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Small town water and sanitation delivery
Taking a wider view

"Only connect...
Living in fragments no longer."

E M Forster, *Howard's End*

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Please note that any factual errors are those of the authors.

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Executive summary

Our towns and cities are rapidly expanding. Worldwide, over 50% of the population now live in urban areas. In the developing world this rural-urban shift is even more extreme. Now, for every large town there are an estimated ten small towns – and these towns are expected to double in both number and size within 15 years and then, within 30 years, to double again (Pilgrim, 2007).

Whilst we may recognise a small town when we see one, there are challenges in defining and understanding them. In some countries small towns may be classed as those with a population of between 5,000 and 20,000, in other countries the figure is up to 80,000 or even 200,000. This difference poses a significant challenge for the design of appropriate and sustainable water and sanitation services as the solution for a town of 20,000 will be vastly different to that of a town of 200,000.

Small towns can show both rural and urban characteristics. Rural characteristics relate to the economic linkages to agriculture. Urban characteristics may relate to the role of light industry in the economy but are more often linked to living conditions as a function of density, and changing social systems as a reflection of increased diversity. This blend of urban and rural characteristics can undermine problem-solving approaches. Typical rural approaches such as community participation and mobilisation become more difficult to manage as communities get larger and more diverse, ie where traditional decision-making practices start to break down. On the other hand, small towns lack the resources of cities, making the application of urban approaches, where economies of scale or cross-subsidisation exist between users or between services, more difficult.

Most small towns tend to be diverse, dynamic and constantly evolving. They largely act as agricultural market and food processing centres and as centres of employment in small and medium-sized non-agricultural businesses. They normally attract people from rural areas and this expansion often accelerates when services such as water, schools and health centres are provided. Generally characterised by rapid unplanned growth leading to concentrations of low-income populations, people living in small towns are amongst the worst served for basic services such as access to water and sanitation and hygiene promotion.

Investments in small towns have simply not kept pace with the growing need for services. According to one study, they are largely neglected by policymakers and donors who have tended to support either rural programmes or infrastructure in large cities. Although the figures may have changed somewhat, a study from a few years ago estimated that 13% of development assistance had been targeted at small towns (Cardone and Fonseca, 2006). The predicted growth of small towns is a major development challenge which threatens to derail efforts to meet the Millennium Development Goals (MDGs) for water and sanitation. Given the difficulty of tailoring approaches to individual contexts, in those countries where small towns receive

assistance from central governments and donors, there tends to be a 'one size fits all' financing, technological, management and capacity building package.

Despite the challenges of tailoring approaches to meet each small town's requirements, there is a real need to get small towns onto the right track before unregulated growth, weak capacity and unhelpful policies allow these burgeoning towns to become sprawling, un-served and unmanageable urban areas. With this in mind, working with Building Partnerships for Development (BPD), WaterAid, with funding support through a planning grant from the Bill and Melinda Gates Foundation, have spent a year trying to answer the following two main questions:

- What is different about the challenges and potential solutions for the delivery of water and sanitation services in small towns as opposed to large urban or rural environments?
- Can we learn lessons from other sectors that deliver infrastructure that could inform the design of water and sanitation solutions?

The ultimate goal was to identify promising approaches to service delivery and also to create an analytical tool or framework that would allow those planning water and sanitation services in small towns to make appropriate financial, technical and management decisions.

Admittedly, with regards to the second question, our research fell short. More work and maybe different kinds of conversations are needed to learn from other sectors. As to the first question, our initial research tried to discover whether there is something inherently different about small towns that would influence the demand or supply of services. The priority was to understand how best to shift the emphasis away from reactive responses to more adaptive, creative, reflective approaches. Using a broader lens, the team focused on more effective ways to anticipate how small towns might develop and evolve.

An initial discovery was that many existing small town assistance programmes tend to result in finance and technology decisions that then dictate key planning and design decisions. Our emerging approach suggests that the technology and finance decisions must more carefully respond to the circumstances on the ground. These circumstances seem to be most influenced by how the town is connected or linked demographically, economically and politically to surrounding areas and how these elements evolve within the town itself. Thus, demographics, economics and local governance seem to have a clear bearing on both the demand and supply of water and sanitation services. These need then to be factored more coherently into the design and delivery of services. Although largely beyond the control of water and sanitation professionals, not understanding these influences could derail efforts to design better delivery of services.

