Fiction, Facts & Future

Norad's Assistance to Water Supply and Sanitation Development in Tanzania and Kenya during the 70's, 80's and 90's

Executive Summary

(DRAFT)

A descriptive analysis based on
- Archive search
- Interviews
- Site visits

Prepared for Norad by

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Note

All conclusions presented in this review are those of the review team. The recommendations in this report are the suggestions of the review team and are not binding for Tanzania, Kenya or Norway.

Preface

This review is the result of an initiative by Hans Olav Ibrekk of Norad, following the 2006 approval of the *Norwegian Action Plan for Environment in Development Cooperation*. The review was carried out by Tranor International[1] during the period January – November 2007. Visits were paid to Tanzania in January and Kenya in March. The main purpose is to assist Norad in providing an update on the status of the investments made on the water supply and sanitation sector in these countries during the 1970s, 80s and 90s. Additionally, we wanted to find out how this support was, and is, perceived by those who took part during those years and the actors and stake holders of today. Can lessons be drawn from these programmes for the benefit of future programmes?

The adopted review methodology is a blend of archive search and literature studies, interviews and field work.

This Executive Summary report is organised as follows: Separate Sub-Reports have been prepared for Tanzania and Kenya. They are however enclosed this report as Annex 3 and 4 respectively. The Executive Summary is intended to provide a brief description of the most important features of the review and to present the main conclusions. Chapter 1 provides an introduction to the review's background, approach and methodology, and a reference to the history behind the programmes. Chapter 2 provides a reference to the Sub-Reports, including an introduction to the "North" and "South" perspectives and the correlation between the two. Chapter 3 presents a summary of the conclusions of the review.

Not all topics covered by the review have been reported in this Executive Summary. For a full picture the Sub-Reports should be consulted. These reports also include the review team's travel itineraries and lists of documents used.

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Abbreviations and acronyms

BH	Bore hole
CPHE	Community participation and Health Education
DED	District Executive Secretary
DP	Domestic (water) point = Public water tap = Stand post
GOK	Government of Kenya
GOT	Government of Tanzania
IU	Implementation Unit
KIDEP	Kigoma Rural Integrated Development Programme
MDG	Millennium Development Goal(s)
MOW	Ministry of Water (Maji) Tanzania
MUWSP	Minor Urban Water Supply Programme
MWI	Ministry of Water and Irrigation Kenya
NGO	Non Governmental Organisation
O&M	Operation and Maintenance
pe	Person equivalents
RC	Regional Commissioner
RUDEP	Rukwa Rural Integrated Development Programme
RWE	Regional Water Engineer
Sida	Swedish International Development Cooperation Agency
TOR	Terms of Reference
TP	Treatment Plant
VWC	Village Water Committee
VWF	Village Water Fund
WS(S)	Water supply (sanitation)
WSB	Water Services Board

1. Introduction

1.1. Background

Two important occurrences that happened last year are expected to bring about significant impact to the work of Norad over the next years. In May 2006 Norad launched its new *Strategy towards 2010* and in June the Norwegian Ministry of Foreign Affairs (MFA) launched its *Norwegian Action Plan for Environment in Development Cooperation*. The documents are in this report termed the 'Strategy' and 'Action Plan' respectively.

Of significance to this analysis may be referred that the Strategy a.o. states that:

- *"Norad shall be the professional environment for evaluation, quality assurance and dissemination of results within the Norwegian development cooperation, in close cooperation with partners in Norway, developing countries and internationally."*

The Action Plan a.o. states that:

- *"Effective and sustainable management of water resources is essential for economic growth and for the effort to achieve the MDGs, particularly those related to health, education, equality, food production and the environment. Improved water supplies, sanitary conditions and hygiene are crucial in the fight against poverty."*

In the Action Plan's Section 4.2; *Water resources management, water and sanitation*, are Norway's intentions listed as shown in Box 1. For better understanding of the full perspective a complete reading of the Action Plan is recommended.

Box 1. Norway intends to:

- Support the development and implementation of plans for integrated water resources management, including for trans-boundary water courses. Particular emphasis will be place on promoting the ecosystem approach and supporting institutions that are mandated to ensure sustainable management and use of water resources;
- Promote efficient water use, particular in agriculture;
- Focus attention on the importance of sanitation and hygiene, and of reducing contamination of water resources;
- Support the improvement of water supply and sanitary conditions on other sectors, for example by supporting installation of satisfactory water supplies and sanitary and hygiene facilities in schools and health institutions;
- Assist priority countries in achieving water and sanitation targets, focusing particularly on sanitation;
- Promote community based management of catchment areas, including support for rainwater harvesting and other small scale water projects;
- Increase awareness of and promote research on how water resources are affected by climatic change;
- Work to secure all people the right to water and promote acceptance of the principle that water resources are a common good.

Norad aims at being best possible prepared to take on the new challenges related to its advisory role in supporting water resources management and water supply and sanitation in Norway's partner countries. One way to achieve this is to take lessons learned and experiences from previous Norwegian-funded water supply and sanitation (WSS) programmes. It has therefore been deemed relevant to analyse some selected aspects of previous Norad support to the WSS sector – to see how these systems work today, and if there is information available that may be applicable and useful for future cooperation. This is the purpose and focus of this report. The Terms of Reference (TOR) are enclosed as Annex 1. They state that the analysis shall be based on a review, limited in size and descriptive in nature.

1.2. Brief history

During the 70s, 80s and 90s, Norad provided significant support to the WSS sectors in Tanzania and Kenya. Of this support the most significant programmes have been selected for this review, in agreement with Norad, namely:

- **Tanzania:** Support to the Rukwa and Kigoma Regions, both located in Western Tanzania, along the shores of Lake Tanganyika. The regions were, and still are some of the less developed in Tanzania. In cooperation with the Government of Tanzania (GOT) the WSS support started in 1979[2] when the consulting firm Norconsult was contracted to develop a Water Master Plan ('the Master Plan') for the two regions[3]. It was completed in 1983 and to avoid loss of momentum, Norconsult was the same year engaged to start implementation of the Master Plan. We call these initial years the 'Implementation Period' and the consultant's team for the 'Implementation Team'. The interventions consisted mainly of rural water supply in the form of hand pumps, some gravity schemes, capacity building, a touch of sanitation, supply to rural towns and personnel assistance. After some years the WSS activities were to be absorbed by two new programmes:

  - RUDEP (Rukwa Rural Integrated Development Programme) was initiated in 1985 and the WSS implementation was integrated from 1989.

  - KIDEP (Kigoma Rural Integrated Development Programme) was initiated in 1989 and WSS implementation was integrated from 1992.

  RUDEP and KIDEP were jointly evaluated in 1995 with the result that the programmes needed restructuring, preferably by means of a new pilot programme for rural development and strengthening of local government. However, the discussion on the relevance of the two programmes had been going on within Norad for some times and it was finally decided to close down both programmes in 1996. Unfortunately, the WSS interventions also had to shut down following this decision. Thousands of water points were constructed during these years, more than two thousand in Rukwa alone.

- **Kenya:** Support to the Minor Urban Water Supply Programme (MUWSP) was initiated in 1974, originally under a five-year agreement. However, it went on for about seventeen years, until the diplomatic interruption between Kenya and Norway in 1990. By then, more that fifty projects located in most regions of the country, benefiting thousands of people, had 'visited' the programme with a variety of interventions; piped water supply, also sewerage schemes, capacity building, hygiene education, water use studies, support to Kenya Water Institute (KEWI) and personnel assistance. MUWSP was evaluated in 1982 with the overall conclusion that, although subject to a slow implementation pace, the programme had been making a vital and positive contribution towards the provision of potable water to consumers. The evaluation strongly recommended that the programme should be completed as planned. This also happened, save for the unfortunate diplomatic interruption that prematurely terminated the programme. As a consequence, some schemes were left unfinished. Most of them have not recuperated fully until this day.

[2] WSS support had been provided from early 70s, including the discussion on integrated rural development. For a more detailed background history other documents should be consulted, e.g. the Evaluation Report 4.95: Rural Development and Local Government in Tanzania.

[3] This was a national trend. Similar regional master plans were developed with support from other donors throughout Tanzania during those years.

- **Use of Experts**[4]**:** As was the rule for most donors during this period, assistance of this magnitude were supported by literally dozens and dozens of experts who ventilated in and out of the programmes. The heavy use of experts is also discussed in this report.

1.3. Project objective

The TOR describes the objective of this analysis as follows:

- "Through literature studies, interviews and field work carry out a descriptive based analysis of Norad's previous support to the WSS sectors in partner countries, with emphasis on Kenya and Tanzania during the period 1975 - 1995."

The TOR raises some additional questions:

- "Which approaches were good and could be brought forward into new programmes and which did not work out? What is the opinion of the actors and stakeholders who took part in these programmes? But most important, how does it look today 15 – 25 years after intervention? Do the schemes still operate - which types are still operating and which are not? What is the opinion of the national authorities and the end users – are they happy with what was done during this period? There are myths, stories and many perceptions about this period, but very little have been documented. What is *fiction* and what is *fact*, and how can increased knowledge about this period benefit the *future*?" We have given it the working title "3F Project".

1.4. Methodology

The methodology of this analysis is basically a blend of archive search, literature study, single and group interviews and field work. Emphasis has been put on meeting people who took part during the years of implementation, both from the donor side, the recipient side and also the 'expert' side.

- Archive search and literature study: Norad's and embassies' archives and to a limited extent local archives (mostly for MUWS identification purpose), e.g. annual reports, progress and completion documents, reviews and evaluations. A list of documents consulted is shown in the Sub-Reports;
- Single and group interviews: Interviews of pervious Experts, Norad and embassy desk officers and employees, local employees in Tanzania and Kenya who took part during those years, today's employees in Tanzania and Kenya for updated status on the current situation, group interviews of community representatives affected by the interventions. Lists of people met is enclosed in the respective Sub-Reports, ref. Annex 2 and 3;
- Field work: Visiting selected project areas in Tanzania and Kenya, inspecting the current status of the schemes and the regional and district water offices. An overall travel itinerary is shown in the Sub-Reports, detailed itineraries are enclosed in the respective Sub-Reports, ref. Annex 2 and 3.

[4] 'Expert' or 'expatriate' is a professional person who normally was hired on the open market in Norway and who spent two or more years in the recipient country, on Norad's payroll, as advisor or in a national or local government line position. During those years Norway and other donor countries used a high number of Experts in Tanzania, Kenya and other countries. Experts often came together with their families and constituted a cultural society by itself. Veteran Experts often went into Norwegian government positions or to consulting firms after one or more periods abroad.

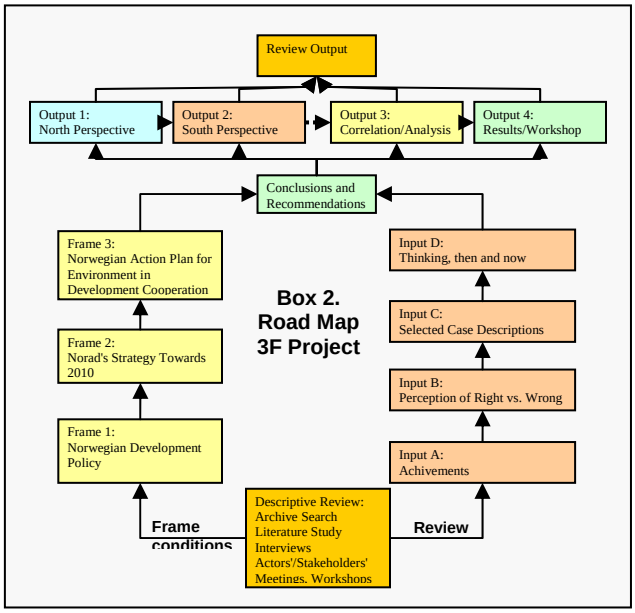
See also the next sub-chapter 1.5 for more information on methodology.

1.5. Analysis structure and phase description

The conclusions of this analysis have been drawn by working along two roads, of which one is obviously the findings of this review, see right hand side of Box 2. The second road is reached by taking due consideration to the set frame conditions of the Norwegian development policy in general, the Action Plan and the Strategy.

The review itself has been divided in three phases:

- Phase 1: The "North perspective" – signifying the results and findings from reviews and interviews made in Norway;
- Phase 2: The "South perspective" – signifying the results and findings from the visits to the respective countries. One of the most important findings of the review is considered to be: What is the situation in the field today? What is working and what is not? What is today's overall opinion about Norway's support among regional and district sector actors and stake holders?
- Phase 3 is aiming at providing a correlation between the results from Phase 1 and 2, while at the same time consider the frame conditions mentioned above, to see if the results may be useful for a future WSS strategy.



1.6. The challenge of integrity

The risk of a subjective conclusion of this analysis is significant. The work has therefore been carried out with a conscientious side view to this possible trap. Obviously, also informants and people consulted do present subjective perspectives. All information has been carefully considered and sought qualified from more than one source. A number of written information have been received from regional and district representatives in Tanzania and Kenya. Hard facts have been presented in statistical formats and graphs whenever possible in the Sub-Reports. It must however be appreciated that it has not always been possible to physically verify every bit of written information provided. The received material has generally been considered reliable if it falls within the range of the review's own investigations in the field.

2. Sub-report reference

The information in this chapter presents the main findings of the Sub-Reports for Tanzania and Kenya, reference is made to Annex 2 and 3. However, not all topics covered by the review have been reported in this Executive Summary. The Sub-Reports should therefore be consulted for better understanding of the conclusions and recommendations of this report.

2.1. It works!

Possibly the most interesting finding of this review is that most of the investments made still work today 15, 20 or 30 years after intervention and long after normal life expectancy for this type of work. In Tanzania we had two sources of overlapping information; updated reporting from the Ministry of Water (Maji) and the review team's own investigations. In Kenya, where we have an urban environment, the team could make its own assessment. The results are as follows:

Rukwa: In Rukwa, about 2,000 water points[5] were constructed, of which between 65 % and 74 % of the Norad-supported investment is still operating and in daily use. After visiting 17 villages, 100 % had functioning Village Water Committees and 94 % had operating Village Water Funds.

Kigoma: In Kigoma, about 800 water points were constructed, of which between 76 % and 78 % of the Norad-supported investment is still working and in daily use. After visiting 21 villages, 95 % had functioning Village Water Committees and 95 % had operating Village Water Funds.

Kenya: In Kenya, more that 50 minor towns were involved in the programme, of which 19 were visited by the review team. 100 % of the visited schemes are working and in daily use today. When we single out the actual Norad-supported investment, which we managed to do in 16 towns, 91 % is still working and in daily use.

The above is in our view an astonishing achievement! Naturally, the term "working and in daily use" does not necessarily mean that everything is perfect. All schemes are in dire need for better operation and maintenance (O&M) and for replacing worn out parts with new parts. However, they do provide mostly safe water to the communities as intended. There are however, some few dark sides also with these programmes, which is explained in more detail in the Sub-Reports, Annex 2 and 3.

In Tanzania, the incorporation of the water programmes into the new integrated rural development programmes led to reduced focus and budget for water development, to significant frustration of those involved on the WSS sector, both local employees and experts alike. Also the very rapid phasing out of these programmes in 1996, and thereby also phasing out the water programmes, came as a shock to Tanzania, as the set targets had not yet been reached. The review team could verify that the communities have not received any significant new investment since the closing of the Norad-supported programmes. The effect of the population increase has therefore brought the WSS coverage quite a bit down since that time.

In Kenya, Norad did follow the programme over a number of years with very positive impacts for the towns involved. However, due to the diplomatic break between Kenya and Norway in 1990, there were a number of towns where the ongoing development came to a halt, partly in mid-construction. Six of these towns were visited by the review team. Some few have received funding after this period but most of them are still standing unfinished.

However, the above does not reduce the overall impression that the results from Norad's support still today are very visible, and that a significant high percentage of the investment is still in working order. The review team also did note that, although the interventions took place partly a generation ago, Norad still has a strong name and standing among the populations visited.

[5] The water points are a variety of bore holes (deep or shallow), spring protections, gravity schemes, and some other pilot solutions.

There are some similarities and time-typical common features between the programmes in Tanzania and Kenya, some of them quite different from today's thinking:

- There were a high number of expatriate personnel and consultants involved;
- Semi-autonomous project organisations were established for more effective outputs;
- The thinking was high resource input and high production output in shortest possible time;
- Initial years had more focus on technology, but later years had strong software components;
- Long programme presence ~15 years, still some believe this to have been too short.

2.2. Correlation of North vs. South perspectives

The review team's interviews and meetings with persons from Norway, Tanzania and Kenya did reveal a surprisingly overall agreement in their basic perceptions on the relevance of the support provided by Norad. There is a however a slight difference in that while North tend to seek justification in the overall national context, South is more preoccupied with consumer needs and benefits. When it comes to the adopted approach and methodologies for the interventions, North tends to be influenced by today's thinking, whereby the tendency clearly is reduced or no use of expatriates and strong focus on recipient responsibility. North therefore tends to have a perception that the interventions became to big and too detached from the ordinary national sector structures. South has absolutely no perception in this direction at all. On the contrary, in both Tanzania and Kenya there is a clear opinion among the people and institutions consulted that the adopted approaches were relevant and adequate under the circumstances prevailing in the countries during that time.

Both South and North do agree that had not these implementation approaches been adopted the outputs would have been a lot less and far fewer communities would have received adequate water supply and sanitation facilities. All parties do agree that we are faced with the same dilemma today in our strive to reach the Millennium Development Goals (MDG): What is better, to introduce a high resource input and to seek less bureaucratic and sometimes temporary implementation channels with the aim of optimal utilisation of resources and highest possible output in shortest possible time or, in the name of recipient responsibility utilising at times imperfect national and local implementation channels, thereby accepting a slower implementation pace and that people must wait longer for improved living conditions. The justification for the latter approach, besides the positive ethical aspect, is that a better capacity-building (CB) result may be expected ant that the sustainability of the intervention may be improved. The results of this review however, suggest that the CB and sustainability issues did not suffer from the adopted approach and that this is why South today expresses satisfaction with what was done and the way it was done. At the same time South also confirms that the situation the Tanzania and Kenya today are different for the better and that a different approach would have been appropriate today.

3. Summary of conclusions

For full information on lessons learned reference is made to the respective Sub-Reports. Below is listed some selected results considered to be of importance for future interventions:

Tanzania:

- To integrate water supply development into RUDEP and KIDEP, thereby letting the water sector "compete" with other sectors did not turn out successful in Tanzania. The common

view is that water development is a cross-cutting issue affecting all sectors and should have remained by itself.

- It is a common perception that Norad, once the decision was made, pulled out of the water sector in the provinces too soon and too quickly. There is also unfortunately an understanding in the provinces that this was due to some default on the Tanzanian side, to which we have found no documented substantiation.

- Water schemes have turned out more sustainable in well organized communities, with a sense of solidarity among the people and where there are functioning Village Water Committees and Village Water Funds. This shows how important CPHE work is and that this component must have been successful, albeit arriving a bit late into the implementation process.

- While the Water Master Plans were quite extensive, it is a unanimous perception that they were very useful tools in the process. It is not unreasonable to believe that the master plans are one of the keys to the success of these programmes.

Kenya:

- The basic idea of the MUWSP of increasing the attractiveness of, and provide development in, minor towns throughout Kenya did actually work.

- The size of the task was underestimated for an urban environment and the implementation pace was too slow. The population and corresponding cost increases in the town were at that time considered an obstacle and not taken as a sign that the policy actually did work.

- The adopted technology has turned out to be very adequate and sustainable.

- The approach and methodology adopted started off rather technology focused but were very software-oriented during the later years, and is reported to be similar to the approaches adopted today under the current sector reorganisation.

- It is unfortunate for Kenya that their diplomatic brake with Norway resulted in the closure of ongoing construction of some schemes. Some of them have in the meantime received funds from other sources but many have not and are still suffering with unfinished works.

Both countries:

- For both countries we may conclude that most schemes visited, although in working condition, are in dire needs of better operation and maintenance and re-investment;

- In both countries the active presence for Norad's support was about 15 years. It is reasonable to assume that the relatively long presence is another key factor for the success. In some eyes, in particular in Tanzania, the presence should have lasted longer since the set targets had not yet been reached at time of closure. In Kenya it would have lasted longer had it not been for the diplomatic break;

- The use of a high number of expatriates was a success considering the prevailing situation in the countries during that period. The common view today from both North and South is that also in future interventions there is the need to adopt a pragmatic approach towards the use of expatriates. Some programmes may need many, some few and some again none.

