Profits for all – Service for all

Innovative approaches and management options for equitable and sustainable drinking water and sanitation services

Report on the 18th AGUASAN Workshop
Gersau, Switzerland
June 24 to 28, 2002

A workshop for project staff, consultants and desk officers

compiled by Adrian Coad, Skat Consulting

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Resource Centre for Development

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LIST OF ANNEXES

Annex 1 Proposed programme

Morning	Afternoon
Monday, June 24	
Arrival (11:00 a.m.) ▪ First informal contacts ▪ Welcome drink	**Opening** ▪ Presentation of the context (AH) ▪ Personal presentation of participants ▪ Programme and objectives (KW) **Introduction** ▪ Introducing the term "profitable" and business principles in the water sector (SW) ▪ Using the change of paradigms (TZ)
Tuesday, June 25	
▪ Presentation of the Wittenbach case (KW) ▪ Introduction to the assignments for group work regarding stakeholders (KW, SW, TZ) ▪ Groups work on the Wittenbach case describing the profits of different stakeholders	▪ Presentation and exchange of group work (TZ) ▪ Lessons learnt ▪ Introduction of the four cases (CSP) ▪ Forming of working groups (TZ)
Wednesday, June 26	
▪ Visualisation of the cases indicating the stakeholders and their profits (SW/TZ) ▪ Collecting main issues **Introduction to the excursion** (SW) ▪ General information	**Excursion** (SW) ▪ Visit to a Community Water Supply ▪ Historical development of ownership and management tasks ▪ Dinner in the Community
Thursday, June 27	
▪ Presentation of group work ▪ Recapitulation of main issues ▪ Introduction to group work (SW / TZ) ▪ Group work: Introducing new measures to make it work more profitable	▪ Group work continued ▪ Small open space for adding new ideas from outside (TZ) ▪ Preparation of final presentation including framework for action (TZ)
Friday, June 28	
▪ Final presentation and discussions ▪ Conclusions and recommendations (SW), common aspects ▪ Lessons learnt	**Looking back and forward** ▪ Listing topics for the next AGUASAN Workshop ▪ Evaluation of the workshop ▪ Closure of the workshop
END OF THE WORKSHOP : FRIDAY, 28th June, APPROX. 4:00 P.M.	

KW Karl Wehrle **AH** Armon Hartmann **SW** Josef (Sepp) Wechsler
TZ Tonino Zellweger **CSP** Case study presenters

Annex 2 The context – water supply and sanitation from Dublin/Rio 1992 to Gersau 2002

Presented by Armon Hartmann

Twenty years ago all we heard about was technologies; there was no mention of profits.

A2.1 The starting point in 1992

Following the UN Conference on Environment and Development in June 1992 (also known as the Rio Conference) the following final statement was made in relation to water issues:

> *The integrated water resource management concept is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good, whose quality and quantity determine the nature of its utilisation.* Rio, 1992

At the Dublin Conference in the same year, it was concluded:

> *Water is a social and economic good* Dublin 1992

The taboo was overturned – it was no longer expected that water would be free.

A2.2 Major influences since 1992

The following five events and policies each had a major impact

- The water and sanitation policy of the Swiss Agency for Development and Co-operation (SDC, summarised in section A2.3)
- The establishment of the World Water Council and the Global Water Partnership, which contributed to
  - awareness of water scarcity
  - integrated water resource management (IWRM) Under this umbrella come policies, institutions (capacity building) and instruments related to four main groups of water use (for household use [WSS], for food security [irrigation], for the environment and ecosystems, and for other uses.
- The processes of globalisation and democratisation, leading to new roles for government and civil society
  - The essential key is stronger, better performing governance arrangements.
  - National water management strategies are needed now to address the fundamental responsibilities of governments: laws, rules and setting standards; the movement from service delivery towards being the creator and manager of an effective legal and regulatory framework. Effective regulatory arrangements that are transparent and can be monitored are the way to effective, responsive, financially sustainable services. Within these we will welcome both improved public sector and private sector delivery arrangements.

- Decentralisation process, resulting in the managing of water at the lowest possible level.

  Decentralisation is key:
  The local level is where national policy meets community needs. Local authorities – if delegated the power and the means, and if supported to build their capacities – can provide for increased responsiveness and transparency in water management, and increase the participation of women and men, farmer and fisher, young and old, town and country dweller.

- The UN's Millennium Declaration

  The International Development Target set by the UN Millennium Assembly 2000 states the objective:

  to halve, by 2015, the proportion of people living in extreme poverty and to halve the proportion of people who suffer from hunger and are unable to reach or to afford safe drinking water

  and the emphasis on stewardship –

  to stop the unsustainable exploitation of water resources.

  To reach that target for drinking water, best available estimates show that, by 2015, an additional 1.6 billion people will need access to adequate water infrastructure and services. In addition, 2.0 billion will need access to improved sanitation. In many countries the proportion of people without one or both of these services has actually increased in recent years.

A2.3 SDC Sector Policy on Water Supply and Sanitation

- Social strategy: community-based management; gender-balanced development
- Institutional strategy: New roles of government, private sector and collectivity
- Economic strategy: Cost sharing and cost recovery; resource management ➔ preservation of resources
- Strategy for technology choice: appropriate technology; risk assessment; promotion of local construction
- Strategy for skills/knowledge and standards: rights and responsibilities; training and transfer of knowledge.

A2.4 Consequences for our work

In order to simplify the overall context, we will mainly look at water and sanitation, always bearing in mind the *integrated water resource management* approach (IWRM)

A2.4.1 Legal basis

Is access to water a human right?

- Rio and Dublin: *Water is a social and economic good.*
- The UN Charter talks of the human right to life, which surely must include the right to food and the right to water. Or the UN Charter on the right to water. The UN Charter is a "soft law" meaning that the responsibility to implement it is not defined or restricted.

- Global Agreement

  A global agreement is a legally binding instrument which fixes the principles of law, but leaves governments free to choose the means of implementation. So people have a right to water, but cannot demand this right from government.

A2.4.2 Financial consequences

At the Freshwater Conference (Bonn 2001) it was declared that:

Estimates for required global investment in all forms of water-related infrastructure vary widely up to $ 180 billion annually, compared to a current estimated level of $ 70 to 80 billion.

Water supply and sanitation for basic human needs, however, account for only a small proportion of these totals: the needs are estimated at approximately $ 20 billion annually, compared to a current level of $10 billion.

A2.4.3 Expected role of government

Within the field of Governance, the following actions were proposed in Bonn in order to secure equitable access to water for all people:

- The primary responsibility for ensuring equitable and sustainable water resources management rests with governments. It requires the participation of all stakeholders who use or protect water resources and their ecosystems. Special attention is needed to improve the participation of those people, particularly the poor, who are often excluded from decision-making.
- Public responsibility includes the task to set out and enforce stable and transparent rules that enable all water users to gain equitable access to, and make use of , water.
- Countries should be in the process of developing water resources management plans by 2005.
- Water resources policies and their management should be better linked with other international agreements and processes, such as those concerned with climate change, desertification, biodiversity, wetlands, dams, the marine environment and sustainable forests. They should also be linked to international processes on development, finance and to the national benefits from trade in other goods.

A2.4.4 Privatisation

Within the field of encouragement of a more efficient service provision:

- The predominant public delivery of water services should be complemented by more use of different and often innovative forms of service delivery, including self-help groups formed by the people themselves, informal service providers, co-operative societies, and local and international private enterprises. In each situation, the approach should be chosen that would best benefit people and the environment.
- All service providers should be subject to effective regulation, benchmarking and monitoring. They should be efficient, accountable, and protected from inappropriate pressures. There should be clear separation between the roles and responsibilities of the regulator and the service providers.
- Regulation is a national level function which should be strengthened through international networking and the application of consistent principles, standards and methods.

A2.5 Conclusions

The final conclusions can be summarised as follows:

- Water is an integral part of sustainable development. Policies for all aspects of water should be clearly linked to policies for poverty reduction and economic growth. Governments should review the priority given to water and sanitation and to productive water infrastructure in national and international programmes to tackle poverty.
- Water infrastructure and services should be pro-poor and gender-sensitive. The plans should be realistic and targeted to the needs of the poor, and should include targets and indicators of progress at all levels.
- The UN Millennium Declaration target on drinking water should be complemented by a corresponding target to halve the proportion of people lacking access to improved sanitation by 2015.

Armon Hartmann finished his presentation by expressing his hope that these general reflections would be considered in discussions and group work during the Workshop.

A2.6 Discussion

There was some debate about the need for an overall goal and to ensure that goals are realistic. Mr Hartmann stated his belief that an overall goal is necessary to channel policies and efforts. We need to learn to use existing resources more efficiently, in addition to finding new resources.

There is a communication gap that has prevented information from reaching the community level.

Decentralisation is often only partial – duties are passed down to lower levels, but not the necessary power and finance. Some governments do not want international agencies to work directly with lower levels.

Annex 3 Headaches and keys for success

Major headaches and key prerequisites for sustainable profit

As part of their introductions at the beginning of the programme, participants were asked to introduce themselves briefly. One of the questions asked participants what was their "major headache". The last asked participants to identify in one sentence what they thought was the most important prerequisite for sustainable profit.

These lists contain many good ideas which could usefully be incorporated into a checklist for use in periodic reviews.

A3.1 "My major headache"

- Ever changing modern solutions
- Working smarter, not harder
- Time
- Arsenic in groundwater and its remedial measures
- Why is globalisation so much focused on economy and profit? Why not justice and peace?
- Operation and maintenance
- Low demand for sanitation
- Missing balances, responsibility and solutions in different fields: environment, social, economic, political
- Sustainable use of safe water, environmental sanitation and personal hygiene
- Scaling up sustainable water and sanitation programs in developing countries
- How government policy impacts on the sustainability of projects.
- What is a greenhorn able to contribute to this workshop? How is profit defined?
- The isolation of the water sector from general development processes
- Do we export inappropriate organisational paradigms after having exported inappropriate technologies?
- Limited resources from improving water
- Unpredicted behavioural patterns of human beings
- How to reinforce the private sector in water and sanitation in the framework of the new decentralisation context.
- How can CBO approaches take up business factors, without always relying on donor money? – Self-sustained approach.
- Timely planning and implementation of programs and projects without creation of full ownership among the beneficiaries
- Intelligent finance for unconventional solutions
- Lack of counterpart dedication.
  Hidden agendas from super-powers.
  Corruption within central governments.
  Donor fatigue for African countries.
- Fallacies
- When and why should privatisation be stopped?
- How can we make systems sustainable?
- Time runs out much too fast
- Genuine co-ordination and peace
- Covering project targets with obstacles placed
- Water supply still has priority over sanitation and hygiene.

A3.2 "My number one prerequisite for sustainable profit"

- Learn from existing problem solving solutions in other sectors, profit is not dirty
- Determine the willingness to pay of end users / consumers first.
- Sustainable profits imply sustainable / satisfied customers (partners) hence "Profits for all" (Win-win).

- Demand-based better service provision
- The right tools and satisfied customers
- Sufficient commitment from everybody involved in a project
- Certain amount of customers demanding a product or service.
- Think of the next generation
- Firm commitment from all concerned to bring about positive changes in water, sanitation and hygiene situation.
- Incentive mechanism which is practical and could be applied and operationalised in the context of developing countries.
- Communities must not be treated as passive recipients of services.
- Water and sanitation services should be demand-orientated and household-centred.
- Purchasing power of clients.
- The institutional setting for delivering the service must be clear and transparent – and efficiency must be combined with proper pricing policies.
- Community's willingness and capacity to pay
- Deliver quality and stay (prove) committed.
- The workshop develops the main principles of SDE and exposes some cases and successful examples
- Professional preparation of investments by all parties
- Demand for the product / service and thus willingness and affordability to pay or contribute in kind to sustain the product production or service provision
- A market with a created demand for services and no public or private monopoly for the delivery of those services.
- Introduction to water and sanitation network and players and working methods
- Commitments from all stakeholders
- Grass roots initiative and empowerment
- Commitment by all partners, and peace and stability
- Satisfied customers
- What is sustainable profit?
- Dependable service
- Deliver quality stuff, making it affordable and snappy
- Ownership and trust among stakeholders
- Better understanding and relationship with all concerned.
- How can we achieve clear separation of roles between regulator and provider of service with transparent, appropriate and accountable offer?
- Users should pay for the service so that they can ask for a decent long-lasting service.

Annex 4 Field trip

The programme for the field trip included visits to two water supply systems and ample opportunities to discuss the institutional and financial arrangements under which these systems operate. The trip concluded with an excellent dinner at a beautiful location – at Wartensee Manor House[1] overlooking the lake, and set in a beautiful garden – as shown in the photographs in this Annex and in Annex 9.

The two water supply systems were a treatment plant that treated lake water, operated by the Sempach Corporation, and a supply based mainly on springs, operated by the Water Co-operative of Neuenkirch, in the Canton of Lucerne.

The hosts in Sempach and Neuenkirch went to great lengths to provide an excellent programme and a warm and memorable welcome. They even put flags in the streets to welcome the group. Information was shared freely.

A4.1 Sempach

The first stop was to see the treatment plant that treats water taken from the lake (Sempacher See). At first the plant had relied on filtration through a bed of anthracite (coal) and sand to treat the water, but, in 1989 further treatment by ozone and activated carbon was added because of the growing use of chemicals in intensive farming, and increasing water quality standards. (The activated carbon is replaced at intervals of 1 to 1.5 years at a cost of CHF 50,000 to 60,000.) Finally chlorine dioxide is added to provide some lasting disinfection capacity in the water, since the water is pumped for a distance of up to 50 km, and therefore spends a long time in the network. The system supplies a total population of nearly 15,000. The price of the water is CHF 1.5 (about US$ 1.0) per cubic metre. The plant is operated by three men who each take one eight hour shift; the plant is visited three times a day, each time for about 30 minutes. The lake water is very clean, especially at the intake (which is at a depth of 40 m and is 460 m from the shore). When two glasses of water were held up – one raw and one treated, it was not possible to see any difference, but water analysis using sophisticated instruments is able to show the clear improvement in quality that results from the treatment processes.

The Canton's legislation affecting water supplies has not been modified for 30 years, so it is now being reviewed. The Canton can delegate responsibility for water supplies to municipalities or other bodies. The Canton owns the sources, so water supply undertakings pay a fee to the Canton for their use; until now the fee has not been clearly defined, and it takes the form of an annual fee varying from CHF 0.30 to CHF 4.0 per litre/minute (abstraction/pumping rate). The current rate of abstraction corresponds to half the capacity of the pumping and treatment plant and half the concession that has been granted for abstraction.

The Sempach Corporation is like a club which is within the Municipality but accountable to the Canton. Members of the Assembly are members by virtue of their family inheritance or marriage, though it is also possible to buy membership of the Assembly. The Corporation has a Board composed of five members; there are no full-time positions in the Board. An allowance is paid to Board members who attend a meeting. The Corporation runs several independent businesses – a camping site, a restaurant, housing and forests. They are run as financially independent operations,

[1] In German the building is called "Schloss", which is often translated as "castle". The style and size of Schloss Wartensee suggests that the best translation would be "manor house" according to the terminology used in England.

and income from water supply may not be used to subsidise other activities. The members of the Corporation do not benefit from any specials rates for water, meals at the restaurant or other services – the only benefit obtained by the members appeared to be a free meal at the annual meeting of the Assembly. The position of the Brunnenmeister is full-time. His deputy works most of the time for a pipe-laying company. The Brunnenmeister has participated in training courses organised by a federal institute and is fully qualified.

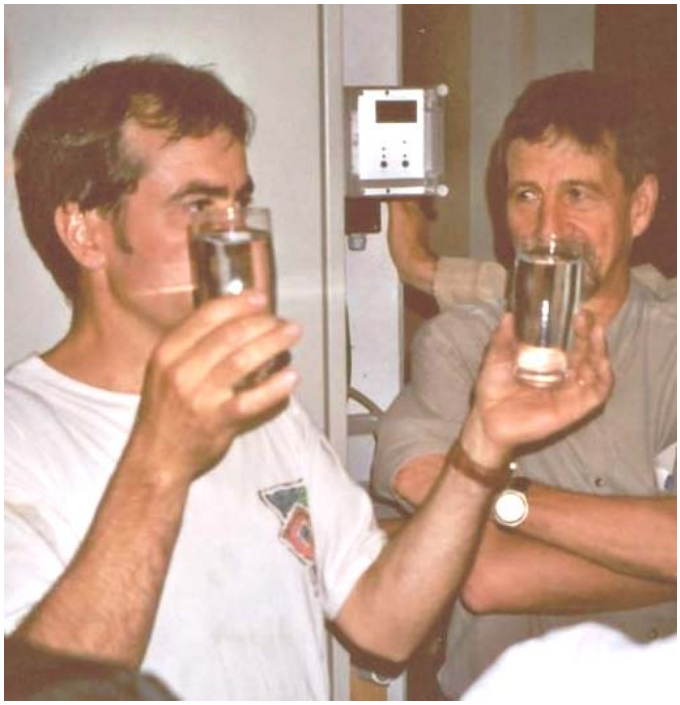

Photo A1

One glass holds raw water and the other treated water. But which is which?

(At the lake water treatment plant of Sempach)

The water supply system is 110 years old. It was initially supplied from springs. In 1934 a deep well was bored and in 1959 abstraction from the lake began. In addition to supplying the 3,700 residents of Sempach, water is sold to nearby villages to augment their spring supplies. The springs still supply nearly 10% of the total demand, and the deep well supplies about 20%. The distribution system of Sempach is divided into two pressure zones, but customers in both zones pay the same volumetric charge.

The Sempach Corporation is required to make a profit to provide capital for investment. It pays tax on its profit and for its facilities.

The charge payable to the Corporation for any new connection is 1.5% of the new (insurance) value of the building. In addition there is an annual meter-reading charge of CHF 25 to 75, as well as the volumetric charge for the water consumed. The reserves, which are considered necessary to fund future investment, are currently in the region of CHF 250,000.

Although Board members are not paid any salary, it has not been a problem so far to find people to stand for election as Board members. The Head of Infrastructure explained that he can trace his family history in the area for 600 years. His mother was involved with the Corporation as secretary, and he sees his work as a public service, as fun, and as a pleasure to work with such a good team. He explained that, as his employment, he works as a salesman for low-energy housing, but devotes about 500 hours each year to his responsibilities for water supply.

A4.2 Neuenkirch

The Neuenkirch system gets about 20% of its water from springs, about 70% from two deep boreholes, and the remaining 10% comes from the lake water treatment plant of Sempach. The average demand is approximately 800 m^3/day, rising to about 1400 m^3/day in June. Houses are metered and apartment blocks share a common meter. Water from the springs and boreholes is cheaper than the surface water. The network consists of about 32 km of mains, and losses are estimated to be about 12%.

There are three reservoirs – two for the lower zone and one for the upper zone. The control room at the fire station controls all pumps and reservoirs. The control system is all computerised and there are telephone alarms that warn the technician on duty if there is a problem. If there is a storm and the electricity is cut, an emergency power supply can keep the computers operating for eight hours. There is also the option of manual control. A high level of security is needed for fire-fighting; there are reserves of water kept solely for fighting fires. The costs of the extra facilities needed only for fire-fighting are borne by the Fire Insurance Bureau.

Photo A2 At one of the reservoirs of Neuenkirch, in a farm set in beautiful surroundings

Ultra-violet disinfection is used for the spring water and one of the boreholes, largely as a precaution, since there is a possibility of bacterial contamination of the spring water after heavy rain. If the performance of the ultra-violet lamps deteriorates, the water is automatically sent to waste. The turbidity of the spring water is also monitored automatically, and if it rises the water is sent to waste.

The history of the system stretches back 120 years. In 1880 some farmers built a reservoir for their own use, but they also supplied some water to others. As the demand for water grew, the farmers could not afford the needed investments. In 1928 the Water Co-operative (with about 30 members and unlimited liability) was founded and the farmers who owned the original system sold it to the Co-operative. Additional reservoirs were built and the network was expanded significantly. Two groups of springs (17 springs in total) feed into the reservoirs. In 1998 a large borehole was commissioned, so that the Co-operative can now provide 90% of its needs from its own sources. The current

population is around 3500, and there are about 650 connections. The Co-operative has 34 members (who now have a maximum liability of CHF 5000) and a Board of seven.

Customers	Annual demand, thousands of m^3 p.a.
Households, small commercial - 623 connections	185 - 200
Industries	50 - 55
Farms	15 - 20
Other water supply networks	15
TOTAL	265 - 290

The local council (in German *Gemeinderat*) is responsible for approving regulations and charges.

The Co-operative owns the assets and is autonomous. This autonomy allows it to make decisions and take action quickly, and it is able to take risks. It is not politically based.

The income and reserves may not be used for other purposes – only for water supply. It is not profit-orientated, any surplus each year being put into the reserves. The Co-operative receives no subsidies. Members pay the same tariff as non-members, so there is no financial benefit arising from membership.

The connection fee (paid once when a building is connected to the supply) is 1.5% of the value of the house (rebuilding cost), and this is used to repay loans and build reserves. In addition there is a charge for buildings in the higher zone per square metre of ground area that is built on, according to the height of the building – CHF 1.20 for a single storey building, rising to CHF 3.00 for a five storey building. There is an annual charge (for hire of a water meter) of CHF 40 per connection. Regulations limit the range for the volumetric charge to between CHF 1.20 and CHF 3.00 per cubic metre. The current volumetric charge is CHF 1.6 per cubic metre. Households are billed once per year.

The summary financial record for 2001 is as follows: (shown in thousands of Swiss Francs)

Income		Expenditure	
Volumetric charges	473	Purchase of water from Sempach	51
Meter rent	22	Direct personnel costs	35
Connection fees	195	Electricity	31
Interest	7	Environmental control, emergency standby, monitoring, land registry	40
		Maintenance & replacements	150
		Insurance, depreciation	162
		Office costs, administration	78
		Tax	38
		Reserves	70
		Surplus	42
Total	697	Total	697

The hosts for the visits were:

Water Corporation, Sempach	Water Co-operative, Neuenkirch
Mr Hans Schmid (Head of Infrastructure)	Mr Josef Stirnimann, Member, who also provided transport
Mr Theo Leutwyler (Brunnenmeister)	Mr Hanspeter Waldburger (Vice President)
	Mr André Baumann (Head of Operations)
	Mr Beat Schnider (Brunnenmeister)
	Mr Beat Gachnang (Secretary)

Photo A3 Participants were entertained to an excellent dinner in the grounds of Wartensee Manor (Photo: Urs Fröhlich)

Photos A4 and A5

At Wartensee Manor, entertainment (both cultural and comedy) was provided by three alpine horn players and some international would-be players.