Looking at the emphasis on connectedness, several colleagues made the parallel between our analysis of small towns with peri-urban areas or satellite towns. Whilst issues of connectedness also certainly apply to peri-urban settlements and satellite towns, these areas cannot so easily be separated from their adjacent urban areas. They are intimately and automatically connected to the infrastructure, economy and employment opportunities of the cities they surround. Similarly, they are intimately connected to both the politics and ambitions or expectations of those populations living in the adjacent cities. The impacts of these connections on small towns are less predictable. Thus, while we suspect that many of the issues we have flagged will be relevant and useful for other types of settlement, the connectivity or connectedness aspect appears to be the most critical determining factor for small towns' development.

Much of our analysis suggests that sustainability of small town programmes has not been helped by the 'golden opportunity'. Several policymakers and practitioners along the way suggested that there is a danger in offering (relatively) big money to small towns to sort out their water and sanitation service provision. It can create perverse incentives on all sides to put in infrastructure that may not be affordable or manageable even after a few years. The team saw this first-hand in several places. Consultants and construction companies make more money from designing bigger projects; politicians make a bigger name for themselves by bringing in bigger projects; donors get more money granted, contracted or lent to meet more macro targets; populations get quick fixes.

Key findings of this initial research include:

- Whilst certain generic elements apply to all small towns in the same country, such as election rules, national regulations, financing criteria, laws and decentralisation, each small town has its own particularities. A certain level of tailoring to specific contexts may be needed.

- This tailoring of approaches should be based on wider analysis that reviews the economies, demographics and politics of small towns in more detail. Otherwise the result has tended to be over-designed construction projects that cause towns to suffer financially or in other ways once the design teams and consultants have left.

- Small towns are inextricably connected and vulnerable to outside influences, both to the surrounding rural areas and the nearby larger urban centres, that impact on their economies, demographics and even decision-making.

- Small towns do not yet fully enjoy the economies of scale that allow them to cross-subsidise from group to group or from service to service.

- Small towns do not have the capacity to deal with shocks such as mass in-migration or other sudden changes.

Key onward action research work specifically for small towns will focus on these guiding questions:

- Do we need to be thinking differently about how we characterise and group small towns? Key considerations may not be directly related to technical aspects of water and sanitation service delivery but rather to demographics, economics and politics.

- Are there ways of delivering services (perhaps through the local private sector) that allow for a more flexible, staged or gradual approach to construction and financing rather than the big one-off project?

- What kind of national support structures would be most effective in supporting small towns in evolving service delivery models?

It is clear that unless small town decision-makers pay more attention to the wider influences on the supply and demand of small town water and sanitation services, the resulting systems will not appropriately match the development needs of these towns and will result in unsustainable services. Ensuring that small towns do not fall through the cracks may very well be the key to meeting the MDGs.

1   Introduction

This document presents the emerging findings from a year long preliminary piece of analytical work on the supply of water and sanitation services in small towns. The purpose was to attempt to synthesise existing knowledge and identify promising approaches. In a rapidly urbanising world where small town growth, in both size and number, is rapidly outstripping that of larger urban centres, we urgently need to find new approaches to ensure the provision of these basic services. The authors and their organisations are keen to test some of the many assumptions that can be found throughout the document.

The opportunity, as provided through a planning grant from the Bill and Melinda Gates Foundation, has afforded us the scope to explore well beyond the more traditional areas of the water and sanitation sectors using six countries (four African and two Asian) as the basis for this initial analysis. The challenge throughout has been to find an organising framework on which to hang the many different kinds of information and wide-ranging perspectives that emerged over the year. The authors are keen to understand whether the approach taken resonates with practitioners and policymakers.

For more information on the methodology and key research questions, please refer to Annex one – Our approach to the task: a unique opportunity.

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2   What's the issue about small towns?

2.1   The challenge of defining small towns in the developing world

We know that the world is urbanising. Between 1990 and 2010, the world's urban population is estimated to have increased by 1.2 billion people.[1] As of 2007, over 50% of the world's population lives in urban areas. In many low-income and some middle-income countries, between one quarter and one half of their total population live in settlements with between 2,000 and 200,000 inhabitants. Indeed, for every large town in the developing world (with a population of 50,000 to 200,000) there are an estimated ten small towns (with a population of 2,000 to 50,000). Both the population and number of these small towns are projected to double within 15 years, and then double again within 30 years (Pilgrim, 2007).