- With reference to the previous point, and in a sustainability perspective, the experience has shown that for all infrastructure development assistance, it is of vital importance to start with and analysis of the environment in which the investment shall operate: What are the needs? What is the capacity in terms of resources and knowledge? Where are the gaps and which are the critical issues?

We have tried to comment upon some presumed myths surrounding these programmes in the respective Sub-Reports. It is however not clear to which extent these myths have had a bearing on Norad's decision-making process. The answer to this question would require a study in itself and has not been the main objective of this review. We have only looked into some of the frame conditions surrounding the programmes, to the extent that better understanding of the environments in which the programmes operate are important for correct interpretation of the results.

3.1 Fiction, Facts, Future

Tanzania: Both sides do agree that the high number of expatriates was needed under the prevailing conditions in Tanzania. The bottom-up approach was a bit unfamiliar to Tanzania when is started, but is now applauded by the stake holders. Otherwise it is clear that North is more preoccupied with national context thinking and development principles while South's focus is more on the local context and local benefits. Both derive at the same conclusions however: That the assistance for the greater part was very useful for Tanzania and that the affected communities are still today benefiting very much from the support.

To the extent that there may have been some myths surrounding Norad's water sector support to Rukwa and Kigoma, we may conclude the following:

- Norad thought that the water programs did not function well and pulled out (Tanzanian assumption)? Wrong – RUDEP and KIDEP however was "neither overly successful, nor total failures" (ref. evaluation report 1995). The water programs did function well throughout (ref. evaluation report 1995), albeit with low capacity during RUDEP and KIDEP. The findings of this report prove that the water programmes did function and has turned out more sustainable than could be expected. They are for the greater part still operating – long after having surpassed their theoretical economic life.

- Norad were given to believe that the water programmes were likely to be less successful because they were driven by expatriates. Extensive use of expatriates is costly (equivalent to 10 or more local experts) and may jeopardize sustainability (ref. evaluation report 1995). Wrong – cost-wise yes, but qualified local experts were simply not available in the required numbers during those initial years. This study proves that the sustainability was not jeopardised. On the contrary, the consultants and expatriates introduced CPHE to the regions, an approach which is now highly appreciated and which has counteracted the worries of the 1995 evaluation. Tanzania expresses great satisfaction with this approach.

- The results of this study therefore do not support the static view that phasing out of experts generally gives better and more sustainable results. It proves that a pragmatic approach towards the use of expatriates is needed. Some programmes may need expatriates, some may need many, some may need few, and some may need none at all. It depends on the country, the programme and the local context.

- The Water Master Plans were costly and considered "overkill"? Wrong – The plans have been unanimously appreciated both by North and South sector staff and actors working in the field. The plans have been very useful and are described as indispensable tools – still being used.

- Revolving Funds for spare parts and O&M did work? Unfortunately not. Due to the abrupt close down of RUDEP and KIDEP the funds never came into a sustainable existence.

Kenya: It is full agreement that the idea behind the MUWSP was to make minor towns in Kenya attractive for development in shortest possible time. To achieve this, and to catch up delays in the programme, there was a readiness on both sides to shortcut the GOK bureaucracy by creating a semi-autonomous project organisation.

Both sides do agree that the use of expatriates was very relevant during those years. It would still be relevant but not in the same high numbers as before. Today Kenya is much better equipped with qualified water sector staff.

After some years with high focus on physical outputs and technology, software components, like e.g. capacity building and training, O&M, health and hygiene and water use aspects came into the programme. During the last years of its existence the MUWSP was a programme which to a great extent was carried out along the same lines as programmes are being implemented today.

To the extent that there may have been some myths surrounding Norad's support to the MUWSP in Kenya, we may conclude the following:

- The basic idea of the MUWSP, i.e. to increase the attractiveness and promote development in about 50 minor towns throughout Kenya has been successful, and Norad's support did trigger continued investment.

- The size of the task was underestimated and the initial implementation pace was too slow. However, the rapid population increase in the towns may also be interpreted as a sign that the programme actually did succeed in creating development.

- The technology was appropriate for the prevailing urban settings. This is the confirmed opinion of the people interviewed and also proven by the positive current state of the schemes found by this study.

- The use of expatriates, also in the relatively high number, is still today considered to have been relevant considering the situation in Kenya during that time.

The results of the analysis seem to point in the following direction:

- Always appraise the situation on an individual basis before intervention: What are the needs? What is the capacity in terms of resources and knowledge? Where are the gaps and the critical issues?
- Use a pragmatic approach, without having preconceived solutions. Do what is needed to be done to reach the targets in shortest possible period of time, with the appropriate project management.

- Use expatriate personnel as and when needed. Some programmes may need many, some few and some none.
- Stay in as long as needed, preferably a bit longer, and never leave without a mutually agreed exit strategy.
- Be careful in mixing the water sector with other sectors. The water sector is a cross-cutting issue in all sectors and can easily loose out in this "competition".

Final comments:
Our review has established that most schemes in both Tanzania and Kenya are still in an astonishing good condition today, long after normal life expectancy for water projects of this kind and that this would not have been possible without a minimum of care, maintenance and replacement of worn out or broken parts. While this definitely gives credit to the communities and towns responsible for the schemes throughout the years, it certainly also gives credit to those actors and participants who took part during the implementation processes, be it from Norway, Tanzania or Kenya, and who provided the original basis for this success.

It would seem like a well-deserved boost to the Norwegian development cooperation on the water supply and sanitation sector if Norway's significant support to Tanzania and Kenya during the 1970', 80s and 90s in the light of history could be appreciated as successful.

Attachments

Annex 1: Terms of Reference

Terms of Reference

FICTION AND FACTS –
An Analysis of Norway's Assistance to the Water Supply and Sanitation Sectors in selected Countries – as Basis for Future Sector Support.

Background

Norway, through Norad and NGOs, has a long and respected history in support to and cooperation on the water supply and sanitation (WSS) sectors in developing countries. Traditionally, and as one element of this support, both Norad and the donor community in general relied heavily on the use of so-called "Experts" in supporting sector programmes. With few exceptions the Experts were selected from private business environments, received a brief training and sent as advisors to the respective country for a minimum period of two years. This cooperation approach, which had picked up considerably during the 1970s, saw a peak during the International Drinking Water Decade 1980 – 1990. It came as a surprise to most sector actors when it turned out that there actually were more people without water after the Decade than before. Donors started re-thinking their approach and one of many changes, which was also founded on other conceptual and political cooperation adjustments through the 1990s, was the reduction in the use of Experts until almost nil.

Towards the end of 1990 and around the millennium, Norway had made a shift in its development assistance policy, whereby WSS sector interventions through direct financing of investment and technical assistance had been significantly reduced, although Norway always has participated actively in international policy and strategy making fora. In the wake of the Millennium Development Goals (MDGs) there is an ever growing realisation that if the MDGs shall be reached by 2015 there is need for much higher investment on the sectors than is within most countries' capability, and that international support is needed. Again, there is need for a paradigm shift on the WSS sector – but how - and how can Norway contribute?

Norwegian Action Plan for Environment in Development Cooperation
Two important events took place during the summer of 2006 with a strong bearing on the work of Norad and Norwegian development cooperation: The new *Norad's Strategy towards 2010* and the *Norwegian Action Plan for Environment in Development Cooperation (NAPED)*. The strategy states that Norad shall be *the* professional environment for evaluation, quality assurance and dissemination of results within the Norwegian development cooperation, in close cooperation with partners in Norway, developing countries and internationally. The NAPED states clearly that *"The purpose of Norway's environmental development cooperation is to contribute towards achieving the MDGs, making it possible for people to improve their living conditions and health, and reducing their vulnerability"*. As regards **water resources management, water and sanitatio**n, the NAPED emphasises that *"Effective and sustainable management of water resources is essential for economic growth and for the effort to achieve the MDGs, particularly those related to health, education, equality, food production and the environment. Improved water supplies, sanitary conditions and hygiene are crucial in the fight against poverty"*. The action plan foresees support at multilateral levels like selected UN organisations, international financial institutions and other initiatives like e.g. GEF, GWP and WSSCC and NGOs, but also state-to-state cooperation. NAPED lists eight bullet points where Norway intends to be particular active, se box.

Norway intends to:

- Support the development and implementation of plans for integrated water resources management, including for trans-boundary water courses. Particular emphasis will be place on promoting the ecosystem approach and supporting institutions that are mandated to ensure sustainable management and use of water resources;
- Promote efficient water use, particular in agriculture;
- Focus attention on the importance of sanitation and hygiene, and of reducing contamination of water resources;
- Support the improvement of water supply and sanitary conditions on other sectors, for example by supporting installation of satisfactory water supplies and sanitary and hygiene facilities in schools and health institutions;
- Assist priority countries in achieving water and sanitation targets, focusing particularly on sanitation;
- Promote community based management of catchment areas, including support for rainwater harvesting and other small scale water projects;
- Increase awareness of and promote research on how water resources are affected by climatic change;
- Work to secure all people the right to water and promote acceptance of the principle that water resources are a common good.

Objectives of the Project

Within the frames of the Norwegian development policy in general, and the new Norwegian Action Plan for Environment in Development Cooperation and Norad's Strategy in particular, Norad aims at being best possible prepared to take on the new challenges related to supporting water resources management and water supply and sanitation in Norway's partner countries. For this reason Norad has decided to carry out an analysis of Norway's past performance on the sector in selected countries, suggested to be Kenya and Tanzania. Both countries did receive considerable support during to the WSS sectors from Norway and other Nordic and European countries. Which approaches were good and could be brought forward into new programmes and which did not work out? What is the opinion of the actors and stakeholders who took part in these programmes? But most important, how does it look today 15 – 25 years after intervention? Do the schemes still operate - which types are still operating and which are not? What is the opinion of the national authorities and the end users – are they happy with what was done during this period? There are myths, stories and many perceptions about this period, but very little have

been documented. What is **fiction** and what is **fact**, and how can increased knowledge about this period benefit the **future**? We may call it the "3F Project".

Based on the findings, elements for a future engagement strategy for Norwegian support to water and sanitation in our cooperation countries will be prepared. The strategy will be based on specific Norwegian experiences, best practices, recommendations from international organizations and institutions and Norwegian development cooperation policy.

Approach and Methodology

The analysis is not intended to be based on an evaluation but on a review, limited in size and descriptive in nature. It will be a combination of literature study, single source interviews and field inspections, with the following **Objective**:

- Through literature studies, interviews and field work, carry out a descriptive based analysis of Norad's previous support to the WSS sectors partner countries, with emphasis on Kenya and Tanzania during the period 1975 - 1995.

Methodology

Approach	Activity
Phase 1: Home office information collection; desk studies and interviews:	**H1:** Search archives of Norad and other actors and stake holders, including other Nordic Countries; scrutinise, analyse and sort available written information; **H2:** Carry out interviews with selected key persons from a variety of actors, stakeholders and time witnesses; **H3: Conclusion Phase 1, summarise:** • What was achieved in terms of output in broad terms? • What is the general perception of Norad's support during this period: what was good, what was not so good? Use case descriptions. • What was the thinking behind the approaches during that period in descriptive terms? • Prepare programme for the field visits.
Phase 2: Field visits to Kenya and Tanzania	**F1:** Visit ministry representatives, actors, stake holders and time witnesses at central levels; • What is the "official" Kenya's and Tanzania's perception of the interventions made during this period; • If available, collection of written information; • What is the "official" perception of the current technical status of the investment made? **F2:** Field visits to selected schemes and investment sites. Interviews with end users and local authorities, actors and stake holders. **F3: Conclusion Phase 2, summarise:** • What is the general perception on what was achieved during this period? • What is the country's general perception of Norad's support during this period: what was good, what was not so good? Use case descriptions. • What was the country's thinking behind the approaches during this period in descriptive terms? How is their thinking today?
Phase 3: Home office analysis and presentation	**H4:** Present a correlation between the findings from Phase 1 and Phase 2 as regards: • Achievements; • Positive and negative issues; • Way of thinking; • Difference in opinion between groups, e.g. international versus national central and national local; **H5:** Actual status of the visited schemes; **H6:** An overall elaboration on "fiction and facts". **H7:** Within the frame of the *Norwegian Action Plan for Environment in Development Cooperation* in particular and Norad's strategy in general, present an introductory note on how this study may have a bearing on Norad's continued support to the sectors of water resources management, water and sanitation.

In the execution of this work, Norad will cooperate with an external consultant who will act as project team leader. The consultant will be assigned a student from the Technical University in Trondheim working on the thesis "Execution of Water Projects in Developing Nations". Norad staff will be integral members of the team and take part in field work and in reporting.

Reporting and dissemination

The work will be documented in a final report which will be presented to relevant decision-makers in Norway and to the various embassies. During the work Norad will convene a workshops where the findings of the work will be presented and possible elements for an engagement strategy will be discussed.

Annex 2: Sub-Report Tanzania

Fiction, Facts & Future

**Norad's Assistance
to Water Supply and Sanitation Development
in Tanzania and Kenya
during the 70's, 80's and 90's**

Sub-Report Tanzania

**A descriptive analysis based on
- Archive search
- Interviews
- Site visits**

… as basis for future support

Prepared for Norad by

October 2007
Under contract with Nordic Consulting Group

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Abbreviations and acronyms

BH	Bore Hole
CPHE	Community Participation and Health Education
DED	District Executive Secretary
DP	Domestic (Water) Point = Public Water Tap = Stand Post
DWE	District Water Engineer
GOT	Government of Tanzania
IU	Implementation Unit
KIDEP	Kigoma Rural Integrated Development Programme
Maji	Ministry of Water
MDG	Millennium Development Goal
MOW	Ministry of Water
NGO	Non Governmental Organisation
O&M	Operation and Maintenance
RC	Regional Commissioner
RUDEP	Rukwa Rural Integrated Development Programme
RWE	Regional Water Engineer
TANESCO	Tanzania Electric Supply Company
TOR	Terms of Reference
VWC	Village Water Committee
VWF	Village Water Fund
WS(S)	Water Supply (Sanitation)

Sub-Report Summary

Within the frame of last year's launching of the Norwegian Action Plan for Environment in Development Cooperation (the "Action Plan") and Norad's new Strategy towards 2010 (the "Strategy"), Norad has the intent of drawing out lessons learned and experiences from previous Norwegian-funded water supply and sanitation programmes. The rationale is to develop a basis for future Norwegian engagement on the sector. This document, 'Sub-report Tanzania', while edited as an independent report, should be construed as Annex 2 to the Executive Summary by the same title. For detailed background information to this review please consult the Executive Summary. This Sub-Report comprises Norad's support to the Rukwa and Kigoma Regions in Tanzania[6].

When Norad and Tanzania on 30 August 1979 signed the Agreement regarding "Water Supply in Western Tanzania" it signified the beginning of a cooperation which came to last about 16 years (~1996), but which in many people's opinion preferably should have lasted 10-15 years more. The Agreement does not specify goals and objectives, but makes reference to the report from a fact-finding mission of January 1979 titled "Regional Master Plans and Rehabilitation and Construction of Water Supply Schemes for the Kigoma and Rukwa regions". The goal herein is to fulfil the GOT political target of providing potable and dependable water to the rural villages by end of 1991 within a distance of 4-500 m. This first Agreement included four elements; two regional master plans, a socio-economic research study, an appraisal mission (for rehabilitation of WS and a shallow wells programme) and a housing scheme in Sumbawanga and Kigoma towns. Notes backing the Agreement make it clear that the national goal will not be reached with the resources from this Agreement and that Norad must be prepared to continue beyond the three years foreseen in the Agreement.

The two programmes resulted in the production of about 2,000 water points in Rukwa and about 800 in Kigoma. During the visit a total of 2 regional administrations, 6 District Water Offices and 32 water schemes were visited, including the Lake Tanganyika Water Basin Authority, see travel itinerary in Annex 1. The Mission was extremely well received by all actors and stake holders throughout the visit. The Ministry of Water (Maji) assigned a person to the Mission full time during the visit to the regions. Regional and district staff set up local itineraries and followed the Mission with their own transport in both regions. The local communities assembled in high numbers to express their experience and views regarding their water systems and needs.

This review confirms that 65-74 % of the water schemes are still operating in Rukwa Region today, and 76-78 % in Kigoma. Village Water Committees and Village Water Funds are in operation in 89-100% of the villages visited. This is a very positive achievement. Involved people have been visited and interviewed in both Norway and Tanzania and there is an astonishing good correlation between their perspectives on both 'relevance', 'effectiveness and efficiency', 'perception right vs. wrong', and 'thinking then vs. now' (Chapter 5). While there always are issues that could and should have been done differently, the water sector support to the Rukwa and Kigoma Regions must today be described as overall successful.

Selected software issues:

- Norad pulled out of the water sector in the provinces too soon and too quickly. Unfinished projects had to stop, people lost their jobs: there was no exit strategy. This is the major stain on Norad's image from this period. Otherwise the judgements are predominantly positive.

[6] Another separate report is covering the experience from Kenya and is also part of the Executive Summary as Annex 3.

- To integrate water supply development in RUDEP and KIDEP, thereby letting the water sector "compete" with other sectors did not turn out successful in Tanzania, at least not with the applied approach[7]. The common view is that water development is a cross-cutting issue affecting all sectors and should have remained by itself.
- Water schemes are most sustainable in well organised communities with a sense of solidarity among the people and where there are functioning Village Water Committees and Village Water Funds.
- The above shows how extremely important the CPHE work is and that this part of the efforts must have been quite successful in order to have such good results after so many years.
- In a sustainability perspective, the experience has shown that for all infrastructure development assistance, it is of vital importance to start with an analysis of the environment in which the investment shall operate. What are the needs? What is the capacity in terms of resources and knowledge? Where are the gaps and which are the critical issues?
- If Norad had been in place until the planned revolving funds at district levels were in place, including long-term O&M practices, it is likely that the results would have been even better.
- The Water Master Plans were very useful tools, not only during water implementation, they are actually still being used. "But now they need updating!" as one engineer put it. In hindsight the master plans must therefore be appreciated as a very useful and sensible investment.

Selected hardware issues:

- While the India hand pump is greatly successful, the SWN hand pump installations must be regarded a disappointment. Most non-working boreholes had originally SWN pumps installed. The major problem was that PVC pipes were threaded and screw-fixed to the pump. This procedure makes the pipe prone to bursting from movements and vibration when the pump is being operated. The result is that the pipe drops into the borehole and can only be retrieved, if at all, with special tools. The problem was known during implementation but alternative pipe material turned out too expensive to be accepted in spite of recommendations from the engineers in the field. Additionally, the planned local spare part production for the SWN pump was not successful and now spare parts are hardly available in Tanzania.
- Gravity schemes are generally working well. However, gravity schemes in combination with group[8] schemes are less successful. We have situations where the intake is working fine but only one out of three villages has water, namely the village closest to the source. For social, cultural, or other reasons, it seems that the villages in a group scheme have problems in cooperating on equitable terms. It seems that when the population increases and water becomes scarcer, the village closest to the intake has the upper hand in setting the agenda, unfortunately at the cost of the other villages further down-stream.
- Other technologies like e.g. diesel-driven pumps and hydram pumps have been less successful. Spring protection schemes have been very successful in Kigoma region but not at all successful in Rukwa.
- Other infrastructure like office buildings and workshops, including workshop machinery has been very successful and is still being fully used today. A 688 kV generator has been taken over by TANESCO in Kigoma and is still in daily use. The staff houses in Sumbawanga and Kigoma are in good shape and daily use.

[7] Evaluations indicate that this was more successful in Sri Lanka from where Norad brought the idea.
[8] A group scheme is a project where 2-4 villages have piped water from the same source.

