

**Zambia: Water Supply in North West Province I (a) & II (b) /
Water Supply in Solwezi (c)**

Ex-post evaluation

OECD sector	14030/Basic drinking water supply and basic sanitation	
BMZ project IDs	a) 1980 65 724; b) 1995 65 060; c) 1997 65 249	
Project executing agency	North Western Water Supply and Sewerage Company Limited (NWWSSCL)	
Consultant	GITEC Consult GmbH, Düsseldorf in cooperation with DORSCH Consult Ingenieursgesellschaft mbH, Munich	
Year of ex-post evaluation report	2008	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	a) 1st quarter 1981 b) 1st quarter 1997 c) 1st quarter 1998	4th quarter 1981 1st quarter 2001 1st quarter 2001
Period of implementation	a) 36 b) 36 c) 36	96 51 51
Investment costs	a) EUR 15.85 million b) EUR 9.15 million c) EUR 3.07 million	EUR 14.32 million EUR 11.70 million EUR 3.07 million
Counterpart contribution	a) EUR 1.53 million b) EUR 0.92 million c) EUR 0.31 million	EUR 0.0 million EUR 1.22 million EUR 0.31 million
Financing, of which Financial Cooperation (FC) funds	a) EUR 14.32 million b) EUR 8.23 million c) EUR 2.76 million	EUR 14.32 million EUR 10.48 million EUR 2.76 million
Other institutions/donors involved	GTZ	GTZ
Performance rating	3	
• Relevance	2	
• Effectiveness	3	
• Efficiency	3	
• Overarching developmental impact	3	
• Sustainability	3	

Brief description, overall objective and project objectives with indicators

The two projects "Water Supply North-West Province II" and "Water Supply Solwezi" are follow-on projects to the project "Water Supply North-West Province", which was completed in 1990.

The overall objective of the projects under evaluation was to make a contribution to reducing water-transmitted health risks in the project locations. The project objective was to secure year-round, sufficient supply of hygienically safe drinking water and adequate sanitation to most of the urban population and institutions and commercial and trade enterprises in North West Province. Twelve indicators were developed for measuring whether the project objective was achieved (including water availability, water loss, territorial coverage, water quality, tariff collection, cost recovery, functionality of sewerage systems). The target group of the measures comprised the whole population in the project locations (at present altogether about 165,000 people), including the predominantly poor population in the periurban areas who previously had met their water needs from dug wells, rivers, open water bodies or water vendors.

Project design/major deviations from original planning and main causes

The "Water Supply in North West Province Project", completed in 1989/90, mainly focused on the rehabilitation and enlargement of the water abstraction and treatment facilities in 7 small to medium-sized towns. Complementing this, the Zambian side was to repair the water distribution grid. As this was not carried out, the decision was taken in the mid-1990s to finance and implement the two (follow-on) projects. They were designed and implemented in cooperation with German Technical Cooperation (GTZ), which carried out measures to set up the executing agency in North West Province, the North Western Water Supply and Sewerage Company Limited (NWWSSCL) as part of the "Reform of the Water Sector Programme". NWWSSCL is a legally independent limited liability company wholly owned by the 7 municipalities or districts of North West Province and seeking financial autonomy (full cost recovery).

The design, detailed planning and implementation of the project measures appear appropriate, also in hindsight. With adequate investment outlay and the use of suitable technology, water supply facilities have been installed or rehabilitated which are capable of providing a reliable supply of drinking water to meet the needs of the urban population of North West Province. The sanitation measures were confined to rehabilitating the few central facilities available.

Due to the delay in adopting the water law, the executing agency, NWWSSCL, was not founded until 1999 and the implementation of the projects was delayed by 3 years.

