other purpose such as gardening and moulding of bricks is also found in the community, especially in rainy season. LCC is advising the owners of shallow wells to lock the wells and not to allow neighbours to use it in order to discourage the residents to fetch drinking water from shallow wells. 3-4. Households taking garbage to the collection site doubled in George Proper compared with five years ago. In most cases, the sites are self-made near the houses with little consideration of hygiene. For sanitation facility, household owing latrine decreased and those people share the facilities with neighbours. Traditional pit latrine is used mostly by the residents. Prevalence of the improved type of latrine has not been achieved much.		
4. ABO/CBOs are enabled to identify the felt needs of the community and take initiatives for realisation of improvement of the living conditions in partnership with local authority and other stakeholders.	4-1 Status of community participation in decision-making on the projects for improvement of the living conditions 4-2 Status of implementation of the action plans elaborated by the ABO/CBO 4-3 Extent of trust in the ABO/CBO by the local authority and community members	4-1 ZDCs were formed in all 27 zones in George Complex as the unit to discuss and make decisions on common development issues for residents living in each zone. Community members also send their representative through ZDC to RDC. 4-2 Newly elected RDC has just elaborated an action plan hence not much progress in realisation. CBOs working with health centre also make their action plans. 4-3 Local authority and service providers regard ABO/ CBO in the area as their partner to execute the development activities. Awareness and evaluation on the ABO/CBO by the community members varies		

Chapter 5 Conclusions and Recommendations

5.1 Answers to Sub-Questions

In order to answer the Evaluation Question below, the answers to the three Sub-Questions were prepared as follows:

Evaluation Questions: In the Sub-Saharan countries, have the integrated approaches and the sector-wide approaches been more effective to realize sustainable safe water supply systems for the poor population when compared with the traditional engineering oriented approaches?

5.1.1 Sub-Question I: Sustainability of Water Supply Project

1) How does an integrated approach and/or sector-wide approach need to be designed and implemented in order to contribute to the "realization of sustainable safe water supply" in the Sub-Saharan countries more efficiently and effectively?

It is essential to understand water-related problems, their background and poverty structure in the target communities during the project formulation and planning stages to realise the "sustainable safe water supply". This is because water-related problems have a strong relationship with the geographic, topographic, historical, cultural and environmental background of the communities. Is it located in the urban area or the rural area? What types of water problems are the community members facing? Is the shortage of water supply volume all through the year or seasonal? Or, is the water volume enough but the water quality is not good? Approaches of the water supply projects need to be designed based on good understanding of these situations.

Water supply projects for the poor population in the Sub-Saharan countries require a stronger involvement and commitment by community members because the capacity of their central and local governments is limited. Therefore, when designing individual projects of facility construction, procurement, capacity building etc., it is necessary to spend more time to understand the target areas' political and socio-economic background and

decision making system in addition to the technical survey from the engineering aspects. It is also important to discuss and identify the water related problems with the community members of the target areas. Potentials and constraints in establishing a sustainable water supply system might be revealed through these activities.

In project designing, it is necessary to focus on technical, financial and institutional sustainability. If advanced technology or equipment are chosen which require difficult skills or expensive spare parts, which are not locally available, lots of difficulties in establishing a sustainable water supply system could be encountered. Empowerment of the communities is also important for securing project sustainability. Capacity building in problem identification, critical thinking and problem solving might be useful at all of the stages of the project cycle: planning, implementation, monitoring/ evaluation and follow-up.

In order to establish a sustainable safe water supply system among the poor in the Sub-Saharan countries, a sector-wide approach which is comprised of engineering components, institutional components and capacity building components might be more efficient and effective than a traditional engineering-oriented approach. Such sector-wide approaches are expected to include the following activities:

(1) Conduct a technical survey to understand the socio-economic context, water problems, poverty structure etc. in the target communities in addition to the engineering survey;

(2) Conduct sensitisation and planning workshops with the community members to discuss and understand the community background, water-problems, needs and potentials and to formulate strategies;

(3) Formulate basic and detailed plans, which include facility construction, procurement, institutional strengthening and community sensitisation etc., by the experts and obtain community members' consensus;

(4) Carry out a series of activities; community sensitisation, capacity building, institutional strengthening, maintenance skills training etc.;

(5) Construct water supply facilities and procure the necessary equipment; and

(6) Monitor and evaluate the project activities and provide follow-up sessions.

The (2), (3) and (4) activities listed above might require much time. However, they will contribute to secure the project sustainability and the project

efficiency and effectiveness will be improved. NGOs have good potentials to handle these activities with community members.

