

**Swiss Centre for Development Cooperation  
in Technology and Management**

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**Private Sector - just a (new) hope?**

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**Report on the 15th AGUASAN Workshop  
June 28 - July 2, 1999**

**Urs Fröhlich**

Table of content	page
Executive summary .....	4
1. Personal foreword of the rapporteur .....	5
2. Outline of the 15th AGUASAN Workshop.....	6
2.1 Objectives and expected results.....	6
2.2 Programme, organization, participants.....	7
2.3 Context (AGUASAN group) .....	8
2.4 Methodology of the workshop .....	9
3. The workshop .....	10
3.1 Inputs.....	10
3.1.1 <i>Chances and limits involving the private sector in water and sanitation ....</i>	<i>10</i>
3.1.2 <i>The private sector and the market.....</i>	<i>12</i>
3.1.3 <i>The (World Bank) Toolkits for Private Participation in Water and Sanitation</i> .....	<i>13</i>
3.2 The cases, projects (overview) .....	13
3.3 Group work on the cases.....	18
3.3.1 <i>Introduction.....</i>	<i>18</i>
3.3.2 <i>Bangladesh - Latrine programme (from government to marketing approach)</i> .....	<i>18</i>
3.3.3 <i>India - Production and distribution of handpumps (private sector with</i> <i>tradition).....</i>	<i>19</i>
3.3.4 <i>Lesotho - Government rural water supply programme (labour contractors)</i>	<i>20</i>
3.3.5 <i>Nicaragua - Rural water supply and sanitation programme.....</i>	<i>20</i>
3.3.6 <i>Romania - Sânmartin water supply (shareholding company).....</i>	<i>21</i>
3.3.7 <i>South Africa - MVULA Trust (community based service provider) .....</i>	<i>23</i>
3.4 Discussions about important issues .....	24
4. The Excursion to the Pfäffikon Corporation.....	27
5. Lessons learnt by the workshop participants .....	29
5.1 Positive experience.....	30
5.2 Negative experience .....	30
5.3 Risks .....	31
5.4 Some important conclusions:.....	32
5.5 Individual insights of workshop participants .....	33
6. Side activities .....	35

6.1 Public - Private Partnership .....	35
6.2 Taking a New Look .....	36
6.3 Other presentations .....	37
7. Closing .....	38
Participants .....	39
<i>Presentors of Case Studies</i> .....	41
<i>Members of the AGUASAN-Group</i> .....	42
<i>Moderator</i> .....	42
<i>Rapporteur</i> .....	42
<i>Resource Persons</i> .....	42
<i>Guest on Monday and Tuesday</i> .....	42
<b>Annex 2: The excursion to the Pfäffikon Corporation</b> .....	44
<i>History, present situation and future</i> .....	44
<b>Storage tanks and springs</b> .....	47
<b>Pumping Stations</b> .....	47
<b>Plant Supervision</b> .....	47
<b>Technical Data</b> .....	47
<b>Water Supply</b> .....	47
<i>Distribution System</i> .....	48
Yearly Supply .....	48
<b>Unaccounted-for water</b> .....	48
<b>Hardness of water</b> .....	48
<b>Water Treatment</b> .....	48
<b>Water Quality Monitoring</b> .....	48

## Annexes

Annex 1	List of Participants
Annex 2	The excursion to the Pfäffikon Corporation
Annex 3	AGUASAN Workshop in the year 2000

## Executive summary

"Private sector - just a (new) hope?" was the subject of the 15th AGUASAN one-week workshop in Gersau/Rotschuo. The question was whether and how the private sector can contribute effectively to cover the needs in the water sector, whether the market economy is suitable to work in programmes of poverty alleviation. With the world-wide and locally growing economic constraints and with the increasing difficulties many governments have in fulfilling their provider roles, the expectations and the hope in the private sector have increased. The workshop concentrated on small- and medium-scale projects and enterprises.

37 participants worked in groups on six projects/cases that were presented by members of the respective project execution teams.

The projects:

- Bangladesh, Latrine programme
- India, Handpump production
- Lesotho, Contractors in rural water supply
- Nicaragua, Rural water supply and sanitation programme
- Romania, Water and sanitation project Sânmartin
- South Africa, MVULA – Community-based service provider

Applying participatory methods, the cases were analysed with regard to stakeholders and their tasks, responsibilities and roles. The discussions about the cases and a visit to a self-supporting, independent community water corporation in Pfäffikon brought the participants to the conclusion that the private sector is more than just a new hope. Under conditions ensuring transparency of all processes, empowerment of communities, a suitable legal framework and governmental facilitation/control, the private sector is able to contribute effectively to the improvement of the water and sanitation situation of the poor, in direct cooperation with the users/clients. Social marketing is important to launch and support private sector-based programmes in water and sanitation.

The public sector plays a decisive role in promoting or hindering progress in programmes and projects with private sector components. Governments must fulfil their regulatory role (e.g. management of natural resources), and they must learn to change their position of providers to the one of facilitators, respecting at the same time the interests and the rights of the poor, and the marketing principles.

"The lessons learnt" are grouped under the headings Positive experience, Negative experience, Risks, Some important conclusions. The participants concluded that *the private sector is an attractive option even for the poor*, which requires applied research and more of experience sharing.

## 1. Personal foreword of the rapporteur

The 15th AGUASAN workshop about private sector involvement was in so far special as it took place in a period of world-wide changes: Decentralisation, globalisation, deregulation, democratisation, economic and ecological problems, political tensions and governmental failures are just a few of the headlines of today's mass media topics. It becomes increasingly obvious that the traditional ways of understanding and solving problems need to be combined (not replaced) with new approaches. - Five years ago the AGUASAN audience would not yet have been open to discuss private sector options. In the meantime, there have been hopeful examples, i.e. concrete experience in water and sanitation projects which prove that the question is no longer about the public or private sector, but how these two can operate hand in hand and together with, and in the interest of, poor people. In an increasing number of cases, the government is successfully changing from a provider role to that of a facilitator. The author of this report and many participants remain sceptical whether water and sanitation should become a business. However, the workshop made clear that an appropriate private sector involvement could be very effective regarding development and poverty alleviation, provided certain conditions are fulfilled. During the group work and the intense discussions, the participants showed a clear readiness to intensify projects with private sector involvement and the political dialogue on all levels. The AGUASAN workshop has also made obvious that the private sector involvement should as much as possible remain on local and regional levels; transparency to all stakeholders is a basic condition.

It was not expected that this workshop would give a comprehensive strategy for private sector involvement. We were, however, able to highlight some very important aspects. Shared experiences and insights resulting from the engaged thinking and discussions might serve as checklists in order to find workable options. The workshop concluded that the private sector could be much more than just another new hope.

This report presents six projects/case studies on which the group work focussed. The discussions of experiences with private sector involvement as well as the identified options and risks are described. Photos of posters produced by the groups are relevant conclusions. This report should serve the participants as a source of information about private sector experiences and options under different project conditions in the water and sanitation sector. Other readers, too, should benefit from the report that may serve as a checklist for the topic of private sector involvement, helping to find realistic views about options, chances, risks and links.

Urs Fröhlich

## 2. Outline of the 15th AGUASAN Workshop

*Karl Wehrle*, on behalf of the AGUASAN group, opened the workshop on Monday 28th June 1999 at 2.00 p.m. He highlighted a few points:

- There are 37 participants and resource persons/facilitators.
- Two thirds of the participants of this workshop are here for the first time.
- The topic of this seminar was selected among 23 recommendations from last year. Not less than eight proposals concerned economic management, marketing or private sector involvement. The 14 workshops held in the years since 1984 are a good mix of technical, economic, social and institutional topics.

### 2.1 Objectives and expected results

*The challenges:*

- 1.2 billion people do not have access to safe drinking water
- 3 billion people do not have access to proper sanitation
- Approximately 50% of all solid waste is not collected
- No one knows how many people are flooded out each year  
and
- 3 billion people have to survive on less than US\$ 2 per day

We know these facts and we feel their weight. We have always tried to take up these challenges and much has been achieved:

- Women, the driving force in water supply, increasingly use and implement their competence, capacities, and rights in the families, in communities and in politics,
- Community empowerment is an accepted goal
- NGOs are recognized as important and competent stakeholders in the water and sanitation sector.

However, the basic needs seem to grow faster than the coverage. We hope that this workshop will show ways and strategies how to face the challenges in water and sanitation more efficiently.

*The organizers / facilitators expect results from this workshop:*

⇒ Exchange of experience / network building

⇒ Answers: • What can work?

Why? In which context?

- What does not work?

⇒ Checklists / guidelines / essential criteria to be applied

⇒ Enhancement of knowledge about potentials and limits of private sector involvement

*The participants also brought in their own questions and expectations:*

- ⇒ Sharing of experiences / discussions
- ⇒ Opportunities / strategies / guidelines for cooperation between private and public sector
- ⇒ Clarification of roles
- ⇒ Chances and risks of private sector involvement, positive and negative impact
- ⇒ Visions of donors, visions of users?

## 2.2 Programme, organization, participants

The programme (Table 1) was developed by the workshop preparation group under the professional leadership of SKAT. Table 2 gives an overview of the workshop organization. Participants, resource persons, facilitators, and organizers came from 17 nations. Individual motivation and team spirit favoured the success of this workshop. In the open atmosphere of friendship the group work and the plenary discussions were easy and efficient. The workshop gained by the active participation of four women, two of them as resource persons. AGUASAN is still far from being gender-balanced, but we look forward to gradually reducing the shortcoming. A list of the participants and their addresses is given in Annex 1.

Morning	
Monday, June 28	
<b>Arrival (11:00 a.m.)</b> <ul style="list-style-type: none"> <li>• First informal contacts</li> <li>• Welcome-drink</li> </ul>	<b>Opening / Introduction</b> <ul style="list-style-type: none"> <li>• Programme and objectives</li> <li>• Personal presentation of participants</li> <li>• Presentation of the context</li> <li>• Introducing the workshop topic</li> <li>• Presenting the cases</li> </ul>
Tuesday, June 29	
<ul style="list-style-type: none"> <li>• Important issues related to the involvement of the private sector</li> <li>• Group work on cases</li> </ul>	<ul style="list-style-type: none"> <li>• Continuation of group work</li> </ul>
Wednesday, June 30	
<ul style="list-style-type: none"> <li>• Exchange of group work</li> <li>• Preparation of the excursion</li> </ul>	<b>Excursion</b> <ul style="list-style-type: none"> <li>• Visit to a water co-operation formerly run by a farmers' co-operation</li> <li>• Dinner at an Island of Lake Zurich</li> </ul>
Thursday, July 1	
<ul style="list-style-type: none"> <li>• Discussion of issues taken from the presented cases</li> </ul>	<ul style="list-style-type: none"> <li>• Potential and limits of the involvement of the private sector in W&amp;S</li> </ul>
Friday, July 2	
<ul style="list-style-type: none"> <li>• Conclusions and recommendations regarding the involvement of the private sector</li> </ul>	<b>Looking back and forward</b> <ul style="list-style-type: none"> <li>• Listing topics for the next AGUASAN workshop</li> <li>• Evaluation of the workshop</li> <li>• Closure of the workshop</li> </ul>

Table 1: Workshop programme

Organization	AGUASAN / SKAT
Preparation and coordination of the content / "rolling" planning during the workshop	Armon Hartmann, SDC Albert Bürgi, HELVETAS Martin Strauss, SANDEC Karl Wehrle/ Franz Gähwiler, SKAT
Secretariat	Maria Rätzer, SKAT
Financing of: <ul style="list-style-type: none"> <li>• Organization / Programme</li> <li>• Accommodation</li> </ul>	SDC, Berne Participants individually
Facilitation / Moderation	Tonino Zellweger
Rapporteur	Urs Fröhlich
Resource Persons	Claudia Hungerbühler Urs Heierli Ian Curtis
Presentation of Case Studies	Carmen Pong Mahesh Desai Gemi Malau / Richard Holden Habib Rahmatullah / Derrick Ikin Jens Vad Frank Haupt

Table 2: Organization, management and financing, logistics

## 2.3 Context (AGUASAN group)

*Armon Hartmann*, representative of Swiss Development Corporation (SDC), head of the infrastructure department, looked back to 1982 when the idea of a water and sanitation group was born in discussions with people of the World Bank and other organizations. Since 1982, the AGUASAN group has held 60 working meetings. After 1984, a workshop was organized at Rotschuo every year. AGUASAN has also contributed to the *SDC sector policy* on water and sanitation.

