Botswana

Ex-Post Monitoring of Japanese ODA Loan Project

"North-South Carrier Water Project"

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Field Surveys: June and August 2009

1. Project Profile and Japan's ODA Loan

Project Location Map

Mmamashia Water Treatment Works

1.1 Objective

The objective of the project is to develop water resources in the northern region of the country by constructing a dam, water transmission systems and water treatment works, thereby contributing to relieve high water demand in the southeast and to supply water to the central regions that are dependent on groundwater[1].

1.2 Outline of Loan Agreement

Loan Amount / Disbursed Amount	4,685 million yen / 4,685 million yen
Loan Agreement/Loan Completion	December 1995 / February 2001
Ex-Post Evaluation Survey	FY2003
Executing Agency	Water Utilities Corporation (WUC)
Main Contractors (Over 1 billion yen)	DEGREMONT, LTA (France, South Africa) ABB Industry, GRINAKER (both South Africa)
Consulting Services (Over 100 million yen)	BURROW BINNIE Botswana LTD (Botswana)

[1] This project was co-financed with European Investment Bank, Nordic Development Fund, and African Development Bank. The Yen Loan was provided for the construction of Water Treatment Works, Pump Stations and Break Pressure Tanks.

1.3 Background and Reasons for conducting Ex-Post Monitoring Survey

The reason why this project is subject to ex-post monitoring is that, in the ex-post evaluation, the achievement rate of water supply at Water Treatment Works was low and that the financial position with deficit spending was pointed out. Therefore, there was a necessity to investigate how these points have been improved. Specifically, effectiveness and sustainability of the project were concluded as follows.

(Effectiveness) The achievement rate of water supply in 2001 stayed at 54% of the projected rate. It was particularly low in Mahalapye and Palapye, located in the rural area, being 16% and 12% respectively[2]. The major causes were the low water storage rate of Letsibogo Dam and the slower-than-expected population growth in the covered areas of this project.

(Sustainability) There were no problems identified for operation and management. However, in terms of finance, repayment of liabilities became a burden and this led to the financial position with expenditures continuously in excess of revenues.

Thus, this project became subject to ex-post monitoring, and the reviews based mainly on the results of the field surveys were conducted in accordance with the evaluation criteria, and the conclusion was finally led.

2. Monitoring Results

2.1 Effectiveness (Impact)

2.1.1 Quantitative Effects

2.1.1.1 Water Supply Volume / Facility Utilization Rate[3]

The water supply volume and facility utilization rate of each water treatment works, which were obtained in the ex-post monitoring survey, are shown in Table 1 and Figure 1. A comparison of the data obtained in the ex-post evaluation and in the ex-posting monitoring reveals that some improvements were recorded for Mmamashia Water Treatment Works. However, water supply conditions deteriorated at Mahalapye and Palapye Water Treatment Works. As described in detail below, all the water treatment works were affected by two major factors, which are water supply stoppage due to water leakage / repair of the water transmission pipes, and the slower-than-expected population growth.

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[2] During the ex-post monitoring, the latest set of data on the water supply volume of the three water treatment works was obtained. It was found that the data had been maintained incompletely during the early period of this project operation, around 2001. Therefore, the data are corrected as shown in Table 1.

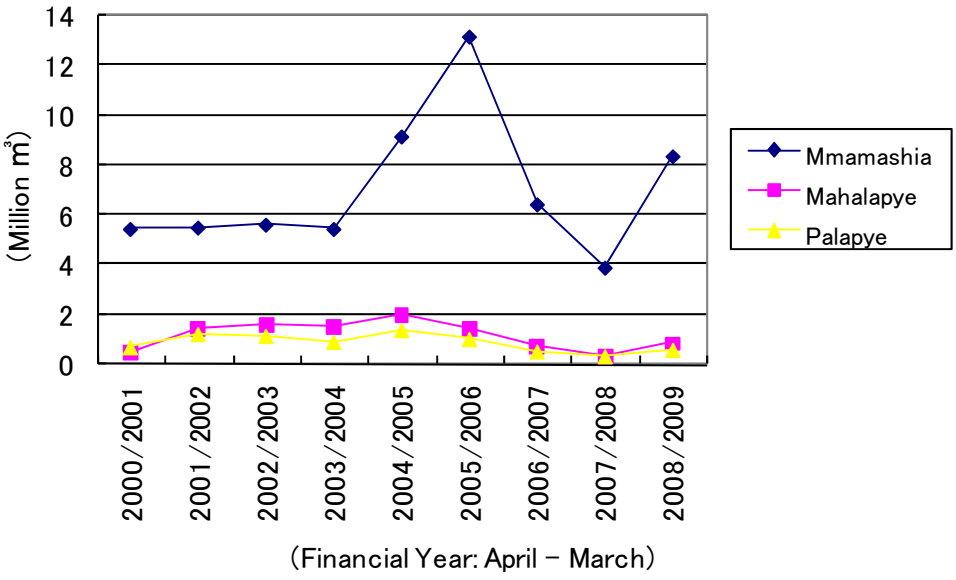
[3] It was found that “Supply Achievement Rate” that had been calculated in the ex-post evaluation was the rate of water supply volume against the maximum capacity of the facilities that were developed in this project. This is identical to “facility utilization rate”. Thus, in this ex-post monitoring report, the term “Facility Utilization Rate” is used.

