AGUASAN Workshop Series

Caring and Integrated Management for Sustained Water and Sanitation Services

Conserving existing services allows future investments in upgrading and scaling up

Report on the 21st AGUASAN Workshop
Gersau, Switzerland
June 27 to July 1, 2005

A workshop for project staff, consultants and desk officers

Compiled by Urs Karl Egger, Skat

skat_ Swiss Resource Centre and Consultancies for Development

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Report of the 21st AGUASAN Workshop

"Caring and Integrated Management for Sustained Water and Sanitation Services - Conserving existing services allows future investments in upgrading and scaling up"

Gersau, Switzerland, June 27 to July 1, 2005

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Content

Abbreviations

AGUASAN	Swiss community of practice of professionals working in the field of water supply and environmental sanitation in developing countries
AOM	Administration, operation and maintenance
CIM	Caring and integrated management
Helvetas	Swiss Association for International Cooperation
ICTs	Information and communication technologies
IWRM	Integrated water resources management
MDGs	Millennium Development Goals
NGO	Non-governmental organization
O&M	Operation and maintenance
PPP	Public-private partnership
PSP	Private sector participation
SANDEC	Department of Water and Sanitation in Developing Countries at the National Research Center for Water Pollution Control
SDC	Swiss Agency for Development and Cooperation
seco	Swiss State Secretariat for Economic Affairs
Skat	Swiss Resource Centre and Consultancies for Development
TBW	Technische Betriebe Weinfelden (municipal utility of Weinfelden)
W&S	Water and sanitation
WSP	Water and Sanitation Programme of the World Bank

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Abstract

English

The 21st AGUASAN workshop to the topic “Caring and Integrated Management for Sustained Water and Sanitation Services” explored the potential for maintaining the water supply and environmental sanitation services with a caring and integrated management (CIM) practice.

A caring and integrated management is an entrepreneurial mindset and management practice caring in a responsible and proactive way for sustained services and satisfied clients, considering at the same time in an integrated manner all relevant factors for an effective and efficient management system like infrastructure or human resources.

In an introductory case study the caring and integrated management practice of the Technische Betriebe Weinfelden, the utility of the municipality Weinfelden (Switzerland) was presented. The potentials of a CIM were further explored with four case studies from Mozambique, Peru, Bangladesh, and Mauritania.

The participants concluded that a caring and integrated management practice is a useful and practical way to improve the management of existing water supply and sanitation systems and to ensure the sustainability in the long run.

Français

Le 21ième séminaire AGUASAN intitulé “Caring and Integrated Management (CIM) for Sustained Water and Sanitation Services” a exploré le potentiel d’une pratique dite de "gestion engagée et intégrée" dans le but d’une pérennisation effective des services d’approvisionnement en eau et d’assainissement.

Une gestion engagée et intégrée correspond à une façon de penser et à une méthode de gestion responsable et proactive en vue de services durables et de clients satisfaits, tout en tenant compte de manière concomitante de l’intégralité des facteurs qui sont à la base d’une gestion efficace et efficiente – comme les infrastructures et les ressources humaines.

A travers une étude de cas introductive, la méthode de gestion engagée et intégrée des Services Techniques de Weinfelden, le service public de la municipalité de Weinfelden (Suisse) a été présentée. Le potentiel d’une telle gestion a alors été exploré davantage à travers quatre études de cas venant du Mozambique, du Pérou, du Bangladesh et de la Mauritanie.

Les participants ont conclu qu’une méthode de gestion engagée et intégrée constitue un moyen utile et pratique pour améliorer la gestion des systèmes d’approvisionnement en eau et d’assainissement existants et pour garantir leur durabilité à long terme.

Español

El Taller No. 21 de AGUASAN sobre el tema “Servicios de agua y saneamiento sostenibles a través de una gestión dedicada e integral” tuvo como objetivo investigar el potencial de un novedoso enfoque para asegurar la sustentabilidad de servicios de agua y saneamiento, denominado “gestión dedicada e integral” (CIM en inglés).

La gestión dedicada e integral es un enfoque y una práctica de gestión empresarial caracterizado por una actitud dedicada, es decir, responsable y proactiva en la persecución de su objetivo, que es lograr un servicio sustentable y clientes satisfechos. Es una gestión integral en el sentido de que busca tomar en cuenta todos los factores relevantes para que el servicio sea eficaz y eficiente, como por ejemplo la infraestructura y los recursos humanos.

Como introducción se presentó la experiencia práctica que la empresa de servicios públicos de la municipalidad de Weinfelden (Suiza) ha podido hacer con el enfoque CIM. Luego en el taller se debatió en detalle acerca del potencial que CIM podría tener en contextos varios, tomando como base estudios de caso provenientes de Mozambique, Peru, Bangladesh y Mauretania.

En conclusión, los participantes del taller coincidieron en que la práctica de gestión dedicada e integrada puede ser útil para mejorar la gestión de sistemas de agua potable y saneamiento existentes, contribuyendo así también a asegurar la sustentabilidad a largo plazo de estos servicios.

1 Introduction

1.1 About this report

This is the report of the 21st AGUASAN Workshop to the topic “Caring and Integrated Management for Sustained Water and Sanitation Services - Conserving existing services allows future investments in upgrading and scaling up”. The workshop took place in Gersau (Switzerland) from June 27 to July 1, 2005.

The report summarises the presentations, the discussions, the results of the working groups, and the insights of the participants. The report is not a conceptually sound publication about caring and integrated management, but reflects the insights of the participants at the workshop and the results they have achieved.

1.1.1 Workshop CD

More detailed information is provided on the workshop CD that is appended to this report in the back cover containing:

- PowerPoint presentations.
- Photos taken during the workshop.
- Photos of flipcharts and pin boards.
- Some short movies taken during the workshop.

1.1.2 Structure of the report

The report is structured as follows:

- Section 1 gives an *overview* of the 21st AGUASAN Workshop, the background, the goal and objectives, the expected results and the workshop procedures.
- In section 2 the *conceptual framework* of the workshop is described: what a caring and integrated management is and what has to be considered if a CIM is used to run water supply or sanitation systems.
- In section 3 the *introductory case study* of the workshop is presented: the caring and integrated management approach of the Technische Betriebe Weinfelden.
- In section 4 *case studies* from Mozambique, Peru, Bangladesh, and Mauritania are outlined. These four case studies were presented at the workshop and analysed in detail by working groups.
- Workshops are always a learning experience for all participants. In section 5 the *insights and remarks* of the participants of the workshop are listed.
- Section 6 gives an overview and insights in the *workshop organisation and methodology*.
- In section 7 further *resources* to the 21st AGUASAN workshop and for the preparation of the 22nd AGUASAN workshop are presented.

1.2 AGUASAN and the AGUASAN workshop

AGUASAN is an interdisciplinary Swiss community of practice addressing water supply and sanitation in developing countries. The members belong to several Swiss development and research organisations. They meet four times a year in Switzerland to share experiences and information related to the sector, to discuss successes, problems and innovative solutions, and to develop practical recommendations.

Since its formation in 1984, representatives from SDC, Skat, Helvetas and SANDEC have been mandated by AGUASAN to prepare and organise an annual summer workshop in June. These 5-day workshops have taken place up to now in Rotschuo, an ideal retreat at the borders of the lake Lucerne in Switzerland.

The AGUASAN workshops always have brought together project field staff, desk officers, researchers, experts and consultants for a week of exchange, in-depth reflection and learning on selected actual development issues.

The AGUASAN workshops foster a mutual learning experience, aim at utilising the broad and multi-faceted knowledge and experience available among the participants, by mutually elaborating strategies and conceptual tools that will be of practical use in development cooperation.

1.3 AGUASAN workshop 2005

1.3.1 Background

Enhancement of coverage is endangered despite new investments

Annually, 1.5 billion US dollars are invested in new water supply and sanitation (W&S) systems resulting in significant achievements. These investments are necessary to achieve the Millennium Development Goals (MDGs), but their effects are reduced, because previously installed service facilities run out of service far too early. Even if 65% of all facilities are operational, special attention has to be paid to the remaining 35% of broken down and malfunctioning systems, as the cost of their rehabilitation bindes important investments in new infrastructure.

The reason for these failures seems to be mainly related to insufficient institutional, technical, and economic frameworks, and ineffective management practices. The deterioration often starts when the task of operation and maintenance is too quickly handed over to local management. The importance of proper operation and maintenance becomes most obvious when looking at the practical benefits of properly

Story – Lesotho, Africa

"For years I have accompanied a very successful country programme carried out by the Department of Rural Water Supply in Lesotho. The programme lasted from 1978 up to 2005. During this period the local capacity could be enhanced and the external support continuously reduced. What I observe now, unfortunately, is an asset run-down cycle. Capacity building for preventive maintenance of the water supply systems was insufficient and caused more frequent breakdowns. This raises the attention of politicians who interfere. The result is a patchwork and not a systematic operation, maintenance and rehabilitation. This situation demotivates the staff responsible for the water supply system and the supply becomes more and more unreliable. The consequence is low willingness to pay and therefore the money for preventive maintenance is lacking."

told by Karl Wehrle

working facilities: e.g. "water is flowing from the tap today". Doing simply "patch repairs" just to get the system running again somehow with the least expenditure, will sooner or later lead to system breakdowns, which fall beyond the financial, technical, and managerial capacities of the institution in charge. This "erosion process" often develops gradually with the system becoming more and more unreliable until the complete breakdown of the service provision, well ahead of the expected end of service life. The rehabilitation of such systems requires in most cases similar investments as for new systems.

With caring and integrated management practices to sustainable W&S services?

During the past decades many efforts were undertaken to improve operation and maintenance, e.g. through private sector involvement or enhanced capacity building at different levels. Undoubtedly, some improvements have been achieved. However, the measures taken so far are not sufficient. When looking at the success cases both in the South and in the North, a more caring and integrated management practice seems to have a potential for improving the maintenance of water supply and environmental sanitation services. A caring and integrated management practice may be a response to lacking commitment and responsibility of decision-makers, service providers and users for their services.

Story – Flores, Indonesia

A few years ago I visited a village on the Indonesian island Flores. I went there as a consultant to explore possible solutions for a breakdown in the water supply system of a small village. On my visit I took a chairman-to-be of another village with me so that he can see how the situation in other villages look like. Two years later I met the chairman who accompanied me again in his village. I was very happy to see that the water supply system in his village worked very well. He had even started with a tree nursery. In our conversation he told me that he was shocked about the bad situation in the village we visited together last time, and he decided then to make it better. As I could see this was not only a vision, but also a real commitment and the benefits were already visible, like for example a tree nursery."

told by Karl Wehrle

In the context of development cooperation caring and integrated management practices can be defined as an entrepreneurial mindset and management practice caring in a responsible and proactive way for sustained services, considering at the same time in an integrated manner all relevant factors for an effective and efficient management system like infrastructure or human resources.

1.3.2 Goal and objectives

The workshop focussed on *existing* water supply and sanitation systems and how they could be managed better. The overall goal was to contribute to the achievement of the MDGs through a more effective *safeguarding of the already achieved service levels* so that investments lead to true additional coverage.

The *specific workshop objectives* were:

- To identify and develop key elements and processes for the establishment and implementation of caring and integrated management practices that make best use of locally available resources.
- To get to know and understand the key ingredients, which make caring and integrated management sustainable and effective.
- To identify effective processes and to create advocacy material (facts and figures) to set priorities in order to safeguarding the achieved service levels before investing into new infrastructure.

The *key questions* addressed in the workshop were:

- What are the key principles, elements and processes of a sustainable caring management?
- Which are the key ingredients making a caring and integrated management effective?
- Which are the enabling factors (e.g. regulatory framework) for an effective and caring management?

A number of additional questions were raised:

- Are there differences of a caring and integrated management in rural settings or small towns?
- How can local resources (human resources, finance, know-how) be better utilised with a caring and integrated management?
- How can poverty responsiveness be preserved or enhanced in a system with an entrepreneurial approach?

1.3.3 Expected results

The expected results of the workshop were:

- A common understanding of a caring and integrated management is achieved, and the key principles, elements and processes for the establishment and implementation of the approach are identified and developed for different contexts.
- Key ingredients for caring and integrated management practices are identified.
- Case studies presented in the workshop are further elaborated with the following outputs:
  - The existing management models and the activities carried out (or not) are reviewed, e.g. achievements under community-based maintenance or raising of local funds.
  - The potential for improvements through caring and integrated management practices is explored.
  - Concrete measures are identified and developed, which contribute to the enhancement of sustainable services through caring and integrated management practices.
- If the approach of a caring and integrated management shows to be a key for sustainable W&S services, strong arguments for the promotion of this approach are developed.

1.3.4 Workshop procedures

AGUASAN workshops always maintain a *holistic view*. SDC's sector policy serves as a basis since it provides a practical framework regarding a balanced development strategy, which considers institutional, economical, technical, social, skills and know-how, and environmental aspects.

Given the scale and significance of the challenge, the workshop was organised in a way so that everybody could take advantage of the experience that the workshop gathers. Together with contributions from experienced practitioners it was explored what caring and integrated management practices contain and what potential they have to contribute to the workshop goal. Based on these insights collectively new or improved solutions to suit the case studies were identified. This procedure was a *learning experience* for all, and the participants hopefully can implement their learnings in their own working situations.

The *procedures* during the workshops comprised in particular:

- Creating a common view and understanding of the workshop theme.
- Being introduced to the term, elements, processes and potential benefits of caring and integrated management practices.
- Collecting new insights and trying to apply them in the participant’s working situation.
- Being exposed to a practical case study presenting caring and integrated management practices in the Swiss context.
- Proceeding in an open and participatory manner.
- Using visual aids and a variety of teaching materials.
- Having time for informal exchanges in a friendly setting.

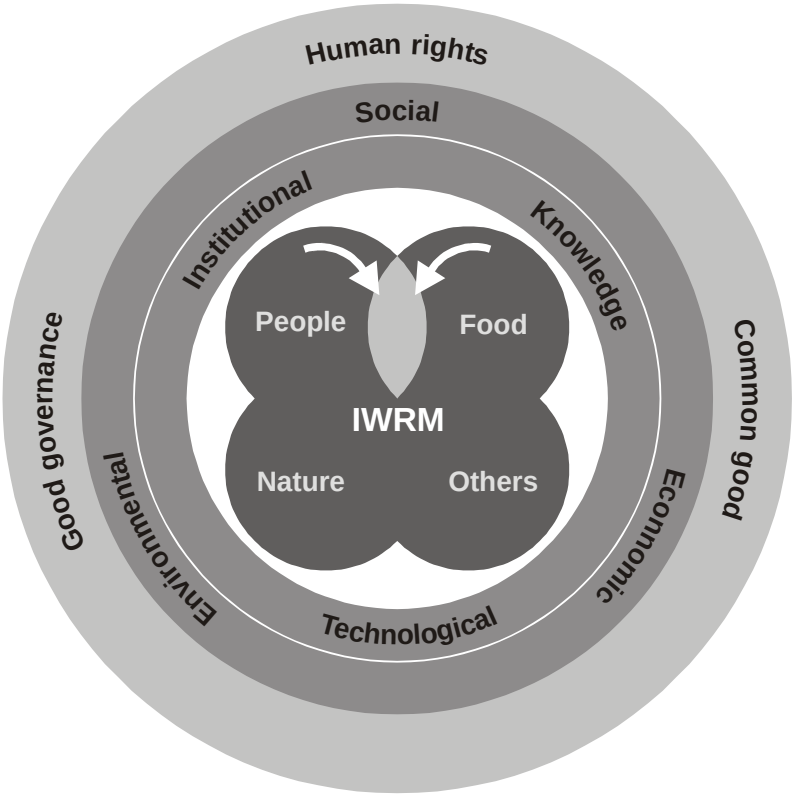
2 Conceptual framework

2.1 Water and sanitation – the perspective of SDC

Since its beginnings the AGUASAN workshops were funded by the Swiss Agency for Development and Cooperation. Its policies, strategies and activities form the background for the AGUASAN workshops.

The main focus of SDC's activities in the water and sanitation sector is given by the Millennium Development Goals, which stipulate to halve the number of people with no access to *safe drinking water and basic sanitation* by 2015. To achieve these goals it is necessary to increase the performance of the sector and to double the financing.

In its strategy "Water 2015" SDC lays down its policy principles and strategic guidelines for an *integrated water resources management (IWRM)* that covers water for people, nature, food and other uses like industrial activities. The three basic values for SDC are human rights, water and sanitation as common good, and good governance. Six strategies support an integrated water resources management approach: the economic, social and environmental strategies, and the institutional, technological and knowledge strategies.



These policy principles and strategic guidelines form the framework for SDC's activities. The expenditures in the water sector amount to 60 million Swiss francs a year, which corresponds to about 12% of the bilateral budget. In addition, the multilateral department spends another 30 million Swiss francs a year for the water sector.

Presently, there are about *125 projects and programs* ongoing in the water sector. In terms of geographical distribution, Asia, Africa and Latin America account for 25% each. 15% is attributed to Eastern Europe, and 10% goes to the Middle East and to international programmes and projects. Thematically, 55% of the budget is used on water supply and sanitation projects.

In SDC's water sector activities special attention is paid to the *participation of the private sector (PSP).* SDC developed in partnership with the Swiss State Secretariat for Economic Affairs (seco) and the Swiss reinsurance company Swiss Re guidelines to improve the private sector participation in water supply and sanitation projects.

The guidelines comprise:

- *Policy principles* for policy makers and decision-makers, a framework, basic values and key factors.
- *Implementation guidelines* for the responsible management and operational staff giving guidance how to put the key factors into practice.
- *Tool container* for operational staff and management with a collection of existing tools and best practices.

Another priority of SDC is to *raise awareness and to increase the commitments for improving sanitation* in developing countries by making use of the potential of the private sector. A brochure “Sanitation is a Business” has been published which shows new approaches for providing sanitation.

Another example of SDC’s work with the private sector is the SwissRe Award that awards the price of 150’000 Swiss francs to good *watershed management* projects.

Achieving the Millennium Development Goals not only requires a better sector performance but also more funding. That’s why SDC currently explores the feasibility of a *solidarity percent* (Wasserrappen). The idea is to charge the water bill with a certain percentage that would be used for additional water and sanitation projects implemented by NGOs. First estimates indicate that about 16 million Swiss francs could be expected per year.

SDC supports a *networking strategy* on the local, national, regional and global level. In April 2005, SDC participated in the 13th session of the Commission of the United Nations for Sustainable Development (CSD 13) in New York. The CSD has been created following the Conference of Rio de Janeiro on the environment and development in 1992 and is now in charge to coordinate the follow-up. The twelfth and thirteenth session concentrated on the subjects of water, sanitation and human settlements. This last session determined the political options and practical measurements in order to reach the MDGs and surmount the obstacles in these sectors. Even if the negotiations were difficult (e.g. to agree on cost recovery), a treaty was signed by all participating countries.

From these various activities of SDC result a number of conclusions with relevance to the 21st AGUASAN workshop. In order to reach the MDGs an increase of the performance in terms of management and an extension of water and sanitation systems is required. Whether private or public actors provide these services is not the issue. What counts is the *performance*:

- To be able to serve the poor the services to an affordable price.
- With at least partial cost recovery for sustainable operation and extension of the systems.
- With (if necessary) a clear and non-discriminatory system of subsidies.
- With a sustainable water management and environment protection.
- With a long term and sustainable supply chain for spare parts and services.

2.2 Caring and integrated management

The overall goal for every water supply system is that safe water runs from the tap of the users 24 hours 365 days a year, at present and in the future. The same is true for sanitation services: they should be provided or work continuously without interruption.

Crucial elements for sustained water and sanitation systems are an effective operation and maintenance and an anticipatory renewal, upgrading and scaling up.

Human beings are at the core of all water supply and sanitation systems. Basically all would like to have well-functioning water supply and sanitation systems and are willing to do their best. What preconditions or systems are necessary that this also comes true? The AGUASAN Workshop 2005 highlighted in particular two aspects: a caring and integrated management.

2.2.1 Caring management

People and their commitment are pivotal for sustained water and sanitation systems. This is taken into account by a *caring management* that can be defined as follows:

> *A caring management is an entrepreneurial mindset and practice of people who care in a responsible and proactive way for sustained services and satisfied clients.*

In the centre of a caring management are the attitude, the behaviour, and the commitment of people who are involved in setting up and maintaining water supply and sanitation systems. The following aspects describe this in more detail.