The five strategies/fields (Figure 1) proved to be a useful tool to structure and to face water and sanitation activities. Other governments and non-governmental institutions use this tool that was developed under the leadership of AGUASAN.

SDC is convinced that the private sector has to play an important role in the development of water and sanitation sector. Therefore, the Swiss Government has promoted and supported the development of the World Bank's "*Toolkits for Private Participation in Water and Sanitation*" (see 3.1.3).

*PPIAF (Public - Private Infrastructure Advisory Facility)* is another tool to help developing country governments to improve the quality of their infrastructures through private sector involvement. This facility will be launched in these days among the World Bank and prospective donor nations. PPIAF funding will depend on clear project approval criteria like government commitment, donor coordination, co-financing, value for money, quality assurance, regional and sectorial balance, environmental assessment.



SDC gives a high priority to AGUASAN activities, in particular to the workshop in Gersau/Rotschuo, which initiated and stimulated many fruitful processes of thinking and problem solving.

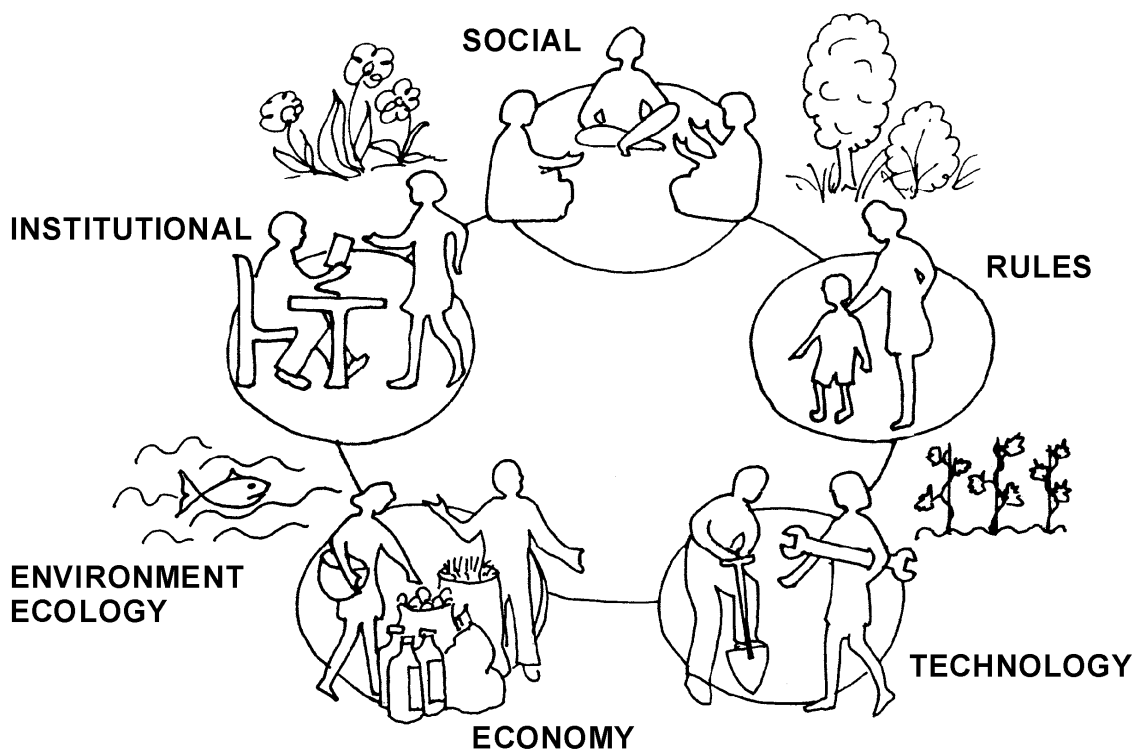


Figure 1: SDC sector policy - the five fields/strategies

## 2.4 Methodology of the workshop

On the basis of previous good experiences, the organizers decided to rely on case studies and group work. Resource persons from six projects/programmes were invited to report about their projects and their experience regarding private sector involvement. The presenters of cases were advised to prepare three main inputs:

- A five minutes' portrait to enable participants to choose a project for group work
- A one hour case presentation in the working group (following a special checklist)
- Active promoter role in the case-related group work

*Few key questions* formed the base for a comprehensive, case-specific group work:

- What mix of roles and responsibilities, and which conditions and context give the best chance for sustainable services?
- Which forms of relations and collaboration (between the public and the private sector and within the private sector) are most appropriate in different and changing contexts?

- How can the private sector be promoted and supported?
- Which kind of capacity and institution building is essential and possible in order to obtain a sustainable public/private partnership?
- What are the essential factors and processes to be included and considered when trying to establish private sector involvement?

Due to the complexity of the cases, the composition of the working groups was not changed during the week.

The results of the group works were introduced to the plenary. The posters (see pictures) contain the essential findings of the groups. It is a main task of the rapporteur to assess this important information in a way that common findings about positive and negative experiences and also contradictions clearly appear (lessons learnt, chapt. 5).

Every morning, the first (official) item was the "*review of yesterday*". These humorous performances were a nice form of warming up and reminding about the discussions held. They also helped to understand and to internalize important aspects.

*The workshop was characterized by*

- Open, participatory approach and methods
- Regular progress-reviews
- Inputs from specialists
- Reality checks to the participants' own fields of activities
- Official working periods and informal exchange
- Use of simple, practical visual aids and teaching materials which are available and manageable everywhere.

*Tonino Zellweger* acted as an efficient, sensitive moderator, without being authoritarian.

### 3. The workshop

AGUASAN works mainly on topics of community-based water and sanitation for rural and semiurban areas. Therefore, the workshop focussed on options with small and medium size enterprises and not on the role of big, multinational firms.

#### 3.1 Inputs

##### *3.1.1 Chances and limits involving the private sector in water and sanitation*

*Urs Heierli* presented a paper that he had prepared together with *Claudia Hungerbühler*, an input regarding the chances and limits of private sector involvement in water and sanitation.

The private sector pushes more and more into the water and sanitation business, as

water becomes rare and therefore the price and the willingness of consumers to pay increase world-wide. The fully privatized water supply of Berlin is just one of the recent examples. The question is whether the private sector can also act together with and in the interest of the poor. This is the case when there is a need and a demand and when all links in that market system are profitable.

The free provision of water has led to a waste of natural resources and to inefficient services. Water and sanitation (services) should not and cannot be allocated free any more. Private sector involvement (with marketing mechanism) promotes effectiveness, efficiency, and therefore reliability of services. To ensure equity under water scarcity conditions and under competitive usage is an increasing challenge for the public and the private sector.

Effectiveness:	"do the right things"
Efficiency:	"do things right"

#### *Assumptions for this workshop:*

- A free, competitive market economy is *the* desirable system; private sector involvement is *the* solution.
- Each individual has a right to sufficient and safe water and adequate sanitation.
- Tariffs are an efficient steering instrument to manage scarce resources under competitive demands.
- The public sector is responsible for the protection of natural resources, the exploitation and allocation of resources (regulations, enforcement and sanctions, coordination, advice, facilitation).
- People and institutions are able and willing to pay for appropriate and reliable water supply.

*Are the private sector and development cooperation compatible?* They have the common objective of satisfying needs. However, they also have diverging objectives like profit orientation versus poverty alleviation. The private sector works with clients, whereas development cooperation speaks of beneficiaries. Can these objectives be combined and met by the same strategy? Could the private sector be this strategy?

#### *Some basic reflections on market mechanisms*

- Need creates demand (expressed need)
- Single control over resources may lead to monopoly (and higher price)
- Competition between suppliers leads to a lower price  
[but lack of regulations bears the risk of over-exploitation of natural resources]
- There is a tendency that the private sector concentrates on urban areas and neglects rural zones with low population density.

- The scarcity of resources is not always reflected in the price [government must assure this]<sup>1</sup>.
- Competing buyers may price the water services differently [government is responsible that the basic needs (of the poor) remain satisfied in an affordable way].

### 3.1.2 The private sector and the market

As a reply and to discuss *Urs Heierli's* paper (3.1.1) *Claudia Hungerbühler* gave a short input about the private sector, market and clients. She compared the private sector with a flower demanding certain conditions for growth (climate, water, soil, etc., Figure 2). The relation between clients and private sector was visualized with another picture (Figure 3). This figure explains how the willingness to pay leads to satisfaction of need by the private sector and how this supports the willingness to pay. In this regard, refer to the input from *Tonino Zellweger* (6.2).

