

Ex-post Evaluation 2008

**Improvement of Water Supply Tigray
Region, Ethiopia**

Brief Report

gtz

Produced by: AGEG Consultants eG
This report was produced by independent external experts.
It reflects only their opinion and assessment.

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Evaluation Unit

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Tabular overview

The evaluation mission

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|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Evaluation period | June – October 2008 |
| Consulting firm | AGEG Consultants eG, Germany |
| Evaluation team | Mr. Richard Ellert, MSc. Water and Environmental Engineering – International expert Mr. Temesgen Bogale, Economist – Co-Evaluator Mr. Yibeltal Fentie, Agricultural Economist – Pre-Study |

The project/programme

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|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title of the project/programme according to the order | Improvement of Water Supply in the Tigray Region |
| Project/programme number | 1996.2017.0 |
| Overall term broken down by phases | Phase 1: November 1996 to October 1998 Phase 2: October 2001 to September 2004 |
| Total costs | German Contribution: 2.897.864,43 Euro Ethiopian Contribution: app. 600.000 Euro |
| Overall objective of the project as per the offer | A reliable and sustainable water supply management system for semi-urban and rural areas is established, is operational at selected locations and can be replicated by the Ethiopian agencies concerned. |
| Lead executing agency | Ministry of Water Resources |
| Implementing organisations | Tigray Water Resources Development, Mines and Energy Bureau (TWRDMEB) later changed into the Tigray Bureau of Water Resources Development (TBWRD) |
| Other participating development organisations | None |
| Target groups as per the offer | 8 Pilot towns and 19 replication towns |

The rating

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|------------------------------------------------------------------------------------------|---|
| Overall rating <i>On a scale of 1 (very good, significantly better than expected)</i> | 4 |
|------------------------------------------------------------------------------------------|---|

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|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <i>to 6 (the project/program is useless, or the situation has deteriorated on balance)</i> | |
| Individual rating | Relevance: 2; Effectiveness:3 ¹ ; Impact: 3; Efficiency: 4; Sustainability: 4 |

Mission: On behalf of GTZ GmbH, the project “Improvement of Water Supply Tigray Region, Ethiopia” was evaluated by Mr. Richard Ellert (Water Engineer / Int. Consultant) and Mr. Temesgen Bogale (Economist, Local Consultant) of AGEG Consultants eG. An inception report based on the analysis of project documents and ToR preceded the field mission which was conducted between 20 September and 10 October 2008.

Core Problem / frame conditions: In the Tigray region, poverty is extremely high and recent reports showed that nearly 75% of the population is living below the absolute poverty line. Access to improved drinking water is equally low, having increased from 23% in 1996 to only 52 % by 2006. Availability and recovery of ground water is problematic because of the limited rainfall resulting in i.e. intermittent water supply (6 to 7 hours / day) in most of the towns. One of the key problems at the time of project design were nonexistent management structures for these semi-urban water supply systems. Since 1992, the regions in Ethiopia are becoming gradually autonomous from the Central Government. In harmony with this, Tigray Region has issued a proclamation (in 1995) to give full autonomy for the management of urban and rural water supply systems.

Project Concept: It is against this background that the regional government of Tigray approached GTZ in 1995 to implement this project. The project aimed to support the regional government in setting up a sustainable and reliable water supply management system. To this end, eight pilot towns were selected with the plan to replicate the system in four other towns (Tigray has approximately 67 semi-urban towns). The resulting intervention logic (results chain) is straight-forward: *The provision of trainings for the Tigray Bureau of Water Resource Development (TBWRD), the four repair workshops and the introduction of a management system for eight water utilities (WU²) in pilot towns (outputs) were to result in a) effective support services of the TBWRD to the WU, b) the provision of economic and efficient repair services by the repair workshops to the WU and c) the introduction of a water supply management system in the pilot towns (intermediate outcomes). These outcomes in return were meant to make the functioning of water supply systems more reliable and sustainable in eight semi-urban towns of Tigray (direct results) and to further spread over the Tigray region by means of replication towns. The anticipated impact (indirect results) finally was the contribution to a reliable and sustainable water supply for the whole of Tigray region.*

¹ See Annex 1.