Activities in fields of education, health or others, which are not directly related to the water supply project, may be included to the integrated approach in order to enhance project sustainability. In that case it is important to consider the economic conditions and project management capability of the target population and the government's capacity for continuous support as well as the relation between poverty structure and water supply in the target areas.

If the beneficiaries include the poorest group of the people who cannot afford to access social services such as water supply, because they cannot contribute towards O&M cost of the water supply system or pay the user fee, it may be effective to include supporting economic activities such as income generating measures or micro-finance schemes in addition to activities such as promotion of payment and health and hygiene education, which are directly related to the water supply project. In social infrastructure development, the service scale and maintenance cost are normally set considering the capacity of beneficiaries and the implementing agency, who are responsible for the management and O&M of the service. Therefore, as the service level is set considering the local O&M capacity at the planning stage, income generation measures such as introduction of a micro-finance scheme should target a specific group of people whose household economy is adversely affected due to deterioration of economic conditions. Especially in the rural areas, there are examples that rules are set by the community to exempt water fees from the socially disadvantaged such as the elderly and the handicapped Therefore it is important to consider the way forward toward the system of sustainable water supply considering the potential capacity and the structure of the target community.

5.1.2 Sub-Question II: Impact on Poverty Reduction

2) How does an integrated approach and/or sector-wide approach need to be designed and implemented in order to ensure that its impacts attain and enhance the overall goals such as improvement of living condition among poor families, poverty reduction etc. regarding water supply projects as entry points of capacity building for community development?

For the community to take initiatives in planning and implementing various types of community development activities, which were started with water

supply as its entry point, community sensitization, problem analysis, project planning, fund raising, human resources development and strengthening of community organizations are essential. Through these activities community members' self-governing capacity would also be enhanced. This is one of the lessons learned from the impact of the integrated approach taken in the Zambian case which included strengthening of community organizations.

It is also important for the central and local governments to define their responsibilities for community development and to render support such as dissemination of technical information and training in order to promote improvement of living conditions initiated from the community.

If each community activity is separately organized, a synergetic effect could not be expected. For both the urban poor and the poor in rural areas, it is more efficient to support groups which are, or will be, engaged in water supply services and poverty reduction activities. The system of cooperation among such groups should be strengthened to enhance the synergetic impact by disseminating information, providing opportunities for information exchange, introduction of successful cases in other areas and providing role models to women's groups through the support from the central and local government, donors and NGOs. For the Zambian case the outcomes of the projects were followed up and utilized by NGOs and, therefore, the project impact was extended to the surrounding communities, while the target area of the Zimbabwe project was located in a remote rural area and it was difficult to establish local networks. When targeting the rural poor local government's or NGOs' support on information dissemination, especially introduction of successful cases, is essential.

Poor urban areas are sometime illegal settlements, to which local governments have difficulty in rendering support. Therefore, establishment of a long term support system, starting with community sensitization and organization building in collaboration with local NGOs is important for community development activities to expand from water supply issues to improvement of living conditions and poverty alleviation, considering the difficulty for the local administration to render support especially to illegal settlements. Urban areas have relatively high employment opportunities and better possibilities of income generating activities through small-scale entrepreneurs. To support these entrepreneurial activities, it is recommended to establish a reliable consultation system or provide financial resources including introduction of micro-credit.

In the poor rural areas, the priority is to establish a sustainable water supply

system by setting up an O&M system of the water supply facility in the community. This requires continuous support in community sensitization and institutional building. Achievement of a common goal might foster a sense of assurance, confidence and initiative in the community and promote the establishment of a community bond for further development. To continue implementing a series of activities, it is important to strengthen the support system of the relevant department or technical extension staff of the local administration. It is also effective to collaborate with NGOs in long-term activities.

5.1.3 Sub-Question III: Applicability of Integrated Approaches

3) What are the required or desirable social and economic conditions of recipient country governments and/or communities to ensure that an integrated approach or sector-wide approach will function effectively for the poor population of an African country?

In the case that the responsibility of the planning and implementation of development activities is devolved to the local government under the decentralization policy, it might be effective to conduct integrated or sector-wide approaches with the local governments as the counterpart agencies. It will be desirable to start the integrated approach with the local governments which already have a basis of supporting community activities through the experience of working with donors and NGOs and which have the basis of financial and human resources capable of coordinating activities.

Integrated and sector-wide approaches might be introduced to the communities where there are established community leaders or development committees; development issues are already discussed among the people; and some kind of consensus building mechanism is already established.

Development activities can be suffocated or disturbed by the interference of politicians causing inequitable distribution of benefits to a certain group of people or divisions among the community. On the other hand, local politicians could be the bridge between the community and the government to promote development projects. It is therefore necessary to recognize local politicians as one form of social capital in the community and to take measures within the programme to foster true leadership in local politicians, so that they also can contribute to community development. The programme should provide them with the environment, in which they can foster true leadership to contribute to community development.

