

Harnessing entrepreneurship in the water sector: expanding water services through independent network operators

DAVID SCHAUB-JONES

Most water utilities in Africa struggle to serve even half of urban households falling under their mandate. Peri-urban districts and small towns fare especially badly; a widening gap is developing between the services offered by utilities and demand (fuelled by rapid population growth and urbanization). Typically this gap is filled by small-scale operators, many independent of the utility. Yet the risks these operators run are great – despite making significant investments, most are informal, and many are technically illegal.

This paper focuses on one type of operator – those that invest their own funds in independent networks. Independent operators who work in peri-urban areas, often under the shadow of a public utility, are distinguished from those working in small towns, where the utility is not in evidence. Findings show that these operators are able to be innovative in the technical and financial arrangements of supplying to poor people, thus keeping down their charges. To improve their operation, interventions are suggested that can be brought about without major policy changes, and some changes that involve policy change.

Keywords: Independent operators, Ghana, Mauritania, Mozambique, entrepreneurs, regulation, water utility, water supply

More than 10,000 independent operators specialize in drinking water supply in developing countries

THE LAST FEW YEARS have seen increasing interest in the role that entrepreneurs play in providing water to many of the officially 'unserved'. These providers range from pushcart vendors to standpipe operators, from tanker services to those operating small water supply networks. A recent World Bank study, covering 49 developing countries, found more than 10,000 independent operators specializing in drinking water supply, a figure that the authors believe represents only a fraction of the true number (Kariuki and Schwartz, 2005).

Such providers typically operate in the informal sector and, as such, very little is known about how they actually function or what their

David Schaub-Jones is Outreach and Research Officer, Water and Sanitation, Building Partnerships for Development, South Africa. This article is based on findings from a roundtable hosted by BPD in 2008 and also draws deeply on a recent co-authored work in the small towns of Ghana and Mauritania and in peri-urban areas of Bamako and Maputo (Valfrey-Visser et al., 2006)

© Practical Action Publishing, 2008, www.practicalactionpublishing.org
doi: 10.3362/1756-3488.2008.033, ISSN: 0262-8104 (print) 1756-3488 (online)

relationships to customers and authorities look like. Discussion of the merits and drawbacks of their services is clouded by a general lack of information.

To address some of this gap BPD, together with AFD and the international consultants Hydroconseil, embarked on a year-long programme of action research in West Africa. A preliminary survey of ten West African countries pointed to interesting developments taking place in Ghana, Mali and Mauritania. Later Maputo was added as a fourth case study.

The work focused on one category of such operators – those entrepreneurs that sell water to households through piped networks. It thus concentrates on those entrepreneurs (someone ‘who organizes, operates, and assumes the risk for a business venture’) that provide household connections (rather than those who provide tanker services or manage water standpipes, for instance) and who do so by developing their own water sources. These are the entrepreneurs who take the most risks, and arguably, present the greatest opportunities. Such operators have five major assets:

- they serve significant numbers of households (for example, more than 200,000 people in the peripheral districts of Maputo);
- they are highly innovative, both technically and commercially, and have proven adept at connecting households at a fraction of the cost of utilities and without subsidies;
- because of their for-profit nature, they have an incentive to expand services without relying on government or donor intervention;
- they source their capital locally and outside the formal banking system (from family savings, cash-flow from other business activities, etc); and
- if managed carefully, there is potential for the service these entrepreneurs are developing to become a fixed part of the water supply landscape over the longer term.

Across these four countries a number of such entrepreneurs were identified and surveyed. We found small entrepreneurs providing water to tens of thousands of people, in small to medium urban centres, or in the unserved areas of major cities. Their background, skills and capacity varied widely – from individuals driven to serve their community, to local entrepreneurs new to the water sector, to formal water operators appointed after competitive bidding. Yet all have shown a remarkable ability to adapt to local conditions in order to build up their customer base. The surveys (which sampled a wide range of both entrepreneur and utility customers to determine customer satisfaction

These entrepreneurs develop their own water sources and sell water to households through piped networks

They have connected households at a fraction of the cost of utilities and without subsidies

They are innovative, using appropriate standards to lower the costs of service delivery

with water quality, cost and service and went on to investigate coverage and investments) showed them often outperforming larger formal providers in meeting demand for household connections, usually without any external subsidies. This achievement relies significantly on their ability to innovate, using appropriate standards to lower the costs of service delivery (see Box 1). Investment and operational risks are passed through to the user and local relationships built to provide security.

Peri-urban districts and small towns – natural niches for entrepreneurs

Independent providers tend to develop in two market niches that have largely been abandoned by municipal or national utilities. Here they have significant comparative advantages.

The first niche is small towns (of less than 50,000 inhabitants). These are typically considered unprofitable by utilities that have been designed for large conurbations. With significantly lower overhead costs, independent operators are able to adapt to a challenging market where profits are slim, tariffs highly regulated and consumption low (often between 20 and 40 litres per day per person).

Utilities are also largely absent from the peri-urban zones of large cities. For utilities to reach such neighbourhoods, they often need to make significant investments in network extension (see Box 1). Many

Box 1. An independent operator at Mouribabougou in Bamako

Mr Cissé is an operator in Mouribabougou, a village 15 km from the centre of Bamako, fast being swallowed up by the rapid urbanization of Mali's capital. Initially Mr Cissé invested in eight boreholes in order to develop aquaculture activities. Lately he has used part of this infrastructure to distribute water to households through a network that he has entirely self-financed. His network extends today for 11 km, directly serves 240 users and also has 10 standpipes (Valfrey-Visser et al, 2006).