1. Brief introduction

Within the frame of last year's launching of the Norwegian Action Plan for Environment in Development Cooperation (the "Action Plan") and Norad's new Strategy towards 2010 (the "Strategy"), Norad has the intent of drawing out lessons learned and experiences from previous Norwegian-funded water supply and sanitation programmes. The rationale is to develop a basis for future Norwegian engagement in the sector. The analysis of some selected aspects of the previous support to the WSS sector is the object of this report. How can increased knowledge about this period benefit the future? The Terms of Reference (TOR) are enclosed in Annex 1 of the Executive Summary. They state that the analysis shall be based on a review, limited in size and descriptive in nature.

This document, while edited as an independent report, should be construed as Annex 2 to the Executive Summary by the same title. For detailed background information to this study please consult the Executive Summary. The review and analysis has been carried out by Oddwin Skaiaa of Tranor International[9]. During the visit to Tanzania participated as member of the review team also Ms. Nathalie Haavimb, a student working on her master thesis related to WSS in developing countries.

During the 70s, 80s and 90s, Norad provided significant support to the WSS sectors in Tanzania and Kenya. Norad has decided to limit the study to these two countries. This report concerns issues related to Norad's support to the Rukwa and Kigoma Regions in Tanzania[10].

1.1 Itinerary Tanzania

See Annex 1:

- Norway: Norad archive search, interviews carried out in the offices of Norad or by visiting informants in their home offices;
- Tanzania: Visit to Tanzania from 8-27 February 2007:
  - Initial interviews and meetings in Dar es Salaam;
  - Rukwa: By road to Sumbawanga, Nkanzi (Namayere) and Mpanda Districts, visiting rural schemes, regional and district projects and representatives along the way;
  - Kigoma: By road to Kigoma, Kasulu and Kibondo Districts, visiting rural schemes, regional and district projects and representatives along the way;
  - Final interviews and winding up meetings in Dar es Salaam;
- Norway: Continued interviews, analysis and report preparation.

1.2 Places, people and documents

During the visit a total of 2 regional administrations, 6 District Water Offices and 32 water schemes were visited, including the Lake Tanganyika Water Basin Authority, see travel itinerary in Annex 1.

The Mission was extremely well received by all actors and stake holders throughout the visit. The Ministry of Water (Maji) assigned a person to the review team full time during the visit to the

[9] Under Norad's frame contract with Nordic Consulting Group.
[10] Another separate report is covering the experience from Kenya and is also part of the Main Executive Summary as Annex 3.

regions. Regional and district staff set up local itineraries and followed the Mission with their own transport in both regions. The local communities assembled in high numbers to express their experience and views regarding their water systems and needs. As necessary, security personnel were provided along certain road sections. We would like to take this opportunity to express our thankfulness and appreciation for valuable professional support, guidance and good company.

Annex 2 presents a list of people met and consulted during the visit. Names of people exposed to single interviews in Norway and Tanzania are not listed in this report and identifiable single statements are not quoted, for reasons of source protection.
Annex 3 presents a list of documents received in Norway and during the review team's visit to Tanzania.
Annex 4 presents selected notes taken during the visits to the villages and local communities in Rukwa and Kigoma. The review team was throughout extremely pressed on time and therefore only basic information related to the functioning of the schemes was collected.

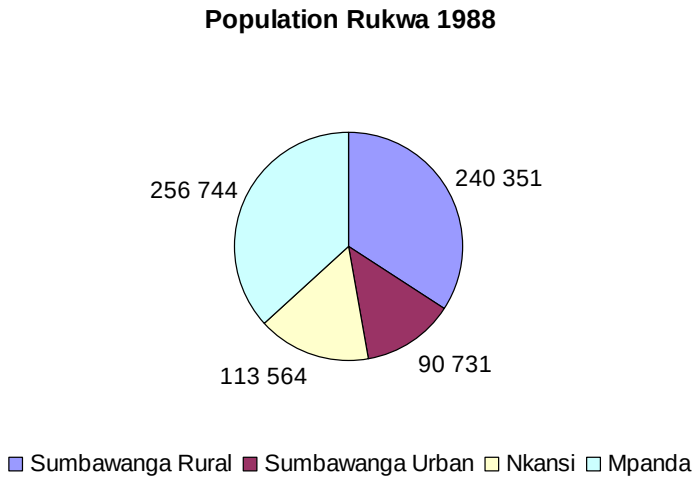
2. Achievements then and findings now

Please not that the main aim of this report has been to see how the Norad supported investment is working today. Additionally, some assumed related information is also reported. The study has by no means the intention to bring a full analysis of Norad's support during these years. There are obviously a high amount of issues, of both positive and negative character, which are not brought to debate in this report.

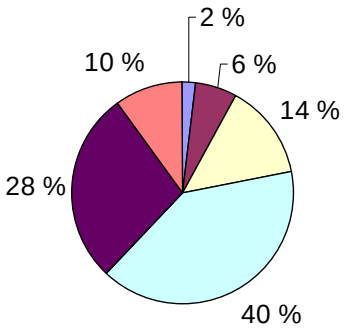
2.1 Original achievement Rukwa Region

We do have updated statistics from December 1993 regarding physical achievements of the total water supply interventions in the Rukwa Region. A total of 2,062 water projects had been constructed, for a population of 701,390 people (1988), averaging somewhere above 340 persons per scheme. This is no doubt a considerable achievement. The details look as shown in the three following graphs, population, distribution and status.

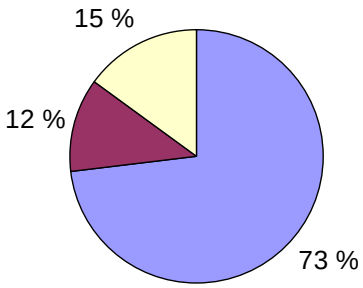
The average of 340 persons per water scheme constructed may be described as close to full WS coverage, not considering that a) there is a certain urban population in



Type Distribution 2 062 Schemes 1993



Status all Schemes December 1993



Spring Protection, Ring Well, Tube Well, Deep Bore Hole, Gravity Supply, Other

Working, Low Yield, Not Working

Sumbawanga, Namanyere and Mpanda that would justify a higher-density supply and that b) to compensate for the average figure of 15 % out of service would justify a certain level of higher coverage. Overall however, we may describe the WS physical achievements made in the Rukwa Region for very satisfactory.

We have less hard facts on i.a. sanitation, community participation and health education (CPHE), staff training and general sustainability issues, like e.g. the intentions of establishing a revolving fund for operation and maintenance (O&M). However, we do have received opinions on these issues from our interviews and site meetings.

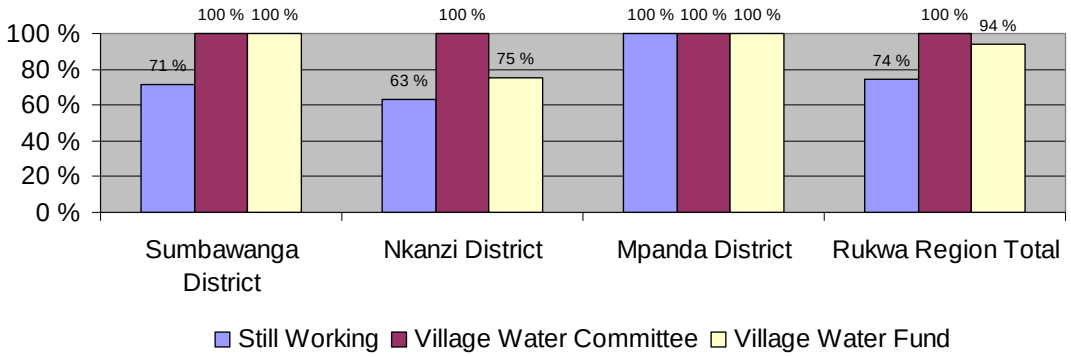
2.1 Findings Rukwa

In order to maintain highest possible objectivity we will present two sets of statistics; a) based on the team's findings in the field and b) based on updated reporting from Maji. The team's findings are related to the places actually visited while Maji's reporting concerns the whole region. The results from the two sources will then be compared and commented upon.

Within the time available, the team managed to visit seventeen locations in the Rukwa Region, see Annex 1. Our field visits basically focused on the following five questions:

- Village Water Committee operational?
- Village Water Fund operational?
- Norad's original support and what is still working?
- What was/is the problem with non-working schemes?
- Available infrastructure today, including possible later investment?

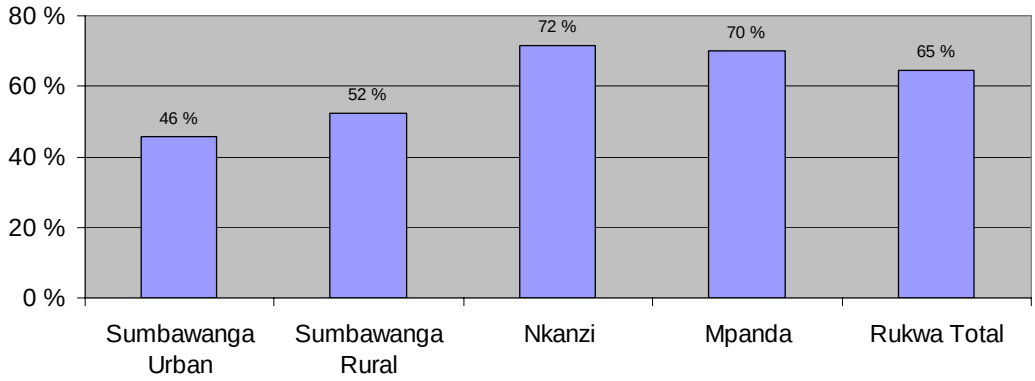
Field Visit Working Status on Norad Supported Investment (2007)



While field notes are presented in Annex 4, some statistical information is summarised in the graph shown above.

Term "still working" implies that there most likely have been carried out maintenance and repairs as and when needed (but not necessarily preventive maintenance). In some places boreholes may have been reported out of work for some time before finally being repaired and put into use again.

Maji Reported Working Status on Norad Supported Investment (2006)



In comparison, from Maji the team received the following updated information shown in the graph above.

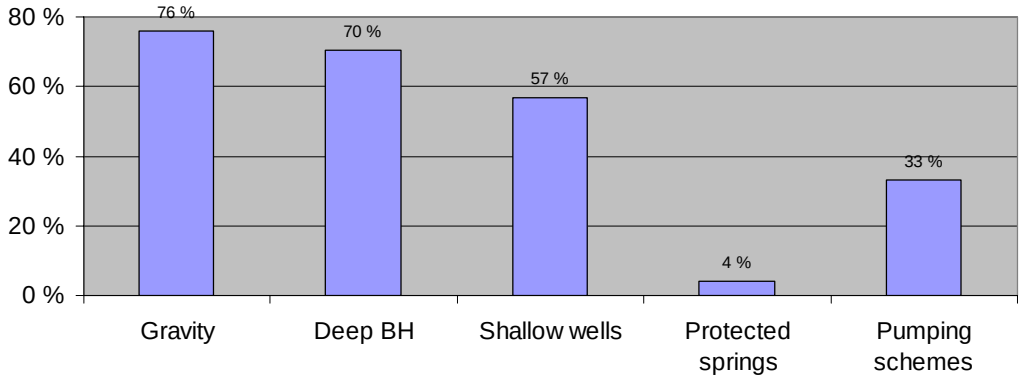
Maji reports that the overall service coverage has dropped from 72 % in 1995 to the current 50 %. Obviously, population increase contributes heavily to the reduced coverage, but also a long drought in recent years. Therefore, the reduced coverage is not exclusively based on technology, lack of repairs or weak maintenance. It should be noted that these figures do hide quite significant individual variations; e.g. in the Nkanzi District capital Namanyere, i.e. a semi-urban setting, the current service coverage is reported to only 26 %. This is serious.

There is a reasonable good correspondence between the findings of the team and the reporting from Maji. The team visited only seventeen schemes, mostly not too far from the main road where access and communication is reasonably good, while Maji has reported for the whole region, including more remote areas, e.g. along the shores of Lake Tanganyika and Lake Rukwa.

Considering that the schemes are long beyond their normal technical and economical life spans, it is quite surprising and very good news that such a high percentage of the investment is still operational; on average only a drop of 15 – 20 % compared to the status reported in 1993, as shown above. It is actually quite remarkable.

It is also interesting to take a look at the survival rate of the various technology options. From the Maji 2006 reporting the following results can be interpreted. The figures speak for themselves.

Maji Reported Working Status on Selected Technology Options (2006)



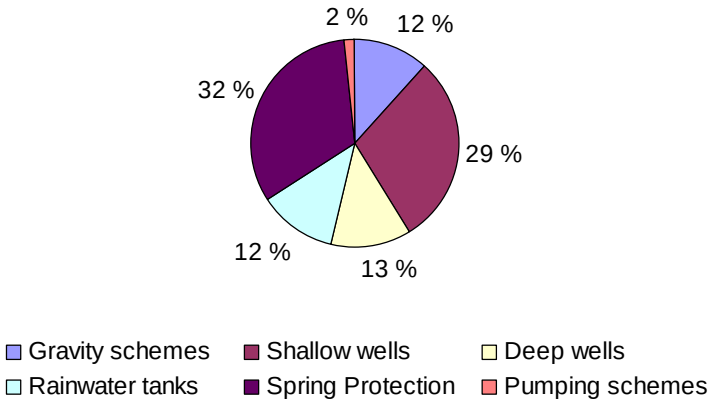
We can additionally confirm that all hydram pump schemes (three pilot villages) went out of service few years after installation, due to "break down and lack of spares".

Another point worth mentioning related to technology is the choice of using the Dutch SWN hand pump. Due to corrosion problems and the high costs of stainless steel pipes, the SWN pumps were installed with threaded PVC pipes. This has turned out to be a bad choice as threading the pipes makes them prone to bursting – due to movements created by the action of pumping. The pipe will then fall down the hole and is difficult to pick up again without a special "fishing" tool. Additionally, the originally intended local manufacture of spare parts had stopped, adding to the problems. As a consequence, most non-working hand pumps encountered by the team were SWN pumps. The India pump is generally working very well.

2.2 Original achievement Kigoma Region

For the Kigoma Region we do have less reliable information about the actual status at time of project completion than for Rukwa. We have to rely on the current reporting from Maji, which also contains information about the number of schemes originally supported by Norad. In the figure base for the graphic below, Kibondo District is missing and therefore included based on estimation, meaning that

Type Distribution Approximately 800 Schemes 1993



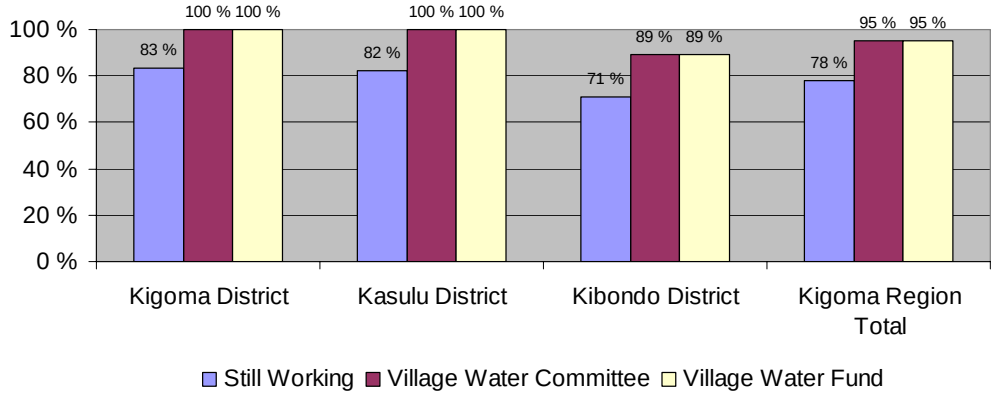
the actual number of schemes completed will not be exactly correct for the region as a whole.

The 1993 population for Kigoma Region was in one Appropriation Document reported to 855 000, divided on 18 Divisions, 76 Wards and 220 Villages. The coverage for Kibondo District was in one consultancy report indicated to 50 % not considering non-working schemes. Number or percentage of non-working schemes was not given.

2.3 Findings Kigoma

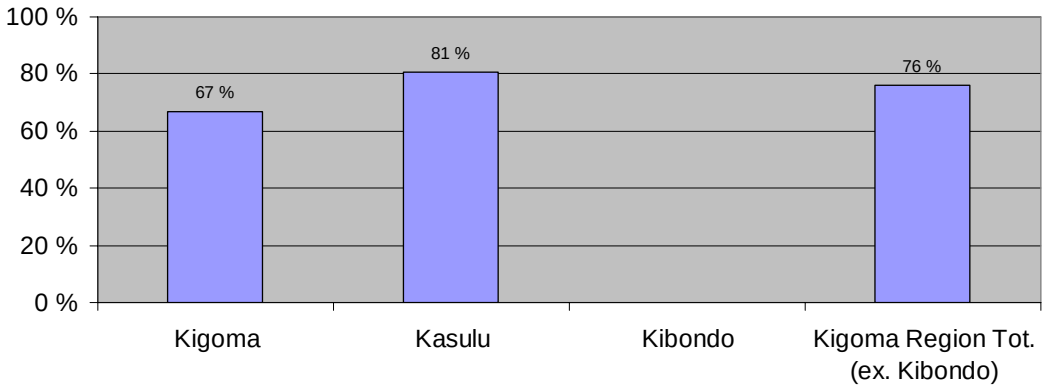
The team's approach and type of questions were the same in Kigoma as for Rukwa. While field notes are presented in Annex 4, some statistical information is summarised in the graph below, based on visits to 21 locations, see Annex 1. It should be noted that in Kigoma District, the team did not have opportunity to see projects in the Kigoma rural area – only the urban area was visited. The lower "still working" figure in Kibondo District is mainly related to the above described problem with SWN hand pumps.

Field Visit Working Status on Norad Supported Investment (2007)



In some villages with gravity system, the domestic taps have been replaced by private connections. In these instance we have considered the scheme as "still working" as this is a deliberate modification from the village – although private connections demand higher volume of water and thereby makes it more difficult for other areas to become water, as long as the source remains limited.

Maji Reported Working Status on Norad Supported Investment (2006)

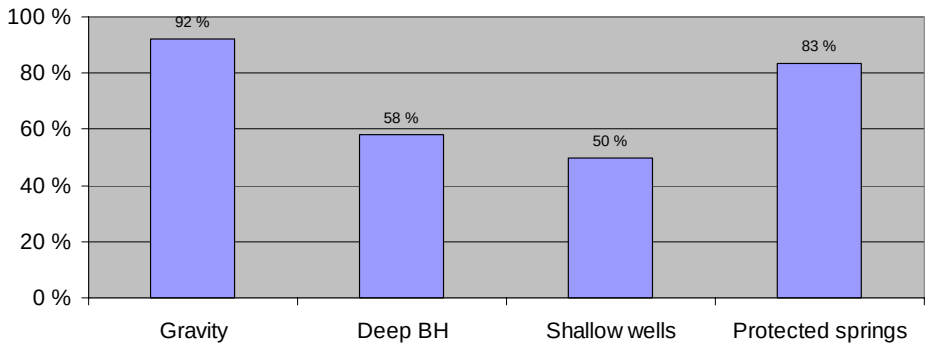


We will try to compare the team's findings with the reporting (2006) from Maji. Unfortunately, as described earlier, Kibondo District is missing from Maji's report. Therefore, only Kigoma and Kasulu Districts are included in the graph above.

There seems to be quite good correlation between the findings of the team and the reporting from Maji. As for Rukwa Region it is very impressive to notice the relatively high "still working" percentage compared to what could have been expected after all these years.

As for Rukwa, the last graph under this chapter shows the working status related to the various technology options reported by Maji. It should be noted that the numbers are much less than in Rukwa and therefore prone to greater variations. The reason for only 58 % "still working" for Deep BH in Kigoma is not exactly known. The figure is quite a bit lower that for Rukwa. The expression "break down of pump" has been repeatedly used in the Maji report. It is assumed that this has to do with the SWN pump as was the case in Rukwa and Kibondo. Seemingly, the protected springs have been more successful in Kigoma than in Rukwa.

Maji Reported Working Status on Selected Technology Options (2006)



It would seem from the statistics that gravity solutions are successful both in Rukwa and Kigoma. This seems to be correct with some reservations. The team's findings have revealed that gravity solutions are reasonable sustainable a) as technical options and b) because they may allow the community with time to "advance" from domestic points to private connections, i.e. they give room for some development in this regard. However, the gravity solutions are seemingly less successful as "group schemes". We saw several places that within a group scheme, the village closest to the intake benefited and managed to utilise the available water and even to expand its coverage – however at the cost of other villages down-stream the line. In some places villages further down did not have water at all. There seem to be problems with communal social cooperation and equitable distribution of the water source among villages within a group. This is an unconfirmed impression of the team that would need further research.