² The water utility is defined as consisting of water board and water service office.

The input of the project consisted of long-term experts (institutional, operation and maintenance – 66 person-months), short-term experts (tariff, financial management, business planning – 21 person-months), and the procurement of material as well as equipment for emergency repair measures in the pilot towns (app. 360.000 Euro). The detailed activities were preliminary studies to design the management system, trainings for the TBWRD in Mekelle, eight WU and four repair workshops in relevant fields as well as the preparation of guiding manuals for the eight WU. The introduction of software to manage the spare parts of the four repair workshops accompanied these activities. Direct contributions of GTZ (drilling of wells, provision of pumps and bulk meter) for immediate improvement of the water supply system were especially effective. In summary, the introduction of cost-recovery and efficient management merely based on economic considerations turned out to be partly unrealistic, considering the limited economic capacity of the population and the ecological frame conditions. Some of the towns might have had the potential to achieve full cost-recovery and independence, but the majority of them, especially the replication towns, did not. A disadvantage with respect to monitoring the success of the project was the lack of solid indicators to supervise the performance of TBWRD and WU (i.e. per capita consumption, losses in the network, etc.) - standard benchmarks in water projects.

Technical implementation: The project was implemented in two phases from 1996 to 1998 and, interrupted by the civil war, from 2001 to 2004. The approach to implement the system in eight pilot towns first and subsequently monitor its implementation in 19 replication towns was a good concept. Unfortunately, the monitoring system was not sufficiently refined to allow an analysis of the quality of duplication and whether the replication could be done without external assistance. The combination of capacity development and direct contribution of GTZ is an effective combination in theory and practice. The provision of equipment and material for some of the pilot towns added significantly to the project impact.

The relevant sector papers are the water sector strategies of the BMZ from 1984 and 1996. Whereas the sector paper of 1984 is dominated by the engineering side of water supply and sanitation, the paper of 1996 promotes a more holistic approach. Both papers do not furnish new momentum in terms of content and only provide a broad overview of what is expected. IWRM (Integrated Water Resource Management) might have been a “crosscutting” issue upon which German development actors could have defined their cooperation. There were no data available to assess the extent of cooperation between them or the sector organisations i.e. the World Bank (WB), European Union (EU) or Japanese International Cooperation Agency (JICA). The cooperation between the German development actors was limited to formal meetings in which basic information was exchanged. The cooperation within the sector followed standard sector meetings in Mekelle and Addis Ababa.

Partner capacity: A central assumption of the project was the strengthening of the implementation partner through extensive capacity building and training measures. The evaluation did not find any hard evidence that the capacity of the partner was sustainably strengthened. This is mainly due to high turn over of staff and the fact that the structure of the TBWRD has changed six times since 1992. Evidence gathered in the course of the evaluation suggests that the project has benefited individual persons more than the TBWRD. In this respect, GTZ could have followed a multi-level approach and should have reduced its focus on the TBWRD and increased activities on the “grass-root level”, the WU and the population in the towns. GTZ never really reacted to the limitations of the TBWRD in terms of resources and capacity.

This independent evaluation assessed the program’s achievements according to the five DAC evaluation criteria:

Relevance: The project is relevant (**rating good (2)**), as it supported the decentralised management of water services. It was and is the declared goal of the government in Tigray to introduce full cost-recovery (this goal is still far away) and end all subsidies for water supply services. The designed development measure was fully in line with this concept. The water sector was and is an important policy sector of the German Ministry of Economic Cooperation and Development (BMZ). The sector paper (BMZ 1996) requests the introduction of tariffs which ensure cost-recovery, limited by the responsibility of a government to offer pro-poor services. The project is relevant with respect to German development policy. However, it has not sufficiently elaborated how to offer a minimum water supply to the poor population. The project is not as relevant for the population, since a significant increase of water quantity and number of water points would have had first priority.