Our first challenge in trying to understand their water supply and sanitation situation was to define what was meant by small towns. Whilst we generally recognise a small town when we see one, commonly accepted definitions are not readily available and usually refer to what small towns are not rather than what they are. Obviously, small towns lie somewhere between rural and urban. The criteria for defining the rural-small town – urban continuum varies significantly from country to country usually based on the population size of the primary city or cities. Thus, if there is any categorisation beyond rural and urban, population size threshold is the most commonly used defining characteristic for small towns. In some instances, small towns are categorised as those with a population between 5,000 and 50,000 and in other national

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1 Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2009 Revision, http://esa.un.org/wup2009/unup/.

classifications, small towns are noted as those between 5,000 and 200,000 people. This difference in population-based classification poses a difficulty for an international study. Once we begin to look at the specifics of service provision, intuitively we know that solutions could easily be quite different for cities in Bangladesh of 200,000 compared to those for towns in Nepal or Uganda of 15-30,000.

Defining small towns purely based on their population size fails to adequately capture their dynamism and diversity. At the national level, the danger of not understanding this diversity could result in generic policy, finance and technological approaches that saddle small towns of 20,000 people with inappropriate or unsustainable service delivery systems that are more appropriate for towns of 200,000.

Some countries do include other elements such as relative percentage of the local economy that is not agriculture based (for example, in Nepal) or relative percentage of men not working in agricultural-related jobs (for example, in Bangladesh). Such criteria may, however, be sufficient merely to distinguish urban from rural.

Most small towns exhibit both rural and urban characteristics. Rural characteristics relate to the drivers of the economy through agricultural linkages. Urban characteristics may relate to the role of light industry in the economy but are more often linked to living conditions as a function of density, and changing social systems as a reflection of increased diversity. Thus, with regard to a clear definition, the literature only stops at providing an understanding of small towns by looking at some of their common characteristics. For our purposes, trying to identify approaches for the provision of water and sanitation services, as stated in Pilgrim (2007, p77), 'small towns straddle rural and urban spaces and have unique characteristics that make it difficult to apply either urban or rural strategies to them.' The larger community size (as compared to rural areas) is often identified as a limiting factor for community participation and mobilisation processes; the bottom-up approach that has worked for rural villages fails or requires serious modifications as systems become larger and more complex (Doe, 2003). From a cost-benefit perspective, using traditional urban approaches the problem of small town water supply is one of large capital requirements against limited economies of scale. (Refer to Table 1 on the following page for more detail on the classification of small towns in our six study countries.)

Typically, small town settlements in low-income countries that are not satellite towns in close proximity to a major urban centre, are characterised by a core trading centre and relatively scattered settlements around a densely populated commercial zone or core. Fringe areas tend to be more rural in nature, with mainly residential houses widely spaced from each other compared to the core. The main sources of income for populations in these areas are small scale trade followed by peasant farming and a few, generally agro-based, industries. Small towns attract people from rural areas, and tend to be diverse, dynamic and constantly evolving environments. The presence of schools, health and administrative centres may attract further in-migration (Mugabi, Dec 2006, p 188).

Thus, although available empirical evidence varies greatly, small towns in many developing countries have been found to act as centres of demand (markets) for agricultural produce from surrounding rural areas, and as centres for the production and distribution of non-farm goods and services for surrounding rural areas through the development of small and medium-sized enterprises (ibid).

Study countries	Existing classification of small towns	Population range	Other considerations
Bangladesh	Range of different classifications – more based on administrative determinations than local population or other characteristics.	5,000-50,000	Urban (as opposed to specifically small town) criteria: (i) Majority of male working population engaged in non-agricultural pursuits (75%). (ii) An identifiable central place where amenities and infrastructure services are provided. (iii) Density of population.
Madagascar	Different classifications are observed. The National Institute of Statistics (INSTAT) considers an urban centre as any commune in which the population exceeds 5,000. The law on urbanisation requires all communes with minimum population of 10,000 to develop a strategic document for managing their district.	District capitals and urban communes are those of between 10,000 and 80,000.	National, regional or secondary urban centres are labels allocated after analysing the socio-administrative category of a given town (administrative function, population size, size of urbanised area, economic function, interdependence of the town,[2] potential for the town to develop in the future[3]).
Nepal	Government administrative classification.[4]	5,000-40,000	Density greater than 10 people per hectare; less than 50% of adult population involved in agriculture; connected to strategic road networks; basic infrastructure (ie grid electricity and IT services, secondary school education and health services).
Nigeria	May not be enshrined in policy.	Widely defined as 5,000-20,000.	(Enugu State defines as between 8,000 and 20,000, as settlements of under 8,000 still exhibit 'rural' characteristics).
Tanzania	Defined by Local Government Act of 1982 based on population size.	5,000-50,000	
Uganda	Based on population size.	5,000-50,000	Urban centres of between 1,000 and 5,000 are defined as rural growth centres.