3. North perspective

By "north perspective" we try to present some perceptions from the Norad files, Norad staff (then and now) and experts who worked in Tanzania during those year. Based on archive search and interviews we have tried to throw some light on the following issues:

- Was the work done during those years relevant for Tanzania's needs?

- What about the effectiveness and efficiency, i.e. output as final result and output compared to resource input?
- Could things have been done significantly different? Perception of 'good' vs. 'bad' work?
- What did characterise the 'thinking' during that time compared to today's views on WS development cooperation?

We are well aware that these questions, while being quite demanding in themselves, are still limited in a development perspective and cannot adequately cover all aspects of Norway's involvement in Rukwa and Kigoma Regions during those years. This is also not the intention of the review. The TOR says that the review shall be "limited in size and descriptive in nature", signifying that we are focusing exclusively on the water development components, how the support was/is perceived by stake holders and how it looks today, 15 to 25 years after the interventions. In the description below we do not distinguish between Rukwa and Kigoma, as most observations have general validity.

3.1 Relevance

There is no disagreement among the people interviewed that the support provided was extremely relevant for Tanzania's needs during those years, which came in the wake of several important political and policy developments, i.a.: President Nyerere's (reelected in 1975 and 1980) policy of building a socialist state for millions of poor peasants through a series of village cooperatives (*ujamas*) required a widespread revision of the infrastructure due to considerable demographic shifting[11]. The economy declined due to the new policy's self-inflicted trade restrictions, but unfortunately also periods of drought; in 1979 Nyerere sent troops to support the Uganda National Liberation Front in its bid to overthrow President Amin. This enhanced Nyerere's reputation but was another blow to the country's economy[12]; 1980 was the first year of the International Water Decade 1980-1990, which sparked a widespread donor focus on water and sanitation development in Africa. Tanzania's regions were divided between donors for an unparalleled massive support towards WSS development in the country[13].

In this situation, Tanzania lacked most parameters necessary for a functional WSS sector: Educated and experienced staff, functional institutions at province and district levels, funds for investment, sector standards and guidelines, etc. Additionally, the new villages were in dire need for water and other necessities required for community development. Quick action was imperative. In fairness to all actors involved during the 1980s, the activities undertaken during those years must be understood within this context.

3.2 Effectiveness and efficiency

The overall perception of the people interviewed is that the work related to development of water supply services throughout the years was carried out very effectively- and in some eyes possibly too effectively. After the Water Master Plans for the two regions were completed in 1982, after only two years of work, in itself a remarkable achievement considering the enormous work involved, it became clear that the task ahead was formidable. Hundreds of schemes and thousands

[11] Until 1972 no more than 12% of the total population lived in *ujama* villages, and there were severe food problems in the country.
[12] It is generally accepted however that the Nyerere period was successful in developing a good public health service (the best on the African continent according to UN officials) and a national primary-school system.
[13] The above is by no means intended to provide an in depth analysis of Tanzania's political environment during the 1970's. It serves only the purpose to explain some of the relevant incentives behind the massive WSS support over the following years.

of water points needed to be implemented as quickly as possible. Shortage of skilled local staff, transport, supplies, equipment, spares, etc. was described as "obstacles". To eliminate these obstacles in the short term, it was decided to provide the Regional Water Engineers (RWE) with a "semi-autonomous Implementation Unit" (IU) in order to "utilise resources outside the rigid government system if necessary". For a quick start, the consultant responsible for the master plan was charged with the responsibility to man the IU during the initial years after 1982. During the last half of 1980s there was a gradual shift from the IU to national province and district staff, however with a very strong presence of expatriate staff through Norad in both line and advisory positions. No doubt, the output was very high during these years and the overall achievements are impressive as documented in Chapter 2 above.

Regarding efficiency the picture is more unclear. This study was not mandated to evaluate output related to financial input. No such study has been made and it is not known if the total accumulated funding input for water development in the two regions has ever been compiled. The interviews have however given us an insight in how the efficiency was perceived by the actors themselves. The most significant views may be summarised as follows:

- Local technical personnel, in spite of being limited in number, were generally of good quality;
- The regional administrations were sometimes slow in handling, however it is appreciated that they had an almost impossible logistic challenge;
- Expatriates in line and advisory positions, combined with their resource support, secured faster actions and a constant pressure leading to a higher outputs;
- Activation of the district levels came relatively late into the picture;
- The bottom-up approach, including CPHE, should have been applied at an earlier stage, but became eventually a very conscientious activity;
- Capacity building at regional and district levels was mostly related to "learning by doing" and less based on a systematic training needs assessment;
- Corruption and various forms of misuse were always present;
- The Water Master Plans were used actively during the whole programme period and are described as a very valuable tool for the actors involved;
- Expatriates generally felt left-alone by Norad and that their experience and suggestions for improvements were of little interest. Norad seemed to rely more on recommendations by short-term review consultants – without always informing the expatriates about the outcome;
- The introduction of the integrated rural development programs of RUDEP and KIDEP resulted in a significant reduction of the momentum on water supply development to great frustration of those involved since the set targets had not yet been reached. Additionally, the decision making process became slower and the budgets more uncertain.
- In reality, the introduction of RUDEP and KIDEP turned out to be the beginning of the end for Norway's water supply and sanitation support to the Rukwa and Kigoma regions.

3.3 Perception right vs. wrong

Most expatriates do not have the perception that much was "wrong" in the two programs. When pushed on the subject however, these are the most common observations from the interviews:

- The programmes became too big relative to the capacity of the local authorities. The programmes established themselves at semi-autonomous organisations drawing limited services from the local community, thereby depriving the local community for potential work in e.g. the service and transport industry. The effort should have been better calibrated to the local capacity. However, if that had been the case the achievements would have been considerable less.

- This is a fundamental question raised by several of the persons interviewed: Is it better to leave the pace of work to the local recipient with a considerable lower output as result, or is it better to utilise the potential force of the donor to benefit as many deprived persons as possible within the set time? The question is just as relevant today: Why set the MDGs by 2015 if the corresponding resources needed to achieve this target are not being made available?
- Norad had no exit strategy. It all just stopped without Tanzania's participation. Projects stopped before completion, people lost their jobs and some had to take children out of school. The quick pull-out left a void. It was considered wrong of Norad to close down the water programme before reaching the set targets.
- The beginning was too output oriented. Little focus on recipient capacity, O&M and community ownership.
- Norad did not have a water policy to go hand in hand with RUDEP and KIDEP. There was a competition between sectors for funds – and water lost.
- It was wrong to integrate water into RUDEP and KIDEP. Water is an overriding necessity for all sectors. The water programmes should have continued as separate programmes, possibly with reduced funding and more integration into the Tanzanian water sector, but for at least another 10 years.
- Norad changed their routines and guidelines too often. New desk officers and new expatriates had new ideas. Tanzania felt that they had to comply as precondition for continued funding.
- The expatriates missed closer contact with Norad during their service, However the preparation before going abroad was considered good.
- The CPHE and sanitation activities became better with time, but latrine construction never really took off. From 1990 onward most expatriates do agree that there was a good coordination at district levels.
- The high number of expatriates was needed considering the Tanzanian context during those years.
- The overriding perception among people interviewed is that the basic approach and methodology applied was largely correct under the prevailing circumstances in Tanzania during that time. The approach and methodology were slightly adjusted over the years as the sector slowly increased its own capacity.

3.4 Thinking then vs. now

When the Water Master Plans were completed and the enormous size of the tasks became clear it was a conscientious choice to choose an implementation approach slightly on the side of the local government structure, which was extremely weak at that time, in order to obtain a best possible output in shortest possible time. Later this was a bit reversed as the local capacity improved, but not completely. The overall perception among the people interviewed is that this should still be considered a right approach, although today most probably the recipient responsibility principle would have been overriding, even with a much slower output as a result.

Intensive use of expatriates in the field was a typical feature of the donor cooperation during the 1970s and 1980s, not only for Norad but for most donors. Expatriates on Norad's payroll came almost completely to an end during the 1990s. It is however a general opinion among the people interviewed that in both Tanzania and Kenya during those years this was unavoidable and that also the high number was needed. The common perception is that certain pragmatism is needed in the use of expatriates. Even today some programmes and projects will benefit from the presence of international experts. The question is who shall provide them – Norad, consultants or other donor government agencies?

The importance and concept of community participation, hygiene education and sanitation was not as developed at the inception of the program as it is today. However it became integrated in the programme with time.

Field people interviewed have a clear perception that Norad's follow up was more active and of higher quality during periods when sector professionals sat as desk officers.

4. South perspective

When it comes to the 'South perspective', we did ask the same questions as described above for the 'North Perspective' in order to see how the perspectives and perceptions between the two correlate. A seemingly clear difference in perspectives between North and South is that while North is quite preoccupied with development cooperation principles like 'recipient responsibility', right vs. wrong, etc., the South seems to possess a more pragmatic perception: To satisfy the communities needs for drinking water and improved livelihood – regardless of the applied theory behind. Therefore, the following observations are largely positive in most aspects, simply because such a high number of communities received water during a period of 15 years.

4.1 Relevance

The Norwegian support period to Rukwa and Kigoma is being termed "the good old days" by today's regional representatives. Those were the years in recent history where something seriously positive happened in Tanzania's most marginalised regions, job opportunities and activities in most districts. Not surprisingly considering that e.g. approximately 80 % of Rukwa's development budget came from Norwegian funds. The visibility was extremely high and the good will correspondingly so. The relevance related to peoples needs is undisputable. Considering that not much has happened in the way of infrastructure since Norad closed down its support it is quite understandable that this period still is remembered as the good old days.

4.2 Effectiveness and efficiency

The regional and district water sector staff describes the integration of the water programmes into RUDEP and KIDEP as very unfortunate. This resulted in fewer funds, less capacity and less expatriates. The physical output was reduced considerably. The abrupt close down of the programmes some years later is by many described as a disaster. According to water sector staff, today there is nothing left to be seen from RUDEP and KIDEP except what was done on the water sector[14].

Maji and the sector are very satisfied today with what was achieved during the time of the Implementation Unit and the following water programme. In their view it is better, more effective and efficient with a high resource input over a relative shorter period of time than smaller inputs over a long period of time. In their perception the adopted approach was correct. However, the abrupt close down deprived many communities from receiving the planned and expected water supplies and the regions for the proper setup of a revolving fund at district level for spare parts and capacity building for introducing good O&M routines.

4.3 Perception right vs. wrong

People interviewed in Tanzania are largely clear in their views that the adopted approach and methodology before RUDEP and KIDEP was very good, that integration of water into these programmes was very bad for continued water development and that the rapid closing of the

[14] This is an observation that obviously has not been checked by the review team. The team focused exclusively on water.

programmes was a disaster for the regions' WSS sector. The simplified perception in Kigoma region is that "Norad was good but KIDEP was not so good".

There is unfortunately a widespread belief that the close down of RUDEP and KIDEP came after a disagreement between Norad and RUDEP ("that we did something wrong") and that KIDEP followed in the wake of this unfortunate situation. The review team has not been able to substantiate this postulate from other interviews or archives and believe that this is not a correct assumption.

There is a clear perception that the number of expatriates was relevant during the period before the introduction of RUDEP and KIDEP. Tanzania did not have the required capacity and staff available during those years.

The bottom-up approach introduced by the water programmes was very much appreciated by the Tanzanian side. There is no CPHE going on today.

4.3 Thinking then vs. now

It is not possible to establish a particular 'thinking' behind the approach and methodology on the Tanzanian side at time of executing the programmes in the two regions. On the contrary, it is probably correct that Tanzania did not have a particular thinking – and for understandable reasons. The whole country was split between various donors having sometimes quite different approaches and strategies for their work. For Tanzania it was greatly a matter of complying with an agenda suggested by these donors. And when the donors changed their approaches over the years Tanzania complied.

Today of course the situation is different. Tanzania has now come a long way with its WS sector reform work both for the rural and urban environments. Water laws, policies and strategies are in place and all donors wanting to support Tanzania will have to comply with the national policies and guidelines.

4.4 Impact

It is interesting to compare Norway's own evaluation notes on impact from 1995 with the team's findings in the field. See the following three quotes:

Quote 1: *"In the regions, the support to the water sector is undoubtedly the most visible and noted achievement of Norad support to the regions, and it is a general viewpoint in the regions that Norad should continue the support to the water sector until it has secured an organizational and financial basis for operation and maintenance."*

Comment: This was a very correct observation and its validity has been confirmed by this review. Unfortunately, Norad did stop its support and the organisational and financial basis planned to be under the district revolving funds never came into proper being.

Quote 2: "*With a rapid phasing out of RUDEP and KIDEP, and with no support to the water sector after that time, it is most likely that the water supply schemes will deteriorate and that the number of people supplied with water will be reduced. With the current financial crisis in local government funding, the districts cannot maintain the water supply systems installed during the last 10-15 years without outside financial support"*.

Comment: A warning cannot be put much clearer than this. However, Norad did stop its support, but fortunately, this review has revealed that most communities have been able to maintain the

schemes better than expected. However, the evaluation was correct in its description of the weak economy in the districts.

Quote 3: "….., *it seems fair to state that RUDEP and KIDEP have not been overly successful programmes, but neither have been total failures. The programmes show weak results, and have had limited impact on the rural population's welfare and on the rural economy. There has been limited institutional capacity building, and weak sustainability in the programmes. If there is rapid phasing out of donor support, it is likely that most activities will close down."*

Comment: The assumptions were correct. When Norad only one year later did close down the programmes all activities stopped and have hardly been picked up since, at least not on the water sector, beyond in some areas prone to influx of refugees where NGOs have provided water supply systems.

Thanks to the high number of schemes and water points still in operation in the two regions, and the impressive high number of Village Water Committees and Village Water Funds also still in operation, we may conclude that the impact from Norad's support is significant. There has been no donor support on the water sector in the regions since then and almost insignificant national financial support. What the communities received during those years is what they have now. That is why the cooperation still today is so highly appreciated.

4.5 Lessons learned

Selected software issues:

- Norad pulled out of the water sector in the provinces too soon and too quickly. Unfinished projects had to stop, people lost their jobs: there was no exit strategy. This is the major stain on Norad's image from this period. Otherwise the judgement is predominantly positive.

- To integrate water supply development in RUDEP and KIDEP, thereby letting the water sector "compete" with other sectors did not turn out successful in Tanzania, at least not with the applied approach[15]. The common view is that water development is a cross-cutting issue affecting all sectors and should have remained by itself.

- Water schemes are most sustainable in well organised communities with a sense of solidarity among the people and where there are functioning Village Water Committees and Village Water Funds.

- The above shows how extremely important the CPHE work is and that this part of the efforts must have been quite successful in order to have such good results after so many years.

- In a sustainability perspective, the experience has shown that for all infrastructure development assistance, it is of vital importance to start with an analysis of the environment in which the investment shall operate. What are the needs? What is the capacity in terms of resources and knowledge? Where are the gaps and which are the critical issues?

[15] Evaluations indicate that this was more successful in Sri Lanka from where Norad brought the idea.

- If Norad had been in place until the planned revolving funds at district levels were in place, including long-term O&M practices, it is likely that the results would have been even better.

- The Water Master Plans were very useful tools, not only during water implementation, they are actually still being used. "But now they need updating!" as one engineer put it. In hindsight the master plans must therefore be appreciated as a very useful and sensible investment.

Selected hardware issues:

- While the India hand pump is greatly successful, the SWN hand pump installations must be regarded a disappointment. Most non-working boreholes had originally SWN pumps installed. The major problem was that PVC pipes were threaded and screw-fixed to the pump. This procedure makes the pipe prone to bursting from movements and vibration when the pump is being operated. The result is that the pipe drops into the borehole and can only be retrieved, if at all, with special tools. The problem was known during implementation but alternative pipe material turned out too expensive to be accepted in spite of recommendations from the engineers in the field. Additionally, the planned local spare part production for the SWN pump was not successful and now spare parts are hardly available in Tanzania.

- Gravity schemes are generally working well. However, gravity schemes in combination with group[16] schemes are less successful. We have situations where the intake is working fine but only one out of three villages has water, namely the village closest to the source. For social, cultural, or other reasons, it seems that the villages in a group scheme have problems in cooperating on equitable terms. It seems that when the population increases and water becomes scarcer, the village closest to the intake has the upper hand in setting the agenda, unfortunately at the cost of the other villages down stream.

- Other technologies like e.g. diesel-driven pumps and hydram pumps have been less successful. Spring protection schemes have been very successful in Kigoma region but not at all successful in Rukwa.

- Other infrastructure like office buildings and workshops, including workshop machinery has been very successful and is still being fully used today. A 688 kV generator has been taken over by TANESCO in Kigoma and is still in daily use. The staff houses in Sumbawanga and Kigoma are in good shape and daily use.

5. Correlation North vs. South

Relevance: There is full correspondence between the North and South perspectives on the relevance of the support. Both sides are focusing their perceptions on the actual needs for water and poverty reduction, but while North tend to seek justification in the national context, South is more attached to local benefits and job opportunities.

Effectiveness and efficiency: Both sides do agree to the chosen approach and methodology whereby a high non-bureaucratic process in shortest possible time should reach the highest possible number of communities. While South mostly still applauds this approach today, North shows a reluctance related to the size of the operations related to the local capacity in which the programmes operated. Both sides do agree that the programmes were very effective before the

[16] A group scheme is a project where 2-4 villages have piped water from the same source.

introduction of RUDEP and KIDEP and that the effectiveness then was reduced. Most people interviewed seem to have the perception that the work was carried out in an efficient way.

Perception right vs. wrong: Both sides do agree that the water programmes were very good and that the introduction of RUDEP and KIDEP was the beginning of the end for water in the regions. Both sides remain puzzled about the abrupt closing down of RUDEP and KIDEP. While South tends to believe that Norad was unhappy with the Tanzanian side and therefore closed down the programmes, no such notion can be found by North. South thinks that the Water Master Plans were, and still are, very useful tools for water interventions in the regions. This corresponds with the perception of the North, except that some voices think that the plans could have been a bit narrower on water supply and sanitation.

Thinking then vs. now: Both sides do agree that the high number of expatriates was needed under the prevailing conditions in Tanzania. The bottom-up approach was a bit unfamiliar to Tanzania when is started but is now applauded by the stake holders. Otherwise it is clear that North is more preoccupied with national context thinking and development principles while South's focus is more on the local context and local benefits. Both derive at the same conclusions however: That the assistance for the greater part was very useful for Tanzania and that the affected communities are still today benefiting very much from the support.

To the extent that there may have been some myths surrounding Norad's water sector support to Rukwa and Kigoma, we may conclude the following:

- Norad thought that the water programs did not function well and pulled out (Tanzanian assumption)? Wrong – RUDEP and KIDEP however was "neither overly successful, nor total failures" (ref. evaluation report 1995). The water programs did function well throughout (ref. evaluation report 1995), albeit with low capacity during RUDEP and KIDEP. The findings of this report prove that the water programmes did function and has turned out more sustainable than could be expected. They are for a great part still operating – long after having surpassed their theoretical economic life.

- Norad were given to believe that the water programmes were likely to be less successful because they were driven by expatriates. Extensive use of expatriates is costly (equivalent to 10 or more local experts) and may jeopardize sustainability (ref. evaluation report 1995). Wrong – cost-wise yes, but qualified local experts were simply not available in the required numbers during those initial years. This study proves that the sustainability was not jeopardised. On the contrary, the consultants and expatriates introduced CPHE to the regions, an approach which is now highly appreciated and which has counteracted the worries of the 1995 evaluation. Tanzania expresses great satisfaction with this approach.

- The results of this study therefore do not support the static view that phasing out of experts generally gives better and more sustainable results. It proves that a pragmatic approach towards the use of expatriates is needed. Some programmes may need expatriates, some may need many, some may need few, and some may need none at all. It depends on the country, the programme and the local context.