(Photos: Urs Fröhlich)

Annex 5 Summaries of evening presentations

A5.1 Suitable Water Management for Urban Areas - high-, medium- and low-tech options

Presented by Hans Hartung

This presentation was based on a PowerPoint programme[2] prepared by Prof. Dr.-Ing. Ralf Otterpohl of the Technical University Hamburg-Harburg, and Hans Hartung.

Recently a mission from Germany went to look at the applicability of rainwater harvesting to urban needs in India. In many countries new solutions are needed.

Conventional sewerage results in pollution of groundwater, a loss of soil fertility and inefficient usage of water resources. The presentation showed alternative toilet systems in which urine is kept separate from faeces and drinking water is not used to transport wastes. Vacuum toilets, urine separating composting and desiccating toilets and waterless urinals were introduced. Systems for managing grey water (including infiltration, gravel filters and constructed wetlands) were also illustrated. Examples of these different systems from Germany, Sweden and Mexico were shown. It is estimated that each person produces 25 to 100 m^3 of grey water per year, but only 500 litres of urine and 50 litres of faeces. Given the very different health risks and fertilizing potentials of these three components, there are compelling reasons for keeping them separate.

A5.2 Towards a sanitation strategy for the Water and Sanitation Programme, African Region

Presented by Andreas Knapp

The strategy that was presented by means of a PowerPoint presentation was a first draft. The presentation included some effective cartoons.

The purpose of the strategy is to co-ordinate efforts in water and sanitation in the region, to focus attention on obstacles and on areas where progress is possible, and to communicate with partners and clients.

Five themes have emerged as leading issues:

- Offering *services that people want*. Business principles should be applied to the promotion of sanitation. Regarding sanitation promotion as a business involves
  - Understanding the demand for sanitation
  - Learning how to stimulate the demand for sanitation
  - Learning about the opportunities and limits from a private sector perspective in marketing and delivering sanitation services
  - Developing a policy framework that enables service providers to make a living out of sanitation and enables consumers to access the services.
- Communicating *the worth of sanitation* and its links with poverty, economics and finance. When and why will politicians support effective sanitation solutions?
- *Who does what:* The right institutional framework The strategy should consider the roles of different levels of government, utilities, the informal private sector, communities, schools and households.
- *Spreading knowledge and understanding:* Advocacy, communications across boundaries. How can an effective African learning network be developed?

[2] PowerPoint presentations can be sent by e-mail to those who request them, on the understanding that the source of any information or illustration used is acknowledged. Contact Adrian Coad at adrian.coad@skat.ch.

- *What works where*: Technical and settlement issues. Different solutions are needed for different types of dwellings and different types of communities. Some options need more pilot trials.

With regard to financial and economic issues, the following questions need answers:

- How can sanitation be integrated into the process of preparing Poverty Reduction Strategy Papers (PRSP)?
- How can the contribution of sanitation to poverty alleviation be demonstrated more effectively?
- Why is willingness to pay so low?
- What should public funds finance in different settlement types?
- Subsidies and incentives: do taxes on water & other sectors work? How can subsidies be targeted effectively to create appropriate incentives?

In 2003, the following priorities have been identified

- Policy and Investment Advice - operational support in Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Mozambique, Niger, Nigeria, Senegal, and Uganda
- Advocacy and Networking – follow-up to AFRICASAN and increased sanitation communications
- New Knowledge - Renewing the learning agenda, especially around demand, promotion, sanitation-as-a-business, institutions and technology.

A5.3 Watsan partnership project in two areas of Bangladesh - Rajshahi and Chapai Nawbganj districts

Presented by Abdul Motaleb

This presentation – also supported by PowerPoint slides – described a programme in three phases operating in two districts of Bangladesh, comprising 640 villages. It is being implemented by a partnership of three NGOs – one concerned with encouraging behavioural change, one with community management, and the third with developing affordable technologies.

The project strategy is formed from the following components:

- Participation of users, starting from planning to decision making, implementation and monitoring;
- Demand-driven approach for facilities and services on a cost-sharing basis;
- Promotion and supply of goods and services through the private sector, preferably at the local level;
- Collaboration of different partners for successful project implementation;
- Addressing gender balance in water and sanitation activities; and
- Strengthening of the local institutions and local governance (public sector, private sector and civil society) in the sector.

A major concern, which has resulted in a change of focus of the project, is the arsenic poisoning from groundwater that has affected a large part of the country. The project is developing public awareness of the dangers, identifying the villages that are most at risk, and looking for affordable and suitable means of mitigating the effects of arsenic. The first testing programme identified 16% of the population in the screened areas as being at risk.

A5.4 Video – a Marital Affair

This videotaped film told the very personal story of a marital conflict related to water supply in Mozambique, and a husband's jealousy connected to his wife's job as a standpipe caretaker. It showed the Mueda Plateau, which was the focus of one of the case studies (Section 5.3). It was one of the items on a video cassette called "Community Stories"; the item shown was Episode 2 "A Marital Affair" by Licínio Azevedo, and it lasted 31 minutes. The series was an EBANO production for SDC. (The video had also been shown at the Aguasan workshop in 2000.)

Annex 6 Harvest time

A6.1 Comments of the case study presenters

Towards the end of the Workshop, the case study presenters were invited to share insights that they had gained during the discussions or final points that they wished to make.

A6.1.1 Mozambique – Ana Lucia Obiols

She expressed concern that the water sector should not be isolated from the other aspects of development. Ability to pay is a key issue and so careful consideration should be given to finding ways to increase local incomes.

A6.1.2 Nepal - Adhir Sharma

Previously he had not considered the business perspective. The focus on poverty is an important part of the project, so the challenge is to find ways to integrate a business approach with the objective of poverty alleviation. It was also important to find ways to maximise the funds available for operation and maintenance expenditures and to use this money effectively. Microfinancing is another activity that needs consideration.

The workshop had demonstrated an orientation towards action, and participants had been keen to find answers. He suggested that it would be useful to visit the projects of other participants.

A6.1.3 Uganda – Gerald Eder

The Workshop had been a valuable opportunity. Water supply and sanitation often have conflicting objectives: some may be trying to sell more water while sanitation experts seek to reduce the consumption of water. Additional incentives are needed to promote sanitation.

A6.1.4 South Africa – Mohlomi Lebenya

The major issue has been the government requirement that the basic supply of water be provided at no cost to the domestic consumer. This policy could have a disastrous impact and prove truly unsustainable. There is already some opposition to this policy. If people do not pay for water, they have no power to complain. How can one help politicians to see this viewpoint?

South Africans have shown their initiative for self-help, and there is a risk that this willingness to solve one's own problems can be stifled by government promises.

He also expressed appreciation of the opportunity of seeing water supply schemes that had been in operation for 100 years. This encouraged the belief that sustainability is possible.

A6.2 Lessons learned

On the last day of the workshop, each participant was invited to express in one sentence what they felt was the main lesson learned from the workshop. If the particular point that a participant was intending to share had been previously covered by someone else, they were invited to suggest another point. The rapporteur has attempted to classify or group the points.

Aspects of the workshop programme

- The Wittenbach case is a good example of economic human history and solidarity.
- The Aguasan workshop is a window on global water and sanitation sector development, an opportunity to learn from wisdom and experience, and an encouragement to take initiatives in a forward-looking way.

Skills or approaches that have been learned during the Workshop

- It is useful to split expenditures into their components and look at each one.
- Water supply systems can be managed and operated in a very efficient way, with a low input of human resources.
- Paradigm shift tools can be the key to problem solving and should be used more often.

General approach to the provision of water and sanitation

- It is not enough to focus only on the needs of the poor; successful approaches also consider the middle class.
- Rich inhabitants of villages can play an important role; social pride can be an important motivating factor for them.
- The process of introducing a new technology must cover all stages of the project cycle, including operation, maintenance and evaluation.
- Local government is a very important stakeholder in an intelligent institutional set-up, together with service support agents.
- Basic democracy combined with leadership can achieve a lot.
- Voluntary work is still a valid approach.
- The principle of voluntarism has its limits.
- Water scarcity is the first requirement that leads to action being taken.
- Self help is a historical approach in both the North and the South, and is successful in both South and North if there is access to crucial resources.
- Community members (local people) can do much more than we think.
- We are witnessing a paradigm shift in sanitation – forget the sewers!
- Some government policies can kill spontaneous development and initiatives that arise from communities.
- The provision of water should not be isolated from other development issues, including income generation.
- Success stories teach us that there can be "carrots" (benefits) for all.
- Good partnership at various levels leads to sustainability.
- Approaches and models are undergoing continuous evolution.
- "Business as usual" needs constant improvements from external support agencies.
- It appears that a business approach is difficult to integrate with rural development. How can the two be mixed effectively?
- The sanitation sector cannot function effectively without a demand from the public.
- The scaling up of water and sanitation service provision is still a major challenge.

Reflections on the role of profits and enterprise in successful water supply and sanitation programmes

- An enabling environment is the most important precondition for the success of a business approach.
- Community-based management based on market principles can lead to sustainability.

- The incentives that are effective in the business of sanitation provision are very different from those that are effective in water supply.
- Acceptance of the principle of profits and consideration of benefits can improve the provision of water and sanitation services.
- Co-operatives are not necessarily communist.
- Non-profit monopolistic service providers can operate efficiently in small communities without a formal regulator.
- A market approach causes planners to focus their attention on people with money.

A6.3 Comments of the Resource Person on the presentations of the case study groups' findings

A6.3.1 General comments

The use that was made of the financial sustainability chart demonstrated an understanding of the issues. The Resource Person said that he was more convinced at the end of the Workshop than at the beginning of the validity business principles in development. Relying on voluntary inputs may work sometimes – "it works if it works".

A6.3.2 South African case study

The need for an enabling environment is critical here. Stepwise growth can be expected to be more sustainable. Some business principles were used by the group.

A6.3.3 Nepal case study

The approach had, to some extent, been top-down. It would have been better had it been bottom-up, led by demand. There had been a 50% subsidy on investment; the aim should be to gradually reduce these subsidies. The building up of reserves in a bank for operation and maintenance expenditures was a commendable step; there should be a willingness to use some of these reserves for preventive maintenance.

A6.3.4 Uganda case study

Sanitation is a very different issue from water supply. It is not so easy to introduce business principles in this field, though promotion (marketing), which is an important aspect of business, is much needed to generate demand for sanitation. A service for emptying latrines could be developed very much according to business principles. The costs of sewers are too high. As much as possible these issues should be isolated from political influence.

A6.3.5 Mozambique case study

The cost of fuel for the diesel pumps is about 80% of the costs of water supply, therefore it is important to minimise wastage of water. Ownership of the scheme is a key issue, and should be at the lowest level possible.

A6.4 Participants' evaluation of workshop in questionnaire responses

A questionnaire was distributed for all participants to fill in. 21 replies were received. The comments and evaluations are presented here.

1. What were your expectations prior to the workshop?

- Sensibilisation to business principles for private, community and public sector (cost recovery, profit versus benefit)
- Working in representative cases
- Requirement for sustainable water supply to be learned.
- Exchange and sharing of experiences (5 people wrote this)
- Learn as to the crucial factors indispensable for successful water supply and sanitation (WSS) programme. Acquaint myself with effective and successful cases of WSS interventions of different countries. Get familiar with and learn about the effective business principles that ensure that WSS facilities are equitable and sustainable.
- Applying the new working methodologies in our country situations. Gain knowledge about other countries activities in the watsan (water and sanitation) sector.
- Sharing with and learning from others who encounter the same problems.
- Exchange of experiences, learning about new developments, learn about business principles.
- Exchange experiences with other countries
- To hear other ideas, discussions and evaluations of other projects.
- Learn about what works and what does not in private sector participation, community involvement and incentives for effective and efficient service delivery, especially the case studies on Swiss water supply.
- Learning about business principles that are applicable to Watsan. Getting to know the Aguasan network (2).
- Learning new methods
- Sharing the experiences of water and sanitation in various countries.
- To adapt new ideas in my own environment.
- Exchange of experiences and current concepts in the water and sanitation sector.
- Some successful cases of business development services.
- To learn about the management of Swiss community-based water supply schemes.

2. How did you prepare yourself before the workshop?

- Reading the workshop documents (13)
- Studying WEA documents
- Internet research (2).
- Involvement in preparation group.
- Discussion with colleagues who had attended earlier Aguasan workshops. (2)
- Reviewing documents related to the workshop. (2)
- Going through WSS documents available within my organisation.
- Discussions with Helvetas staff and field staff.
- Discussing with colleagues (6) and community members.
- Discussion with key SDC and Skat persons and preparing a presentation.
- Preparing my presentation in consultation with others.

3. Have your expectations been fulfilled?

Yes [13] [6] Partly [1] [1] No [ ]

- Some of the cases discussed and reviewed during the workshop were a bit different than our country's perspective.
- I have learned from other countries' actors in the same sector. Introduce to start more business with water.
- I am extremely pleased with the process and outcome of the workshop.
- Very interesting discussions, exchanges and sharing experience. Good spirit
- This special window on water and sanitation should continue to share and exchange wisdom and experiences.
- More than fulfilled
- The workshop provided an opportunity to study the cases, their technical, social and business performance.

4. Was the participation at the workshop of use for your activities?

Yes [14] [7] Partly [ ] [ ] No [ ]

- Learning and experiences can be adapted to the working situation.
- I have learned a number of good things on how to carry out WSS projects, properly ensuring both qualitative, quantitative and other relevant factors.
- Specially in the context of institutional challenges to address the arsenic mitigation efforts in south Asia.
- My job at the moment is not so much focused on developing countries, but I hope it will develop in that direction in the future, as it does at the moment (with Aguasan this week and a workshop in Cairo next week).
- Learned lots of things.
- Very much so! I also met many new people and agreed with them on sharing information after the workshop.
- To a better analysis for each case
- The model of Swiss water supply organisations, as well as sanitation findings from overseas WSS programmes.

5. Which insights did you gain and how do you intend to use them in your future professional activities?

- Importance of full cost accounting for all implemented activities. Taking investment depreciation costs into consideration. Projects (supply or services) are a dynamic process which can/shall change in organisational structure over time.
- Open, interdisciplinary problem analysis is important.
- A monopolised set-up is possible, but will not function properly with government interference.
- Nothing is free. Voluntarism has its limits. Profits/benefits determine the sustainability of any process/system.
- How business principles can be applied in WSS programme implementation. I would like to utilise my learning from this workshop by undertaking small-scale pilot schemes.
- Think from the business perspective, although there are social values.
- Some of my present activities lead to wrong directions. Some programmes my organisation is involved with will need to be adjusted.
- Water as an economic value and I will disseminate this knowledge.

- No project should be supported or implemented without substantial support of the counterparts, communities, beneficiaries respectively.
- Business process, incentive mechanism, profits and benefits – case study findings; Interaction with participants, discussions during social hours on future potentials.
- Donors and governments are sometimes the biggest obstacles. Economic issues in water and sanitation are more difficult, but also more challenging (and more "fun" for a convinced institutional economist) in rural areas than in urban areas, where I worked in my former job. Small-scale adapted technologies are hindered by heavy organisational settings and existing large-scale technologies. This could lead to a paper/project on the relationship between organisational set-up and promotion of adapted technologies.
- Case study outcomes to be adapted to WES project in the country where I work.
- Comparing our strengths and weaknesses with others at different locations around the world.
- Sustainability, especially financial. How business principles can be integrated in water and sanitation.
- Analysing things from different perspectives.
- I will try to put more emphasis on business principles (concretely in my next backstopping assignment).
- To reinforce the capacity of the community to manage contractors.
- "Profit for all – services for all" is also valid outside Watsan activities.
- The efficiency of community-based water supply systems in terms of technical and financial performance.

6. How do you evaluate the workshop concept?

Choice of main themes

Very good [10] [8] [2] [1] [ ] Unsatisfactory

Proportion of theory, discussion, group work/exercises

Very good [7] [10] [2] [1] [ ] Unsatisfactory

Possibilities for exchange of experiences

Very good [10] [6] [2] [2] [ ] Unsatisfactory

- More discussions may have provided opportunities for a higher degree of experiences sharing.
- The term "Profits for all" is misleading; in fact it is "Benefits for all" (both sides) and profit for enterprises.
- The presentation on business principles and their application to the case studies could have been more in-depth.
- The experience of the workshop organisers is evident.
- More technical aspects of water supply and sanitation systems; more data on financial and economic justifications, e.g. investment per capita in water supply; production costs of water; water consumption; average time spent for water collection; tariff collection ratio. These indicators could be provided for various existing and proposed options (case studies).

7. How do you evaluate the overall lead of the workshop (moderator, resource person, steering committee)?

Thematic competencies

Very good [10] [10] [ ] [1] [ ] Unsatisfactory

Comprehensive presentation of the themes/issues

Very good [10] [9] [ ] [1] [ ] Unsatisfactory

Consideration of experience and inclusion of problem areas expressed by the participants.

Very good [9] [9] [1] [1] [ ] Unsatisfactory

- A lot learned form the Moderator (as usual). Thematic presentations could possibly have been better.
- I had not come across such facilitation before.

8. How do you judge the workshop documents?

Very good [10] [7] [3] [1] [ ] Unsatisfactory

- Concise and precise documentation of Aguasan 17 is remarkably good.
- Those sent before – good; within the workshop - not many but very good.
- I hope that the sending of documents by e-mail will continue.
- Not enough. No conference/workshop bag.
- Good preparation materials and clear instructions during the workshop.

9. Please comment on your overall impression of the workshop (organisation, room facilities, etc.)

Very good [11] [9] [ ] [1] [ ] Unsatisfactory

- A slight decline in the usual efficiency noticed.
- A very enabling environment
- The facilities are very good, but the hotel cost is high (drinks).
- Ideal setting, good number of participants, ideal mix of group work, excursions, inputs…
- It would be good to have a single room at a lower price.

10. Do you intend to have a debriefing with your boss, where you will discuss possibilities of realisation of what you learned within your field of activities?

Yes [15] No [5]

- I am the boss.
- Boss attended too.
- A matter of routine (2). Lot of room for adapting lessons learnt and experiences gained.
- Submission of short report
- Concerning the integration of development issues in my work and organisational issues in Watsan.
- Will present report with action plan within the next five days.
- Reporting to colleagues in writing and sending them materials on request.

11. Any additional comments you wanted to mention – personal suggestions:

- The personal exchange of experiences is always very fruitful. The presence and activity of Skat is very attractive and constructive. Thank you for this opportunity!
- Adding a wrap-up session on the Saturday morning would be an advantage.
- The setting is ideal for the Workshop. However it is presumed that a lot of time (almost 4 hours) every day was spent on meals. The field visit has, as usual, been meticulously planned and arranged.
- In the third world countries in Asia, some of the water supply schemes being reviewed and coming under discussion seem to be much more expensive, requiring much more professional input from expatriates. Most of the WSS projects that were discussed were

being implemented in a donor-driven approach. As a result, many concepts/models of successful cases cannot be applied in the Asian region. Country Strategy Papers and policy papers of different ESAs of different countries should take lessons from the Swiss-based and funded programmes that are being implemented in different parts of the world. Skat and the other partners are doing excellent work in organising this type of workshop. On behalf of my Organisation would like to express my heartfelt gratitude to Skat, SDC, Helvetas, Sandec and the other relevant agencies for organising this workshop and allowing me to attend.

- This has been an excellent event, so it needs to be continued in the days to come. Depending on the "theme" try not to have four resource persons – it would be better to give more time for the participants for learning.
- The Aguasan workshop is a very important occasion for the further training of staff in my organisation. Aguasan workshops are an ideal occasion to review our own activities and some of our programmes/projects (case studies). I hope that there will be Aguasan workshops also in the future.
- I just want to say thankyou for this opportunity that I had to participate 18th Aguasan Workshop. I enjoyed it and I learnt a lot.
- Maybe more individual presentation of participants on account of less time for the work in groups.
- Future sessions might be benefited by inclusion of case studies form other donor/bilaterals and at least one 100% government-funded programme. I would like to suggest for consideration "Scaling up sustainable local government-based service delivery" as the theme for the next workshop. Special thanks to the organisers of the field trip. There should be time for the participants to discuss/reflect on the field visit.
- The carousel session was too noisy with all the groups in one room – it was difficult to hear and understand the speakers.
- The workshop flow was well managed and the overall outcome was very satisfactory.
- Networking on W&S sector experience and capitalisation of experience through documentation.
- Accommodation was satisfactory. Place quite secure.
- Keep it up!
- I have attended already a few of the Aguasan workshops and I am grateful for the opportunity. A considerable part of my up-to-date knowledge and information on policies, strategies, options etc. I have received from the Aguasan workshops.

Annex 7 Topics of previous workshops

Titles	Thematic Field	Author of report	Date
Appropriate Technologies in W&S	technical		
Water Decade	policy		
Participation and Animation	social		
Sanitation and Health	sanitation/technical/ education		
Operation and Maintenance	institutional/economic		
Monitoring and Evaluation	methodology/holistic		
Sustainability of Drinking Water Supply & Sanitation Projects	holistic view		
Communication in Development Cooperation	social / methodological		
Water & Sanitation Knowledge System	skill and know-how		
Water is not a free resource (anymore) Who pays?	economy	Werner Fuchs	1993
Sustainable W&S projects through fair negotiations	institutional / social	Werner Fuchs	1994
Urban Sanitation: A challenge for communities, private enterprises, local governments and external support agencies	institutional / economy	Peter Schübeler	1995
Transfer of Ownership in Water Supply & Sanitation Systems	social / institutional	Peter Schübeler	1996
Less Water for More People	institutional / economic / social	Bruno Strebel	1997
New Technologies and Balanced Development	technology / economic institutional	Stephan Niederer	1998
Private Sector - just a (new) hope?	institutional / social / skill + know how incl. rules + regulations	Urs Fröhlich	1999
The Household-centred Approach	institutional - planning	Adrian Coad	2000
From Sector Reform to Sector Revolution	planning	Adrian Coad	2001

Annex 8 Ideas for the next workshop and planning procedures

On the final afternoon, participants were invited to suggested topics for another Aguasan Workshop. The following topics were proposed:

- Continuing on from this workshop to look at marketing, profits and benefits
- Benefits and limitations of private sector involvement
- Developing a cost-conscious approach
- Advocacy in water and environmental sanitation
- Networking in water and environmental sanitation
- Knowledge management in water and environmental sanitation
- Effective communication in water and environmental sanitation
- Backstopping mechanisms
- The transition from relief to development in water and environmental sanitation
- International conventions and how they affect our work in water and environmental sanitation
- Scaling up service delivery through decentralisation
- Decentralised and regional approaches in water and environmental sanitation
- How to implement the Household-centred Approach
- Holistic approaches for promoting water supply and environmental sanitation
- Sanitation as the key to sustainable water supply
- Taking sanitation as a separate issue, not just the minor part in water and sanitation projects
- Assessment and integration of local traditional knowledge
- Non-conventional alternative sources of water
- Innovative water resources management
- Reflections on issues covered in former Aguasan workshops

These topics would be discussed by the preparation committee (which consists of representatives of SDC, Sandec, Helvetas and Skat) at a meeting during the following month, and it was expected that the title for the next workshop would be agreed by the end of the year. The committee welcomes suggestions for case studies.