Key results of impact analysis and performance rating

The project objective was achieved in part. Of the 12 indicators, 5 were met in full, 6 in part and one could not be assessed. Altogether, there has been a distinct improvement in water supply compared with the previous situation prior to the implementation of the projects. With respect to the partly-achieved indicators, there has been a substantial improvement with steady progress in cost recovery and collection efficiency. The projects have brought about large reductions in water losses and are likely to reach the target after the additional planned measures. NWWSSCL performs its tasks with technical proficiency and due responsibility. The partial fulfilment of some objective indicators is primarily due to problems with power supply, the tariff structure and payment delays, all of which are administered at national level.

NWWSSCL faces the following problems: some larger, frequently even public, consumers have obtained their own water supply via drill holes with donor finance or at public expense to save costs and avoid paying accumulated invoices. The toleration of

a separate water supply for the new residential areas of a copper mine in Solwezi also undermines the economic viability of NWWSSCL. Added to this are the still insufficient tariffs to cover the operating cost deficit, despite increases. NWWSSCL is well established, but is still subject to political influence. In addition, shortcomings in municipal planning hamper the expansion of the water supply and sewerage grid and endanger drinking water resources.

Altogether, we see the main operational risks in the repair backlog resulting from the deficit in operating cost recovery over a period of years. The debts incurred have still not been cancelled, which jeopardises financial sustainability. Until now, operation has been sustained everywhere thanks to the adequate supply of stand-by components, but this does not provide a lasting solution.

Altogether, practically all the inhabitants in the central urban areas (about 43,000 people) and some 61,000 poorer people in the periurban areas are supplied with sufficient clean water today, which has made a direct contribution to poverty reduction. Since obtaining water and the care of children and the sick is still largely the task of women in Zambia, the projects make daily life easier for them thanks to the improved availability of water and reduced health hazards.

The long-standing support of NWWSSCL and its good performance have had capacity-building effects in the Zambian water sector. The development of NWWSSCL is a showcase example today.

Performance rating

The water sector still places a key constraint on the future development of Zambia. The projects addressed a core problem in North West Province, i.e. insufficient urban water supply, including the periurban areas largely inhabited by the poor. Sanitation was not included as it was not a priority problem due to the pattern of scattered settlements, but it was also taken into account in a limited component. Water is a priority sector in German Development Cooperation with Zambia. The results chain is logically sound. All three projects fit in well with the other programmes/projects of Financial and Technical Cooperation and those of other donors in Zambia's water sector. Relevance is therefore rated as good (rating 2).

We deem the project objective as having been achieved in part. Practically all the people envisaged at project appraisal, particularly the predominantly poor people in the periurban areas, are supplied by the central grid, although 5 of the 8 project locations sometimes suffer lengthy outages. As regards the partly achieved indicators, there has been at least a discernible, clear improvement. We therefore judge the effectiveness of the projects as satisfactory (rating 3).

With the exception of the two project locations Mutanda and Manyinga, for which we would have chosen a localised solution considering the low population and/or the very scattered settlements, and the sanitation component, whose implementation was accorded priority due to the sparse settlement pattern and geological conditions, no more economical or simpler design could have been adopted to deal with the problem. Furthermore, we still regard the relatively high average specific investment costs amounting to EUR 86 or EUR 105 per user and the dynamic generation costs and operating costs as reasonable in view of the settlement pattern. The installed capacities are scaled well but are still not in full use (average capacity utilisation of 66%), as some large consumers envisaged during project planning are (still) not connected to the central water supply grid (no compulsory connection). The operating costs, including replacement investments in electro-mechanical equipment, cannot be met in full by the present tariff system. They can, however, be roughly met in the financial year 2008/9

through the approved tariff increases. Altogether, we judge the efficiency of the projects as satisfactory (rating 3).

In the project towns where continuous power supply is assured, the intended overarching developmental impact, i.e. the reduction of drinking-water health hazards to the population, has been reached. The results chain assumption that an adequate supply of drinking water can reduce related health hazards is plausible. Due to the increasing power failures and the resultant rationing of water supply, the overall objective in the project towns not connected to the national power grid (about half of the people supplied by the projects) has not been achieved. The reduction in health hazards is considerably lower here. Overall, the intended impacts of the projects have therefore only been achieved in part. We therefore assess the overarching developmental impact as satisfactory (rating 3).