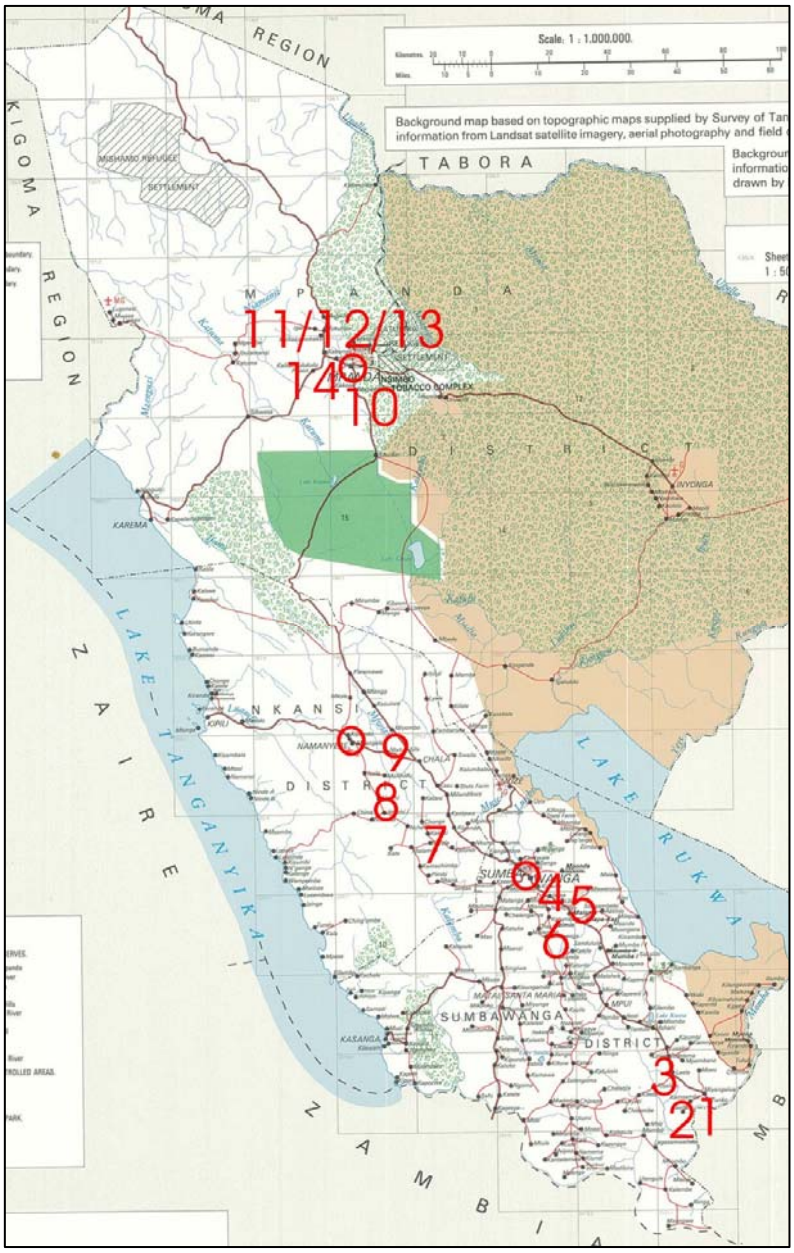
- The Water Master Plans were costly and considered "overkill"? Wrong – The plans have been unanimously appreciated both by North and South sector staff and actors working in the field. The plans have been very useful and are described as indispensable tools – still being used.

- Revolving Funds for spare parts and O&M did work? Unfortunately not. Due to the abrupt close down of RUDEP and KIDEP the funds never came into a sustainable existence.

Attachments

Annex 1: Travel itinerary

Dar es Salaam
9 -10 February '07: Interviews and meetings at the Ministry of Water and Norwegian Embassy, including safari preparations.
11 February, departure for Mbeya and Rukwa Region.



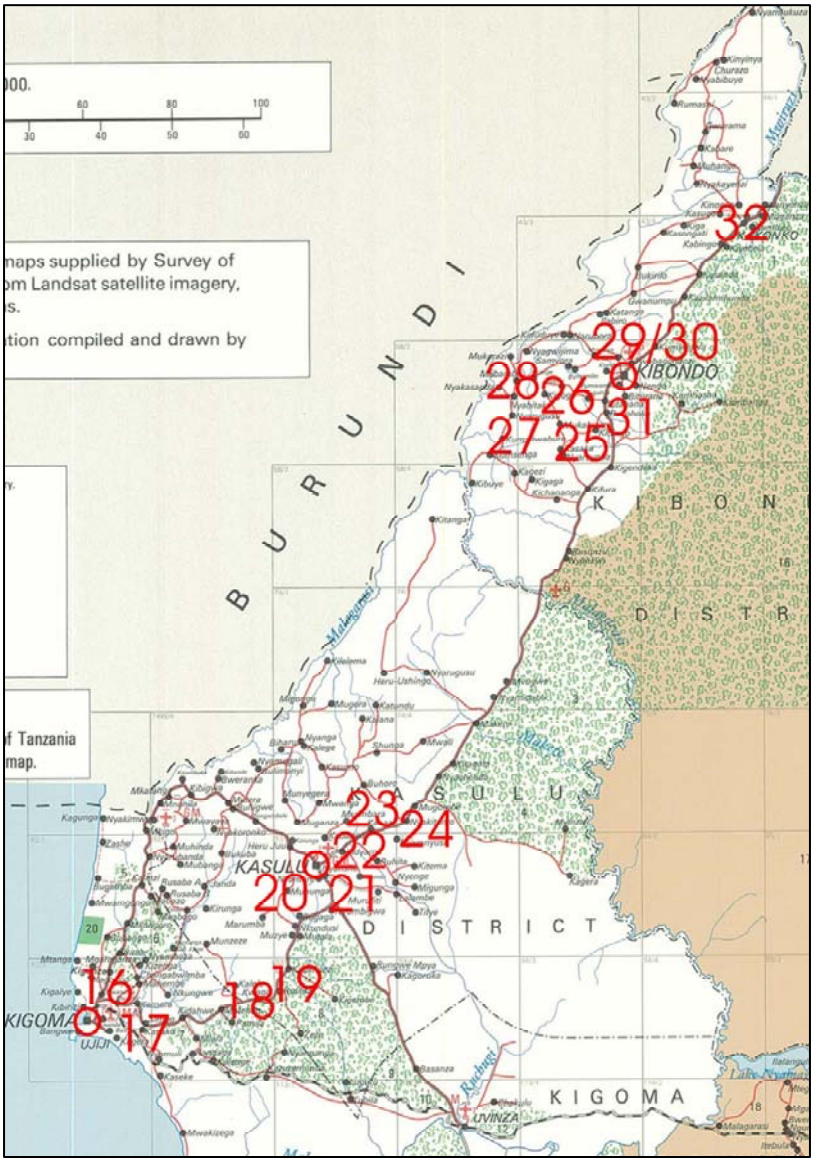
Map source: Rukwa Water Master Plan1982

RUKWA REGION
Sumbawanga Distr.
- 1 Tunku
- 2 Kavifuti
- 3 Laela
- 4 Isesa
- 5 Ulinje
- 6 Tamasenga
- o Sumbawanga

Nkanzi Distr.
- 7 Myula
- 8 Ntuchi
- 9 Ntayambila
- o Namanyere

Mpanda Distr.
- 10 Magamba
- 11 Ilembo
- o Mpanda
- 12 Mpanda 1
- 13 Mpanda 2
- 14 Milala Dam

Period of visit:
12 – 17 February '07



Map source: Kigoma Water Master Plan1982

KIGOMA REGION

Kigoma Distr.
- o Kigoma
- 15 Kigoma Var.
- 16 Mwandiga
- 17 Bibabino

Kasulu Distr.
- 18 Kwaga
- 19 Rusesa
- 20 Nyantare
- 21 Nyansha
- o Kasulu
- 22 Kidyama
- 23 Kanazi
- 24 Nyakitonto

Kibondo Distr.
- 25 Mukabuye
- 26 Kigogo
- 27 Nyarugusa
- 28 Mabamba
- o Kibondo
- 29 Kumwelulo
- 30 Kanjamahela
- 31 Kitahana
- 32 Kakonko

Period of visit:
18 – 22 February '07

Dar es Salaam
26 – 27 February '07: Additional interviews and winding up meetings at the Ministry of Water and Norwegian Embassy.

Annex 2: People met and consulted

Oddwin Skaiaa, Nathalie Haavimb and John Sanzage of MOW participated in all meetings. People participating in several meetings have been mentioned only once.

We apologise sincerely for misspelled names and abbreviations taken from handwritten notes.

Date	Name	Institution	Position
	Dar es Salaam		
09/2	Mr. David M. Maneno	MOW	Senior Economist
	Mr. John A. Mukumwa	MOW	Ag. DCWS
	Dr. Eng. Mohamed A. H.	DDCA	CEO
	Ms. Neema Siara	MOW	Rural Water Civil Eng.
	Mr. John Sanzage	MOW	Rural Water Eng.
	Rukwa Region		
11/2	Mr. Antipas Shirima	Sumbawanga Urban WS Auth.	Managing Director
	Mr. David EP. Kilonzo	RAS Rukwa	TA-EP
	Mr. Jimmy George	RAS Rukwa	TA-WE
	Mr. Gasper M. Shao	Sumbawanga DC	Sumbawanga DWE
	Mr. Samson P. Geehamet	Sumbawanga DC	NRWSSP Eng.
12/2	Mr Daniel Ole Njoolay	Rukwa	Regional Commissioner
	Mr. Innocent Mwenda	Rukwa	Regional Adm. Secretary
	Mr. Anthony Malando	Rukwa	Hydrologist
	Mr. Samson Mashalla	Rukwa RC	Personal Assistant to RC
	Mr. Terentius Rugumisa	Rukwa RS	Ag. RAS
13/2	Mr. Samson P. Gechamot	Sumbawanga District	NRWSSP
	Mr. Bethuel L. Kiula	DC	P Technician
	Mr. Robert Mwanasage	DC Hydrology	P Technician
	Mr. Heke Bulingu	Sumbawanga Municipal Council	Engineer
	Mr. Charles A. Mtatale	Sumbawanga DWA	Lab. Techn.
	Mr. Dominick Madiga	SUWASA	Fin. Adm. Manager
	Mr. Elius Mkumbwa	SUWASA	Supplies Officer
	Mr. Solomon Mwangos	SUWASA	P Techn. Hydrology
	Mr. Kaluma Sichilima	Private	Civil. Eng.
	Mr. E. Nyakahunga	SUWASA	P Tech. Laboratory
	Mr. Atukumbwike Mbewa	SUWASA	Accountant
	Mr. Martin L. Sanawe	Sumbawanga Municipality	Water Technician
	Mr. Mathias Nkura	DDCA	DDCA Manager
14/2	Hon. Joyce W. K. Mgana	Nkansi	DC
	Mr. A. S. Maurikwao	Nkansi	DAS
	Mr. A. Tl. Mbanzo	Nkansi DC	Ag. DED
	Mr. Thomas Petro	Nkansi DC	Ag. DWE
	Mr. Charles Obeid	Namanyere	Manager Water Authority
	Mr. Francis Mapundo	Nkansi District	Water Technician
	Mr. Emmanuel Mbowage	Nkansi District	Water Technician
	Mr. Robert Kapera	Nkansi District	Water Technician
	Mr. Charles Joseph	Nkansi District	Water Technician
14/2	Mr. Ahmud Mbanza	Nkansi DC	Ag. DED
	Mr. Ness Mwahalende	Nkansi DC, Kipande Ward	Ward Executive Officer
	Mr. Julius Pengani	Nkansi DC	Driver
	Mr. Peter Konga	Nkansi DC	Driver
	Ms. Constanza Lingomola	Nkansi DC Nkundi Village	Village Executive Officer
15/2	Mr. Gallus Kasonso	Mpanda Urban WS	Manager
	Mr. Enocu Msengi	Mpanda Rural WS	Ag. DWE
	Mr. Laurian Kasale	Mpanda Urban WS	Technician
	Mr. Geerson Konga	Rukwa Region Water Dep.	Water technician

	Hon. Thobias M. Sijabajoe	Mpanda	DC
	Kigoma Region		
17/2	Mr. Akasi Shao	RC's Office Kigoma	Water Engineer
	Mr. Arthur Msumba	RC's Office Kigoma	Economist
	Mr. George Bussungu	RC's Office Kigoma	Ass. Adm. Secretary Mgm.
	Eng. Peter H. Killewo	RC's Office Kigoma	Ass. Adm. Secretary
	Eng. Aziz Mutabuzi	RC's Office Kigoma	WE-RS
	Mr. Martin O. Mgongola	RC's Office Kigoma	RAS
17/2	Eng. Mbike Jones	KUWASA	Technical Manager
	Mr. Edam Biguza	KUWASA	PDC
	Eng. M. J. Magori	KUWASA	Managing Director
17/2	Mr. Tallas Edwin	Kigoma District	District Engineer
	Mr. Enorch L. Kidudu	Kigoma District	Water Engineer
	Mr. David N. Shokora	Lake Tanganyika Basin	Water Officer
	Mr. Edson D. Biguza	KUWASA	Water Technician
19/2	Mr. Mbaraka R. Ally	Kasulu District	DWE (NRWSSP)
	Mr. Kalhadya L. William	Kasulu District	NED-Kwa G
	Mr. Jofansi Nkuki	RUSESA	MH Diwani
	Mr. O. Olengaspa	RUSESA	VEO
	Mr. Julius balengela	Nyakitonto	M/KITI
19/2	Mr. Thomas Kahesha	Kasulu Water Dept.	Ag. DWE
	Mr. Hussein A. Mwidadi	KUWASA	MD
	Mr. Wilson Ruheta	Kasulu Water Dept.	DDM
	Mr. Kabeza Sibaeni	KUWASA	O&M In Charge
	Mr. Mwafriua Charles	Water Dept.	Plumber
	Mr. Zihuye Gwota	Water Dept.	S/O
	Mr. Siwasutu Yusuph	KUWASA	Reg. Coord.
	Ms. Juliana Esau	Water Dept.	Secretary
	Ms. Esteria Hejeje	Water Dept.	Office Assistant
20/2	Mr. Francis Nanaumbo	Kasulu DC	DED
	Hon. Said R. Bwanamdogo	Kasulu DC	DC
20/2	Mr. Hanusi Singano	Kibondo DC	District Planning Officer
	Mr. Natinga Tu	Kibondo DC	Water Technician Rural
	Mr. Elinathan Elisha	KUWASA	Water Technician Urban
	Mr. Igduis Nzemin	Kibondo DC	Water Technisian
21/2	Hon. Lt. Col. Mzurikwao	Kibondo	DC
	Paul Nkuliki	Kbondo	DED
	Dar es Salaam		
26/2	Mr. C. M. W. Maheri	MOW	SE
	Ms. Neema Siara	MOW	Rural Water Civil Eng.
	Eng. A. K. Kigingi	MOW	Engineer
	Mr. Aloysius G. T. Nyenza	MOW	Economist Dir. Policy and Planning. Ag. PS
Our sincere thanks go to numerous representatives for Village Water Committees and other community representatives in both Rukwa and Kigoma Regions whose names we unfortunately for practical reasons do not have recorded. They gave most valuable information to this report.			

Annex 3: Documents received

No	Documents
	Norway
	Norad archive search and selected copies of relevant archive information.
	MFA Norway: Evaluation Report 4.95: Rural Development and local Government in Tanzania.
	Norad 1982: Rukwa Water Master Plan Summary (Norconsult)
	Norad: Kigoma Water Master Plan Summary (Norconsult)
	NTNU Master Thesis 2007: Execution Model for Rural Water Projects in Developing Nations. Nathalie Haavimb.
	Finnish Cooperative Development Centre 1995: Evaluation of the Development Cooperation between Tanzania and Finland.
	MFA Finland 2001: Finland's Support to Water Supply and Sanitation 1968-2000. Evaluation of Sector Performance.
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	Kasulu DC: Annual report and general performance June 2004 – June 2005.
	Site visit notes, see Annex 4.
	Various papers, notes and memos received from the provinces, districts and some villages during the field work.

Annex 4: Site visit notes

Rukwa region:

Sumbawanga District

1. Tunko Village (12th of February)

Population today: 1832
Village water committee (VWC): yes (number unknown by project team)
Village water fund (VWF): 20 000 TSH
Collect of funds: yes, but small amounts collected because of problems with economy (amount unknown by project team)
Equipment originally: 13 wells with hand pumps
Status today: 3 deep wells and 1 shallow well functioning, i.e. 4 of 13 working
Problems with schemes:

- Wells dried out
- Cylinders fell down to the bottom of the well
- Low water table

Other: Satisfied with Norad's effort. The pump problem is due to choice of technology (SRW hand pump with drop-down rising pipes). They have done some repairs, but because of the economic situation in the village they have a hard time collecting sufficient funds.

2. Kavifuti Village

Population today: 4116
VWC: 8 persons, 4 women and 4 men
VWF: yes, but amount unknown by project team
Collect of funds: collected a one time payment of 500 TSH per person to do some repairs in 2001. This covered 20 % of cost – council took the balance.
Equipment originally: 17 boreholes
Status today: 13 functioning
Problems with schemes:

- lack of spare parts

Other: NORAD assistance in 1986. They are very satisfied with the cooperation with Norad, and they felt they were involved by Norad during the process. They have some problems with their schemes which VWC is trying to fix. The responsibility of the VWC is to have a total overview and inspection of the schemes together with collecting tariffs. They have some problems collecting funds regularly, because their income is dependent of seasonal harvest. Some also lack sufficient access to water because of population growth since the implementation.

3. Laela Village

Population today: 12 000
VWC:
VWF: 1 060 000 TSH. In 2004 money was collected to build boreholes, but the money isn't used yet, because the VWC is waiting for approval from MOW.

Collect of funds: 5000 TSH/household was a onetime contribution in 2004 for the implementation for boreholes, but are still in the bank.
Equipment originally: Group scheme shared by 5 villages. Sources: river, the distance from the sources to the storage tank is 17 km. Storage tank: 50 m^3. Mainly domestic taps, but also some private connections. Some also has private shallow wells.
Status today: Gravity scheme. The water is limited and some pips are not working. The new storage tank is not in use because the pipes were washed away.
Problems with schemes:

- Bad water condition
- Pipelines broken

Other: The village is saving the money in the bank in till there are more severe repairs to be done. VWC is also planning to build boreholes and rehabilitate the gravity scheme, and in order to manage this they are planning to collect 10 millions TSH from the inhabitants after the harvest. This will cover 5 % of the total cost requirement.

We were informed that the other 4 villages did not have VWCs.

4. Isesa Village (13th of February)

Population today: 5808 (726 households (HH))
VWC: 8 people
VWF: 373 858 TSH
Collect of funds: originally 500 TSH/HH/year, but they have raised it to 1000 TSH/HH/year this year
Equipment originally: 14 boreholes, equipped with India Mk. 2 pumps, 1982-84
Status today: all are working, except one pump that was stolen
Problems with schemes:

- Frequent use lead to constant breakdowns
- Bolts and nuts are missing, and chain needs maintenance

Other: They thanks Norad for their support and training, and they clearly see a health improvement after the implementation. The schemes in this village are in remarkable good condition. But because of the population growth they lack sufficient access to safe water. Each pump serves over 400 persons even tough they are designed to serve 250 persons. They say they are in need of more 15 boreholes.

This village has a blacksmith as a head of the VWC and he does all the repairs.

5. Ulinje Village

Population today: 1800 today, 700-800 in 1984
VWC: 10 persons. They collect funds and do the repairs.
VWF: 305 000 TSH
Collect of funds: 1000 TSH/HH/Year last year and they are going to see for how long this money will last
Equipment originally: 5 boreholes, 1984
Status today: 4 are working, one not working
Problems with schemes:

- one has collapsed because the cylinder fell down due to an earthquake

Other: The wells are inspected every 6th month, and they do most of the work themselves because they got training from Norad. If the schemes need major repairs they get help from the district water department.

