

South Africa

Kwandebele Region Water Augmentation Project

Evaluator: Yoshiro Okamoto

Mitsubishi UFJ Research & Consulting Co., Ltd.

Field Survey: November 2006

1. Project Profile and Japan's ODA Loan



Map of project area

Ekangala Regulating Reservoir

1.1 Background

The Mandela administration, which was inaugurated in 1994 as the first black-led government of South Africa, called for the correction of racial inequality and developed a policy statement, “The Reconstruction and Development Programme” (RDP). RDP covered policy issues in wide-ranging areas including the satisfaction of basic needs, development of human resources, development of small and medium sized enterprises and construction of a democratic nation. The water sector was positioned as one of the important sectors based on the idea that “all the people have the right to receive the benefit of water and sanitation in order to obtain the right to basic subsistence.” RDP set a target of supplying 20–30 liters of water per capita per day (l/c/d) for the short term and 50–60 l/c/d for the medium term.

Kwandebele region, located about 60 km east of the capital Pretoria, is one of the former homelands. Because of its geographical closeness, the region was developing as the largest township for blacks commuting to Pretoria with rapid population growth marking an annual growth rate of approximately 7.5% for several years prior to the appraisal of this project. However, because it was a homeland under the old regime, Kwandebele region did not have sufficient infrastructure such as waterworks. Water was supplied through public faucets called “street pipes” and some towns or villages partially provided households with water through water pipes. In some districts that have no public faucets or water pipes, water was taken by hand pumps or supplied by water trucks. At that time, the water supply was 51–54

l/c/d on average before distribution loss. However, it differed greatly by district with some districts being supplied with 250 l/c/d of water while other districts receiving less than 25 l/c/d. According to the data on water-supplied population shown in Table 1, 15% of the population of the region was supplied with less than 25l/c/d of water and a majority of 53% was supplied with less than 50 l/c/d of water. Compared to the above-mentioned short-term target (20–30 l/c/d) and the medium-term target (50–60 l/c/d) set in RDP, although some districts had already achieved those targets, Kwandebele region as a whole was in a situation requiring prompt improvement.

Table 1: Water Supply per Capita and Water Usage in Kwandebele Region

Water Supply per Day (l/c/d)	Ratio to the Entire Population (%)	Ratio to Total Water Usage (%)
25 or less	15	1
26–35	20	8
36–50	18	14
51–80	24	27
81–120	12	21
over 120	11	29

(Source) JBIC data

1.2 Objective

The project aims to fulfill the present and future water demand in Kwandebele region, one of the former homelands, by installing conduits and water pipes and expanding water purification and pumping facilities in the region thereby contribute to the improvement of the sanitation environment and the activation of industries.

1.3 Borrower/Executing Agency

The Government of the Republic of South Africa/ Department of Water Affairs and Forestry

1.4 Outline of Loan Agreement

Loan Amount / Loan Disbursed Amount	3,097 million yen / 1,814 million yen
Exchange of Notes / Loan Agreement	April 1996 / May 1996
Terms and Conditions	
-Interest Rate	2.5% (environmental project)
-Repayment Period (Grace Period)	25 years (7 years)
-Procurement	General untied
Final Disbursement Date	November 2003 ¹
Main Contractors	FREGOLD CONSTRUCTION, VALENTE BROS (South Africa)
Consulting Services	N.A.
Feasibility Study (F/S), etc.	—

2. Evaluation Result (Rating: D)

2.1 Relevance (Rating: c)

2.1.1 Relevance at the time of appraisal

At the time of appraisal, the population of Kwandebele which was estimated to be 877,000 in 1994 was projected to increase to 1,305,000 by 2003 and water consumption in 2003 was estimated to be 68 l/c/d on average, 32.58 million m³/year. Taking into account the losses in the distribution network and purification works, source water of 38.18 million m³/year was thought to be needed.

At that time, available source water was 18.95 million m³/year. However, as water demand had been exceeding the volume of available source water since 1992, the supply-demand situation was quite tight. In order to address this problem, in addition to increasing the water supply from the Bronkhorstspuit Dam by 5.5 million m³/year starting from 1996, it was planned to take water of 15 million m³/year from the Grootdraai Dam as a result of this project. If realized, a total of 39.45 million m³/year was expected to become available, satisfying the demand for source water of 38.18 million m³/year estimated for 2003 as mentioned above (Table 2).

