THE PROBLEM OF … 
TOO MUCH MONEY

Managing cash reserves for capital maintenance expenses

Richard C Carter

The usual problem …

Inadequate tariff combined with an inability or unwillingness to pay leading to further unwillingness to pay for poor service resulting in back to the swamp, and wait for the next donor … leading to unaffordable repairs needed resulting in long down-time
But we are here to consider …

… how to manage significant sums of money collected by water user communities

**An immediate question** arises: how common is this situation? Is it very rare, or does it happen often?

**A second question:** if we had solutions to the problems raised by too much cash, would revenue collections actually increase?

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**So what’s the problem?**

Surplus cash in the community, together with the absence of safe and convenient banking services, leading to

- losses
- misuse
- theft
  - accusations of dishonesty
  - breakdown of trust
  - funds not available when needed

- Against a background of inflation and the inherent unpredictability of timing of major repair requirements
- And even if banks are available they may be risky and they probably don’t pay interest on such funds.
Repairs and maintenance

All water supply systems require

• minor operating, repair and maintenance funds, eg
  • grease for handpump bearings / hangers
  • replacement footvalve and piston seals
  • taps in gravity and rainwater systems
  • fuel for motorised pumps and generators

• major (capital) maintenance funds, eg
  • rising main replacement
  • service reservoir reconstruction
  • motorised pump replacements or motor re-winds

Minor O & M costs

• Are needed relatively frequently
• Are fairly predictable in timing and cost
Capital maintenance items

- are inherently low frequency and
- unpredictable in terms of timing

The **average** life expectancy of a component may be known with reasonable accuracy, but it is not possible to predict with certainty when a particular (pipe / reservoir / motor / pump ...) will fail.

This makes the management of a multi-system, mixed-age, portfolio much easier than managing and financing a single system – and yet this is what we expect communities to do!

An example – a gravity flow scheme

- **Major structures** (intake, sedimentation tank, service reservoir) – average life expectancy 15-20 years, but failure possible at any time due to poor construction, landslip, settlement …
- **Pipeline** – average life 25 years, but parts could be damaged by landslips, vehicle damage, corrosion much sooner.
- **Tapstands** – tap replacement falls into minor O&M costs, but vehicle reversing into tapstand incurs capital maintenance.
What can communities do?

A recent on-line discussion run by RWSN identified 14 different solutions to the problem.


The WASHCost paper “Financing capital maintenance …” identified four broad approaches.


Broad approaches – often used together

1. Find a safe haven for funds – banks, insurance companies, local Government (?)
2. Invest the money raised – in spare parts, livestock, asset replacement, system extension, service expansion (from water to sanitation …)
3. Seek multi-system solutions – through bank loans, multi-service or multi-system providers, trust funds

All options have advantages and disadvantages. Of the 14 solutions identified by RWSN, half list corruption or misuse of funds among the hazards.
The tests of a good solution?

- It encourages rather than discourages consumer compliance.
- It truly does represent a safe place for funds raised.
- Capital maintenance actually gets done in a timely fashion.
- Service performance indicators stay high.

- And if money raised can be invested to the social and/or economic benefit of the consumers, so much the better.

And now …

Three short presentations from the field

- Experience in Ghana
  (Kwabena Nyarko, KNUST)
- Experience in Punjab, India
  (Paul Hutchings, Cranfield University)
- Experience in South Africa
  (Jim Gibson, Maluti GSM Consulting)

Followed by round-table discussions and experience-sharing.

Thanks for listening!

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Kwabena Nyarko
KNUST

Experience in Ghana

Paul Hutchings
Cranfield University

Experience in India
Community CapManEx Reserves in Punjab
World Bank Assisted Punjab Rural Water Supply and Sanitation Project (PRWSS)

<table>
<thead>
<tr>
<th></th>
<th>Singhpura</th>
<th>Shahpur</th>
<th>Ghataur</th>
<th>Daumajra (control)</th>
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<tbody>
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<td>Pop.</td>
<td>1,067</td>
<td>932</td>
<td>1,191</td>
<td>1,404</td>
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<td>Tariff (monthly average)</td>
<td>$3.49</td>
<td>$2.03</td>
<td>$2.77</td>
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<td>VWSC Surplus (2014; after OpEx)</td>
<td>$1,403</td>
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<td>$1,443</td>
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<td>Annual shortlife depreciation</td>
<td>$517</td>
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<tr>
<td>Longlife cover</td>
<td>29%</td>
<td>-</td>
<td>42%</td>
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Table 1: Ability of villages to cover the cost of capital depreciation

How was that achieved?

- Trust backed up by security procedures
- Sector-wide approach
- High quality infrastructure & service levels
- Cultural traits
- Word of warning: this is rare!

With thanks to Ben Harris, Dr Urmila Brighu, Rajesh Poonia
Jim Gibson
Maluti GSM Consulting

Experience in South Africa
The fluctuation in costs is inherently random

Many schemes would not have been able to generate sufficient cash surplus to ride out the fluctuations

Large initial tariffs would have been required to ride out the cost spikes.

Spreading the risk over a number of schemes resulted in a significant reduction in the cash buffer required

### Cash Flow Buffer Fund Required:

<table>
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<th>Ops Area</th>
<th>Max</th>
<th>Avg</th>
<th>SSA</th>
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<tbody>
<tr>
<td>ANDM (04)</td>
<td>2.5</td>
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<td>CHDM (06)</td>
<td>7.9</td>
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Is Clean Piped Water a ‘Competitive Product’

Cost = f (money, time, energy, health)

It is unrealistic to expect 100% “market penetration” of our new product

Conclusion

- What tariff and/or saving is needed to avoid cash flow crisis?
- How do we achieve mutualised risk mitigation?
  - Unit of analysis
- Beware of how you apply subsidy...
  - SA did and has got all sorts of new problems.
- The question is...
  - are small schemes financially viable?
- Market segmentation analysis would suggest some challenges in achieving financial viability.
  - especially when there are alternatives sources