Table 1: Small town classification from the six study countries

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2 Level of facilities, other urban services and its structure.
3 Availability of energy sources, the context for further expansion including availability of land and space for urbanisation.
4 We suspect that the classification of small towns may only be part of the discourse in the water sector.

2.2 Understanding the urgent need for water and sanitation solutions in small towns

The latest report of the WHO/UNICEF Joint Monitoring Programme (2010) indicates that the number of people accessing improved water and sanitation in urban areas has increased since 1990. Those increases, however, particularly in relation to sanitation, are not keeping pace with urban population growth. If efforts to provide water and sanitation to the urban un-served continue at the current rate, by 2015 more than 2.7 billion people will still be living without basic sanitation and 672 million without improved sources of drinking water. Given their pace of growth as noted above, we can assume that a significant proportion of this un-served population will be in small towns. Small towns thus pose a major development challenge and threaten to derail efforts to meet the MDGs for water and sanitation which seeks to halve the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015.[5]

Investments in small towns have simply not kept pace with their large and growing need for services. Sector donors have historically supported either rural water and sanitation programmes or, increasingly, infrastructure and management in large cities. One analysis estimates that, 'of the US$3 billion in Official Development Assistance (ODA) flows to water supply and sanitation in 2003, roughly US$360 million (or 13%) [appears to have been] allocated to small town or related activities' (Cardone, 2006). Funding issues notwithstanding, just looking at policy and other areas, small towns clearly fall 'between the cracks' of a traditionally urban/rural divide in the development and policy discourse.

Challenging policymakers, donors and practitioners alike, small towns are generally characterised by rapid unplanned growth that includes increasing concentrations of low-income populations and run down or often non-existent basic infrastructure. Despite wide variation in national definitions of what constitutes a 'small town' as noted above, available data suggest that people living in these 'intermediate' settlements are among the worst served in terms of all basic services, including access to water, sanitation and hygiene promotion. Whilst the economies of scale at the geographic centre of small towns begin to allow (financially and technologically) for piped water supply systems, cross-subsidising to more costly, lower density, unplanned settlements on the outskirts usually becomes untenable. On the wastewater side, growing volumes of concentrated industrial pollution and human waste begin to pose serious threats both to public health and environmental integrity (including local water sources).

In some cases, policy reforms seek to support local service provision through the transfer of ownership and management of services to actors operating at the local level. However, local authorities still lack the capacity to provide or ensure delivery of adequate water and sanitation services in small towns. Financing mechanisms tend not to be appropriately geared to a staged approach that more adequately meets both the investment needs and the ability of local communities to pay. Technologies tend to come either from rural approaches or those of more major urban centres, making both the economies of scale and technological appropriateness insufficient at either end of the spectrum. Approaches such as aggregation of small towns into a single, joined-up service area make sense from a planning perspective but require significant negotiation to make them work effectively. Despite these challenges, there is a huge opportunity to get small towns onto the right track before the unregulated growth spirals into the inordinately more difficult and complex challenges faced in large urban centres.

5 MDG Target 7c.

2.3   The conundrums of small towns

As noted, the more widely understood pressures of major urban centres, combined with a focus on the plight of the rural poor, have tended to result in neglect of small towns. A general uncertainty around which approaches will make a real difference has furthered this lack of serious focus on small towns from across the development community. When small towns are a focus of assistance from central government and donors, both the lack of analysis and the lack of capacity, combined with certain rural or urban biases, tends to result in 'cookie cutter' approaches to water supply and sanitation provision that treat all small towns the same. Such approaches offer the same financing packages, the same technological solutions and the same management capacity training to all small towns regardless of their particular circumstances. There is clearly an analytical gap that requires closer scrutiny. Biases are not always deliberate but may result from a lack of clear practical experience where rural or more urbanised solutions are expected to translate directly into the small town context.