Annex 9 Participants and their roles

A9.1 Group photos at Wartensee Manor

Photos: André Baumann

A9.2 Participants

There were 32 participants, working in 13 countries. Five were women. The organisations represented and workplaces of the participants were as follows:

	Total	South, east	North
SDC (Swiss Agency for Development and Co-operation) …	4	2	2
Helvetas ……	4	3	1
EAWAG, Switzerland ……	3		3
Swiss Humanitarian Aid ……	3	3	
Skat Consulting, Switzerland ……	3		3
World Bank WSP ……	2	2	
Development Workshop, Angola ……	1	1	
Mvula Trust, South Africa ……	1	1	
PRONAR/DNA, Mozambique ……	1	1	
NGO Forum, Bangladesh ……	1	1	
COSI Foundation, Sri Lanka ……	1	1	
Sarvodaya, Sri Lanka ……	1	1	
GMK Consultants, Kyrgyzstan ……	1	1	
Austrian Development Co-operation ……	1		1
Darmstadt University, Germany ……	1		1
FAKT, Germany ……	1		1
Free-lance consultant, Switzerland ……	1		1
LBL Consultants, Switzerland ……	1		1
MSG Management Systems, Consultants, Switzerland ……	1		1
	32	17	15

At last! A more formal pose

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A9.3 Roles of participants

The members of the Preparation Team, responsible for the preparation and co-ordination of the content of the workshop were

Karl Wehrle	Skat Consulting
Armon Hartmann	SDC
Franz Gähwiler	Helvetas
Chris Zurbrügg	Sandec, and
Sepp Wechlser	Resource Person

The Moderator was Tonino Zellweger.

The Resource Person for the workshop was Sepp Wechsler.

Case study presenters: Mohlomi Lebenya, of the Mvula Trust, South Africa,
Ana Lucia Obiols, SDC and Carvalho Muária of PRONAR/DNA Mozambique
Adhir Sharma, of Helvetas in Nepal, and
Gerald Eder on behalf of Austrian Development Co-operation.

The secretarial inputs were provided by David Zaugg, Skat Consulting, in preparation for the Workshop, and
Julian Jones of Skat Consulting, during the Workshop.

The financial support for the organisation and operation of the workshop had been provided by the Swiss Agency for Development and Cooperation (SDC). Individual participants were responsible for their own expenses.

Case study working groups

Nepal	South Africa	Mozambique	Uganda
Adhir Sharma, presenter	Mohlomi Lebenya, presenter	Ana Lucia Obiols, presenter	Gerald Eder, presenter
Rizwan Ahmed	Haile W Hailemicael	Jacques Bovier	Hedi Feibel
Adrian Coad	Khawaja M Minnatullah	Urs Fröhlich	Hans Hartung
Franz Gähwiler	Josef Müller	Armon Hartmann	Neil Gamini Herath
Udani Ashrini Mendis	Dieter Rothenberger	Palitha Jayaweera	Andreas Knapp
Abdul Motaleb	Fatoumata Guindo Sidibe	Alfred Mink	Antoine Morel
	Leila Talipova	Carvalho Muária	Chris Zurbrügg
		Jürg Zumstein	

Annex 10 Word and abbreviation list

These are not general or official definitions, but explain how certain words are used in this report.

benefit	In this report a benefit is usually taken to mean a reward or positive outcome that is not monetary (unless a wider sense is clearly specified, such as by the use of the phrase "financial benefits"). It comes as a consequence of performing a function or providing a service.
Brunnenmeister	The person responsible for water sources (literally "master of the wells") This term is also used for people in charge of water supply systems that use surface water.
closed benefit/profit system	The concept here is of a circle, with payments made by community members being recycled back to benefit the community in some way. An example would be if the service provider were a community member, in which case payments made to the service provider would stay within the community. There may be also less direct mechanisms for recycling payments and benefits.
economic good	A commodity or facility that can be valued in monetary terms and can be related to a beneficial financial impact. Water is an economic good in that the cost of providing water can be determined and a convenient supply of water has an impact on household finances, by reducing expenditures on medical treatment and liberating time for economic activities.
paradigm	A paradigm is a model, picture or belief that we have in our mind (sometimes subconsciously) and that affects the way we approach issues and problems. Paradigms were the subject of the previous Aguasan workshop; a report of that workshop and a summary booklet are available from SDC and the Skat Foundation. In the booklet – entitled *Better solutions through new ways of thinking* – a paradigm is also said to be like a world view, a metaphor or a map.
paradigm shift	A paradigm shift is a change of paradigm, and it usually results in a change of attitude, approach, expectation or behaviour. A paradigm shift is often the key to finding new solutions to old problems. The booklet *Better solutions through new ways of thinking* suggests ways in which we can become aware of, and therefore change, our paradigms.
private good	This is a term used in economics to refer to a desirable commodity or situation that is enjoyed by the party that pays for it. A metered private water supply is an example of a private good. See Figure 3.3
profit	In this report a profit is a monetary benefit that is obtained as a result of providing a service, equal to the excess of income over costs.
public good	This refers to a commodity or service whose positive impacts are not depleted by additional users, and for which it is generally difficult – if not impossible – to exclude others from enjoying its positive impacts, even if they are unwilling to pay for it. Solid waste collection can be an example of a public good. See Figure 3.3.
sanitation	Though it can have a broader definition to include all activities that reduce the opportunities for the spread of communicable disease, it is usually used in this report to mean the disposal of excreta in a way that does not pose health risks or cause aesthetic offence.

social pride	This term was used quite frequently without being defined. It is understood that it refers to a range of motivating factors that are not connected with financial reward. It includes status or honour in the eyes of community members and the feelings of satisfaction or significance that come from achieving a goal or making an improvement in the lives of one's own family and neighbours.
voluntarism	This refers to the provision of a service for no financial reward or profit. For example, if a community elder supervises a water service provider without receiving any pay or compensation for doing this work, this exhibits the attitude of voluntarism.
WES	water and environmental sanitation. Environmental sanitation has a broader scope than sanitation, and may include solid waste management, drainage of wastewater and runoff, and other aspects related to healthy and environmentally sustainable living conditions
WSS	water supply and sanitation
watsan	an abbreviated form of *water supply and sanitation*

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Chapter 1 Summary and introduction

1.1 Summary of this report

This report is the attempt to convey the presentations and the discussions of the eighteenth Aguasan workshop. It cannot hope to communicate the wide-ranging interactions and lively atmosphere of that week.

This workshop was conducted in Switzerland in June 2002, and was created out of the combined efforts of 32 participants who are working in 13 countries in Africa, Asia and Europe.

The latest in a long-running series, the workshop had been planned carefully for almost a year, and was led by an experienced moderator. The structure of the workshop, and the efforts of the participants to visualise their deliberations and conclusions, have helped to ensure that this report is a reasonably accurate record of the highlights of the week.

The theme of the discussions and presentations was "Profits for all – service for all". The origins of this topic are the unacceptability of the large numbers of people who do not have access to sustainable water supply and sanitation services, and the recognition that the planning, management and operation of these services cannot be left to volunteers and unpaid staff. Motivation is central to sustainability. Starting with the resolutions of international conferences and a background of business principles to establish the concept of water as an economic good, participants were asked to look at case studies – presented both in the workshop venue and on a field trip – and identify the financial profits and non-financial benefits that have kept or can keep the services running sustainably and effectively. Participants examined a case study of a community water supply in Switzerland that has been running successfully for over a hundred years, presented by the great-grandson of one of its founders. Four other case studies were considered in small groups, the situations described representing the wide range of water and sanitation issues that face us today. The focus was particularly on financial sustainability.

It is hoped that this report will serve three purposes. Firstly, that it will be a useful record for those who attended the workshop, reminding them of the lessons learned during the week, acting as a trigger for new ideas and approaches, and encouraging continuing networking with fellow participants. Secondly, it is intended that the main body of this report will be meaningful and helpful to readers who were not at the workshop, but are intrigued by the topic - by the linking of the profit motive with the provision of water supply and sanitation services in low-income countries. Thirdly, this report may be of interest to readers who would like to catch a glimpse of the methods that have been developed at Aguasan workshops over the years. Whilst there are new ideas and techniques used each year, there is also the benefit of experience, and Chapter 2 especially provides some ideas about workshop procedures.

It is regrettable that this report cannot capture the beauty of the setting, the good humour and the oneness of purpose. For these the reader is advised to apply early for the nineteenth Aguasan workshop.

1.2 Introduction

A reliable supply of water and an effective and socially acceptable method of disposing of excreta and wastewater are basic requirements for civilised living;

- and yet a significant percentage of the world's people are still without these basic needs;
- and yet experts are still discussing how the needs of millions of people for water and sanitation can be met in a sustainable way;
- and yet there is a growing consensus that even the poor should be expected to pay for water and sanitation, even though these are regarded as basic needs.

The workshop that is described in this report was convened to address these three points.

1.2.1 The Challenge

"Community-based Management", "Public-private Partnership" and "Household-centred Approach" are some of the names of approaches that have been proposed for the achievement of sustainable services. But are they really producing expected results and reliable service delivery? These approaches have been considered in previous Aguasan workshops and applied to many case studies. The subject of the previous workshop had been the shifting of paradigms to help us to see old problems in new ways. The tools and insights from previous workshops were brought to this meeting in an attempt to move thinking forwards to a more sustainable approach.

Some believe that the private sector is the only sector that can be efficient and effective in the delivery of services. This belief springs from disappointing past experiences of the public (government) sector. Throughout the world, there are countless examples where services provided by the public sector are being hopelessly outstripped by mounting needs and expectations.

However, others are suspicious of the same private sector because it is driven primarily by the desire to make profits. Particularly in urban settings, water users who have little purchasing power or may be more difficult to serve may be of little interest to private companies in their quest for profits, and so these potential customers may be neglected. The negative experience with the privatisation of the railways in the UK is seen as an example that should not be repeated in the water sector; delayed trains, frequent accidents and other shortcomings are interpreted as the result of insufficient maintenance and low investment into the rehabilitation of costly infrastructure. Water is a public good[1]. Access to clean drinking water is a human right. What can profit-making institutions contribute to the drinking water sector?

In some places, much effort has gone into the development and support of systems of community management. Empowerment, enabling and capacity building initiatives have certainly contributed in many instances to the improvement of services that are managed by the community of beneficiaries. But are these systems sustainable? What external investments were required during the planning and implementation phases? Does the driving force continue to be effective long after the withdrawal of external support? Many community-managed water and sanitation systems are poorly maintained. Some are out of service and others are not achieving expected service standards. Is current support for the community management approach based more on ideology than on reality and experience? Is too much confidence being placed in the noble thinking, spirit of service and voluntarism of village leaders? In the face of competing personal and administrative responsibilities,

[1] Some terms (such as "public good") are defined in Annex 10.

do community leaders continue to devote energy to the operation of public infrastructure when they get no compensation or return for their efforts?

Since water and sanitation are basic needs and public goods, should they be provided at no charge? For example, the Government of South Africa guarantees a basic lifeline drinking water ration of 6,000 litres per month for each household at no cost[2]. Is this the answer?

The title of the Workshop was "Profits for all – Service for all". This provocative title argues that only if all involved gain some profit can the services be extended to all the population and be sustainable. Voluntarism – working for no compensation or reward – is regarded as an inadequate foundation for the quality of water and sanitation services that people need. Sooner or later, the volunteers lose their initial enthusiasm. Responsibilities are not clearly assigned, accountability is absent and those performing the work eventually tire of contributing their effort without remuneration.

A system that provides benefits and safeguards for all stakeholders may represent an alternative path towards sustainable and equitable service delivery. In trying to introduce a benefit system for all involved, the key questions are:

- What are the rules of the game?
- What are the business principles to be established and by whom?
- What are the necessary conditions that allow the system to work (enabling environment)?
- How can equity demands be satisfied?

1.2.2 Workshop objectives

The aim of the Workshop was to examine the thesis suggested by the title, and to look for evidence from experience that would support or contradict the idea that all stakeholders need to profit in some way. By considering the type of reward (either a profit or a non-financial benefit) that is needed by each stakeholder, it was hoped that the participants would develop innovative approaches and management options for equitable and sustainable drinking water and environmental sanitation services.

In order to achieve this objective the Workshop programme concentrated on:

- Successful cases in water supply and environmental sanitation
- Principles which make business arrangements sustainable
- New and innovative approaches (by applying tools for creative thinking that had been introduced in the previous Aguasan workshop[3].)

1.2.3 Workshop Procedures

By thorough planning and review over the years, and guided by expert moderation, the procedures of Aguasan workshops have been developed to make best use of the time and the expertise of the participants. The programme of this Workshop is reviewed in the next chapter. The main components of the programme were

- a review of tools that can encourage the development of a new approach to old problems

[2] http://www.hsrc.ac.za/corporate/conferences/sarpn/otherNetworks/southAfrica/wapaper4.pdf

[3] These tools are presented in a booklet entitled "Better solutions through new ways of thinking" which is available from the Skat Foundation.

- a presentation of business principles, so that all participants had the same basic understanding of the prerequisites for the success of enterprises
- a presentation, followed by discussion, of a village water supply in Switzerland, which has been in operation for over 100 years
- examination of four very different case studies from Africa and Asia, to learn from these experiences about the role of profits in promoting sustainability and increased coverage.

1.3 Acknowledgements

Preparations for this Workshop started with suggestions of topics at the previous workshop in 2001. Soon after the close of that meeting, the Preparation Group began to consider these suggestions, select the theme and prepare plans for this Workshop. During the Workshop they became a steering group, meeting each evening to discuss what had been achieved and make modifications to the next day's programme. The members of the group are listed in Annex 9.3, together with others who played major roles.

The Moderator, Tonino Zellweger, guided the whole workshop process on both macro and micro levels. His style, experience and attention to detail were much appreciated.

Sepp Wechsler, as the Resource Person, introduced elements that were new to many of the participants, and helped us to look at old problems and situations in new ways, by turning attention towards business principles and financial aspects.

The case study presenters, including Karl Wehrle, clearly played a major role, including preparation and delivery of presentations and answering many questions, in order that the discussions could be focused on concrete situations.

The field trip was not only an opportunity to see a beautiful part of Switzerland and to enjoy some excellent hospitality, but also provided relevant inputs into the main issues of the Workshop. The hosts of these visits are mentioned in Annex 4.

David Zaugg and Julian Jones of Skat Consulting provided valuable support in the preparation and running of the Workshop.

The success of the Workshop owes much to the efforts and experience of all participants.

A very important contribution in this and all previous Aguasan workshops has been the financial support of the Swiss Agency for Development and Co-operation (SDC), during the long planning phase and in funding many aspects of the Workshop itself. The comments in the feedback questionnaires (Annex 6.4) complement opinions expressed in other ways to emphasise that Aguasan workshops are making an important impact in improving the effectiveness of initiatives in water and sanitation development.

The appreciation and gratitude for all these inputs was expressed at the Workshop and is recorded here.

Chapter 2 An overview of the Workshop programme and procedures

2.1 Introduction

This chapter describes briefly the main events of the Workshop. The thematic input and the deliberations concerning case studies can be found in chapters 3 to 5. The outline schedule below shows the main components of the programme, and the sections of this report where each particular component is discussed. Readers who are interested only in the thematic content of the Workshop, and not in the way that it was organised and conducted, may prefer to move on to Chapter 3.

From Tuesday onwards, each morning began with a humorous review of the previous day's sessions. This not only helped to get us ready in time, and provided entertainment, but also reminded us in a useful way of what we had done the day before. Unfortunately, it has not been possible to record these creative inputs in this report.

2.2 Workshop schedule

The schedule of the next page shows the sequence of the programme of the Workshop and refers to sections where more detailed information about any particular component may be found. The procedures followed in each activity are described in the following section (Section 2.3). In some cases the Annexes provide more details; "A2" means Annex 2. The initials used in the schedule refer to the workshop facilitators as follows:

KW Karl Wehrle **SW** Josef (Sepp) Wechsler, Resource Person
AH Armon Hartmann **CSP** Case Study Presenters

The Moderator, Tonino Zellweger, is not included in the list of initials above or in the timetable below, because he was a key player in every component of the programme. A tentative programme (Annex 1) had been prepared well before the Workshop, and a comparison with the actual programme of events shows that it was followed closely. The Moderator tried very hard (without ever being impolite) to ensure that start and finish times were adhered to, but this sometimes required minor changes to the programme. After each day's programme the preparation and steering group met to review the day, consider what issues would need extra explanations or extra time, and propose details for the next day's programme. The Moderator then worked into the night or early in the morning to prepare lists of questions, organise boards and posters, and check that everything was ready for the coming day.

Day & time	Component	Section
Monday		
11.00	Arrival	
Afternoon	a) Welcome and introduction to the Workshop (KW)	
	b) Personal presentations	A3, A9.2
	Introducing the team	A9.3
	c) The context for workshop deliberations (AH)	A2
	d) Introducing the workshop objectives (KW)	3.1
	e) "Business Principles in the Water Sector" – a presentation by the Resource Person (SW)	3.2
	f) Tools for changing paradigms	3.3
Tuesday	g) Case study – Wittenbach, Switzerland (KW)	4.1-4.3
afternoon	Group work, discussing and presenting findings	4.4
	h) Introductory presentations of African and Asian case studies and formation of groups. (CSP)	5
evening	i) Informal presentations	A5
Wednesday	j) Feedback on group outputs for Wittenbach case study (KW)	4.5
	Clarification on profits and benefits (SW)	3.2.3
	Sketch illustrating profits and benefits	3.2.3
	k) Initial group work on four case studies	5
	l) Introduction to field trip	A4
afternoon	Site visits to Sempach and Neuenkirch	A4
Thursday	m) Group work – financial sustainability profile of four case studies, and developing plans for future work	5
	Reporting back on profiles and plans	5
afternoon	n) Group work – Questions for "creative backstoppers"	5
	Visits of backstopping teams	5
	Preparation of group presentations	5
evening	i) Informal presentation (video)	A5.4
Friday	o) Presentation of group findings using carousel system	5
	p) Harvest time - Comments from case study presenters	A6.1
	What are you taking home? – lessons learned	A6.2
afternoon	Comments from Resource Person	A6.3
	Suggestions for topic for a future workshop	A8
	q) Closing remarks (AH, KW)	
16.00	End of Workshop	

2.3 Workshop components and procedures

a) Welcome and introduction

Karl Wehrle welcomed participants on behalf of SDC, Helvetas, Sandec, and his own organisation, Skat Consulting. He emphasised that the organisers were concerned that the Workshop should be practical and relevant, and welcomed the wide range of countries, disciplines and experience that were represented among the participants.

b) Personal presentations

As usual, each participant had been sent a form to fill in and present as a personal introduction. This year the form had some new questions. Participants were asked to name their *major headache* and their *number one requisite for sustainable profit*. Annex 3 lists the answers provided by participants, and Annex 9 provides a list of participants.

c) The context of the Workshop deliberations

Armon Hartmann reviewed developments in water supply and environmental sanitation, mainly over the last ten years, focusing particularly on the impact of economic considerations on planning. He also outlined the impacts of the trends of globalisation, private sector involvement and decentralisation on the roles of government and civil society, and steps that are being taken to improve governance. For a summary of this presentation, see Annex 2.

d) Workshop objectives

Using posters, Karl Wehrle reminded the participants of the background to the Workshop and presented the hypothesis on which the Workshop was based, and the objective. This presentation provided the framework and rationale for the week's programme, and is summarised in Section 3.1.

e) Business Principles in the Water Sector

By means of a *PowerPoint* presentation, the Resource Person, Sepp Wechsler, provided key insights from the world of economics and management, insights that would assist participants to grasp the issues that are at the heart of the workshop topic – how economists see water, reasons for involving the private sector, profit and business principles. This session introduced the framework and tools that would be needed during the rest of the week. Section 3.2 summarises this presentation

f) Tools for changing paradigms

The tools and concepts that had been presented at the previous workshop were also relevant to the work facing the participants at this meeting, so the final session of the first day focused on some of these tools. After a short introduction by the Moderator, the participants were split into four groups, to consider the four different tools in rotation, and some of the participants who had also been at the last workshop were each asked to explain one of these tools to each of the four groups as they came to visit. *Visitors* were asked to think of examples, based on a starting paradigm. This session proved to be a useful reminder for those who had been at the previous workshop and an introduction for those who had not been present. More information can be found in Section 3.3.

g) Case study from Switzerland

It is not often that one of the organisers presents a case study, but there were good reasons why Karl Wehrle should describe the history of a water supply in a Swiss village. This case study, and studies of three other Swiss villages, have been written up as a series. This particular case study, which covers a period of over one hundred years, had been sent to participants before the workshop. Chapter 4 covers the main points of this presentation and the related discussion.

Following the presentation and a short question session, the participants were divided into four groups. The objective of this session was "to understand the development and functioning of a sustainable system". Each group was given two large pin boards and asked to discuss the following questions and visualise its conclusions. (A copy of the list of questions was given to each group.)

- List the stakeholders and describe the benefits obtained by each
- What were, and are, the driving forces in the system? Are there monetary profits and, if so, who receives them? Are there other non-monetary benefits and, if so, what are they?
- What were the crucial turning points in the process?
- What are the market mechanisms that you can identify in the system?
- Considering mainly financial sustainability (while not forgetting other aspects of sustainability): What contributes to financial sustainability? What hinders financial sustainability?

Each participant was also asked to write on a card what they considered to be the most striking feature of the Wittenbach case; the group should then arrange the cards in clusters.

The Presenter and the Resource Person were available to assist the groups as they discussed, to provide respectively, further information about Wittenbach, and about market mechanisms and financial aspects.

The group discussion session lasted from about 11.00 until 15.45 (with a break for lunch and a few minutes of the World Cup semi-final between Germany and South Korea). Groups were asked to concentrate on the first and last questions (in the bullet list above), and to decide internally which other questions to discuss.

h) Introductions to case studies from Africa and Asia

The main activities for the remainder of the Workshop were built around four case studies – three from Africa and one from Asia. The presenters of these case studies were each given ten minutes to give an introduction. Brief details of the case studies are as follows.