Table 1: Change in Water Supply Volume / Facility Utilization Rate

	Ex-post Evaluation (Actual, in FY2001/02)				Ex-post Monitoring (Actual, in FY2008/09)	
	Supply volume (mil. m^3)		Facility Utilization Rate		Supply volume (million m^3)	Facility Utilization Rate
	Before Correction	After Correction	Before Correction	After Correction		
Mmamashia Water Treatment Works (maximum water treatment capacity: 33.58 mil. m^3/year)	22.00	5.50	66%	16%	8.35	25%
Mahalapye Water Treatment Works (maximum water treatment capacity: 4.38 mil. m^3/year)	0.72	1.42	16%	32%	0.84	19%
Palapye Water Treatment Works (maximum water treatment capacity: 5.11 mil. m^3/year)	0.60	1.23	12%	24%	0.60	12%

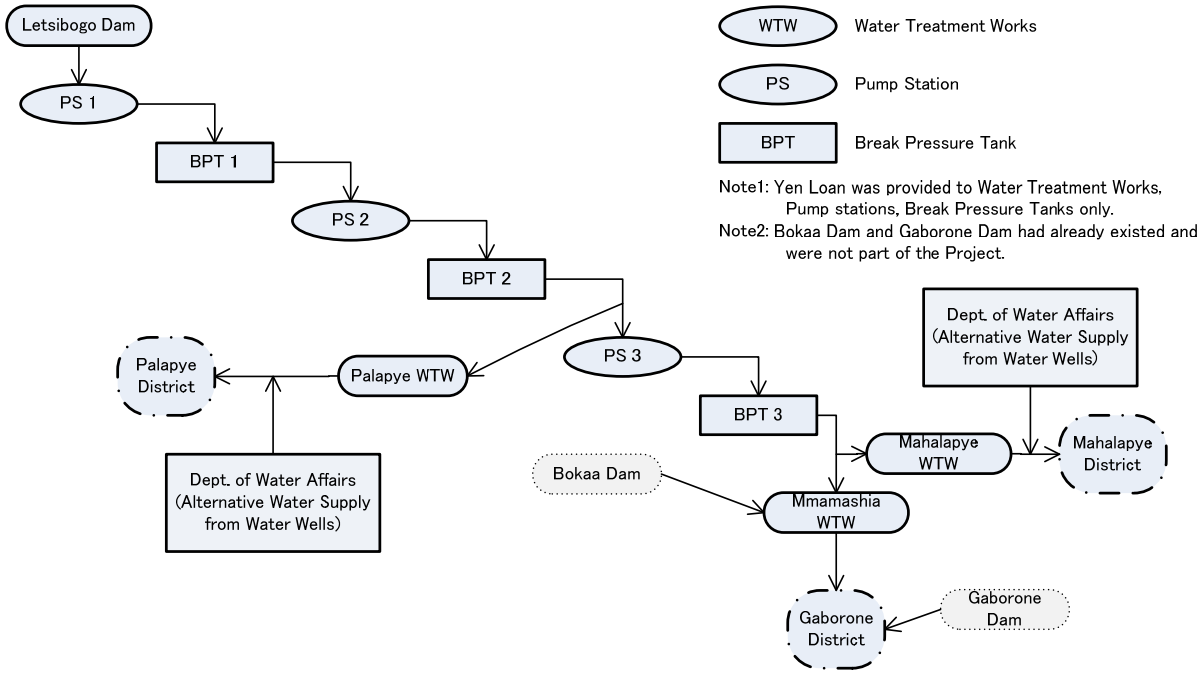
Note: The data before corrections are the figures from January to December, 2001. However, the figures from April to March are currently used as the annual data, due to the change to the data collection method based on the financial year system. Therefore, there is a difference of three months between the figures of "Before correction" and "After correction," which means that these two set of data cannot be simply compared. In this report, comparisons are made based on the financial year.