A caring management:

- adopts a *holistic view* considering all external and internal aspects of water supply and sanitation systems, the software like human resources or know-how, and the hardware like infrastructure;
- nurtures continuously *trustful relationships* to all stakeholders that are relevant for sustained water and sanitation services;
- pays high attention to the *constraints and needs* of all involved stakeholders;
- communicates in an *open, intelligible and transparent* way;
- *trusts in the capability* of people, assigns *clear responsibilities*, *monitors* the performance, and is *ready to help* if necessary;
- *creates favourable conditions* so that all involved stakeholders can work together in an efficient and effective way;
- continuously enables all involved stakeholders to achieve better results by *further training*;
- takes an *anticipatory perspective*, invests in maintenance and considers possible future changes in a proactive way;
- ensures the operation and maintenance and sustained services in an optimal and balanced way with *common sense* (e.g. not only the minimum operation and maintenance is carried out, or too luxurious solutions are avoided);

- pays attention that the services are provided with *high quality*;
- considers sustained water supply and sanitation services as a *duty* of all involved stakeholders;
- is aware that well functioning water supply and sanitation systems are *rewarding*, contribute to everyone's satisfaction and a better living quality.

2.2.2 Integrated management

An integrated management is a way of managing water supply and sanitation services that focuses not only on certain aspects as for example technology, but takes into account also the whole system: the *core group* of actors that makes actually things happen and the *surrounding context*.

Depending from the situation the dimensions of the context may vary. SDC's sector policy on water supply and sanitation, for example, pursues an integrated approach with six strategic interrelated areas, which need to be considered in a balanced manner:

- Social area: equity, empowerment, participation, etc.
- Economic area: financial viability, accountability, cost recovery, efficiency, etc.
- Environmental area: natural water cycles, preservation, regeneration, contamination, etc.
- Institutional area: good governance, competent institutions, collaboration, etc.
- Technological area: appropriate technologies, household centred approach, etc.
- Knowledge area: Information, education, training, learning, communication, etc.

Another approach for integrated management for water supply and sanitation systems highlights the following:

- The context: legal and political system, stakeholders, the environment, the local culture, etc.
- The management system: finances, human resources, corporate culture, information, etc.
- The technical system: water mains, pump system, wells, reservoirs, water cleaning, etc.
- The security system: quality control, inspections, redundancy, emergency planning, etc.

These two examples show that there is no unique approach for an integrated management. The best approach depends from the particular perspective and objective. However, always important is, that projects and programmes take into account an integrated and holistic view of the reality.

2.2.3 Checklist for a caring and integrated management

During the workshop a list of elements was compiled that are relevant for a caring and integrated management. This list may serve as a checklist. It is, however, not exhaustive. Depending from the situation adjustments may be necessary.

Factors in the core system enabling a CIM – in particular for water supply systems	
Guiding framework	☐ Long-term vision; clear, accepted and known strategy ☐ …
Organisation	☐ Structures and processes with clearly defined rules, responsibilities and decision-making ☐ …
Human resources	☐ Committed and convinced management ☐ Staff motivated and trained ☐ Plans for personnel development and career development ☐ Team building ☐ Job security ☐ Good communication ☐ Active conflict management ☐ …
Finances	☐ Solid financial situation ☐ Financial reporting and controlling ☐ Ensured revenue ☐ Long-term investment planning ☐ …
Security	☐ Alarm system ☐ Prompt intervention ☐ Quality management system ☐ Monitoring of supply of water in quantity and quality ☐ …
Technology	☐ Appropriate and affordable technology ☐ Preventive maintenance ☐ Laboratory for water quality assurance ☐ Replacement and rehabilitation plans ☐ Water meters on micro level ☐ Minimum reliability level of system ☐ …
Controlling	☐ Information management ☐ Transparency ☐ Accountability ☐ Monitoring and evaluation system ☐ Incentives and sanctioning system ☐ …
Customer services	☐ Good services ☐ Systematic and prompt handling of complaints ☐ Satisfied clients ☐ …
Management of external relationships	☐ Active communication with relevant stakeholders like politicians ☐ Ensure proximity to stakeholders and create multi stakeholder platforms ☐ …
Factors in the context enabling a CIM	
Political	☐ Political willingness and commitment ☐ Water supply and sanitation on political agenda ☐ Transparent contract and rules for operator ☐ Accountability of operator ☐ Enabling and appropriate legal framework ☐ Good governance ☐ Decision-making at the lowest level ☐ …
Social	☐ Well informed population with capacity for decision-taking ☐ …
Economic	☐ Willingness to pay ☐ …
Environmental	☐ Sustainable use of water resources ☐ Protection of water resources ☐ …
Technical	☐ … ☐ …

2.3 Change management to a CIM

At the centre of a caring and integrated management of water supply and sanitation systems are the involved stakeholders, the staff, their working spirit and their attitude. While already many reflections have been made how an integrated management of water supply and sanitation systems should look like the AGUASAN workshop 2005 addressed also the question how a caring spirit and integrated management can be created and sustained.

A caring and integrated management of water supply system does not fall in place by itself but has to be actively promoted, implemented and managed. Often, it will be necessary to question established beliefs, practices and methods and changes will be required. Change always provokes resistance. For this reason, a proactive change management will help to effect these changes.

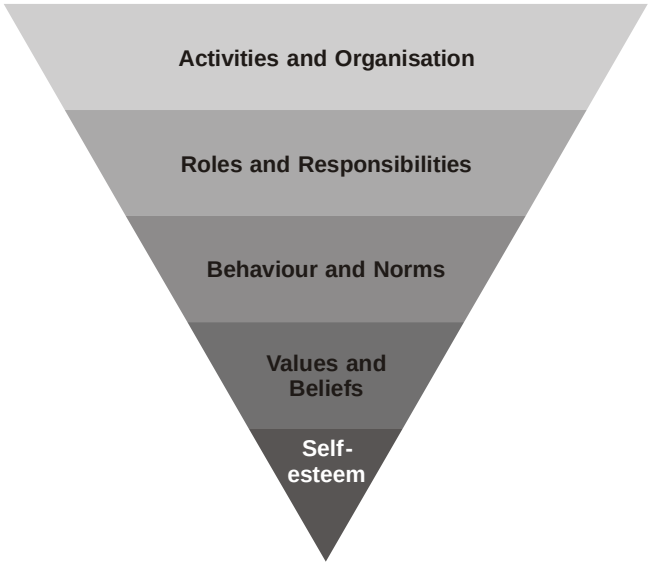
2.3.1 Consider the technical and the social system

Change management states that an organisation comprises always a *technical subsystem* (hardware) and a *social subsystem* (software). Both are important and interdependent. One system cannot be addressed without considering the other one. Only if they are considered together an organisation will work. Change therefore means always changes in both systems: in the social system and the technical system. A change manager has therefore always to work on both levels.

Hardware	**Software**
Buildings	People
Rooms	Teams
Means	Networks
Structures	Knowledge
Processes	Motivation
	Atmosphere

2.3.2 Be aware of different layers

Change processes occur at *various layers*. In the upper layers are the activities and the organisation, roles and responsibilities. On the lower levels more and more personal and individual issues are touched. To introduce change in the upper layers is simpler and faster: it can be carried out in several months. When change touches the lower layers, it is more complex and will soon take a couple of years. Change managers always have to consider these different layers and to be aware that changes in the upper layers affect also the lower layers and vice versa.



2.3.3 Consider changes in different contexts

Change not only “happens”. Behind changes are always forces which drive or force the change, like for example:

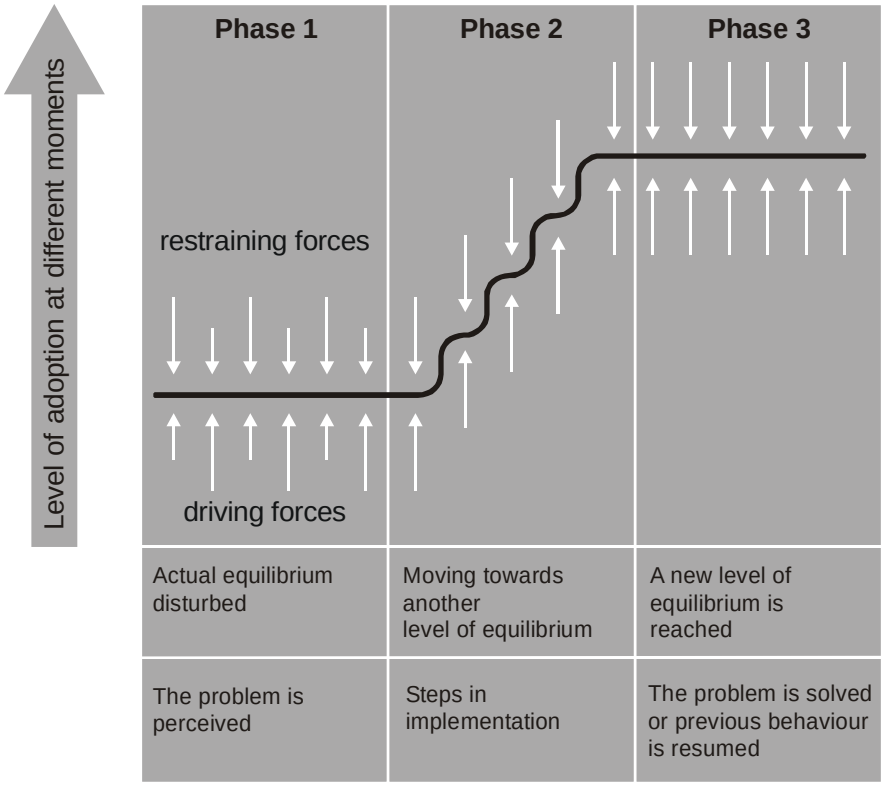
- Environmental changes: social, cultural and political changes, new mega trends in the society, economic break downs, increasing competition, changing laws.
- Technological changes: new technical developments, new products, new knowledge, new concept and methods.
- Changes in competition: new alliances, new co-operation.
- Market changes: new expectations and needs of the clients.
- Changes of the stakeholders: changing public perception by media reports.
- Changes of human resources: new employees, new management, new generation, new priorities, new expectations, or new ideas.

2.3.4 Analyse driving and restraining forces

A force field analysis is a useful way to master change. The force field analysis was developed by Kurt Lewin in the early 1950s. Lewin suggested that any given situation could be analysed in terms of „driving forces“ and „restraining forces“.

Driving forces are the forces, which cause or support some type of change from the status quo. *Restraining forces* are those forces that are hindering a change in the status quo. Once these forces are identified, a change manager will be able to understand why the current situation is resistant to changes or why changes occur.

Once this analysis is carried out it will be easier to develop strategies either to maximize the driving forces or to reduce the restraining forces. In this way the chances are increased that the desired changes will occur. Lewin detected - and experience proved it - that the most successful strategies were those that focused on ways to *diminish the restraining forces*. So it is worthwhile to keep eyes and ears open, to listen carefully and to identify doubts, worries, fears, and reservations of people.



2.3.5 Unfreeze, move, refreeze

Change management follows a three-step process:

Step 1: Unfreeze

- Create the insight that change is necessary and readiness of the relevant people.
- Support the process and be conscious of the reality.
- Carry out a situation analysis, define weaknesses, directions and goals.
- Develop a common vision.

Step 2: Move

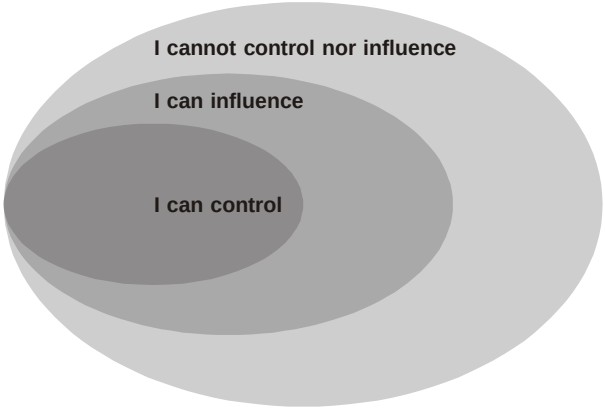
- Realise the necessary changes.
- Follow a systematic project management.
- Address questions of cultural change.

Step 3: Refreeze

- Once the change has taken place stabilise the situation and secure the change.

2.3.6 Spheres of influence

During the change process change managers have to be aware that there are three spheres of influence: the sphere he or she can control, the sphere that can be influenced, and the spheres that cannot be controlled nor influenced. Successful change managers limit their efforts on the feasible issues, while respecting the reality being outside of their influence.



3 Introductory case study – Technische Betriebe Weinfelden

3.1 Municipality Weinfelden

Weinfelden is a small town in the northeastern part of Switzerland near to the Lake of Constance, which marks also the border to Germany and Austria. About 10’000 people inhabitants live in this centre of a region with a population of 30’000 inhabitants. Weinfelden is located in the middle of a valley at the river “Thur” that feeds the ground water around the town.

In Weinfelden more than 200 companies in the sectors industry, trade and services offer about 6’100 workplaces. The largest company is a paper mill. As the production of paper needs a lot of energy and water, this factory is an interesting customer for the local energy and water supply enterprise, the *Technische Betriebe Weinfelden*.

Weinfelden is a municipality. The legislative body is the municipal assembly with 30 members who are elected for four years. The primary role of the assembly is to control the municipal council, the executive authority consisting of seven members. The president of the municipal council is working full time, the other members part time. The annual budget of the municipality is about 26 million Swiss Francs (about 21 million US Dollars).

3.2 Set-up of the Technische Betriebe Weinfelden

In Weinfelden electricity, natural gas, communication services (radio, TV, Internet, telephone) and drinking water are provided by the TBW, a multi utility company that also offers other services like the service of heating installations, advice for energy supply or for the illumination of municipal or cantonal facilities.

The logo with the four bars shows the four independent sectors forming together an integrated whole. The logo also shows that the four sectors together are stronger than each alone and create positive synergies for the TBW.

TBW
Technische Betriebe
Weinfelden AG

Organisation

The organisation is structured in four divisions:

- Administration, finances and accounting
- Water supply and natural gas
- Electricity and communication
- Technical services

The *management* consists of the director, the commercial director and the technical director. The management is supervised by the *board* consisting of representatives of the municipal assembly, the municipal council and selected other members. They are elected until they resign and they are compensated for their work.

The TBW are organised as a *company under private law* with a share capital of 5 million Swiss Francs that is *fully owned by the municipality*.

The TBW employ 35 staff, a skilled and motivated crew. The age of the staff members ranges from 16 to 65. The youngest with 16 years is an apprentice. Most staff members stay very long in the company, two of them already more than 35 years. In the TBW almost every staff member is a specialist with a very specific job description. This makes the substitution of staff very challenging.

Water supply and natural gas

The TBW provide the drinking water for the municipality. In 1891 the springs at the “Ottenberg” hill next to Weinfelden didn’t supply enough water any more for the population living in Weinfelden. A new spring with more water was found at the other side of Weinfelden. In about 9 months a first pipeline with a length of 3.6 kilometres was constructed from the Neuberg to Weinfelden including a reservoir, which is nowadays still integrated in the water supply system. But also this water was not sufficient to cope with the growing demand. In 1926 the first ground water well, and in 1953 another one were tapped and integrated in the water supply system that is still working today.

Every year approximately 1.1 million cubic meters of water are sold. The biggest and most attractive client, however, the paper mill is not connected to the network as it has its own wells. The business volume in 2004 mounts up to 2.1 million Swiss francs. The invested capital adds up to 60 million Swiss Francs. The price for 1000 litres drinking water is about two Swiss francs. The network consists of 90 kilometres of pipes and of about 1000 water meters.

The year 1965 was very dry with little rainfall. The groundwater table was lower than ever observed. The management of the water supply and politicians decided to search for new solutions to ensure sufficient water even for the next generations. They found a well near the river Thur in a forest with water that was described by the inspector in his report as “clear as crystal”. From this well pipelines to the North and the South of Weinfelden were constructed. Today 15 municipalities are connected to this well of the regional water supply organisation named “Regionalwasserversorgung Mittelthurgau”. The task of the regional water supply organisation is the extraction and the transport of the water. The municipalities are responsible for the allocation of the water. The TBW are an important partner of the regional water supply organisation. They operate and run the pumping station and the pipes in the region north.

The TBW also deliver *natural gas* directly to 10 municipalities located in the middle part of the Thur valley. The pipe network amounts to a length of 280 km. About 3’800 customers consume about 400 giga watt-hours natural gas in the year. The largest consumer is the industry. A brick-making plant and a milk powder–factory need together about 40 percent of the delivered natural gas. In addition, the TBW offer a service for gas heating systems that is being used by 2’000 customers. A filling station for natural gas cars was constructed two years ago. The overall business volume in 2004 was about 16 million Swiss francs and the over all invested capital amounted to 120 million Swiss francs.

Electricity and communication services

The TBW supply *electricity* for the area of the municipality. They don’t produce electricity, but buy and resell it to 5’500 customers who are connected to the electricity network. The whole network measures about 250 km. Two electricity feeds, a high-voltage power ring line and more than 80 transformers ensure a good redundancy and supply security. Yearly, about 115 giga watt-hours are sold, most of it to the industry. In particular the paper mill in Weinfelden needs a lot of electricity. The business volume in 2004 mounted up to 16 million Swiss francs and the invested capital to 90 million Swiss francs.

The TBW offer a variety of *communication services*. In 1992 they started with the construction of a fibre optic network. Today, the TWB offer radio and TV transmission to about 4’000 customers. Three years ago the TBW also have started to offer high speed Internet access with a capacity of about 10 mega bits per second. Already 300 Internet users have chosen this service and the trend is showing upwards. Another service has just been established: telephone via Internet. The first telephone accounts have been registered in May 2005.

3.3 Change to a public enterprise under private law

Since 2002 the TBW are organised as a shareholding company under private that is owned by the municipality. Various reasons have led to this new organisation structure under private law.

Previous situation

Before the reorganisation took place the energy and water supply facilities were fully integrated in the municipal administration. This included also the human resources management. Daily

politics influenced the work heavily. Sometimes decisions were taken by people of the administration and politicians without the necessary experience and know-how. For this reason it happened that the staff responsible for the energy and water supply facilities was “swamped” with questions by politicians. Long-term planning was difficult as politicians are elected for 4 years and every 4 years the staff got new instructions.

The political processes needed a lot of time hampering a proactive management. In a liberalised energy market, for example, the price for energy is a result of the market. In Weinfelden, however, the parliament decided on the price and it was not possible for the staff to negotiate prices with their customers. Moreover, the political parties had controversial views about the price level for energy. One group favoured high prices to create an incentive to save energy, the other group voted for low prices to promote business development.

Reasons for change

The responsible people for water and electricity were convinced that a new organisational and legal form was necessary:

- In the European Union the markets for natural gas and electricity were liberalised. It was expected that this will happen soon also in Switzerland.
- More autonomy was necessary to decide proactively in a dynamic market.
- More flexibility was needed to make the necessary investments for a liberalised market.
- The flexibility was lacking to quickly adjust the prices to market prices if required. Prior to the re-organisation the price was always calculated according to the costs and not defined by the market.

Establishing a basis for the reorganisation

The first step in the reorganisation was a careful analysis of the situation at that time. The municipal utilities started a project named “Stratus” together with the utilities of the neighbouring municipalities Frauenfeld and Kreuzlingen. In a workshop the necessary preconditions were explored so that the new challenges of a future liberalised market could be met. The following conclusions were drawn:

- The direct political influence had to be changed and the creation of a company under private law was suggested.
- The culture in the current organisation is good and should be transferred in the future.
- The water supply has to be privatised together with the other sectors, even if the political opposition would be higher.
- The municipal utilities of Weinfelden already have their own financial reporting. This has to be transferred to the new company as well.
- One of the core strengths of the multi-utility service are the synergies like for example lower construction costs, only one administration for several services, and the clients have only one contact partner for several services.

Challenges of communicating change

After this basic analysis the future direction was clear. Before the reorganisation could start, a number of crucial actors had to be convinced. First the inhabitants had to accept this new organisational form and to vote for a change. In addition, it was also crucial to convince the politicians, as they would loose the direct influence on operational questions to some extent.