¹ Since the borrower expressed its intention not to request an extension of the loan expiry date, the final disbursement date was set at the loan expiry date.

Table 2: Water Sources Available in Kwandebele Region

Water Source	Water Volume in 1994 (million m ³ /year)	Water Volume at the Completion of the Project (million m ³ /year)	Note
Kameel River	0.75	0.75	
Rhenosterskop Dam	3.2	3.2	
Loskop Dam	9.5	9.5	
Bronkhorstspuit Dam	5.5	11.0	Accommodating the first expansion of Bronkhorstspuit Purification Works (not completed as of 1995)
Grootdraai Dam		15.0	Additional conduction under the project
Total	18.95	39.45	

(Source) JBIC data

As shown above, water supply in Kwandebele region did not meet the demand at that time and was not expected to meet the necessary volume planned for the future. Therefore, it was urgently needed to increase the water supply level in the region. To this end, it was planned to lead additional water from Grootdraai Dam on the Vaal river system in the southern part of the region at a rate of 15 million m³/year and expand the existing waterworks and water distribution system accordingly.

Thus, the Department of Water Affairs and Forestry (DWAF) developed the “Water Supply Augmentation Scheme to the Kwandebele Region of the Eastern Transvaal Province” in 1995 under the Water Act and designated it a RDP project of the highest priority. This project was designed to support this scheme (excluding some components that had already started) and was regarded as relevant with the development needs and policy of the country, at least as of the time of appraisal. At the same time, it seems that supporting national development of South Africa immediately after the transition to the new regime was of great significance in political terms.

2.1.2 Relevance at the time of evaluation

In 1997 after the project started, the Constitution of the Republic of South Africa came into force. The Constitution ensures that “all people have the right to receive the benefit of water and sanitation in order to obtain the right to basic subsistence” as stated in RDP and the policy for realizing this right (policy on water supply and sanitation) was made into the Water Services Act. This act stipulates that “all the people shall have the right to receive the benefit of water and sanitation in order to obtain the right to basic

subsistence.” The above-mentioned idea that “all the people have the right to receive the benefit of water and sanitation in order to obtain the right to basic subsistence” has been taken over in the current “Strategic Framework for Water Services (established in September 2003),” which is equivalent to a national water resource development plan, indicating that there is no change in the government’s stance regarding this sector as one of the sectors particularly important for national development. The Strategic Framework for Water Services is a basic plan presenting the strategic framework for water supply in South Africa for 10 years from 2003.

Under the Constitution of the Republic of South Africa, the authority over water supply (the authority to supply sufficient volume of water to local communities) is granted to local governments. After the enactment of the Water Services Act, the authority over water supply granted to local governments under the Constitution was clearly defined. At the same time, it was decided to establish a legal system defining the roles and functions of local governments in carrying out the policy on water supply and sanitation. Along with the review of local administration for water supply, thorough review of the system and routes of water supply was planned to be conducted throughout the nation.

The main points of this review are as follows:

- (1) According to statistical data such as the population census, the initially projected increase rate of the population of Kwandebele region (4.3%) will almost certainly not be achieved. It was found that the projection for population increase was unrealistic and consequently the volume of necessary water was estimated to be larger than actually needed.
- (2) Also, in connection with the plan to obtain water from the Vaal River system, it was confirmed that the water volume of the said river system is not so abundant as expected and may become insufficient and that the cost of conducting water will be expensive. Thus, the assumptions used for appraisal have changed significantly.
- (3) Furthermore, in the supply-demand analysis conducted to estimate the volume of water that needs to be supplied in this region, an unrealistically large volume of water demand was emphasized (100 l/c/d, far larger than what should be the basic water demand). Therefore, it was suspected that a) an extremely large volume of water is wasted in this region, and that b) water is used wrongfully. As a result, an opinion was offered that reinforcement of the water management is more necessary than the construction of water supply facilities.

All things considered, it was decided to completely revise the Water Supply Augmentation Scheme to the Kwandebele Region of the Eastern Transval Province. As it became unnecessary to take source water from Grootdraai Dam at an enormous cost, most of the outputs planned in this project have lost their significance. Therefore, this project

became completely meaningless when the above review was conducted and in this context it is difficult to say that there exists any reason to implement this project as of the time of evaluation. Under these circumstances, this project was discontinued in 2000 at the request of the Government of the Republic of South Africa.