Households pay 300,000 FCFA (approx. €450) to connect to the network regardless of their distance from the existing pipes. In comparison, the operator in Kalabancouro (another outlying suburb of Bamako) charges 178,000 FCFA (€267) for each connection located within 20 metres of the existing network. Total investment realised (including boreholes) is estimated between €200,000 and €300,000. Water is sold at a single tariff of around 500 FCFA/m³ (approximately €0.75).

Mr Cissé is ambitious about developing his service. Indeed he expects soon to build a water reservoir of 600 m³ the other side of a small rise in order to extend his network to neighbouring villages. Land has already been acquired. This new investment has not yet been costed by Mr Cissé and the success of the venture remains to be determined. For now his activities take place without any formal contract either with the commune or with the Ministry for Hydrology.

Independent providers are often numerous in informal settlements where they are willing to take risks

In small towns the providers are often actively sought out by the public sector to run and expand existing schemes

households lack legal tenure and have limited income – this further discourages an already reluctant utility from adopting them as formal customers. Yet here independent providers are often numerous, willing to take risks in order to set up viable water businesses.

While their networks may be technically similar, the working environment of the two providers differs quite significantly; there are clear contrasts evident between providers working in small towns (where they are often the main provider) and those working in peri-urban areas (where they typically work in the shadow of a 'dominant operator'). Much of the contrast stems from the way the providers have entered the sector and the consequent degree of formality of their relationships with local and national authorities. In the small towns of Mauritania and Ghana the providers have to a great extent been 'called into being', actively sought out by the public sector to run and expand existing schemes. In Bamako and Maputo (the capitals of Mali and Mozambique), providers operate in the gaps left by the urban water utility. Their networks have evolved more organically and often spun-off from other business operations (such as hotels or small factories).

What makes entrepreneurs particularly interesting?

A key question for policymakers is whether entrepreneurs are a viable prospect for extending access or are merely an undesirable symptom of poor utility performance. There are four characteristics of true entrepreneurs that suggest that independent operators could prove a useful ally for policymakers and struggling utilities.

Despite great legal uncertainty, entrepreneurs make significant investments. The main challenge entrepreneurs operating independently face is legal insecurity. Typically they work without any formal contract (except where the government has taken steps to promote them, such as in Mauritania). The threat of having their assets expropriated is ever-present. Yet this does not deter operators from investing to extend the network to new users, nor from investing directly in large infrastructure such as boreholes or storage tanks. As Box 1 indicates, these investments can be quite significant.

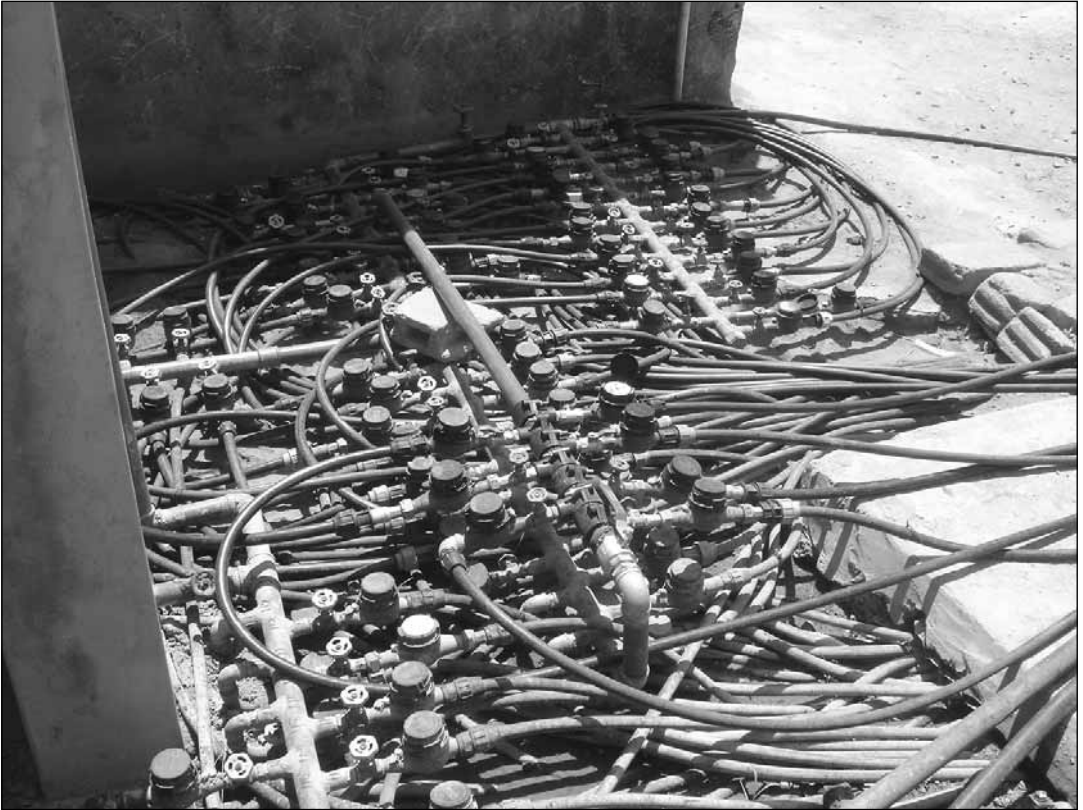
Entrepreneurs care about customer service. Independent providers are often criticised for being opportunistic, exploiting 'captive' consumers that have few, if any, choices and providing a poor and costly service. Yet field surveys suggest that customers are largely satisfied with the services they receive from such entrepreneurs. It also shows that their tariffs compare quite favourably with those of many utilities (whose clients are also 'captive'). These two reasons have underpinned the rapid growth in coverage of such providers, with households prepared

Their tariffs compare quite favourably with those of many utilities

to cover the cost directly of extending the network to their door. Many operators have gone as far as to start customer loyalty schemes.