Figure 1: Water Supply Volume from Water Treatment Works



Source: Data supplied by WUC

Figure 2: NSC Water Supply System



2.1.1.1.1 Mmamashia Water Treatment Works (WTW)[4]

With regard to the "Supply volume (Appraisal projection for 2001)" shown in Table 2 of the Ex-post Evaluation Report, another review of the project appraisal document has revealed that these figures were actually the "Projected supply volume for 2010", which considers the factors such as population increase. These figures corresponded with the maximum capacity of the water supply scheme developed in this project. Therefore, it is natural that the actual figures for 2001, recorded immediately after the completion of the project, are lower than the projected figures for 2010.

However, the latest data of water supply volume for FY2008/09 was 8.35 million m^3 as shown in Table 1, and this is only 25% of the projection for 2010. As described later, the largest factor was the frequent water supply stoppages due to water leakage/ repair of the water transmission pipes that were used in this project. Also, the slower population growth was another major factor. At the time of the project appraisal, the population in Gaborone District was projected to increase up to 559 thousand in 2010 from 244 thousand in 1999. However, contrary to the projection, it still stood at 351 thousand in 2006.

[4] The maximum water supply capacity of Mmamashia Water Treatment Works is 92 thousand m^3 per day (33.58 million m^3 per year). However, the actual water supply volume is 70 thousand m^3 per day (25.55 million m^3 per year) due to the capacity issue of the transmission pipe (pipe's bore) in the south of Palapye.

The existing Bokaa Dam (maximum capacity: 18.5 million m^3) in the northern Gaborone is used as the alternative water source during the period when the water is not transmitted from Letsibogo Dam (maximum capacity: 100 million m^3), which is the normal source of water. The water is purified at Mmamashia Water Treatment Works along with the water from Letsibogo Dam. When the water supply system, which was developed by this project (North-South Carrier, hereinafter referred to as NSC), undergoes repairs in the north of Mmamashia, this dam, as well as Gaborone Dam (maximum capacity: 141.4 million m^3) in the southern Gaborone, is used as a valuable source of clean water supply.

Thanks to these alternative water sources, water was supplied smoothly to Gaborone during the large-scale repair of NSC.

2.1.1.1.2 Mahalapye / Palapye Water Treatment Works

As in the case of Mmamashia Water Treatment Works, the projected water supply volume for 2001 in the Ex-post Evaluation Report was the projection actually calculated for 2010, and these figures conformed to the ones of the maximum water supply capacity of the facilities developed in this project. As shown in Table 1, according to the latest data, the facility utilization rates of these water treatment works in FY2001/02 were higher than the figures for 2001 that had been obtained during the ex-post evaluation. They are 32% for Mahalapye and 24% for Palapye. However, according to the latest data in FY2008/09, the rates become lower, 19% for Mahalapye and 12% for Palapye.

One of the largest factors that caused the low facility utilization rate was the frequent water leakage of the transmission pipes, which were observed shortly after the commencement of the operation. Because of this, WUC was forced to suspend water supply repeatedly. On the contrary, an alternative dam for both Mahalapye and Palapye Dam does not exist and in the case of the stoppage of water supply from NSC, Department of Water Affairs (DWA) has to pump up groundwater from the well and distribute it to each house. As indicated in the result of the beneficiary survey[5], there were some problems felt in terms of the quality of water, and it also incurs an extra cost of electricity for DWA.

Another major factor which prevented the increase in demand was the growth of population being lower than what was projected, as seen in the case of Gaborone. The population in Mahalapye decreased from 49,450 in 2001 to 47,774 in 2006 (70%

[5] The beneficiary survey was conducted in Mahalapye and Palapye districts, as in the case of the Ex-post Evaluation. A total of 100 residents, 50 from each districts, respond to the questions.

of the projection for 2010). In Palapye, there was a minimal change in the number of population, which is, from 26,340 in 2001 to 26,792 in 2006 (70% of the projection for 2010).

2.1.1.1.3 Water Leakage[6]

Water leakage has been a huge problem for the realization of project objectives, as mentioned above. This survey has revealed that the leakage has been a major problem since the commencement of the operation, though the problem had not been mentioned in the Ex-post Evaluation Report.

For the materials of the water transmission pipes, Grass-fiber-Reinforced Polyester (hereinafter referred to as GRP) was used, as it was thought to be more economic. Many leakage cases that frequently occurred were found in the joint sections where the steel pipes were connected with GRP pipes in the chamber with the bore of 140cm. These leaks were spotted in the relatively upstream sections between Pump Station 2 and 3.[7] They occurred quite frequently: 24 times in 2002, 20 times in 2005, 30 times in 2003, and 20 times in 2005. Every time the leakages occurred, the water supply system was forced to stop for repairs for a few days up to a week and all the districts located in the downstream of those sections were affected by the stoppages. The two-time major full stoppages of water supply, which lasted for 8 months starting from June 2006 and for 12 months starting from June 2007, to conduct overall inspections and repairs had a significant impact on the decrease in the water supply volume.