Last but not least, also the staff of the municipal utility had to be convinced that the jobs would remain attractive and save.

The task was even more difficult as the utilities of Weinfelden had made a good job despite the difficulties mentioned above. In addition, a number of failures of privatisation or reorganisation at that time were used in a simplistic way to influence the public opinion.

A number of arguments for and against the reorganisation were propagated:

Arguments for the reorganisation	**Arguments of the opposition**
▪ The municipal utilities need more options for a liberalised market und more flexibility. ▪ The quality of the public service does not depend from the legal form (public or private law). ▪ A service for everybody is guaranteed in the future too. ▪ All services (water, electricity, gas, communication) have to be transferred in the new company. Otherwise the synergies cannot be realised. ▪ The substance of the municipal utilities will not be "sold". The municipality will hold all shares to 100 percent. ▪ There will be no suspension of staff. If this would be necessary, the liberalised market will create other jobs. ▪ Enhancement of awareness of having an accountable service provider coupled with increased client orientation.	▪ It works now. Why should something be changed? ▪ The service for all is no longer guaranteed. ▪ The provision of electricity and gas by a company under private law is acceptable, because the markets in Europe are liberalised. Water, however, is a public good and should remain a public service. ▪ The public has financed the infrastructure that will be handed over now to a private company. ▪ The new company will reduce the number of staff.

Proactive communication strategy

Facing this difficult situation the municipal utilities developed a proactive communication strategy comprising the following elements:

- Communication is top priority.
- Proactive communication: action instead of reaction: "We tell clearly what we want."
- The communication is open and distinct: problems will be discussed in a transparent manner.
- We can't and won't do it right for all.
- Direct discussions with the opposition and organisation of debates with critical groups.
- Open information regarding staff. Make them messengers for the company, as they are asked by friends and the family about their opinion.
- Good, clear and open information to the private clients because they will decide in the end.

Communicate, communicate, communicate…

The management of the municipal utilities took the lead in communicating with all stakeholders that are concerned by the reorganisation. They started immediately with the information of the politicians and afterwards of all other stakeholders in countless debates and discussions. In addition, interviews were given to the press and the local television.

For the staff of the municipal utilities monthly information rounds were organised. The management in particular paid attention that the staff really understands what is planned. All the more it was worrying when the management found out that part of the staff was anxious about the future. Many more hours were needed to clarify the situation. And finally, the management encouraged convinced staff to persuade also their colleagues and friends.

… and finally a YES

The reorganisation and outsourcing in a company under private law owned by the municipality was finally accepted in a popular vote, although the margin was narrow as only 52 percent voted for a change.

In retrospect this decision was the right step. The organisation structure of the TBW is lean and effective. The strategic and operational management and the other different tasks are clearly assigned. In addition, a concise strategy has been formulated which will be implemented soon. And finally, the financial results of the TBW were positive in the last three years.

Conclusions

The conclusion is that not the legal form of an enterprise (under public or private law) is relevant but the *right basic conditions:*

- A professional and caring, strategic and operational management.
- Sufficient flexibility in the organisation, in the administration, in pricing, and in the engagement of new staff.
- Short ways for decision-making.
- Open and transparent communication among all concerned stakeholders, in particular for the political stakeholders.
- Motivated staff.

Resistance always accompanies change, but this can be mastered by a *proactive communication strategy* (see also section 2.3):

- If the staff is convinced of an idea half of the way is made.
- Concerned persons were persuaded of the new model and made to involved persons.
- Of each political party at least one person could be convinced.
- Communication was always open and transparent.
- Open and clear information of all interested partners in good time.

3.4 The drinking water supply division

One of the four divisions of the TBW is the water division, providing drinking water for the municipality of Weinfelden in collaboration with the regional water supply organisation. In the following section it is described how the management system, the technical system and the security system looks like and how the staff cares for the water supply system.

3.4.1 Mandate

The Technische Betriebe Weinfelden have for each of their sectors – water, natural gas, electricity and communication – a separate contract with the municipality. So they have also a *concession contract* for drinking water supply defining the goals to be achieved.

The *mandate* is clearly defined. The TBW have to ensure the water supply in the municipality for 365 days a year and 24 hours a day. In addition, the water supply has to be provided in an efficient and sustained way. During the concession period the TBW have the exclusive right for operating the water supply. A mandate for third parties is explicitly excluded. In return, they are obliged to serve all living and working areas in Weinfelden. Moreover, the TBW have to guarantee to the fire brigade water in sufficient quantity and pressure to extinguish a fire all the time, at every point of the pipe system, stationary sprinkler installations included.

According to the contract the municipality has to *pay the costs for all public services* like the water supply and the maintenance of the fountains or the maintenance of the hydrants providing water for fire fighting.

The rate of return is also fixed in the concession contract. The TBW can define the *water price*, but it has to be endorsed by the municipal council. They are also obliged to *inform* the municipality about all operations related to water supply.

When the TBW became a company under private law the whole infrastructure has been transferred to the new organisation. There is, however, a *fall back clause* included. In case the TBW should become insolvent, the water supply infrastructure would fall back to the municipality.

3.4.2 Technical system for water supply

The pipe system has a length of 90 kilometres. For the construction different materials have been used, as every generation favoured another type of pipe. So the materials of the pipes in use range from cast iron, over steel and glass fibre to plastic tubes (Polyethylene).

Different water pressure zones

Ground water is extracted in the two wells called “Sangen” and “Untere Au”. With submersible pumps the water is directly delivered over the pipe network to the customers and also into the reservoirs in the first pressure zone. The *pressure zone 1* is located about 80 meters higher than the groundwater level and comprises a repository volume of 6’000 cubic meters in four reservoirs. More than 90 percent of the inhabitants and the whole industry are in this pressure zone. The 6’000 cubic meters cover the average daily water consumption. The maximum consumption, however, can rise to 10’000 cubic meters a day.

From the pressure zone 1 water is brought with pumping stations to the *pressure zone 2* situated again 80 meters higher. The volume of the reservoirs amounts to 600 cubic meters.

Again 110 meters higher on the highest point of the hill “Ottenberg” a reservoir for the *pressure zone 3* with a capacity of 150 cubic meters is located.

Water for emergencies

For emergency situations a special concept has been developed that is audited regularly by the cantonal department (see also section 3.4.4). The concept is revised every two or three years and the various reviews already have revealed several possibilities for improvements. To ensure a continuous water supply also in emergencies, the water supply system of Weinfelden is connected to other water supply systems in neighbouring municipalities. They would provide water in emergency situations, if there were a breakdown or blackout in the water supply system of Weinfelden. The regional water supply organisation is an important link in the supply chain and ensures a high overall security of water supply for all their members.

Investments

The pipe system of Weinfelden has an overall length of about 90 kilometres. The life span of the different pipe types ranges from 20 to more than 100 years, depending from the material of the tube, the surrounding soil, and the loading. The frequency of damages increases with the age of the pipes and the costs for maintenance and repairs have to be kept in mind as well.

In average, the pipes of the network in Weinfelden have a life span of 60 years. In order to always have a well-functioning water supply system it was decided to keep the average age of the whole pipe network around 30 years and every year 1'500 meters are replaced. An *investment plan* over five years ensures that the renewal projects are known in good time. Projects can be realised earlier or postponed if necessary. The budget is always balanced.

For other facilities, mechanical and electrical equipment the same renewal principles are applied. With a proactive and caring management the TBW start with the replacements in good time. Everybody respects the prospective planning and the investments for replacements: the municipal assembly, the board, the management, and the staff. They know that if less is invested than planned, then this burden will be handed over to future generations.

Construction of new pipelines

The distribution system is based on the global investment plan (GWP), which defines the alignment and the diameters of the pipe system. In addition, the TBW coordinates with the municipality, the canton and other organisations replacements or the construction of new pipelines. If this is done at the same time as road constructions or canalisation works all involved partners can save a lot of money.

The *actual construction programme* has to be planned carefully. First, the type of pipes to be replaced or newly constructed, of new machines and equipment have to be chosen. The whole water supply system of Weinfelden is designed with a long-term perspective. Therefore all materials and products are carefully chosen. Often, paying more and having fewer problems later is better than saving money and having a lot of difficulties. With careful choices investments are protected. Second, the costs of the project have to be calculated well in advance, because they have to be considered in the respective budget. The project can be started as soon as the budget has been approved and the planning is ready. Large construction work is outsourced to private contractors. During the construction the responsible construction manager has to ensure that the costs remain within the limits. A functional test and a final inspection are done before the project is handed over.

The TBW always try to learn and to improve their work. For example, when pipe systems are installed on private ground the owner, normally the farmer or the homeowner, is mandated to carry out the finishing work like paving or re-planting himself. There are no more complaints, as the owner will never complain about his own work. In addition, the experience has shown that costs have been reduced in the long run.

Maintenance

A pipe doesn't need the same maintenance as a gate valve or a pump. The maintenance work and the life span vary a lot. For this reason a quality management system was established that considers such differences.

Story – Proactive maintenance

"In the winter 2004/2005 a staff member detected on a snow-covered field, that the snow melted in the area where the water pipeline passes. A check showed a small damage of the pipe. With an instantaneous intervention, a bigger damage could be avoided."

told by Walter Krähenbühl

As the installed systems vary a lot written instructions are necessary. Responsible staff obtain checklists for the maintenance and the controls. On this checklist the staff has to report what they have carried out. In addition, the staff is encouraged not only to check the lists, but also to carry out work with open eyes and to write down their observations. These comments are important information for the management. Overall, the good and anticipatory maintenance of the facilities reduces not only the technical problems, but also the costs.

Reporting and Controlling

Every year an annual report has to be written. This forces the management to deal once again intensively with the actual situation, the state of affairs, the investments, the maintenance, the quality of water, and the human resources. At the same time the history of the water supply system is recorded and will also be available later. In case of a claim such recordings can help a lot.

As time passes the routine can blind the staff. Visits of external inspectors are therefore welcome and considered as chances for improvements.

Story – Positive effects of systematic controlling

"In spring 1999 the water quality in the filter well number 2 in a pumping station was poor. In the annual report heavy rainfalls and a very high water level of the river "Thur" were noted. In the year 2001 the water quality in the same well was poor again. There was no rainfall, but the water level of the river "Thur" was high again. Only then it became clear, that it was not the heavy rainfalls which endanger the water quality, but the level of the river. Since 2001 the filter well number 2 is taken out of operation as soon as the river rises to a certain level."

told by Walter Krähenbühl

3.4.3 Management system

Strategic and operational management

The management system of the TBW makes a clear difference between the strategic and the operational management. The strategic management defines the overall long-term strategy of the water supply facility; the operational management deals with the practical implementation.

The TBW apply a *management by objectives* approach. With every staff member individual annual objectives are formulated. In this way staff gets more liberty in the realisation of work and more personal responsibility too. Formulating objectives contributes also to the motivation.

The *controlling* of the whole organisation and system is also important for the operational and strategic management. With a management information system (MIS) the most important figures are collected every month.

The TBW are a *learning and open-minded organisation*. Learning does not only take place in the exchanges with external contacts, but also in regular exchanges of experiences on all organisation levels. Learning is further supported through trainings, further education, and special projects together with other water supply companies. An active exchange of information and know-how also takes place with professional organisations. The staff is encouraged to participate in events of professional organisations.

Corporate identity

The corporate identity and the logo give the TBW a clear face. This is, however, not enough. The management would like to have staff that identify themselves with the firm.

Ethical values are esteemed and other cultural values welcomed, even if this is not always a simple issue. The staff is encouraged to cultivate friendly relationships to their colleagues and to accept the other how he or she is. The personal motto of the Managing Director is: “There are no bad workers; at best they are only incorrectly instructed.”

The TBW are a technical enterprise. As in Switzerland still more men chose technical jobs the gender balance is uneven. Actually, 30 men and only 5 women are employed. The women are working in the administration and the men in the technical sectors.

Recruiting of new staff

The TBW are an enterprise with highly skilled staff. New staff is therefore recruited following a careful procedure. First, an exact job description is written describing the tasks and what the employee can expect. Because of the multifaceted operations and the unavoidable substitutions *teamwork is essential*. New staff must be willing to integrate in the team.

During the recruiting process at least the direct superior and the person who will have to work with the employee are present. If they are not fully convinced nobody is employed and a temporary solution has to be found. The principle is: *“It’s better to have no one than an unqualified one.”* This procedure motivates also the employed staff, as they see that the management demands a high qualification and experience if somebody would like to work in the enterprise.

Handling of faults

Errors can occur, but it is important that they are identified. They are considered as a learning opportunity and it is expected that staff *learn from these errors*.

Proposals and ideas for improvements are collected systematically. The staff has the possibility to submit suggestions in a letterbox and it is guaranteed, that every suggestion is discussed and judged. A personnel commission is responsible that the writer receives an answer in any case, be it positive or negative. Good suggestions are rewarded.

Members of staff have access to the management at all times and the doors are not only open in the figurative sense. All job-related and private problems are taken seriously.

Internal and external communication

Special attention is paid to the internal and external communication. *Internally*, information has to be provided in good time in an open and direct way. Possibilities for exchange are the weekly meetings, emails and the information boards. The “open door principle” contributes to interaction and communication too.

Top down information from the management is essential, but also bottom-up information is encouraged. Consequent reporting ensures that essential information arrives at the management level in short time.

Finally, the personnel commission and the regular direct information of staff contribute to a smooth flow of information.

Story – Caring for clients

“I sit in my office and write the presentation for the AGUASAN workshop. My secretary comes in and tells me, that she had a phone with Mrs Schmid who asked why the insurance has not been paid yet. In February we had a major pipe burst and the water caused damages at many buildings. She told my secretary, that she was so happy to see, that the director of the Technische Betriebe Weinfelden himself was present in her cellar at 3 o’clock in the morning.”

told by Walter Krähenbühl

Several ways and tools support the *external communication*. Last year a bulletin for the clients named “Contact” was established. It informs regularly about issues of water supply, details of the products and developments in the sectors energy, water and communication. In addition, a flyer with information about the quality of the drinking water is sent every year to all clients. Much information is also provided on the website.

The right *handling of complaints* contributes a lot to the good reputation of the enterprise. The same applies for the handling of breakdowns.

A proactive *communication with the local politicians* is the task of the management. This comprises attending the sessions of parliament and other events, the sponsoring of local and regional events, and an active collaboration in organisation committees of local events.

The management cares also for a *close relationship with the media*. In May 2005, for example, the local press of Weinfelden published an article describing a day with the person responsible for the operation and maintenance of the water supply systems. This article provided interesting information for everybody, was excellent for the publicity for the TBW, and motivated at the same time also the staff.

Last but not least *sightseeing tours* to the water supply facilities of Weinfelden are offered. Schools, clubs and political parties actively make use of this possibility.

Human resources

The most important resource of the TBW is their *staff*. Caring for the staff is not just a phrase, but also an attitude that is lived every day.

Continuous training considering the professional and the personal interests is guaranteed. As time passes all staff members get more and more direct responsibility. This has a positive impact on their motivation and they are proud of their job. *Job safety*, in particular in the energy sector, is very important. That’s why every year 2 or 3 days per person are invested for instruction and practical training.

The TBW are fully aware that they will only have well trained personnel in the future if they invest in the training of young people. For this reason, regularly *apprentices are trained* too.

The TBW pay *fair salaries* and they also guarantee fair social security insurance.

3.4.4 Security system

According to the concession contract the Technische Betriebe Weinfelden have to deliver clean water at all times. Fortunately, the water has not to be treated and can be delivered directly to the clients. Nevertheless, the *quality is strictly controlled* taking periodical water samples. The continuous monitoring of these samples is extremely important. Here skilled staff is in great demand because the smallest hints or minimal changes could point to a latent problem.

For the security of the water supply the *pipe network and the equipment is redundant*. If the

Story – Emergency Service

“Two months ago I got a call at home on Sunday morning at 2 o’clock. A woman told me, that she has no more electricity. What had happened? Our emergency number didn’t work. Fortunately, our customers know the telephone number of the managing director of the Technische Betriebe Weinfelden and are not afraid of waking him up. We could resolve the problem immediately.”

told by Walter Krähenbühl

water supply has to be cut off in some areas for maintenance, repairs or for other reasons, in any case reserve systems can be switched on so that there is no interruption of water supply.

All technical staff is integrated in the *emergency organisation*. Clients can call the responsible person for emergencies by phone around-the-clock. The emergency service is automatically informed by the technical alarms and by the fire alarms system.

The TBW work also in close cooperation with the local fire brigade. This ensures a good relationship from which both parties can learn.

3.4.5 Maintaining and improving the system

The TBW have established a water supply system of high quality. This is for them, however, not a reason to rest but to care for what they have achieved and to further improve the system in all sectors. The TBW have mapped out therefore a strategy and formulated the following mission:

"We are the innovative supply company for pipeline-bound energy, drinking water und communication in the region. We ensure the continuous modernisation and advancement of the company through a consistent seizing of market opportunities in our core businesses."

Four notions are important in this mission:

- *Innovative*: Some capacity is always reserved to explore new business areas and new ideas.
- *Continuous modernisation*: The condition of the whole infrastructure, systems and constructions is maintained and improved whenever possible.
- *Advancement*: In all sectors possibilities for new services continuously are seized.
- *Proactive*: Great attention is paid to new market developments.

Six corner stones – the strategy of a caring organisation

Based on their mission the Technische Betriebe Weinfelden have formulated six strategies for long-term success:

Strategy 1: Security of supply
The TBW strive to ensure a sound water supply in the long run. The equipment and the networks are always on a high technical level.

The established long-term planning system will help to accomplish this strategy, but continuous improvements are necessary too. That's why it was decided to implement a new quality management system for the TBW. The revision of existing concepts is very helpful and already new potentials for the improvement of the system have been found.

An important element of the supply security is the emergency system that is revised every year as well as the instructions for the service personnel. Further improvements of the system will occur through the replacement of two existent pumping stations and through the connection of the regional water supply system in the Thur valley with the Lake of Constance.

Strategy 2: Customer orientation
The TBW are always available to serve their customers. For this reason a new division "market and customers" or "marketing and sales" will be created. New services are currently developed in the energy and in the communication sector.

For the customers a whole range of services is available:

- A consulting service for any questions related to energy, water or communication.
- Check-up of installations, heaters, boilers, or washing machines.
- The website is kept up-to-date.
- The customer magazine "Contact" is distributed 3 times a year.
- Our services are presented at expositions and fairs.

Strategy 3: Finances
The long-term finance and investment plan and a rigid cost control ensure the current and future financial strength of the TBW. The goal is to have a balanced budget over years. For future investments and market risks reserves are set aside. Currently, the TBW have no debts. With the banks good relationships are maintained, as it may be necessary to take up loans for future investments in the next years.

Strategy 4: Attractive employer
The TBW would like to remain an attractive employer in order to keep the committed and well-qualified staff that cares for the services. For this reason a variety of measures have been taken:

- Offer of apprenticeships and vocational training, and sharing know-how with younger staff members.
- Regular events for the staff and the management like the two-day excursion that takes place every two years.
- Support for events organised by the personnel.
- Open, direct and complete top-down and bottom-up information in due time.
- Continuous sensitisation for job safety.
- Regular exchanges with the staff.
- An attractive working place.

Strategy 5: Open for cooperation
The TBW are always open for cooperation with other organisations and institutions:

- With other municipalities, e.g. for the provision of new services.
- With the cantonal authorities, like for example the department for environment.
- With local associations if they need support for their activities.
- With the auxiliary fire brigade.
- With local associations the contacts are maintained.
- Cooperation with supply companies is nurtured.

Story – Open for cooperation
"Two weeks ago a cycle race – the Tour de Suisse – passed through Weinfelden. Unfortunately, the premises of the fire brigade in the centre of Weinfelden were barred by the cycle race and they had to find a new location for these two days. The Technische Betriebe Weinfelden offered their services. We will find solutions for similar problems in the future too."

told by Walter Krähenbühl

Strategy 6: Environmentally conscious
The TBW would like to make a difference in environmental protection. The enterprise aims at reductions of the consumption of water and electricity, and sensitizes also their customers to save energy and water, for example by showing that all resources are precious and not inexhaustible. Special attention is paid to the protection of the ground water resources.