Entrepreneurs have proven highly innovative. Given their unpredictable environment, entrepreneurs are driven to quickly recover the capital investments they have made and continually reduce their operating costs to remain profitable. This explains much of the seeming 'do-it-yourself' nature that characterizes networks managed by independent operators. Yet beneath their often chaotic exterior lies much technical (connection using flexible pipes, trench depths limited to the bare minimum, modular storage via plastic tanks, etc.) and commercial innovation (soft loans to customers, sophisticated tariff schemes, etc.). In the challenging business context in which they operate, independent providers need to innovate merely to stay in business.

Beneath their often
chaotic exterior
lies much technical
and commercial
innovation



'Spaghetti connections' that an independent operator uses to serve households in the suburbs of Maputo, Mozambique. Behind the apparent technical irregularities can lie very sophisticated customer management strategies. This operator has over 95 per cent of his invoices paid and his customers are highly satisfied.

Credit: Hydroconseil, 2006

The pool of potential entrepreneurs may be larger than many believe. The more dynamic of the entrepreneurs surveyed (those taking significant financial risks) tended to share certain characteristics. They are often individuals rather than companies, blessed with good business sense, the capacity to invest and an ability to engage local authorities. This contradicts a widely held notion that water provision of this nature requires the skills and capacity of formal companies that have a technical or engineering background.

What would engagement seek to accomplish?

In small towns a key challenge is getting investment into the system, especially to expand the network. In Ghana local authorities struggle to source the grant funding needed for this and tariffs are insufficient to pay for network extension, especially given the high technical standards required. Mauritanian authorities have found one solution, which is to afford providers some flexibility over standards (and permit them to ask households to pay the cost of extension).

In peri-urban areas the formal utility finds the cost of extending its own network prohibitive and struggles to work in unplanned and often diverse communities. Yet entrepreneurs filling this gap typically go unrecognized by policymakers and operate in the 'informal sector'. While they find some stability through accommodation with local authorities, their informal status constrains their investment horizons, limits network expansion and ultimately drives up prices.

Despite the varied challenges in each context, there are four key drivers for government officials, politicians, utility managers and others to engage entrepreneurs.

1) Outsiders can help monitor water quality to ensure public safety. Independent entrepreneurs, by their very definition, source their water from outside their utility, often through their own boreholes. Some chlorinate their water, many do not. BPD's work in Mali showed that entrepreneurs are interested in water quality, due to their concern to attract and retain customers. In Bamako one entrepreneur was paying to have his water tested by the national testing institute, unprompted by local or national authorities. More recent work in Maputo has shown that entrepreneurs compete with each other over water quality, although it is less clear how customers judge this, above and beyond look, smell and taste (Chaponnière et al, 2007).

Outsiders can (and arguably, should) play a role here. The entrepreneurs have several things in their favour already. One is that many of them supply water full time – this offers opportunities to maintain high water quality as long as raw water is safe and/or treated. A second is their offer of household connections – water is available on

Their informal status constrains their investment horizons, limits network expansion and ultimately drives up prices

Entrepreneurs are interested in water quality, because they want to attract and retain customers

By comparison, many utilities' networks are not permanently pressurized and suffer groundwater intrusion

demand, less likely to be stored in the house for long periods and is not transported via tanker or cart. The performance of many utilities, whose networks are not permanently pressurized and which suffer groundwater intrusion, offers a stark contrast.

2) *Careful intervention can lower the costs of entrepreneurs and see the savings passed on to consumers.* In 2005 the World Bank (Kariuki and Schwartz, 2005) confirmed a little known fact that the tariffs of network entrepreneurs very often compare favourably with those of the utility (which benefits from subsidies). In all cases these are better than the alternatives to a household connection (water tankers, independent operators etc.).

Entrepreneurs manage to do this mainly by two means. The first is their innovation over technology – adding only as much storage capacity as they need, using narrower pipe diameters etc. The second is their financial management – typified by lean personnel requirements and their adaptation of tariff and billing to suit the profile of their customers.

Yet most entrepreneur schemes are funded from internal cash sources – savings, migrant remittances, family lending and loansharks – very few, if any access other means of credit (or for that matter, government or donor subsidy). The informal nature of their operations, often technically illegal, leads to short investment horizons (and likely enough, higher prices). There are certainly risks and costs linked to being 'illegal' – these are no doubt passed to the customer.

This opens up useful avenues for those seeking to engage – by offering better access to cheaper finance, or taking steps to lengthen the investment horizons of entrepreneurs, outsiders can help lower their costs. Credit, subsidy and technical assistance can all play a role. Once costs are lowered the next challenge is to ensure these cost savings are passed on to customers.