Despite the two-time major repairs, the leakage problems were not fully solved and it is expected that there will be similar needs of repairs from now on. However, during the second major repair in 2007 and 2008, more chambers were installed on the transmission pipes, in parallel with the replacement of GRP pipes with steel pipes, in order to reduce water losses during the repairs and the number of days required for such repairs.

2.1.1.2 Water Storage Rate (Letsibogo Dam)

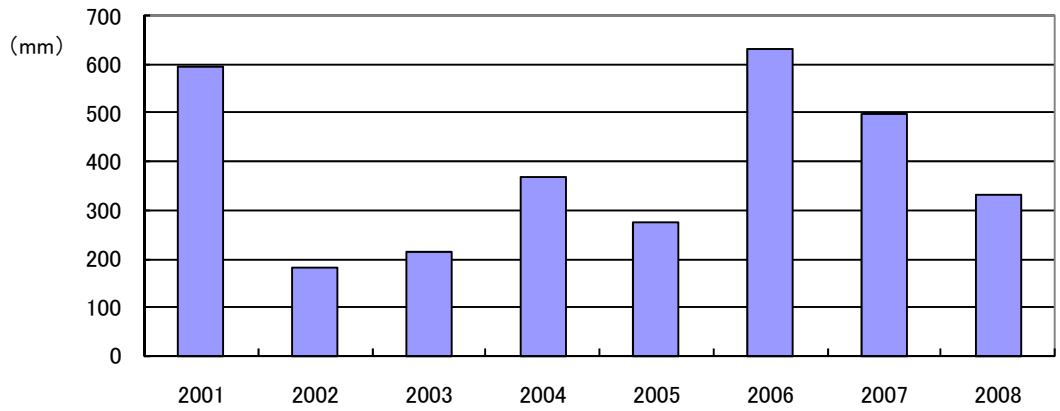
In the Ex-post Evaluation Report, it was concluded that one of the causes of the low water level in Letsibogo Dam was the trend of low rainfall. Indeed, the water storage volume was low soon after the completion of the project, and accordingly the water

6 The report that shows the leakage condition and the technical countermeasure was prepared by WUC in 2008, and it highlighted future issues.

7 Through the investigation of the external consultant outsourced by WUC, it was pointed out that the structure of the parts that connect GRP pipes and steel pipes could not withstand various underground pressures, and that there were a lot of ruptures of the GRP pipes. Also, there have been few leakages in the sections structured only with steel pipes.

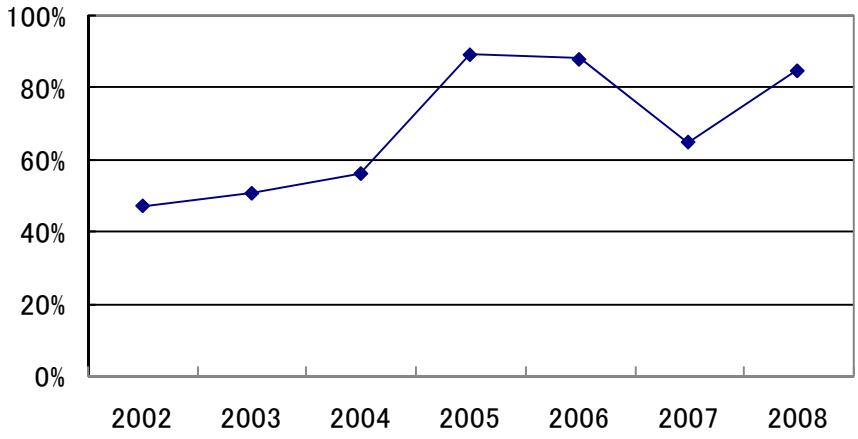
supply was limited. However, since 2004, when there was a recovery of rainfall (Figure 3) leading to an increase in the water level at Letsibogo Dam (Figure 4), the water supply has not been constrained by the Dam. It is only the repair of the water transmission pipes that has been the major factor for any supply restrictions. During the on-site inspection, the water storage volume was at 75% of the full capacity, and in the following week, it reached 100% as a result of the rainfall. As such it is believed that there has been no concern about the water storage volume.

Figure 3: Annual Rainfall Level in the Area near Letsibogo Dam
(Observation Point: Selebi-Phikwe)



Source: Data supplied by Department of Meteorological Services

Figure 4: Water Storage Rate of Letsibogo Dam



Source: Data supplied by WUC

2.1.1.3 Internal Rate of Return

In this monitoring survey, sufficient data, ranging from the past to the future projection, were not available. Therefore, the Financial Internal Rate of Return (FIRR) was not recalculated.