Effectiveness³: The project has limitations; however is still rated **satisfactory (rating 3)**. The eight WU trained and the 19 WU in replication towns are still suffering from shortages in financial resources and high staff turnover, as they cannot offer competitive salaries. This reduces their technical capacity and the ability to manage their systems efficiently. Consequently a number of significant parameters are not monitored, e.g. the amount of water produced, no detailed system map; the safe yield of the source is not known; elevation difference between well and reservoir is not recorded, etc. The attempt to commercialise the workshops failed. The resources for the workshops are provided by the TBWRD, which offer their repair services to the water utilities based on fixed rates. The towns which are not able to pay can access a revolving fund started in 2001 through donations from donors. Whereas the revolving fund is a form of cross-subsidy between richer and poorer communities, it offsets the attempt to commercialise the workshops. Nevertheless, without the repair work

³ See Annex 1.

shops many systems would not be operational anymore. The TBWRD supported the water utilities in semi-urban towns and rural areas but the services provided are not as wide-reaching and professional as it was planned by the project.

Impact: The project has created awareness amongst the TBWRD, the WU and repair workshops that cost-recovery is an important aspect within the provision of water supply services. This is a significant achievement and the project deserves credit for this, especially under the frame conditions in Tigray. It is plausible that the project had an impact with respect to the MDG 4 (reduce child mortality), 5 (improve maternal health) and 7 (ensure environmental sustainability); provision of water which is hygienically safe will definitely reduce the mortality rate of infants and under-fives including mothers; the extent of this reduction is however difficult to estimate. The project has contributed to improved services (app. 50 % of the 67 semi-urban towns) and a preliminary survey carried out in 5 project towns brought the following results: increased water availability from 12 litre / person (1995) to 15 litre / person (2008), reduced collection time from 18 minutes to 3 minutes, increased number of water points from 9 to 28. The project had a positive impact on health as it provided safe drinking water for people who had no access before. The project provided easier access to water for women (if people were able to pay for it) which has reduced their workload to a certain extent, as the quantity of water required from traditional resources decreased. In summary, the project had a good and in some parts significant impact. Measured against the impact defined in the contract (a reliable and sustainable water supply for the Tigray region is achieved) it falls short, but as this goal is assessed to be too ambitious, impact is rated as **satisfactory (rating 3)**.

Efficiency: The project has shortcomings with respect to efficiency and is rated **unsatisfactory (rating 4)**. Phase 1 showed limited productivity, which was criticised by an Internal Revision of PwC in April 2003. Out of 24 manuals planned, 10 were completed, seven were partly completed and seven were not done at all. It has to be noted that there was a sudden interruption of three years between the phases due to the war with Eritrea. Phase 2 produced three main manuals: an administrative, a financial and a technical manual to be used by the water utilities. The manuals are well prepared and structured and they represent relevant information for the water utilities. The immediate repair works carried out in some pilot towns (drilling of wells, construction of spring catchment and reservoir, procurement of pumps, leak detection device and bulk meter) showed shortcomings as the equipment ordered was partly unsuitable. The project implemented the tariff study quite late (2004) and its analysis was weak. The ratios between the project inputs are satisfactory as the project spent the majority of funds on personnel and a substantial amount on material and equipment, which is positive. Administrative costs are slightly high (22.2 %). There was no exchange of information with a GTZ funded project in Oromiya in 1996 and 1998.

Similarly, no connection existed with two relevant projects of the World Bank in Tigray, "Institutional Capacity Building Studies Project" and "Rural Water Supply and Sanitation Demonstration Project".

Sustainability: A management system for semi-urban towns was introduced and still is in use. It is more noticeable in the pilot towns, less in the replication towns and by now, it has been introduced in all of the 67 towns in Tigray⁴. According to the assessment, the quality of the management system varies substantially in different towns and it ranges from acceptable to unsatisfactory. Only a few WU are proactively managing, the majority is merely reactive. An analysis of the intermediate outcomes reveals limitations of sustainability as the WU are not managing their systems efficiently and the repair workshops do not work on self-sustaining tariffs. Finally, the assistance TBWRD provides to the WU is limited. Without the present assistance through World Bank projects and international Non-Governmental Organisations, the water supply sector in Tigray would have deteriorated considerably. The management systems did not bring the expected sustainability in this respect and the evaluation team is of the opinion, based on information from various meetings and debriefings, that the relevant government institutions attempt to secure further funding rather than addressing the situation directly. Rating of sustainability is **inadequate (rating 4)**.