6. Tamasenga Village

Population today: 4631, 812 HH
VWC: 10 persons, 5 women and 5 men, also Ward Water Committee is functioning.
VWF: 160 900 TSH
Collect of funds: 500 TSH/HH/Year, in addition they collect funds if something extraordinary happens
Equipment originally: Gravity scheme shared by 3 other villages **(Pito Group scheme)**. The first village is 4-5 km from the intake (Malagano). Each village has their own storage tank: Tamasenga 20 cbm, Malagano and Pito 10 cbm. 13 domestic taps in this village
Status today: The intake is functioning well. 10 domestic taps are working, 3 are not
Problems with schemes:

- Pipelines breaks
- Expensive spare parts

Other: NORAD started their support in 1976 in this village and in 1982 it was finished. They confirm health improvements. The same good situation is reported in the other villages, but because of the population increase the taps are frequently used and it leads to wear out of the equipment and they need extra water points.

The villages cooperate if it's problems with the intake or the common pipeline and they have a Ward Water Community that takes care of the sheared interest.

Nkansi District

7. Myula Village (14th of February)

Population today: 2456
VWC: 6 persons
VWF: 290 000 TSH
Collect of funds: in till this year they paid 500 TSH/HH/Year, but from this year they pay 2000 TSH/HH/Year
Equipment originally: 8 boreholes with India Mk. 2 hand pumps
Status today: 4 are working, 4 do not.
Problems with schemes:

- Problems with cylinders
- Worn out schemes
- Lack of spare parts

Other: Norad supported this village from 1983 to 1984. Some now use water from traditional water sources because of lack of access to hand pumps.

They have 5 technicians in the village who were trained in Sumbawanga.

3 demo pit latrines were also built during the "Norad-period". Two of those are working.

8. Ntuchi Village

Population today: 3500 inhabitants, 520 households
VWC: 5 persons, 3 women and 2 men
VWF: 450 000 TSH

Collect of funds: in till this year they paid 500 TSH/HH/Year, but from this year they pay 3000 TSH/HH/Year
Equipment originally: 9 boreholes
Status today: 6 are working, 3 are not
Problems with schemes:

- One of the wells has collapsed because the ground has buried the well.
- The pumps are worn out and they don't have spare parts (they have changed the bolts, nuts and the chain)

Other: Grateful for Norad's support. Norad started their work in this village in 1984, and at that time it was 250 households. I.e. have the households more than doubled since 1984. They use traditional water sources during the rainy season, but in the dry season it's usually long queues at the boreholes. The price for spare parts has increased considerably and they have to buy the parts on the private marked at a high price. The district revolving fund supported by Norad was initiated but not completed before close down of RUDEP. Has never worked properly.

9. Ntuntambilla Village

Population today: 4000+, 538 HH (ca. 2000 in 1983)
VWC: 5p, 3W + 2M, 2 skilled caretakers
VWF: 0, but are paying 2000 TSH/HH/year plus ad hoc contribution
Equipment originally: 1 BH 60m, diesel mono pump
Status today: still working, has never had a problem except sometimes lack of diesel making it impossible to fill the storage tank. One BH too little and queuing at the public taps. Some people take water from the river.

Mpanda district

10. Magamba Village (15th of February)

Population today: 2140 inhabitants
VWC: Yes
5 caretakers
VWF: 350 000 TSH
Collect of funds: 2000 TSH/HH/year
Equipment originally: 8 boreholes
Status today: all are working
Problems with schemes:

- they have problems finding spare parts, because they don't distribute some of the parts in Tanzania any longer. Especially the cylinder (Grunfos).

Other: The equipment was installed and handed over to the village in 1986.

11. Ilembo Village

Population today: 2840 inhabitants
VWC: Yes
2 caretakers
VWF: 210 000 TSH
Collect of funds: 2000 THS/HH/year
Equipment originally: 1 SWN 80 Pump

Status today: Working, but the pump is locked at certain times because they have to ration the water. The water is only used for drinking.

Problems with schemes:

- The cylinder needs to be changed after 5-6 years**.**

Other: The equipment was installed and handed over to the village in 1986. The SWN hand pump is not as durable as India Mk.2.

12. Mpanda urban 1 (two boreholes)

Population today: Part of Mpanda town.
VWC: Urban setting
VWF: No, changed to water sale
Collect of funds: Currently water sale from taps, 20 TSH/20 Litres. The caretaker keeps 20% of the revenue and 80% goes to the waterworks.
Equipment originally: 1 borehole at Bomani and one at Sikange, originally with hand pumps
Status today: They removed the hand pumps and replaced it with electrical pumps under ground that pumps the water to two storage tanks. Two different water kiosk with 12 taps each are connected to each tank, and is looked after by a caretaker who collects the money from the users. The tank furthest from the borehole is 700 m.

13. Mpanda urban 2

Population today: Part of Mpanda town
VWC: Urban setting
VWF: No
Collect of funds: ?
Equipment originally: DubaTropic II handpump (Belgian).
Status today: Working
Problems with schemes:

- There are no spare parts for this pump

Other: Implemented in 1986. Also here are plans of converting the well to submersible pump and 12 taps as Mpanda urban 1.

14. Milala Dam, etc.

Population today Mpanda: 45,500 (2002)
Milala Dam and Treatment plant: Under DWA management, working but treatment disconnected.
Equipment originally: Originally built in 1956. Received 2.25 km rising main, 2 diesel pumps and some other pipes from Norad. Rehabilitated and electrified in 1996.

Other source, Manga Gravity Scheme: 14 km gravity line supplied by Norad in 1985. Surplus water goes to Milala Dam. Working ok.

Groundwater sources: 16 deep and 7 shallow wells – not by Norad.

KIGOMA REGION

Kigoma district

15. Venue: various

1. Regional Administration Secretary (RAS).
2. Kigoma Urban Water and Sanitation Authority (KUWASA). Did not exist during the Norad period. Norad gave the generator, storage tank and pipes. The generator was sold to Tanesco, because it was too expensive to use for pumping water.
3. Lake Tanganyika Water Basin Authority (Former RWE).
4. Mnaranu storage tank 1000 m^3 was constructed in 1987. It's still working. Gravity main: 12''.
5. Bangwe Intake (Lake Tanganyika) is the only intake they have. The intake has two pumps (capacity originally in 1988: 234m^3/h x 2), but today only one is working at a rate 150m^3/h. The Government has installed three new pumps after the Norad period. I.e. three of five are working today. Norad also sponsored the surge vessel, and it is working.
6. TANESCO (el.) has the Norad sponsored generator today and it is daily in use (Vartsila Finland), originally 688 kW – now 500 kW.

16. Mwandiga Village

They have a storage tank sponsored by NORAD (225m3). The intake is sponsored by UNICEF. Working.

17. Bibabino Mission

1 Storage tank by Norad. 225 cbm, plus an old 90 cbm. Working ok today.

Kasulu District

18. Kwaga Village (19th of February) (group scheme, see 19)

Population today: 6351 inhabitants in 2002, population increase: 4.8%
VWC: 6 persons, (5 men and 1 woman)
VWF: 584 399 TSH
Collect of funds: 1200 TSH/HH/year
Equipment originally: 4 village gravity group scheme. Two villages in Kasulu District (Kwaga and Rusesa Village, see next village below) and two in Kigoma District (Pamila and Matendo Village) share the same intake at the Kasangesi stream.

-In Kwaga Village: the intake, plus 2 storage tanks with capacity 135 and 90m^3**.** Norad sponsored the storage tank with 90m^3 capacity (good condition today), the other one was sponsored by the Government in 1975 (has some leakage). The pipeline is 23.5 km.

- 32 domestic points (a base of concrete with two taps).

Status today: All the taps are working, but they have removed one of the two taps on all the points. In addition they have changed the original screw tap with a solution that requires that they have to push the tap upwards to get water. This is not a good solution in at least two ways: it's unhygienic and the tap is leaking when not used. O&M budget 2007 is 100 TSH/HH/month.

They have installed 10 private connections after the Norad period.

Problems with schemes:

- pipes are breaking because of exposed pipes; they are buried too shallow in the ground
- the taps are leaking when not in use, i.e. they loose water
- the intake has problem with silting and volume reduction.
- the air valves are bad and this decreases the capacity (the pipe is lied in curves under ground and this creates air accumulation on high points in the pipe.

Other:

- Was constructed in 1987. The villagers have noticed a health improvement after the implementation. They have not invested in any new water facilities other than the private connections after Norad.
- The intake is protected by law. The villagers are not allowed to get near the intake, and this is respected.
- Population increase has led to lack of sufficient amount of taps. They also use traditional water sources (small streams)
- The village has budgeted for O&M this year, and they do all the maintenance and repairs them selves. Some spare parts is ordered from Dar es Salaam by the district water engineer's office and given free to the village. Some parts the village buy from the local shop
- Two villages, Pamila and Matendo Villages in Kigoma district, that share the intake with this village do not get much water, because they are furthest from the intake. In addition they have problems with contributing to the VWF. In Pamila Village in Kigoma district only 4 DP's are working, and in Matendo Village the main pipe is the problem.

19. Rusesa Village (group scheme, see 18)

Population today: 9512 inhabitants, population increase: 4.8%
VWC: 9 people (7 men and 2 women)
VWF: 550 000 TSH
Collect of funds: 800 TSH/HH/year, private connections pay 200 TSH/HH/year
Equipment originally: - Same intake as the previouse village. The system was originally funded by the government, but was in such a bad shape, so NORAD rehabilitated the existing system in 1983.

- 90 m^3 storage tank
- 18.8 km pipeline
- 32 domestic points

Status today: - The village has funded 7 additional domestic points paid with money from village water fund. So today they have 39 domestic points and all are working

- They have implemented 55 private connections after the Norad period – all working.

20. Nyantare Village (group scheme, see 21, 22)

Population today: 3511 inhabitants (in 2002), population increase: 4.8%
VWC: 6 persons (5 men and one woman)
VWF: 306 468 TSH
Collect of funds: 100 TSH/HH/month for domestic taps, 200 TSH/HH/month for private connection

Equipment originally: - Group scheme 4 villages, (Nyansha, Kigondo, Kidyama and Nyantare Village). The scheme was constructed by the Government in 1975 and rehabilitated by Norad in 1991.

- Intake at Mgandazi stream
- $90m^3$ storage tank at Nyantare
- 135 cbm at Nyansha
- 90 cbm at Kigando and Kidiama
- 12 domestic points
- 8 km pipeline at Nyantare, 14.1 km at Nyansha

Status today: - The village has added 4 domestic points and 102 private connections.
- 4 DP's are not working – water is not reaching the DPs.

Problems with schemes: - The 4 DP's are not working because of pressure problems. The water doesn't reach the tap

21. Nyansha Village (Group scheme, see 20, 22)

Population today: 4311 (2002) now 5400. Population increase: 4.8%
VWC: 6 people (3 men and 3 women)
VWF: 420 000 TSH
Collect of funds: 0 TSH for domestic points, 2400 TSH/HH/month for private connections
Equipment originally:

- same intake as the former village
- storage tank: 135 m^3
- 21 water points
- pipeline

Status today: - added 5 DP's, i.e. 26 DP's today. 22 of them are working.
- 289 private connections installed by themselves

Problems with schemes:

- Silting due to cultivation
- Broken pipes

Other:

- The 6 inch. PVC pipes are not available anymore
- They say they don't have enough income to pay for the water (DP's)

22. Kidyama Village (group scheme, see 20,21)

Population today: 4328 inhabitants today
VWC: 4 persons (all men), plus scheme operator
VWF: 134 890 TSH
Collect of funds: 1200 TSH/HH/year for DP's, 2400 TSH/HH/year for private connections
Equipment originally:

- Gravity scheme shared with the two former villages. Originally constructed in 1973, Norad support in 1995.
- Storage tank: $90m^3$
- 14 DP's

Status today:

- added one DP.
- added 11 private connections

- since 2004 the village has had problems with water because it's the village farthest of from the intake and the other villages has installed so many private connections, which decrease the pressure. So they ration the water they have in their storage tank

Problems with schemes:

- the water doesn't reach this village

---

23. Kanazi Village

(15 km from Kasulu town)
Population today: 8470 inhabitants, 863 households. (in 1988: 3417 inhab., 560 HH)
VWC: 6 persons (3 men and 3 women), plus scheme operator.
VWF: 1 481 591 TSH
Collect of funds: 400 TSH/HH/year DP's, 2400 TSH/HH/year private connections
Equipment originally:

- Storage tank: 90m^3
- 22 DP's

Status today:

- 33 DPs, of which Norad supported the 22.
- 33 private connections, of which Norad supported 0.
- All are working

Problems with schemes:

- Lack of fittings
- The water supply doesn't cover the demand
- The storage tank is too small
- Unstable water supply (they leave the taps open in order to see when they have water. This leads to decrease of pressure to all the taps.)

Other:

- water scheme constructed in 1986
- the Red Cross and a local secondary school are contributing money for water every year (in all 400 000 TSH). They have built 42 DPs since 1986. So in total they have about 80 DPs in the village today.
- They are planning to increase the funds collected and to construct a new water source and gravity main trough request from different donors.
- Report good cooperation between V. Council and VWC.
- House connections are popular, but lead to water shortage. Intake and storage capacity are now too low. House connections reduce water borne diseases, good houses, irrigation of garden, body cleanliness.
- New gravity source identified – need new donor. Are looking at rainwater harvesting.

---

24. Nyakitonto Village

Population today: 8172 inhabitants (2002)
VWC: yes
VWF: 200,052 TSH
Collect of funds: 600 TSH/HH/year for DP's, 2900 TSH/HH/year for private connections, 5000 TSH/HH/year for institutions
Equipment originally:

- 23 DP's
- Gravity scheme (for one village only)

- Storage tank: $90m^3$

Status today:

- added 5 DP's after Norad, i.e. they have 28 DP's today. 20 are working.
- Added 56 private connections
- They have water regularly

Problems with schemes:

- Old pipes, frequent pipe breaks
- The 8 DP's isn't working due to leakage and breakage of pipes
- The sources is too small to satisfy the demand

Other:

- Scheme constructed from 1989 to 1990
- the VWC has problems with collecting funds. They go from house to house to collect water.
- They want to raise the contributions from the villagers from 50 to 100 TSH/HH/year for the DP's and also for the institutions
- They also use the water for brick making and irrigation
- They request a new intake, gravity main, pipes and fencing of the water source.

KIBONDO DISTRICT

25. Mukabuye Village (20th of February)

Population today: 8344 inhabitants (5700 during the Norad periode)
VWC: 7 persons (4 men and 3 women)
VWF: 500 270 TSH
Collect of funds: 700 TSH/HH/year (from this year) for both domestic taps and private connections (used to be 300)
Equipment originally:

- Gravity scheme for one village only
- Storage tank: $90m^3$. It's 5-6 km from the intake
- 32 DP's
- 0 private connections

Status today:

- 22 DP's are working – planning 2 more
- The intake is good, it only needs minor repairs
- The storage tank is leaking at the top
- One private connection now

Problems with schemes:

- 10 DP's not working because of bad pipes
- The pipes are worn out and some have been stolen
- The scheme doesn't satisfy the demand

Other:

- Norad handed over the scheme to the village in 1983
- Some villagers use traditional water sources because of lack of water
- Translated report handed over to the mission.
- Less diarrhoea after project was implemented

---

26. Kigogo Village

Population today: 3918 inhabitants (2700 inhab. during the Norad period)
VWC: 8people (5 men and 3 women)
VWF: 28 000 TSH
Collect of funds: 500 TSH/HH/year for DP's, 1500 TSH/HH/year for private connections
Equipment originally:

- Gravity scheme for one village
- Storage tank:
- 16 DPs
- 0 private connections

Status today:

- all the DP's are working. The yield is good, but the number of DPs are too few.
- they have implemented 4 private connections
- the 90 cbm storage tank has some leakage
- the intake is working good and is protected

Problems with schemes:

- Problems with the pipes, the DPs and storage tank is leaking because of lightning.

Other:

- NORAD started their work in 1981 and it was constructed in 1983. In 1990 it was handed over to the village
- They have used a share of the VWF to restore the main pipe and for spares
- Some of the villagers are not willing to pay funds because they don't get water due to the population increase
- Some take water from traditional sources
- Think they need 8 more DPs
- Less diarrhoea after project was implemented

27. Nyarugusu Village

Population today: 6250 inhabitants (1213 households)
VWC: 7 persons (4 men and 3 women)
VWF: 34 600 TSH (low willingness to pay)
Collect of funds: 1200 TSH/HH/year
Equipment originally:

- 6 boreholes
- 3 shallow wells
- 6 protected springs

Status today:

- 2 of 6 boreholes are working (SWN pumps with PVC pipes)
- 1 of 3 shallow wells are working
- 3 of 6 protected springs are working

Problems with schemes:

- The boreholes have problems with the pipes falling down (2) and normal wear and tear (2). They haven't been working since 2005
- The 2 shallow wells haven't been working since two years
- The three protected springs have dried out

Other:

- The schemes was handed over to the village in 1994
- Some villagers don't pay funds, but they use the facilities even though

- Some still use traditional water source
- The village had one technician, but not anymore. It's the DWE responsibility to obtain technicians so they have requested one. The technician's salary was 3000-5000 TSH/month and the VWC was paying him
- No SWN spares available in Tanzania
- Drought is a problem here

---

28. Mabamba Village

Population today: 10 000 (1400 HH) today, 7000 during the Norad period
VWC: 6 persons (3 men and 3 women)
VWF: 20 000 THS
Collect of funds: 1200 TSH/HH/year before the last borehole broke down in 2005. Now they don't pay anything.
Equipment originally:

- 5 boreholes with SWN 80/81 pumps

Status today:

- No boreholes are working, but 4 can be saved

Problems with schemes:

- the pumps aren't working. They have all the same problems with the cylinders as the other SWN pumps. The PVC pips are bad. In addition they can't get spare parts to fix the problem

Other:

- The first borehole broke down in 2000 – the last in 2005.
- They have to go far to get water today
- They don't have a technician today
- They don't have any possibilities to get a gravity scheme, but they wish for pumping from the river and private connections
- Oddwin made a quick estimation over the cost for private connection per household: 12 500 TSH/HH/month. Some of the villagers where willing to pay this amount. This shows that there is some economy flow in this village and if they really prioritized water they are capable to fix the problems with the boreholes if they start saving.

---

29. Kumwelulo B (Uwanja wa jaifa) (21st of February)

Population today: a part of the Kibondo municipality. Uncertain how many users
VWC: one caretaker
VWF: 15 TSH per 20 litres. The caretaker collects 3000-6000 TSH each day.
Collect of funds: n.a.
Equipment originally:

- Norad implemented 5 boreholes with SWN pumps.

Status today:

- Danida changed all the SWN pumps with India Mk.2 pumps in 2000. All are working.

Problems with schemes:

- The SWN pumps had problems with that the pipe released itself from the pump.

Other:

- the caretaker gets paid 18 000 TSH each month. DED is the employer.

---

30. Kanjamahela

Still in Kibundo municipality. Norad implemented 2 protected springs, one in 1987 and one in 1998. The water flows 24h/day and is free for the people.

---

31. Kitahana village

Population today: 5760 inhabitants (957 HH)
VWC:

- large committee: 23 people (12 men and 11 women). Their responsibility is CP-work and training. They meet every month.
- work committee: 7 people (4 men and 3 women). Their responsibility is the day-to-day work.

VWF: 250 000 TSH
Collect of funds:

- 1200 TSH/HH/year for those who use the shallow wells
- 2400 TSH/HH/year for those who use the boreholes
- 1200 TSH/HH/year for those who use the protected springs

Equipment originally:

- ?

Status today: see lost page
Problems with schemes:

Other:

- Implemented by NORAD during 1995 and 1996.
- In the beginning lack of CP-work led to carelessness among the villagers. After the pumps broke down they realised that they could do something with the problem themselves.
- They have got a lot of support from different NGO's and UNICEF, so the knowledge has increased. The massive support may come as a result of the refugee problem the district has.

---

32. Kakonko village

Group scheme with 3 intakes, Nyakoviso (not working, water has taken another course), Mikigo (working), Mbizi (partly working). 60 DPs for all 3 originally.

Population today: 4170 inhabitants
VWC: 7 people (4 men and 3 women)
VWF: 180 000 TSH
Collect of funds:

- private connection: 12 000 TSH/HH/year
- those who use the DP's don't pay anything

Equipment originally:

- group gravity scheme shared by 3 villages.
- 20 DPs in this village.