2.1.2 Qualitative Effect

2.1.2.1 Master Balancing Reservoir

The Master Balancing Reservoir was constructed for absorbing the daily fluctuation of water demand, and it temporarily reserves purified water by using two control chambers. Since the commencement of operation, it has been utilized as originally planned and the reservoir can be said to have a sufficient capacity.

2.1.2.2 Pump Station

It has been nine years since the project was completed. Some pumps are in need of repairs, but since there are no repairing shops in Botswana, they are transported out to South Africa for repairs. The pump stations are generally operating without problems, and there have been no cases of impacting the water supply in a negative way. Also, the operations of pump stations are automatically controlled by managing the upstream flows with the computer system.

2.1.2.3 Break Pressure Tank

All the tanks have been operating without any problems.

2.1.3 Impact

2.1.3.1 Development of Commercial / Industrial Activities by Securing Water Supply

According to 2006/7 Census of Enterprises and Establishments, released by the Central Statistics Office, registrations of new enterprises and establishments increased gradually but steadily (Table 2). However, it is difficult to come to a definite conclusion as to the question on whether the number of entities shows substantive growth or not, since there are a lot of entities that are registered but have no business operations. In the data for 2001-2005, the total number of operating enterprises and establishments, which was counted by each district, remained steady in Gaborone and Palapye, while it decreased in Mahalapye (Figure 5).

However, in the 2000s, industrial parks such as Commercial and Industrial Park, Millennium Office Park, Game City (commercial facilities), and also the residential areas called Block 6-10 were developed. These development projects would not have

been fully realized without water supply. In this regard, it is believed that this project has made some contributions in the areas. Also, designing and/or building of several facilities, such as Botswana International University of Science and Technology, Morupule Coal Thermal Power Plant in Palapye, and along the transmission pipe, Coal Thermal Power Plant in Mmamabula, have been started. It is only with the stable supply of purified water that these large-scale developments have been realized, and this project has become the foundation for the economic activities of the districts located alongside of the coverage area.

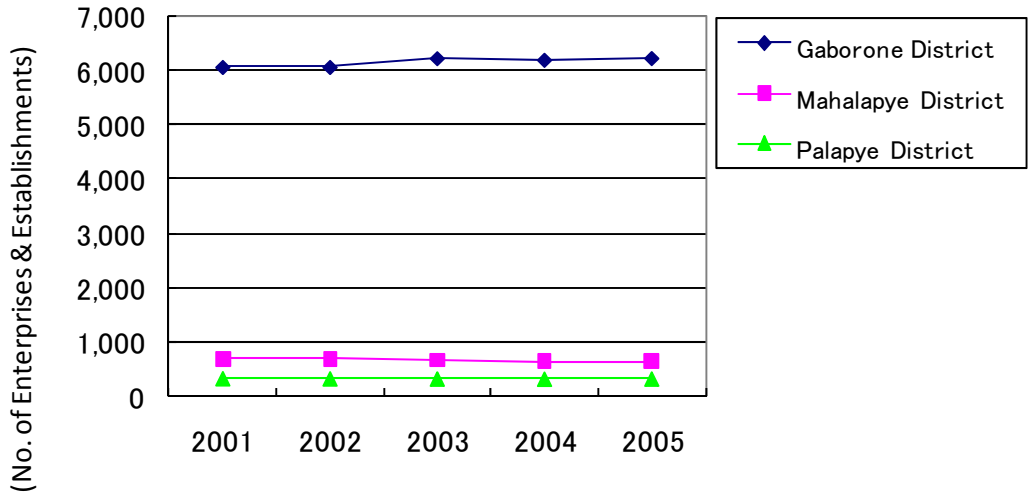
Table 2: Changes in the Number of New Enterprises and Establishments Registrations

(unit: entity)

	2002	2003	2004	2005	2006
Gaborone City	111	108	141	122	165
Mahalapye Village	8	8	18	23	26
Palapye Village	2	12	3	16	23

Note: The data of the three districts above cover only the smaller city and village areas.
Source: 2006/7 Census of Enterprises and Establishments, Central Statistics Office

Figure 5: Number of Operating Enterprises and Establishments



Source: Enterprises and Establishments Register Digest (April-September 2005), Central Statistics Office