Location	Main theme	Presenter
Nepal (Section 5.1)	New approach to water supply and sanitation in remote and rugged regions that emphasises ownership and integrated management. Funds for operation and maintenance are being collected according to local assessments of ability to pay.	Adhir Sharma
South Africa (Section 5.2)	Decentralisation in the context of free water. NGOs and consultants are involved as service support agencies to assist villages set up their water supply services.	Mohlomi Lebenya
Mozambique (Section 5.3)	Water supply to a plateau from pumped sources, where people are willing to pay for water but have difficulty in paying because of the high costs of pumping. A more commercial approach has led to major improvements.	Ana Lucia Obiols
Uganda (Section 5.4)	The implementation of water and sanitation services in small villages is assisted by an umbrella organization that provides technical support and co-ordination. The demand for sanitation needs to be increased. Pollution from latrines is a major concern.	Gerald Eder

After these introductions, the participants were asked to decide which group they would like to join. Each participant was asked to indicate a second choice, but it was possible to form relatively equal groups without much negotiation. One group initially consisted only of Europeans, so a participant from the South was invited to join it. The case studies and the deliberations of the groups are reported in Chapter 5.

i) Informal presentations

It is a valued custom at Aguasan workshops to give participants an opportunity to present activities and information that are not part of the formal programme, in a relaxed way on one or two evenings. Two evenings were allocated for this purpose.

On the Tuesday evening the presentations were

- "Suitable Water Management for Urban Areas – high- medium- and low-tech options"; reviewing systems that conserve water and make use of the nutrients in wastewater, presented by Hans Hartung
- "Sanitation Strategy for the Water and Sanitation Program, Africa Region" - the presentation included considerations of the business aspects of water and sanitation provision; presented by Andreas Knapp;
- "Watsan Partnership Project" – focusing on a water and sanitation for part of Bangladesh, with particular emphasis on strategies for dealing with the problem of arsenic in groundwater.

On the Thursday evening a video was shown. It told a very human story related to the difficulties of supplying water to the residents of the Mueda Plateau in Mozambique (the area that was the subject of one of the case studies).

More details of these presentations can be found in Annex 5.

j) Feedback and clarification

Meeting on Tuesday evening, the steering group considered that it would be useful for Karl Wehrle to respond to the findings of the groups concerning the case study he presented, and it was also considered useful to provide some clarifications regarding market mechanisms and the contrast between profits and benefits. Accordingly, after the review of the previous day that was presented by the participants, Karl Wehrle made some points about experiences in Wittenbach and Sepp Wechsler clarified some aspects of his presentation, assisted dramatically by Dieter Rothenberger, in a short sketch (Section 3.2.3).

k) Initial group work on the four case studies

The Moderator noted that the four case studies were very diverse and at different stages, so that exactly the same approach would not be appropriate for all of them. The objective of this session was to ensure that the members of all four groups were sufficiently acquainted with the case of their group that they would all be able to discuss questions about their cases.

The case study presenters were asked to present their cases to their particular groups according to the guidelines that they had been given. One hour was allowed for this. Then group members were asked to write on a card the point that struck them most (= made the greatest impression) about the case study. The groups were also asked to visualise the system that had been described and look for opportunities of introducing business principles.

l) Field trip

In an introduction, the Resource Person explained that the purpose of the site visit programme was to see something of Switzerland, to get some "food for thought" for workshop discussions, and to meet and discuss with caretakers, operators and owners, looking for factors that favour sustainability. The trip would take us to see two water supply systems, and allow plenty of time for discussions of institutional issues. The importance of being ready to depart on time was emphasised.

The field trip is described in Annex 4, where some photographs have also been included. The first stop was at a surface water treatment plant operated by a corporation that could be called a club. The second supply system was mostly fed by groundwater and was operated by a co-operative. The focus of much of the discussion was on financial arrangements and benefits received by various stakeholders.

m) Financial sustainability profile

A tool was proposed that would allow analysis and comparison of the case studies. It consisted of a matrix, with a row for each of ten aspects and columns for indicating whether each particular aspect contributes to or detracts from financial sustainability. The list of aspects could be modified if desired. Cards with comments supporting the assessment were to be fixed in the appropriate column, and by joining the cards a characteristic profile line could be drawn. (The same type of tool could also be used for other aspects of sustainability.) Figure 2.1 illustrates the tool. In the chart, the heading "- -" means that the particular item (enabling environment, ownership of process etc.) contributes virtually nothing or even has a negative impact on the financial sustainability of the case being described. On the other hand, "+ +" means that the item has a pronounced positive effect on the financial sustainability of the existing arrangements.

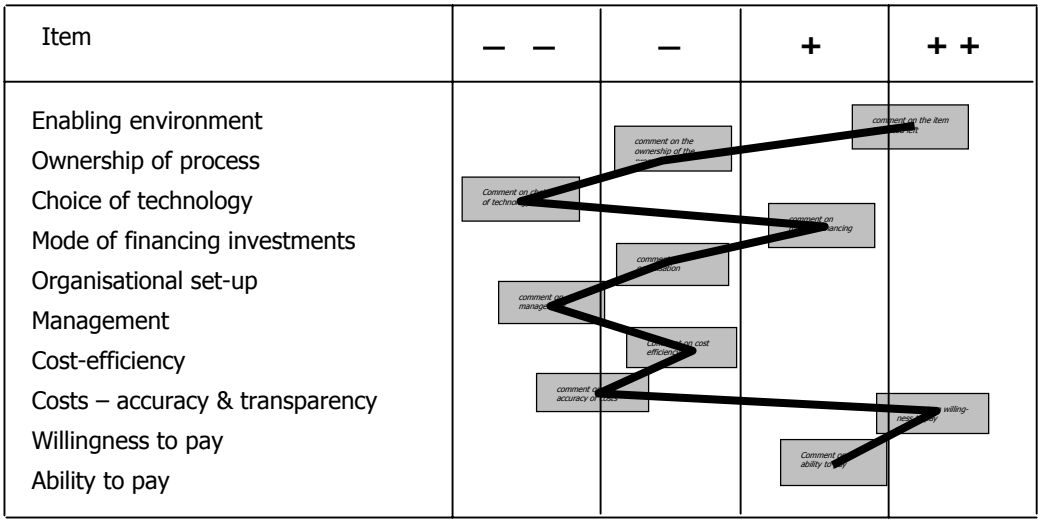
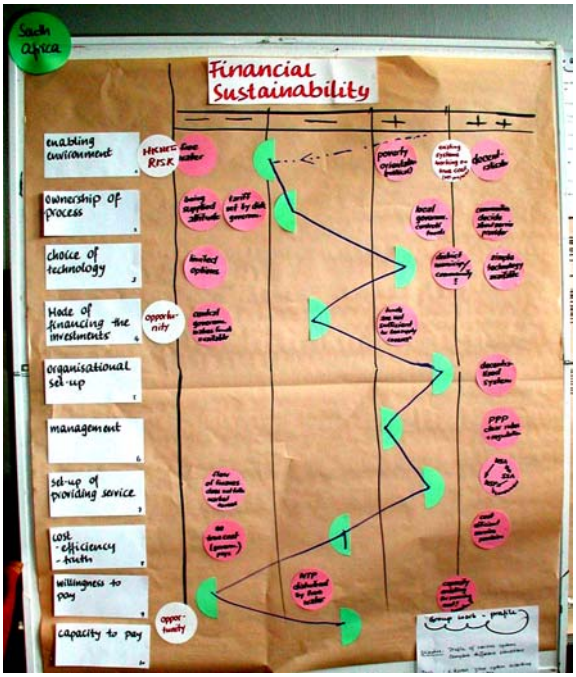


Figure 2.1 The concept of the financial sustainability profile

In addition to preparing the profile, each group was asked to decide the direction in which they would like the group discussion to follow – what particular aspect of the case study that they considered to be of most interest in the context of the Workshop theme. An hour was allowed for reporting back.



Photos 1 and 2 (above) On the last morning, the review team showed that the financial sustainability profile was not just to be written on paper, but to be lived and experienced. This new insight appears to have met with the approval of the Moderator.

(Right) Photo 3 shows a financial sustainability profile on paper

n) Questions for creative backstoppers

The next session was based on the principle

You scratch my back and I'll scratch yours

but instead of being back scratchers, participants were asked to be backstoppers.

The groups were given one hour to prepare questions that they would like to ask a team of backstopping specialists about the case study, and about how to use a business approach to enhance sustainability in that particular case. The four groups were paired so that two groups became backstoppers and would have 15 minutes to listen to and respond to questions. Then the roles would change, and the groups that had provided advice would now ask for backstopping support themselves. This exercise was very helpful in forcing the groups to identify the major issues on which they would like backstopping guidance, and it also provided an opportunity for sharing ideas and information. Often an outsider is able to question or challenge paradigms which cannot be recognised by the people who are very close and involved.

The pairing was as follows:

	"Creative backstoppers"	Seeking advice
First 15 minute period	South Africa group Uganda group	Nepal group Mozambique group
Second 15 minute period	Nepal group Mozambique group	South Africa group Uganda group

Following the visits of the backstoppers, the groups were to finalise the preparations of their presentations, incorporating any ideas of the backstoppers that they found useful. Groups were also asked to consider the question "How do you deal with equity requirements in your chosen option?"

o) Final presentation of group findings using the carousel method.

Each case study group was allocated a site for presenting the posters that displayed their ideas and conclusions. This method of presentation divided the participants into four carousel groups, which visited each site in turn, and at each site the work of the case study group's work was presented by a different member of the case study group each time.

Figure 4 Chris Zurbrügg presents the findings of his group, making use of the household-centred approach concept (Aguasan 2000) (Photo: Andreas Knapp)

This system has a number of advantages. It gives four people in each case study group the opportunity to present the group's findings, and so encourages them to think carefully about what the group has written on the posters. It gives more time for each person to ask questions. It is a varied and interactive method.

p) Harvest time

An opportunity was given for case study presenters to share insights that they had gained from the Workshop. It is expected that the group discussions help the case study presenters to see some aspects of the case study in a new light, and receive new ideas about how to proceed. Their comments are reported in Annex 6.1

Then there was an opportunity for each participant to identify and share one lesson that had been learned. The points that were made are listed in Annex 6.2.

The Resource Person, Sepp Wechsler, was invited to pass on some final observations regarding the outcomes of the Workshop. His points are summarised in Annex 6.3.

Then participants were asked to suggest topics for a future workshop. These are listed in Annex 8.

q) Conclusion

Armon Hartmann expressed his satisfaction with the outcomes of the Workshop and his appreciation of the efforts of the planning and steering committee and of the workshop participants. Karl Wehrle echoed these sentiments, adding his thanks to those who had organised the field trip.

Attendance certificates and some recent publications were then handed out to all participants.

In concluding, Karl Wehrle mentioned that it was the first time that he had presented a case study at an Aguasan workshop. Because of the role played by his forebears in the Wittenbach story it was very personal for him, and he was proud of their contribution, which had helped the deprived to become stronger. He urged participants to do whatever possible to help others to come up and exercise initiative to the benefit of their communities.

Photo 5 Each certificate signed by hand. Karl Wehrle and Armon Hartmann keep working when the others take a break (Photo: Andreas Knapp)

Chapter 3 Fundamental concepts

3.1 Thematic framework for the Workshop

Presented by Karl Wehrle

In order to ensure a common understanding of the background to the Workshop, and its objectives, Karl Wehrle reminded participants of the global needs in water supply and sanitation and of the strategies that have been employed in efforts to meet these needs. Figure 3.1 is based on a poster that was used to review key points.

SECTOR TARGET

by 2015 to halve the proportion of people who have no access to water and sanitation

PRINCIPLES AND STRATEGIES

Water is a social and an economic good

Governments are responsible to set and enforce stable and transparent rules

People (in particular the poor) matter, so they should be involved in decision-making.

Decentralisation and delegation of power and means (resources)

Public delivery complemented by different innovative forms of service delivery

Figure 3.1 The target, and principles and strategies for water and sanitation

Past and current trends and approaches for increasing the coverage of sustainable services have included:

- community-based management
- the household-centred approach
- public-private partnerships, and
- conventional privatisation, from service contracts to BOT and concession contracts.

In spite of these innovative and varied approaches, questions remain. Among them:-

- Why are many community-managed water and sanitation projects poorly maintained? (One would think that the community would take care of its own system for its own benefit. Perhaps one of the issues to consider is that we should not think of the community as one monolithic block, but as a heterogeneous group of individuals each with their own agenda and priorities.)
- What have profit-making institutions to offer in the provision of water and sanitation services to the poor? (Is it possible that the income from poor communities can be enough to ensure a profit for the service provider? It is often mentioned that the poor who buy their water from water vendors pay many times more for a cubic metre than more prosperous residents who are served by a piped supply. Can profit-making enterprises resolve this inequality?)
- Should water, as a public good, be provided free? To whom? By whom? (What has been the experience of free provision of water? What has been the impact of introducing cost-covering charges for water in places where it has previously been free or charged at a very low rate?)

In order to achieve the objective, the workshop procedure would include the following components:

- an introduction to business principles

- learning from successful examples
- consideration of our own working situations (using case studies)
- questioning our mindset and the consequences of our way of thinking
- applying new insights to our own working situations.

The focus of the workshop was defined in terms of a hypothesis and objective, shown in Figure 3.2.

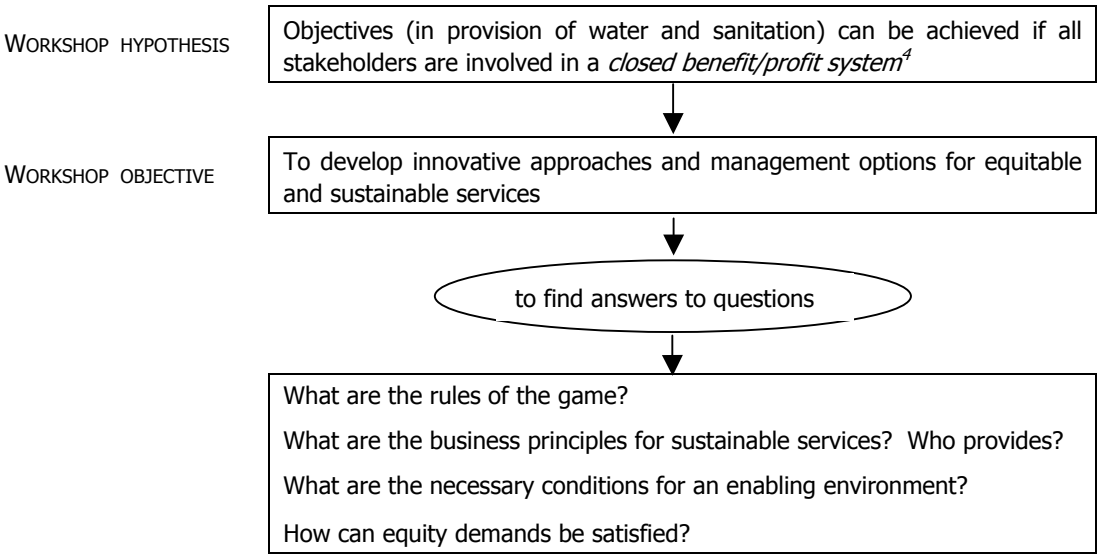


Figure 3.2 The hypothesis and objectives of the workshop

3.2 An introduction to business principles

The hypothesis on which the Workshop was based was that the opportunity for service providers to earn a profit is a necessary condition for sustainable provision of water and sanitation services. Therefore it was important that all participants had a common basic knowledge of business principles as they apply to water and sanitation enterprises. This section summarises the initial presentation on business principles and the discussion which followed, and also includes later inputs on the same theme.

3.2.1 Business principles in the water sector,

presented by the Resource Person, Sepp Wechsler

a) What is special about water?

Some quotations about water from international gatherings helped to set the scene: -

- "Water in a natural resource (part of the ecosystem) and the base for life" (Rio 1992)
- "Water is a social and an economic good" (Dublin 1992)
- "Human right to life = right to water" (UN Charter)
- "People have a right to water but they cannot demand this right from Government" (Global Agreement).

[4] See word list (Annex 10).

Water is considered to be a social good in that it belongs to everybody. The degree of access to water influences social development. Problems linked to access to water can cause social and political tension. Water is also linked to health and well-being. However, water can also be considered as an economic good in that it is essential for processes and cleaning in the agricultural and industrial sectors, and for power generation (hydropower). It also has a value and is limited.

There is a strong demand for water but the demand for sanitation is often much weaker, depending on awareness and affordability. Is there a market mechanism that responds to these demands? The answer to this question depends on whether water is seen as a private good or a public good. Figure 3.3 indicates two key differences between a public good and a private good.

b) Water in economic terms

The definition of whether water is a public good or a private good depends on policy and on the type of organisation that supplies the water. It can be an emotive issue. Market mechanisms apply to private goods. It can be said that water resources (underground in aquifers or surface water in rivers) can be regarded as a public good, and treated water emerging from a distribution system is a private good.

		Exclusion – Is it possible to exclude someone from benefiting from the commodity – for example cutting off the supply of someone who does not pay?	
		No	Yes
Rival consumption – Is the supply open to anyone, or does one person's use diminish or exclude the use by someone else?	No	Public good	
	Yes		Private good

Figure 3.3 Differences between a public good and a private good

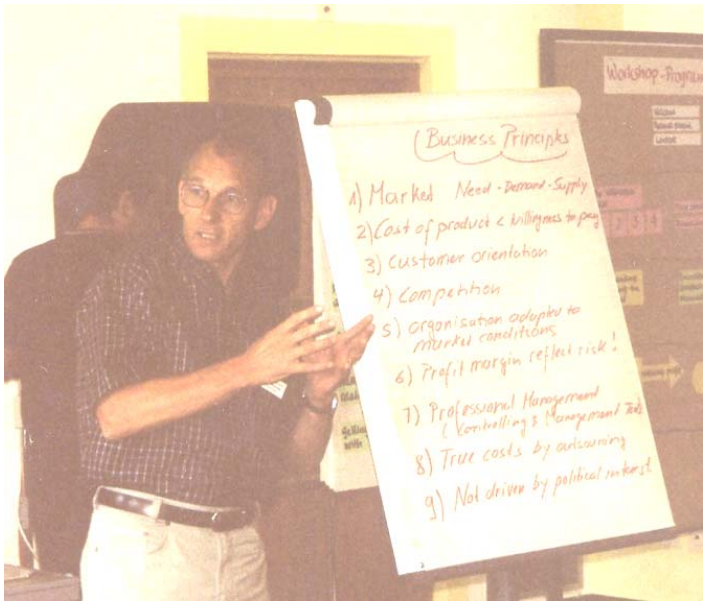


Photo 6 The Resource Person - Sepp Wechsler - presenting key business principles

A market also needs competition. Competition can exist in some aspects of the water supply industry – for example competition between water vendors, competition between companies that are bidding for a contract or concession, and competition between enterprises that offer maintenance and extension services. However, there is no other substance that competes with water (remembering that large quantities of water are used in the production of beer and other alternative drinks), and when a house is connected to one distribution network the residents are not interested in installing a second for the sake of competition.

It can be concluded that the water supply sector is not a typical domain for private sector involvement, and that the right legal and economic framework is an essential precondition for successful private sector inputs. Water is a very political issue, and so changes in government policy can have a big impact on market conditions.

c) Business principles

- The "rules of the game" of the market place involve the aspects of need, demand and supply.
- The cost of the product should be less than the price that customers are willing to pay, so that the supplier can earn a profit.
- The service supplier should exhibit a customer orientation, regarding as important that customers receive the standard of service that they can reasonably expect and that the supplier responds to the needs of the customer. Customer relations – the interface with the customer – should be managed with care.
- Competition is often the driving force for efficient use of resources. (As was discussed earlier, competition may be restricted to certain stages in a "project" cycle and to certain activities.)
- The organisation of the service supplier should be flexible and adapted to the particular market conditions, and based on a well thought-out strategy.
- The profit margin should be set according to the risk that the enterprise faces. (For this reason contract arrangements should aim to minimise uncertainty and risk, so that the service provider can be sure of a regular profit without allowing a big profit margin.)
- An important aspect of successful management is the monitoring and controlling of costs. Tools for controlling and managing costs should be used.
- It is sometimes difficult to know the true costs because of accounting systems that include some items in other budgets. When work is outsourced (undertaken by a contractor, or by people not on the payroll but paid for specific tasks) the true cost becomes known.

Figure 3.4 itemises income and expenditures, showing the different direct and indirect costs. Often depreciation of assets is not considered as a cost. In the case shown, ignoring depreciation gives the impression that the undertaking is making a profit, but there is no provision for replacing assets, so, taking the long-term view, the undertaking is not covering its costs and is therefore making a loss.

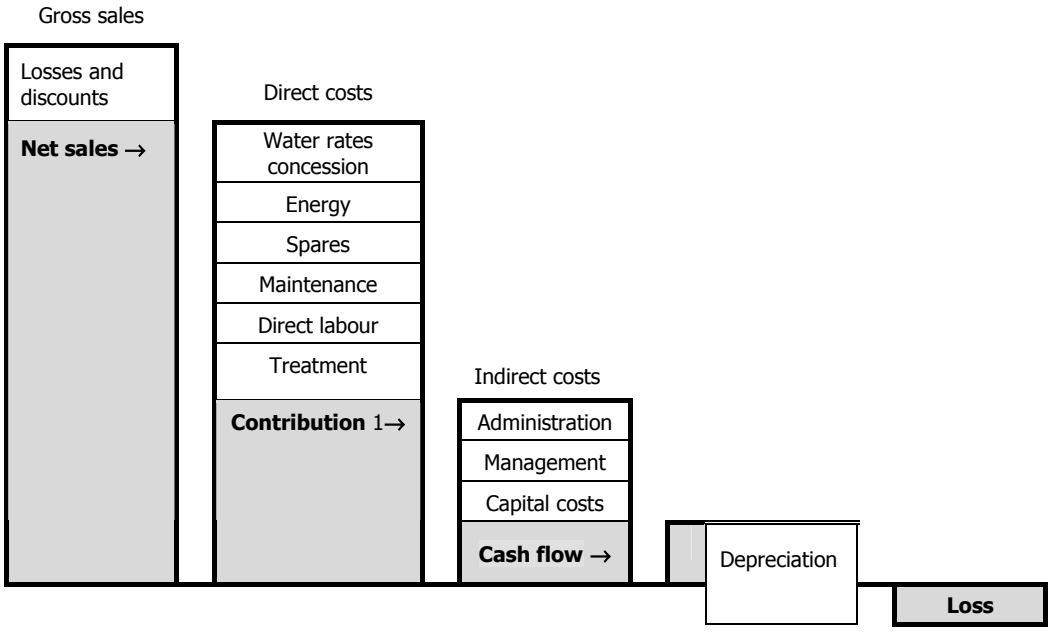


Figure 3.4 Income and costs for a water supply

d) Private sector participation

Figure 3.5 shows the main forms of private sector involvement, indicating the range of private investment and the typical durations for the various arrangements.