3. *The sector may build on the assets and investment of entrepreneurs to speed its growth.* Entrepreneurs make significant investments in the water networks they develop. Those in Paraguay were valued in the region of several million US dollars over ten years ago (Troyano, 1999). Yet in many contexts, including big cities and small towns, as the utility expands (albeit slowly) these investments risk being razed and then duplicated. Yet pro-active intervention can avoid this. In Ho Chi Minh negotiations up-front with entrepreneurs ensured that their investments were compatible with longer-term investments and were incorporated into future delivery plans (Conan and Paniagua, 2004).

As noted above, entrepreneurs also tend to have good contacts with customers and the community. This relationship can provide a lot of useful information, precious to sector planners and utility staff. Insights can be gained too from the technical and operational innova-

Credit, subsidy and technical assistance could all play a role

Negotiations with entrepreneurs ensured that their investments were compatible with the utility's longer-term plans

tions that entrepreneurs have developed. All these, plus a ready-made set of paying customers, can be considered valuable assets that can be built upon.

Another focus for policymakers is getting services to poorer communities. BPD and Hydroconseil work has shown that entrepreneurs, like utilities, are more likely to connect richer customers than poorer ones. More needs to be known about the strategies entrepreneurs use (or neglect) in serving poorer households and what the true impact on poor communities is of an entrepreneur operating in their neighbourhood (for instance what happens to the resale price of water). This would open up avenues for outsiders wanting to build on the entrepreneurs' activities to ensure the poor get better access to water.

4. Outside stakeholders can use entrepreneurs to recover 'lost' households.

In peri-urban settings particularly, entrepreneurs and their customers are considered 'unserved'. They fall outside the formal water sector and as such are not bound by its rules, nor do they benefit from its support. This renders policymakers and the utility irrelevant to many thousands of 'lost' households. Yet surveys have shown that entrepreneurs' customers are often highly satisfied with the services that they receive. Independent entrepreneurs clearly have legitimacy in the eyes of many citizens; local government politicians are typically aware of this; they often reach an accommodation with entrepreneurs, issuing local business licences (or otherwise providing a 'licence to operate'). Engaging with entrepreneurs may offer a way for policymakers to 'reach through' entrepreneurs in order to become relevant to many of their own citizens.

For utility staff this dynamic can be more tangible still – customers of the entrepreneur can become customers for them. In Manila, for instance, engagement has permitted entrepreneurs' customers to be counted as part of the concessionaires' coverage targets (WSP-EAP, 2004).

Customers of the entrepreneur can become the utility's customers

Harnessing operators without sector reform

There are two types of intervention possible – those that require major changes to the existing policy and regulatory framework and those that don't (so-called 'policy-neutral' actions). We look at each in turn, starting with the latter.

Although policy change can be helpful in the medium- to long-term, there are a range of actions that can be undertaken with more immediacy. These broadly divide into activities to: improve the technical performance of entrepreneurs; to improve their financial profile and to shape the overall market in which they operate.

In Mauritania the government agency helps entrepreneurs with maintenance of their larger capital equipment

Outside stakeholders could offer cheap and easy ways of testing an entrepreneur's water quality

Operators could be offered access to cheaper sources of finance, or direct subsidy

Encouraging technical improvements. Although some entrepreneurs are technically very proficient, others lag behind. Particularly when it comes to the 'big ticket' items of water provision (pumps, water treatment etc) entrepreneurs can benefit from technical assistance from outsiders. This has been applied intelligently in Mauritania, where the government agency ANEPA, helps entrepreneurs with maintenance and breakdowns in their larger capital equipment.

On a more micro level, there is much entrepreneurs can learn from each other. Associations, such as that in Paraguay, have taken steps to share information and knowledge. Yet often these steps have been tentative, and could benefit from the involvement, support and encouragement of outside stakeholders.

Water quality treatment and testing are areas where there is potential for significant gains. Water quality testing can be an expensive process, and daunting for one individual to undertake alone. Where outside stakeholders offer cheap and easy ways of testing an entrepreneur's water quality, they can be doing both the provider and their customers a great service. Entrepreneurs themselves are often keen to make progress here – this helps them strengthen their brand and adds to their knowledge base.

Another option is 'less carrot and more stick': one suggestion from BPD's recent roundtable was that random tests could be performed widely, with the understanding that entrepreneurs with continuing poor records will be named and shamed. This could be softened by combining positive suggestions on how to improve water quality for those who test marginal, closing down the boreholes of entrepreneurs whose water quality is particularly hazardous (and offering bulk water connections where sensible).

Improving entrepreneurs' financial profile. Entrepreneurs are generally pretty good at understanding the financial profile of their customers and tailoring the offerings accordingly (weekly billing, different levels of service etc). They, particularly those that have set up their own business, may have little enough to learn on this front. Perhaps a more promising avenue is to lower their 'cost of capital' – for instance, offering access to cheaper sources of finance, or providing direct subsidy. Output-based aid approaches are being mooted here, with some progress being made with small towns in Uganda and elsewhere.

Further options relate to how entrepreneurs determine their tariffs (their own cost of operation, competition, and their investment horizon all important factors). External intervention can lower the cost of their operations (procuring cheaper spare parts and diesel generators, cutting the cost of electricity), or can seek to lengthen the investment horizons of entrepreneurs (via public recognition of their efforts, contractual guarantees and greater protection of assets).