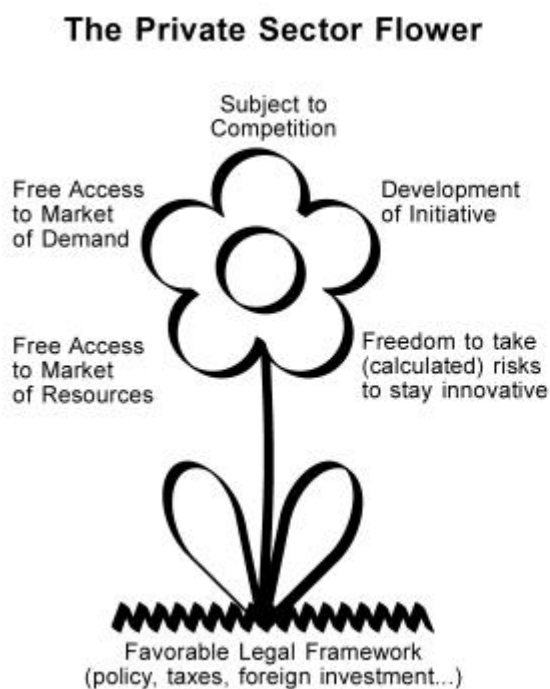


Figure 2: The private sector flower

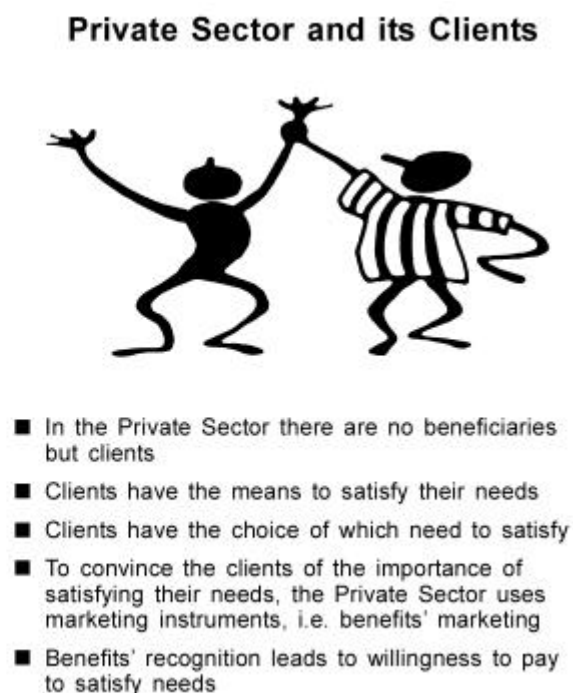


Figure 3: Private sector and its clients

<sup>1</sup> [ ] Remarks of the rapporteur

## SMEP = Small and Medium Enterprise Promotion



Market access through

- defined business policy
- use of commercial accounting
- operational business plans
- performance oriented staff, subject to free labour market
- product marketing, access to and market information, networking
- competitiveness through cost effectiveness (minimization of non-productive outputs)

Figure 4: SMEP = Small and Medium Enterprise Promotion

### 3.1.3 The (World Bank) Toolkits for Private Participation in Water and Sanitation

Jan Curtis introduced the "Toolkits for Private Participation in Water and Sanitation" which consists of the following volumes:

1. *Selecting an Option for Private Sector Participation*
2. *Designing and Implementing an Option for Private Sector Participation*
3. *What a Private Sector Participation Arrangement Should Cover*

The toolkit was primarily meant for application in urban areas. However, most aspects are also valid in rural contexts, some even more. This guideline was launched recently and the authors are interested in feedbacks from the users.

The discussion showed the desire for a simpler and shorter edition of this toolkit, especially for rural situations. The full kit was distributed to all participants.

## 3.2 The cases, projects (overview)

Table 3 gives a rough comparative view of the six cases. The characteristics, contents and strategies of these projects, their size and context are completely different. It is therefore very interesting to know their experiences and options regarding private sector involvement.

Country	Bangladesh	India	Lesotho
<b>Project / title of group work</b>	<ul style="list-style-type: none"> <li>Rural latrine promotion</li> </ul>	<ul style="list-style-type: none"> <li>Meera and Ceiko pumps PVT.LTD.</li> </ul>	<ul style="list-style-type: none"> <li>(Departement of) Rural Water Supply (DRWS)</li> </ul>
<b>Resource person</b>	<ul style="list-style-type: none"> <li>Habib Rahmatullah and Derrik Ikin</li> </ul>	<ul style="list-style-type: none"> <li>Mahesh Desai</li> </ul>	<ul style="list-style-type: none"> <li>Jens Vad</li> </ul>
<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>Clients, latrine owners</li> <li>Government of Bangladesh</li> <li>UNICEF</li> <li>NGOs</li> <li>Private sector</li> </ul>	<ul style="list-style-type: none"> <li>Users, village people</li> <li>District authorities</li> <li>State government buyers of pumps</li> <li>National government</li> <li>Quality control agency</li> <li>International organizations and donors</li> <li>Manufacturer, suppliers, contractors</li> </ul>	<ul style="list-style-type: none"> <li>Villages (users, interest groups)</li> <li>Government (different levels including Highland Development Authority (LHDA))</li> <li>Local NGOs (e.g. Helvetas Lesotho)</li> <li>Donors</li> <li>Labour contractors</li> </ul>
<b>General context (country)</b>	<ul style="list-style-type: none"> <li>144'000km<sup>2</sup>, 120 mio people, growth rate 2,3%, life expectancy 55 years</li> <li>80% rural population</li> <li>Users are owners and maintainers of latrines</li> </ul>	<ul style="list-style-type: none"> <li>3'287'000km<sup>2</sup>, 674 mio people, growth rate 2,1%, life expectancy 61 years</li> <li>2/3 rural population</li> <li>3 mio handpumps installed (India)</li> <li>Maintenance by community, with financial support from state</li> </ul>	<ul style="list-style-type: none"> <li>30'000km<sup>2</sup>, 2 mio people, growth rate 2,7%, life expectancy 60 years</li> <li>10 district offices, construction capacity for water supply: 100'000 persons / year;</li> <li>Bureaucratic centralized system</li> </ul>
<b>Context, strategy</b> <ul style="list-style-type: none"> <li>economical</li> <li>legal</li> </ul>	<ul style="list-style-type: none"> <li>80% of potential customers could not afford the subsidized latrines sold by GOB, UNICEF, etc.</li> <li>Government cannot afford to give free sanitation</li> <li>Market based approach was developed (people are customers, they have a choice; products became affordable, attractive).</li> </ul>	<ul style="list-style-type: none"> <li>Producer is supplier to government, who distributes and installes</li> <li>Coverage of rural areas with handpumps 85 - 90% (market is decreasing now, due to saturation)</li> <li>Handpumped water is promised to remain free of charge in rural India (government policy).</li> </ul>	<ul style="list-style-type: none"> <li>Private contractor involvement since ~ 1985 (drilling, design, maintenance of water supply, other infrastructure)</li> <li>Water resource management policy developed and being implemented</li> </ul>
<b>Context, strategy</b> <ul style="list-style-type: none"> <li>social</li> <li>political</li> </ul>	<ul style="list-style-type: none"> <li>Social mobilization / marketing campaign (prominent leaders, thousand of schools)</li> </ul>	<ul style="list-style-type: none"> <li>Government staff fears to loose influence and control over operation and maintenance</li> <li>Central government is prepared to support / tolerate privatization in WATSAN</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of community ownership and management</li> <li>Promotion of private sector (DWRS changes to facilitator role)</li> </ul>
<b>Private sector involvement</b>	<ul style="list-style-type: none"> <li>Number of latrine producers increased from 700 to 4'500 within less than 10 years.</li> <li>Do-it-yourself latrines</li> </ul>	<ul style="list-style-type: none"> <li>Meera tries to enter also in maintenance and management activities</li> <li>Needs satisfaction = philosophy of the firm</li> </ul>	<ul style="list-style-type: none"> <li>Former government employees, Helvetas trained masons and foremen become (labour) contractors.</li> <li>The supply of building material is still with government</li> </ul>
<b>Successes / problems</b>	<ul style="list-style-type: none"> <li>A river delta country with success in WATSAN</li> </ul>	<ul style="list-style-type: none"> <li>Customer satisfaction and profit</li> </ul>	<ul style="list-style-type: none"> <li>Good coverage</li> </ul>

Country	Bangladesh	India	Lesotho
	<p>with the help of a vibrant private sector</p> <ul style="list-style-type: none"> <li>Commercial latrine producer: 1990 - 650; 1994 - 2'600</li> <li>Water supply 80% coverage</li> <li>Sanitation coverage 1972: 1% for 90% coverage 100 years would be required</li> <li>1990: 6%</li> <li>1998: 40% new strategy</li> </ul>	<ul style="list-style-type: none"> <li>Meera pump production increased from 5'000 (1975) to 42'000 (1992); since then production went down to ~ 20'000 (1993/94)</li> <li>Diversification is necessary for Meera and other companies (selective diversification in related fields)</li> </ul>	<ul style="list-style-type: none"> <li>Water supply systems are community operated and maintained</li> <li>DRWS is the main actor in water management (too dominant)</li> <li>DRWS decides about technology</li> <li>Water and sanitation are not integrated / coordinated properly (two departements)</li> </ul>
<b>Options / Questions</b>	<ul style="list-style-type: none"> <li>The helping / blocking role of government</li> <li>The helping / blocking role of donors</li> <li>The helping / blocking role of NGOs</li> <li>The helping / blocking role of private sector</li> </ul>	<ul style="list-style-type: none"> <li>Optimization of handpump design (better, cheaper)</li> <li>Selective diversification in India and abroad (water treatment, wind mills, fishing tools)</li> <li>Optimization of relationship among main actors (government, donors and private enterprise)</li> </ul>	<ul style="list-style-type: none"> <li>How can the labour contractor become an independent, responsible general contractor for WATSAN?</li> <li>Involvement of community in choice of technology</li> </ul>

Table 3: The six cases, projects

Country	Nicaragua	Romania	South Africa
<b>Project / title of group work</b>	<ul style="list-style-type: none"> <li>Rural Water Supply and Sanitation Programme</li> </ul>	<ul style="list-style-type: none"> <li>Water and sanitation project Sânmartin, 3'000 persons</li> </ul>	<ul style="list-style-type: none"> <li>Mvula Trust (Community based service provider)</li> <li>Mission: To improve health and welfare of the poor</li> </ul>
<b>Resource person</b>	<ul style="list-style-type: none"> <li>Carmen Pong</li> </ul>	<ul style="list-style-type: none"> <li>Frank Haupt</li> </ul>	<ul style="list-style-type: none"> <li>Gemi Malau and Richard Holden</li> </ul>
<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>Communities - CAPS (owners, project holders, O + M)</li> <li>ENACAL (government) (policy, planning, technical assistance to CAPS, covers 75% of investment volume)</li> <li>NGOs (finances, policy support)</li> <li>External agencies (execute 25% of project volume)</li> </ul>	<ul style="list-style-type: none"> <li>MESA (implementing, shareholding)</li> <li>Shareholders of MESA</li> <li>Users, private and institutions</li> <li>Local council and government</li> <li>Partner community Meyrin</li> </ul>	<ul style="list-style-type: none"> <li>Water committee (community)</li> <li>District, regional and local councils / local government</li> <li>Department of Water Affairs and Forestry (DWAF)</li> <li>Priv. sector (consultants, contractors, suppliers, banks)</li> <li>NGOs (e.g. Mvula Trust; agreement with DWAF)</li> </ul>
<b>General context (country)</b>	<ul style="list-style-type: none"> <li>120'000km<sup>2</sup>, 4,5 mio people, growth rate 2,3%, life expectancy 55 years</li> <li>50% rural, highly scattered</li> <li>Natural disasters, war → high external funding</li> </ul>	<ul style="list-style-type: none"> <li>240'000km<sup>2</sup>, 22 mio people, (negative growth), life expectancy 70 years</li> <li>Population in project area = 3'000</li> </ul>	<ul style="list-style-type: none"> <li>2'247'000km<sup>2</sup>, 40 mio people; growth rate 2,5%, life expectancy 63 years</li> <li>50% rural, majority in former "homelands" and "self governing territories", high unemployment</li> <li>Water scarcity</li> </ul>
<b>Context, strategy</b> • <b>economical</b> • <b>legal</b>	<ul style="list-style-type: none"> <li>War affected economy, degraded production systems</li> <li>1979 foundation of INAA (water supply and sanitation institute, governmental)</li> <li>No water and environmental protection legislation</li> <li>However, functional water and sanitation policies on lower levels</li> <li>Poor enforcement of laws</li> </ul>	<ul style="list-style-type: none"> <li>Obsolete industrial base</li> <li>No "business thinking" (communist tradition)</li> <li>Traditionally centrally planned economy</li> <li>Lack of experience with local autonomy</li> </ul>	<ul style="list-style-type: none"> <li>Lack of (government) capacity and financial constraints → foreign firms attracted</li> <li>Local government is responsible for water services, communities as provider allowed</li> <li>Rural consumers are (now) expected to pay for water</li> <li>Legal systems allow private sector for water and sanitation provision</li> </ul>
<b>Context, strategy</b> • <b>social</b>	<ul style="list-style-type: none"> <li>1980 - 90 civil war - destruction</li> <li>Lack of community regulations</li> </ul>	<ul style="list-style-type: none"> <li>Bureaucracy, constant changes of administrative procedures</li> </ul>	<ul style="list-style-type: none"> <li>1994 new constitution</li> <li>With the paper on water and sanitation</li> </ul>