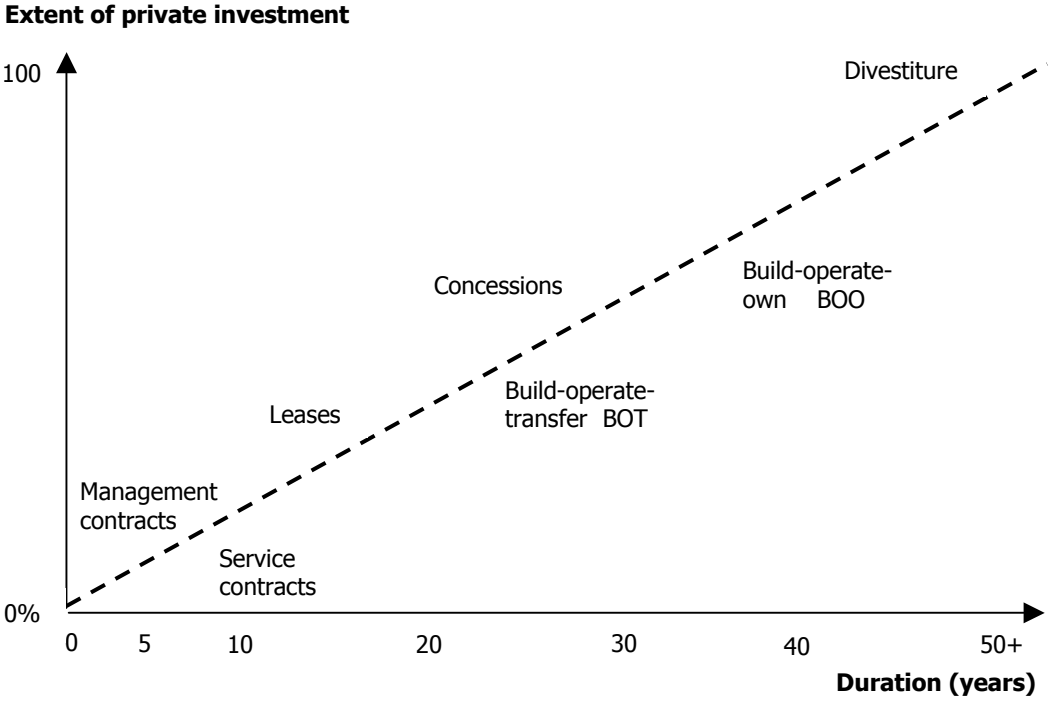


Figure 3.5 Forms and degrees of private sector participation

Some experts give the impression that involving the private sector always brings improvements. Experience has shown that this is not always the case, but there have certainly been many situations where involving the private sector has brought real improvements. Much depends on

the contractual arrangements, the legal framework and the supervision of the service provider. The common reasons for involving the private sector are: -

- Deficiencies in the service provided by the public sector
- To improve efficiency and cost effectiveness, reducing public expenditure and subsidies
- To gain access to finance (loans) for capital investment
- To bring in technical and managerial expertise
- To make the service more responsive to customers needs and preferences (More customer-oriented)
- To democratise or decentralise decision-making
- To achieve some insulation from political influence, allowing more stability (provided that contract clauses guarantee this insulation and that they are upheld by the judiciary).

Figure 3.6 shows the advantages of the different arrangements or private sector participation. In the case of the Build-operate-transfer arrangement, the responsiveness to customers is said to be less because the facilities are transferred to the public sector, which is assumed to be less responsive to consumers.

Advantage / Option	Additional technical and management expertise	Higher operating efficiency	Higher investment efficiency	More responsive to customer	Insulation from political influence
Service contract	+				
Management contract	++	+		+	+
Lease	++	++		++	++
Concession	++	++	++	++	++
BOT	++	++	++		++
Divestiture	++	++	++	++	++

Figure 3.6 Relative advantages of different private sector options
(A blank indicates no effect; + indicates some effect; ++ indicates a major impact)

The advantages of private sector participation from the perspectives of the different stakeholders can be summarised as follows:

stakeholder	advantage
- customer	higher quality and availability
- entrepreneur	profit and employment
- citizens, public	lower taxes, efficient use of resources, economic development
- government	one problem less to worry about
- all	benefit to environment from more efficient use of resources

The private sector can be defined in different ways, and may or may not include non-profit organisations. The following categories are suggested: -

- Self-help, not-for-profit groups, such as co-operatives and corporations (semi-public societies) and land owners' groups;
- public-private partnerships;
- private capital companies, including private limited companies and private equity companies.

e) A favourable environment

There is widespread agreement that the institutional environment or context in which the private sector service provider operates must be conducive or favourable, so that the enterprise can function in the most efficient way. Some of the key factors to consider are:

- **policy formulation**: Policies should promote efficient water use, equitable provision of services, and allow prices that are adequate and fair. Involving the private sector should not be seen as an end in itself, but as a means to achieving improved services.
- **legal and regulatory framework**: There is a need for clear regulation, especially in regard to the following aspects: -
  - restrictions on private sector involvement (such as exclusion of foreign companies);
  - laws on water resources management (such as ownership, abstraction rights);
  - environmental law;
  - contract law and the attitude of the judiciary (which should uphold the rights of both parties);
  - competition law (for example, to encourage real competition at the tendering stage)
- **stability and accountability**; especially for long-term investment and to avoid bidders looking for excessive profits because of uncertainties;
- **competition**:
  - competition in the market (when enterprises are operating in parallel and it is relatively easy to switch from one to another) – does not apply to all aspects of water supply services, but applies more to sanitation and waste management;
  - competition for the market (competition for the right to supply) bidding procedures, contracts, encouraging a real choice at the bidding stage;
  - benchmarking the performance of different suppliers in similar circumstances to allow comparison and to set standards.

f) objectives that favour sustainability

- Better supply – coverage, quality, service, maintenance
- A win-win situation for all stakeholders
- Generation of employment at different levels
- Decentralised decision-making
- Efficient use of natural resources

Sustainability requires that there is a profit or a benefit for all stakeholders.

3.2.2 Discussion

Definitions

- Sustainability – this word has many aspects (such as social, environmental and financial) but here the focus will be on financial sustainability.
- Private sector – Here the private sector will include all non-governmental organisations, including user groups and community associations.
- Profit – this is used to refer to an excess of income over all costs in cash terms, that can be used by the owner or shareholders of the organisation. A not-for-profit organisation may earn a surplus, but this should be paid into reserve funds or reinvested.

Other points

Switzerland has a wide range of systems – probably all possible options can be found in Switzerland. For example, recently the capital, Bern, has decided to use a public sector provider and to subsidise water supplies.

Water supply is usually a monopoly, so independent regulation is needed to control prices and ensure that profits are reasonable.

Losses of water through leaks in distribution pipes are a technical matter, but financial efficiency demands a tight control of such losses. One of the clear impacts of the entry of the private sector into water supply is usually that physical water losses are reduced.

3.2.3 Profits and benefits

For the purposes of this report, a profit is considered to be always in cash terms, but a benefit is a positive impact or result that cannot be measured in cash terms. For any transaction there must be a positive effect (profit or benefit) on both sides.

These points were illustrated very effectively by a short role play performed by Dieter Rothenberger and Sepp Wechsler . . .

It is the day of the World Cup football final between Germany and Brazil. An anxious-looking German customer bursts breathlessly into a shop that sells electrical appliances and asks the shop owner how much the television sets cost.

Shop owner: *I have only one set left, but fortunately for you, it is a very good one. It has six loudspeakers, a remote control that even works when you are pointing it towards yourself, and such a good picture that you can see every blade of grass. It is only €999.99.*

Customer: *I need a TV set so that I can watch the final with my friends. But why is it so expensive?*

Shop owner: *Expensive? It is a good price. Don't you know that with the money you will pay me I have to pay to buy the TV from the wholesalers, pay the wages and other costs of my staff, pay rent for this shop, pay for electricity and heating, set aside some money for redecorating the shop, and earn a little profit?*

Customer: *Profit? Why do you need such a big profit? You are just exploiting me because you can see how urgent it is that I have a TV.*

Shop owner: *Oh, no sir! With the little profit that I earn I need to provide myself security in terms of a pension, some of it will go in tax to the Government, and perhaps next year will not be a good year for business, so I will need to have something in reserve.*

Customer: *Oh, very well. Here you are. (Pays €1000.)*

Shop owner: *Thank you, sir. Here is your cent. It is such an excellent set that I am sure you will enjoy the match, even if Brazil wins.*

This little sketch illustrated a number of points. The customer would not have agreed to buy the TV set unless he believed he was obtaining useful benefits by doing so. Perhaps the benefits he had in mind were:

- status among his friends, that he was able to invite them to see the match on such a high quality set, and future invitations from them;

- goodwill with his boss, if he invites him to come also;
- avoiding possible injuries that he might get if he watched the match in a public place where there were many supporters for the other team.

The positive effect for the shopkeeper was obviously the Euros in this pocket, but also perhaps the benefit of satisfaction at having made such a profitable sale.

If there had been competition (from another shop, or if there had been other television sets in this shop), or regulation of prices, the customer might have paid a lower price for what he wanted.

3.2.4 Not just theory, but practice

How often, as professionals in the water supply sector, have we argued that water cannot be provided free, because there are many costs involved in treating and distributing the water? During the workshop, the hotel management kindly arranged a practical demonstration of this fact, to help us in future when we are facing people who argue that water should be free.

During the Workshop, most participants were glad to have a drink with their meals, and those of us who wanted something plain ordered tap water. The tap water was served in a nice glass carafe, and we discovered afterwards that we were charged about US$2 for this service. We made comments about being near to the lake, and thought such a charge was unreasonable. But the hotel owner could argue that he needed to pay his staff who were serving the water and washing the glasses and carafes, and that if we had not ordered the water we might have ordered more expensive drinks. He also expected to make a profit on everything. In this way we were made to see quite clearly our own reactions to the concept of profit and paying for water.

Perhaps we felt that the price and level of profit were not reasonable, and we regretted that there was no competition or independent regulator to keep the price down.

3.3 Recognising and changing paradigms

Though each Aguasan workshop has its own distinct theme and objective, there is a common thread that runs through them, and the tools and insights from each workshop are integrated into subsequent meetings. At this workshop, the tools and approaches connected with the household-centred approach (2000) and paradigm shifts (2001) were very much in evidence. After the previous workshop ("From Sector Reform to Sector Revolution", about paradigms), in addition to the usual workshop report, a booklet[5] had been prepared to review some of the main concepts and tools of that workshop, and this booklet had been circulated to participants before the workshop to give them an insight into tools that help us to change the way we think about familiar problems and issues. As a reinforcement, a short session was dedicated to some of the concepts concerned with changing paradigms. Each point was linked to a picture.

[5] "Better solutions through new ways of thinking"; available from the Skat Foundation

3.3.1 What do you see?

The Moderator introduced the session with this picture, asking the audience what they saw. Some saw an old woman, some a young woman. (The lower part of the nose of the old woman is the jaw of the young woman.) He pointed out that we cannot see both at the same time.

Some people see one image, and other people see the other. If we are talking to someone who sees the alternative picture, we will not understand what the other is saying, because we are talking about different images.

Failing to understand one another for this reason can be very common. For example, if two people are talking about the private sector, because of their different experiences, one person may have in mind a small community-based enterprise, while the other is thinking of a large, technology-based international company. Until they can understand the picture that is in the other person's mind, they are likely to get very frustrated at their failure to understand each other.

3.3.2 Looking for alternative paradigms

The starting paradigm was

The consumer should pay for water.

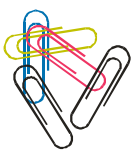
Participants were asked to use the different tools to look for alternatives to this paradigm. We may think that this paradigm is so obvious, correct and complete, that we have great difficulty of conceiving another, or a variation, that might be more helpful in finding a solution to a problem. The tools mentioned below can be helpful in looking for alternatives.

a) Parallel thinking

One way of trying to see things in a different way is to compare them to an object with which there is no obvious connection. In this case we were asked to compare the starting paradigm to a stapler. In this way we are freed from customary thought patterns to think about the paradigm in a different way. Suggested alternatives included:

- If we don't pay, there is no money to buy staples
- The stapler needs someone to push it and to replace the staples.

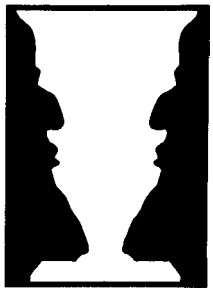
b) Looking for many alternatives



Just as paper clips can be used for many purposes, and bent into many shapes, so it is useful to think of many different ways of changing the starting paradigm, without worrying if each variation is really sensible. This is like the process of brainstorming. Some of the variations that were suggested were:

The consumer/someone else should pay/should not pay/should sometimes pay for water/for wastewater disposal.

c) Figure/ground reversals



Here "figure" means foreground or central object and "ground" means the background or the context.

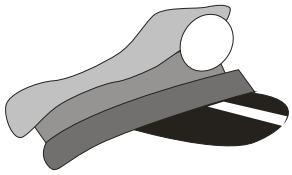
In the picture one person may see a white vase for holding flowers, and another may see the silhouette of twins, now old men, eyeball to eyeball.

What is central and clear to one person may be just the background, and therefore ignored, to another.

In this case we ask ourselves: "What does the paradigm seem to ignore or assume or neglect?" Some of the suggestions were:

- Is there enough water, and is its quality acceptable?
- What about vulnerable groups?
- Are there alternative sources of water?

d) Put yourself in someone else's shoes, or hat



Our perceptions and perspectives depend very much on our backgrounds and origins, and it would often be very useful to see situations as others see them. At the previous workshop, participants had been asked to name the profession that they would have followed if the had not followed their actual career. Later, they had been asked to imagine how someone following this alternative career path would see an issue. The picture here is of a policeman's hat, prompting the question "How would a policeman interpret this situation?"

Participants were invited to consider, for example, how a village woman might react to the starting paradigm mentioned above (about paying for water), or how a health worker might see it. The reaction of a villager who currently has no convenient water supply would probably be very different from the reaction of someone living in a village that had had a good water supply for many years.

3.3.3 Some applications

In the context of water supply and sanitation, the word "profit" triggers many reactions. It may be interesting to consider what paradigm we personally have adopted in this connection. Do we see profit in the context of greed and exploitation, or do we see it as the lifeline that is often the only hope for sustainability in basic services? Are we willing to consider alternative views?

Related to this is voluntarism. Do we see a dependence on volunteers as a sign of altruism and solidarity, a beacon of light in a world of self-interest and personal ambition? Or do we regard a dependence on volunteer efforts as a failure to really tackle basic issues and a fundamental weakness in a system?

Where do non-financial benefits fit in? To what extent can status, the "feel-good-factor", or job satisfaction motivate individuals to invest time in public service when there are other urgent and competing demands on their time?

Before we can think of changing paradigms, we need to understand what the existing paradigms are.

Chapter 4 Wittenbach case study

presented by Karl Wehrle

4.1 Introduction

Wittenbach is a village near St Gallen in Switzerland, with a population of about 8000. The history of its water supply goes back more than 100 years, so as a case study it has the potential to teach some lessons about sustainability. But can the experiences of prosperous Switzerland be of any relevance to the present situations of low-income countries in Africa, Asia and Latin America? Before coming to a quick answer to this question, it is useful to reflect that village life in rural Switzerland a century ago was very different to life in modern Switzerland. It is also valuable to have an open mind and look for models and ideas wherever they may be found. The reader is invited to consider the conclusions reached by the workshop participants (which are summarised towards the end of this chapter) to see whether they identified any useful lessons that can be learned from this sustainable case study.

Sustainability has been defined as ensuring that our grandchildren can enjoy the earth's resources in the same way as we do. This definition is very appropriate here because the first two presidents of the water supply in Wittenbach were Karl Wehrle's great-grandfather and grandfather. Karl has lived in Wittenbach for most of his life and so continues to enjoy the benefits of the foresight and efforts of his forefathers. This is truly sustainability.

This case study, and three others covering other villages in Switzerland where there are different institutional arrangements for the water supplies, have been documented and are available in a small Skat publication entitled "Community Water Supply in Switzerland – what can we learn from a century of successful operation?", authored by Matthias Saladin and available from the Skat Foundation. The section about Wittenbach had been sent to participants before the Workshop.

During the field trip, participants had the opportunity to learn from the experience of two other Swiss villages. (Annex 4)

4.2 Presentation of case study

4.2.1 Background information

In the late nineteenth century, Wittenbach was a small village whose economy was based on dairy farming. Water was supplied from springs, many of which were not perennial, so there were frequent water shortages. In 1897, 26 farmers met to organise a water supply system and negotiate with the owners of two reliable springs. They wanted water for their cattle, but also the increased convenience of individual household supplies. They determined that they needed CHF[6] 25,000 to start. Each of the 26 was asked to contribute according to the number of cows that he owned, and a bank loan was arranged. The farmers did part of the construction themselves. Additional people wanted to join. They were not allowed to join as members of the "club", but could receive water as customers.

[6] CHF means Swiss Franc

In 1900 there was a drought, so it was decided to bring water from Lake Constance, which was not far away, but was 300 metres lower than the elevation of the village. Water was purchased from St Gallen at a comparatively high cost, and brought to Wittenbach through a pipeline belonging to another village; permission to transfer water through this pipeline was granted only after hard negotiations.

In 1908 the caretaker was dismissed. In 1910 the son of the first President took over from his father as President. (This second President was also the Mayor and the President of the local bank.) He saw that water was being wasted, so he initiated the installation of meters. The charges in those days were CHF 0.20 per cubic metre for members and CHF 0.25 for non-members (equivalent to about five to eight times the current charges.) Board members were paid CHF 2 for attending board meetings.

By 1918 the bank loan had largely repaid – an indication of the financial discipline of the members.

In 1932 they were encouraged to change from a club (with about 30 members and 60 subscribers) to a public body in the form of a co-operative. This change was made because the Municipality had been made responsible for fire protection, and, as a public body, the water supply undertaking would be eligible to receive a subsidy in return for providing water for fire fighting. (The fire insurance bureau checks that pipe sizes and storage provisions are adequate, and pays the extra costs of provisions for fire fighting. The checks on designs and constructions standards provide an important assurance of quality.)

In 1941 the principal groundwater source needed major repairs which were beyond the expertise of local technicians, so an expert from a distant part of Switzerland was engaged to repair the source.

In the 1950s there was a big increase in the population of the village. By this time a high proportion of the water was purchased from St Gallen (50% in 1947) at a comparatively high price. In order to reduce costs, negotiations were started with a village near the Lake to obtain water from there at a better price.

In 1975 a water supply group was formed, incorporating several of the nearby villages, to pool their resources in order to ensure supplies during dry periods. The formation of this group involved a large amount of negotiation, which was very stressful for the Wittenbach President at that time.

In 1987 funds were made available to assist a poor community with its water supply.

In 1990 the arrangements were reorganised to improve equity, since one village of weaker economic status had been required to pay higher charges.

In 1994, new byelaws were introduced.

Currently, the water supply undertaking has reserves of one million Swiss Francs.

4.2.2 Three key lessons

Initiatives from within From the start decisions and developments have been internal, within the community. For example, the decision to form the water supply group was taken by the communities themselves, with no external prompting or inputs.

Water supply systems involve continuous development. The initial club persevered through difficult times. The management remains internal but experts with knowledge of the latest technologies are brought in from outside when necessary. The system is continuously evolving, and the arrangements should be sufficiently flexible to allow this evolution to continue.

The driving engine The development of Wittenbach's water supply suggests a "services for all" cycle. Some initial components are shown in Figure 4.1 below, but more could be added.

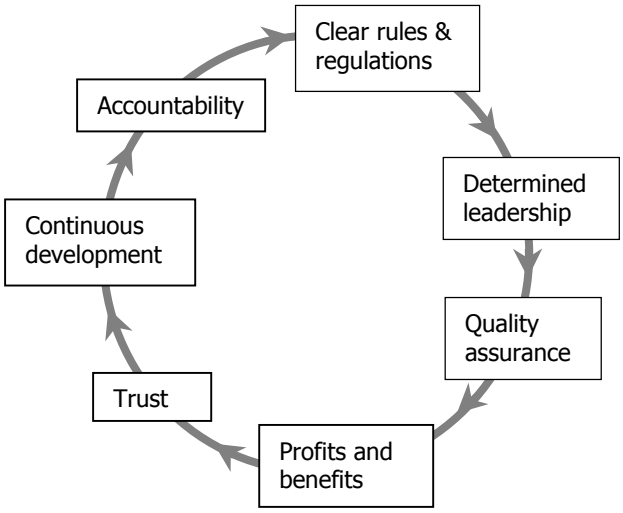


Figure 4.1 The "services for all" driving engine

4.3 Points raised in discussion

Initial charges The charges for the water were initially set according to the willingness to pay rather than the operation costs, since the members were keen to pay off the debt. Connection fees for new customers also helped to repay the capital.

Tariff structure The charges are set by the Executive Board and require the approval of the financial administration of the Canton. The connection fee is 0.67% of the value of a new building and there is an annual charge of 0.025% of the building value, in addition to a charge according to the volume of water used.

Subsidies There was one case – in 1995 - of a subsidy from the Canton for fire insurance, apart from the regular financial contribution from the fire insurance bureau to pay for the increased pipe sizes and storage needed for fire fighting. Apart from these, the water supply Co-operative receives no external financial support.

Organisation There is an annual General Assembly, which elects the Board. Many of the residents are not interested in attending the General Assembly, because they are satisfied with the way that the water supply is managed. However, it is not difficult to find people to serve on the Board, and it appears that residents are happy to take on this duty because of the satisfaction of the job, the team spirit, and because it is seen as a worthwhile task. Members of the Board receive a small allowance for attending meetings, but, in addition, generally commit some time to this work on a voluntary basis. The President receives a small salary. Board members serve on the Board for long periods – 20 years is not uncommon – but their position on the Board must be approved each year by the General Assembly. There are always several farmers on the Board. Women are eligible to fulfil any role, but since they are satisfied with the situation they rarely bother to attend General Assembly meetings. (As an indication of the role played by women of the village, the wife of the President of the water supply Co-operative is a member of the Canton Parliament and is planning to stand for the National Parliament.)