Questions and answers

The presentation of the caring and integrated management system of Weinfelden at the workshop triggered a number of questions. Walter Krähenbühl, the Managing Director of the Technische Betriebe Weinfelden, answered them as follows:

How was the business before the Technische Betriebe Weinfelden became a public enterprise under private law?
The business before was not that different. The development of the TBW has taken place over the last 100 years in an evolutionary way. With the six corner stones of the strategy the foundation for the future evolution is prepared.

What does it mean to work with less political influence?
The new legal and organisational structure under private law mainly served to ensure the already good management system at that time. We wanted to keep it even if there would be political changes.

What has changed for the client?
For the client not that much has changed after the reorganisation, but the TBW themselves have achieved a lot. So we could for example reduce the price for electricity, as we don't have to make a lot of profits. The price of water has not been changed. The customers, however, are better informed. They receive, for example, every year a leaflet informing them about the quality of the water.

What is the real basis for the pricing of the product or service?
The price is based on the production costs. About 20 to 25 percent of the water price is put aside for investments, about 5 to 10 percent for overhead costs.

Are there poor people who can't afford to pay for water?
Fortunately, all people are able to pay the water bill.

Do the TBW have the capacity for larger investments?
The long-term investment plan and the financial planning ensure that there is sufficient funding for maintenance, the salaries, and investments. In the past, savings have been made for future investments. Currently, an investment of 5 million Swiss francs is planned. If we have to take a credit the interest rate is low as we have a good rating.

Do the TBW plan to increase the number of customers in the future?
In the overall concept the service area does not only cover Weinfelden, but also surrounding municipalities. It is, however, not planned to integrate the municipalities, but to offer them services. The basic question is not, whether the TBW are interested to grow, but whether the others municipalities would like to be integrated.

How much does the caring and integrated management system depend from the Managing Director?
The person of the managing director always has an influence on the corporate culture. But on the other side the TBW have a number of systems ensuring a caring and integrated management like the quality management system that is currently being set up. In addition, a corporate strategy with six corner stones has been formulated.

Which are the key ingredients for a committed and motivated manager and his staff?
I like my job and to work with my staff. I feel like an entrepreneur and I'm also ambitious, but without political ambitions. I can lead the company now in an independent and flexible way and I like the freedom to take decisions within the given organisational framework. The further education and training is very motivating for the staff.

What do you mean by actively care for politicians?
This cannot be generalised. Every politician is different. An open communication is very important. Very effective has been an information leaflet with statements of the staff of the TBW, but also from politicians of every party that showed ownership.

How can a loose-loose situation be changed to a win-win situation?
This is hard work. First, I always write down the problem to see clearer. Then I assess alternatives, I take a decision and solve the problem.

Is there a contradiction between a cost-efficient management, environmental protection or the consideration of the human factor?
Managers always have to deal with contradictory objectives. That's the challenge of managers. The price being paid by the client has to ensure the long-term viability of the enterprise. Short and long-term thinking has to be balanced. In the short term the management has to be efficient; at the same time it has to care for the long-term. Balancing contradictions is an important management task and compromises always have to be made. Often, the optimal and not the best solution has to be identified.

How can conflicts between public and private interest be solved?
It is difficult to give a general answer. If there is a problem I have to write it down, understand it, talk with people and find a good compromise. We just have put a large area in the protection and a lot of landowners were concerned. We had long discussions and you get grey hair.

Is the solution that has been chosen in Weinfelden replicable in other countries with other political and legal frameworks?
The workshop has to answer what can be transferred to the specific situation in developing countries. In Switzerland there are many other multi-utility enterprises. So a replication in Switzerland is possible.

In developing countries often the legal framework is missing. How should we start there? With the legal framework or the company?
This cannot be answered in general. The TBW grew in an evolutionary way. They were already organised like a private company before they changed their legal form to a public company under private law.

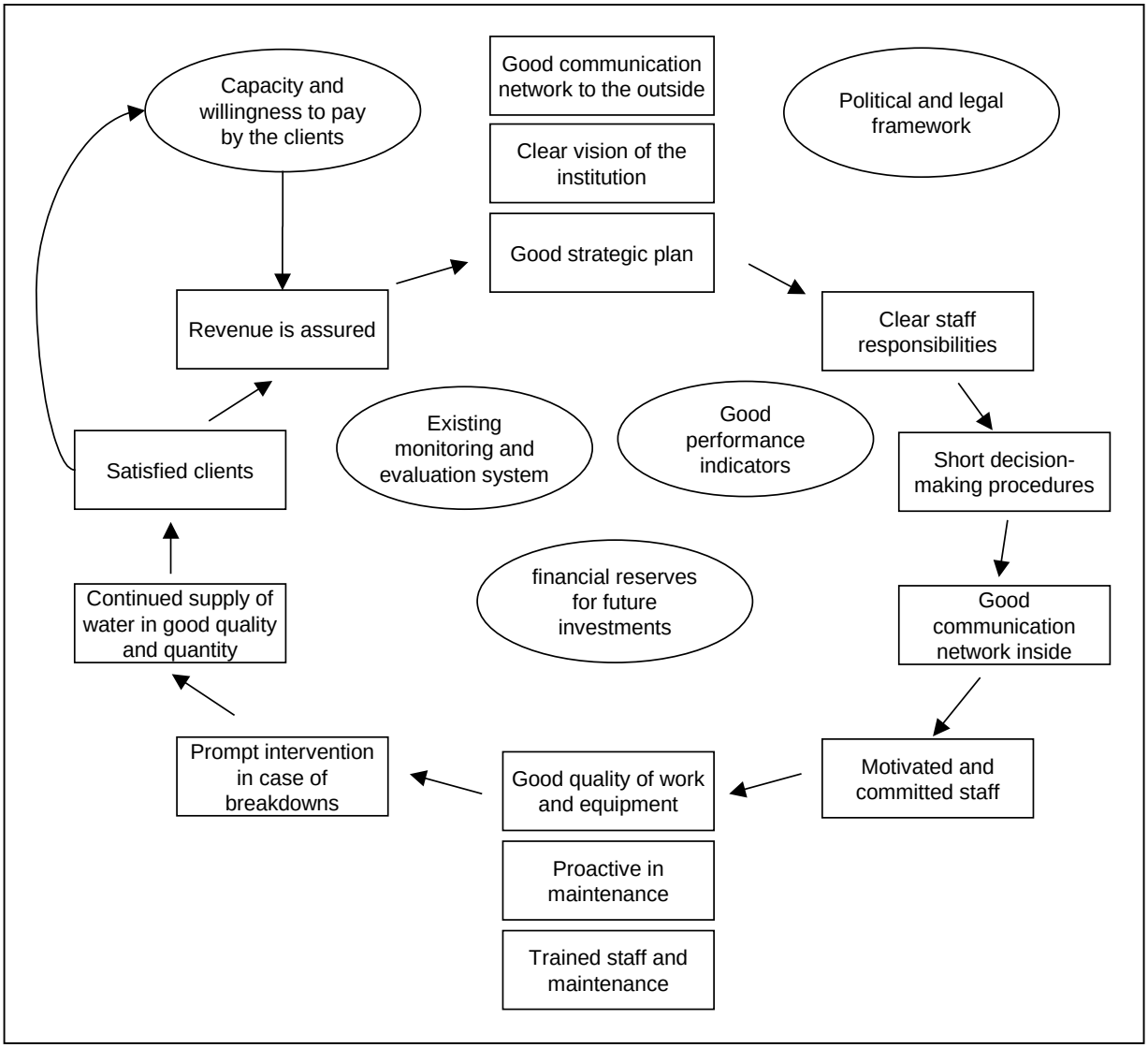
How many people are working for the water supply division? Do the politicians not complain that the TBW do not create enough jobs?
For the water supply division three people are employed. Larger construction works are outsourced to private contractors. The basic task of the TBW is to provide good services in an efficient way and not to create jobs.

3.5 Success factors identified by four working groups

Four working groups analysed the success factors of the caring and integrated management model of the Technische Betriebe Weinfelden. Below the results of the working groups are summarised.

3.5.1 Working group 1: A success cycle

The working group 1 identified a success cycle that makes a caring and integrated management possible. This cycle is only as strong as the weakest part of it. If one element is missing in the circle the whole system is collapsing.



3.5.2 Working group 2: An iceberg with visible and invisible factors

The working group 2 noticed that the different factors making up the CIM of the Technische Betriebe Weinfelden resemble a floating iceberg: there are visible, half visible and invisible factors.

	Political factors	Management factors	Technical factors	Security factors
Visible	Management model is accepted by the community Transparent reorganisation process	Sustainable business with a longterm vision Pragmatic and dynamic management Profitability allows for necessary savings Business plan and financial results Good services Customers are satisfied	Key is that they provide quality water.	Good services with no breakdown Efficient system Problems are solved very quickly
Semi-visible	Accountability and trust Entreprise status: municipality is the owner Synergy among the actors Longterm financial planning Very good planning system	Very close to customers Motivated staff Innovative every day to find new solutions Good communication system Private legal form not considered as negative Training of staff Corporate culture		Water quality monitoring Good maintenance of the system Prevention of breakdowns Safety plans for breakdowns
Invisible	Legal framework Proper contract and rules for cooperation Population informed and with capacity for decision-taking Political will	Availability of financial resources Committed management and staff	Affordable, appropriate and right technology	

3.5.3 Working group 3: Four pillars and enabling factors

The working group 3 has identified the most important pre-conditions and key ingredients that support a CIM, the benefits and successes of such a system, and what enabled the benefits.

Political system	Management system	Technical system	Security system
Enabling legal framework providing flexibility, decision power and transparent tariff structure A stable political framework can help to stabilise the economy Foster and involve politicians	Clear, accepted and known strategy Transparency on all management activities Accountability Good communication bottom-up and top-down, feedback loops with customers Very motivated staff: human resource development plans and personnel development Enough time for staff and team building Good information management (checklists, finances) Financial controlling Organisational structure: clear rules and regulations, performance Management system Quality management system lived by staff Pay attention to marketing	Long term investment planning Replacement and rehabilitation plans Preventive maintenance Good controls of losses can increase the business of water companies Customer service: level of service, response system High quality standards and requirements for investments Binding liability and commissioning act Monitoring and reporting system: annual reports and systematic reporting	Monitoring of water quality Clear alarm system with definition of responsibilities

What are the benefits and successes of a CIM?	What made these benefits possible?
Achievement of a model with an enabling regulatory framework Reliable and efficient services with limited staff Caring for water resources but too high water consumption (a disadvantage!) Highly motivated staff proud and recognized of being part of the water utility	Influencing the political framework for a more efficient management model with less political interference Committed and highly motivated manager Pro-active and open communication on all levels: bottom-up, top-down and horizontal Customer orientation and caring for customer without administrative barriers Transparency: people know the information system and they have personal contacts Continuous improvements, further development and capacity building

3.5.4 Working group 4: The four pillars interpreted in the development context

This working group 4 has particularly analysed what they can learn from the caring and integrated management system of the Technische Betriebe Weinfelden and what can be applied in the specific context of developing countries.

Political system	Management system	Technical system	Security system
Involve politicians who are committed Create a multistakeholder platform Civil society has to be well informed Water has to be on the political agenda Good governance: transparency and accountability of the contract Decision-making at the lowest level close to the source Appropriate legal framework	Committed and convinced management and manager Having a vision Job security of staff ensured Career development facilitated Proximity to all stakeholders	A minimum reliability of the system is ensured Water meters on the micro-level are installed; for this the willingness to pay is necessary	Setting up quality assurance mechanisms Agree on and follow the rules Having a reliable laboratory for water-quality monitoring Conflict management system Hygiene campaigns Serve the poor and prevent destruction

4 Case studies

4.1 Mozambique: Small town water supply for Mocimboa da Praia

4.1.1 Presentation of the case

Mozambique is located at the southern part of the East African coast and covers a surface of about 800’000 square kilometres. The coastline amounts to about 2’500 kilometres. Mocimboa da Praia is a small town situated in the Northern Province Cabo Delgado. About 47’300 people live in this growing town where the most important economic activities are subsistence agriculture, fishing and informal businesses.

Challenges of water supply

Water supply in Mozambique faces many challenges. From the total population of about 18 Million inhabitants 80% live in rural areas. Only 44% of the latter have access to safe water. The coverage in the Province Cabo Delgado is about 52% and in Mocimboa da Praia about 31% (14% covered by the piped town water supply and 17% by shallow wells equipped with handpumps). To reach the Millennium Development Goals the country faces now the challenge to provide safe water for 55% of the population until the end of 2009 and for 70% until 2015.

Historical overview

The main water supply system of Mocimboa da Praia was constructed during the colonial period in the sixties. The system was managed in these years by the colonial administration. Users with a private connection were charged for the water, whereas water at public standpipes was supplied for free.

After the independence of Mozambique in 1975, the water supply system was run by the district administration applying the same pricing system as in the colonial period. The government covered the costs for operation and maintenance. Due to the war in the eighties many people moved from rural areas to villages and towns. In 1994 the Mocimboa da Praia water supply system was non-operational due to the obsolete pipelines and broken down pumping

equipment. Through the first democratic election of local governments in 1999 the small town of Mocimboa da Praia became a Municipality, and the responsibility for the operation and maintenance of the waters supply was transferred from the central state to the newly elected municipal council. In 2002 the system was partially rehabilitated. Eight kilometres of the main pipe and the pumping equipment were replaced and eleven standpipes were reconstructed.

Policies and sector strategies

When Mozambique became independent in 1975 the Government built many water supplies. A lot was invested in new infrastructure in the eighties and nineties. Nevertheless, the coverage remained low and many water points suffered from breakdowns.

In August 1995 the Government of Mozambique (GoM) approved a new National Water Policy (NWP) encouraging the decentralisation of water supply, the active participation of users in operation and maintenance, and the involvement of the private sector. In 1997, the GoM approved the Rural Water Transition Plan (RWTP) for the coordinated transition from a supply driven system to a demand responsive approach. Since 2002 management models and guidelines have been designed for small town water supplies.

Existing Infrastructure

The water for Mocimboa da Praia is taken from a river and led with a main pipe to the town. 50 private users are directly connected to the water supply system. In addition, water is provided at 11 standpipes. The tariff for the cubic meter water mounts up to 1.25 US Dollars. The water delivered is untreated as the treatment plant is out of service. Between 2001 and 2004 about 200’000 US Dollars were invested in the infrastructure.

Outstanding questions

Based on this initial situation a number of questions were raised:

- In which way could the current investment and rehabilitation plans be improved so that the Millennium Development Goals are reached?
- How can the management of water supply systems be improved considering the under qualified staff?
- How can people be convinced to contribute to the improvement of the water supply system?
- How can the necessary current and the future investments be secured?

4.1.2 Analysis of the case by the working group

Main challenges

The water supply in Mocimboa da Praia faces several challenges:

- The water supply network is obsolete. About 38 days a year the water supply system doesn’t work. There is a high investment gap.
- A water treatment utility is missing.
- The water losses are high. About 40% of the water gets lost.
- The cost recovery rate is very low. Only about 50% percent of the costs are covered by income.
- The management capacity of the Municipal Water and Sanitation Department (DAS) is weak.

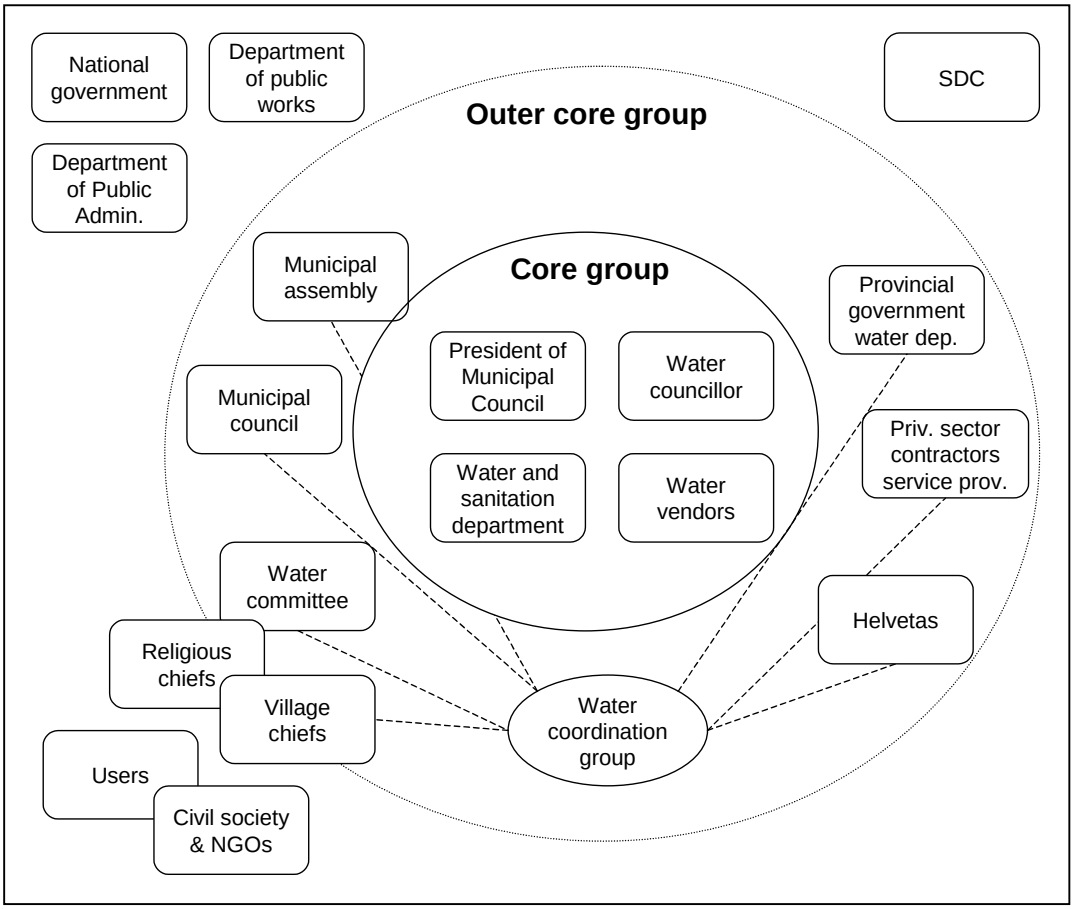
- The services provided by the DAS are of low quality: the water is not treated, the water supply system is often broken down, and the coverage of the water supply system is unsatisfactory.
- The capacities of the water committee (CdA) representing the different quarters of the town are weak and skills for maintaining and operating the water supply system are lacking.
- Overall, the security of the water supply and the water quality is not ensured now and in the future.

Stakeholder map

A number of stakeholders are involved in the water supply of Mocimboa da Praia. The *core group* ensuring water supply are the President of the municipal council, the water and sanitation department (DAS), a non-autonomous organisation of the Municipal Administration running the water supply system and employing 9 staff, the water councillor, and the water vendors.

The *water coordination group* plays a major role in the coordination of the outer core group of local actors. Represented are the water department of the provincial government, the Municipal Council (President and Water Councillor), the representatives of the Municipal Assembly, the water committee, the NGO Helvetas, village chiefs, political leaders, and the private sector like contractors and service providers.

Also relevant are *other actors* like the national government, in particular the Ministries for Public Works and for Public Administration. Important are also the water users, the civil society and NGOs as well as religious chiefs engaged in the development of the Municipality. Finally, SDC plays an important role as international donor.



Context analysis

- Political context
  - The linkages between the national and the provincial government are weak and there is a lack of strategic guidance by the national level.
  - With the decentralisation more responsibility was handed over to the provincial and municipal level. The building up of capacities on these lower levels, however, proceeds only slowly.
  - The support of the province to the municipalities is weak (investments, technical assistance).
  - On the political level the ruling party faces strong political opposition.
  - The legal status of the DAS and the water committee are unclear on the local level.
  - Employees of the Municipality are not motivated.
- Economic context
  - Government and the private sector don't invest sufficiently in water supply. The provincial government provides however some subsidies for operation and maintenance.
  - The income of the households is low. This sets clear limits to further increase the income of the municipality.
  - Most economic activities are informal.
  - The municipal services are not coordinated sufficiently and integration of services is lacking.
- Social context
  - The population is still growing and poverty leads to migration to the town.
  - The population is barely committed to water issues as long as they have minimal access to it.
  - The expectations of the population in the decentralisation process were high. Capacity building at the local level is low and leads to frustration. The water supply infrastructure is exposed to vandalism.
- Environmental context
  - The water resources for Mocimboa da Praia are unprotected.
  - There is no effective water resources management.
  - There is the danger that saltwater from the sea infiltrates into the ground water (shallow wells).
  - Cholera outbreaks threaten the village.