For obvious practical reasons, it is not possible to tailor solutions for each small town. Even advocating for more individualised treatment, or at least closer attention to classifications and typologies of small towns, has raised eyebrows for being unhelpful or too difficult. However, our findings so far seem to suggest that without a more tailored approach, small towns may very well be saddled with financial and technological approaches that, after only a few years, become burdensome and unsustainable. Efforts to decentralise responsibility recognise that more needs to happen at the local level. The mechanics and practicalities of decentralisation certainly require further analysis. **A clear recommendation is to understand what factors are generic to all small towns in a national or regional context and what factors require tailored solutions to meet a small town's particular context.**

2.4   How different are small town water and sanitation?

The businesses of water and sanitation service delivery, although inextricably linked, are very different. The ultimate client might be the same (for domestic services) but in comparison to water services, sanitation services are more complex, often involving multiple groups of stakeholders, considerably more land use management issues, different financing models and attitudinal shifts. Because of the emerging scale of the production of waste, sanitation services in small towns begin to require multi-pronged interventions in order to deal with faecal waste, wastewater, solid waste and drainage. This noted, each of these sanitation businesses can be broken down into sub-businesses, potentially providing opportunities and scope for the local private sector.

In the early stages of this work, there was concern that our analysis, like much in the water and sanitation sector, would be skewed towards water issues. Although this did in fact happen, particularly during the stakeholder consultation process, the contextual analysis framework presented later in this document appears to be applicable to making tailored service model decisions for either water or sanitation. With some modifications, we are confident that the initial lines of inquiry will be the same for both sets of services. Whether slight adaptations may be necessary for one or the other may only become clear as this framework is further tested and developed in a future phase of the work.

2.5 Stating the obvious – lines of inquiry regardless of settlement size

Our research has been designed to assess whether or not there is something inherently different about small towns that would influence the demand or supply of water and sanitation services. Our approach challenged us to look well beyond those elements that are within the scope of all water and sanitation project designs. Although stepping out of our comfort zone has proven difficult at times, we were convinced that, without widening our scope, we would miss important causal linkages and contextual issues related to small town development.

For this reason, this document reflects our pointed approach to not investigating in any depth those issues that we consider to be generic to water and sanitation service design regardless of whether in rural, urban, small town, or peri-urban settings. These generic issues are both technical and procedural and include defining and understanding the following:

- The service area and the standard demographic projections (usually based on available statistical averages) to understand water system demand.

- Local geography, surface hydrology and hydrogeology to determine suitable sources, water treatment requirements and system design requirements.

- Nature of the settlement patterns (for example, clustered/linear) to determine whether to centralise services or make them more localised.

- Storage capacity requirements and technical sizing specifications.

- Availability of land for infrastructure.

- Existing standards, laws and rights (to municipal services) as they apply to the local context; statutory planning processes.

- Available finance and financing mechanisms, including attitudes and practices around willingness to pay by the users.

- Standard management practice models and expectations around asset management and ownership.

- Standard aspects around procedures and contracts.

- Planning for provision as a service versus as a (series of) construction project(s); attitudes to public service delivery (in relation to using business principles, cross-subsidising, ring-fencing, expenditure planning etc).

Again these all reflect standard design factors that would be taken into consideration whether designing a rural scheme, a small town system or an urban service. Our assumption is that these would not vary significantly for small towns.

3   Introducing the emerging framework

In many ways this exercise has been like doing a complicated jigsaw puzzle without using the picture on the cover of the box. After months of thinking through the issues around small towns, we may have arrived at some kind of image. We have latched on to a few simple aspects that help us to analyse small town situations. As expected though, the approach still requires further testing and the implications for water supply and sanitation service provision options require further thought.

Our initial goal was to answer the seemingly simple question of what is different about small town water and sanitation service delivery vis-à-vis rural or larger urban settings. As the work progressed though, it became clear that we were building up a way of analysing small towns that strayed quite far from the water and sanitation sectors. In other words, in each of the six countries visited, a majority of the most influential factors with regard to service delivery in small towns seemed to be not directly related to water and sanitation. Our goal was not to bring these factors under the control of water and sanitation professionals but to recognise that without understanding these factors, water and sanitation professionals would get it wrong.

Indeed, whilst recognising the validity of these lines of inquiry and their enabling and disabling impacts on both demand and supply, the team received many quizzical looks when, for example, asking engineers about the impacts of social capital or finance specialists about political decision-making. Whilst some interviewees clearly suggested that our approach took them out of their comfort zone, most saw it as a welcome opportunity to place small town water and sanitation service delivery into a much wider context.