As described above, relevance of this project is highly questionable both in terms of development needs and policy as of the time of evaluation.²

2.2 Efficiency (Rating: N.A.)

2.2.1 Outputs

This project was planned to consist of two parts. The first part was the construction of infrastructure for obtaining a large volume of raw water from water sources. The plan was to supply raw water from the Vaal River system via Grootdraai Dam to Bronkhorstspuit Dam. The second part was the construction of infrastructure for supplying a large volume of drinking water, in which drinking water was planned to be supplied to Kwandebele.

As shown in Table 4, four components of the planned eleven components were implemented almost as planned. As for the remaining components, however, either the contracts were cancelled or the construction or procurement was suspended in 2000. The reason was that, as described above, after the project started, the Government of the South Africa conducted a nationwide review of the system and routes of water supply, and the plan to obtain water from the Vaal River system, which was determined in the planning stage of this project, was called off. As a result, the suspended components lost their significance and the reason for existence.

Table 3 shows a comparison between the plan and the actual results of the project.

² In 2003, DWAF started FS on water sources to study the most effective option for a source of water in Kwandebele region. After discussing several options, it was finally decided to temporarily secure a source of water by using the surplus capacity of the Rand Water System, a water supplier serving the adjacent Mamelodi region. In April 2006, a water pipeline was completed between the Rand Water System and Kwandebele region (length: 42 km, diameter: 500 mm, water supply capacity: 11 million m³/year) and the system for supplying water from the Rand Water System to the region was established.

Table 3: Outputs of the Project (comparison between the plan and the actual results)

Plan	Actual
<p>1. Installation of Ekangala-Enkeldoornoog Gembokkspruit conduit (42-km long, capacity 0.52 m³/s)</p> <p>2. Construction of Ekangala Regulating Reservoir and Enkeldoornoog Regulating Reservoir (capacity: 10,000 m³ and 40,000 m³)</p> <p>3. Procurement of equipment for Bronkhorstspuit Water Purification Works (Stage 2) (add 6.0 million m³, total capacity 21.0 million m³)</p> <p>4. Civil works for the expansion of Bronkhorstspuit Water Purification Works (Stage 2) (expansion of the intake from the river, intake pumping station and the conduit)</p> <p>5. Construction and installation of Kendal Regulating Reservoir (10,400 m³), Matla-Khutala conduit (2.3-km long, capacity 0.6 m³/s) and Kendal-Bronkhorstspuit Dam conduit (35-km long, capacity 0.5 m³/s)</p> <p>6. Installation of Bronkhorstspuit-Ekangala conduit (10-km long, capacity 0.68 m³/s)</p> <p>7. Procurement of equipment for Bronkhorstspuit Water Purification Works (Stage 3) (add 5.0 million m³, total capacity 26.0 million m³)</p> <p>8. Civil works for the expansion of Bronkhorstspuit Water Purification Works (Stage 3)</p> <p>9. Construction of Kwandebele Region Regulating Reservoir (capacity 10,000 m³)</p> <p>10. Construction of the Second Kendal Regulating Reservoir (capacity 10,400 m³)</p> <p>11. Construction of Tweefontein Reservoir and Kwandebele Region Regulating Reservoir (capacity: 40,000 m³ and 10,000 m³) (Stage 1 of the civil works for the expansion of Bronkhorstspuit Water Purification Works and the procurement equipment is excluded because it had already started at the time of appraisal)</p>	<p>1. 42 km long, capacity 1 m³/s</p> <p>2. Capacity: 20,000 m³ and 11,000 m³</p> <p>3. Procured (planned to be used for the repair of Bronkhorstspuit Water Purification Works)</p> <p>4. Suspended</p> <p>5. Suspended</p> <p>6. Suspended</p> <p>7. Suspended</p> <p>8. Suspended</p> <p>9. 10,000m³ x 2</p> <p>10. Suspended</p> <p>11. Suspended</p>

2.2.2 Project Period

Table 4 shows a comparison between the planned and actual implementation period of this project.