Core group

The core group caring for the water supply system of Mocimboa da Praia builds on a couple of enabling factors. The decentralised political system gives the municipal council decision-making power and scope for action.

The core actors maintain good linkages to the political system and the president of the municipal council is one of the core actors himself. There is also some political pressure for action as the municipal council is accountable to the municipal assembly.

A basic infrastructure for water supply to some private households and water standpipes exists, although the coverage, the maintenance of the supply and the water quality are unsatisfactory.

The actors of the core group are committed to improve the current situation. They are well connected to the actors in the other actors and communication, in particular at the local level, works well. The core actors have a good understanding of the local situation. Social and economic aspects are considered in a balanced way to set the water tariffs.

4.1.3 Conclusions of the case by the working group

The analysis of the context, the core system and its stakeholders revealed that there is considerable scope for action, if a caring and integrated management perspective should be aimed at:

- Long-term strategy
  - Plan a watershed management.
  - Start investigating alternative water resources.
  - Conduct an organisational diagnosis and review.
  - Develop a strategic plan with the core actors involved in the water supply system.
- Human resources
  - Carry out a skills audit.
  - Select staff with required qualifications and replace staff if necessary.
  - Prepare a short, medium and long-term human resources development plan.
  - Train the staff: caretakers, plumbers, administration staff.

- Finances
  - Conduct fundraising activities to improve the infrastructure.
  - Lobby for funding from the private sector, e.g. the timber industry.
  - Develop a long-term investment plan for upgrading the current water supply system.
- Technology
  - Assessment of the current water supply infrastructure and preparation of an upgrading and rehabilitation plan.
  - Assess whether the operation and maintenance could be outsourced to a private local operator.
- Controlling
  - Develop a system to monitor the performance of the water supply system.
- Customer services
  - Devise a strategy to increase the number of direct connections to private households. This might help to improve the cost recovery of the whole water supply system.
- Management of external relationships
  - Multiple actors are involved in the local water supply. A proactive communication with all actors is paramount.
  - Conduct an information needs assessment and prepare a communication plan.
  - Inform the public and politicians actively about the performance of the water supply system and improvements.
  - Conduct regular public consultations on water issues.
  - Involve health services and NGOs in hygiene education and household solutions for water treatment.
  - Explore possibilities to link electricity supply with the water supply department.
  - Establish partnerships with interested local industries (fishery, timber, oil).

4.2 Peru: Management and empowerment in rural water and sanitation services

4.2.1 Presentation of the case

Peru has a population of about 28 Million inhabitants of which 73 percent live in urban and 27 percent in rural areas. 75 percent have access to safe water and 56 percent to sanitation services.

In particular in rural areas the coverage and sustainability of water supply and sanitation services is unsatisfactory. Only about 31 percent of all water and sanitation systems can be considered as functional. 44 percent are deteriorating, 22 percent are already seriously deteriorated, and 9 percent are no longer viable.

In 1991 the government of Peru started with a national programme to fight poverty. The programme was implemented by the organisation FONCODES (Fondo Nacional de Compensación y de Desarrollo Social). Apart of this programme another one was set up to improve water supply and sanitation in rural areas. The success of such programmes, however, was limited as they followed a vertical and centralized approach, the local municipalities were not considered in the process, only very limited training was provided and the focus was mainly on infrastructure.

The PROPILAS project

To address this alarming situation a new national programme for rural water supply and sanitation was set up with a budget of 80 million US dollars. In 1999 the project PROPILAS (Proyecto Piloto de Agua Potable Rural y Salud) was launched. The goal of PROPILAS was to improve the district management and the sustainability of water and sanitation services.

The following criteria were considered as relevant for the sustainability:

- The system had to ensure the supply of water in good quality, in sufficient quantity, and the continuity had to be guaranteed.
- Water committees were set up with a clear status and regulations, a transparent accounting, and with regularly renewed staff.
- The population had to pay for the operation and maintenance of the water supply system.
- The water supply system had to respect the environment.

PROPILAS was funded by SDC. CARE International was responsible for the implementation and facilitation of the programme. The Water and Sanitation Programme of the World Bank (WSP) monitors the projects, contributes to a consistent framework, facilitates the links with government levels, and draws the lessons learnt.

PROPILAS pursues the following strategies:

- The approach is demand responsive.
- The projects submitted by the municipalities and communities are selected in a competitive process.
- Capacity building in the management, operation and maintenance of water supply systems is provided for the municipalities, communities and the private sector.
- Health and hygiene are included in the trainings.
- The water supply systems are built by the private sector, whose contractors relate directly with the municipalities.

The programme is meanwhile in its second phase. In its first phase 15 water supply systems supplying water for 7’272 inhabitants were installed in 19 communities in the two provinces Cajamarca and Celendín. In the second phase the regional scope has been extended to the province Chota and another 21 systems in 26 communities have been set up providing water for 8’000 inhabitants.

Implementation process

The first step in the implementation process is the selection of municipalities based on the expressed demand and request by a community to build a safe water supply system under the PROPILAS project. The community is informed about PROPILAS and its rules, as for example required financial and labour contributions. These rules must be discussed and agreed upon in the community assembly.

The families can choose the desired level of service once the decision is taken. The community covers a share of the costs depending of the chosen service level.

Subsequently, a contractor is hired by the municipalities in a transparent process with participation of the community. The three involved parties sign a contract. The average contract sum reaches up to 15’000 US dollars.

The community participates afterwards in the administration, operation and maintenance (AOM) of the water supply system. Included in the AOM are training and health education activities.

For each water supply system a committee is elected, the JASS (Junta Administradora de Servicios de Saneamiento). A core group of five people leads the JASS: a president, a

treasurer, a secretary, and two other members. The JASS monitors the compliance of the contractor and the contributions of the beneficiaries, reviews the costs with the supervisor, and authorises the municipality to pay the contractor. 25 persons are trained in AOM. Some JASS carry out other additional activities such as purchasing of supplies or providing services for which there is a demand by the community.

4.2.2 Analysis of the case by the working group

Context analysis

The analysis of this case revealed that the project benefits from a favourable context. On the *political level* there is a clear will to improve water supply in rural areas. The proof is a national programme for rural water supply and sanitation with a budget of 80 million US dollars. Favourable is also the decentralised approach. Municipalities are empowered by the legal framework, they receive financial assignments, and they are involved in decision taking.

The *economic context* is challenging, as the rural areas in Peru are very poor. The average capacity of a family to pay for water is about 1 US dollar per month. The decentralised organisation of water supply and the fact that the municipalities have some funding helps to finance local water supply projects. Nevertheless, additional financial support from the national level is required.

The analysis showed that the social context contributes a lot to a safe water supply in rural areas. There is a strong local collective identity and the motivation for voluntary services like contributions to the water supply system is very high.

The PROPILAS project also considers *environmental aspects*. New water supply systems must not affect the environment. To avoid diseases the delivered water has to comply with the national norms for water quality.

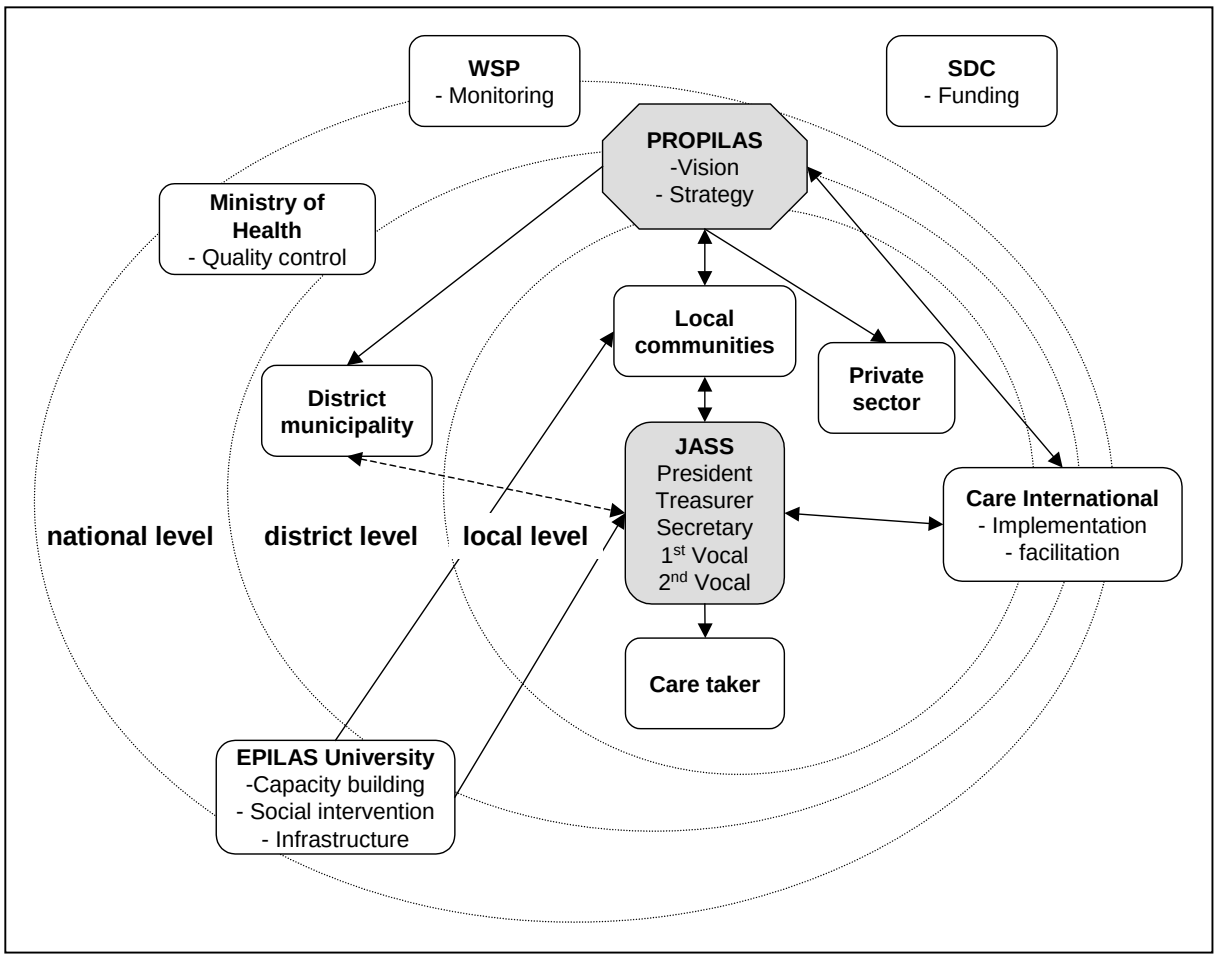
Successful water supply projects also need a context supporting *technical* competence. In Peru there is a high demand for technical staff. In particular in rural areas more technical staff on the local level is of utmost importance. In addition, training for the private and public sector is provided by EPILAS (Escuela Piloto de Acreditación en Agua y Saneamiento), which has set up an accreditation system that is handled by the University of Cajamarca.

Stakeholder analysis

The stakeholder analysis shows a variety of actors ranging from the national to the local level ensure the success o f the programme.

On the national level the programme *PROPILAS* develops the long-term vision, the strategies and the rules for the implementation of local water schemes. PROPILAS is working closely with district municipalities, the local communities and the private sector. The responsibility for the quality control of water is on national level. In charge is the *Ministry of Health*.

On the local level the *communities* assume responsibility for the water supply. They have to develop the projects and the proposals to be handed in to the PROPILAS programme that assesses, rates and selects the projects.



Once the projects are chosen by PROPILAS the responsibility is taken over by the JASS, the operational organisation on the local level for water supply. The communities elect the members. The JASS are led by a core group of five people: a president, a treasurer, a secretary, and two other members.

JASS is the core organisation for the provision of local water supply: for the construction, administration, operation and maintenance of the local water supply schemes. The members of JASS are carrying out their work voluntarily and they are very motivated.

The JASS works in cooperation with the *district municipality*. However, the demarcation of responsibilities between these two actors is unclear.

Finally, *EPILAS* is an important stakeholder who provides a national pool of technical experts supporting the JASS and the municipalities, facilitating social interventions, and providing training.

Success factors

A number of factors contributed to the success the PROPILAS programme:

- It is up to the local community to prepare the proposal. This leads to a higher appropriation of the water supply project by the community.
- The ownership for the local water supply projects is further enhanced by the participation of the community in the formulation of the bylaws.

- As the proposals are rated the communities have a strong incentive to develop proposals of high quality.
- The overall leadership for the local water supply is clearly entrusted to the JASS who are committed to fulfil their duties.
- The whole process of developing the proposal, but also later the administration, operation and maintenance and the funding are carried out in a transparent and accountable way and the community is always directly involved.
- On the local level capacities for maintenance and prompt intervention are available if required.
- If necessary, a national pool of experts supports the local level.

Examples of caring

In the analysis several examples of a caring spirit have been identified:

- The responsibility is where it should be: at the local level. The local communities have to care for their water supply, to develop projects and to organise operation and maintenance.
- People accept responsibility for maintenance and repairs.
- The members of the JASS do not only work voluntarily for the local water supply, they also pay attention to other needs of the local community and provide services as the community asks them for.
- Once the water supply system is set up it is also carefully operated and maintained. Out of the 25 persons of JASS that are trained in operation and maintenance, five of them are selected every two years as leaders.
- Regular information is taken seriously. The JASS, for example, informs everybody in the communities about the financial status of the water supply.
- The JASS has a high incentive to provide good work as the communities regularly elect the leaders of the JASS.

4.2.3 Conclusions of the case by the working group

PROPILAS is a very successful programme for improving rural water supply. Nevertheless, some *risks* have to be taken into account. The local water supply and the JASS are built on the voluntary and collective local spirit. If this collective spirit would decrease in the future new ways have to be found to organise the local water supply. This possibility, however, is merely an academic concern, since the provision of volunteer services to answer the communal needs has deep roots in Peruvian culture, which comes from ancient times (Inca). The financial sustainability might also be an issue deserving greater attention. So far the households contribute one dollar per month to the water supply. This might not be enough to fund the renewal of local water supplies in the future.

These risks also might be mitigated if the various *opportunities* are seized:

- The willingness to pay should be analysed and the price for water increased so that the coverage of all costs is ensured.
- With the installation of micro water meters the consumption of all households could be controlled and the households could be charged according to their consumption. The necessary staff would have to be trained accordingly.
- Operation and maintenance could be contracted out.
- The sharing of responsibilities between the communities, the district municipalities and the JASS needs further clarification.
- Up to now the water quality is monitored by the national Ministry of Health. The responsibility for the water quality, however, should be assigned to the local level, e.g. to the JASS.
- Continuous training is very important. This is an opportunity for the JASS. But also EPILAS plays an important role and could even improve its outreach, e.g. by addressing social aspects of water supply in more detail.

For three opportunities, the driving and restraining forces were analysed in detail:

Opportunities	**Driving forces**	**Restraining forces**
Establish a fair price for water	To get enough income to pay maintenance and replacements Government is willing to subsidise rural water supply Municipality is not willing to pay anymore for new replacements	People living in rural areas have poor capacity to pay Concept that water supply should be for free
Assign responsibility for water quality	People are interested to have safe water	More work and costs are involved with a voluntary based scheme
Increase social aspects in the EPILAS training courses	Demand by technicians to receive better social skills	Training fee increases

4.3 Bangladesh: Community based urban waste management

4.3.1 Presentation of the case

About 144 million people live in the Asian country Bangladesh. In the urban areas about 13’333 tons of waste are produced every day. In Dhaka, the capital of Bangladesh, the daily output of waste mounts up to about 4’634 tons that have to be disposed of. The waste generation is still increasing and the city authority with their limited resources cannot cope with the situation and the pollution is aggravating every day. Currently, various stakeholders are involved in the disposal of waste like the municipal corporation, community initiatives, private collectors and the informal sector. There is, however, a lack of partnership among the stakeholders. Furthermore, the households assume that the municipality is responsible for waste collection. 50 percent of the waste generated every day remains in the city causing drainage blocking, odour and the spreading of vermin. The population is not aware of waste management problems, even if piles of waste can be found in many places.

Yet, the good message is that 80 percent of the produced waste is organic and could basically be used for composting and the compost could be used as fertilizer. Common myths, however, have blocked for a long time the situation. Waste was considered as a problem that should be managed centrally and kept in sole responsibility of municipalities. Sophisticated and capital-intensive technologies for managing the huge amount of waste were considered as essential. Last but not least many were convinced that there are no real alternatives to chemical fertilizer for agricultural production.

In 1994 the NGO Waste Concern started to *care* for this difficult waste situation in Dhaka. They committed themselves to change these beliefs and to show alternatives based on the following assumptions:

- Waste should be considered as resource, rather than just a problem. Waste can be managed in a decentralized manner with public-private-community partnership.
- Simple, low cost and labour-intensive technology can be used for the composting of organic waste.
- The compost, enriched with balanced nutrients, can gradually replace the indiscriminate use of chemical fertilizer in agriculture.

Waste Concern started to promote their idea of converting organic waste into compost by using a community based and decentralized approach. Waste is daily collected door-by-door allowing a better separation and composting of waste. (The local authorities collect waste only from waste collection points). Initially it was difficult to convince the different government agencies and to initiate a composting project, even by offering free consultancy services. Subsequently, in 1995, Waste Concern started to demonstrate their model to convince different social groups. These demonstrations of their model gradually changed the mindset of public and private sectors, communities, as well as farmers of Bangladesh. The pilot plant in Dhaka has been replicated in 20 cities over the last 10 years.

4.3.2 Analysis of the case by the working group

Context analysis

The analysis of the *political context* shows that mainly four administrations are involved in waste management: the Ministry of Environment and Forests, the Ministry of Local Governance, the Dhaka City Corporation and the local municipalities. They set together the policy framework for waste management and for land allocation.

The *economic context* for waste management is marked by widespread poverty. A considerable share of the economic activities is carried out by the informal sector. Public authorities like the Dhaka City Authority still do not have the necessary awareness or resources to cope with the waste problem. Instead, a number of other stakeholders stepped in to provide seed money or to fund solutions for waste management like international donors, NGOs, and private investors. In addition, also the private sector has discovered the reuse of waste as fertiliser as a business. A local fertilizer company buys all compost and retails it to farmers in rural areas.

The very dense and still growing population is one of the most important factors of the *social context* influencing waste management in Bangladesh. The widespread poverty and the informal character of economic activities make people vulnerable. In particular in slums and squatter areas waste is not collected or only to a small extent.