Shaping the market. While utility provision is based on the assumption that water provision is a natural and economic monopoly, the reality is that alternative providers exist, are numerous and are affected by market forces to a greater or lesser degree. One way of proactively harnessing entrepreneurs in the interest of service delivery is to acknowledge the existence of this market and work to improve its functioning.

The current prices charged by independent providers in different neighbourhoods was publicized

One way outsiders can exert influence is to increase the transparency of the market in peri-urban areas. In Cochabamba, Bolivia, there has been an initiative to publish widely the current prices charged by independent providers (more often co-operatives than true entrepreneurs) in different neighbourhoods. This has raised awareness of the prevalence and thus importance of independent provision, but more importantly still, allowed consumers to see what rates they pay compared to their neighbours. Peer pressure and consumer voice have thus increased the competitive pressure felt by the providers (BPD, 2008). Similar measures are being considered elsewhere.

In large cities, creating associations for entrepreneurs has proven quite easy

Outsiders can also influence the responsiveness of the market. An option here is to promote and support professional associations. These are seen by some as a way to introduce some self-regulation to operators' activities, or a means of creating a manageable interlocutor with which government and others can engage. Peri-urban operations are a particular focus for associations. In large cities, creating associations for entrepreneurs has proven quite easy. Indeed Africa's informal operators have a long history of creating trade union structures, seeking thereby either to defend collective interests or develop networks of mutual assistance. Often all that is required is an appropriate invitation by policy-makers for independent operators to start to create an association. In Maputo, independent providers formed the association AMATI soon after the asset-holding company, FIPAG, expressed a desire to engage them. Comparable structures exist in many places – for instance the water-tanker association in Ghana; the association of water-reseller in informal settlements, ARE-QUAPCI, in the Ivory Coast; the union of vacuum-truckers, USV in Benin; or the Aguateros' Federation in Paraguay (Collignon and Vezina, 2000).

By contrast, in small towns scattered over large distances, creating the linkages required and organizing meetings between entrepreneurs is much harder. Associations that form in this context are certainly less spontaneous and require more support from either the regulator or from policy-makers. Although an association for Mauritania's small-town operators has existed for some time, it still represents only 3 per cent of the 320 operators, and has never succeeded in becoming a true interlocutor for ANEPA. The truth is that experience globally with associations has been very mixed, some successful, others not (see Valfrey-Visser et al, 2006 for further information).

Box 2. Formalizing independent operators in Maputo, Mozambique

In northern Maputo up to 200 small independent networks assure water distribution. Nevertheless these providers are unregistered and lie in the informal sector, their activities regulated by competition alone. The asset-holding company (FIPAG) and the regulator (CRA) have come to recognize the importance of their services and are now looking to integrate them into the broader framework of service provision.

Yet being informal, offers independent operators certain advantages which they are unlikely to forsake without a tempting counter-offer. To 'bring them out of the woods', they will need a better deal that addresses issues such as access to water resources, security of investment and regulation of tariffs (that acknowledges the investment they have made).

Harnessing operators via reform of the sector

The previous section discussed steps that could be taken within the existing framework that governs the water sector in many developing countries (although, to be clear, much of the focus to date has been on associations; some of the other steps suggested have been given little attention). In contrast, we now discuss steps that typically require changes to the policy and regulatory environment (i.e. are not 'policy neutral'). Some have been discussed at length, some are regarded as more radical. As a package, however, they offer significant potential to better harness the dynamism and innovation of independent network entrepreneurs. They include: the opening up of the sector to formal competition from independent operators; sub-contracting entrepreneurs; licensing entrepreneurs; investing 'upstream' of independent operators to support their activities; and adaptation of technical standards, bringing them more in line with the approaches actually being used in the field.

1. Opening the sector to competition for the market. Legally the right to provide water services is often granted solely to a formal utility which enjoys a legal monopoly (at least on paper). A keenly felt consequence of this is that entrepreneurs are *de facto* 'relegated' to the informal sector and deprived of the opportunity to benefit from market opportunities, donor support and other state assistance. An alternative is to formally open up certain segments of the market to other providers. In peri-urban areas there are various options (without completely jettisoning the monopoly contract).

One can introduce competition over network extension to new areas. Where the dominant operator proves slow to invest, the monopoly clause can be suspended for a period of time (ten years, for instance). This allows entrepreneurs to step in and build distribution networks, while ensuring an adequate return on investment. This

Some changes to the regulatory environment could help harness the dynamism of independent network entrepreneurs

Competition can be introduced over network extension to new areas

strategy has been adopted in Nairobi's slums to address the severe public health consequences of a huge backlog in investment (in what amounts to around half the city). Equally, one can allow competition for new household connections. Where the penetration rate of household connection is stuck at low levels (< 50 per cent of the households), there are strong arguments for opening the market to competition in the public interest.

In small towns the issues are typically quite different. National utilities tend to balk at serving small towns, believing their systems below the critical size needed to be financially viable. For instance, as Trémolet (2006) highlighted, EDM in Mali only distributes water in the 16 largest towns of the country, while SNDE in Mauritania also manages only 16. As for GWCL in Ghana; it has reduced its mandate to cover less than a hundred towns.

Entrepreneurs have found the means to make water provision in very small towns of Ghana, Mali and Mauritania viable. Opening the sector to competition has made it possible to diversify supply and, in the case of Mauritania, cover the best part of the backlog. There, 350 independent operators manage as many water systems in places where several thousands (and sometimes as few as several hundreds) of inhabitants would have had to wait a considerable time before SNDE reached them.

