



## Sustainability with large communally owned systems

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THE KEY TO the successful sustainability of a system is the mobilisation of public awareness and co-operative spirit to the needs of maintenance, hygiene, sanitation and costs, and the matching of the system to the specific community, or in the case described, the several disparate communities. With large systems covering a large area and with public access to standpipes, this presents special problems due to complexity, population size and institution building, increasing the load on mobilisers progressively as the system grows.

In 1992, Wateraid, with initial funding from DANIDA took on the reconstruction and enlargement of the Bwera Water Project, begun in 1987 to a Carl Bros plan and build by DWD. It was far too small and had broken in many places.

After further survey, the mainline was relaid, a proper intake built at the source and a further 16 reservoirs of 70-100,000 l built, and some hundreds of kilometres of pipe laid. Still under construction (in May '95 11 out of 16 parishes had been completed) it will have about 900 standpipes in 16 parishes covering perhaps 250km<sup>2</sup>.

We employ 25 salaried local staff and had originally 64(4 from each parish) volunteers to be trained in maintenance. Of these only a few can now be relied upon as they were never paid, but once a parish is 'on line' then they are paid by the community for repairs. The parishes also supply community labour for trenching etc., locally available materials such as sand and meals to work crews.

Bwera is in west Uganda, Bukunjo County, and the River Lubiriha, from which the water is taken, forms the Ugandan/Zairean border at this point 20 l/sec are diverted to a population of 60,000 and the system is designed for 80,000 by 2001 providing 20l/h/d. Organisation reflects the Ugandan RC system of government of participation through elected representatives at different administrative levels (a bit like the Poder Popular of Cuba). Each parish has a reservoir and distribution system for which it is responsible. There are 5 elected committee members and a further 1 from each parish elected to the Central Committee, which therefore has 16 members of which again 5 form the executive. Each tapstand has a committee of 3, for maintenance, hygiene and rate collection (receipts given), and each parish decides its own constitution. The Cen.Comm. is responsible for repair and maintenance to the main supply line (common to all) payment of fees/salaries to permanent or hired staff, upkeep of central office, monitoring per-

formance and arranging audits. Of the present monthly rate of 400/1 (30p) per household 20% goes to the Cen.Comm. The Bwera Water Association is now a registered indigenous NGO, and its patron the Rt. Hon. Crispus Kionga, Minister of Internal Affairs, who was the original government initiator of the project long before Wateraid arrived.

Problems foreseen were a belief that water is free and therefore resistance to regular payment, the lack of existing grass-root organisations with which to work, and the belief that donors not only provide but should also maintain, and the generally low educational/income level of this poor but developing area. The concept of community ownership was difficult to explain and devise as it would have been in Watford or Dallas, since, like us, they expect 'top down' provision. Not foreseen were:

- 1a The arrival and rapid growth of the Customs Market and its future development as a 'Duty Free Zone' at the border trading point
- b. The planned 200 bed hospital, funded by EADB, with staff quarters, which alone will take as much water as a parish.
- c Immigration to the area due to trade, at present estimated at 50/month in the town alone, and further immigration from the mountains to the plains now supplied with potable water, to exploit the high coffee prices.
- d. The amount of water abuse for car washing, brick-making and construction in a booming area, and irrigated gardens.

These are problems of rapid development and apart from 1d beyond the commitment of Wateraid. They will however shorten the useful life of the system.

### Mobilisation difficulties

As usual, the devil is in the detail.

- 2a The system is too large to be comprehensible to the layman and there is a total lack of awareness of the technical and administrative inter-relatedness of its constituent parts. Explanations are involved and technical. The wananchi are only interested in the bottom line.
- b. The general attendance at meetings is about 2%, and usually no more than 5% even at handover ceremonies. Even elected representatives won't attend un-

less we feed them. People of course have other things to do, but it makes communication and the dissemination of information difficult.