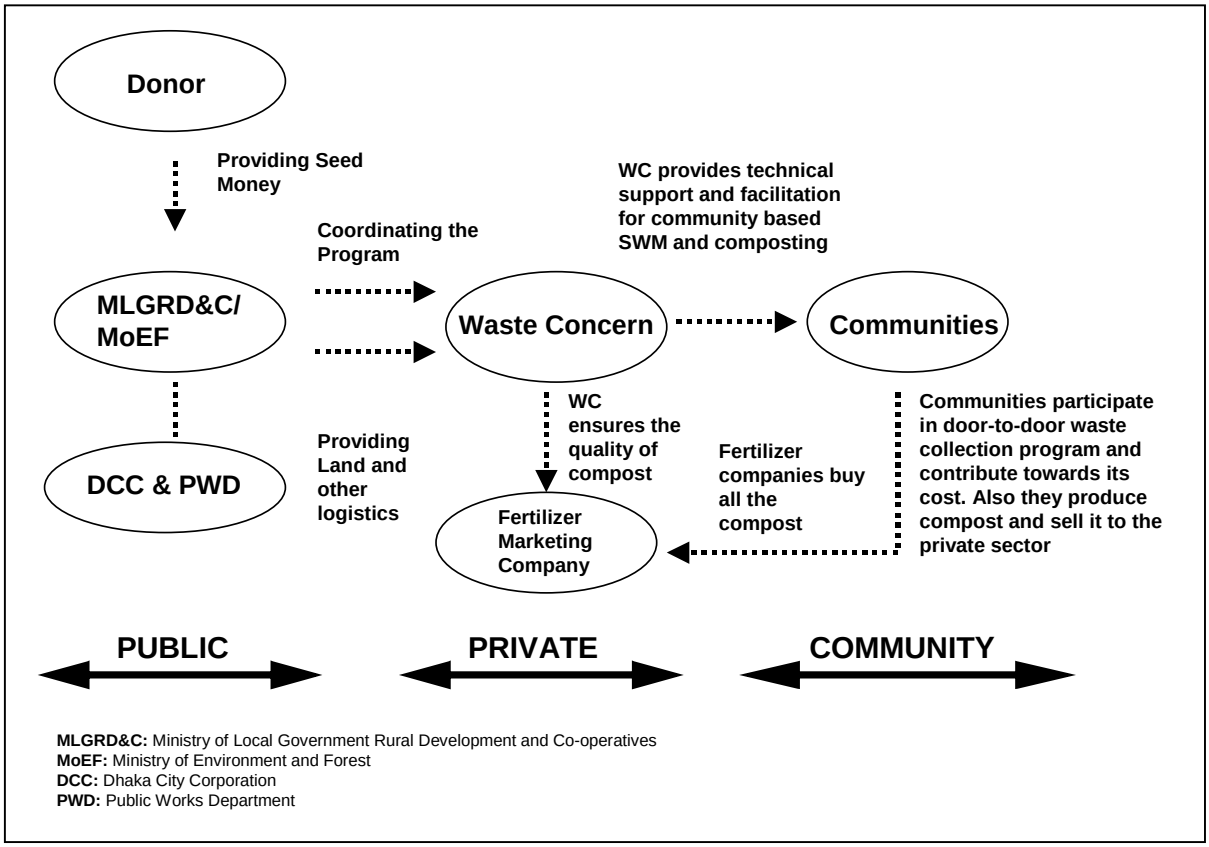
The *environmental* consequences of an inappropriate waste management are severe. Low-lying areas, drains and canals are clogged with waste, leachate of unsanitary waste disposals pollutes ground and surface water, vermin in the waste spread over 40 diseases, methane evaporating from waste disposal sites is one of the most relevant green house gases and the bad odour is a nuisance for the population. Finally, the disposal of the ever-increasing volume of waste requires large landfills.

These negative environmental impacts can be reduced considerably with a systematic reduction, collection, recycling, and composting of waste. The compost contributes to the enrichment of the soil for agricultural production.

Core system and stakeholders

At the core of the approach facilitated by Waste Concern are the *communities* organising the house-to-house waste collection and the composting plant. Waste Concern acts as a facilitator of the whole system including also public agencies and the private sector. The specific roles of the different actors are:

- Ministries
  - The Ministry of Local Government Rural Development and Co-operatives (MLGRD&C) and the Ministry of Environment and Forest (MoEF)
    - Coordinate the community based urban solid waste management project.
    - Provide seed money in some cases.
- Waste Concern
  - Establishes links to municipalities.
  - Conducts market analysis.
  - Elaborates business plans.
  - Provides technical assistance to communities for the establishment of community based composting plants.
  - Provides training to communities on operation and maintenance of plants.
  - Assists in the marketing of compost.
  - Carries out external communication.
  - Monitors the project after handing over to the communities and carries out quality control for compost.
- Communities
  - Participate in the house-to-house waste collection system.
  - Households pay a collection fee.
  - Participate in the community based composting program
  - Produce compost in composting plants and sell it to the private sector.
  - Appoint staff for the collection and composting service.
  - Operating the program after one year of training and demonstration.
- City Corporation / Municipalities and Public Works Department
  - Provide land for establishment of community based composting plant free of charge.
  - Signing partnership agreement with Waste Concern.
- Private fertilizer companies
  - Purchase the compost produced from the community based composting plants.
  - Enriches the compost with artificial fertilisers.
  - Market the compost all over the country through their already existing national distribution network in rural areas.



Several factors contribute to the success of this closely linked partnership:

- The communities respond to a real need: the collection of organic waste directly from the households.
- Facilitated by Waste Concern all involved actors communicate with each other. Links to other existing strong networks are growing.
- The concerned authorities agree with the project and support it.
- The households are willing to pay a fee for the improved collection service.
- The financial management is transparent. Savings are made for maintenance and repairs.
- All involved partners are linked in a benefit loop and profit from the system.
- The composting process is systematically monitored (moisture and temperature). This is very important, as organic waste causes odour if not treated properly.
- The origin of waste is very important to know. Heavy metal or other toxic substances can pollute organic waste used for composting.

Management system

The analysis of the community based urban waste management within the framework of a caring and integrated management gives the following results:

- Vision and strategy (three points)
  - The project clearly focussed its activities on the community level.
  - Waste has to be reduced and treated as close to the source as possible.
  - Compost is marketed through established distribution channels.
  - The satisfaction of the customers (community, the fertilizer company and the farmers) has to be achieved.
- Organisation (one point)
  - The community organisations are informal structures. This might prove to be a major weakness of the system as municipal authorities are not willing to sign contracts with them.
  - All involved actors have clearly defined roles.
  - Waste Concern acts only as an intermediary and hands over responsibility after a one-year start-up phase to the communities.
- Human resources (four points)
  - Staff working in waste collection and composting plants receive an initial training.
  - All employed staff has fixed working hours.
  - Staff is paid a monthly income and receives an annual bonus of a one-month salary. This income improves livelihood and increases the social recognition.
  - A health service is provided for employed staff.
- Finances (three points)
  - A regular income is created with the collection fee and the sale of compost.
  - The project is financially viable once established with seed money for investments.
  - The pay back period for investments is 23 months.
  - Accounting follows strict rules and reporting. For fees, for example, a receipt is necessary. Records are kept of raw materials purchases, repairs and maintenance.
  - For repairs, maintenance and reinvestments savings are made.
- Security (zero points)
  - Composting has an inherent security mechanism: if the compost smells badly, something is not working well. The monitoring of the process is meant to avoid any bad smell beforehand.
  - All workers wear protective gear.
  - The quality of the collected organic waste and the compost is controlled continuously.
- Technology (five points
  - The technology for composting is appropriate, of small scale and simple (labour intensive).
  - The maintenance of the system is integrated in the daily routine.
  - Staff checks the composting process with simple tests. More complex testing is carried out in external laboratories.

- Controlling (one point)
  - The whole process is controlled systematically.
  - The number of the vehicles and the volume of waste transported per day are counted as well as the kilograms of compost produced.
  - The most important process parameters are recorded systematically.
  - Waste Concern evaluates the projects regularly.
- Customer services (four points)
  - The door-by-door waste collection is an improved service for all households.
  - The whole system builds up on good personal relationships.
  - Waste Concern creates awareness among the population with information events where people are shown what is happening with their waste.
  - The fertilizer companies are important for the distribution of the compost. The compost always has to meet their quality requirements.
- External relationships (0 points)
  - Waste Concern actively manages the external relationships and trains the community by providing leaflets and posters and inviting them to composting plants.
  - Guided tours for school children around the composting sites are organised.
  - Good relationships with international organisations are established.
  - Municipal officers are trained on visits to composting plants.
  - Close contacts are established with the media and all involved actors get free support for media coverage.

The working group that analysed this case study tried to rank the importance of the various elements of a caring and integrated management. The points are indicated in brackets. However, after the ranking process the group realised that security and the management of external relationships got no points although they were considered as important in hindsight. *This shows that the single elements of a caring and integrated management approach cannot be considered on its own but only as an interrelated system where every element plays an import role to balance the whole.*

4.3.3 Conclusions of the case by the working group

The case study of the community based urban waste management shows what can be achieved if actually somebody cares and finds ways to overcome existing problems. First, it was mainly Waste Concern caring for the alarming waste situation. They facilitated a process so that nowadays the communities take full ownership and care for the waste collection and composting. The approach has been replicated in 20 towns of Bangladesh. Further replications are planned in Qui Nhon City in Vietnam and in Matale City in Sri Lanka.

The impact is impressive: communities are cleaner and the living conditions healthier. The local authorities save money and space for landfill areas. For the urban poor new employment opportunities have been created. Informal labour is created by engaging unemployed in the collection of waste and the production of compost. With the use of compost in farming organic matter is returned to the soil, the use of chemical fertilizers is reduced, the yield is increased.

Challenges

The analysis with the framework for a caring and integrated management system revealed also a couple of challenges:

- There is a lack of a proper policy framework.
- Land for composting facilities needs to be provided by the municipalities or local bodies. The communities do not own the land themselves and are therefore dependent.
- Waste Concern has a pivotal role in the whole system for training and communication. They are also closely woven into the system as they signed the contracts for the land of the composting plants. Waste Concern will get problems to move forward if they stay involved in all replications.
- The communities have no legal status. They can’t open bank accounts and savings can only be kept in an informal way.
- There is a need for capacity building for entrepreneurs and officials dealing with solid waste management.
- More activities are necessary to further develop the market for composting.

Potentials and restraining factors

There are several potentials to improve the current system. However, also the restraining factors should not be neglected.

Potentials	**Restraining factors**
Strengthening the role of the plant manager (more skills, more responsibilities)	A plant manager with higher education is too expensive.
Composting should become an autonomous entity: - Privately owned and privately run; or - Publicly owned and privately run.	Lack of champions. Lack of commitment of the municipality (not lucrative enough). Lack of legal framework and institutional support. No actual promotion of this activity within the local authorities.
Scaling up to plants for compost up to five tons and replication.	Collection of waste from larger areas is difficult.
Bundling of several composting plants in a city managed by one skilled manager	Needs further commitment of local authorities – concentrate on one city!

4.4 Mauritania: Rural and periurban management for water access

4.4.1 Presentation of the case

Mauritania is situated at the northwestern coast of Africa and totals a population of 3’086’000 inhabitants. Deserts cover most of the territory and water is a very scarce resource. Many urban areas are connected to a water supply system, though the water supply is sometimes intermittent. Not everybody has access to this system and people rely on water vendors from water kiosks, which sell water at a very high price. The coverage rate in semi-urban areas mounts up to about 60 percent, in rural areas only to about 32 percent.

One of the priorities of Mauritania’s national poverty reduction strategy paper was the establishment of a national water policy and a national water law. As part of the reform the former agency for water and electricity was dismantled and *various institutions with specific tasks and roles* were created. The overall framework for water supply such as the legislation, regulation and planning is set by the Hydraulic and Sanitation Ministry (DHA - Direction de l'Hydraulique et de l'Assainissement). The National Centre for Water Resources (CNRE - Centre National des Ressources en Eau) observes, evaluates, and manages water resources across the country. The National Water Company (SNDE - Société Nationale d’Eau) is focussing on urban areas, whereas the National Safe Drinking Water and Sanitation Agency (ANEPA - Agence Nationale de l’Eau Potable et de l’Assainissement) concentrates on rural areas.

The Agency for the Promotion of Universal Access to Basic Services (APAUS - Agence de Promotion de l'Accès Universel aux Services de Base) is responsible for generalising the access to Water, Electricity and Information and Communication Technologies, especially for the poor people in unserved areas. APAUS is in charge of the National Strategy for Universal Access, adopted by the government in 2001 and underlined in the National Framework for the Struggle against Poverty adopted in 2000.

The new *national strategy for access to water in rural areas* assigns to the state level the responsibility for the overall concept, planning and programming of rural water supplies. Water supply systems are to be set up according to demand and real needs. To ensure the long-term sustainability and financial independence consumers must pay the costs for operation and maintenance. The strategy includes also the private sector as a potential investor and highlights the need for capacity building of both the public and private sector. With this new strategy the water coverage rate in rural areas shall be increased to 65 percent.

This case study focuses on the work of ANEPA and how this authority contributes to and facilitates the access to water in rural areas for small villages with a population of 500 to 1500 inhabitants.

4.4.2 Analysis of the case by the working group

Context analysis

The context analysis showed that ANEPA faces several challenges in its work. The *political context* is marked by a number of quite new institutions that are involved in water supply. Coordination among these different bodies is not always easy. The ongoing trend towards decentralisation brings together the actual providers, users and funders of water. The administration of the municipalities is often very weak; sometimes even an official office is missing, because the municipalities are small. Water is very scarce and precious in Mauritania and therefore a politically highly sensitive issue. ANEPA is hindered sometimes in its work by the high political influence.

The *economy* in rural areas is based on agriculture and livestock for livelihood. Recurrent droughts have forced many to move from the very poor rural areas into the cities. Water tariffs in rural areas can’t be set at cost covering level and water supply schemes have to be subsidised. Even the provided subsidies do not cover the funding gaps.

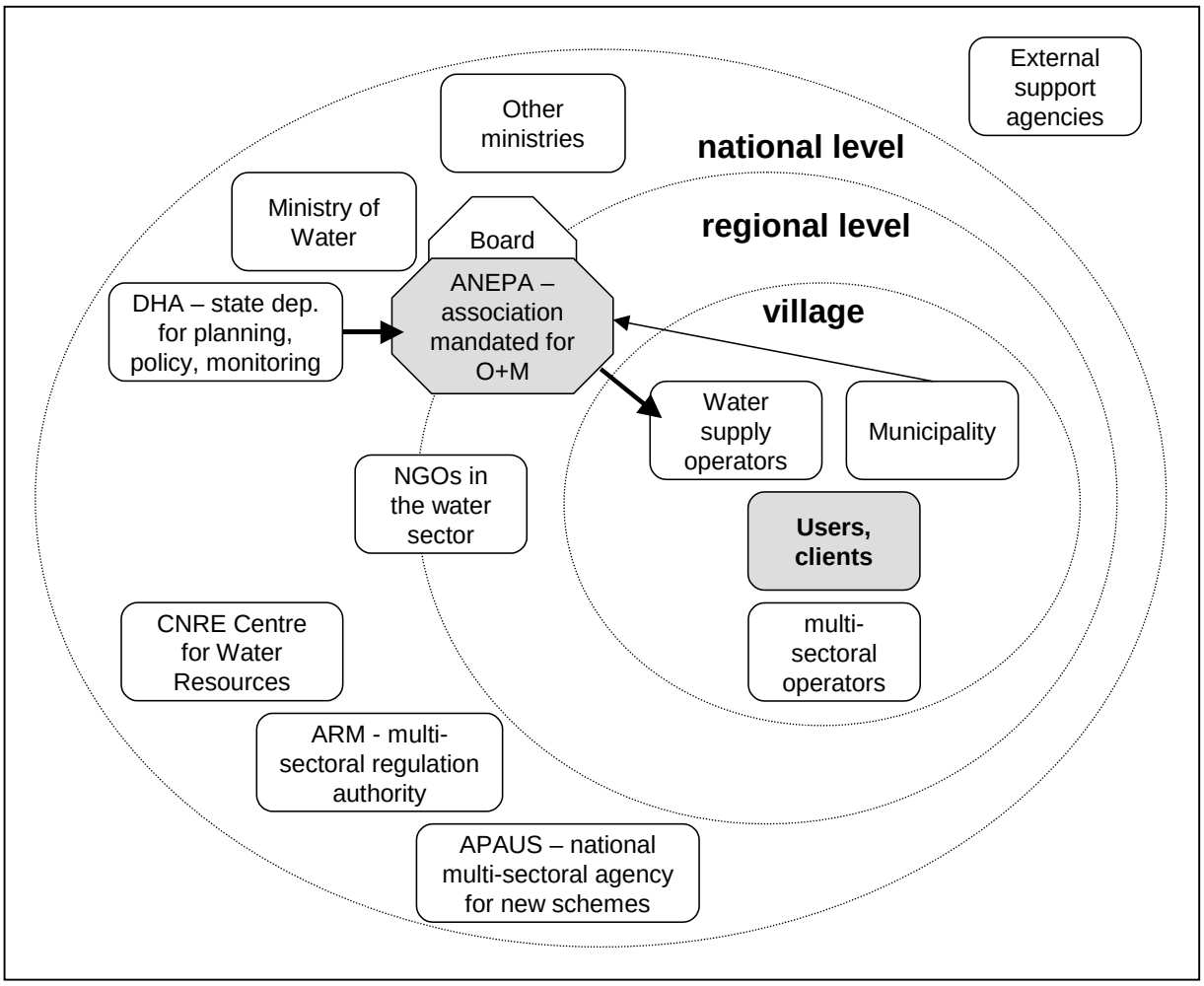
The analysis of the *social context* showed that the capacities on the level of villages are very limited. In the rural areas a nomadic culture prevails and most people are illiterate. ANEPA faces the challenge that the accountability of some of their staff is low.

The widespread country, the low population density, the hot and dry climate and desertification shape the *environmental context* in the rural areas of Mauritania. Water is very scarce and the groundwater wells are very deep.

Stakeholder analysis

A number of stakeholders are involved in rural water supply in Mauritania. *ANEPA* is one of the key players in this network. ANEPA was created by the Hydraulic and Sanitation Ministry as a private non-profit association, and received the mandate to contribute to the functioning of existing rural water supply networks. ANEPA receives subsidies for its work.

The investments for new systems are made by DHA or APAUS. The new scheme of management is applied by APAUS, which can also be a regulator – in case of delegation by the Regulation Authority (ARM) – for the non-profit areas.



ANEPA pursues seven objectives:

- Identify and realise with APAUS appropriate management and financing models for maintenance programmes and renewal of water supply schemes.
- Assure that maintenance programmes are carried out and that the water supply systems and equipments are renewed.
- Elaborate with ARM specifications and contracts for the supply of water by the private sector.
- Select with ARM in a transparent competitive bidding process the water operators, taking into account multi utility water services.
- Assure that the operators strictly follow the provision of the contract, supervise that the water fees are collected, and that the water supply systems are maintained.
- Support and train the local operators in technical aspects and for the management of the water supply systems.
- Contribute to the promotion and training of the national and local operators.

In Mauritania, the local level – the municipalities – are quite weak, given the small size of the villages. For this reason *ANEPA* works as an interface between the local and the national administration. In response to the decentralisation and in order to be closer to the local level ANEPA has also set up regional offices. ANEPA contracts the local operators who run the water supply systems in the villages in a franchise system. ANEPA provides training, ensures major

repairs and replacements, and gives support in case of conflicts. For new investments, another governmental institution, APAUS, is responsible.

On the local level the *operators* play a key role. The operators are local people who are franchisees of ANEPA and assume the responsibility for the operation of the local water supply in the villages. The operators are responsible for preventive maintenance. The motivation to do so is limited because ANEPA is responsible for large replacements and renewals. If the system does not work, however, the local operators are losing money.

The operators generate their revenue by charging the *users* and they have to collect the fees. One share of their income has to be paid to ANEPA for the provided support and major repairs and investments. The local operator has to pay another share to the *municipality, which* monitors the performance and reports back to ANEPA based on the feedbacks of the users. This arrangement contains obviously conflicts of interest at the level of the local operator.