The secretary reads the meters and collects the fees. The Co-operative also collects fees for wastewater collection and treatment (which is managed by the Municipality) and is paid a fee for collecting these charges.

There is a *Brunnenmeister* (literally "master of the source") who is more than a caretaker. His family have been involved in the water supply since near its beginning, when the local blacksmith started making pipes. Now the family owns a large and successful enterprise in the water supply and plumbing business, operating out of several centres. He and his predecessors have always given good service and kept abreast of technical developments. He has a service contract for maintenance of the network and competes with outside companies for extension work. Householders, on an individual basis, hire him for their own repairs and alterations. This enterprise is run according to the principle "Quality and customers first", and because of this approach it has established itself in a very strong position with no real competition. The success of this family firm shows that a long-term view and a commitment to quality and service produce a *win-win* situation – the enterprise has a stable commercial base, and customers and the community know that they will get good quality at a fair price without needing to look for competing offers and giving work to unknown suppliers. In many situations it may be necessary to rely on competition to obtain reasonable prices, but there are real benefits in a partnership relationship where a long-term view, trust, and links to the community ensure a good service at a reasonable price. (See Figure 5.5 and Section 5.2.6 for more discussion of the trade-off between partnership and competition.)

Water Supply Group This group links the water supplies of seven villages. It owns all the transmission and distribution infrastructure, from the sources to the meters, but the individual villages are responsible for operation of the distribution network and collecting charges. The Board of Directors comprises the presidents from the seven villages. It has an executive committee of technical professionals; the manager must be always available and so this function is now held by a specified individual in a private sector company that specialises in control systems.

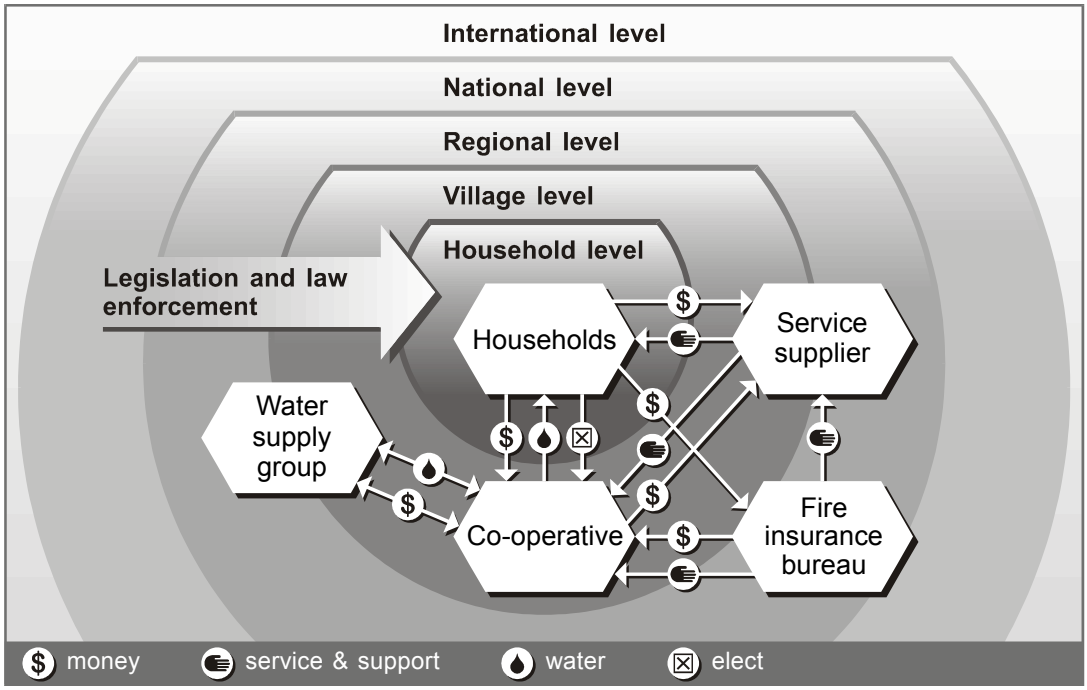


Figure 4.2 Wittenbach stakeholders and their interactions

4.4 Group work

The scope of the group work has been described in Paragraph (g) of Section 2.3. The outputs of the four groups have been merged into one summary.

4.4.1 The most striking feature

- The human touch
- The balance between hardware and software
- The value of an individual's financial stake does not affect voting rights or the influence of that individual.
- It is a co-operative without members.
- 100 years of continuous supply
- The impact of social relationships on ensuring quality is maintained.
- The club started well.
- True willingness can indeed bring a positive change in water supply.
- There are no women in the picture.
- The commitment of a few can change the situation for the whole community.
- The initiative of a few (elite) led to equitable access.
- The price is the cheapest in the region.
- Qualified people are always available.
- The former club members were wise to create a co-operative in order to retain control of the scheme.
- There was a high level of trust in institutional stability – stable political and financial environment.
- The system was sustained by the continuous interest of a few key individuals.
- The commitment of those concerned
- A strong willingness to be associated with the scheme and contribute voluntarily.
- The readiness to invest private capital
- Water resources were protected.
- Balanced, integrated development
- The system was technically sound.
- Why was the water supply system not set up before 1897?
- It takes a long time for the process of evolution in a system initiated by the community.

4.4.2 The crucial points in the development of the water supply

Date	Event	Number of groups selecting this event
1897	Founding of the water supply club	2
	Inclusion of fire fighting needs and payment for extra features	2
1932	The club is forced by a court decision to become a public body	4
1975	The formation of the water supply group after 15 years of negotiations	4

4.4.3 Stakeholders and their benefits

At the start of the club in 1897

Stakeholders	Benefits that they received
All connected farmers	improved livestock, more convenient access to safe water, improved water security
Big farmers (Club members)	social prestige and power
Non-members with connections	more convenient supply, improved health, prestige coming from enjoyment of modern facility, increase in property value
Owners of springs	income from use of springs
Bank	business opportunity, profit, contribution to the development of the village
Local service provider (blacksmith)	business opportunity (monopoly), profit, contribution to the development of the village, professional pride
Local building contractor	business opportunity, profit, contribution to the development of the village, professional pride
Municipality	one problem less, village becomes more attractive

Current - 2002

Stakeholders	Benefits that they received
Water Supply Group	Poorer villages are subsidised by more prosperous members, professionalism, a more reliable supply
Municipality	A satisfactory water supply system is provided, and wastewater fees are collected for them, tax revenue.
Board of Co-operative	social prestige, job satisfaction, power to make decisions
Consumers	a reliable and sufficient supply of safe water at low cost, larger pipe sizes paid by fire insurance bureau.
Government	satisfied citizens, confidence, trustworthy partner in water supply
Fire insurance bureau	fire fighting facilities are available at low cost
Service provider (Brunnenmeister)	business opportunities, profitable work, family pride, good reputation
Bank	Benefit from holding Co-operative's reserves

4.4.4 Driving forces

- water scarcity
- fear of fire damage
- peer pressure
- access to credit
- increasing demand
- industrialisation
- access to funds for fire protection
- new legal framework – democratisation and technical requirements, fire protection
- willingness of club members to invest and take action
- customer satisfaction

4.4.5 Market mechanisms

Market mechanisms can be seen in the following aspects of the water supply system:

- Selection of service providers
- Open tendering for larger investment works (extensions, major renewals and modifications)
- Management is subcontracted.
- Buying and selling water (e.g. water from St Gallen costs 50% more).
- The periodic scarcity of water made it valuable, increasing the demand.
- Balance between demand and supply
- Job creation

4.4.6 Impacts on financial sustainability

The following factors are considered to either contribute to or hinder financial sustainability:

Factors contributing to financial sustainability		Factors hindering financial sustainability
✓ Willingness of founders to invest with a long-term repayment perspective ✓ Decisions were made by a group who were cohesive and had the same interests. ✓ Ability and willingness to pay ✓ Good, transparent accounting ✓ Efficient services ✓ Multiple sources (distribution of risk) ✓ Multiple purposes (water supply and fire fighting)	✓ Good financial reserve ✓ Low water price (cost-effectiveness) ✓ The system is technically sound. ✓ Managed to benefit consumers, not shareholders ✓ Initial wealth, vision and responsibility ✓ Voluntary work ✓ Cost recovery ✓ Payments were made on time. ✓ Lean management unit	x Dependence on outsiders * x Dependence on voluntary inputs x Low financial incentives for staff of Co-operative x Lack of competition

* During times of water shortage the water supply group may depend on St Gallen or other surrounding towns to provide water.

4.5 Some conclusions

It is clear that the stakeholders in Wittenbach are generally not motivated in their work for the water supply by the desire to maximise their income, but there are many non-financial benefits which appear to have played an important role in enhancing the sustainability of Wittenbach's water supply. In this social context, commitment and voluntarism have provided a sustainable basis for a reliable supply and satisfied customers.

It is likely that the size of the community is significant, because of the apparent importance of reputation and delivering a quality service, which would be less important in a large and more anonymous city. Instead of close supervision of the maintenance service provider and competitive tendering for routine work, reputation and a concern to continue to have a good customer base into the future, motivate him to provide a good service.

The water supply system of Wittenbach has developed and flourished with negligible external support. The fire insurance bureau has played an important role in ensuring high standards in design and construction, providing technical support to assist the non-technical Board members.

This experience suggests that it may not be necessary to involve all stakeholders at the start, but that an initiative of a few can attract the interest and commitment of others when they see the system functioning.

Photo 7
Community involvement in the construction of a reservoir over 100 years ago

Chapter 5 Four case studies and group outputs

5.1 Nepal - Funding operation and maintenance

presented by Adhir Sharma

5.1.1 Introductory presentation

Historical context From 1976 to 1994, Helvetas was engaged in the Community Water Supply and Sanitation Programme (CWSSP), which sought to enhance local participation, involve women and upgrade technology. Looking back, the approach seems somewhat top-down and it did not generate a sufficient sense of ownership. This was followed by the Self-Reliant Water and Sanitation Programme, which had a more participatory approach and a primary emphasis on the social process. This programme exposed the need for broader water resources management, for improved co-ordination of the many agencies involved, and for the means of solving conflicts regarding the competing uses of sources.

From 1998, the Water Resources Management Programme (WARM-P) has been looking at all possible uses for available water and involving participatory planning and management to achieve agreements on the use of available water. It closely involves the lowest administrative level of government (the Village Development Committees –VDC) and civil society. It is estimated that only 25% of the population have access to basic sanitation facilities, so sanitation is integrated into this programme. It has already been piloted successfully in two areas, and is applicable in remote and backward areas. Current attention is focused on the ruggedly hilly areas of the Western and Far Western regions.

The WARM-P approach consists of 17 steps, the first 12 of which are social foundation work. Looking at all water uses, it leads to a Water Use Master Plan (identifying a wide range of projects) and to a 20 point water supply and sanitation programme, the steps for which are listed in Table 5.1 below. The main focus of the presentation was point 6 – Operation and maintenance fund collection.

Table 5.1 Components of the water supply and sanitation programme

Water supply and sanitation programme			
Preparation phase (social mobilisation)		Construction phase	O&M phase
1. Appraisal from VDC Council 2. WSMC formation 3. Resource map 1 4. WSMC MT-1 5. Sanitation motivation 6. O&M fund collection	7. Resource Map 2 8. Detail survey 9. VMW training 10. Construction agreement 11. Local material collection	12 Non-local material collection 13. Construction implementation 14. Construction supervision 15. Construction completion information	16. Final commissioning 17. WSMC MT2 18. WTCT 19. First follow-up 20. Second follow-up

Abbreviations

WSMC Water and sanitation management committee **VMW** village maintenance worker **WTCT** Women tapstand caretaker training

The "tariff card system" was initiated in 1998 to serve as a means of recording payments for operation and maintenance costs that were made by each household. The Water and Sanitation Management Committee decides on the amount that each individual should pay, within the range

Rupees 5 to 20. The amounts are assessed according to the willingness and ability of each household to pay, not in relation to the O&M costs. (For purposes of comparison, a cup of tea costs Rs 5 and a bottle of beer Rs 75.) The tariff card provides a transparent record of what is paid and received.

The committee approach may be new in some villages, but it helps to develop a sense of ownership. Being a committee member is not a serious burden because meetings are held only three times during the implementation stage.

The social processes that are involved clearly require a considerable input, in addition to the cost of the construction and materials. Helvetas contributes 50% of the investment costs.

Labour costs are paid for maintenance work and for collecting fees, but the tapstand caretakers are not paid for their work; however they are proud of their responsibility. There are generally two to three village maintenance workers in each village. A tapstand is shared between six households, and each tapstand has a caretaker. These caretakers hold the office indefinitely.

5.1.2 Interesting features

The group identified the following features of the project as being of particular interest

- The objective is to provide services to people in remote, hilly regions of Nepal.
- The water and sanitation programme is integrated into a survey of all water uses.
- It is a well-planned community mobilisation project with local government support and genuine participation of beneficiary committees. The extensive preparation programme and committee structure is needed to develop ownership. This approach exhibits true accountability and transparency.
- Different households are asked to pay different monthly fees, according to their ability to pay, as assessed by the village committee. The annual amount received is only about 1.4% of the investment value (compared with the 5% that is regarded as necessary in Switzerland).
- The designs and construction are of good technical quality, so that the requirements for operation and maintenance are less.
- Women have been appointed as tapstand caretakers.
- The programme includes promotion of sanitation.
- Priority is given to remote, poor areas. Communities are selected for programme support according to the acronym S.L.O.W. to ensure particular concern for the following groups: -
  - small farmers (who can grow food to supply their families for no more than nine months of the year)
  - landless
  - occupational caste group (Dalits or untouchables)
  - women-headed households

5.1.3 Opportunities for introducing business principles

The attention of the group focused on the operation and maintenance fund. Money is collected on a regular basis, and some of it is used to pay caretakers, but there is a great reluctance to withdraw money from the account once it is paid in. Voluntary labour has been used for cleaning work. Transparency in the use of these funds is of great importance.

Uses of the operation and maintenance fund were discussed, and the following suggestions were made:

- A fund could be built up to prepare for future replacements (of taps, pipes etc.)

- Preventive maintenance should be encouraged, so that serious, overwhelming failures are less likely to occur.
- The group discussed the option of loaning money to neighbouring communities for their own water and sanitation improvements. The size of the fund was considered small in relation to the capital costs of new systems.
- The possibility of using the capital in the fund for microfinance was considered, and it was agreed that this would require external inputs to provide the skills and capacity needed to administer micro-lending.
- Another suggestion was that the fund be used to buy spare parts that would be needed later for repairs and extensions, because it is likely that the prices of these items would rise, and some items may not be available after several years because of changes in product design. However, it was considered that the risks from deterioration (for example, PVC degrades in the sunlight), theft and damage would render this plan of action unwise.

The group also discussed some possibilities for increasing the fund, since the long-term needs for operation and maintenance were not known. A market assessment might provide ideas of possible income generation schemes. It is reported that 20% of the WSMC (village-level committees) have started some form of income-generating activities. There is no possibility of selling water to neighbouring communities because the systems are so isolated.

It was also suggested that capacity development in financial management should be included in all projects.

5.1.4 Financial sustainability profile

Aspect	Comments	– –	–	+	+ +
enabling environment	Legislation favours local approach				
ownership of process	Proven commitment to process				
choice of technology	Appropriate technology chosen				
mode of financing investments	50% subsidy				
organisational set-up	Community organised				
management	Community managed				
set-up of providing service	Women tap-stand caretakers (social pride) Village maintenance worker (incentives)				
cost - efficiency - information	External project support not included in costs				
willingness to pay	Full cost recovery for O&M				
ability to pay	Not for capital cost				

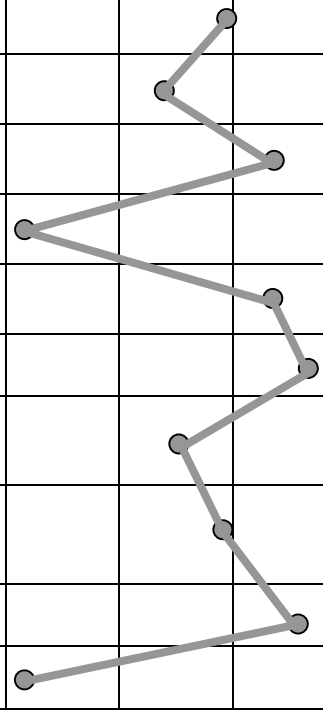


Figure 5.1 Financial sustainability profile for the Nepal case study

5.1.5 Questions for creative backstoppers

The South Africa group came to help as creative backstoppers. The Nepal group asked them the following questions, and received the advice that is summarised below:

a) Should the O&M fund be used for microfinance or other investment opportunities?

   If there are strong social bonds within the community, microfinance can be successful. (There are strong social bonds, but the caste system causes some divisions.) Since the money is in a bank already, it might be better for the bank to take the risks and manage the micro loans. (But the banks do not offer small loans.) Perhaps it could be tried in a few places. In Cameroon village committees invested in pipes.

b) Should the women tapstand caretakers be paid for their work, or would this kill their pride and status? Are there other non-financial benefits that they could be given?

   The advice was that it would be better if they were paid. In South Africa, caretakers collect user fees and are entitled to keep one sixth of what they collect. It is easier to intercept the commission before the fees are paid into the bank than to take out money that has already been paid in.

c) The water and sanitation management committees (WSMC) are reluctant to use any of the money that has been reserved for operation and maintenance expenditures. What should be done about this?

d) What can be done to retain the village maintenance workers when they have received some training, and discourage them from using their new skills to find employment elsewhere? (The case study presenter explained that so far this had not been a problem, so the question was not discussed further.)

5.1.6 Further points in final presentation

There is a high degree of transparency and accountability because all the villagers know what happens in the committee meetings.

Local government is involved from the start and so supports the programme.

Since the O&M costs are currently not estimated, it might be necessary to bring in a consultant to estimate what these costs might be.

5.2 South Africa - Community-based management of water and sanitation services

presented by Mohlomi Lebenya

5.2.1 Introductory presentation

During the years of apartheid, little was done to provide water and sanitation to most of the communities. When some provision was made, there was often no concern for maintenance.

Since the coming of majority rule, the Water Services Act has created a framework within which water services are to be provided through Water Services Authorities (WSA). A WSA manages and allocates government funds and can appoint Service Support Agents (SSA) and Water Services Providers (WSP) to provide technical, organisational and financial know-how and take charge of the

budget. The SSA may be a consultant or an NGO. The presenter is with an NGO (Mvula Trust) that has been engaged as a Services Support Agent. At village level there are Water Services Providers (WSP) which are responsible for day-to-day operations, and an operator, who informs the WSP of any operational problems or breakdowns. Figure 5.2 illustrates the organisational arrangements.

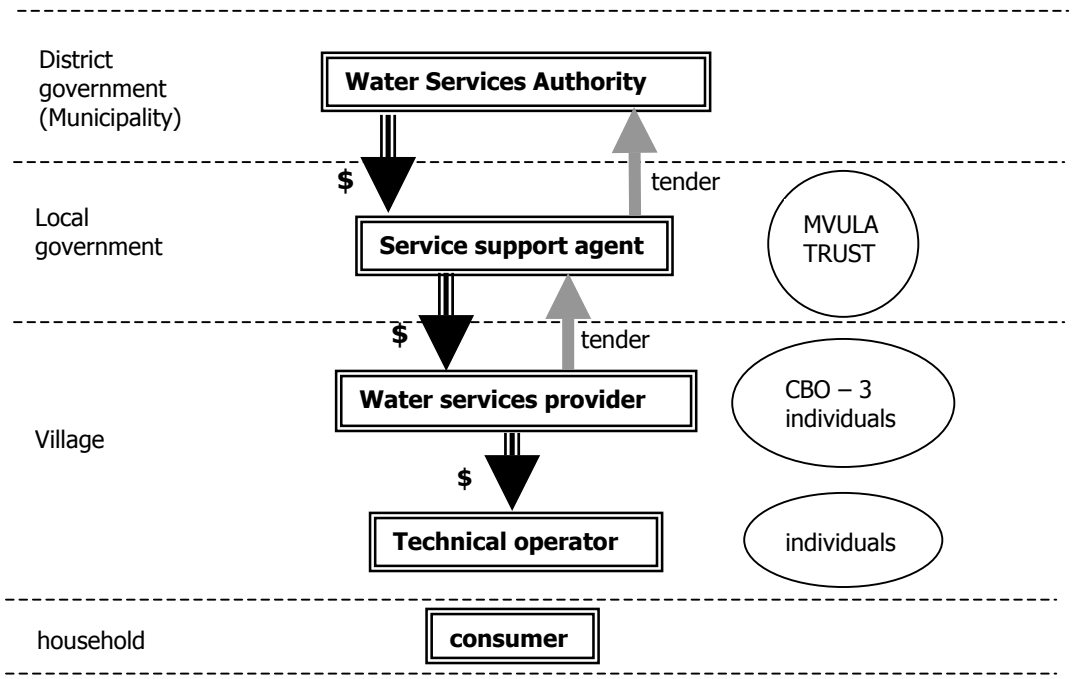


Figure 5.2 Typical organisational structure for village water supplies in South Africa

The most prominent aspect of the case study, in the context of the Workshop theme, is that the national Government has decreed that there should be no charge for the first 6,000 litres of water supplied to each household each month. Whilst this is obviously welcomed by the electorate, it is considered to have serious repercussions on the sustainability of water supplies, since there may be inadequate government funding for operation and maintenance, and for the construction of new systems. It is thought that the government has funding that may only be enough for a limited period, after which communities might be expected to pay.

5.2.2 Key issues

The focus of the discussion was on the management of existing schemes rather than expanding to unserved villages. The following key issues were identified for consideration:

- What are the likely consequences of the government policy that the first 6,000 litres supplied to each household each month should be free?
- How does voluntarism affect project sustainability?
- Should more be done to increase the sense of ownership of the schemes?
- Is the CBO model vulnerable because of its dependence on the availability of external funds?
- What can be done to enhance the impact of Government efforts to promote exchange of information and understanding between the private sector and CBOs?