2.1.3.2 Improvement in Public Health and Living Environment by Using Clean Water

Water has been supplied to the residents in Mahalapye and Palapye districts through aqueducts and stand pipes, even when they relied totally on well water. Although there

were few problems at that time in regard to the health hazards and the deterioration of living environment etc, the commencement of water supply under this project has enabled the supply of high-quality tap water classified as Class 1, which is the highest rank under National Standard for Drinking Water Quality BOS32:2000. However, there were complaints from 20% of the residents interviewed in the beneficiary survey. It was due to the fact that during the water supply stoppage from NSC, well water is supplied by DWA and the water quality fluctuates shortly after heavy rains. Regarding the usage of tap water, more than 90% of the residents in the beneficiary survey were using water from faucets and only one family used well water for washing clothes, sprinkling, and so on. With regard to the water quality, while some residents complained about well water after heavy rains, 75% of them were satisfied with the quality. Also, 95% of the residents were satisfied with the water supply volume, and WUC's water supply services were hailed by 75% of the residents commenting that the services have been improved over the past five years. Therefore, it can be said that WUC has generally provided good services. By early 2010, the water supply services to Mahalapye and Palapye districts will be transferred from DWA and will be the responsibility of WUC[8]. Hence, more improvement efforts are expected to be made continuously in order to supply stable water from NSC.

2.1.3.3 Impact on Society and Natural Environment

Compensations were provided to the residents who were forced to relocate due to this project, in accordance with the guidelines issued by the Land Board. Since then no complaints from them have been filed and thus it can be said that necessary measures were implemented. Regarding the environmental conservation, WUC implements an environment management system in accordance with ISO14001. In addition, there were no particular environmental burdens noted in the surrounding areas of the project sites.

2.2 Sustainability

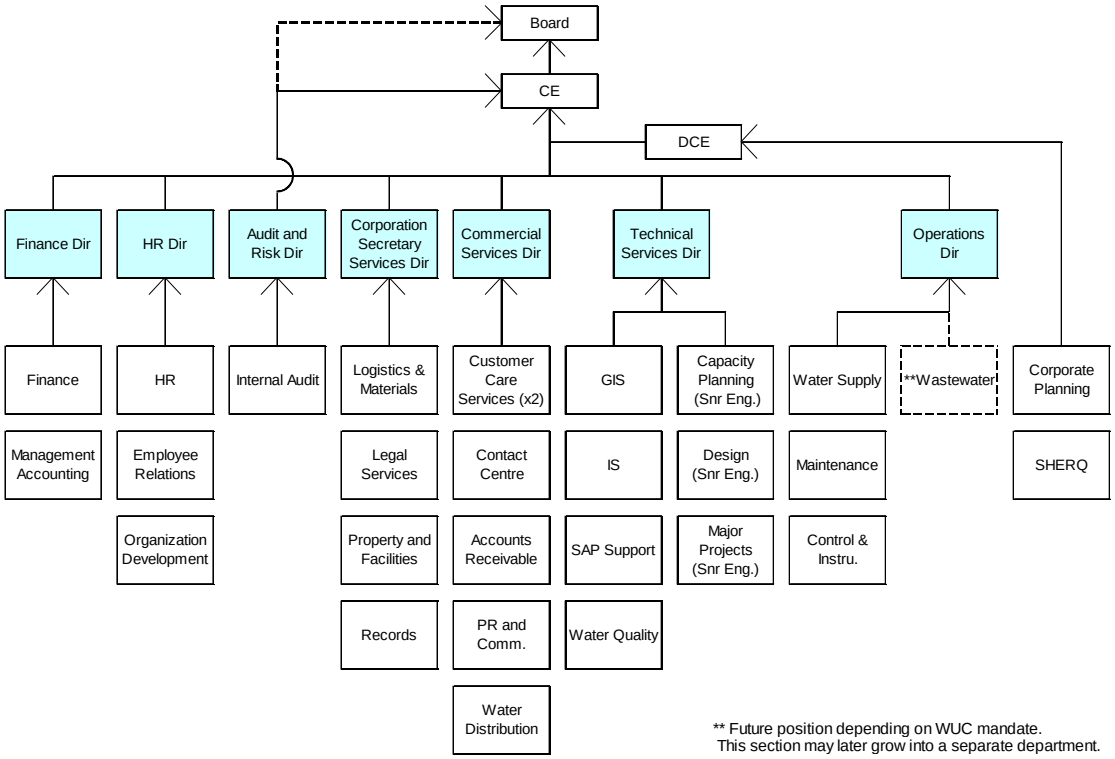
2.2.1 Operation and Maintenance System

There was a major change in the organizational structure of WUC. The department that had administered this project was integrated from an independent entity to one of the units under the Operations Department. Seven departments are set up under the Chief Executive, and within the Operations Department three divisions are set up; (1)

[8] As the Government of Botswana has implemented a reform program of the water sector, significant changes are being made including the reallocation of roles among the government ministries and public corporations.