Status today:

- 2 DP's are working

- UNICEF, Danida, Sida and a local NGO TWESA have implemented 4 boreholes, 6 shallow wells and 4 spring protection.
- 40 private connections have been implemented – all are working.

Problems with schemes:

- Many leaks on main line and intake
- Main problem is the gravity line to storage tank.

Other:

- NORAD started their work in 1987 and finished in 1990.
- Everything was working in till 2004
- They have major problems regarding cooperation between the villages that share the intake. Local political problems.
- Evidently a major alcohol problem in the village. A feeling of apathy among the villagers.

Annex 3: Sub-Report Kenya

Fiction, Facts & Future

**Norad's Assistance
to Water Supply and Sanitation Development
in Tanzania and Kenya
during the 70's, 80's and 90's**

Sub-Report Kenya

**A descriptive analysis based on
- Archive search
- Interviews
- Site visits**

… as basis for future support

Prepared for Norad by

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Abbreviations and acronyms

BH	Bore hole
GOK	Government of Kenya
MUWSP	Minor Urban Water Supply Programme
MWI	Ministry of Water and Irrigation
O&M	Operation and Maintenance
pe	Person equivalents
Sida	Swedish International Development Cooperation Agency
TOR	Terms of Reference
TP	Treatment plant
WS(S)	Water Supply (Sanitation)
WSB	Water Services Board

Sub-Report Summary

Within the frame of last year's launching of the Norwegian Action Plan for Environment in Development Cooperation (the "Action Plan") and Norad's new Strategy towards 2010 (the "Strategy"), Norad has the intent of drawing out lessons learned and experiences from previous Norwegian-funded water supply and sanitation programmes. The rationale is to develop a basis for future Norwegian engagement in the sector. This document, Sub-Report Kenya, while edited as an independent report, should be construed as Annex 3 to the Executive Summary by the same title. For detailed background information to this review please consult the Executive Summary. This Sub-Report comprises Norad's support to the Minor Urban Water Supply Programme (MUWSP) in Kenya[17].

Kenya became in 1965 Norway's first cooperating partner country in Africa. Bilateral support to the WSS sector started in 1966. The major part of this support was after 1974 channelled through the Minor Urban Water Supply Programme (MUWSP). Besides this, support was given to some other projects, a.o. water supply inn Lodwar and technical assistance to the Ministry of Water (Maji), now the Ministry of Water and Irrigation (MWI). From the early start, support was only given as personnel assistance. Project support started in 1974 with MUWSP. The programme included originally construction, rehabilitation and extension of 42 water supply and 8 sewerage projects in minor towns throughout Kenya. Later it was extended to include a number of hardware and software components, and new towns were added.

MUWSP was an element in Kenya's strategy against uncontrolled urbanisation of the greater cities, as laid down in the Second Development Plan (1970-74). The idea was to develop and stimulate growth in minor urban towns, by thereby improving the attractiveness of the rural areas as an alternative to the big cities. The MUWSP was evaluated in 1982.

The various existing programmes, including the MUWSP, were terminated in 1989 and all remaining work was put into one hat, the new Integrated Water and Sanitation Programme. However, all water activities were abruptly put to a halt due to the diplomatic break between Kenya and Norway in 1990. Meanwhile the diplomatic relations are normalised again, but the water programme was never revived.

When MUWSP started in 1974 it was intended to go on for five years. However, the progress turned out to be slow, there was a considerable cost increase and the population in the towns increased above expectations. The programmes success would have been jeopardised if Norad had not continued beyond the planned five years. After the evaluation in 1982, Norad established a stronger management and follow-up by introducing a Programme Coordinator, direct procurement, 100 % Norad financing and more targeted use of expatriate personnel. In 1985, 25 projects were completed and 9 new started

Additional to physical interventions in about 50 towns, the programme over time also included support to the establishment of a water laboratory, offices and warehouses in some of the towns, support to the Kenya Water Institute (KEWI), master studies at the university, training of staff, and a high number of expatriate personnel. Also a Water Use Study was introduced, and during the later years emphasis was put even more on training and O&M, community and health education aspects.

[17] Another separate report is covering the experience from Tanzania and is also part of the Executive Summary as Annex 2.

This review took place in March 2007 and the team visited schemes in 19 towns, out of which the type of Norad support could not be established for 6 schemes, see Annex 1 for map. The Mission was very positively received wherever we travelled, and we would like to thank the Ministry of Water and Irrigation for the assistance in planning this mission and all district representatives for valuable support and guidance during our visits to the various towns. Without your help this work could not have been done.

It is not surprising to find working water supply and sewerage schemes in these towns. Actually, 100 % of the schemes are working at different levels of quality and regularity. Over the years the towns have had a significant population increase, and they have become important hubs for the surrounding rural communities. Some of them have also received additional infrastructure funding, partly from the government and partly from donors. What is impressing in this review is that when we single out the Norad supported investment in these cities, 91 % is still working. Considering that this investment was the very beginning of infrastructure interventions for the major part of these cities, and the time elapsed since then, we must admit that the result is impressive. We must also assume that these initial investments actually did trigger off the wanted attractiveness and the corresponding growth in the cities, and that MUWSP in that sense has been a success. The GOK policy behind the MUWSP did work. This has also been confirmed by the interviews carried out by the team in Kenya.

Involved people have been visited and interviewed in both Norway and Kenya and there is an astonishing good correlation between their perspectives on both 'relevance', 'effectiveness and efficiency', 'perception right vs. wrong', and 'thinking then vs. now' (Chapter 5).

While there always are issues that could and should have been done differently, the support to the MUWSP in Kenya must today be described as overall successful. Below are summarised some results from the interviews and field visits:

- The basic idea of the MUWSP of increasing the attractiveness of, and provide development in, minor towns throughout Kenya did actually work.
- The size of the task was underestimated and the initial implementation pace was too slow. Population and cost increases were perceived as complicating factors.
- With the employment of an expatriate Project Coordinator, introduction of direct procurement and 100 % financing in 1982 the programme picked up speed.
- Until 1982 the programme had a mostly technical profile. Then software components were introduced with considerable success.
- Schemes affected by the diplomatic break in 1990 have, with few exceptions, not yet been able to recuperate and complete the planned investment.
- Some critics were of the opinion that the technology used was generally too advanced. The view of all people interviewed however is that the technology was very appropriate for these projects located in urban settings. This study has confirmed this view to be correct.
- As regards technology, only one hardware component was broken down and removed in all water supply schemes visited: the electrical chemical dosing pump. Without exemption, all automatic dosing pumps had been removed and replaced by makeshift gravity solutions, mostly of very low and simple quality, incapable of measuring correct dosage of chemicals.
- Some visited schemes suffer under bad O&M and most schemes visited are in need of upgrading, expansion and new investment.
- In a sustainability perspective, the experience has shown that for all infrastructure development assistance, it is of vital importance to start with an analysis of the environment in which the investment shall operate. What are the needs? What is the capacity in terms of resources and knowledge? Where are the gaps and which are the critical issues?

1. Introduction

Within the frame of last year's launching of the Norwegian Action Plan for Environment in Development Cooperation (the "Action Plan") and Norad's new Strategy towards 2010 (the "Strategy"), Norad has the intent of drawing out lessons learned and experiences from previous Norwegian-funded water supply and sanitation programmes. The rationale is to develop a basis for future Norwegian engagement in the sector. The analysis of some selected aspects of the previous support to the WSS sector is the object of this report. How can increased knowledge about this period benefit the future? The Terms of Reference (TOR) are enclosed in Annex 1 of the Main Report. They state that the analysis shall be based on a review, limited in size and descriptive in nature.

This document, Sub-Report Kenya, while edited as an independent report, should be construed as Annex 3 to the Executive Summary by the same title. For detailed background information to this study please consult the Executive Summary. The review and analysis has been carried out by Oddwin Skaiaa of Tranor International[18].

During the 70s, 80s and 90s, Norad provided significant support to the WSS sectors in Tanzania and Kenya. Norad has decided to limit the study to these two countries. This report concerns issues related to Norad's support to the Minor Urban Water Supply Programme (MUWSP) in Kenya.

1.1 Itinerary

The review took place in March 2007 and the team visited schemes in 19 towns, out of which the type of Norad support could not be established for 6 schemes, see Annex 1 for map. The schemes and corresponding Water Services Board (WSB) are shown in the table.

Scheme	Type	Water Services Board
Naivasha	STP	Rift Valley
Njoro	WS	Rift Valley
Londiani	WS	Lake Victoria South
Keroka	WS	Lake Victoria South
Kisii	WS	Lake Victoria South
Rongo	WS	Lake Victoria South
Homa Bay	WS	Lake Victoria South
Kendu Bay	WS	Lake Victoria South
Kakamega	WS	Lake Victoria North
Bungoma	WS	Lake Victoria North
Turbo	WS	Lake Victoria North
Iten	WS	Rift Valley
Chepkorio	WS	Rift Valley
Kipkabus	WS	Lake Victoria North
Limuru	STP	Athi
Kiambu	WS	Athi
Ngong	WS	Athi
Kangundu	WS	Athi
Machakos	WS	Athi

WS = Water Supply, STP = Sewage Treatment Plant

Before travelling to Kenya, selected persons were interviewed together with a search in Norad's archives.

In Kenya, meetings were held with the Ministry of Water and Irrigation (MWI) and the Norwegian Embassy in Nairobi, before and after site visits to selected projects located as shown in Annex 1.

The projects and practical arrangements related to the field work was carried out in excellent cooperation with MWI.

1.2 People consulted

Reference is made to Annex 2. The review team was very positively received wherever we travelled, and we would like to thank the Ministry of Water and Irrigation for the assistance in planning this mission and all district representatives for valuable support and guidance during our visits to the various towns. Without your help this work could not have been done.

[18] Under Norad's frame contract with Nordic Consulting Group.

2. Main achievements

Please note that the main aim of this report has been to see how the Norad supported investment is working today. Additionally, some assumed related information is also reported. The study has by no means the intention to bring a full analysis of Norad's support during these years. There are obviously a high amount of issues, of both positive and negative character, which are not brought to debate in this report.

2.1 Background

Kenya became in 1965 Norway's first cooperating partner country in Africa. Bilateral support to the WSS sector started in 1966. The major part of this support was after 1974 channelled through the Minor Urban Water Supply Programme (MUWSP). Besides this, support was given to some other projects, a.o. water supply inn Lodwar and technical assistance to the Ministry of Water (Maji), now the Ministry of Water and Irrigation (MWI). From the early start, support was only given as personnel assistance. Project support started in 1974 with MUWSP. The programme included originally construction, rehabilitation and extension of 42 water supply and 8 sewerage projects in minor towns throughout Kenya. Later it was extended to include a number of hardware and software components, and new towns were added.

MUWSP was an element in Kenya's strategy against uncontrolled urbanisation of the greater cities, as laid down in the Second Development Plan (1970-74). The idea was to develop and stimulate growth in minor urban towns, by thereby improving the attractiveness of the rural areas as an alternative to the big cities. The programme was evaluated in 1982.

The various existing programmes, including the MUWSP, were terminated in 1989 and all remaining work was put into one hat, the new Integrated Water and Sanitation Programme. However, all water activities were abruptly put to a halt due to the diplomatic break between Kenya and Norway in 1990. Meanwhile the diplomatic relations are normalised again, but the water programme was never revived.

When MUWSP started in 1974 it was intended to go on for five years. However, the progress turned out to be slow, there was a considerable cost increase and the population in the towns increased above expectations. The programmes success would have been jeopardised if Norad had not continued beyond the planned five years. After the evaluation in 1982, Norad established a stronger management and follow-up by introducing a Programme Coordinator, direct procurement, 100 % Norad financing and more targeted use of expatriate personnel. In 1985, 25 projects were completed and 9 new started.

2.2 Achievements

Additional to physical interventions in about 50 towns, the programme over time also included support to the establishment of a water laboratory, offices and warehouses in some of the towns, support to the Kenya Water Institute (KEWI), training of staff, and a high number of expatriate personnel. Also a Water Use Study was introduced and during the later years emphasis was put even more on training and O&M, health education and sanitation aspects.

Upon completion in 1989, and the integration into a new programme, the MUWSP was regarded as a reasonably successful programme. The previous frustration about slow progress, cost increases, the rapid growing towns and problems with finding a correct time to stop the interventions must today be perceived as a success rather than a failure. As explained above, the

official Kenya policy was to make these towns more attractive in the competition with the bigger cities. The rapid population increase in these cities must be understood as a proof that this policy was successful. The need to continuously expand the projects in the towns must therefore rather be seen as a sign of success.

Additional to the mentioned expatriate assistance and software components, it seems that about 55 towns located all over Kenya received some sort of intervention. However, the interventions need not always have to been very significant. In some places maybe only a few pumps and a pumping main, or a storage tank or an electric generator. In some places Norad came back after some year and supported disconnection of the generators and the connection to the national grid. Some places may only have received health education or participated in the Water Use Test Study. The field visit revealed that it was not always possible to recapitulate what the interventions had been during those years. But most towns did receive planning, design and construction of complete water supply or sewerage schemes.

The following gives a brief overview of the schemes visited during this study. Please note that some of the towns below did receive support on several occasions. E.g. Naivasha did receive WS extension support additional the sewage treatment plant, Kisii and Homa Bay received WS support about around 1980. We have here only included physical infrastructure positively identified by staff interviewed on site. The percentage figure in parenthesis indicates the current functionality of the Norad-supported investment. "Unfinished" signifies that work stopped before completion due to the diplomatic break between Kenya and Norway in 1990. The paragraph number corresponds with the location on the map in Annex 1:

1. **Naivasha Sewerage (100 %):** Oxidation pond system commissioned 1984. Capacity 43,000 person equivalents (pe), 22,000 pe connected, 56,000 pe in Naivasha today. The design is good, the plant is fully functional as planned and treats 570 m^3/d. The treatment plant (TP) has 5 employees. The sewage tariff is collected jointly with the water tariff. The tariff is currently 21 KSH/m^3 for water, 75 % of this for sewage and 100 KSH/m^3 for septic tanks. Water demand today is 7,000 m^3/d. 3,500 is supplied from bore holes (BH). Future plans, a gravity scheme from 40 km away with capacity 20,000 m^3/d, possibly jointly with Nakuru. Major problem is to expand the sewage collection network, no funds available today. High electricity costs 70,000 KSH/month. Land is available for expansion.

2. **Njoro Water Supply (90 %):** Rapid sand filter treatment, storage and distribution commissioned 1981. Raw water from bore holes. While the treatment plant is fully operational, except the dosing equipment, it has been disconnected and only chlorine is administered by gravity. The explanation is that the water quality is good enough without treatment. Two out of three bore holes are operational. The scheme suffers from obvious lack of proper maintenance.

3. **Londiani Water Supply (100 %, unfinished):** This project was overall about 40 % complete when the diplomatic break came about. By Norad: Pump house, electrification of intake, 3 original pumps, 800 m 200 mm pumping main, booster station with 50 m^3 tank, rising main from booster to main storage, main storage 30 % complete by Norad, distribution from main storage 20 % complete, 10", 8" and 6" – all working today. The main storage tank is still not completed. The treatment plant itself was never started. Today's production is 5,000 m^3/month. The demand corresponds to 5,000 pe. No new investment since Norad "left".

4. **Keroka Water Supply (100 %, unfinished):** Keroka was severely affected by the diplomatic break. The plan was full rehabilitation of the existing scheme with intake,

pumping, treatment improvement, storage and distribution. Only electrification of the intake, some minor improvements and excavation at the booster station was done before the work stopped. Keroka received some funds from the El Niño programme in 2002 to rehabilitate intake, rising main, treatment, booster station, a storage tank and dosing equipment. The dosing equipment is not working any more but otherwise the plant seems to be quite well maintained.

5. **Kisii Water Supply (100 %):** Support from Norad was possibly[19] only a replacement of a 3 km old PVS rising main to 14" G.I. pipe in ~ 1986. it works excellent today with no bursts. Kisii is a big town today and the scheme works overall fine. It has received funds over the years from WatSan initiatives and UN Habitat. Today's design capacity is 6,000 m^3/d and actual production is 1,600 – 3,000 m^3/d – the electrical capacity is too small. Only air blower pumps are not working, meaning that the filters cannot be properly cleaned.

6. **Rongo Water Supply (100 %, unfinished):** Affected by the diplomatic break. Commissioned 1978. Support from Norad rising main 2.5 km from TP, 6", 4" and 3" – all working. Not done was the intake, pumps, treatment plant, storage and distribution. Has received CDF funds. Daily demand is 600 m^3. Rongo has today a population of 22,000.

7. **Homa Bay Water Supply (100 %, unfinished):** Affected by the diplomatic break. State of Norad supported completion: TP 80 %, 1,500 m^3 storage tank 100 % except fittings, raw water rising main 100 %, Distribution lines 75 %, Pumps 0 %, Offices 90 %, Electricity 0 %, Fencing 100 % - all working today. Received El Niño funds in 2001 and completed the whole scheme which now is working. Are today receiving some funds from UN Habitat for distribution extension. (The person interviewed refers to another project where he worked during the Norad period, Sagana Water Supply in Kirugoya District. It is a gravity scheme commissioned in 1986 and is still working perfectly today.)

8. **Kendu Bay Water Supply:** There was no person present when the team arrived and it was not possible to enter the premises. The scheme is working, but the Norad supported investment and status today could not be verified.

9. **Kakamega Water Supply:** Kakamega is on the MUWSP intervention list, but it was not possible to establish what had been done. The scheme is working. Some funding has been received from Finland.

10. **Bungoma Water Supply (100 %, unfinished):** Apparently, Bungoma urban did not receive direct funding from Norad (although on the intervention list), but some smaller projects in its vicinity. They all stopped before completion due to the diplomatic break.

    a. **Ndalu Water Project (100 %):** Spring protection, 50 m^3 and 100 m^3 storage tanks, Lister pump, 2" 6 km pipeline – all working today with same equipment. 47 km pipeline was not done and is still pending. Population 22,000.
    b. **Lukhuna Water Project (100 %):** Protected high-yield spring. 50 m^3 sump, 100 m^3 storage, 11 km pipes, PVC and G.I. Everything works fine today. 32 km pipeline not done and still pending.

[19] The assistance may probably have been a lot more that this, but this could not be confirmed on site.

c. **Mabanga Farmers Training Centre (100 %):** Spring protection, 50 m^3 sump, pumphouse, pump/engine, steel elevated tank 25 m^3, 3 km pipeline and some house upgrading – all working today. 12 km pipeline not done.

11. **Turbo Water Supply (100 %):** Rapid sand filter scheme commissioned in 1984 and rehabilitated in 1986 when electricity was installed. This is a complete project working fine also today. The chemical dosing pumps have been disconnected and all dosing is done by gravity. Design weakness is that they are pumping water directly to consumption. The plan is to pump to a new elevated storage tank which can feed the consumers by gravity. Further plans are to procure new pumps and new gravity feeders.

12. **Iten Water Supply (50 %):** Iten as supported by Norad was only one bore hole and distribution. The bore hole was rehabilitated in 1999 and finally in 2002 replaced by new bore holes. The pipeline is however in use. In the meantime, Iten has received a complete new scheme with proper treatment at a new location closer to the town centre.

13. **Chepkorio Water Supply (100 %):** Chepkorio works, except for the chemical dosing pumps which also here have been disbanded and replaced by gravity solutions. However, the plant suffers from very bad maintenance routines. The intake area is silted and the treatment plant has been disconnected albeit working. Since one year there is a new manager and it seems that the maintenance may be picking up again.

14. **Kipkabus Water Supply (50 %), unfinished:** Only the intake, the offices and staff houses were completed before the diplomatic break. This is still working. They received some funds in 1995 to build the treatment facilities. It seems to be half finished but has then stopped. The project as such is in very bad shape and suffers from bad maintenance and follow-up.

15. **Limuru Sewrage Project (100 %):** Limuru is a very nice-looking oxidation ditch type sewage treatment facility, recently completely rehabilitated. It has always been working as planned. Norad sponsored five persons to the Kenya Water Institute (KEWI). They were affected by the diplomatic break and GOK accepted to sponsor the last year.