5.2.3 Financial sustainability

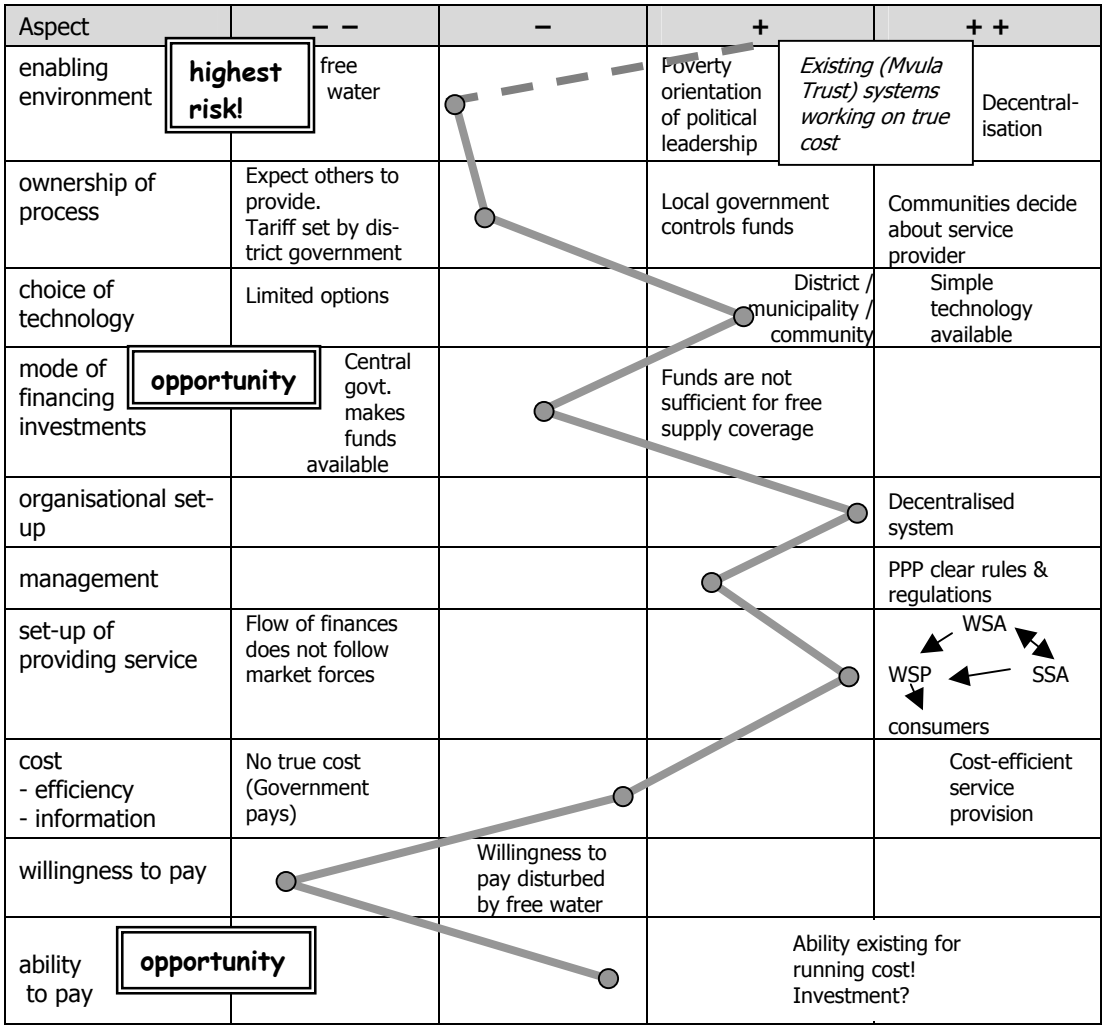


Figure 5.3 Financial sustainability profile for the South African case study

The "highest risk" and "opportunity" factors were selected as the key aspects for the group to concentrate on.

5.2.4 A likely scenario

Scenario The policy of providing water at no cost proves to be unsustainable

Imagining that the government's free water policy collapses within five years, supply-driven designs are found to be overdesigned, with unaffordably high capital and running costs, and subsidised schemes run into great difficulties and become run-down and unreliable (and there are plenty examples of this happening in South Asia) . . . what will need to be done? The following steps are suggested to remedy the situation:

1. Information gathering, awareness creation and advocacy to prepare the way for financially sustainable water and sanitation services. This will include
   - facilitating exposure visits to other projects and organising workshops
   - seeking coalitions with like-minded people, professionals and organisations (including donors)
   - establishing facts (through financial analyses) regarding financial sustainability

- supporting the development of policy
- seeking government acceptance for piloting sustainable models
- focusing on existing systems (such as those with which the Mvula Trust is associated) that are based on true costs, leading to demonstration projects.

2. Tariffs should be set at the lowest level.
3. Develop cost-effective options as a basis for negotiation and provide service levels that are based on willingness to pay. The infrastructure should be sized to provide for projected demands and level of service.
4. Devolve financing mechanisms to levels below the current WSA and SSA levels
   - Set up a resource pool for infrastructure and resource centre activities
   - Establish an operation and maintenance fund paid by customers and managed by the Water Services Provider.
   - Investment may be subsidised, but there should be no long-term subsidies.
5. Competition and tendering
   - Develop options that encourage tendering while ensuring quality safeguards.
   - Competition to be balanced with healthy partnering with the community.
   - Government should not be a provider.
6. Tariffs
   - Actual costs should be analysed and broken down into components.
   - The tariffs should be based on actual costs.
7. Campaign to raise awareness among future customers
8. Conduct surveys to establish willingness to pay and ability to pay.
9. This new model or approach should be marketed to the communities and to other stakeholders.

5.2.5 Questions for creative backstoppers

The South Africa group explained that they were aiming to achieve financially sustainable water supplies within ten years. They felt the current approach of providing a "lifeline" supply of water to all households to be unsustainable. After explaining their strategy for moving to a more sustainable approach, they asked the "backstoppers" the following questions:

- How can the poorest be supported by means of subsidies?
- Should the Mvula Trust also work on other schemes (other approaches elsewhere)?
- How should environmental considerations be taken care of? Could subsidies be used to encourage protection and conservation of water resources?
- Why and how did the Nepali Government accept community-based management?

In the discussion that followed, the Nepal presenter explained that practical realities (failures of schemes) pointed to the need for community management. There was also voter pressure and pressure from international NGOs in the direction of community management.

It was agreed that subsidies are appropriate for investment, but not for operation and maintenance – community schemes should be weaned from outside financial help at an early stage. It is hard to avoid leakages (improper use) of some of the money allocated for subsidies. The government in Switzerland provides subsidies.

5.2.6 Further points in final presentation

The group proposed some modifications to the existing arrangements, particularly in terms of the flow of funds. Funds from government and international donors would be used to finance the Infrastructure Fund, which would be administered by the Infrastructure Committee. Part of the money then goes to the Resource Centre activities (information collection, knowledge resource base etc.) which would be the reference point for information on technologies, best practice, lessons learned etc. This part of the money would not be refunded via the water tariffs, and so would be a subsidy. The rest of the fund would be used for the actual water supply systems and schemes. Much of the work of the service support agencies (SSAs) would come from contracts for particular activities, as requested by the water service providers – a change that is more in tune with market mechanisms. The SSAs would also need to engage consultant experts for advice on particular problems. It is anticipated that the role of the SSAs would progressively diminish. An umbrella association of water service providers should be means of networking support. The proposals are shown in Figure 5.4.

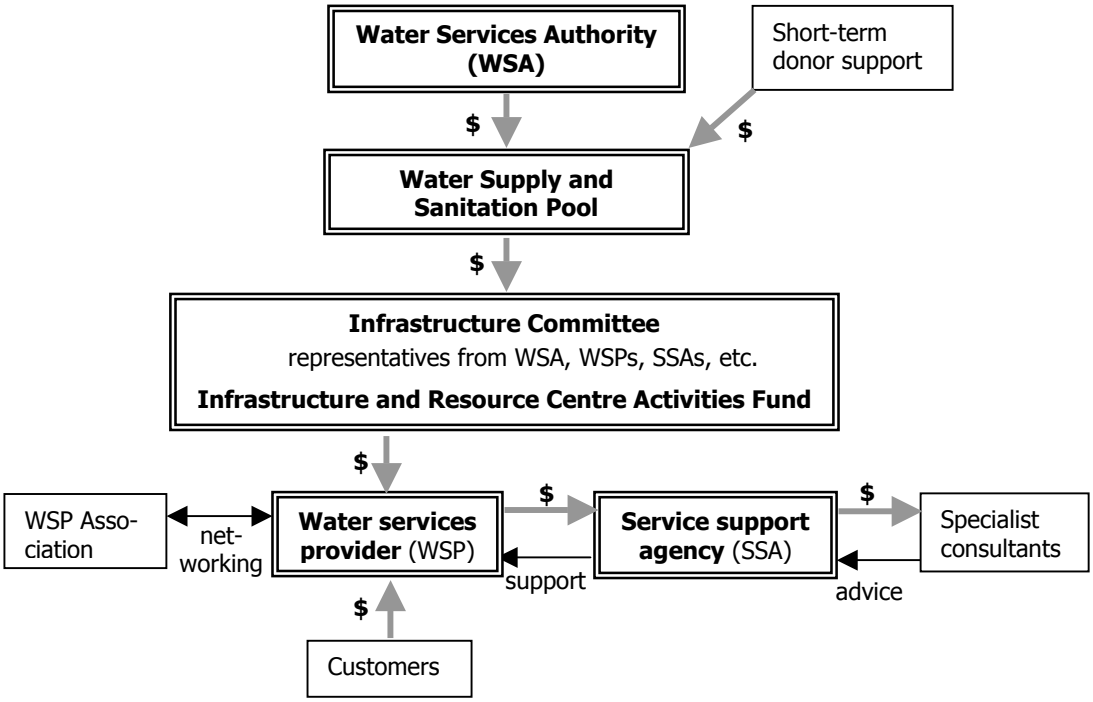


Figure 5.4 Proposals for flow of funding and technical support at district level in South Africa

The group also proposed a representation of the variation of the impact of competition and the partnership with the community on cost and quality. When a service provider is initially engaged, competition is an important instrument for encouraging tenderers to quote low prices. If they know that there are others who could take on the work if the quality of their work is judged to be poor, they will make more effort to achieve a good standard in their work and maintain their position in the face of this competition.

As time goes by, the service provider is likely to strengthen his position and make it more difficult for others to bid against him, so that the importance of competition reduces. On the other hand, the relationship between the service provider and the community develops, both socially and commercially. The service provider becomes more influenced by the opportunity for stable, long-term work, and the value of satisfied customers. The concept of partnership becomes more

important, as has been seen in the Swiss case study and on the field visit. This concept is visualised in Figure 5.5

However, this trade-off between competition and community partnership can also be seen in terms of a steady state rather than a step-by-step process. For real competition it is necessary to tender quite often. However, if there is a close partnership, the impact on cost and quality could be improved without competition.

It is also possible to have both, if criteria on the set-up of a partnership approach are included as socio-economic criteria next to technical or purely financial issues for the purpose of evaluating tenders.

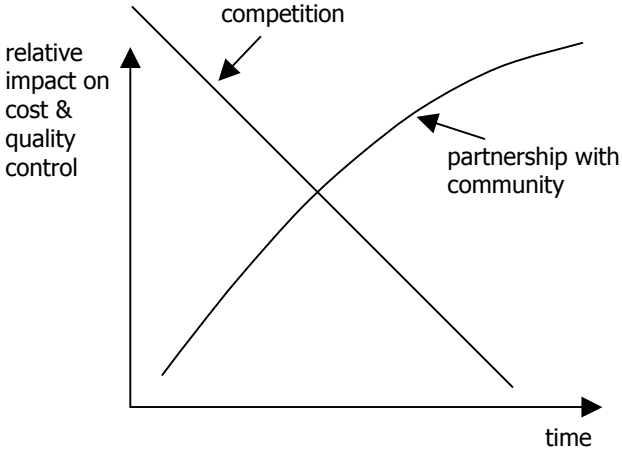


Figure 5.5 The variation of the importance of competition and partnership in controlling cost and quality

5.3 Mozambique – A difficult case of dependence on pumping

Presented by Ana Lucia Obiols

5.3.1 Introductory presentation

For many years Mozambique suffered from a debilitating civil war. During this time many rural dwellers were obliged to live on the Mueda plateau, in spite of the problems of water supply in that area. (The area of the plateau is half that of Switzerland.) This case study tells the story of great hardship and challenge, where efforts to find water can involve a two-day journey and a stiff climb, and where technical solutions appear almost unaffordable.

The Mueda plateau is home to about 180,000 people in 53 villages.

In the 1970s six individual water supply systems were set up. They were required to raise the water by a height of up to 800 metres; diesel pumps were installed because the area is 300 km from the electricity distribution network. Nearly 300 km of pipes were installed. The systems were designed to supply water at no charge to the consumer. In the following years the Government was unable to fund the operation and maintenance costs of the systems, and the operational performance fell to the levels shown for 1996 in Table 5.2. The situation was bleak.

In 1997 the Government initiated a Transition Plan with three key components:

- Adoption of a demand-responsive approach
- Integration of water supply, sanitation and health activities
- Involvement of the private sector.

Since 1997 there have been huge improvements. A Government programme, with the support of Helvetas, has tackled the problems within the organisational framework shown in Figure 5.6, with the results shown in the last column of Table 5.2. The community was involved in problem analysis and making decisions. A decentralised management structure was set up. The physical components of the six systems were rehabilitated and metering was improved. Awareness campaigns were conducted. Customers were required to pay for the water as they collected it in their buckets, at a rate of about US$ 1 per cubic metre. Because of the great need and the lack of alternatives, there was a high level of participation and willingness to pay, but the ability to pay was severely limited by the low income levels.

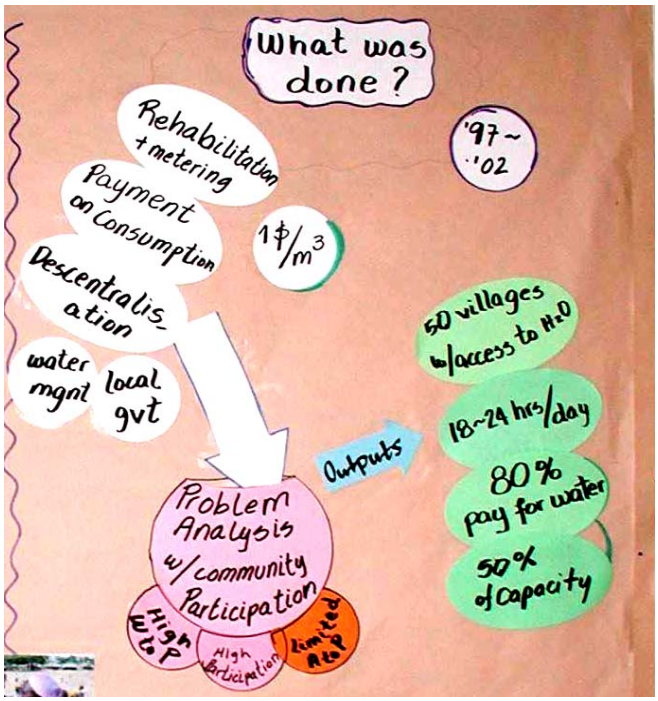


Photo 8 Part of an introductory poster outlining action and achievements

Charging for the water using a price per bucket has led to the introduction of larger buckets (50 litres instead of 25 litres), which are charged at the same price. (These heavier buckets may cause more lifting injuries, and so it may be advisable to increase the charge for the larger buckets in order to discourage their use.)

Not all problems have been solved. The supply still requires subsidy. The consumption level is between 15 and 20 litres per person each day – this is all they can afford.

Table 5.2 Progress in improving water supplies since 1996

Performance indicator	Before 1996	2002
Availability of water	3 to 4 days per month	18 to 24 hours per day throughout the year
Proportion of capacity at which the system is running	5%	50%
Villages having access to water	Only Mueda village	All villages in the plateau
Proportion of the population paying for water	10% of plateau dwellers	80 to 90% of plateau dwellers
Level of corruption among staff	High	Reduced
Control of consumption	No measurements of water production or consumption	Meters on pumping stations and public taps are functioning

Women have an important role in operating the system. Since women customarily collect water, women have been appointed to be in charge of fee collection, selected and supervised by the communities. 100 women are in charge of the 50 taps, collecting a fee for each bucket-full collected, and retaining ten percent as their fee. Doing this can they earn a salary that is above the average,

up to US$ 100 per month. Women participate actively in community meetings and as residents' representatives. Some social aspects of this arrangement are portrayed in a video that was shown on the last evening of the workshop (see Annex 5.4).

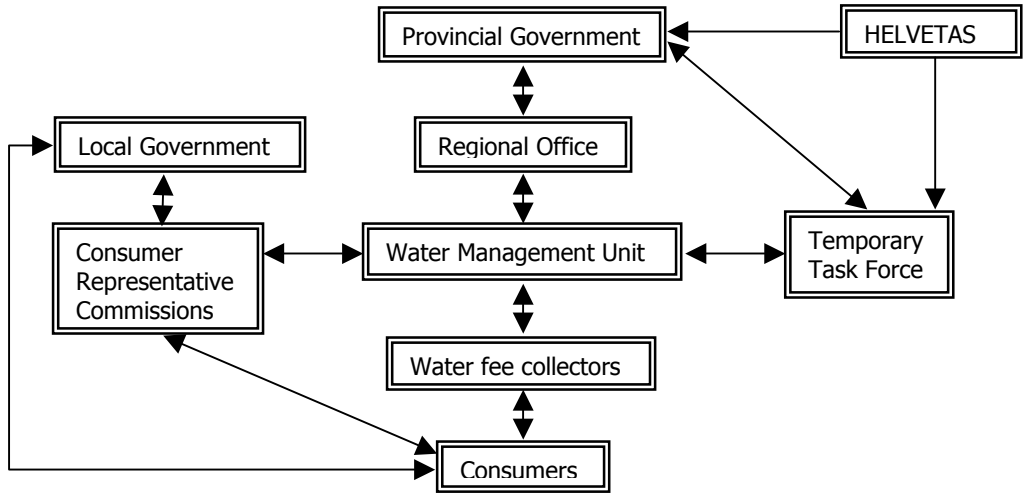


Figure 5.6 Stakeholders

The options for improving the situation seem very limited. When electricity comes to the region, this can be expected to reduce operation and maintenance costs, but this is not expected until 2007 at the earliest. Unit costs cannot be reduced significantly by selling more water since the cost of diesel fuel is at least 80% of the cost of supplying the water, and this cost is proportional to consumption. There may be scope for reducing losses and increasing efficiency in other ways. Alternative sources of water need to be investigated further. Means of increasing household incomes, to increase the ability to pay for water, are another possible solution.

Photo 9 Paying for water on the Mueda plateau, Mozambique

5.3.2 Striking features

The group identified some issues which stand out in this particular case.

Political

- Politicians have expressed support for the payment of fees for the water.
- There is political acceptance of water as an economic good as well as a social good.

Institutional

- A task force was set up in 1996 and it has succeeded in achieving a recovery to an improved operational status for the water supply system.

Technical

- There is a lack of alternative water sources for the plateau.
- There is a large population spread over a wide area. (How did they get water before?)

Socio-economic

- Where there are no alternative sources there is a high willingness to pay, but most of the people are not able to pay the full cost of the water.
- The supply is further threatened by an expected rise in the cost of fuel.
- There is good understanding and communication of the financial issues between the supplier and the customers.

5.3.3 Opportunities for introducing business principles

In some cases it is useful to maximise production, since this allows the fixed and capital costs to be shared with a wider market. In this case, because the cost of fuel is such a large part of the cost of water (over 80%) and the fuel usage is directly proportional to the volume of water supplied, there is no significant commercial benefit in looking for new uses of water. The price of water is set with the objective of recovering only operation costs, and the salaries of operational staff (apart from fee collectors) are paid by the Provincial Government; these factors further reduce any possible benefit from increased sales.

There is a high level of willingness to pay, but because household incomes are so low, the ability to pay is often not there. So consideration was given to finding ways of increasing household incomes by promoting existing income generating activities, or looking for new ones. A list of products was suggested, but markets of any size are some distance away, necessitating high transport costs, risks of spoilage of perishable foodstuffs, and dependence on intermediaries – each of whom would require a profit. The main markets would be Tanzania (60 km), Moçimba da Praia (150 km) and Pemba City (500 km). The list of products comprises:

- firewood and charcoal
- timber
- wood carvings
- pottery
- beverages
- chicken
- pork
- game meat
- food crops
- cashew nuts
- medicinal plants
- construction materials

5.3.4 Financial sustainability profile

Aspect	– –	–	+	+ +
enabling environment	Physically difficult; Alternative water sources	Economic-ally difficult		Political – Role & support given to Task Force
ownership of process			Local government support	Users involved
choice of technology	Alternative energy systems; High investment, high running cost			
mode of financing investments	Full investment from outside			
organisational set-up			Decentralised & autonomous Task Force & WMU	
management			lean, transparent, committed	
quality and reliability of service			Technical improve-ments and better service with change of water fee collectors	
cost - efficiency - information	Investment not included		Operation costs transparent	
willingness to pay			lower elevations	higher elevations
ability to pay	Ideas for income generation; Investment high, income low		Running cost high, but most recovered by fees	

Figure 5.7 Financial sustainability profile for Mueda plateau, Mozambique

5.3.5 Alternatives and strategies

a) Alternative water sources

Possible options		Investigation needed
Rainwater harvesting	- roofs	investigate roofs of public buildings
	- impluvium	identify suitable locations for catchment areas and surface ponds
	- sub-surface dams	identify suitable streams
	- surface dams	identify suitable streams
Fog-water collection		feasibility study
Boreholes with handpumps		test boreholes
Animals to carry water		feasibility study – load-carrying animals are not currently used in this region.

b) Income-generating activities

The suggestions made by the group were:

- Improving agricultural production by using drip irrigation or the pitcher system
- Production of roofing materials (such as micro-concrete tiles) by a small enterprise

- Encourage industrial activities that require water so that added value leads directly to water requirements and extra sales for water providers.
- Improve the efficiency of business arrangements by direct marketing (instead of using intermediaries), the formation of co-operatives or associations and looking for NGO partners.

5.3.6 Further points in final presentation

Some points were made in relation to equity:

- There is access to land and the local natural resources for all residents
- There is a reasonable social network
- The poorest families that cannot pay for water are able to get water by walking for it.
- Most income-generating activities do not require major investments.

5.4 Uganda - Can sanitation be a business?

5.4.1 Introductory presentation

This case study was located in the "South Western Towns Water and Sanitation (swTws) Project" in the south-west of Uganda. The first phase of the project, which started in 1996, has been covering 18 small towns, with populations between 1,000 and 5,000, and a district capital, Kisoro, which has a population of 15,000. The Project is being implemented with technical and financial help from Austria.