Table 4: Planned and Actual Implementation Period of the Project

	Plan	Actual
1. Installation of Ekangala-Enkeldoornoog Gembokkspruit conduit	Jul. 1996 – Mar. 1997	Oct. 1996 – Jun. 1998
2. Construction of Ekangala Regulating Reservoir and Enkeldoornoog Regulating Reservoir	May 1996 – Mar. 1997	Oct. 1996 – Jul. 1998
3. Procurement of equipment for Bronkhorstspuit Water Purification Works (stage 2)	Apr. 1997 – Jan. 1998	May 1997 – Dec. 1999
4. Civil works for the expansion of Bronkhorstspuit Water Purification Works (Stage 2)	Nov. 1997 – Oct. 1998	Suspended
5. Construction and installation of Kendal Regulating Reservoir, Matla-Khutala conduit and Kendal-Bronkhorstspuit Dam conduit	To be completed in Dec. 1996	Suspended
6. Installation of Bronkhorstspuit-Ekangala conduit	To be completed in Jul. 1997	Suspended
7. Procurement of equipment for Bronkhorstspuit Water Purification Works (Stage 3)	To be discussed after the completion of Stage 2	Suspended
8. Civil works for the expansion of Bronkhorstspuit Water Purification Works (Stage 3)	To be discussed after the completion of Stage 2	Suspended
9. Construction of Kwandebele Region Regulating Reservoir	May 1997 – Aug 1998	Aug. 1998 – Sept. 2000
10. Construction of the Second Kendal Regulating Reservoir	Not decided	Suspended
11. Construction of Tweefontein Reservoir and Kwandebele Region Regulating Reservoir	Not decided	Suspended

As mentioned above, only four components of the eleven components planned for this were carried out. The comparison between the plan and the actual results is as shown in Table 4. It is difficult to correctly determine the efficiency of the project period because the construction work and procurement of many components were suspended. Since the borrower expressed its intention not to request extension of the loan expiry date, this project is considered to have been terminated upon the loan expiry in November 2003.

2.2.3 Project cost

Table 5 shows a comparison between the planned and actual cost of this project. The actual project cost is about 56% of the amount estimated at the time of planning. The project cost substantially decreased because, as already mentioned, the planned outputs were not implemented.

The ODA Loan covered the entire foreign currency portion shown in (1) in Table 5 (732 million yen) and part of the local currency portion (2,364 million yen), totaling 3,097 million yen³.

Table 5: Comparison between the Planned and Actual Project Cost

(1)Planned project cost

	Foreign Currency (million yen)	Local Currency (million rand)	Total (million yen)
Construction Cost	665	101	3,055
Contingency Reserve	67	10	305
Management Cost		11	262
Taxes		21	507
Total	732	144	4,129 ⁴

(Note) Base year used for the calculation: June 1995

Exchange rate: 1 dollar=85.16 yen, 1 rand=23.67 yen

(Source) JBIC

(2)Actual project cost

	JBIC Component (million yen)	Local Component (million rand)	Total (million yen)
Construction Cost	NA	NA	NA
Management Cost			
Taxes			
Total	1,814	25.576	2,327

(Note) Exchange rate: 1 rand=20.07 yen (calculated based on the JBIC loan amount (in rand) stated in the Project Completion Report and the amount actually provided by JBIC (in yen))

The data on the foreign currency and local currency portions was not provided by DWAF.

(Source) Project Completion Report prepared by DWAF

In determining the efficiency of the cost of this project of which only some components were carried out, it would be ideal to compare the actual cost with the planned cost of each component that is completed. However, because such data was not available at the

³ The total does not agree due to a rounding error.

⁴ The total of 4,129 million yen, which is the amount shown in JBIC's appraisal material, does not agree with the total of the foreign and local currency portions converted into yen (4,140 million yen).

time of evaluation and that many components were suspended after being partially implemented, it is difficult to correctly determine the efficiency of the project cost in general.