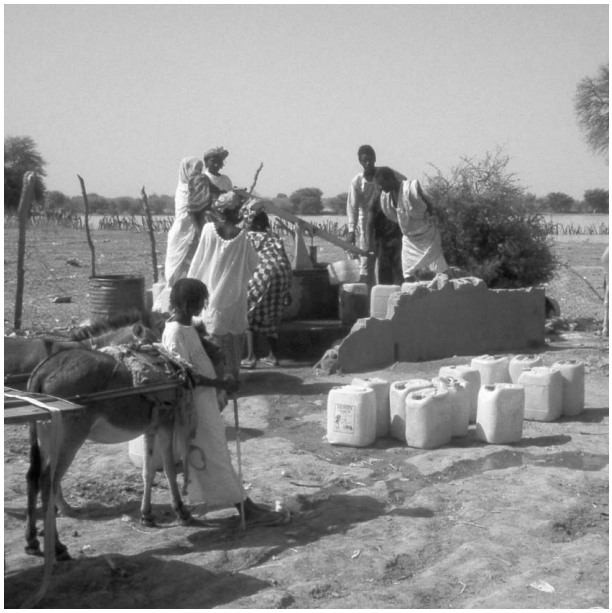
Strengths and weaknesses

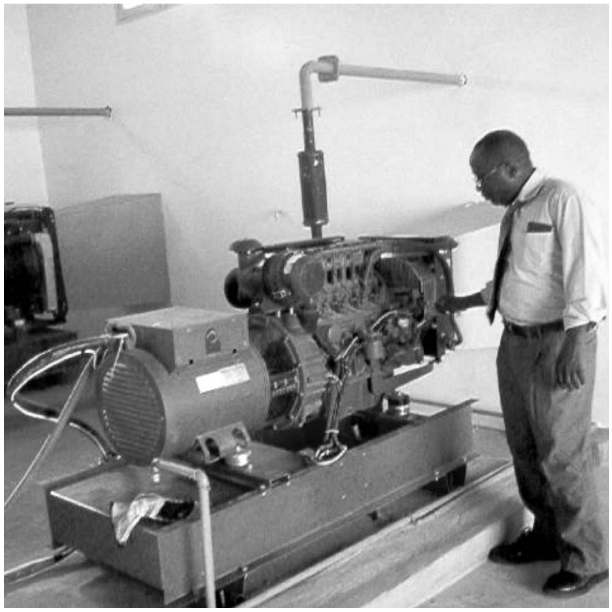
The analysis revealed strengths and weaknesses of the current system. Overall, the established model was considered to be appropriate taking into account the context. The identified *strengths* are:

- The whole system is organised in a decentralised manner. The water supply systems are therefore close to the needs of the users. In addition, decentralisation contributes to the flexibility of the whole system.
- A transparent organigram has been developed. The responsibilities and tasks are clearly assigned.
- Capacity building has been recognised as important and a training programme has been put in place.
- A decentralised system has been established to monitor the customer satisfaction and to collect feedbacks.
- The customer services are continuously improved.
- ANEPA works in a transparent way and shows an open learning attitude.
- The political sensitivity of water facilitates the negotiations with the government.

A number of *weaknesses* have been identified and further improvements are possible.

- A culture for long-term planning is missing in the whole set up. The current work is too much directed by daily needs. To improve this situation is one of the tasks of APAUS with his staff of highly qualified experts.
- Awareness of the importance of human resource development exists. A systematic concept is not in place yet.
- The flow of finances is complex. This might lead to conflicts of interest.
- Neither ANEPA nor the municipality systematically monitor the day-by-day performance of the local operators. Continuous maintenance is not enforced and ensured.
- The local operator has no incentive to really care and undertake measures for preventive maintenance, as big repairs and replacements are carried out by ANEPA. In the new scheme that was decided in an agreement between ANEPA and APAUS, the operator is responsible for the whole maintenance and big repairs. He is controlled by ANEPA. The fees also have been adjusted so that the operator can cover larger maintenance work.





4.4.3 Conclusions of the case by the working group

Based on the analysis of the context, the strengths and weaknesses of the system a number of *opportunities* for the further enhancement of the system have been identified.

ANEPA is the key player to improve rural water supply in Mauritania. A proactive human resource development is therefore of utmost importance. The job satisfaction could be further enhanced by team building, offering career opportunities, and an open communication culture (open office doors). If the ANEPA staff is motivated they will actively care for the rural water supply systems and contribute proactively to the establishment of common standards and reliable supply chains. The demand orientation could be further enhanced by assigning a senior person within ANEPA as contact person for customers. Last but not least, ANEPA could take advantage of water being a political highly sensitive issue by lobbying for more support from the state level (funding and enabling legal framework)

The *operators* should be increasingly made responsible and accountable for major repairs and replacements of the water supply system, so that they will feel the benefits from well-performed preventive maintenance. In return, the operator would collect and use the entire water fee. ANEPA would only be responsible to secure the supply chain. An important precondition for this will be the continuous training of the operators. They should be particularly sensitised in client orientation and trained to respond proactively. Last but not least a systematic quality assurance system should be put in place. In the new scheme performed by APAUS in collaboration with ANEPA as controller, the operator is responsible for these activities and for the distribution of electricity, which needs more qualified operators.

On the local level the *municipality* should supervise the work of the local contractor and report back to ANEPA. The role of the municipality has to be strengthened by clearly defining the relationship, the responsibilities, and tasks in a contract. In the new scheme, an agreement exists between the operator, the municipality and APAUS as investor. This allows the municipality to control the quality of the services.

The *users* should be actively involved in the whole set up. They give important feedbacks on the functioning of the water supply system. Their awareness for water issues should be enhanced and their capacity developed to control their own affairs. In addition, their awareness for sanitation and hygiene should be strengthened. The new scheme of APAUS foresees user or consumer associations to involve further the civil society on the management of the water.

An optimisation of the *financial flows* of the whole set up could also contribute to its further success. One possibility in the short term might be to explore the opening of accounts for the water supply systems that are managed by ANEPA, controlled by the municipality, and audited by the Ministry. In the very long term, these accounts could be handed over to the municipalities and controlled by the users.

The realisation of the above outlined suggestions that are based on a caring and integrated management model will contribute to an optimisation of the current set up and to the overall sustainability and security of the rural water supply system. Water supply should never be considered in an isolated way and sanitation and hygiene must be taken into account.

It is further recommended to develop and test improved caring and integrated management practices in selected geographical areas: Walata, Tamchekett, Tichitt, Rachid, and Bir Moghrein. This process should be monitored and the practices should be continuously improved based on the learnings. When the model has proven to work optimally it may be scaled up and applied in other regions as well.

5 Insights and remarks

Workshops are always a learning process for the organisers and the participants. Last but not least every workshop is as good as the insights the participants got. Below the insights and remarks are listed that the participants mentioned on day one, two and four.[*]

5.1 Insights and remarks of day 1

Workshop topic

- Workshop's topic is very relevant.
- Reaching the MDGs requires an increase of the performance in terms of management and extension of water and sanitation.
- SDC water desk: good governance (6 fields), 60 Mio. CHF/year (50% water), sanitation could be a business, PPP, % solidarity to reach MDG: 60 Mio. CHF/year.

Water supply systems & services

- The system is not for the staff [to create jobs].
- An efficient service can be provided with just 35 staff.
- How did the enterprise improve efficiency?

Compensation for work

- Compensation of the board [of the Technische Betriebe Weinfelden] not too high?

Care and motivation

- The manager of the Technische Betriebe Weinfelden cares in a first step for his staff that care finally for the clients.
- Motivation in private sector management of water and sanitation.

Stakeholders

- Stakeholders to be involved – make concerned persons to involved persons.

Quality of services

- Quality of service can build trust in people, which are crucial for sustainable business in utility service and reduces the risk of investments.

Capacity building and maintenance

- Examples of Indonesia and Lesotho show that capacity building and the maintenance system are key factors for success.

Multi-utilities

- An integrated management of multi utility services is possible, but with finances separated.
- The multi-utility services of Weinfelden create synergies.

Cost recovery

- Flat rate for water (2 CHF per m3).
- Prices are cost covering.
- Long-term investments are guaranteed.

[*] Titles in italics added by the rapporteur.

Public or private and performance

- No matter if management is public or private – efficiency is the point.
- Public or private is not the problem but the performance.
- The reorganisation of the Technische Betriebe Weinfelden is not a privatisation.
- Private/public management is not the question.
- The Technische Betriebe Weinfelden are a public enterprise. Where is the private sector participation?

Transfer of insights in developing countries

- It is a big challenge to translate the lessons learnt from the Technische Betriebe Weinfelden into different contexts (poverty) and other paradigms.

5.2 Insights and remarks of day 2

Entrepreneurial thinking

- Where there is a will, there is a solution.
- CIM: champion in management.
- Good leadership is essential for success of an enterprise.
- The personality, the people are key.
- Entrepreneurship with social responsibility.

Waste water treatment

- More attention has to be paid to water consumption and produced wastewater.
- Wastewater management is more expensive than drinking water supply.

Management

- Good management and enabling environment are essential for CIM.
- Good management practice of the Technische Betriebe Weinfelden.
- The true influence of good management on quality services.

Caring for customers

- Importance of customer care service enhanced the maintenance system of Weinfelden.
- Close relationship with (caring for) clients and politicians creates trust and accountability.
- Professional solutions: staff, clients.

Preconditions for a CIM

- Defining the preconditions for CIM.
- Some confusion on the prerequisites and the key success factors.
- Political will and legal framework very important.
- Success of caring and integrated management depends very much on external preconditions.

Communication and marketing

- Good communication ensures synergies among stakeholders.
- Communication and marketing are essential for good functioning of water supply and sanitation.

Profits of public enterprise under private law
- The profits of the Technische Betriebe Weinfelden go to the municipality.

Transparency of accounting
- No cross subsidies.

Sufficient savings
- Secure investments through sufficient savings.

CIM is self-reinforcing
- Enabling factors for success of a caring and integrated management are nurtured when the system progresses.

Good understanding of challenges and system is important
- Identify the three visibility levels of a company: invisible, more or less visible, visible.
- Caring and integrated management needs both: structures and dedication/commitment.
- Blaming is not the solution: formulate and understand the problem and find afterwards the solution.

Necessity of immediate successes and long-term planning
- Striving for immediate success and caring for long-term sustainability.
- Importance of long-term planning in service delivery.

5.3 Insights and remarks of day 3 and 4

Relationships to stakeholders and shareholders
- Proximity of the municipal council to the issue of water.
- Close relationships of the Technische Betriebe Weinfelden and the municipality are evident.
- Constructive relationship between Technische Betriebe Weinfelden, shareholders and mayor.
- Motivation and commitment of all stakeholders is a key factor for success in Weinfelden.
- The success of a project depends on the sharing of information between actors.
- Lack of involvement of stakeholders leads to unsolvable situations and problems.

Quality of equipment, cleanliness and maintenance
- Technische Betriebe Weinfelden impacting cleanliness.
- Excellent equipment quality and maintenance.

Environmental protection
- Environmental protection measures of the Technische Betriebe Weinfelden.
- Protection of water resources through good relationships with farmers.
- The strategic water resources management of the Technische Betriebe Weinfelden is very important to ensure the water quality.

Short, medium and long-term planning
- Need to have short, medium and long-term plans.
- Age and history of supply system with different service levels.

Organisational culture based on trust
- Organisational culture as a main driving force.
- Trusting the system doesn't exclude controlling.

Open and transparent communication
- Possible to understand context with open and transparent communication.
- If you want to get useful inputs, be transparent.
- Do away with your paradigms and listen.
- Caring = looking and listening.

Dedicated, accountable and efficient staff
- Dedicated staff of Technische Betriebe Weinfelden.
- Staff in community social network and accountable.
- Staff efficiency in Technische Betriebe Weinfelden.
- High sense of ownership.
- Exceptional efficiency of small team of the Technische Betriebe Weinfelden.

Leadership
- Good leadership matters and teamwork.
- Technische Betriebe Weinfelden has an entrepreneurial spirit.

Transfer of insights in developing countries
- Success story of the Technische Betriebe Weinfelden is an inspiration for development projects elsewhere.
- Relevancy of the discussed and presented cases.
- The visit to the Technische Betriebe Weinfelden gives us some optimism to reach something better, but also shows the limitations we have in the South.
- Financial sustainability is a myth in poor rural areas.

5.4 Final learning insights

At the end of the workshop the participants mentioned the following main learning insights about the usefulness of a caring and integrated management approach:

Training and capacity building
- Priority number one is attention, support, training and professional upgrading of the core group.
- Staff development and satisfaction are key factors.
- Pourqu'un système de gestion d'eau potable et d'assainissement soit durable, l'instance de décision locale doit avoir la maitrise technique et financière de çe service de proximité.

Professional management through bundling of services in multi-utility
- Bundling service units carries a potential for professionalizing management.

Caring managers
- Caring managers are essential.
- A caring champion is behind any success story.

Public or private organisation is the not the question but performance

- Public or private management is not the problem – important is the efficiency.
- Public/private is not the problem but quality service at a good price.
- Private or public management is not the question but performance.

Integrating a CIM is a continuous process

- A caring and integrated management should be considered from the very beginning of any project/system.
- Step by step from the lower, local level to a sustainable caring and integrated management: 1) social and political local preconditions; 2) caring for financial and management matters; 3) caring for technical matters.

Human factor

- A key factor is the human factor.
- It is all about people, …and much less about technique.
- Human factor caring for staff and clients.
- People play a very important role for the success of a caring and integrated management.
- Dedicated and committed staff is one of the key issues for caring and integrated management.
- Make concerned persons to involved persons at all levels.
- Customer relationships are key (users & politicians).
- Come closer to the beneficiaries.
- Bring all stakeholders in the benefit loop to sustain the system.
- Quality services might be built on trust in communities to get sustainable work and reduce the risk.

Enabling environment supports a CIM

- Enabling environment recognizing the performance.

Transparent and accountable management structures and processes

- Simple command line, ensuring transparency and accountability.
- The core system and the context are equally important at the same time.
- Good management is a key factor for success.

Vision

- Shared vision is a key factor for success.

Entrepreneurship

- Entrepreneurship on all levels makes things running better and more sustainable.

Information and communication

- Communication is a key factor for success.
- The success of the management system depends on information sharing between the actors.

Sustainability through integrated approaches

- Integrated approach to service delivery is essential for sustainability.
- Importance of long-term planning.

Enabling context

- Political will and legal framework are very important; must be associated.
- Success of a caring and integrated management depends very much on external preconditions.

Potential of caring and integrated management

- Caring management has the quality of pushing boundaries: vision, leadership, strategic options, and communication.
- The big challenge to translate the lessons in the local context. CIM: monitoring all the factors, listening and acting, communication inside and outside. In your context: will and knowledge.

6 Workshop organisation and methodology

AGUASAN workshops always apply a variety of methods for the preparation, organisation and realisation of the workshop.

6.1 Preparation

The workshop was carefully prepared by a steering committee in several meetings including the moderator of the workshop. In some meetings the rapporteur participated as well. The workshop administration was carried out by the Skat secretariat.

The most important preparation activities were the discussion and definition of a workshop theme, the identification and briefing of resource person and case study presenters, the development of the workshop programme, the invitation of participants, and the organisation of workshop facilities.

To ensure a good coordination and understanding of the workshop theme two meetings were held with the resource person for this workshop: Walter Krähenbühl, Director of the Technische Betriebe Weinfelden.

Experience shows, that a careful preparation of the workshop always contributes a lot to the success.

Workshop preparation team

Tasks and responsibilities are clearly assigned. By separating clearly the different roles and appointing responsible persons everybody can focus on his/her specific tasks.

Workshop organisation	**Responsibility**
Steering committee: preparation, coordination of content and workshop	Karl Wehrle (Lead) – Skat François Münger – SDC Kaspar Grossenbacher – Helvetas Silke Drescher – SANDEC
Secretariat – Rotschuo (Switzerland) Secretariat – St. Gallen (Switzerland)	Roger Schmid – Skat Gisela Giorgi – Skat
Resource Person	Walter Krähenbühl – Technische Betriebe Weinfelden
Rapporteur	Urs Karl Egger – Skat
Moderator	Sylvia Brunold – LBL

Funding

Also this year the organisation, the realisation of the workshop and accommodation were funded by the Swiss Agency for Development and Cooperation (SDC).

The participants had to fund their travel and accommodation costs on their own or to find a sponsoring organisation.

Preparation of participants

Prior to the workshop the participants received various information so that they could prepare themselves.

- In the first *announcement* the theme of the workshop was explained: the background, the goals and objectives, the expected results, and the workshop procedures.
- Persons interested to participate had to submit a *pre-registration form*.
- In order to optimise the working environment of the workshop, the *number of participants is limited* and all applications had to undergo a selection procedure by the workshop steering committee. All applicants were informed, whether they were selected or not.
- Prior to the workshop the participants received a short *introduction note to the workshop theme* for information and reflection.
- All participants received also a form where they could introduce themselves. These *personal introductions* were put up on a wall during the workshop.

6.2 Realisation of the workshop

6.2.1 Venue

The AGUASAN workshops have taken place up to now always in the Paradieshotel Rotschuo, situated in central Switzerland on the edge of Lake Lucerne, between the villages of Gersau and Vitznau.

6.2.2 Workshop programme

The workshop programme of the AGUASAN workshop has to be understood as a process. Prior to the workshop a tentative programme is prepared. During the workshop the schedule and the content are continually adjusted and improved according to the ongoing workshop process. Generally, the working blocks lasted from 8:30 to 12:00 in the morning and 14:00 – 18:00 in the afternoon. The table below gives a general overview on the workshop programme.

Morning	Afternoon
Monday, June 27th	
Arrival (11:00 a.m.) ▪ First informal contacts ▪ Welcome-drink	**Opening** ▪ Programme and objectives ▪ Personal presentation of participants ▪ Presentation of the context) **Introduction** ▪ General introduction to the workshop topic
Tuesday, June 28th	
Resource person ▪ Caring and Integrated Management – Concept and Experiences from Weinfelden ▪ Group work: collecting basic elements and main issues	▪ Open questions answered by resource person ▪ Group work continued ▪ Presentation and exchange of group work ▪ Introduction of the 4 case studies ▪ Forming of working groups for case studies
Wednesday, June 29th	
Case studies ▪ Detailed introduction to the assignments for group work ▪ Detailed presentation of case studies Early start to the excursion	**Excursion** ▪ Visit to Weinfelden ▪ Meeting with Mr. Krähenbühl and his team, as well as with the board, clients, public administration etc. ▪ Culture and dinner in Weinfelden
Thursday, June 30th	
▪ Recapitulation of impressions and insights on the excursion **Case studies** ▪ Working with the cases: What has to be done? What will work in which situation	**Case studies (continued)** ▪ Group work ▪ Small open space for adding new ideas by counselling ▪ Preparation of final presentation including framework for action
Friday, July 1st	
Presentations ▪ Final presentation and feed back from resource person ▪ Conclusions and recommendations, common aspects, Lessons learnt ▪ Transfer for personal working situation	**Looking back and forward** ▪ Listing topics for the next AGUASAN Workshop ▪ Evaluation of the workshop ▪ Closure of the workshop **End of workshop**

6.2.3 Structural elements

The workshop programme comprised several structural elements: presentation of a resource person, presentation and discussion of case studies, excursion, daily review team, and evening presentations.

Resource person

For this year's workshop a resource person was invited. The resource person had the task to present a first case study to illustrate the theme of the workshop and to give feedbacks to the cases presented by the participants. The resource person was Mr Walter Krähenbühl, Director of the Technische Betriebe Weinfelden.

Case studies

Important elements of the AGUASAN workshop are the case studies. They serve to explore the topic of the workshop in depth at the example of real cases. At the AGUASAN workshop 2005 four case studies were presented and analysed in depth:

Topic	Country	Presenter(s)	Working group
Small town water supply for Mocimboa da Praia	Mozambique	Alberto José Cumbana	Kaspar Grossenbacher (Coach), Kalinga Pelpola, Alfred Mink, Salam Yameogo, Blanca Del Rosario
Management and empowerment in rural water and sanitation services	Peru	Roy Antony León Rabanal, Oscar Castillo	François Münger (Coach), Kurt Schneider, Humphred T. Musa, Monique Husser, Thakur Prasad Bhatta
Community based urban waste management	Bangladesh	Maqsood Sinha	Silke Drescher (coach), Sébastien Kinsiklounon, Neil Herath, Koussé G. Koné, Paul Bayili, Wossen Assefa
Rural and periurban management for water access	Mauritania	Mamadou Amadou Kane / Ould El Eyil Mohamed Mahmoud	Roger Schmid (coach), Nathalie Sémoroz, Chris Zurbrügg, Cheick T. Tandia, Karl Wehrle

The case study presenters have to prepare prior to the workshop a presentation of their case and they are requested to arrive one day earlier. Together with a *coach* the case study presenters review the presentation, the length, and the information provided. Based on the review the presentation is revised and finalised. This procedure ensures presentations of high quality.

On the second day of the workshop the case study presenters had the opportunity to present briefly their case to all participants. Afterwards working groups were formed according to the interests of the participants and every case study presenter gave a detailed overview on his

case. Each working group had to analyse afterwards the case on the basis of the framework for a caring and integrated management.

Daily review team

At the beginning in the morning of day two, three and five of the workshop a team of the participants had to give a daily review of the last day. Every group presented in an ironic theatre the most important official activities and unofficial incidents in an ironic way. This was not only a good opportunity to remember what happened yesterday, but also facilitated a smooth start in the new day and created a good spirit right from the beginning.