The challenge is to make this a deliberate consequence of policy decisions, not an unexpected side effect of the failure of the national utility (see Box 3).

2. Encouraging subcontracting. An alternative approach to direct competition for the market between independent operators and the

Box 3. Moving from competition to collaboration

A fundamental question is how the dominant operator (often a utility) perceives entrepreneurs. Indifference is widespread. In Bamako this reflects entrepreneurs' lack of visibility (they are not yet very numerous) and the challenges EDM faces in its 'core business' of serving the existing network.

Elsewhere the dynamic is more competitive in nature. In Maputo, Aguas de Moçambique (AdeM) is involved in a large extension project that is bringing networked water to a district where entrepreneurs currently hold sway. The displacement of these operators and the terms upon which this is done is high on AdeM's agenda and has prompted a tricky dialogue between numerous parties.

Creative negotiations can allay some concerns. In Manila the concession contract of the two operators initially encouraged them to find and support independent providers (whose connections counted towards their coverage targets). In Haiti the political power accorded the public provider, CAMEP, through its role in serving the slums has proven a great motivation. CAMEP (and others) also make money on bulk water sales to (in this case, non-independent) operators (Jones, 2004).

National utilities
tend to balk at
serving small towns

Often sub-
contracting is the
only means of
providing a public
service inside slums

dominant operator is to look into the potential to sub-contract the management of customers in marginal zones (slums, isolated towns, etc.) to an independent operator. Where this collaboration leads to increases in coverage there is a strong case for this being done for the public good. Yet many operators' contracts explicitly prohibit sub-contracting. Opportunities for such subcontracting exist in slums and the unplanned settlements, where uncertainty over land title acts as a brake on investment by the utility. In Abidjan, SODECI has sub-contracted 'licensed resellers' and in Port-au-Prince (Haiti) and Nairobi (Kenya) sub-contracting is the only means of providing a public service inside slums that contain up to 50 per cent of all households (BPD roundtable discussions, 2008).

Rural areas also offer scope, particularly where services need expanding to numerous small and isolated communities. In Morocco, the operator has explored sub-contracts as a way to increase coverage from the 360 communities it currently serves to more than 10,000.

3. Licensing entrepreneurs. The case of Lusaka (see Box 4) demonstrates that licences can indeed be one tool to identify, recognize and oversee independent operators. For those looking to integrate existing independent operators into the broader framework of service provision, especially in peri-urban settings, licensing the operators is often an attractive option. This means awarding licences to operate not only as registered companies (many already have trade licences or company registration), but as public service providers. Licensing is often the best way to identify entrepreneurs and can be used as a tool to push standards to improve or develop codes of conduct. Some

Box 4. 'Negotiating a deal' in Zambia

Lusaka's water trusts have been the context for an interesting deal, struck between the trusts and their 625,000 users on the one hand, and the Lusaka Water & Sewerage Company on the other, with the national regulator, NWASCO, acting as broker.

The tariffs charged by the trusts are significantly higher than those charged by LWSC, but despite this, they are strongly supported by their own users, who have rejected merging with LWSC and paying lower tariffs. This curious state of affairs stems from an understanding, inculcated early on in the development of the trusts, of the need for financial sustainability. Lusaka residents served by the trusts have seen much other infrastructure fall into disrepair and disuse and distrust the ability of LWSC to sustain a quality service over time.

The trusts, wanting to safeguard their independence, have struck a deal with NWASCO and LWSC where they will retain their autonomy over tariffs, but henceforth fall under the LWSC service licence. LWSC will assist them with major technical issues and now gain some role in provision to large areas of the capital that it previously lacked.

This is a clear example of the various parties searching for predictability in their relationships and planning for the further evolution of Zambia's urban water sector.

Licensing is often the best way to identify entrepreneurs and can be used to raise standards

view it as an adjunct to regulation; award or renewal of a licence can require such things as a safe source, certain minimum levels of service, periodic testing of water quality, etc. Such licensing processes have existed for many years in contexts as diverse as the licensing of standpipe operators (in Mali, Mauritania and Mozambique), the licensing of truckers associations (in Ghana), the licensing of re-sellers (in the Ivory Coast), and the licensing of rural network operators (in Mauritania) (Collignon and Vezina, 2000).

Licences may also provide opportunities for corruption

There are clearly both advantages and challenges to any licensing process. While they do improve awareness of independent operators (even if not all are likely to register), licences can also create an additional brake on supply (non-licensed entrepreneurs may decide to quit the business and others dissuaded from entering). There is certainly potential to improve service standards (licences are reserved for independent operators who respect a 'quality charter'), but licences may also provide opportunities for corruption (with entrepreneurs asked to pay bribes in order to obtain them). The broader hope is that licensing will integrate entrepreneurs' activities into the formal economy, yet the reality can be that governments lack the necessary bureaucratic capacity to smoothly, transparently and rapidly oversee the licence process.

4. Investing in water production 'upstream' of entrepreneurs. Where water resources are readily available (such as Maputo, Dar Es Salaam, Vietnam and Paraguay) independent operators have readily invested in boreholes, even where these prove to involve major and costly works (such as in Kathmandu or Sanaa). Having one's own borehole assures entrepreneurs greater independence and control of their supply. Yet in many areas of Africa (including Ghana, Mali and Mauritania), underground water resources are more limited and boreholes have a high rate of failure. Here availability of the resource becomes a key factor and principal investment risk.