Perhaps obvious in hindsight, some clear 'Aha!' moments emerged throughout the process:

- We quickly recognised that some generic elements would apply to all small towns in a particular country given the macro context. These are defined under areas such as election rules, national regulations and standards, financing criteria, laws and procedures around decentralisation, even to some degree national culture as it shapes attitudes to risk, and solidarity and regional working.

- Defined criteria should allow us to group certain kinds of small towns together which would take the burden off individualised approaches for each small town. However, each small town has its own particularities and thereby, difficult as this will be, some aspects may require tailored solutions for each specific context.

- The need to ensure that programmes are not seen by local communities and designed by consultants as a 'golden opportunity'. Over-designed projects and programmes leave towns financially strapped once the consultants have left. Finances cannot be allowed to dictate the programme but rather that the programme of work is designed around affordability and

makes a realistic assessment of future finances available for operations and maintenance, expansion and rehabilitation. Similarly, many of the systems we saw were too complex to be operated by communities but too small to be managed by conventional urban water utilities that could cover their operational costs.

- With regard to accountability, for a variety of reasons, small towns are either largely ignored or are at the mercy of a wide range of bureaucrats, technocrats and consultants. Support structures must have a longer accountability frame than only until immediately after construction is completed.

The primary learning early on was that the 'cookie cutter' approach undertaken in a number of countries ultimately does not meet the current and developing needs of small town populations.

3.1   Interests of different stakeholder groups

Throughout the process we have attempted to understand what different stakeholder groups might need from an analytical framework on small town service delivery. The entry points into the topic are bound to be different, as highlighted for some stakeholder groups briefly below.

WaterAid, our initial target, may use the framework to forge new partnerships and to test approaches in arenas that are different from major urban or rural ones. The framework might help international NGOs to make the linkages between their activities and wider shifts in the political economy of small towns.

Donors and **international finance institutions** are quite focused on meeting the MDGs. Given the focus on targets and beneficiaries reached, there needs to be a cost justification for their investments. The transaction costs are too high to work on tailored solutions in each small town. The emphasis has to be on bigger programmes that either reach more people in urban areas or that cluster towns together. For small towns then, working at scale mandates, for example, the design of a lending programme for tens of towns. Admittedly, the conclusions we have drawn so far about the need to tailor solutions to individual towns or typologies of towns may appear cumbersome and challenging for this stakeholder group. A middle ground is required that supports a menu of options for different groupings of towns.

As for **national** and **local stakeholders**, national governments' roles are often varied and dispersed with regards to small towns. The overarching interest is to be able to prioritise how resources are allocated. The framework below attempts to unpack both the informal and formal influences that shape rule-setting and resource allocation.[6]

For **local governments**, analysing their prospects, trends and gaps more accurately may also help them in the negotiations amongst the business community, local administration and local politicians or even in their negotiations with regional and national government.

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6 A useful way of thinking through these informal and formal relationships as they relate to governance issues is from the Institute for Development Studies (IDS) – *An upside down view of governance* (IDS, 2010). The IDS study points out that 'instead of viewing informal arrangements as a major part of the governance problem, they could also be part of the solution'.

3.2 The unpredictable dynamic – understanding the internal and external influences on small towns

Some small towns seem to hardly change from one year to the next. Most that we saw, however, are experiencing significant change – either rapid population growth but also, in a few cases, rapid decline. A key factor in our thinking centred around a town's ability and capacity to manage its changing circumstances and the demands that these circumstances make on service delivery. In many places, growth and change are unpredictable. For example, in much of Nepal, the Maoist movement drove people from the countryside into the small towns at an alarming speed. In the south of Bangladesh, cyclones drove people and economic activity into the small towns of the Sundarbans. Some of this movement is a natural transition to an urbanising economy; much of it though, is less predictable. Such shocks impact small towns disproportionately more than larger urban centres.

In many small towns the challenge is to understand the impacts of these changes and to find the capacity to cope with the new circumstances. Our assumption is that wider analysis around the shifting nature of demand and the factors influencing supply must be used to narrow down the service delivery models that will then narrow down the technologies and the finance options. The order of events and analysis usually appears to be the opposite.