Country	Nicaragua	Romania	South Africa
• <b>political</b>	<ul style="list-style-type: none"> <li>Traditional WATSAN policies on lower levels exist</li> <li>1998 reforms - constitution of ENACAL (Nicaraguan Water and Sanitation Company)</li> <li>1998 decree about creation of national water and sanitation commission (policy maker)</li> </ul>	<ul style="list-style-type: none"> <li>Low confidence in government</li> <li>Collapse of Soviet block ~ 1990</li> <li>Lack of communal interest and commitment</li> </ul>	<ul style="list-style-type: none"> <li>Rural local government established 1995 (limited capacity)</li> <li>Community based organizations well known and accepted</li> </ul>
<b>Private Sector involvement</b>	<ul style="list-style-type: none"> <li>All the latrines</li> <li>Handpumps (rope pumpe)</li> <li>Supply of building materials, equipment, tools</li> <li>Facilities, technical consultancy to CAPS</li> </ul>	<ul style="list-style-type: none"> <li>MESA = Shareholding Company for Provision of Water and Sanitation, 55% local council, 45% private (community members)</li> <li>See contextual obstacles</li> </ul>	<ul style="list-style-type: none"> <li>Private sector is strong and well developed, competition</li> <li>CBOs enter in contracts</li> <li>Mvula acts as a facilitator / coordinator</li> </ul>
<b>Successes / problems</b>	<ul style="list-style-type: none"> <li>Coverage 1990 (rural) water supply and sanitation 18%</li> <li>Coverage 1998 (rural) water supply 33%, sanitation 40%</li> <li>Hurrican Mitch initiated much foreign aid which is not easy to manage and to invest properly</li> <li>Lack of executive capacities</li> </ul>	<ul style="list-style-type: none"> <li>Modern water supply system, quantity and quality o.k.</li> <li>Waste water collection and treatment</li> <li>Relatively high price; poor willingness to pay (WTP) because of alternative sources?</li> <li>Number of connections still low, but increasing</li> <li>Lack of quality control (during construction phase)</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive, modern legal base</li> <li>Inappropriate application</li> <li>Mvula Trust has fruitful cooperation - with SA government (2nd five year contract)</li> <li>Development of new approaches for rural WATSAN</li> <li>160 water supply projects in 5 years</li> </ul>
<b>Options / Questions</b>	<ul style="list-style-type: none"> <li>50% coverage rural water supply in 2002</li> <li>Can the private sector fulfill the requirements regarding community water project strategies (demand response, gender aspects, village organization, institution building and human resource development on local level?)</li> <li>Enforcement and application of the new legislation</li> </ul>	<ul style="list-style-type: none"> <li>Commitment of the community</li> <li>Flexibility of government authorities</li> <li>Better information and marketing (more users!)</li> <li>Quality management → reliable service → clients are satisfied → WTP</li> </ul>	<ul style="list-style-type: none"> <li>Relationship between CBOs and local government needs to be developed</li> <li>Any WATSAN - service provider must set up a system which is affordable, which retains money with the community, which is built quickly</li> </ul>

Table 3: The six cases, projects

### 3.3 Group work on the cases

#### 3.3.1 Introduction

The group work was structured in three parts:

- 1) Context and stakeholders (29 June 99)
- 2) Tasks, responsibilities, roles (30 June.99)
- 3) Involving the private sector (1 July 99)

Through a detailed presentation of the respective cases (history and actual situation), the resource persons enabled the groups to understand the projects in the local and regional context. Particular attention was given to the landscape of stakeholders. The socio-economic, institutional and ecological implications, cultural and political frames were introduced and discussed in order to achieve common understanding. The presentations of cases to the groups contained also a review of experience with private sector involvement. - Between the different parts of group work, speakers introduced the outputs to the plenary and answered questions of understanding.

In a second step, the roles were analysed. Stakeholders, their tasks and responsibilities were mentioned in a two dimensional matrix or in a similar form. Here the groups already listed successes and constraints in the respective fields. This descriptive part of the work is not commented here. The "Water and Sanitation Knowledge System - WSKS", a tool developed in a previous AGUASAN workshop, was used as a checklist to structure this process.

The third part, the core of the workshop, was the most creative and dynamic process: Private sector experiences and options were discussed among experts from different geographical, institutional and professional backgrounds. Results are presented and discussed on the following pages.

To achieve a homogenous presentation and optimal understanding, the following text is arranged case-wise over the three steps of group work. After the six portraits, the results are commented and compared, considering also the insights and recommendations expressed or discussed in the final plenary session.

#### 3.3.2 Bangladesh - Latrine programme (from government to marketing approach)

The Bangladesh case shows how the new approach of intensified private sector involvement re-activated a stagnant latrine programme. - During the period 1962-1972 (independence) the Department of Public Health Engineering (DPHE) run a UNICEF-supported campaign. Structures were offered to the users on subsidized prices. However, due to still high prices and because of inadequate design the coverage only reached 1% until 1972. Almost 20 years later, in 1990, the coverage was 8%, still low and the problem of high child death remained unsolved. Based on a need assessment and market survey, the partners DPHE, SDC, DANIDA and UNICEF formulated and proposed a new approach. New actors were attracted and involved: Commercial sector and

NGOs. Traditional stakeholders' rules changed: Beneficiaries became customers and a market strategy was adapted to their needs and willingness to pay (WTP). In a WTP assessment, the affordable price levels were defined. The commercial philosophy considers also the fact that customers like to choose from different options. The success of achieving a coverage of 42% until 1999 was only possible through the involvement of new and important supportive players: In a social marketing campaign the Prime Minister, religious and political leaders and school teachers were mobilized.

### 3.3.3 India - Production and distribution of handpumps (private sector with tradition)

Handpumps are very common in rural India. Meera & Ceiko Ltd., who have been producing since 1968, hold about 14% of the Indian handpump market. Meera is a family company with about 200 employees. The local distribution is done by the Indian Government (who remains the owner of the pumps), partly together with UNICEF, the World Bank and other international organizations.

The quality and the diversification policy are the key for the successful development of the Meera pumps: "Earn customer satisfaction by the delivery of quality products at a competitive price." Meera & Ceiko are engaged in the development of new handpumps. The firm manufactures and installs different models and is associated with drilling firms. Before 1978, government held the monopoly for well drilling. The output was far below the needs. The policy decision to open well drilling to the private sector brought a significant growth. The market expanded until 1992.

The increasing coverage, a certain saturation of the market and economic difficulties brought a shrinkage of sales of about 50% in three years. The interest in profit and the responsibility for the staff made Meera & Ceiko develop new products and widen their goals and mission:

- Strive for selective diversification in the related fields of water and environment
- Pursue strong technical and marketing efforts to ensure leadership in existing product lines.
- Establish tie-ups with international firms for diversification
- Maintain control over costs and increase the efficiency of operations
- Provide an affordable, maintainable, durable quality product
- Enhance customer satisfaction
- Increase profitability

The stakeholder scene makes clear that Meera, as a manufacturer, has no direct contact with the local users. It is the government who deals with the water committees on the village level.

The India team listed a huge number of tasks and allocated them to the respective stakeholders. In a focus discussion, the group evaluated the history of Meera handpumps, which is a success story. In view of the decreasing sales figures (saturation) the group was looking for new business options and evaluated the chances of *private sector*

*involvement in operation and maintenance*: The discussion of "pros" and "cons", of conditions and obstacles, made clear that this option is a realistic chance for flexible firms which are able to widen their hardware-centered production to "software" as well: direct cooperation with the local market and with communities (customers) in the form of training and coordination. Standardization and the assurance of quality for products and services are essential challenges. The government, too, must be prepared to transform its role to that of a facilitator. On the policy level, the principle of "free water" needs to be adjusted in a way that water-related services can call for payment. - The risks involved led to the recommendation that the O + M engagement should be initiated through a systematically monitored pilot project in a supportive state and district. The risks need to be assessed and covered by appropriate means. The necessary venture capital should be contributed from the private sector and from external donors together. The government also needs to be integrated as a contributing and responsibility sharing partner.

#### 3.3.4 Lesotho - Government rural water supply programme (labour contractors)

The "Department of Rural Water Supply" (DRWS) maintains offices in all ten districts. Helvetas' technical assistance to government started in 1978: Training support and technical consultancy are the main inputs. The executive capacity of the government allows to serve about 100'000 people a year with new water supplies, using an approach with villagers' free labour contribution. Before 1980, DRWS (assisted by Helvetas) and the rural communities were the only partners in water and sanitation projects. Since about 1985, more and more tasks have been allocated to contractors and consultants. The outsourcing started with design and construction and was extended gradually to borehole-drilling and recently to maintenance. The number of NGOs and contractors has increased considerably. The villages have activated a certain autonomy in order to deal now directly with NGOs and contractors. However, the main amount of money still flows through government channels and the government is still making the technology choice. The actual regulatory framework is fairly supportive to the private sector; however, centralized and complicated tendering of all government contracts still limits and hinders local small projects. During the last 10 years, the production of new schemes has decreased due to a certain saturation, but mainly to the financial incapability of potential users/customers. - Lesotho has developed a strategy to achieve full coverage until 2010. The new governmental "water resource management policy" promises to promote community ownership and management as well as the efficient implementation by the private sector. That means government will change its own role from a provider to a facilitator in the rural water and sanitation sector. Former government technicians receive a training in business administration and management in order to enable them to undertake independent and qualified contractor work.

The team focussed its discussion on the improvement of the contractor model. This model contains a wide field of opportunities and realistic chances. Technical training and also management and marketing support are the essential needs to empower and enable the labour contractors to independent and efficient work of good quality. The role of DRWS is changing: as policy maker, coordinator and facilitator this department remains highly important.