- c. Mistrust of money collectors. This is well placed, as some elected rate collectors and representatives have absconded with funds and even the local bank has stolen from the parish accounts which took 18 months to resolve. Low educational levels make accounting procedures incomprehensible to the wananchi and difficult for committee treasurers.
- d. Elected members of committees volunteered their services in the erroneous belief that there would be a salary or fee when Wateraid depart. They will not continue to work for nothing, therefore allowances must come from rates. Ergo, rates must rise.
- e. It was only after 2½ years in to the project when we had 5 parishes 'on line' that we had payment registers, which might be relied on. Although beginning well at around 90% they soon fell to an average of 23% in Oct. '94. After a serious effort by mobilisers they then rose a bit, but in May 95 are again falling to a level to low to maintain the system.
- f. At the outset, only 1 mobiliser was needed to organise the pilot community for labour; trenching, backfilling, soakaways, pipeline marking, hygiene and sanitation. As the number of parishes increased, it was still necessary to constantly return to ones considered complete to reinforce messages, sort out problems at tapstand level etc, while at the same time mobilising for construction on many other parishes being constructed in parallel. The load on mobilisers was therefore greatly underestimated, even though we were uniquely lucky to find a partner organisation in Kasanga CBHC to undertake Health and Sanitation aspects. It had been hoped that committee members would themselves be active in mobilisation but again, without recompense, they had other things to do. They need to earn a living, and so not surprisingly regard such duties as employment. Altruism is an unaffordable luxury.

### Other worries

- 3a. There had been problems of our workers 'moonlighting', by fixing private connections. This is now forbidden, but when we leave and they no longer have a source of income, it is unlikely they will restrain themselves. If the better off begin installing showers and baths, consumption will quickly rise again.
- b. Spares acquisition; Most of the pipe laid was HDPE, not manufactures in Uganda. Both Kenyan and UK pipe face import surcharges and procurement difficulties. DWD were excluded from maintenance because of the accompanying loss of public accountability and the difficulties they have in maintaining their present workload.
- c. That demand will exceed supply very quickly leading to water shortages and a further fall-off in rate

payment. There is no understanding of the carrying capacity of the 6" main, which was not the result of design, but left to Uganda on the break-up of the EAF.

- d. That our best trainees and technicians would sell their skills elsewhere at a rate unaffordable by their committees. They also know how to manipulate the system for sectional interests if pressure or inducement is sufficient.

### Attempts to solve these problems

- 1. Supply problems caused by points 1, a, b, c are a future problem for the development of the areas, beyond the commitment of Wateraid. Local government has been informed of our concerns but seem unlikely to revise their plans. 1d will be addressed by having bye-laws passed, regarding the use and abuse of potable water. We count on the co-operation of the Combolo chiefs and RC system for enforcement.
- 2a Continued repetition of the message that all leaks and breakdowns must be reported immediately to parish trainees or committee members, followed by shut-down of affected area until repair. Hammer home need to pay water rates.
- b. A small budget of 50,000/- (£32) per quarter was set aside for food for important meetings to encourage attendance. This too will have to be funded from the water rate when we leave.
- c. A training programme in book-keeping, budgeting and management will commence in June '95. A bit too late maybe, but there were many difficulties encountered. The almost cultural pursuit of embezzlement will remain a problem.
- d. A system of attendance fees and allowances was worked out with committee members. People will not take long-term responsibility without recompense. Salaries/fees for future permanent staff agreed between Cen.Comm and trainees at locally affordable rate. (Much lower than the NGO rate).
- e. We hope that the enforcement of bye-laws, though coercive will be seen as a necessary part of a 'carrot and stick' approach.
- f. The number of mobilisers was increased to 3, then to 5.0. Our Programme Support Unit helps Kasanga CBHC for a couple of days each month and has trained some of our mobilisers, but we cannot claim to have solved the difficulties of community mobilisation for payment of water rates. The level of resources allocated to this aspect has to be much higher with 'open access' systems and community management, and our mobilisers who are necessarily local Bakonjo speakers have no engineering or other training, but fly by their pants.
- 3a We hope that bye-laws will prevent this, but 'money finds a way'.
- b. A stock of spares left with the Cen.Comm. and tool kits with each parish. Water-Aids continued presence in Uganda will facilitate overseas procurement if

necessary, but again this will have to come from water rates.