To understand these influences, the research team teased out interlinking elements of demographics, function of the town, and autonomy and decision-making (see Figure 1). After much debate, the overarching factor that seemed to define what differentiated small towns from rural or urban agglomerations came back to the dynamic and often intangible notion of what the connections are that a small town has with other rural or urban settlements. For urban centres, these 'connections' seem less of a factor as they are more self-reliant with services, have economies of scale that allow for cross-subsidising from service to service or user to user and they have significantly more absorptive capacity to deal with physical shocks, in-migration or other events or trends. For rural settlements, such connections are largely either about physical connectedness (roads to take agricultural produce to market and users to basic services such as education and health) or connections through remittances and other allegiances from rural out-migration. Whilst this connectedness is incredibly important to rural households, our assumption is that these factors do not really influence the demand for or supply of water and sanitation services.
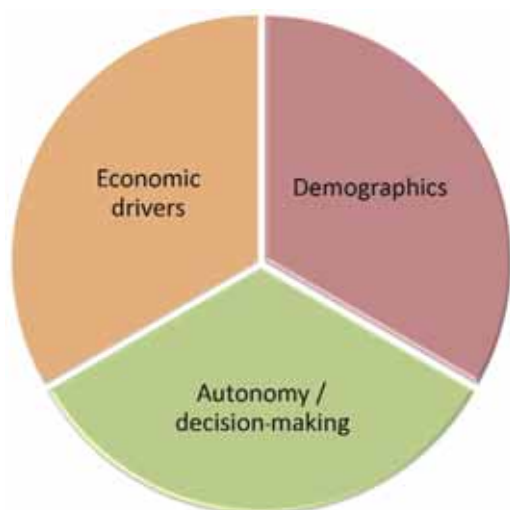

Figure 1: Elements of analysis

Figure 2: Three tiers of connectedness

Several colleagues also made the parallel between our analysis of small towns with peri-urban areas. Whilst issues of connectedness also certainly apply to peri-urban settlements, these areas cannot so easily be separated from their adjacent urban areas. They are intimately and automatically connected to the infrastructure, economy and employment opportunities of the cities they surround. Similarly, they are intimately connected to both the politics and ambitions or expectations of those populations living in the adjacent cities. With the exception of satellite towns, which can be quite similar to peri-urban settlements, the impacts of these connections on small towns are less predictable. Thus, while we suspect that many of the issues we have flagged in the approach below will be relevant and useful for other types of settlement, the connectivity or connectedness aspect appears to be the most critical determining factor for small towns' development.

We have unpacked this connectivity along three levels – external, town and household (see Figure 2). The three elements are best viewed, as shown in the graphic, from concentric circles starting from the outer circle of external, town and then household level in the inner circle. Across these tiers we overlay three elements of analysis (Figure 1) that provide us with the overall analytical framework as represented in Figure 3 below.
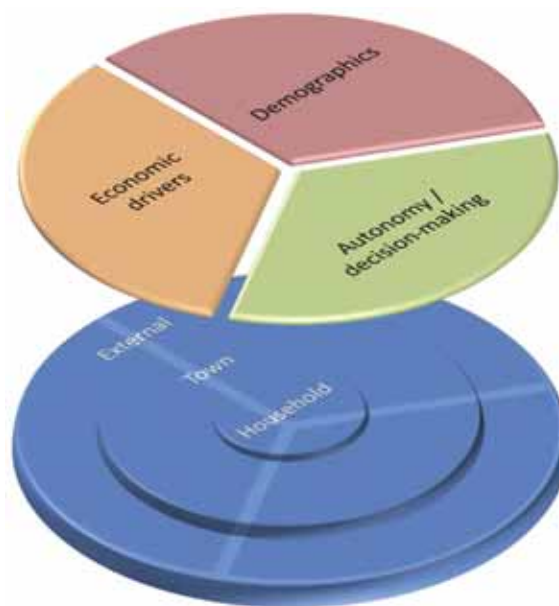

Figure 3:
Combined
analytical
framework

This can also be represented by the following three-by-three matrix:

	Demographics	Economic drivers	Autonomy / decision-making
External			
Town			
Household			

Table 2: Analytical framework represented as a matrix

3.2.1 Unpacking a small town's external connectedness

Looking at how a small town is connected to its rural hinterlands, other nearby small towns, bigger urban centres or the capital city is one way of understanding connectedness, ie connection to a world outside the boundaries of the small town. In this light, small towns serve as transfer and transition points, stepping stones and conduits for people, goods and services. Literally based on how connected the transport systems are, they may also serve as less complicated places for certain agricultural or industrial investments where land and other resources (natural and human) are more readily available. Proximity to other urban centres or the capital city, though, may not have any bearing on a town's connectivity. Not being connected via economic or social links or, even at a more basic level by good transport links, can result in even those towns near to urban centres being seemingly quite isolated. Whether close or distant to other urban centres, this isolation can hamper the transfer and uptake of ideas, resulting in stagnation or alternatively, bolstering the resilience of a small town, creating innovative, home-grown approaches to problem-solving.