#### 3.3.5 Nicaragua - Rural water supply and sanitation programme

Due to political conflicts and world-wide macroeconomic problems, the public and private productive systems became increasingly inefficient. The Water and Sanitation Institute (INAA), created in 1979, was the only government agency in charge of water and sanitation. In 1990, the water supply coverage was 45% on a national level, 18% in rural areas. Due to poor water quality, the morbidity rate was extremely high; children were the most affected. The democratic elections in the nineties brought back peace and political stability. Under the leadership of INAA the water and sanitation sector was reformed and the contacts to the international donor community intensified. Executing structures were decentralized: Regional offices received more competency in executive and decision-making functions. Training activities, awareness creation, construction, rehabilitation and maintenance were intensified. To increase the volume of activities, INAA started to source out works on contracts. New guidelines based on self-reliance and self-help were developed. Systematic monitoring, information and coordination among rural systems were introduced. Until 1998, the water supply coverage increased to 61% (rural 33%). According to the national policy of 1997, social and basic infrastructure investments in rural areas are of first priority. A new legal and institutional framework for water supply and sanitation was approved in 1998. The stakeholders of the rural water and sanitation sector are:

- *ENACAL (Nicaragua Water and Sanitation Company)*. Inside ENACAL, GAR is the department in charge of rural water supply on central and local levels: implementation of policies, planning, HRD and ID, management support to communities, monitoring, choice of appropriate technology, natural resource management. ENACAL realizes 75% of rural water supply investments, the rest falls under the management of external agencies.
- *FISE (Emergency Social Investment Fund)* is a government institution managing funds from external donor agencies. The implementation (construction) is handed over to the private sector.
- *Municipalities* are of growing importance. They are coordinating institutions and forces on a local level (local infrastructure).
- The *Ministry of Health (MINSA)* is promoting sanitation and hygiene education, under facilitation by ENACAL.
- Various *external agencies* (COSUDE, UNICEF, SNV, SWISSAID, AOS, SDC) have contributed to ENACAL in institution building.
- The *NGO* scene is growing because of newly launched funding campaigns (after the damages caused by the hurricane Mitch).
- *Private sector* activities are common in the urban water sector, whereas it is still rare in the rural areas, except the supply and transport of building material. However, the production and selling of handpumps (rope pump type) to communities and to private customers are one important field of the private sector.

The potential private sector contribution to water and sanitation was discussed under the motto "*One family - one pump*". This attractive status goal is supported by realistic arguments about national resources, affordable technology and expressed needs.

### 3.3.6 Romania - Sânmartin water supply (shareholding company)

Romania is in a difficult transition process from a so-called "planned economy" to a market based economy. In 1997, a national stabilization and structural reform programme was initiated, including the industry, agricultural and financial sectors. Although progress has been made in successfully privatizing small and medium size firms, the reforms did not really reach the large, state-owned industries. The GNP is stagnant and the inflation will remain high with about 50% (150% in 1997). The industrial production rate decreased by 6% in 1997 (source: CIA Factbook 98).

The water supply of Sânmartin is one of four pilot projects in Romania, which were realized in partnership with the Swiss Municipality of Meyrin.

*The stakeholders:*

- *Shareholding company MESA*<sup>1</sup> (concession holder)  
The municipality will always own the majority of shares (51% at least); the rest is owned by the founder members of MESA
- *Local council* (municipality)  
duty to provide safe water = concession giver
- *Executing staff of MESA* (director, technician, administration/laboratory, driver)
- *Public institutions* (school, orphanage, hospital, fire brigade)
- *Enterprises* (hotel, restaurant, bars)
- *Partner community Meyrin and SDC* (technical backstopping, financial support, training of technicians, accounting course)
- *Government* (Ministry of water, forests and environmental protection (water resources, quality control of discharged water), Ministry of public works and regional planning (water supply, sewerage, waste water treatment at national level))
- *Users* (households)
- *Gipsies* (the poorest of the poor)

The municipality remains the owner of the water supply whereas MESA is in charge of the management (O+M, including treatment, distribution and marketing). Tariffs and fees are calculated on a cost recovery basis:

- Costs of connection (once)      ~ 50 - 150 \$ per household
- Subscription fee (once)      ~ 85 \$
- Monthly rate per connection      0,4\$
- Consumption tariff      0,4\$ / m<sup>3</sup>

The budget is based on an assumption of 300 connections, however, today only 170 connection fees have been paid and the consumers constitute only about 15% of the population. The majority of people use the traditional water facilities even with poor quality and reliability. The actual monthly income can just cover the salaries of the MESA staff. The other running costs and depreciation cannot be covered. This shows how important it is to convince more families and more people to make use of the new facilities. Presently

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<sup>1</sup> MESA = Meyrin and Sânmartin

the partner town of Meyrin is assisting with a repayable loan.

The government shows its interest in water supply by a regular control of the water quality. On the other hand, it is hindering contribution of the private sector to water and sanitation by a complicated and untransparent legal system. MESA proved to be able to deliver a reliable service, however, the marketing is not professional enough. The users are willing to pay the services regularly which is a necessary condition for sustainable commercial options. MESA needs to improve its services and to market them effectively. By diversification (e.g. offering training to other operators of small town's water supplies) its position could be strengthened. As a long-term strategy, the private sector should operate under ordinary market conditions (open competition). The government has to fulfil its tasks regarding appropriate resource control and establishing a facilitating legal frame.

### 3.3.7 South Africa - MVULA Trust (*community based service provider*)

The "homelands" were often situated in the areas with poor natural resources and with the least developed infrastructure. To keep people in these areas the Apartheid Governments poured considerable sums of money into the development of bulk water infrastructure and the drilling and equipping of boreholes. This was done as a necessity to prevent migration of the population into the white areas and was implemented without consultation, and with little regard for cost recovery.

The Municipal Systems Bill of 1995 legislated the responsibility of the Local Government without addressing their lack of financial and human capacity. Due to these institutional and financial constraints, private European water companies have entered the market in South Africa offering privatisation as panacea to all the ills of the water sector. A private company, which invests money into the sector, will want a return on investment. This, by definition, will mean taking money out of communities, which are already reliant on external sources of income for survival. The MVULA Trust believes this will not lead to sustainable development within the communities. This will be achieved by ensuring that money stays within the communities for as long as possible before being returned to the outside world for the procurement of goods or services. The Trust believes this can be assisted through the establishment of community-based water service providers, who, with outside support, can provide a locally based, highly responsive, transparent service at a lower cost (management at the lowest appropriate level).

The MVULA Trust was founded in 1993 with the support from the Development Bank of Southern Africa, the Independent Development Trust and the European Union. The Trust's mission is to improve the health and welfare of poor and disadvantaged South Africans in rural and periurban communities by increasing their access to safe and sustainable water and sanitation services. The strategy is to support the development of good practice in the sector by testing and advocating models of cost effective and sustainable delivery and management. MVULA has applied its principles for over five years now, by empowering village water committees to manage project funds; the construction of water supply schemes and the operation and maintenance of the service in the long term. MVULA's experience has also shown that most village water committees cannot manage community water supply schemes entirely on their own. They need a reliable institution to support them by, for example, assisting with major repairs and upgrading of the systems. New local government structures have the constitutional mandate and duty to provide

precisely this kind of support. Therefore, MVULA is working closely with the local governments and with village water committees to build strong partnerships. They can be legally formalised in terms of the Water Service Act of 1997. This progressive piece of legislation, which provides for voluntary associations (in this case village water committees) to be legally appointed as self reliant Water Service Providers (WSPs) through an agreement with the Water Service Authority (WSA), which in many cases is the local municipality.

South Africa has well-developed and widespread manufacturing, distribution, banking, contracting, consulting and NGO sectors. Both DWAF and MVULA Trust make full use of all of these sectors but with the Trust going further in enabling the communities to manage and to contract all the actors necessary to plan and to construct a community water supply scheme.

*Important stakeholders:*

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Department of Water Affairs and Forestry (DWAF)</li> <li>• MVULA Trust</li> <li>• Department of Constitutional Development (DCD)</li> <li>• District and Regional Councils</li> <li>• Local Councils</li> </ul> | <ul style="list-style-type: none"> <li>• Tribal Authorities</li> <li>• Communities</li> <li>• Private Sector             <ul style="list-style-type: none"> <li>– Consultants and NGOs</li> <li>– Banks</li> <li>– Manufacturers</li> <li>– Contractors</li> </ul> </li> </ul> |
|--|--|

Regarding a future improvement, the South Africa group identified and concentrated on two main actions to which MVULA can contribute:

*1) Corporatisation of CBOs*

*2) Definition of clear outputs for consultants*

Under "corporatisation of community-based organizations" (CBOs) the group proposed the empowerment of local organizations through training and appropriate follow-up procedures. Clear allocation of roles and responsibilities, transparency and accountability are core conditions.

Under item No. 2, the necessity of clear terms of reference (TOR) for consultants was pointed out. Clear procedures, more process-oriented approaches and the change from "supply driven" to "demand driven" strategies were recommended.

### 3.4 Discussions about important issues

The groups working on different projects brought a great number of aspects and interesting arguments into discussion. However, the enormous volume of information made deeper discussions impossible. Therefore, the facilitating team decided to work for a



short time in another group mix on specific topics/theses/claims given as inputs for discussion:

- *"Community participation and commercial sector (profit making) cannot go together ....."*
- The group did not agree with this common statement. In a climate of transparency (processes and flow of money) and by optimal planning/coordination including community involvement, a cooperation can be successful. However, risks of failure increase with the complexity of a project and with growing distance between contractor and community. Clear rules for paid and unpaid work must be fixed in advance.
- *"How can we force the government to do what it has to do?"*

If the relations between government and "non government" are not based on confidence, any cooperation and collaboration is difficult. Competency and duties should be shared in a kind of balance: government and civil society have their respective importance and weight that should be acknowledged and respected mutually.

- *"Once a product has caught on, forget further promotion"*

A successful product means a sustainable service delivery. Any product development must include a marketing strategy, which takes into account mainstreaming and scaling up. Marketing means promotion, which should be a permanent component of the product. The driving force for the service (product) promotion should shift (over time and space) from donors to government and private sector. Service delivery to customers/clients, not to beneficiaries.

- *"Marketing latrines is the same as marketing Mercedes cars"*

This is true when speaking of the commercial marketing: in both cases, the publicity appeals to comfort, status, and safety. Moreover, in both cases profit and job creation opportunities are driving forces. - The marketing principles are the same, but the objectives are different. In simplified terms: the managers of Mercedes want to sell their cars to a rich minority at the highest price possible, whereas the latrine producers, being members of the same society as the buyers, are interested that as many as possible can afford to buy a latrine. Mercedes promotion covers very few aspects of public interest, in comparison with those of latrine promotion; on the other hand, it supports vital public interests like improvement of hygiene and health. Therefore, social marketing with donor assistance seems justified.

- *"The commercial sector is not suited to serve the poor ....."*

It is a fact that poor people make use of the commercial sector: medicaments, ciga-

rettes, preservatives, beer, etc. What creates and promotes the willingness to pay for particular services? Competitive baseline data are needed: socioeconomic, technical, environmental, institutional, political. On the basis of this information, institutional and commercial options can be evaluated and strategies developed. To reach poor people and to stimulate the demand in water and sanitation social marketing is required.