16. **Kiambu:** Kiambu is on the MUWSP list but it was not possible to establish the type of intervention.

17. **Ngong Water Supply:** Ngong is on the list, but it was not possible to establish the type of intervention.

18. **Kangundu:** Kangundu is on the list, but it was not possible to establish the type of intervention.

19. **Machakos:** Machakos is on the list, but it was not possible to establish the type of intervention.

Considering the overall very similar scores for those projects where the Norad supported intervention is known, it is reasonable to assume that the score would be similar in those towns where the intervention is not known. However, we find it more correct to leave these out and to average only town with confirmed current status.

It is not surprising to find working water supply and sewerage schemes in these towns. Actually, 100 % of the schemes are working at different levels of quality and regularity. Over the years the towns have had a significant population increase, and they have become important hubs for the

surrounding rural communities. Some of them have also received additional infrastructure funding, partly from the government and partly from donors. What is impressing in the above review is that when we single out the Norad supported investment in these cities, 91 % is still working. Considering that this investment was the very beginning of infrastructure interventions for the major part of these cities, and the time elapsed since then, we must admit that the result is impressive. We must also assume that these initial investments actually did trigger off the wanted attractiveness and the corresponding growth in the cities, and that MUWSP in that sense has been a success. The GOK policy behind the MUWSP did work. This has also been confirmed by the interviews carried out by the team in Kenya.

3. North perspective

By "north perspective" we try to present some perceptions from the Norad files, Norad staff (then and now) and experts who worked in Kenya during those year. Based on archive search and interviews we have tried to throw some light on the following issues:

- Was the work done during those years relevant for Kenya's needs?
- What about the effectiveness and efficiency, i.e. output as final result and output compared to resource input?
- Could things have been done significantly different? Perception of 'good' vs. 'bad' work?
- What did characterise the 'thinking' during that time compared to today's views on WS development cooperation?

We are well aware that these questions, while being quite demanding in themselves, are still limited in a development perspective and cannot adequately cover all aspects of Norway's involvement in Kenya during those years. That is also not the intention of this review. The TOR says that the review shall be "limited in size and descriptive in nature", signifying that we are focusing exclusively on the water development components, how the support was/is perceived by stake holders and how it looks today, 17 to 33 years after the interventions.

3.1 Relevance

There is a common understanding that there was a very relevant need to try to do something to improve living conditions and thereby the attractiveness of the smaller towns in Kenya. The official GOK policy was that the MUWSP should contribute to this effect. Another programme addressed itself to the rural communities. This was supported by Sida. Improved water supply and sanitation were important measures in this respect.

While the programmes were quite technical in the beginning, software components, like e.g. water use, health aspects and O&M, came up very strong towards the last half of the period.

The use of expatriate personnel was quite extensive in both line and advisory positions in the ministries and local government. During the first years Kenya did not have sufficiently qualified personnel to cover all ministry positions. The gaps were filled by expatriates. But there were always Kenyans in major lead positions.

The chosen technology is considered adequate for the environment in which it was supposed to operate. Sewage treatment was needed due to health reasons and because in many cases rural communities used water downstream of the town for drinking.

3.2 Effectiveness and efficiency

The perception is that the work was very effectively carried out and that there was a very high production output. From the archives we can however see a frustration about an apparently slow implementation process in the towns. The projects had actually problems in coping with the population growth, and there was naturally a corresponding cost increase. It is probably correct that there actually was a slow progress, but hardly anyone carried the notion then that this actually was a sign that the policy behind the MUWSP actually did work. The towns became more attractive![20] At that time this was perceived more as a frustration which affected the progress of work. From 1982 Norad actually cut some red tape by introducing an expatriate project coordinator, direct procurement and 100 % financing. The programme then picked up speed.

It is not within the mandate of this study to look at cost/benefit ratios but we must assume that it may be high due to the high number of expatriate personnel. However, expatriate personnel were unavoidable during that time and we would suggest keeping the expatriates out of the equation. It is the perception of the personnel interviewed that the efficiency was generally very satisfactory.

3.3 Perception right vs. wrong

The general perception about the people interviewed is that most of the applied approach and methodology was right and successful. However, the work was during the initial years very technical and output oriented. This was adjusted later on when more software components were introduced into the programme.

The recipient responsibility concept was not yet a firmly established policy, but in spite of this it was applied fully in Kenya, both in the priority setting and in the decision-making process. The issue of sustainability and O&M was however weak during the first years, but came full into the programme later.

The evaluation in 1982 confirmed that the water programme had been "making a vital and positive contribution towards the provision of potable water to consumers". A serious problem identified in the evaluation study was a serious inequity in that non-connected consumers had problem in benefiting from the new schemes due to an inadequate number of water kiosks and public stand posts. Additionally, it was also established that smaller consumers paid proportionally more for water that the larger consumers.

Strangely, the evaluation also states that it cannot be said that the MUWSP has contributed to the GOK Growth Centre Strategy, "which appear to have been abandoned, but it is definitely contributing to the development of infrastructural services in smaller urban centres in the country". It seems strange today that the high population increase in the towns was not interpreted by the evaluation as a result of this policy.

After 1982 it is generally agreed that the programmes profile was very good and balanced between technical and non-technical components. Support was provided to physical investment, laboratory and quality issues, Kenya Water Institute, master studies, O&M, water use, hygiene education, etc. We believe that the following eight years did confirm that the support actually has contributed to increased attractiveness in these towns.

[20] We cannot assert that this was the only reason for population increase in the cities, but probably water was one of several important factors.

3.4 Thinking then vs. now

It would seem that the approach was quite idealistic and very practical. It was a clear policy to do as much as possible in shortest possible time and there was a readiness to cut red tape in order to achieve this, particularly after the evaluation in 1982. This is a fundamental question raised by several of the persons interviewed: Is it better to leave the pace of work to the local recipient with a considerable lower output as result, or is it better to utilise the potential force of the donor to benefit as many deprived towns as possible within the set time?

Intensive use of expatriates in the field was a typical feature of the donor cooperation during the 1970s and 1980s, not only for Norad but for most donors. Expatriates on Norad's payroll came almost completely to an end during the 1990s. It is however a general opinion among the people interviewed that in both Kenya and Tanzania during those years this was unavoidable and that also the high number was needed. The common perception is that certain pragmatism is needed in the use of expatriates. Even today some programmes and projects will benefit from the presence of international experts. The question is who shall provide them – Norad, consultants or other donor government agencies?

The importance and concept of community participation, hygiene education and sanitation was not as developed at the inception of the program as it is today. However it became successfully integrated in the programme with time.

4. South perspective

When it comes to the 'South perspective', we did ask the same questions as described above for the 'North Perspective' in order to see how the perspectives and perceptions between the two correlate. A seemingly clear difference in perspectives between North and South is, as the experience was in Tanzania, that while North is quite preoccupied with development cooperation principles like 'recipient responsibility', right vs. wrong, etc., the South seems to possess a more pragmatic perception: To satisfy the towns' needs for drinking water and improved livelihood – regardless of the applied theory behind. Therefore, the following observations are largely positive in most aspects, simply because such a high number of towns received water supply and sanitation improvements during a period of 16 years – and the fact that these interventions actually did trigger off a positive development over the years to come.

4.1 Relevance

People interviewed in the Ministry of Water and Irrigation, at River Basin and District Levels, who was involved during those years and who still works in the business, confirm as with one voice that the assistance given to Kenya's minor urban towns during this period was very relevant to the country's needs, very relevant in terms of choice of technology and very relevant in terms of approach and methodology as regards the implementation process. As one senior official put it: "Norad's support sparked development, this is still not much appreciated today. Norad was ahead of the other donors, both within water supply and sanitation". Another official said: "Norad's support has been very useful for the communities and it still is" (signifying that in some places there has been little investment after Norad's involvement and that they still benefit from the original investment).

4.2 Effectiveness and efficiency

Maji representatives in Kenya who were involved during the implementation period are of the opinion that the work of the expatriates within the Maji system vas much needed during that time and that the cooperation with their local counterparts was very useful and effective. There is a general perception that the high number of expatriates was relevant.

The staff interviewed also expressed the opinion that it was right to take as much advantage as possible of the presence of expatriates by focusing on a high-output implementation strategy, particular in an urban setting like the MUWSP.

4.3 Perception right vs. wrong

It has not been possible find any perception of anything "wrong" about the Norad support as seen from the view of the people interviewed. On the contrary, there is a clear opinion that support after 1982, i.e. the combination of physical intervention, support to KEWI and master studies, focus on sanitation, hygiene and water use and operation and maintenance, was a very right approach. As one Maji officer put it: "This is what we are focusing on today in our new sector reform process, Norad was 20 years ahead of time!"

4.3 Thinking then vs. now

There is no doubt that the GOK's official Growth Centre Strategy formed the original basis for the MUWSP. The idea was to try to relieve the urbanisation pressure on Nairobi and Mombasa by increasing the attractiveness of several smaller towns throughout Kenya. According to the evaluation in 1982 this official strategy was not so apparent any longer in 1982. However, the interventions continued until the diplomatic break in 1990, by the time these town had seen population increases beyond expectations. It is therefore beyond doubt that the infrastructure investment in the towns attracted development. If this development really had any relief effect on the urbanization processes of Nairobi and Mombasa is not known by this study.

People interviewed are of the opinion that the high number of expatriate assistance was relevant for Kenya during those years. Today, of course, the situation is different. The country is in a positive development, the water sector reform process is well under way and the approaches and methodologies for development are correspondently modified.

When discussing the current needs for expansion and new investment in the towns most people interviewed express the view that there is time to introduce a new donor. The perception of long-term sustainability through active use of a tariff structure and GOK priority within Kenya's own capability does not seem to have taken hold yet.

4.4 Impact

The impact is clear to see: The combination of hardware and software support to the around 50 originally minor towns had an immediate positive effect while at the same time triggering off continued expansion and development. The most unfortunate towns are those affected by the diplomatic break in 1990, in the sense that work stopped before completion and that very few of the towns have received additional funding since then.

4.5 Lessons learned

The lessons learned in the MUWSP are largely positive and may briefly be summarised as follows:

- The basic idea of the MUWSP of increasing the attractiveness of, and provide development in, minor towns throughout Kenya did actually work.

- The size of the task was underestimated and the initial implementation pace was too slow. Population and cost increases were perceived as complicating factors.

- With the employment of an expatriate Project Coordinator, introduction of direct procurement and 100 % financing in 1982 the programme picked up speed.

- Until 1982 the programme had a mostly technical profile. Then software components were introduced with considerable success.

- Some critics were of the opinion that the technology used was generally too advanced. The view of all people interviewed however is that the technology was very appropriate for these projects located in an urban setting. This study has confirmed this view.

- In a sustainability perspective, the experience has shown that for all infrastructure development assistance, it is of vital importance to start with an analysis of the environment in which the investment shall operate. What are the needs? What is the capacity in terms of resources and knowledge? Where are the gaps and which are the critical issues?

- As regards technology, only one hardware component was broken down and removed in all water supply schemes visited: the electrical chemical dosing pump. Without exemption, all automatic dosing pumps had been removed and replaced by makeshift gravity solutions, mostly of very low and simple quality, incapable of measuring correct dosage of chemicals.

- Schemes affected by the diplomatic break in 1990 have, with few exceptions, not yet been able to recuperate and complete the planned investment.

- Some visited schemes suffer under bad O&M and most schemes visited are in need of upgrading, expansion and new investment.

5. Correlation North vs. South

Relevance: There is full agreement between North and South regarding the issue of relevance. As for Tanzania, there is however a difference in perspectives. While the North is focusing more on the overall sector context and structural weaknesses, the South focuses on the recipient perspectives, people's needs and consumer benefits.

Effectiveness and efficiency: Both sides do agree in the opinion of an effective and output-oriented project management organisation within the GOK bureaucracy. The slow implementation pace in the towns during the initial years seems not to have been strongly felt among the actors in the field. However, for Norad, including for the 1982 evaluation, this was an important issue that led to management changes and improved performance of the programme.

Perception right vs. wrong: There is full agreement about all positive sides of the programme. Some negative issues have been voiced by the North side only, which however were identified and improved during the last years of the programme:

- Slow implementation pace – improved with new management set-up.
- Original focus was too technical – improved by successfully introducing a number of software components.
- O&M component was originally week but was later an important issue.
- The high number of expatriate personnel was relevant during that period.
- The cooperation between expatriates and local personnel was successful.

- The high output was considered correct considering the rapid growth of the towns.
- The technology was relevant for the urban settings.

Thinking then vs. now: It is full agreement that the idea behind the MUWSP was to make minor towns in Kenya attractive for development in shortest possible time. To achieve this, and to catch up delays in the programme, there was a readiness on both sides to shortcut the GOK bureaucracy by creating a semi-autonomous project organisation.

Both sides do agree that the use of expatriates was very relevant during those years. It would still be relevant but not in the same high numbers as before. Today Kenya is much better equipped with qualified water sector staff.

After some years with high focus on physical outputs and technology, software components, like e.g. capacity building and training, O&M, health and hygiene and water use aspects came into the programme. During the last years of its existence the MUWSP was a programme which to a great extent was carried out along the same lines as programmes are being implemented today.

To the extent that there may have been some myths surrounding Norad's support to the MUWSP in Kenya, we may conclude the following:

- The basic idea of the MUWSP, i.e. to increase the attractiveness and promote development in about 50 minor towns throughout Kenya has been successful, and Norad's support did trigger continued investment.

- The size of the task was underestimated and the initial implementation pace was too slow. However, the rapid population increase in the towns may also be interpreted as a sign that the programme actually did succeed in creating development.

- The technology was appropriate for the prevailing urban settings. This is the confirmed opinion of the people interviewed and also proven by the positive current state of the schemes found by this study.

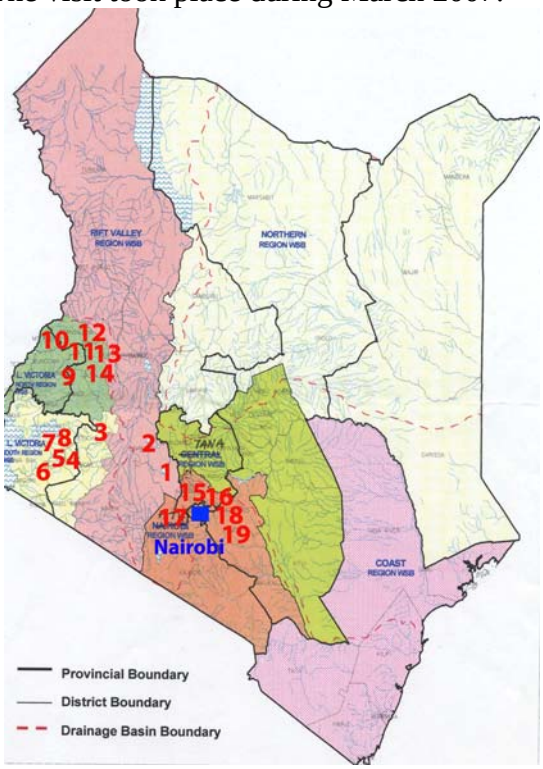
- The use of expatriates, also in the relatively high number, is still today considered to have been relevant considering the situation in Kenya during that time.

Attachments

Annex 1: Travel itinerary

Date	Activity
19	- Meeting Norwegian Embassy - Meeting Min. of Water & Irrig.
20	1. Naivasha sewage treatment 2. Njoro water supply 3. Londiani water supply
21	4. Keroka water supply 5. Kisii water supply 6. Rongo water supply 7. Homa Bay water supply 8. Kendy Bay water supply
22	9. Kakamega water supply 10. Bungoma water supply 11. Turbo water supply
23	12. Iten water supply 13. Chepkorio water supply 14. Kipkabus water supply
26	15. Limuru sewage treatment 16. Kiambu water supply 17. Ngong water supply
27	18. Kangundo water supply 19. Machakos water supply
28	- Meetings Min. of Water & Irrig.
29	- Meeting Norwegian Embassy

The visit took place during March 2007.



Kenya:

Annex 2: People consulted

We apologise for possibly misspelled names and acronyms from handwritten notes.

Date	Name	Institution	Position
19/3	Mr. Jan Arne Munkeb	Norwegian Embassy	Councillor
	Eng. Peter O. Mangiti	Min. of Water & Irrigation	Deputy Director Water Developm. Pgm. Coord.
20/3	Mr. Daniel M. Ndiritu	Naiwasha Water and Sewerage Company	Ag. MD
	Mr. John M. Kaigana	Naiwasha Water and Sewerage Company	Head WSS
	Mr Euachim Uwanui	RVWSB	Superint. Water
	Mr. Stephen Mbugua	RVWSB	District Water Officer
	Mr. Fredrick I. Mwangi		Divisional Water Officer
	Mr. Josphai Kimong	RVWSB	Njoro Div. Water Officer
20/3	Mr. Samuel Chepkwony	Kericho District	District Water Officer
	Mr. William Sigei	Londiani Division	Divisional Water Officer
21/3	Mr. Silvester Gumo	LVSWSB	Asset Devel. Manager
	Mr. Moses Chirande	Keroka WS	Deputy O&M Officer
	Mr. Daniel S. Ondiek	Keroka WS	Operator
21/3	Mr. Wilson M. Nyasimi	New Kisii WS	Plant Mechanic
	Mr. M. Onyonke	New Kisii WS	Technician
	Mr. Elias Gisarro	New Kisii WS	W. S. O.
	Mr. Thomas Ongoro	Keroka Area	Area manager
	Mr. John M. Mosoti	Kisii Water Co.	
	Mr. Francis S. Musonye	Kisii Water Co.	Head Construction
21/3	Mr. Edwin Mikoyah	Rongo District	Ag. DWO
21/3	Mr. David G. Nyakundi	Homa Bay WS	Ag. Manager Kisii WS
21/3	Mr. Patrick Ombongo	LVSWSB	Managing Director
	Mr. Silvester Gumo	LVSWSB	Asset Devel. Manager
22/3	Mr. Simeon Kinyangi	Kakamega District	DWO
	Mr. John W. Simiyu	Kakamega District	DWO's Office
	Mr. John Bosco Simba	LVNWSB	
	Mr. Tamas W. Sikolia		DWO
	Mr. Thomas O. Mboga	Kakamega District	Revenue Collector
22/3	Mr. Bernard Mulele	LVNWSB – Turbo	Inspector Water
	Ms. Vinaywa S. Nancy	LVNWSB – Turbo	Superint. Water
	Ms. Doreen J. Changnom	LVNWSB, Uashin Gishu	Inspector Water
23/3	Mr. John K. Too	LVNWSB - Keiyo District	District Water Officer
26/3	Mr. Solomon Adika	DWO Office Kiambu	Deputy DWO
	Mr. Willy P. Wainaina	Kiambu Water Co.	MD KIWASCO
	Mr. C. K. Muriga	Kiambu Water Co.	DWO

26/3	Ms. Margaret Maina	Limuru WSC	Ag. MD
	Teresa Mwaura	Limuru WSC	Ag. TM
	Mr. J. M. Kyuhe	Limuru WSC	Ag. CM
27/3	Mr. Jones M. Mwaka	Machakos District	Dep. DWO
	Mr. Martin Ngaa	Machakos District	DWO
	Mr. Boniface N. Muinde	Machakos District	DWO
	Mr. Kimanga Mutwa	Machakos Water Co,	MD Machakos Water Co.
28/3	Mr. Jan Arne Munkeby	Norwegian Embassy	Councillor
	Eng. Robert N. Sakubia	Min. of Water & Irrigation	Director Water Services
	Eng. Peter O. Mangiti	Min. of Water & Irrigation	Deputy Director Water Developm. Pgm. Coord.
	Mr. Fred K. Mwango	Min. of Water & Irrigation	Senior Deputy Director Water
29/3	Ms. Elisabeth Jacobsen	Norwegian Embassy	Ambassador
	Mr. Jan Arne Munkeby	Norwegian Embassy	Councillor

Annex 3: Documents consulted

No	Documents
	Norad archive research: Project documents, agreements, progress reports, reviews, completion reports, notes and letters.
	Norad: Evaluation Report 2.82. Water Supply Kenya.
	MFA Norway: Evaluation Report 2.90. Operation and Maintenance in Development Assistance.