2.3 Effectiveness (Rating: N.A.)

At the time of appraisal, the process of identifying operation and effect indicators of this project and setting target values of such indicators was not conducted. Therefore, it is difficult to analyze and evaluate the degree of target achievement by comparing the actual achievements with the target values of the operation and effect indicators. The effects of this project expected at the time of appraisal are as follows:

- (1) Volume of water intake from the Grootdraai Dam on the Vaal River system (plan: 15 million m³ a year)
- (2) Population supplied with water (plan: 1,305,000)
- (3) Volume of water supply (plan: 68 l/day, 32.58 million m³/year, meeting water demand up to 2003)
- (4) Financial Internal Rate of Return (FIRR) (-5.7% assuming that the water charge would be at the level of 1995), -0.8% (assuming that the water charge would increase by 50%)

As mentioned above, of the eleven components that were originally planned, only four components were implemented (construction of some pipelines and regulating reservoir, procurement of equipment for water purification works, etc.). It means that the preconditions for generating the above-mentioned effects as initially expected have not been fulfilled and therefore it seems meaningless to measure the effects of this project.⁵ The four components that were implemented are used as part of the water supply network in Kwandebele region. However, as the water intake from the Grootdraai Dam was not realized as planned, water used in the network is provided not as an output of this project but through the pipeline constructed with other funds than the ODA Loan.⁶ Considering

⁵ The following situation was confirmed at the time of evaluation with respect to the effects that were expected at the time of appraisal.

- (1) Water intake from the Grootdraai Dam on the Vaal River system, which was planned to intake 15 million m³ of water, is not realized.
- (2) The water-supplied population was planned to be 1,305,000, while that covered by the outputs completed with the ODA Loan has not been confirmed. The population of Kwandebele region as of 2007 is estimated at 745,063, though this is an unofficial estimation.
- (3) Regarding the volume of the water supply, water supply of 68 l/day, 32.58 million m³/year was planned in order to meet water demand up to 2003, while Bronkhorstspuit Water Purification Works is capable of supplying water of 40l/day, 14.6 million m³/year to Kwandebele region on a continual basis.
- (4) Recalculation of Internal Rate of Return is impossible.

⁶ Some options were considered as an alternative to water intake from the Vaal River system that was cancelled. As already mentioned, it was finally decided to construct a 42 km-long pipeline with a diameter of 500 mm between Mamelodi and Ekandustria to receive water supply from the Rand Water System located west of the region. The construction started in 2005 and was completed in April 2006.

this situation, evaluation of the effectiveness of the current system and routes of water supply cannot be logically considered tantamount to the proof of the effectiveness of this project.

2.4 Impact

At the time of appraisal, implementation of this project was expected to have the following impacts.

- (1) Contribution to the improvement of the living environment such as the improvement of public sanitation and reduction of epidemics.
- (2) Indirect impact such as the creation of employment by the use of as much local labor as possible in the construction work for the implementation of this project.

With respect to environmental impact, this project was determined to have no problems in particular because the main part of the project was expansion and improvement of the existing water supply facilities and no large-scale construction such as dam construction was included. Also, it was considered to have no adverse impact on WID (Women in Development).

At the time of evaluation, it was not known whether the above impacts of (1) and (2) expected at the time of appraisal were found. The reason is that only limited components among those planned for this project were implemented and therefore, as with the evaluation of effectiveness, evaluation of the impact of the current system and routes of water supply cannot be logically considered tantamount to the impact of the ODA Loan project. Also, considering the small scale and nature of the limited components that were implemented, this project is considered to have no adverse impact on the environment and society as mentioned above. No adverse impact on WID has been reported.

2.5 Sustainability (Rating: c)

2.5.1 Executing agency

At the time of appraisal, water services in South Africa were operated as follows:

- (1) First level = Central Government (DWAF): Administrative guidance and supervision regarding water supply and sanitation, planning and funding for national plans and the projects mainly focused on water resource development, and management and operation of water resources.
 - (2) Second level = water corporation: Implementation of water and sanitation plans under the supervision of DWAF and provision of services to the third level
 - (3) Third level = local municipality or water board: Providing local residents with services relating to waterworks and sanitation that are provided by the water corporation of the second level, collection of water charge from the local residents,
-

payment of collected water charge to the water corporation.

Since Kwandebile region was a former homeland, it was not covered by the service area of the water corporation and organizations of local municipalities had not been established. Therefore the second and third levels of the above-described structure were not in place and were just starting to be established. Until such structure is established, DWAF of the first level was to assume full responsibility for the implementation of this project. It was decided that the operation and maintenance of the components of this project involving water purification works were the responsibility of Bronkhorstspuit Town Council (present Kunguwini Local Municipality) and other components were the responsibility of DWAF, whose regional offices were to carry out management and operation activities.⁷ After taking over infrastructure facilities for water supply services transferred from the former administrator of the homeland, DWAF became the temporary owner of those facilities and also the provider of water supply services.