- *"The future consists of partnerships among government - private sector - NGOs - donors - users"*

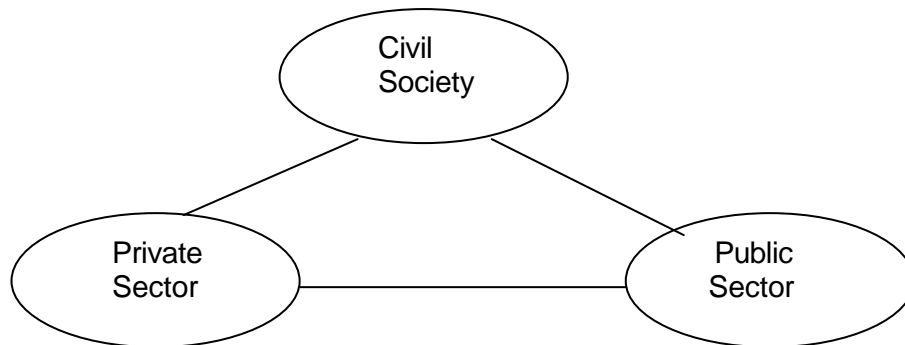
This statement was accepted as true, but

- partnership requires equal partners.
- the presence of donors can distort the expression of needs.
- stakeholders should concentrate on their real abilities:
  - government on policy, public interest, control over resources, coordination, facilitation
  - commercial sector on efficient, professional services to a competitive price
  - NGOs/donors on support, facilitation (human resource development, institution building, transfer of knowledge, networking, money for training, pilot projects, applied research, social marketing, etc.)

- *"Sharing risks and profit makes partnership last"*

Principle: the higher the risk, the higher the envisaged profit should be, for all risk sharing partners. The public sector can "sell" the risk to the private sector; however, tendering out risks can be risky. Risk projects need to be based on a contractually defined partnership including sharing of risks. Important conditions for business partnership:

- A legal framework for the relations in the triangle



- Time factor: the private sector needs time to prove the quality of its services
- Tendering: too much competition and bureaucratic processes can increase the costs of products.

The brainstorming on these seven issues was just a start. The results are provisional; however, they show that these topics are relevant and that the discussions need to be extended and deepened.

#### 4. The Excursion to the Pfäffikon Corporation

(see Annex 2)

At 1.00 p.m. sharp we left Rotschuo by bus. In cloudy, later even rainy weather, the driver brought us safely over the pass "Sattel" to Pfäffikon SZ.

The team of the Pfäffikon Corporation consisted of:

- *Ueli Feusi*, president of the Pfäffikon Corporation,
- *Liebert Weber*, technical supervisor and caretaker of the water supply scheme,
- *Bruno Strebel*, water engineer and Mayor of Geuensee.

The introduction took place in the futuristic conference hall of the Hotel Seedamm Plaza. Mr. U. Feusi welcomed the AGUASAN team in the name of the corporation, which is a traditional public society of seven burgher families. Generations ago, there were ten families forming this "Land and Project Holder Society". However, three of them had no descendants and died out. Until about 15 years ago, only men were members of this "exclusive club". However, when Swiss women received equal rights by public and nationwide votation, the Pfäffikon Corporation was obliged and forced to allow adult women to be full members as well. The initiation to the corporation takes place when people are 24 years old.

The corporation was given a water concession by the political municipality (for 99 years)

a few years ago. Before that, over a period of about 100 years, the legal status (rights and duties) did not exist in a written form.

Mr. B. Strebel explained how the stakeholders' private and communal interests have changed from Middle Age to today.

Portraits of the villages and of the Pfäffikon Corporation were given by two videos. The political municipality is formed by five villages. Until about 1960, the area was purely rural. Later the agglomeration of Zurich expanded more and more and moved closer to Pfäffikon SZ. The vicinity to Zurich and the good traffic infrastructure (roads, railways) generated an enormous growth of population and economy. Pfäffikon was able to develop into a modern and well-organised community and at the same time, the people found ways to preserve their culture and traditional life.

The corporation, the political municipality and the monastery of Einsiedeln are the most important landowners in the area. The corporation, as the legal owner of the water supply scheme, has different sources of income. The most important ones are based on land holdings:

- Agricultural land (rental revenues - presently very low)
- Forest (wood revenues - presently negative)
- Construction land given out on leasing contracts for 99 years (very attractive)
- Exploitation of gravel
- Houses, restaurants (rents)
- Water rates (Sfr. 0.65  $\approx$  0,4 US\$ / m<sup>3</sup> which is about 50% of the Swiss average price)
- Water connection fees (2% of the house investment value): Sfr. 600'000.-- to 1'200'000.--/year, depending on the construction volume

The pipeline network is about 100 km long. The supply is based on 45% spring water (about 30 springs on the mountainside) and two major groundwater pumping stations in the alluvial plain near the Lake of Zurich. Both waters are of good quality, they need only very little treatment. The groundwater level is only about 3m below the ground, whereas the pumps take the water in a depth of about 18-20m. The alluvial aquifer is more than 20m thick. The capacity of the aquifer is very, very high: when there is full test pumping over 24 hours with 6'000l/min = 8'640m<sup>3</sup>/24h the ground water level lowers just by 5 to 10 cm. (Such a huge amount of water could serve about 4 million people in a dry area!). The daily water distribution is about 4'400m<sup>3</sup>. Groundwater pumping stations are directly exposed to roads and railways which bear a considerable risk of pollution (cases of accidents with oil or other toxic goods). Therefore, the corporation is engaged in improving the quality and the quantity of spring water. In order to control the watershed management, the corporation is buying more land in the catchment areas. In the so-called protection zones, the agricultural land will be transformed to forest. This measure helps to minimize the nitrate content and turbidity during and after rains.

The water supply is operated and maintained autonomously by the Pfäffikon Corporation which employs three staff members to run the scheme. Mr. L. Walter is leading this very efficient team. They do not only operate and maintain, but also design and construct it.

External engineering consultants and contractors are engaged for the planning and execution of major works only. An external engineering office finalizes drawings/maps of all pipelines and other installations. In such "as-built plans" all structures are indicated with the exact positioning.

The water supply is self-supporting; all installations and structures are fully paid for. The revenues come mainly from two sources:

- water rates 1'600'000m<sup>3</sup>/y at -.65 Sfr./m<sup>3</sup>  $\cong$  Sfr. 1'000'000.--/year
- connection fees  $\cong$  Sfr. 1'000'000.-- / year

Due to its exceptional frame conditions, the corporation of Pfäffikon is not a representative case in Switzerland:

- Ownership of vast land areas
- Vicinity to Zurich (residential areas, commercial zones, recreation)
- Attractive landscape (lake, mountains)
- Regional traffic junction
- Rich water resources in the alluvial zones and in the mountain area

The success story of the corporation of Pfäffikon would not be possible without a good management. The fact that the water price is maintained at a low level (half of the Swiss average tariff) is not only an indicator for efficiency but also for the non-profit policy in the water business; the concession holders seem to perceive water as a public good. Hence, it seems acceptable that the decision power on water issues lies in the hands of a few families only.

After the site visits, the AGUASAN entourage was invited to the typical corporation-owned mountain restaurant "Körnlisegg" for nice and extensive refreshment. Not only the Pfäffikon Water Supply impressed us, but also the great hospitality and kindness of the corporation. Our gratitude and satisfaction was expressed in a speech by *Isaack Orenga* who underlined the differences between rains in Kenya and rains in Switzerland. After a difficult bus tour on narrow roads from the mountainside, we reached the shore of the Lake of Zurich. We were brought by a small boat to the island called "Ufenau". Here, just before sunset, the rain stopped. On this island, we had fresh fish from the lake for supper.

With good impressions from an interesting private sector programme and from a nice tour, we arrived at Rotschuo late in the evening.

## 5. Lessons learnt by the workshop participants

The reflections and discussions brought out a lot of useful information. However, this experience is still young and somehow provisional. To share it was very interesting and we feel encouraged to go on with experimental programmes and pilot projects. The undersigned tried to concentrate, to summarize and to group the results objectively, knowing the risk of giving an unbalanced and subjective view. The findings make clear that *the private sector is a viable option* in many cases. The involvement of the commercial sector should lead to an economy of all kinds of resources. However, the promotion of the private sector can never mean to dismantle governmental power.

## 5.1 Positive experience

- Social marketing brings private sector and clients (users) together (common interest, "win-win" situations (customer satisfaction + profit).
- The Market economy normally does not affect, but allow and promote the independence of clients.
- The client remains free, independent (he can take or not; he can change from one product to another one).
- Water and sanitation coverage and health can be promoted by appealing on prestige, status and safety - ("One family - one pump").
- The private sector is best qualified to respond to expressed demand.
- There is high water and sanitation coverage through and thanks to private sector involvement (India, Bangladesh).
- Profit orientation is not necessarily a contradiction to poverty alleviation.
- Positive competition leads to lower prices.
- Local employment means enhancement of local economy.
- The private sector is able to create adapted solutions (innovation); is more flexible.
- Private sector staff develops more responsiveness than most government employees (direct interest).
- Government or donor assistance for social marketing campaigns or venture capital can be very useful or necessary.
- Government policy decisions can create development impulses (India).
- Many governments are creating supportive legal frames for the economic sector.
- Government control must ensure that the public interest is respected, rights of the poor, right of nature (resources).
- Former government employees are trained to become contractors (Lesotho).
- Responsibility feeling and self-confidence are strengthened on clients' and market side (through private sector involvement).
- Limited financial and natural resources are better used.
- Conclusion of positive aspects from the Bangladesh case:

## 5.2 Negative experience

- Communities and individuals (clients) are not enough trained, not empowered to communicate with the private sector.
- The private sector distributes inappropriate products (inferior quality, solutions which are not ideal).
- If firms are too big and/or too far away, the risks are increasing:

- lack of transparency
- mistrust
- corruption .....
- Contractors are not enough trained in organization and management.
- Contract conditions are not clear (duties, rights, conditions of payment, guarantee ....).
- To expect the private sector to carry all risks and to work without profit is unfair (profit is not only legitimate but necessary).
- Where the density of settlements is too small, it is difficult to develop market services (profit impossible due to long transport distances).
- Lack of (governmental) control over the private sector can lead to
  - Negligence of interests and rights of the poor
  - Overexploitation of natural resources
  - Conflicts about the allocation of scarce resources
  - Monopoly situations
- Government structures are not (yet) prepared to allow private sector activities, cooperation is difficult. Some government employees sometimes fear and therefore hinder private sector activities.
- Government procedures are too complicated, bureaucratic.
- The volume and the quality of government services have decreased in most countries (macro-economic crisis).
- Many governments and many private companies are corrupt.
- Governments and donors do not understand/recognize marketing principles.
- Government or donor subsidized services can be a killing competition to the commercial sector (example of agriculture).

### 5.3 Risks

Commercial activities bear risks, which must be shared according to the carrying capacity and the potential profit to be made. Some risks identified during the workshop:

- Dependency of clients where the economy is monopolized.
- Price and tariff systems sometimes neglect the interest and the rights of the poor people.
- Free competition among firms may lead to overexploitation of natural resources and of staff.
- Too high risks can kill commercial firms (risk assessment and risk management/sharing is very important).
- Unbalanced and unfair situations where the legal frame is missing.

- There is no stable economy without governmental facilitation.
- Bureaucratic, long procedures cause inefficiency.
- Inappropriate subsidies and donor contributions (too much or too little) can kill the private sector.