Decentralisation has been a key aspect of the project, in the hope of achieving a sustainable institutional set-up, but it is also necessary to provide expert backup since the communities themselves often do not have all the needed skills and capacity. This backup has been provided by an organisation known as the South Western Umbrella of Water and Sanitation (swUws). This swUws is positioned between the users – represented by the Water and Sanitation Boards (WSB) which are members of the swUws - the district, the national government bodies and other partners, and seeks to represent the users and assist in communication between the stakeholders.

The targets and strategies of the Project are summarised in the following list:

Target	Strategy
Creation of ownership	Local level Water and Sanitation Boards have overall responsibility for the WSS schemes. A Scheme Operator (SO) is employed to run each scheme (O&M). The swUws provides backstopping support in special technical, financial, legal and administrative issues beyond the local capacities. Land titles for demarcated spring catchments. In addition, the timing of the Project should be such that there is time for the sense of ownership to be developed.
Protection of water resources	Afforestation of spring surroundings. Promotion of *ecological sanitation* toilets with urine separation to reduce pollution.
Low O&M costs	Pumping by solar power
Sustainability	Support for South Western Umbrella of Water and Sanitation (swUws)

A music group and a drama group have been used for developing awareness in water and sanitation.

The second phase, to start at the end of 2002, will be concerned with a further 30 towns in the same and an adjacent area and last for another six years. The main issues to consider in preparing this next phase are:

? Have the approaches and paradigms of the first phase been effective, or should they be modified for future work?

? Can sanitation be a business?

? How can the swUws be strengthened institutionally and financially?.

Figure 5.8 The logo of the South Western Towns Water and Sanitation project

5.4.2 Striking features (Comments in brackets added by the Presenter)

- Promotion by music band (drama groups)
- Users in the centre (Users have the right to participate in the development process through elections.)
- Users have the right to participate in the development process through elections.
- Democratic rights of users
- Very many stakeholder linkages are weak and nominal in certain cases.
- Complicated structure; artificially installed project team; unclear responsibilities
- Implementation appears highly centralised. (planning at regional level; implementation at local level; intervention through policy dialogue at national to local levels)
- Complex structure, but well defined
- Not politically independent (Development pressure is high in the Ugandan rural water sector.)
- Consistency of Watsan interventions of donors – governed by national policy
- Influence of donors (e.g. implementation principles, policy dialogue between donor and national Government)
- Well set legal and policy framework
- Change from implementation to O&M not clear (Handover from swTws implementation team to swUws, which gives backup support later)

5.4.3 Opportunities for introducing business principles

- Concentrate on training small contractors and consultants.
- The Water & Sanitation Boards need more training
- Subsidies directly to users?
- swTws Project works only if contracted
- Opportunities for the music group

5.4.4 Financial sustainability profile

The profile was constructed so that water and sanitation could be assessed separately, as shown in Figure 5.9.

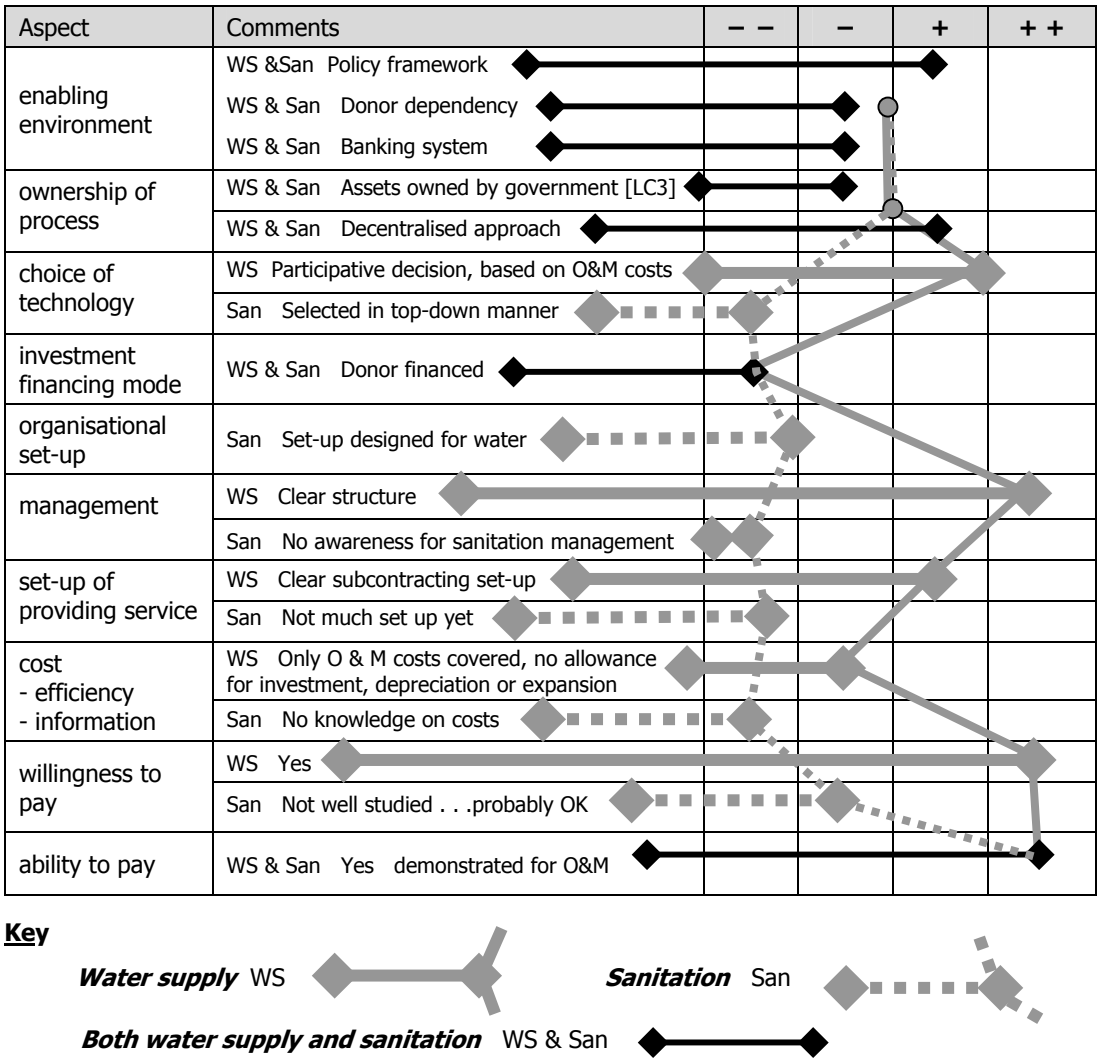


Figure 5.9 Financial sustainability profile for swTws Project, Uganda

As the profile shows, the situation regarding sanitation seems less favourable than for water supply.

The situation is very dynamic. It is not clear if the same organisational structure is appropriate for both water supply and sanitation. The group suggested that, until recently, the Project had concentrated too much on water supply, at the expense of sanitation, and that the selection of sanitation systems had been somewhat "top-down", with a strong preference for ecological sanitation (with separation of urine from faeces).

Some solar panels used for pumping had been stolen, but within six months the community managed to find the cash to replace the stolen panels. This shows the sense of ownership within the community, and also indicates that, though solar panels incur low operating costs, the cost of replacing damaged or stolen panels must be factored into recurrent costs.

There was also concern that the availability of donor money might reduce the willingness of the consumers to pay.

In Kisoro, a sewerage network had been designed and implemented. The Kisoro Administration expected that 200 households would be connected. As it happened, only ten houses were connected

to the system because the connection fee was regarded as unaffordable by many households. The donor has not been willing to subsidise the connection fees.

5.4.5 Further points

The swUws functions as a professional organisation, providing information and technical assistance to its members, the Water and Sanitation Boards (WSBs). The formation of the umbrella organisation can be described as a bottom-up re-centralisation to:

- provide specialised services and competence to its members (financial management, specialised technical support, institutional development, legal issues, performance monitoring, data base)
- benefit from the economy of scale in building up such competence
- have a strong and independent voice in the interests of its member schemes (honest broker, lobbying).

A key prerequisite is that the swUws is autonomous, independent of government. Currently it is receiving a little financial support from its members and some from the Ugandan and Austrian governments. To be independent they would need to operate more as consultants to the communities (WSBs) that they serve and so be mainly paid by them. The Ugandan Government may give additional subsidies to the swUws

The water supply arrangements are working well. There is a demand for the service, and the customers pay. Sanitation has been promoted less vigorously, so there is a need to focus on this issue. The main problem is that there is little demand for improved toilets. The residents have simple latrines and are satisfied with them, but because the geology of the area is karstic, the groundwater is easily polluted by these latrines. A key first step is to increase the awareness that simple pit latrines can pollute the water supplies.

There is a range of sanitation options to be considered. Sewerage has, so far, not been successful in Kisoro, but there may be ways of improving the situation, such as providing subsidies or loans from a revolving fund. However, it appears that sewerage is not appropriate and it is hoped that others can learn a lesson from the experiences mentioned here. Other options include the range of types of latrine (including ecological sanitation that is already being promoted), public toilets and septic tanks.

- Ecological sanitation is best suited to users who value the liquid fertiliser and rich compost that are produced. Farmers and gardeners are generally not willing to use faeces, even if the material is well composted and no longer unpleasant.
- Public toilets are working well because caretakers keep a proportion of the user fees that are charged, in return for keeping the toilets clean. However, emptying is not done satisfactorily; perhaps emptying could be included in the contract with the caretaker for general cleaning.
- Septic tanks could also cause serious pollution if the effluent is allowed to drain freely into the ground and if the tanks are not emptied regularly.

Recommendations are to

- support and develop the swUws in initiating, supervising, contracting, monitoring and operating
- enact and enforce new regulations to require improved sanitation
- collect more information on experiences and costs of ecological sanitation
- look for ways of promoting ecological sanitation, by developing businesses for collecting and using the urine and composted faeces for organic agriculture. The collection of toilet wastes

could be linked to the collection of garbage (solid waste) as a combined business, and this could be supported by informing potential buyers and developing a draft business plan to demonstrate the commercial viability of this work. Perhaps the urine and composted faecal matter could be regarded as commodities that are bought and sold.

- consider how to stimulate the demand for ecological sanitation, perhaps using artists (singers, actors etc.) or senior politicians to support it, or by assisting the poor to install improved sanitation in the hope that more prosperous residents would wish to join this trend. Currently, no subsidy is paid to households for sanitation. Most people may have little knowledge about factors that should be considered in selecting a sanitation system, so it may be more effective to promote ecological sanitation by means of an attractive superstructure, at the same time as seeking to improve general awareness. Other proposals for promoting improved sanitation were:
  - using public toilets as a promotion tool for household latrines
  - offering prizes in a related competition or running a lottery
  - award a prize for the best operating eco-sanitation toilet
  - working in schools with class sessions and demonstration toilets
- develop a national strategy that should involve
  - information dissemination and advocacy,
  - technology development and applied research
  - curriculum development for demand-responsive training, and
  - sharing of experience, networking and exchange visits.

The evening presentation of Andreas Knapp - summarised in Annex 5.2 - gave some more ideas about sanitation as a business.

Photo 10 The Uganda group in action

Chapter 6 Conclusions and reflections

When planning and defining institutional arrangements, it is wise to consider the non-financial benefits and the profits that will be received by all stakeholders, and to consider the interests of all.

6.1 Paying for water

The case studies illustrate a range of paradigms with respect to paying for water. Some believe that water is purely a social good and should be provided free (as in the South African case) and others acknowledge that water is also an economic good, and so are willing to pay for it, as in the Mozambique and Nepal cases. There is much evidence – including from the Mozambique case – to support the argument that users must be asked to pay the actual cost of the water that they consume, in order that the supply becomes sustainable, but short-term political gains still prevail in many places. The political support for a cost-recovering tariff in Mozambique is encouraging.

In the Nepal case, water users were paying a small amount each month for their water, but the amount was linked more to what the village committee thought that each household could reasonably be asked to pay, rather than to any estimate of the probable costs. When water is initially supplied at a very low charge, it can be difficult to raise the tariff dramatically when there is no corresponding improvement in the service being offered. A more commercial approach would base the tariff on anticipated expenditures, and technical and accounting expertise is needed to determine how much these costs are likely to be.

In the Mozambique case, for example, where the ability to pay for water is of considerable concern, it is especially important to look at the wider socio-economic picture, in order to look for ways of boosting household incomes so that water and other needs can be afforded more easily.

The benefit from paying is not all one-way. Paying brings power. If customers are paying for a service, they can withhold payment if service is unsatisfactory, and so influence the quality of service that they receive. If water is provided free, they do not have the rights of paying customers to protest about inadequacies and must use less effective political channels to register their complaints. In the same way, it is not easy to discipline a volunteer – a paid employee can be controlled much more effectively by the threat of dismissal or a reduction in salary.

Demand is a key issue in relation to willingness to pay. In all the cases there was a high demand for water, but the demand for sanitation appears to be a problem in some of the places studied, particularly in south-west Uganda.

In most cases the target is to fund operation and maintenance from fees collected from consumers, but there appears to be no attempt to repay capital costs for social preparation, construction and equipment, or to make allowances for depreciation and replacement, except in the case of Wittenbach. In the case of the gravity-fed supplies in Nepal, the annual O&M costs are a small percentage of the capital costs, and in the Mozambique case, the operating costs are so high for the customers that they cannot pay any more to cover depreciation. The availability of external finance (from central government or donors) also discourages communities from paying for capital expenditures, since they expect that external finance will always be available for this. In this way the schemes are not financially sustainable.

It is often important that managers and committees become more cost-conscious, by improving the standards of accounting and reporting of costs, by benchmarking to provide comparisons with similar schemes, and by looking for ways to reduce costs.

6.2 Political involvement and an enabling environment

Some comments made during the Workshop seemed to indicate that all political involvement is harmful and to be resisted. In essence, political involvement is the expression of democracy, and elected representatives should be expected to influence the provision of important services. Governments have an important role in setting the policy that creates an enabling or conducive environment – as exemplified by the support of cost recovery and private sector involvement in Mozambique, and the decentralisation of decision-making in Nepal. Problems come when politicians wish to ensure that contracts and opportunities go to their friends, or when long-term arrangements are truncated for political reasons. To prevent this happening there must be legislation and effective enforcement to ensure transparency and uphold contractual agreements and defend the rights of all parties – another aspect of the conducive environment.

6.3 Support organisations

Decentralisation is leading to an expanding role for NGOs or consultants to provide guidance, training and support on a range of technical, financial, and management issues, and to help in involving the community, as shown in the South African and Ugandan cases. These support organisations are largely funded from government or donor funds. Does sustainability demand that they be funded by the enterprises and organisations that they support, just as consultants are paid by their clients?

6.4 Learning from Swiss experience

Experience in Switzerland shows how a small group often took the initiative for the early development of a water supply system, and more people became involved later. Democracy with full and equal participation is not the only way. Whilst it is not clear to what extent experience in Switzerland can be translated into programmes in Africa and Asia, there is no doubt that it is useful to consider Swiss case studies carefully in the search for new and more effective paradigms or approaches. The history of water supply in Switzerland shows that leadership is of great importance, and that it is not necessary to have all future beneficiaries involved at the beginning. Equity in supply was not guaranteed initially, but equitable arrangements evolved as regulations developed and as a result of social solidarity within small communities.

Because of its decentralised cantonal structure, Switzerland provides a wide range of administrative arrangements that can be studied. An example of this diversity is illustrated by a quick comparison of the Wittenbach case study with the development of the water supply for Neuenkirch. In the former case, after some time the *club* saw that it was in its interests to open its doors to include all who were connected to the water supply network, whereas in the latter the Co-operative remains in the hands of a minority of those supplied.

A common element in Swiss experience is the importance of fire protection in the development of water supplies, either as an initial motivation or as a steady support at later stages. In some cases the desire for a more convenient supply or considerations of social status encouraged the growth of water supply networks. In the same way, there may be motivating factors that encourage installation and use of sanitation and water supply systems that are not directly linked to concerns for health promotion and environmental protection. Convenience and privacy are often important motivating factors in increasing the demand for sanitation, but there may be others that can be exploited, such as the desire for an attractive superstructure or some form of social recognition.

Swiss experience also demonstrates the need to allow time for changes to take place. In Wittenbach, for example, the negotiations that led to the formation of the water supply group that linked the supplies of seven villages were long and arduous, lasting for fifteen years. Too often our programmes for institutional development do not allow enough time.

The benefits of a long-term view are clearly shown. Farmers usually take a long-term view because of their attachment to their land and communities; they think in terms of generations, not years. As a result they look for long-lasting technical and institutional solutions, and build up financial reserves for extensions and renovations that will be needed beyond the immediate future.

Experiences in Switzerland suggest that voluntarism (inputs from elected individuals who receive little or no financial compensation) can be effective and sustainable. It is not clear whether this observation would hold true in other contexts.

6.5 Profit, payment and the private sector

Is profit necessary? Is it sustainable to ask someone to work for a water supply or in promoting sanitation when they are not paid cash in return for this service? Senior executives of large companies are paid bonuses according to the financial successes of their enterprises. Can anything be learned from this example? Observations from Switzerland and Nepal indicate that it is possible to operate a sustainable system without paying some of the office bearers. In such cases the motivation seems to be social status, or the feeling of satisfaction from doing worthwhile work and helping others. However, there appears to be no reason why the organisational arrangements operating in the Swiss cases that were studied could not include salaries for the office bearers, provided that all financial arrangements are transparent and agreed by the board.

The effectiveness of non-financial benefits is likely to vary significantly from one situation to another. Three of the factors that may affect the impact of non-financial benefits in comparison with cash payments are:

- the financial status of the persons concerned – If they feel that they must devote as much of their time as possible to earning money, and if they have opportunities to do so, they may be reluctant to work for no financial compensation. It can safely be assumed that the water supply Board members in Switzerland who are not paid are not struggling to find enough money to feed their families.
- the method by which they were chosen to do this work. A village headman, who is asked to do extra work as part of his official duties, may give that work a low priority if he considers that he is already overloaded, or if he considers the work unimportant. On the other hand, if a person is elected for the one specific job under consideration, for finite length of time, (s)he may be more prepared to serve for no salary.
- the size of the community. In small communities, individual members may feel a greater responsibility for the services that are provided and for the general well-being. In a small community, relationships, reputation and social standing may have more influence on a larger proportion of the population. Social cohesion may increase the impact of non-financial benefits.

The terms "profit" and "private sector" can generate emotional responses that reveal negative paradigms. For some people these concepts are closely linked to exploitation, corruption and neglect of the poor. Whilst it must be accepted that there have been cases that clearly lead to such associations, it is also possible to make a robust case that profits and private sector involvement, if handled well, can lead to improved services to the poor and increased transparency.

Some public sector organisations, and perhaps some NGOs and development organisations, may need to review their attitude to profit. Profit not only provides funds for re-investment, but also

provides a cushion or reserve to enable an enterprise to survive through periods of difficult trading and delayed payments and defaults. Profit can also provide a motivation for expansion and improved efficiency. However, if a service provider is perceived to be exploiting the customer by generating excessive profits, the arrangement cannot be expected to prove sustainable or desirable. There are several possible mechanisms for controlling the profits of enterprises that provide services in water supply and sanitation:

- The common solution is competition. If there is truly competitive bidding (free of price fixing and false competition between related bidders) and a clear understanding of what is a fair price, profits can be kept at reasonable levels (neither so high as to be exploitative or so low that service cannot be sustained).
- Monopolistic water utilities (in England for example) are monitored by independent regulators to ensure that standards are met and profits are not excessive. The work of such regulators is not easy – they are open to attack by customers, service providers and government, and it is difficult for them to preserve their independence. Perhaps one of the roles of the Service Support Agencies in South Africa, or the Water and Sanitation Boards (umbrella organisations) in Uganda could be to monitor profit levels and prevent exploitation.
- The Swiss case studies suggest another way. If a service provider (such as the enterprise that mends damaged mains and undertakes plumbing repairs) has strong links with the community that is served (including social and family links) and is concerned to continue to provide service for a long time into the future, there is less incentive to generate exploitative profits and a strong motivation to provide a high quality of service over the long term. This relationship was termed *partnership* by the South African group. Transparency regarding profits is important here. In the Swiss models studied, the motivation for water supply undertakings (corporations or co-operatives) to provide the best possible service at the lowest possible charge appears to be largely the appreciation of the customers and the social standing within the community, and the desire to be re-elected for a further term on the Board. It appears that a reasonable salary and a small agreed bonus for a financially successful year would have only positive effects on management quality, but such a view may reflect a misunderstanding of the true motivations of the Swiss water supply board member. In Switzerland, non-profit organisations, that reinvest any surpluses and pay only fixed allowances, have provided a good service with only minimal regulation of tariff levels from local government.

6.6 Sanitation

Even in our discussions, most attention focused on water supply, and less on sanitation. Much needs to be done to increase the demand for satisfactory means of managing excreta and grey water. Is there a need for a radically new paradigm for the promotion of sanitation? Should it be decoupled from water supply? Additional incentives are needed to promote sanitation – can the profit motive be harnessed to promote the implementation and use of sanitation?

There are business opportunities that are linked to sanitation, including the supply of components, construction, and maintenance – particularly the emptying of ecological sanitation latrines (urine separation composting toilets), but also pits and septic tanks – and managing and operating public toilets.

Urine separation latrines have been most successful where the households using them are concerned to exploit the fertiliser value of the urine and composted faeces that they collect. In an urban setting, it is likely that users will be less willing to take the trouble to operate the latrine in the correct way, unless the products of ecological sanitation latrines (fertiliser and compost) attract a commercial value because that they can be sold to farmers.

Some comments made by participants at the end of the Workshop

The water sector should not be isolated from other aspects of development.

The challenge is to find ways to integrate a business approach within poverty alleviation initiatives.

Additional incentives are needed to promote sanitation.

If people do not pay for water, they have no power to complain.

There is a risk that the willingness to solve one's own problems can be stifled by government promises.

It is useful to split expenditures into their components and look at each one.

It is not enough to focus only on the needs of the poor; successful approaches also consider the middle class.

Community members (local people) can do much more than we think.

The sanitation sector cannot function efficiently without a demand from the public.

The scaling up of water and sanitation service provision is still a major challenge.

An enabling environment is the most important precondition for the success of a business approach.

Community-based management based on market principles can lead to sustainability.

The incentives that are effective in the business of sanitation provision are very different from those that are effective in water supply.

Acceptance of the principle of profits and consideration of benefits can improve the provision of water and sanitation services.

Sustainability demands the motivation of all stakeholders