The Constitution of the Republic of South Africa enforced in February 1997 grants authority and functions to provide extensive public services to local governments, including the authority to supply water (the authority to secure sufficient water to be supplied to communities). Based on this provision of the Constitution, various laws and regulations concerning water services were established.

At the time of evaluation, the structure of water services has been developed from that in place at the time of appraisal into the following structure.

- (1) Water Services Authority (WSA): Functions of administration, planning, and regulations concerning water supply services (it was stipulated that the local municipalities having jurisdiction over each service area shall serve as WSAs)
- (2) Water Services Provider (WSP): Functions of designing, construction, ownership, operation, maintenance and customer relations concerning water supply services

Thus in Kwandebile region too, the authority and responsibility for water supply were to be transferred to local municipalities holding jurisdiction over the region according to the law. However, since the local governments had not been established and there was no water supply service provider in the region, Ikangala Water Board was organized in February 1998 as a body to implement those functions. The Board was to take over the responsibility for the management of large-scale infrastructure facilities from DWAF while assuming the functions of regional operation and maintenance that had been performed by DWAF.

In January 1999 when the first members of Ikangala Water Board were officially appointed, a provisional management team was organized in DWAF to support the Board.

⁷ For the future, the responsibility for the operation and management of all components of this project was planned to be transferred to Magalis Water and local municipalities.

In April 2000, four managers sent by DWAF to the Board took the place of the provisional management team and took over the responsibility for the operation and management.

2.5.1.1 Technical capacity

As mentioned above, DWAF and Ikangala Water Board entered into a management agreement in 2000 under which DWAF sent a staff of 470 members engaging in management and operation activities and provided operating funds. Since then DWAF has been providing personnel and financial support to the Board. However, as of 2006, there seemed to be a downward trend in the personnel and financial support and it is feared that the support by DWAF to the Board may not be continued.

Moreover, the CEO and five members of the management staff of the Board resigned (the post of CEO remained vacant at the time of evaluation). Also, it was found that the Board did not have any technical employees as of the time of evaluation. Given this situation, it is determined that the Board currently does not have the capacity to operate water supply services appropriately.

On the other hand, the local municipalities to which water supply facilities were transferred from DWAF in recent years (2005/06) are authorized as WSAs that are legally responsible for water supply and assume the responsibility for the operation and management of the transferred assets. However, these municipalities have not entered into appropriate water supply agreements with other WSPs and they do not seem to have the capacity to properly maintain and manage the transferred assets for water supply both in technical and personnel aspects. Judging from this situation, the present environment is not enough for the assets constructed under the project within the implemented scope to be utilized effectively to satisfy the needs for water supply of the region on a continuous basis.

2.5.1.2 Organization

At this time, it is unclear what role Ikangala Water Board will play in the future. The Board seems to not have enough capacity to perform the functions and roles of WSP as it was originally expected. If the present situation remains unchanged, its existence will lose all meaning in the future.

2.5.1.3 Financial status

As explained above, Ikangala Water Board was established in 1997, when organizations of local governments had not been established and there existed no water supplier in Kwandebele region, as an entity to supply water in the region. After that, local governments were established in the region and five of them were authorized as WSAs.

However, none of them have entered into a Water Services Provider Agreement with Ikangala Water Board and they do not make payment for water provided by the Board, except for one local municipality which pays only the cost of water provided by the Board. On the Board's side, it does not have sufficient resources and a system to accelerate cost recovery and, in addition, the subsidy from DWAF is less than the operating cost necessary for providing services. It means that the Board cannot secure an adequate budget for water supply in spite of the fact that it receives a subsidy from DWAF. Furthermore, the support from DWAF has been gradually decreasing and is feared that it will be discontinued. Ikangala Water Board is considered to have an extremely weak financial base.

2.5.2 Operation and maintenance status

Ikangala Water Board, which has been performing the operation and maintenance of water supply facilities, etc., in Kwandebile region on behalf of DWAF is faced with the fear that the financial and personnel support from DWAF may not continue for the future. On the other hand, the local municipalities to which water supply facilities were recently transferred from DWAF are authorized as WSAs legally responsible for water supply. However, these municipalities have not entered into an appropriate water supply agreement with other WSPs and they do not seem to have the capacity to properly provide water supply services both in technical and personnel aspects. Judging from these situations, the present environment is not enough for the assets constructed under the project within the implemented scope to be operated and maintained effectively to satisfy the needs for water supply of the region on a continuous basis.