Assistance with prospecting and borehole drilling can considerably reduce investment risk for entrepreneurs

An option is to support the abstraction of water. Particularly in small towns, external prospecting and borehole drilling can considerably reduce investment risk for entrepreneurs (and thus draw them to small centres that remain unserved by the national utility). Even in peri-urban areas, investing in the abstraction of raw water can be a useful step. Bulk water can either come via the utility (with incentives for them to on-sell it) or be developed independently. While the former has been tried to help supply Kibera in Nairobi, the latter was used in the late 1980s to reduce the growing water deficit in Bamako, Niamey and Ouagadougou (all information above from Hydroconseil, discussed in Valfrey-Visser et al, 2006).

5. Adapting engineering norms and standards. As discussed, entrepreneurs are particularly good at two things. First is 'knowing their customers'; they tend to live in the same districts and face the same

Only by simplifying standards can capital costs be brought down to realistic levels

constraints (powercuts, unpaved roads, insecurity of tenure). The second is their ability to adapt the standard of the service that they offer based on the vagaries of local demand. Crucially, it is this ability and inclination to innovate that provides their main comparative advantage. In both small towns and in peri-urban areas entrepreneurs have proven their ability to offer an adequate service at a modest price. This is no miracle – they achieve this by simplifying standards. Out go inspection chambers (in any case, their neighbourhoods often lack pavements), as does the recommended pipe depth of 120cm (as there is little risk of trucks crushing the pipes). Connections are made using PVC pipes, a meter and a stop-valve. Only in this way can capital costs realistically be brought down to the capacity of households to pay.

This evolution reflects common sense. Yet although entrepreneurs' strategies typically conform well to local demand, they rarely correspond to the norms and standards defined by national and international bodies. The consequence is that entrepreneurs find their quality of service called into question by officials and their networks deemed 'non-compliant'.

While pragmatism suggests that this contradiction between official service standards and the needs of poorer households needs resolving, changes challenge deeply entrenched attitudes shared by many engineers and decision-makers. Many are reluctant. Realistically however, if the Millennium Development Goals for water are to be at all feasible, such rigid doctrines need to be challenged. Legalizing new technical specifications, better adapted to unplanned areas (narrow, unpaved roads), to households' capacity to pay and to the business models of entrepreneurs would permit the recognition of water distribution systems that are certainly less sophisticated, but which are both functional and accepted by households.

Changes challenge deeply entrenched attitudes shared by many engineers and decision-makers

Negotiating a deal

We've discussed some of the rationale for engagement and practical actions that can be taken to harness the positive aspects of entrepreneurs. Yet proactive engagement with them is clearly a process, not a static event. Negotiating a 'new deal', with or without sector reforms is far from straightforward. How to proceed? Some considerations around preparing the ground and managing change follow.

A good first step is to fully map how households currently access water services

1) Preparing the ground. Experience has shown, in both Paraguay and Maputo, that a good first step is to fully map how households currently access water services. In each case, donors supported a thorough study that was accepted as valid by all stakeholders and which served as a spur to later dialogue. Such work needs to see how many

entrepreneurs are active and of what type, how many people they serve, their hours of service, quality of water. Should that data be accepted by the major actors in the sector, then you can move forward. If there is serious resistance to accepting them, it is very hard to make progress (from BPD Roundtable 2008).

Dialogue also needs reliable interlocutors to succeed. They group interests and reduce transaction costs. Yet they also need legitimacy. This means finding interlocutors (or intermediaries) that properly represent each constituency. The reality is that no one organization is likely to fully 'represent' the public sector; several interlocutors exist, including local and national bodies. Rather than shy from this, any process of dialogue should recognize it early, ensure the right people are represented and find some means (appropriate to that particular context) to balance the interests and outlooks of various government role-players. Above we've discussed the possible role of associations as an interlocutor for entrepreneurs – these certainly have advantages, but there are certain caveats (associations must be open to diversity, and cartels watched out for).

Early negotiations may well benefit from a little creative uncertainty as to what final outcome is expected. Yet sooner or later each party will want to know where it stands and what parameters are up for negotiation. Brokers can be very useful in both regards, playing a useful confidence-building role between parties at the outset and help smooth the evolution of any nascent partnership. It may be helpful early on to seek out brokers (external or internal to the discussions) and give them an explicit mandate to intervene. A useful early step for them is to identify likely conflicts and put in place mechanisms to deal with them (a widely accepted and neutral base of information can be crucial here). Another is to find areas of common ground, such as those in Box 5.

Water is an inherently political issue so champions with sufficient energy and influence to bring about change are needed. One potential champion for entrepreneurs is local government. Local authorities are typically more closely engaged with entrepreneurs than their national counterparts (issuing generic business licences and collecting local taxes) – their constituents benefit from the providers' activities.