- c. Repetition of the limitations of the supply system, and the setting of inlet valves to reservoirs at design population flow rates and then padlocked. A weak point since so many people are now trained in the system that it can be manipulated for sectional interest and destroy the balance of supply.

## Results

As of May '95, rate payments are still too low to maintain the system satisfactorily. Bye-laws are still pending although passed at RC5 level and there is still some local political in-fighting over who controls the system and its assets to be ironed out. Such a large system potentially generates a large cash-flow and employment opportunities. Mobilisation will continue for a year after the construction phase has finished. We await further data once bye-laws are in place.

## Recommendations and lessons learned

1. With hindsight, it would have been simpler and needing less social engineering if water shops had been set up at agreed points and fitted with meters. The attendant would then be paid a percentage of the rate collection measured by the meter, and payment to committees could also have been checked against measured delivery. However, the original system had open access via standpipes and I presume that this was simply continued.
2. "Professional" agencies such as Wateraid, which have large local salaried staff have inevitable cost ceilings and time horizons. Engineering planning, while attempting Critical Path Analysis, faces procurement problems common to the continent which turn ETA's into no more than hopes, while system software, ie. the social engineering must be opened, varying according to regions, peoples and local experience. The pressure for 'top down' solutions increases with the size of the project and the financial implications of over-run. "Volunteer" agencies without local salaried staff, whose only cost is the predictable one of capital costs of hardware and freight may well be more effective where systems are smaller or time horizons indefinite.
3. Other areas or countries may well provide a different experience. The Bakonjo are a self-reliant people with little co-operative organisation or institutions. The socio-political groups of societies which have undergone popular armed struggle may well provide better vehicles for co-operation and organisation. The RC system, while admirable, was not the result of grassroot experience. This should be taken into account when designing systems and service delivery.
4. It is now realised that mobilisation is a far larger component of sustainability than was believed. The Chief and RC system were not invited to become involved until it was clear that rate payment was below that necessary to maintain the project. Such organisational and legal aspects should be anticipated and form either part of the information provided, or ideally arise from participatory organisational design.
5. It was later realised that a significant part of default was unintentional but the result of seasonal crop payments. A larger part of default was embezzlement by collectors (many have been dismissed or have absconded).
6. Reticulation was designed to make maximum use of supply potential without other reserve than population growth. This may not have been a good idea, as large systems are likely to generate their own growth factors.
7. The necessity of common accounting systems and training in budgeting, book-keeping and management.
8. The Wateraid PSU unit was not constituted until the project was well underway. In future they should be incorporated at the earliest opportunity and with adequate resources for training trainers, especially in such large public systems requiring rate payments and large area consensus. A more participatory approach could then be implemented in which solutions to anticipated problems would arise from within the community. Project completion dates seem to argue for a more didactic approach which appears a shorter route. If 'gift horses' are not to become 'on site' to direct their efforts efficiently.
9. Wateraid local staff are paid at the going NGO rate, which is many times the commercial labour rate. This sets a benchmark expectation on our departure which cannot be fulfilled from community resources. We should consider carefully the inflationary implications of our belief in 'a decent living wage' as in the long run it is the poor who suffer the worst of its effects. A larger social wage might be an alternative. Our best technicians and fieldworkers will be lost to the system when we stop paying them.
10. The problems caused by embezzlement are likely to continue in this area, and at standpipes, and a thousand people handling funds, it seems inevitable that the mice will nibble the seedcorn, while meticulous policing would have further costs which would have to be reflected in the water rate if implemented.
11. Development is a long learning process in which the lessons learned are not universally applicable and formulae which are not flexible should be avoided. However I realise that in order to convince a people that we seriously intend to proceed with a project, they must first see pipe being laid, but that construction quickly outruns social organisation unless far greater effort is put onto this area otherwise it is very difficult to rectify mistakes made in organisational design.