#### 5.4 Some important conclusions:

- Communities need to be prepared/trained/empowered to cooperate with the private sector. They must be able to express and defend their own interests.
- Community-based service providers (NGOs like MVULA Trust in South Africa) can act as facilitators and trustees between government, users and commercial sector.
- Corporatisation of community-based organizations leads to a higher degree of local autonomy:
  - Business (not profit) - oriented management
  - Independent controlling board transparency and accountability
  - Government supervision
- Buy from local producers (services, products), engage and use local human and natural resources.
- Clear contracts and terms of reference for the duties and rights of the contract parties
- The private sector involvement must be based on comprehensive assessments of needs, potentials, risks, legal frames, socio-economic conditions.
- The commercial sector must be able to offer attractive and sustainable services, packages with "hard- and software".
- Social marketing is a powerful tool to inform and to attract users/clients for water and sanitation
- Business planning, infrastructure projects and contracts must be based on a realistic financial planning. Risks, depreciation/replacement of structures and the amortisation of loans must be included.
- The government must fulfil important tasks:
  - Provision of legal frame (territorial administration, community organization, ecology, standards of service and technologies, public and individual rights (of the poor in particular).
  - Management and allocation of natural resources,
  - Regional planning and settlement of regional conflicts,
  - Elaboration of policies and development of strategies,
  - Initiation of pilot projects,
  - Leading and coordination of development planning, human resource development and institution building,



- Pre-qualification of manufacturers, dealers (quality control),
- Balancing of advantages and disadvantages between urban and rural areas,
- Good governance,
- etc.
- Government subsidies and donations should be limited to the necessary minimum, to supportive actions like social marketing and risk management; users should feel like free customers (instead of beggars)
- Transparency and confidence, through information, dialogue, and personal relations, are essential qualities. These qualities are more easily achievable under local and small-scale conditions (direct relations between customers and contractors).

## 5.5 Individual insights of workshop participants

### *The workshop in general:*

- The group process is still one of the best.
- Shared views from people who came from different places.
- How beneficial to have an opportunity to exchange experiences at international level.
- Understanding others' views and better understanding of my own position.
- Listen carefully to what others say, then listen carefully to what they do not say. Then you may say something yourself.
- Finding solutions through group work.

### *Users, customers, community:*

- Building local communities' capacity to operate in a more business sense to maximise sustainability/cost recovery.
- The community is the most important partner in a water supply project.
- Buying makes free!
- There is a market for the private sector in water supply and sanitation (expression of users needs).

### *Government:*

- Institutional memory is important to understand processes and trends on a long-term base and to steer interventions.
- Regulatory framework by the public sector (government) is a must for a controlled private sector.
- The public sector should promote and support the success of the private sector through good policies.
- Enabling environment for effective private sector involvement in water and sanitation is still a hope in most countries.
- Both government and private sector need to be strong to make a profitable partnership for sustainable service provision.
- Private sector involvement and privatisation are two issues (they have to be clearly distinguished).
- The private sector can play his role best if the government does it as well.
- South Africa has a window of opportunity during the transformation of government. Use it to promote development.

*Private sector:*

- The initiative of the private sector is going on (cannot be stopped) ⇒ necessity to find appropriate ways of partnership.
- Create an enabling environment for the "small scale" commercial sector - but do not help it too much!
- The influence of private sector depends on the level where it interferes (local, national, and international).
- The private sector has a large potential, which is under-exploited.
- Why are profits of the private sector dealt as negative? Everybody makes the best of his life.
- Many people underestimate the risks carried and handled by the private sector.
- Private sector involvement, if it takes consideration of community participation, can be a good option: balance between profit and sustainability.
- Opportunities and limitations of the private sector in water and sanitation has become clear.
- The private sector shall support development efforts.
- NGOs (very often) can be considered as private sector and should be treated accordingly.
- Promoting small entrepreneurship carries fewer risks than selling urban water and sewerage works to multinational firms.

*Development cooperation / donors:*

- Subsidies can be counterproductive to the commercial sector.
- Subsidizing social marketing of development-oriented private sector products seems justified.
- Social mobilization and marketing can be a powerful instrument and should be used as a driving force by donors.
- Development cooperation has an important role to play in the preparation of an enabling environment (social marketing) for private sector involvement.
- The private sector can play an important role but requires enormous capacity building among civil society and (local) government.
- Development cooperation should assure an intercultural approach.
- Private participation for the rural water sector is at an initial stage - AGUASAN plays a role in organizing a global network around this issue.
- Globally seen, donor pressure is legal → make use of it.

*Relation donor / customer:*

- "Sanitation" can be done without "direct" subsidies.
- Work and get paid for it. Avoid donations, grants, and gifts. They make you dependent. Working creates buyers, sellers and dignity.
- Capacity building is a necessary and vital component to enhance successful private sector involvement in water and sanitation.

*Marketing:*

- Direct links between suppliers (private sec-
- Social marketing and people's willingness to

tor) and users (civil sector) can minimize the risk of failures.

- Profit making is legal and moral.
- More support to marketing of products and services offered by small-scale enterprises.
- Social marketing can be a useful undertaking, including the poor.
- The principles of marketing latrines vs. Mercedes are the same, but the goals differ.

pay help to promote the commercial sector in water and sanitation.

- The driving force for social marketing has to be with ESAs as long as government has not taken over.
- To integrate the concept "client" in the projects.
- "From animation to marketing".

### *Partnership communications / relations:*

- Open discussion is recommended to achieve a consensus.
- The partnership between different sector stakeholders plays a vital role in promoting commercial sector involvement.
- Government/communities/private sector/NGOs:
  - shared opportunities, risks profit

### *Mixed insights:*

- Are we in a period of transition with emphasis on liberalisation and privatisation at the expense of the less privileged ....?
- Make the poor a contractor/client in a fair business.
- What we individually perceived to be the model for involvement of the private sector is just one out of so many of the entire globe.
- The carrying capacity of a real partnership is built on the added value of human relations such as friendship and mutual understanding, more than on economic or technical performance
- First objective: poverty alleviation
- There is not just one solution/answer/method etc. A combination is most likely to result in success!
- Public sector      Business partnership of great diversity which requires rules and regulations and sound personal relationship.  
Civil society  
Private sector
- More weight to private sector is good, but don't forget the other partners (government, etc.)

## 6. Side activities

### 6.1 Public - Private Partnership

*Jan Curtis* gave a portrait of the (British) Department for International Development (DFID) which is a government organization promoting partnership between the public and the private sector. The elimination of poverty is the main or super goal of this institution. Objectives mentioned in the policy are as follows:

- Better health and education for the poor.

- Improved livelihood opportunities for the poor.
- Better management of environment and ecosystems for the benefit of all, in particular of the poor.

DFID is engaged towards resetting international targets for water resources management and water supply. With particular funds DFID supports governments in water-related private sector involvement activities. From experience the following requirements for successful public/private partnership in water and sanitation of countries are formulated:

- Full support and political will of the sovereign government
- Recognition of user/operator/investor perceptions of what is appropriate
- Good regulations for the sector (regulators' responsibilities):
  - To ensure that water companies' functions are properly carried out
  - To ensure that water companies are able to finance their activities (reasonable returns on their capital)
  - To protect the interests of customers
  - To promote the effectiveness and efficiency of the operator
  - To recognize and take account of the requirements of the regulatory bodies concerned with commercial, socio-economic and environmental issues

## 6.2 Taking a New Look

*Tonino Zellweger* introduced a new publication <sup>1)</sup> of the Swiss Center for Agricultural Extension, Lindau (LBL): *"Taking a New Look - Elements for a new approach to agricultural extension"*. The publication is applicable also to the water and sanitation sector. The presentation was opened with a short definition of the private sector and development cooperation:

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<sup>1)</sup> Zellweger, Tonino; Bustamante, Benjamin; Stürzinger, Ueli: Taking a New Look - Elements for a new approach to agricultural extension (Tegucigalpa); (INTERCOOPERATION/LBL), (1998) - ISBN 99926-606-2-7

Private sector:	If I take your money I will give you what you want (client remains free)
Development cooperation:	If you take my money, I will tell you what you need (user becomes dependent)

Donor agencies concerned with rural development normally work through intermediary institutions in order to reach the local communities. These "intermediaries" in many cases are NGOs; in other cases they are public sector agencies, but they may also be trade unions, federations, associations, cooperatives, technical services or other organizations and institutions which are part of the civil society. A weakness in this scheme is the fact that intermediary institutions have formal commitments to the institutions that provide financial support, while their links with the target populations do not go beyond a moral commitment. The intermediary institutions respond to the donors. This has an effect on the orientation of their actions as well as the quality of the services provided: the final beneficiaries do not have the option or the right to demand anything from the intermediary. "Taking a New Look" is a new approach, based on the following assumptions: the services offered are defined as products (not as favours); the persons interested in the products are identified as clients (not as beneficiaries); and the co-financing must be negotiated among those who offer and those who demand products (Fig. 18).

"Taking a New Look" considers producers as clients of technical assistance services. These clients pay, at least partly, for these services.

Some advantages of this new approach:

- If users turn into protagonists through substantial financing of services, the orientation of development actions will be better adjusted to their needs.
- If users pay for part of the services they require, they can call in quality from the institution that is providing them. The control of implementation and quality will no longer be the unilateral function of the donor agency.
- The process of adopting technologies is accelerated.
- The logic that rules this new approach corresponds to the logic of agricultural producers who are already and simultaneously producers, merchants and business people.

However, certain activities of "traditional" parts of development projects could be transformed or even disappear under the new approach; for example "training on gender awareness", "training on environmental awareness". The new scheme also affects the roles of donors and their executing agencies.

### 6.3 Other presentations

A good number of participants have introduced their own projects and programmes. These valuable presentations have widened our horizons and many of us have gained useful insights from others' experience.

## 7. Closing

On Friday afternoon, before the organizers closed the 15th AGUASAN workshop, the participants were asked to recommend topics for coming workshops (Annex 3). The participants left Rotschuo with the good impression of having experienced efficient and fruitful collaboration in an atmosphere of friendship. We are convinced *that the private sector can be much more than just a new hope*.

*Boniface Akwo*, water engineer in the Northwest Province of Cameroon, has already submitted a feedback report, linking the workshop topic to the situation in his country, which is similar to many other places of the world:

- "In brief, the involvement of the private sector in water, specifically clean drinking water, and sanitation in Cameroon could be considered still young with a narrow scope in an environment that still nurses patches of monopoly. With promising future however, as the government strives to create both an atmosphere conducive for this sector to flourish through competition; and awareness in fulfilling its obligation of subsidizing, to cater for the welfare of the less affluent, who are also part and parcel of the clientele.
- Turning particular attention to the rural masses in my region (Northwest Cameroon), they should be helped in their communities to see their present status as beneficiaries of aid with every scepticism, as it only reduces them to mere beggars having nothing to offer. Necessary and adequate measures should be taken into consideration by the authority at all levels to facilitate the transformation of these communities or users into providers of goods which have to be paid for; this to an extent will balance the desire for a common public good (water) with cost vis-à-vis sustainability, quality of service and empowerment. This in my opinion could enhance the operation and success of the private sector in this domain, and invariably contribute to the general welfare of the citizenry/local peasantry.
- The workshop greatly strengthened my capacity/experience in the sector as a baseline worker and this knowledge could now be passed on to others."