Water Supply, (2) Maintenance and (3) Control and Instrumentation. In each division, sections that conduct the operation and maintenance of this project are placed and the staff are assigned at each water treatment works. For relatively large-scale repairs, planning and implementation are undertaken mainly by the staff from Mmamashia Water Treatment Works. The number of staff assigned for operation and maintenance purposes increased from 39 to 52 in Mmamashia, from 22 to 31 in Mahalapye and from 19 to 32 in Palapye, since the Ex-post Evaluation. Although only the outsourced security guards are stationed at the pump stations and at the break pressure tanks, the staff at each water treatment works go on duty and conduct regular operation and maintenance. No problems were found in terms of the overall number and composition of the staff.

Figure 6: Organization Chart of WUC



Source: Information supplied by WUC

2.2.2 Technology for Operation and Maintenance

Advanced repairs, such as the large-scale repairs of the pumps, are arranged and conducted in South Africa due to the lack of repairing facilities as described earlier. However, periodical inspections and repairs of the facilities, equipment and devices are conducted by the in-house engineers of WUC. During the on-site survey, it was found that almost all the facilities were maintained in good conditions and no technical

problems were observed. WUC also allocates necessary budget every year for long and short term trainings of the staff at home and abroad. Regarding the trainings abroad, as of August 2009, 16 officers were pursuing degree programs in the engineer-related fields at the universities in South Africa. As for home / domestic training, short courses on the issues such as maintenance of equipment, are regularly conducted for the relevant staff members.

2.2.3 Finance for Operation and Maintenance

WUC sets different water tariffs by region on a cost-recovery basis. The water tariffs in Gaborone and Francistown, which are urban districts, are the highest in Botswana. However, no particular complaints from the users have been filed. Also, in the beneficiary survey, it was found that 92% of the residents of Mahalapye and Palapye districts thought that the water tariff was set at a reasonable level.

The Finance Department is now divided into 5 divisions, as the Jwaneng Division has been added since the Ex-post Evaluation. This project is continuously administered by the NSC Division (North South Carrier Division).

With regard to the financial position of this project, according to the income statement, net losses were posted soon after the completion of this project. However, net profits have been recorded since 2004 (Table 3), driven by the increase in water sales. Operating cash flows also have positive balances except the financial year 2005/06, when there was an impact from the severe drought. Therefore, it can be said that it has stayed in a financially sound condition. Other factors which support the corporation's good financial conditions can be derived from the fact that this project has been given preferential treatment with the consideration of the social importance of this project, i.e. only the 'interest' is paid by the NSC Division[9], and that a certain amount of revenues is transferred from the Gaborone Division regardless of the water supply volume. The overall balance of WUC has stayed in surplus and good condition. In the financial year 2005/06, the surplus was reduced due to the decrease in water sales caused by the drought and the exchange loss. However, the percentage of water operation surplus has never fallen below 40% of the revenue of water sales and the trend remains in a stable manner (Table 4).

[9] Amortization of principal is undertaken by the Government as WUC is not obliged to do so.

Table 3: Income Statement of NSC Water Supply

	2001	2002	2003	2004	2005	2006	2007	2008
Water Sales	0	57,400	146,719	170,838	223,909	257,883	206,321	261,823
Operating Exp.	8,473	43,684	63,017	64,647	71,408	74,513	76,918	79,416
Operating Profit / Loss	-8,473	13,716	83,702	106,191	152,501	183,370	129,403	182,407
Other Income	61	20,517	-13,250	136	167	188	204	189
Finance, net	0	-67,563	-80,799	-100,357	-77,856	-114,178	-64,911	-58,759
Net Profit/Loss	-8,412	-33,330	-10,347	5,970	74,812	69,380	64,696	123,837

Note: One Financial Year is from April to March.

Source: Income Statement prepared by WUC

Table 4: Income Statement of Water Utilities Corporation

	2004	2005	2006	2007	2008
Water Sales	465,934	492,829	416,288	444,722	469,506
Water treatment & Distribution Exp.	79,114	120,084	114,817	76,394	114,022
Administration & Other Expenses	48,673	70,924	65,146	76,114	78,830
Depreciation & Amortisation	64,338	64,459	63,244	59,363	60,833
Total Operating Exp.	192,125	255,467	243,207	211,871	253,685
Water Operation Surplus	273,809	237,362	173,081	232,851	215,821
Other Income	1,844	1,748	2,387	1,710	1,395
Operating Surplus	275,653	239,110	175,468	234,561	217,216
Finance Income	22,011	33,179	10,766	57,867	71,559
Finance Costs	-125,538	-97,021	-93,243	-86,244	-80,808
Finance, net	-103,527	-63,842	-82,477	-28,377	-9,249
Surplus for the year	172,126	175,268	92,991	206,184	207,967

Source: Water Utilities Corporation Annual Report (Audited by PricewaterhouseCoopers)

3. Conclusion, Lessons and Recommendation

3.1 Conclusion

This project was co-financed by several donors, and the Yen-loan components have been operating in good conditions, without any significant problems. However, the water leakage issues of the transmission pipes have been a significant obstacle to the achievement of the overall project effects. During the stoppages of water supply from NSC, the demand is still met by the supply from the alternative dams in the Gaborone district. On the other hand, in the Mahalapye and Palapye districts, where there are no

alternative water supply sources, DWA supplies water to individual households by pumping up underground water. This practice not only leads to extra expenditures for the repairs but also to the losses of revenue opportunities. In this regard, it can be said that the achievement level of this project is lowered by the length of the stoppages of the NSC system.