At sectoral level, all the major sector parameters are in place and there has been a positive development, particularly with regards to operating cost recovery. The management of the executing agency is better than average in our opinion and it is capable of ensuring the sustainability of the two projects, yet it is still in need of government support (including approval of further tariff increases, debt relief, power supply, compulsory connection, payment morale of public consumers). The sustainability of the projects depends heavily on the extent of this support in the future. Tariff increases and recent debt cancellation indicate that despite the ongoing defects the facilities can continue to operate in the future as well. Owing to planned future donor commitment in the sector (primarily in connection with the urban SWAp presently co-organised mainly by Germany), German Development Cooperation can continue to exert a positive influence here. We consider the sustainability of the projects to be satisfactory (rating 3).

We assess the developmental efficacy of the projects overall as satisfactory (rating 3).

General conclusions and recommendations

When setting up a regulator, care should be taken to ensure that besides protecting users from excessive tariffs it also caters for the economically viable operation of the water suppliers. Apart from the inadequate income of the water utilities due to insufficient water prices, lax payment morale by public consumers poses a problem. In designing future projects, greater care should be taken to ensure that government institutions pay their water bills regularly. The regulator should play a major role here as well.

Another obstacle to sustainability is the lack of compulsory connection and usage in Zambia. In sectoral dialogue, influence should be exerted, also with the help of the regulator, on the Zambian Government to prohibit institutions from using their own wells in the future.

In a commercial water utility, the supervisory board should be appointed by the owners and not the provincial government for stronger ownership and local management oversight.

As a general rule, central water supply projects should only be carried out only if sanitation is improved at the same time. However, exceptions can be warranted where the quantity of sewage can be absorbed by the soil and vegetation without causing harm, if local building development allows. In these cases, drinking water resources should be protected from pollution through appropriate urban planning (e.g. by keeping the catchment areas free of building development).

Notes on the methods used to evaluate project success

Assessment criteria

Projects are evaluated on a six-point scale, the criteria being relevance, effectiveness, overarching developmental impact and sustainability. The ratings are also used to arrive at a final assessment of a project's overall developmental efficacy. The scale is as follows:

Developmentally successful: ratings 1 to 3	
Rating 1	Very good result that clearly exceeds expectations
Rating 2	Good result, fully in line with expectations and without any significant shortcomings
Rating 3	Satisfactory result – project falls short of expectations but the positive results dominate
Developmental failures: ratings 4 to 6	
Rating 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Rating 5	Clearly inadequate result - despite some positive partial results, the negative results clearly dominate
Rating 6	The project has no impact or the situation has actually deteriorated

Sustainability is evaluated according to the following four-point scale:

Rating 1	Very good sustainability	The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.
Rating 2	Good sustainability	The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected.)
Rating 3	Satisfactory sustainability	The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.
Rating 4	Inadequate sustainability	The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and an improvement that would be strong enough to allow the achievement of positive developmental efficacy is very unlikely to occur. This rating is also assigned if the developmental efficacy that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

Criteria for the evaluation of project success

The evaluation of the developmental effectiveness of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail above focus on the following fundamental questions:

Relevance	Was the development measure applied in accordance with the concept (developmental priority, impact mechanism, coherence, coordination)?
Effectiveness	Is the extent of the achievement of the project objective to date by the development measures – also in accordance with current criteria and state of knowledge – appropriate?
Efficiency	To what extent was the input, measured in terms of the impact achieved, generally justified?
Overarching developmental impact	What outcomes were observed at the time of the ex post evaluation in the political, institutional, socio-economic, socio-cultural and ecological field? What side-effects, which had no direct relation to the achievement of the project objective, can be observed?
Sustainability	To what extent can the positive and negative changes and impacts by the development measure be assessed as durable?