Evening presentations

Several participants indicated that they would like to present other projects or videos that are not directly related to the workshop topic. For this reason evening sessions were organised.

During the AGUASAN workshop 2005 the following evening presentations were made:

- Humphred Tebong Musa presented two programmes of Helvetas in Cameroon: the Programme for Sustainable Water Supply and Sanitation Services (PWS) and the Council Support Programme (CSP).
- Kalinga Pelpola presented the Masibambane Water Services Sector Support Programme in South Africa.
- Thakur Prasad Bhatta presented a video on the Nepal Water Resources Management Programme of Helvetas.
- Neil Herath presented a video for the promotion of the SODIS system in Sri Lanka. SODIS is a simple system to disinfect water in PET bottles with sunlight.

Excursion

Excursions are a very effective way to show practical examples. On excursions the participants are confronted directly with the reality: with all their senses they can hear, smell, taste and see what should be done or avoided. Often, these excursions help to answer many questions and trigger insights more quickly than lengthy discussions or reports.

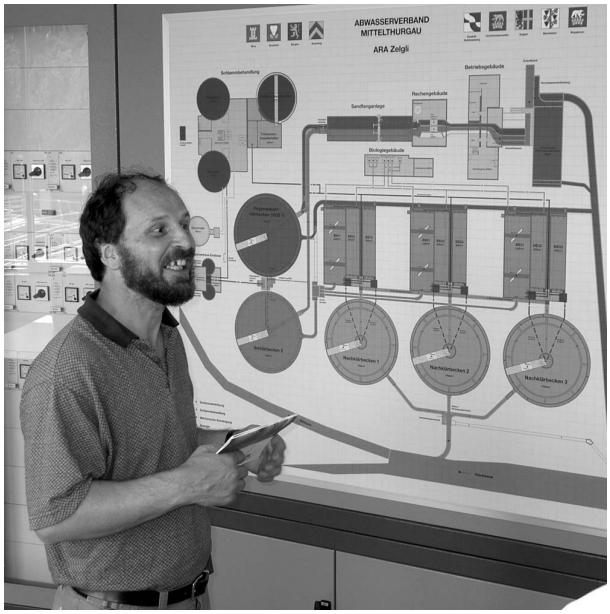
Talking about caring and integrated management is one thing, visiting and seeing an organization working in a caring and integrated manner gives much more and lasting insights. That’s why at every AGUASAN workshop an excursion is organized.

This year’s excursion led to the *Technische Betriebe Weinfelden*, the municipal utility of Weinfelden, that were introduced on the first two days of the workshop by the Managing Director Walter Krähenbühl. And in fact: a perfectly organized excursion confirmed that the Technische Betriebe Weinfelden are run with a caring and integrated management system. The participants could see the staff in action and see for themselves that the whole system is well maintained.

First, the workshop participants had the opportunity to visit on a *round trip* the sewage treatment plant, a filter well, the control room, and the planning and information system. The visits of the various sites went like a (Swiss) clockwork.

The *sewage treatment plant* is not part of the Technische Betriebe Weinfelden because of historical reasons. Nevertheless, it was included in the excursion programme as it is also a well-managed utility. Recently, it was rehabilitated - almost in a too perfect way. As some participants surprised remarked only three staff members run the whole sewage treatment plant.

The caretaker who has been working for the Technische Betriebe Weinfelden for 35 years presented the *filter well* collecting groundwater. The participants could ascertain that he really cares for his well. The surrounding area of the well is under protection and the farmers are not allowed to use chemical substances. To make sure that the farmers comply with the restrictions the caretaker maintains good relationships to the farmers. For the protection of the groundwater also passive security mechanisms have been put in place: a road leading through the ground water collection zone was constructed in such a way that no oil or fuel can infiltrate in the groundwater in case an accident happens.



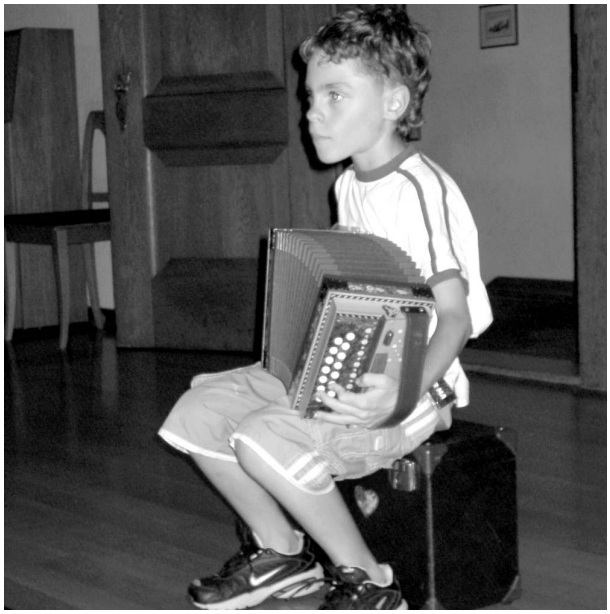
In the *control room* of the Technische Betriebe Weinfelden all relevant information for the water supply, natural gas, electricity and communication is collected electronically and can be accessed via computer stations. In case of a problem the system automatically raises an alarm and informs the staff member on duty. This staff member has afterwards to confirm the alarm and is subsequently fully responsible to settle the emergency.

In the planning department the participants had the opportunity to see the whole *planning system* for the water supply network. The whole infrastructure is based on a geographical information system (GIS) where all pipes are registered with additional information like the diameter, the quality, the material or the exact location of the pipelines. The whole system can be plotted in a plan.

After this roundtrip the Technische Betriebe Weinfelden invited to a *drink* to which many already were longing for as it was one of the hottest days of the summer. Present were also the whole management of the Technische Betriebe Weinfelden, the mayor of Weinfelden, Mr. Max Vögeli,

and other representatives of the Board. This was an excellent opportunity to ask – also critical – questions.

In a sightseeing tour through Weinfelden the participants got an impression of the beautiful old town of Weinfelden and in particular to aspects related to water, like fountains or small streams running through the town. The day was concluded with a dinner in a traditional restaurant in Weinfelden. This was again a good opportunity to discuss with the staff of the Technische Betriebe Weinfelden and representatives of the board, and to digest the insights of the day. A presentation of a young accordion player enchanted everybody and showed that the traditional Swiss culture is also lived by the young generation.



6.2.4 Role of facilitator and rapporteur

During the workshop the steering committee including the facilitator and the rapporteur regularly met to discuss the workshop progress and to adjust the procedure when needed.

Facilitator

During the AGUASAN workshop a facilitator guides through the programme. The most important task of the facilitator were:

- Leading through the programme and following the thread.
- Keeping the schedule.
- Presentation of the programme every morning.

- Review progress during the day.
- Develop assignments for working groups.
- Clarification of misunderstandings.
- Summarising briefly contributions.

Rapporteur

The rapporteur has the task to take notes for the workshop report, to collect the files of PowerPoint presentation, flipcharts and notes on pin boards. The result of his work is this workshop report.

During the workshop pictures of all pin boards and flipcharts were taken as well as of the participants in the working groups, during breaks, the excursion, etc. On the last day all files with presentations and papers and pictures taken during the workshop were burned on a CD and distributed to the participants.

6.2.5 Methodology

A good workshop methodology contributes a lot to a successful workshop. Based on the experience of the former AGUASAN workshops the following methodology was applied:

Workshop principles

At the beginning of the workshop a few workshop principles were stated:

- It's your workshop – be your own chairperson.
- Give feedbacks to the steering group.
- It's not problem solving but learning from each other.
- Listen to each other.
- Share leadership and responsibility in working groups.
- Write properly on cards, flipcharts and pin boards so that everybody can read it.

Working groups

Working groups are an excellent means to discuss specific topics in depth in smaller groups. They will achieve better results if they are well organised.

- Working groups receive always written assignments summarising the objective, the tasks, the available time and the expected results. The assignments are on the CD attached to this workshop report.
- Every working group has to choose a facilitator who moderates the discussions
- Every working group has to choose a rapporteur who reports back to the plenary.
- For some tasks it was suggested to the working groups to visit each other and to give feedbacks. This mutual visits contribute to the learning process.

Presentation and discussion modes

During the workshop several discussion and presentation modes were chosen:

- PowerPoint for longer presentations.
- Flipcharts and pin boards to illustrate topics or for group work.
- Working groups (see above).

- Talk show: to discuss a topic in the plenary the presenter and a moderator took place at a table. People from the audience who were interested to ask a question had to queue up for the podium, take a seat and discuss the question with the presenter.

Learning methodology

The participants had many opportunities to learn from each other: from presentations, formal and informal discussions, or the excursion.

In addition, the participants were asked at the end of every day to sit together in groups of three people and to discuss what their most important learning insight of the day. All insights were collected on cards and put on an inboard. This exercise helps the participants to reflect on the workshop process and is also an indicator for the workshop organisers how the workshop process is working.

7 Resources

7.1 Publications

The results of the AGUASAN Workshop 2005 are available on a CD with the following content:

- Workshop report
- Pictures (photos, flipchart and inboard illustrations)
- PowerPoint presentations

The AGUASAN workshop reports of the workshops of the last years are available for download on the website www.skat.ch.

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7.3 Topics of previous workshops

N°	Titles	Date
0	**Appropriate technologies in water supply and sanitation**	1984
1	**Water decade** Drinking Water and Wastewater Problems in Developing Countries	1985
2	**Participation and animation**	1986
3	**Sanitation and health**	1987
4	**Operation and maintenance** Activities and goals relevant for maintaining of village supply systems and latrines	1988
5	**Monitoring and evaluation in drinking water and sanitation projects**	1989
6	**Sustainability of drinking water supply and sanitation projects** What is sustainability, in what fields can it be achieved, what are its guidelines, what has to be done to make a project sustainable	1990
7	**Communication in development cooperation** Communication and its various aspects in development work	1991
8	**Water and sanitation knowledge system** Development of water and sanitation knowledge systems for better preparation and implementation of WatSan projects	1992
9	**Water is not a free resource (anymore) – who pays?** About the problems of financing water supply and sanitation systems	1993
10	**Sustainable water and sanitation projects through fair negotiations** Importance of well conducted discussions during preparation and implementation of water and sanitation projects in order to ensure their sustainability	1994
11	**Urban sanitation** The challenge to communities, private sector actors, local governments and external support agencies	1995
12	**Transfer of ownership in water supply and sanitation systems** Community ownership of water supply systems, which is essential to user participation, and to the sustainability of these systems	1996
13	**Less water for more people** How to tackle and avoid conflicts around global water scarcity in the field of international development cooperation	1997
14	**Technology and balanced development** All involved organisations, professionals and users are bound to contribute to sustainable drinking water supply and sanitation systems	1998
15	**Private sector – just a (new) hope?** Whether and how the private sector can contribute effectively to cover the needs in the water sector and whether the market economy is suitable to work in programmes of poverty alleviation	1999
16	**HCA – The household-centred approach** A new way to increase the sustainability of water and sanitation projects?	2000
17	**From sector reform to sector revolution** A new (and revolutionary) approach is needed in order to ensure sustainable operation and maintenance of installed systems	2001
18	**Profits for all – service for all** Innovative approaches and management options for equitable and sustainable drinking water and sanitation services	2002
19	**This shit drama – are there ways out?** Innovative approaches for practical solutions to a dirty and deadly issue that has been taboo for too many decades	2003
20	**Sustainable services without external support – still a challenge!** What is needed so that sustainable services are guaranteed after the withdrawal of external resources?	2004

7.4 Ideas for the next workshop and planning procedure

At the AGUASAN workshop 2005 the participants suggested the following themes for the next workshop:

Workshop themes[†]

Water, sanitation, and health

- Synergies between water and environmental sanitation and health
- WASH quality management training on community level
- Water alone is not enough. Catch up with sanitation.
- Sanitation as a business
- Auxiliary options to complement water supply like RWH, waste water, recycling
- Water resources management and protection

Appropriate technology

- Traditional technology: myth or opportunity?
- Use of appropriate technologies to minimize costs
- Appropriate technology for water supply and sanitation

Entrepreneurship and supply chains

- Entrepreneurship in water and sanitation services
- Promoting entrepreneurship and partnership
- Supply chain development

Water planning and management by municipalities and communities

- Analyze the work of the municipalities with the community
- Participatory planning and implementation at community level

Governance, harmonisation, partnerships

- Strengthening partnerships: operator, regulator, implementer
- Using decentralisation for water and sanitation benefits
- Good governance and conflict sensitive water and sanitation implementation
- Harmonisation and sector wide approaches

Information, knowledge, capacity building

- Improvement of knowledge, information and data bases on water supply and sanitation
- Date and information management
- Transfer of skills in decentralisation process
- Human resources management on community district level
- Capacity building for municipality-district level on water management
- Scaling up of success models to enhance delivery

Quality control

- Quality control and management training
- Enhancement and securing of quality (design, construction, performance)

[†] Titles in italics added by the rapporteur.

Workshop organisation

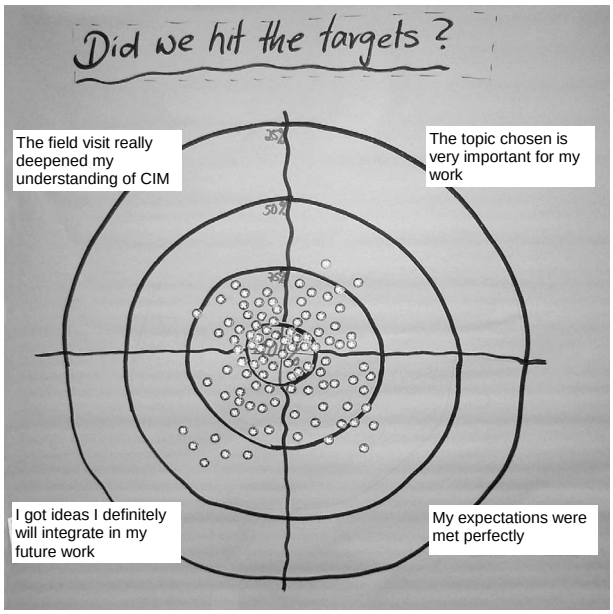
For the organisation of the next AGUASAN workshop the organisers should think about:

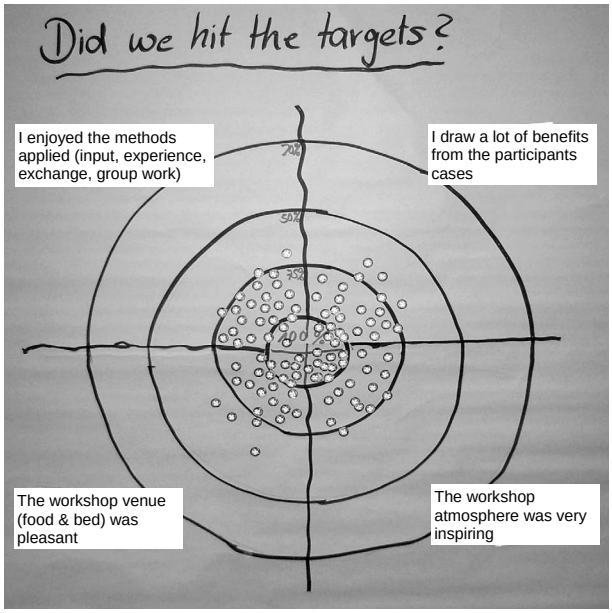
- Access to the Internet (mentioned three times).
- More time to visit the wonderful surroundings.
- More time for exchanges among the working groups (mentioned three times).
- More time to discuss case studies.
- More time for individual exchanges.
- More time for exchanges on specific themes important for our work.
- Another language is necessary (French, Spanish).
- Brief presentation of each participant on his/her working context related to the topic.

7.5 Workshop assessment

7.5.1 General assessment

On the last day all participants carried out together an assessment of the workshop. The results are displayed in the two pictures below.





7.5.2 Results of survey

The participants received also a questionnaire. The results of this survey are summarised in the table below.

1	**What were your expectations prior to the workshop?**	**Nos**
	Learn from others, experience exchange	6
	Learn about CIM experience exchange	4
	Learn about CIM	3
	Experience exchange	2
	Learn from best practice	2
	Development of improved strategies for O&M	1
	Familiarisation with state of the art	1
	Get new insights	1
	How to improve WES performance	1
	Methodological inputs in CIM experience exchange	1
	To have a new model	1
	Total Answers = 23	
	Topics	
	Learning	21
	Exchange of experience	13
2	**How did you prepare yourself before the workshop?**	**Nos**
	Discussion with:	
	Boss	4
	Colleagues and partners	7
	Preparation group/Project team/Resource person	4
	Total Answers = 15	
	Other preparation:	
	Read materials provided	13
	Reading WebPages	1
	Seco PSP initiative	1
	Work on the case study	1
	Total Answers = 16	
3	**Are your expectations fulfilled?**	
	yes = 5, partly = 3, no = 0 - Average:	**4.56**
	Total Answers = 25	
4	**Was your participation at the workshop of use for your activities?**	
	yes = 5, partly = 3, no = 0 - Average:	**4.88**
	Total Answers = 25	
5	**Which insights did you gain and how do you intend to use them in your future professional activities?**	**Nos**
	Motivated and committed staff caring as an attitude	8
	Customer satisfaction	4
	Stakeholder involvement	3
	Good planning	3
	Public vs. Private is not the question, quality of service is the question	2
	How to set up water management system and implement them in new project	1
	I will try to apply a CIM system in my agency	2
	I would like to make a CIM workshop with our counterparts	1
	More training is needed	1
	It will be difficult to motivate staff in my country	1
	Advocate for TA with authorities at central level	1
	Share the lessons learned with staff	1
	Workshop encourages lateral thinking and good management practices	1
	Total Answers (multiple answers possible) = 29	

6	**How do you evaluate the workshop concept?**	
	Very good = 5, OK = 3, Unsatisfactory = 0	**average**
	Choice of main themes	4.76
	Balance of theory, discussion, group work / exercises	4.28
	Possibilities for exchange of experiences	4.52
	Total Answers = 25	
7	**How do you evaluate the overall lead of the workshop (moderator, resource persons, steering committee)**	
	Very good = 5, OK = 3, Unsatisfactory = 0	**average**
	Thematic competencies	4.52
	Comprehensive presentation of the themes / issues	4.52
	Consideration of experience & inclusion of problem areas expressed by the participants	4.36
	Total Answers = 25	
8	**How do you judge the workshop documents?**	**average**
	Very good = 5, OK = 3, Unsatisfactory = 0	3.96
	Total Answers = 24	
9	**Please comment on your overall impression of the workshop (organisation, rooms)**	**average**
	Very good = 5, OK = 3, Unsatisfactory = 0	4.72
	Total Answers = 25	
10	**Do you intend to have a debriefing with your boss, where you will discuss possibilities of realisation of what you learned?**	**Nos**
	Will share with boss and colleagues	5
	Will share with colleagues	13
	Will promote AGUASAN	1
	Will secure influence of Helvetas W&S projects	1
	Total Answers = 24	
11	**Any additional comments you wanted to mention – personal suggestions:**	**Nos**
	During preparation, it is good to discuss relevance of case studies	
	Case Studies should maintain a minimum standard and should meet minimum elements of scientific papers	1
	It would be useful to have more time to share the case studies with all groups, More analytical work of the case studies is needed	3
	Good choice of case studies	1
	It was a good idea to fully integrate the field trip in the WS theme	1
	In the context of present decentralisation CIM should find a place	1
	Next workshop should focus on capacity building	1
	Could this workshop be organised in a country of the south	1
	Congratulation good job, Very useful Forum	4
	WS went well despite many changes in the organisers	1
	This type of workshop promotes learning	1
	Didactic Skills maximised learning process	1
	New moderator was good/new ideas and methods	1
	Interchange and learning improves efficiency and motivation	1
	Very good climate at workshop	1
	Language problems prevented intense discussion, more theory please	1
	Previous workshop proceedings should be available	1
	Organisers to facilitate regular contacts with participants	1
	Telephone and Internet access should be facilitated	3
	It would be better to have single rooms for all participants	1
	No pads and pens were provided	1
	I missed the nice desserts	1

Diagram summarising the overall satisfaction