5.2 Answers to Evaluation Questions

Based on the results of the Study, it can be concluded that "the sector-wide approaches of the water supply sector", which includes the engineering, institutional strengthening and capacity building components, are effective to establish a sustainable safe water supply system for the poor population in the African countries. Compared with the engineering-oriented water supply projects, the sector-wide approaches are more helpful to strengthen the ownership of the community members and to improve the sustainability of the projects. It is important to take adequate time at the planning stage so that issues such as water-related problems, poverty structure and the role of women in the target area are analysed and reflected into the project contents.

The sector-wide approaches, which included facility construction and hygiene education, contributed more effectively to reduce the morbidity rate of water borne diseases rather than the engineering-oriented approaches. Community awareness and capacity building components improved the confidence and ownership of the community members, which led to the voluntary development activities or income generation activities by the community members. The sector-wide approaches are expected to function as an entry point of community empowerment for poverty reduction.

To improve sustainability of water supply projects, improvement of primary education and household income for enhancing capacity of community could be effective. Therefore an integrated approach in the water sector or a sector-wide programme would be effective. In Sub-Sahara Africa, social and economical capacity of governments and communities should be carefully considered in designing an integrated approach including water and other sectors for sustainable development.

5.3 Recommendations

From the answers to the evaluation questions, the following recommendations for Japan's ODA are formulated:

The results of the Study show that the sector-wide approaches consisting of engineering, institutional strengthening and capacity building components contribute more effectively and efficiently to the improvement of the project sustainability.

To implement the sector-wide approaches more properly, the following strategies are important at all of the stages of the project including planning, implementation

and follow-up:

(1) understand water-related problems and poverty structure in the target communities;

(2) establish an operation and maintenance system consisting of community organizations or members; and

(3) strengthen the supporting system of the central and local government agencies and NGOs.

The donor agencies are required to improve the quality of the planning activities and to strengthen capacity building components for both of the community members and the central and local government agencies of the recipient countries.

1) Expansion of Planning and Designing Stages

In order to understand the water related problems and the poverty structure of the target area, it is necessary to place more importance on the activities during the planning stage. At the implementation stage the project plan should be reviewed and, if necessary, altered according to the community's needs and change of circumstances.

Understanding the water related problems and poverty structure in the target communities requires much time. The current basic design period (about 1 month) of the Japan's grant aid projects is not adequate to clarify the water problems and the relationship between water and poverty of the target area. Prior to the implementation of the grant aid project, more time should be allocated to planning and designing of the project as well as community sensitization. It is also important to clarify the role of and benefit to women and children who are the main beneficiaries of the water supply project. It is advisable to utilize local human resources such as local consultants, NGOs etc. to identify the problems and potentials in the target area.

2) Need of Capacity Building of Target Community and Central and Local Governments

To establish a sustainable water supply system, capacity building of target community as well as the central and local governments is essential. It is especially important in the countries where decentralization is in progress and the local government support system is not yet fully developed. The current assistance schemes do not cater for the adequate follow up of the project. It is important to address the issues such as what kind of aftercare services should be brought to the

beneficiary community of the water supply project or how to further provide a water supply system to the surrounding non-serviced areas. As these activities require a longer commitment it is more efficient to collaborate with local consultants or NGOs.

As it is not possible for the community to plan and implement all the development projects by themselves, a support system for community development needs to be established by the government. Decentralization policy is being implemented in many African countries; however, many of the local governments do not have adequate financial and human resources to carry out community support projects. Therefore, it might be beneficial to include supportive measures to the local government of the target area including human resources development in addition to the usual technical transfer to the executing agency.

The government support should include measures to enhance the economic conditions of the target community. Activities which generate income such as improvement of agriculture production by small-scale irrigation, food processing, or in the urban areas introduction of micro-finance schemes together with business and skill training, would benefit for the sustainability of water supply system as well as work as poverty reduction measures. Such support measures, however, should be carefully designed so that benefit will be equitably shared among the people including women and the disadvantaged.

Also in this integrated approach within the water sector, through continuous community sensitization and health and hygiene education it is possible to address development issues related to the water sector such as reduction of water borne disease, improvement of nutrition, improvement of the living environment, improvement of maternal and child health and health promotion for all.

When community based organisations and the government support system are formed and strengthened through water sector development, an integrated approach addressing basic human needs such as primary education, health, sanitation and income generation could enhance the community's initiative and willingness towards community development with synergetic effects among different activities.

It is hoped that continuous implementation of community based activities would result in an effective and sustainable impact on poverty reduction and Japan's development assistance would further contribute to addressing issues of "water and poverty in Africa".