2. Managing change. Entrepreneurs need to be engaged and kept engaged. This is not always easy when national dialogue tends to descend into long policy debates and the intricacies of legislative frameworks. Focusing on immediate and tangible issues is the best way to draw in stakeholders. Quick wins allow them, and others, to see merit in the process and act as a prompt and motivation if later (and possibly more controversial) discussions become bogged down. Change may well be more palatable when planned in small steps. Alterations to market structure or technical norms can be regarded as

Interlocutors
are needed that
properly represent
each constituency

One potential
champion for
entrepreneurs is
local government

Box 5. Both entrepreneurs and the utility have a desire for predictability and stability

In many contexts significant unpredictability about the security of investment and their investment horizon bedevils entrepreneurs. Their engagement with local authorities to procure business licences is a direct reaction. Insecurity drives up tariffs as operators seek to recoup their initial investment as quickly as possible. A key goal for reform is often to lengthen the investment horizon for entrepreneurs (for instance in Uganda's small towns where longer contracts are being debated) and provide predictability (such as Ho Chi Minh where the terms and conditions that govern the expropriation of an entrepreneur's network are enshrined in the agreement between the parties.).

Utilities also seek predictability, in their case about planning and the terms of future transition. What happens when, as in Maputo's Distrito 4, the network reaches an area where entrepreneurs are entrenched? Are they forced to withdraw or allowed to stay and compete? Policymakers may want to know what outcome is the best for the local households, but the operator may be more concerned about its bottom line and reputation. To incentivise utilities, discussion may need to initially focus on the short and medium term, as well as being open about the possibility of entrepreneur networks being absorbed by those of the utility.

Policymakers should avoid demanding 'compliance' overnight

'big-bang' – a focus on piloting alternatives first and generating more information can assist. Third parties, in the form of donor agencies, can help to broker and champion such processes.

Above all, policymakers should avoid demanding 'compliance' overnight. Rather weigh up successful and useful practices and, where needed, seek more gradual convergence over time. Policymakers should seek an environment that encourages entrepreneurs to gradually formalise their activities over time. All parties must then be creative when it comes to capturing and confirming any 'deal' being made.

One lesson from BPD's small towns' experience in Mali, Ghana and Mauritania (Valfrey-Visser, 2006) and from other sectors is that 'contracts' are by no means the whole story. Thus while the negotiation of a contract (or licensing procedure) can form a practical issue around which to structure early dialogue, this will not address many on-the-ground constraints. In contexts where local dynamics and individual relationships are crucial, and officials particularly change over time, licensing or contracts are only one tool, amongst several, that will structure and guide relationships between stakeholders. A good way to explore other avenues to capture and confirm the essential deal is to get suggestions from stakeholders; what do they consider provides security and what not?

Conclusions

A key tenet of any partnership is the allocation of risk to those parties most able to bear it. This is useful to bear in mind when honestly appraising how water services are delivered in many developing countries. Entrepreneurs have proven adept at dealing with customers whose incomes, tastes and attitudes to authority vary widely. Their ability to take on this level of risk has been proven many times over, as has their capacity to innovate technically and managerially in order to lower costs and improve reliability. Indeed on these and other measures their ability to outperform many utilities has been witnessed in diverse contexts across the globe.

Other risks lie outside their sphere, and yet can be attenuated by donors, policymakers and forward-thinking utilities. Some innovative thinking is taking place on this front. An important distinction is between policy and regulatory reform, which is often long and complex, and 'policy-neutral' actions, which can be taken now, without need for changes to the existing policy framework. There are clear lessons on both of these from other sectors, such as transport, health or agriculture, as well as support to small and medium enterprises, which could be better harnessed by the water sector.

Yet in much of the discussion about policy reforms and support strategies one important aspect tends to be overlooked – the risks of engagement for the entrepreneurs themselves. How can these risks be anticipated and assuaged so that a true dialogue develops? Too much discussion gets bogged down in policy formulation and platitudes, failing to benefit those who need it most – those many millions to whom neither entrepreneur nor utility yet offer a clean, affordable and reliable piped connection.

An important distinction is between policy reform and 'policy-neutral' actions that can be taken now

References

- BPD Roundtable (2008) 'Engaging entrepreneurs in the water sector' (not yet published), London.
- Collignon, B. and Vezina, M. (2000) *Independent Water and Sanitation Providers in African Cities: Full Report of a Ten-Country Study*, Urban Water and Sanitation, Program. UNDP-WSP.
- Chaponnière, Emmanuel et al. (2007) 'Technical assistance for the implementation of a water supply project in the suburbs of Matola and Maputo – Inception report', FIPAG / AFD.
- Conan, Herve and Paniagua, Maria (2004) *The Role of Small Scale Private Water Providers in Serving the Poor*, ADB.
- Jones, David (2004) 'Community-managed standpipes in Port-au-Prince, Haiti' *Waterlines* 21(2)

Kariuki, M. and Schwartz, J. (2005) *Small-Scale Private Service Providers of Water Supply and Electricity: A review of incidence, structure, pricing and operating characteristics*, World Bank Policy Research Working Paper 3727.

Trémolet, S. (2006) 'Adapting regulation to the needs of the poor: Experience in 4 East African countries', BPD, London.

Troyano, F. (1999) *Small Scale Water Providers in Paraguay. Urban Water and Sanitation Latin America and the Caribbean*. UNDP/World Bank Water and Sanitation Program.

Valfrey-Visser, Bruno, Schaub-Jones, David, Collignon, Bernard and Chaponnière, Emmanuel (2006) 'Access through innovation: Expanding water service delivery through independent network providers', BPD.

WSP-EAP (2004) *Increasing Access – The Experience of Small-Scale Water Providers in Serving the Poor in Metro Manila*, WSP.