The rapporteur sincerely thanks Franz Gähwiler, Markus Strauss, Karl Wehrle and Tonino Zellweger for their co-reading and constructive recommendations to this report. I have tried to give an objective report. In my endeavour to be short, the success is very limited, therefore I end here with the hope that this report might be of some use to the readers.

The author

Urs Fröhlich

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## Annex 2: The excursion to the Pfäffikon Corporation

### The Water Supply System of the Pfäffikon Corporation

#### *History, present situation and future*

The water supply system of the Pfäffikon Corporation supplies 45 % of all water needed with spring water. This corresponds to an average of 1'370 l/min. The remaining 55 % are supplied with perfectly clean groundwater from the three pumping stations in Hurden, in Seefeld and in the Sack area with an average yield of 1'675 l/min.

Due to the constant and often rapid increase of the population of our municipality over the last two decades, our water supply system had to constantly increase the number of its water supply and water distribution plants in order to satisfy the demand and to meet its obligations.

Our water supply plant in Pfäffikon was built in the last century. In 1895 the first storage tank with two basins with a capacity of 300 m<sup>3</sup> was built in Ruostel. This project as at that time very far-sighted. For the supply of this plant with water, the springs of Ried, Strickly as well as of Ruostel were used.

Thanks to the development of the region on the Körnlisegg the yield of spring water could be considerably increased in 1947. Furthermore, it was possible to take over a small collecting storage tank which had been built by the army and used for the supply of the troops from 1939 to 1945.

The whole area of approximately 25 ha comprises today 26 springs with varying yields. A small spring yields approximately 10 l/min, bigger springs yield more than 100 l/min. Variations are normal, as the yield mostly depends on the rainfalls.

The water of the 16 springs of Körnlisegg goes to the Erli storage tank. The water level of this storage tank is at approximately 760 m above sea-level. The plant with a total volume of 300 m<sup>3</sup> was built in 1973. An ozone water treatment plant was realised to ensure the quality of the spring water. A photometer turbidity measurement installation was added in 1978. In view of the geological situation of the area it is not always possible to avoid turbidity, e.g. after the snow melting or after strong rainfall. The turbidity measurement plant allows to divert temporarily the water, even if it contains scarcely noticeable turbidity. At the same time, alert is given by the central supervision plant at the Werkhof.

The Ruostelmatt area and partly the municipality of Feusisberg are supplied with water from the Erli storage tank. The other 10 springs of Strickli, Schneckenburg and Ried as well as the old Ruostel springs go into the old Ruostel storage tank. Although it was built 88 years ago, it is still operating perfectly and its buildings are still in a very good condition.

The arriving water quantity is of approximately 300 l/min. At the beginning of 1984, this spring was equipped with a turbidity supervision (UV pilot plant) installation.

The newly revised chlorine disinfection plant is used for the complete water supply system, as it is the only disinfection system with a sustainable effect. This aspect is extremely important in view of the length of the installation lines. The Gräfli storage tank which is situated immediately above the highway bridge of the Etzelstrasse, was built in 1958 and has a total yield of 1'600

m<sup>3</sup>. The water level of the Gräfli reservoir is at 500 m above sea-level, i.e. at the same altitude as the old and the new Ruostel storage tanks. A differential control system is used for the taking of water and the filling of these two tanks. This allows a constantly regular filling level of the two tanks.

The big Ruostel storage tank which was built in 1975 contains 3'000 m<sup>3</sup>. Without the new high area storage tank, the main area has therefore a total volume of 4'500 m<sup>3</sup>, of which a reserve of 300 m<sup>3</sup> is kept separately for fire fighting.

The extension of a water supply system such as the one of Pfäffikon has to be carried out systematically and on the basis of a general concept. In the case of Pfäffikon this was done with the general extension plan of 1973 based on the area plan of 1972. Among others the area of Roggenacker and further to the west some important construction areas, whose altitude is approximately 510 m above sea-level, were handled separately. The maximum level of the existing main storage tanks, when full, being at 500 m, the supply of the upper areas is not possible anymore. This is particularly the case for fire fighting. A pressure of approximately 30 m for water supply for industrial and domestic use in a plot under construction is however needed.

The supply of this area therefore requires a minimum water level of approximately 550 m altitude. That is why we constructed from 1981 to 1982 at the end of the forest street in Hinterruostel at an altitude of 558 m above sea-level a new high area storage tank. This new tank has a capacity of 1'000 m<sup>3</sup>, of which 200 m<sup>3</sup> are used as a reserve for fire fighting. Thanks to the well-planned line installation on the main Ruostel storage tank, the spring water which is not used at the Erli storage tank goes first to the new tank at Hinterruostel. Only when there is a risk of overflowing, the water flows both into the Gräfli and Ruostel storage tanks of the main area. This allows considerable cost saving as the pumps in the pumping station are less used.

It is only when the water coming from sources is not sufficient for the complete water supply, groundwater is automatically pumped from Hurden to the main area. The source water however still goes to the main high-level reservoir which is 60 m higher. Should the source water supply be stopped due to a damage, the two automatically working Pleuger step pumps will pump the water from the main area reservoir to the high-level area.

In the Seefeld area we have three pumping stations:

- Pumping Station Hurden, built in 1943, 1 pump, yield: 1'100 l/min
- Pumping Station Sack, built in 1954, 1 pump, yield: 500 l/min
- Pumping Station Seefeld, built in 1968, 3 pumps with a total yield of 12'000 l/min.

It must be mentioned that in 1977 in the Seefeld area two trial borings were made which showed very good results. We would therefore be in a position to supply an additional 6'000 l/min with a fourth pumping station. This would correspond, with a pumping time of 6 hours per day, to a yield of approximately 790'000 m<sup>3</sup>, corresponding approximately to the present annual consumption of both Pfäffikon and Hurden municipalities.

Regarding the water quality, we can assure that we only supply excellent water.

The regional laboratory in Brunnen carries out periodical bacteriological and chemical water tests, without prior advice. Furthermore, the Bachema Institute in Zurich has been requested by the Corporation to test the water several times per year and at different places, both at the springs, the pumping stations and the storage tanks, in order to check the water both bacteriologically and chemically.

The total hardness of the drinking water varies between 22 and 25° F degrees, which corresponds to a medium hardness.

The water supply area comprises today 8'500 inhabitants. The annual water consumption amounts to approximately 1,6 million m<sup>3</sup>. About half of it is used by the industry and the service sector.

The Water Supply Plant is organised as follows:

#### Administration

Manager Water Supply Plant  
(1 employee)

Administration Water Supply Plant  
(0,5 employee)

Construction Unit  
(2 employees)

These 3,5 employees carry out the following tasks:

- Installation of industry and household water connections
- Maintenance of springs, storage tanks, pumping stations and the water distribution network
- Maintaining an Emergency Service
- Administration of water connections
- Registration of technical data (water supply plans etc.)
- Operation of the workshop (vehicles, tools, equipment, spareparts etc.)

It is only possible to carry out these tasks with a good team and flexible, motivated employees.

It can be assumed that the population will further grow in the considered area and that the water supply per inhabitant will increase. The Corporation administration has therefore set up the following action plan:

- Optimisation of the utilisation of the springs in order to increase the part of spring water in the total water supply which will result in the planning of a further storage tank.
- Strategic planning in view of realising the tripolar system „Sources – Groundwater Pumping Stations – Lake-water Pumping Station“
- Construction of a modern monitoring and supervision plant with a SPS control system.
- Certification of the plant according to ISO 9001 (Quality) and ISO 14001 (Environment)

## Chronicle

### Storage tanks and springs

- 1895 Construction of the first storage tank at Ruostel with a capacity of 300 m<sup>3</sup>
- 1927 Development of the Schneckenburg – Strickli – Ried area with a total of 10 springs, with an average yield of 300 l/min.
- 1947 Development of the Körnlisegg area with a total of 17 springs with an average yield of 1000 l/min.
- 1958 Construction of the Gräfli storage tank with a capacity of 1'600 m<sup>3</sup>, of which 300 m<sup>3</sup> are used as a reserve for fire fighting.
- 1973 Construction of the Erli storage tank with a capacity is 300 m<sup>3</sup>, of which 150 m<sup>3</sup> are used as a reserve for fire fighting.
- 1974 Construction of the Ruostel storage tank with a capacity of 3'000 m<sup>3</sup>.
- 1983 Construction of the Hinterruostel storage tank with a capacity of 1'000 m<sup>3</sup>, of which 200 m<sup>3</sup> are used as a reserve for fire fighting.
- 1983 Procurement of the water supply system from the Freienbach Corporation.

### Pumping Stations

- 1943 Construction of the pumping station Hurden with a delivery of 1'000 l/min.
- 1954 Construction of the pumping station Sack with a delivery of 1'000 l/min.
- 1968 Construction of the pumping station Seefeld, which was consequently enlarged as follows:
  - 1968 1<sup>st</sup> pump with a delivery of 2'000 l/min
  - 1972 2<sup>nd</sup> pump with a delivery of 3'000 l/min
  - 1980 3<sup>rd</sup> pump with a delivery of 3'000 l/min
- 1983 Pumping station Grützen which was included in the procurement of the water supply system of the Freienbach Corporation

### Plant Supervision

- 1975 Plant supervision with a control board, established in the office tower I
- 1989 Fully automatic control system established in the workshop

### Technical Data

#### *Water Supply*

The water supply system of the Pfäffikon Corporation serves some 8'500 inhabitants of the Freienbach municipality.

**Distribution System**

Total length of pipelines	92'000 m, of which
▪ source lines	9'600 m
▪ main lines	6'700 m
▪ distribution lines	75'700 m

**Yearly Supply**

**Total Supply** 1'600'000 m<sup>3</sup>  
consisting of 45 % spring water and 55 % groundwater

**Unaccounted-for water**

between 12 – 17 %

**Hardness of water**

22 – 25° F degrees

**Water Treatment**

Ozone and chlorine for spring water

**Water Quality Monitoring**

- Fully automatic monitoring system for distribution systems and water levels in the storage tanks
- Permanent monitoring of water turbidity of spring water
- Monthly laboratory checks
- Three checks per year by a specialised laboratory with a comprehensive quality control programme



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## **Annex 3: AGUASAN Workshop in the year 2000**

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### **The participants proposed the following topics:**

- Urban versus rural watersupply
- Watersupply versus sanitation
- Traditional water management
- WATSAN challenges for the next millennium
- Household solutions
- Sustainable management of natural resources
- Local level water resources management
- How effective is the government?
- How to define role and capacity of government?
- Potential and limits of SWAPs in water and sanitation
- Legal framework for effective and balanced business relationship
- Partnership approach for sector development
- Relationship communities / private sector / civil society / public sector - especially in periurban areas
- Social marketing (successes, limitations; 4 case studies; roles of government, donors etc.)
- How do the outputs from vision 21 influence / change our focus / strategy?
- Lessons from the field on local level management, financing and sustainability of services
- Cost recovery
- More coverage with less money