WUC conducted the large-scale repairs of the transmission pipes over the total period of 20 months between 2006 and 2008. However, it is expected that further repairs are to be performed, although each repair may be relatively on a smaller-scale. On the other hand, the financial position can be commended in that the condition has been improved significantly since the Ex-post Evaluation and has been in stable conditions. Looking ahead, it is desirable that this project be well coordinated with the Second North-South Carrier Water Project[10], and that the stable water supply services be realized by implementing fundamental repairs to the problematic sections while keeping the current water supply in operation.

3.2 Lessons

During the project planning period, a multifaceted examination of the transmission pipes should have been made. In this project, while there were no issues on operation and maintenance for the Yen-loan components, i.e. water treatment works, pump stations and break pressure tanks, the adoption of GRP pipes led to significant losses as a result. In a similar project in the future, it is important that not only the initial costs but also the long-term maintenance costs are taken into consideration when selecting the materials and equipment.

The problem that the facilities developed in this project have not been utilized as originally planned was caused by slower-than-expected population growth and by the frequent breakages of the pipes. As the low utilization level can lead to a financial burden it is necessary, when forecasting demand for a similar project, that the projections are based on deliberate calculations by considering social trends, so that the overestimation can be avoided.

3.3 Recommendations

3.3.1 Recommendations to Executing Agency

In addition to the thorough maintenance to be conducted continuously, it is important that intensive repairs should be made on the sections where the problems frequently

[10] A project to enhance water supply capacities by constructing another dam in the north of Letsibogo Dam and installing new transmission pipes alongside the current pipes. A part of the entire project has already commenced, such as the construction of the dam

occur so that the stable water supply to Mahalapye and Palapye districts will be achieved. Also, since the Second NSC Project is on a larger scale and there could generate larger financial burdens, designing and construction should be conducted with an emphasis on the ease of maintenance, as well as the considerations on the initial costs during the planning phase.

Comparison of Original and Actual Scope (Yen Loan Components)

Item	Plan	Actual
(1) Output		
I. Water Treatment Work		
1) Mmamashia	92,000m^3/day	92,000m^3/day
2) Mahalapye	12,000m^3/day	12,000m^3/day
3) Palapye	14,000m^3/day	14,000m^3/day
II. Master Balancing Reservoir	Capacity: 78,000m^3(Mmamashia) 5,000m^3(Mahalapye) 6,000m^3(Palapye)	Capacity: 78,000m^3(Mmamashia) 5,000m^3(Mahalapye) 6,000m^3(Palapye)
III. Pump Station		
1) Letsibogo	1.01m^3/Second	0.82m^3/ Second
2) Mahalapye	1.51m^3/ Second	0.93m^3/ Second
3) Palapye	1.33m^3/ Second	1.03m^3/ Second
IV. Break Pressure Tank: 1. Moralane 2. Thoti-Hill 3. Lose-Hill	Capacity: 4,500m^3×3	Capacity: 4,500m^3×3 Thoti-Hill and LoseHill were changed to Dikalate and Tewane.
(2) Period:		
1. Water Treatment Work	Feb 1996 - Sept 1998	Jan. 1997 – May 2000
2. Master Balancing Reservoir	Oct 1996 – Sept 1998	Jan 1997 – May 2000
3. Pump Station	Feb 1996 – Sept 1998	Nov 1996 – June 2000
4. Break Pressure Tank	Jan 1997 – Sept 1998	April 1997 – March 1999
(3) Project Cost:		
Foreign Currency	JPY 31, 071 million (BWP 840 million)	JPY 24,093 million (BWP 901 million)
Local Currency	JPY 13,725 million (BWP 371 million)	JPY 13,085 million (BWP 489 million)
Total	JPY 44,796 million (BWP 1,211 million)	JPY 37,178 million (BWP 1,390 million)
ODA Loan Portion	JPN 4,685 million (BWP 127 million)	JPN 4,685 million (BWP 175 million)
Exchange Rate	BWP 1 = JPY 37.0 (1995)	BWP 1 = JPY 26.75 (IFS[11]-based period average)

[11] International Financial Statistics by IMF