Overall rating: The project is rated **unsatisfactory (rating 4)**. The project is relevant and has addressed essential needs of the stakeholders involved, yet the needs of the population have been satisfied to a lesser extent. It has contributed to the development of management structures for the self-management of water supply systems in semi-urban towns; however, the services provided are not sustainable. This is mainly due to the limitations of the implementation partner resulting from permanent restructuring and turnover of staff. The direct services provided led to significant results in the pilot towns; however they fall short of the expectations regarding overall efficiency, as does the impact of the project.

Special evaluation questions: In general, water projects have a gender-related effect, as women benefit the most when access to and availability of water is improved. This project, however, aimed at institutional strengthening of water authority / water utilities and therefore had only limited impact in this respect. The project neither carried out a preliminary gender analysis nor interacted with parallel projects, which might have implemented a study of this kind. Monitoring reports did not collect gender segregated data specifically. Significant changes mainly occurred with respect to access to safe drinking water⁵. Availability was increased from 12 litre / person (1995) to 15 litre / person (2008), collection time was reduced from 18 minutes to 3 minutes, and the number of safe water points increased from 9 to 28. Thus, water quantity and quality are the main sectors of the MDGs the project has

⁴ Information received from the TBWRD during the debriefing in Mekelle. This information was not verified.

⁵ These figures are somehow questionable as walking distances of up to 1.5 km are accepted. This is clearly too high.

contributed to, however the impact is modest. Based on the GTZ concept paper⁶ “How we work to ensure sustainable development”, it can be concluded that the project did not trigger sustainable development.

Overall conclusion and recommendation: The project as such, its activities and quality of services are reasonably good. The elaborated manuals are well prepared and the few people interviewed who had participated in the project, confirmed the quality and usefulness of the training. There is no doubt about the importance of the capacity building activities complementary to the physical improvement of the systems (additional well, reservoirs, etc.). Nevertheless, sustainability would have needed full commitment of the TBWRD. Weaknesses can be found in the project design. The quantity of water available in most of the towns is not known and there is no information on the safe yield of the wells. The management system treats all towns equally and does not consider the fact that their potential and frame conditions vary considerably, i.e. that certain economic conditions may demand a different approach and increased cross-subsidy. The majority of key-informants interviewed knew these limitations, but there was no attempt to counteract.

Recommendations

- A thorough analysis of the implementation partner should be standard in order to analyse strengths and weaknesses. This would allow GTZ to identify weak spots and adapt training measures. A multi-level approach (e.g. focus more on the target population) should be an option, if implementation partners are likely to have difficulties in providing the required resources and capacities;
- GTZ should include a predetermined break point (exit strategy) for project continuation in case of known limitations of the implementation partner;
- Institutional capacity building and strengthening makes a practical system for monitoring the achievements mandatory. This is a main precondition for sustainability and the system has to provide relevant information on the quality of capacity building taking place in the institution;
- Decentralisation of services in order to manage public infrastructure should not only focus on economic aspects, commercialisation and privatisation, but include socio-cultural issues and ensure pro-poor services. Frame conditions might require different management systems and even subsidies cannot be excluded in general;
- Representatives of all water-related sectors (e.g. agriculture) should be members of the water utility in order to ensure that an integrated approach for water resource management can be followed;

⁶ These principles are: use of a holistic approach, process orientated work and use of value-based approach.

- Based on the low consumption and the high variation in consumption patterns, it would be advisable to introduce a base tariff as part of the water tariff. It would cover the majority of the fixed costs of the WU and make the WU more independent from variation of consumption.