3. Feedback

3.1 Lessons Learned

3.1.1 It can be speculated that at the time of appraisal, supporting national development of South Africa immediately after the transition to the new regime had a great political significance for Japan. For a politically significant project like this, appropriateness of project implementation should be determined after full consideration of economic rationality at the stage of FS or ex-ante appraisal.

3.1.2 If a situation arose as a result of the policy change of the borrower country that the reason to continue the project might be lost from the viewpoint of relevance, JBIC and the borrower country should have moved toward a dialog at such point to discuss effective utilization of the ODA Loan. If the discussion came to the conclusion that it is practically impossible to continue the project, ex-post evaluation should be conducted

without waiting two years after the loan expiry date.

3.2 Recommendations

(To JBIC)

3.2.1 A thorough examination of the situation at the time of planning needs to be done to answer questions such as and why such change of plan occurred and why it could not be predicted at the time of FS. Lessons learned from this project should be applied to project formation for the future to prevent the same kind of problems. Even if such change in the situation resulted from change in the policy of the borrower country and was beyond the control of JBIC, it cannot be denied that the provided fund ended up not being used effectively.

(To local governments in the project area)

3.2.2 Given the unclear future direction of Ikangala Water Board, local municipalities in Kwandebele region need to establish relations with appropriate Water Services Providers as Water Services Authorities as soon as possible from the viewpoint of ensuring sustainable water supply.

Comparison of Original and Actual Scope

Item	Plan	Actual
1. Outputs		
1) Installation of Ekangala-Enkeldoornoog Gembokkspruit conduit	42-km long, capacity 0.52 m ³ /s	42-km long, capacity 1m ³ /s
2) Construction of Ekangala Regulating Reservoir and Enkeldoornoog Regulating Reservoir	Capacity 10,000 m ³ and 40,000 m ³	Capacity 20,000 m ³ and 11,000 m ³
3) Procurement of equipment for Bronkhorstspuit Water Purification Works (Stage 2)	Add 6.0 million m ³ , total capacity 21.0 million m ³	Procured (used for other region)
4) Civil works for the expansion of Bronkhorstspuit Water Purification Works (Stage 2)	Expansion of the intake from the river, intake pumping station and the conduit	Suspended
5) Construction and installation of Kendal Regulating Reservoir, Matla-Khutala conduit and Kendal-Bronkhorstspuit Dam conduit	10,400m ³ , 2.3 km long, capacity 0.6 m ³ /s, and 35 km long, capacity 0.5 m ³ /s	Suspended
6) Installation of Bronkhorstspuit-Ekangala conduit	10km long, capacity 0.68 m ³ /s	Suspended
7) Procurement of equipment for Bronkhorstspuit Water Purification Works (Stage 3)	Add 5.0 million m ³ , total capacity 26.0 million m ³	Suspended
8) Civil works for the expansion of Bronkhorstspuit Water Purification Works (Stage 3)	Details undecided	Suspended
9) Construction of Kwandebele Region Regulating Reservoir	Capacity 10,000 m ³	10,000 m ³ x 2
10) Construction of the Second Kendal Regulating Reservoir	Capacity 10,400 m ³	Suspended
11) Construction of Tweefontein Reservoir and Kwandebele Region Regulating Reservoir	Capacity 40,000 m ³ and 10,000 m ³	Suspended
2. Project Period	May 1996 – May 2001 (61 months)	Oct. 1996 – Nov. 2003 (86 months)
3. Project Cost		
Foreign Currency	732 million yen	NA
Local Currency (In local currency)	3,408 million yen (144 million rand)	NA
Total	4,129 million yen ¹	2,327 million yen
ODA Loan Portion	3,097 million yen	1,814 million yen
Exchange Rate	1 rand = 23.67 yen	1 rand = 20.07 yen ²

	(As of June 1995)	
--	-------------------	--

Note 1) The total 4,129 million yen, which is the amount shown in JBIC's appraisal material, does not agree with the total of the foreign and local currency portions converted into yen (4,140 million yen).

Note 2) Calculated based on the JBIC loan amount (in rand) stated in the Project Completion Report and the amount actually provided by JBIC (in yen).