One element that needs to be understood is how present the State is. What is the actual (as opposed to the designated) role of national and regional decision-makers in the functioning of the town? Does the policy arena actually support more tailored approaches to each town? We started to see evidence of this in Nepal where the discourse at the national level was very much about recognising an emerging typology of towns and how they fit into regional development.

As noted, a town can be connected through political processes as well as political biases towards or against them based on demographic makeup, historical or cultural significance, or charismatic leadership. More broadly, small towns can be seen in the national psyche with nostalgic yearning (ie 'I wish we could move back to the small town I grew up in where life was much simpler') or they can be seen as bastions of traditionalism that are not keeping up with the times. Some of these perceptions may be a function of who you ask and how many generations of their family has lived in a big city. Interviews did suggest though that big cities in the developing world may not hold the same kind of pull as in the developed world. Although they may offer economic and educational opportunities, big cities may not be seen as desirable places to live. These biases could have relevance, for example, in terms of who is taking decisions on how national funding is allocated and whether small towns are seen as an integral part of the country's development plan. It also has a bearing on whether small towns are seen as capable of acting on their own or whether they need to be told what to do and have their hand held every step of the way.

Other aspects of these wider linkages relate to a town's specific reputation. In other words, do people want to move to the town because of perceived economic, education, social or other opportunities? Similarly, do people with money want to invest? These aspects speak not only to the nature of demand and the demographics at household level, that will be touched on again below, but also to whether the town can attract and keep professional staff (including the water and sanitation professionals required to run more complex systems).

A town's reputation is also a function of an expressed vision for its future. This may very well involve the development of high-end water and sanitation technologies based on the kinds of people and companies that it envisages will be a core part of the town's make-up in the future. The key will be whether the town's population buys into this vision and are thereby willing to pay for it upfront or find ways to build up gradually through various stepped or phased approaches.

Based on these and related issues, a series of questions begin to emerge as follows:

Demographics	Economic drivers	Autonomy and decision-making
External • What national policies are in place with regard to supporting (or slowing) small town growth? • What are attitudes towards adjacent towns? Are they in competition for resources or profile? Do they work together on other services or projects? Are there economies of scale to be gained from clustering adjacent towns? • Do people want to move to the town (because of economic, education, other opportunities or social linkages)? Do people with money want to invest? Are there aspirational issues that influence types of investment or technology choice? • Is there likelihood of the town being swallowed up by other nearby cities?	• What are the external sources of finance for the town? Can the town raise local revenue? Are there government investment and other economic policies in place that influence small town economies? • What aspects of the wider economy currently, or will likely, influence supply – deforestation or shrimp farming's impact on water quality, for example? Are there flows of goods, people, services from the town to rural or other urban areas that impact on demand? Are there remittances or other (seasonal) income sources that could affect demand?	• How present is the State? What are the actual roles of national, regional and local decision-makers? Does the policy arena support more tailored approaches in each town? What is the interface between politics and national technocracy? Is there technical support available? • How much access to information and ideas does the town have? How isolated is the town? • What professional capacity does the town have – both in administration and in other sectors? Can it attract professional capacity? • Is there a vision for how the town would want to be in 10-20 years? What (externally) influences this vision (exposure to other towns, for example)? Is the town cut off from resources due to political or social biases from the regional or capital centre?

Table 3: External tier analysis – guiding questions at the external level

Learning from country visits

The town of Paikgacha in **Bangladesh** exhibits the isolation that stifles local government but spurs on entrepreneurship through local business. In essence, perhaps as a function of distance, although other factors may also be important to unpack, the local government appears to be quite isolated from the wider influences of national government. They did not suggest that there were thriving channels for small towns to share information, ideas and learning. However, a family-run business was clearly taking advantage of the gaps in the

delivery of water supply by operating a borehole and then selling water to 800 customers in neighbourhoods near the family home. The incentives for them to expand their profitable business into other parts of the town or adjacent small towns, however, were not clear to them, despite some obvious demand.

In **Nigeria**, as population densities increase and with them land pressures, resulting in falling yields for urban agriculture in many small towns, a clear potential exists for sludge re-use.

Bandipur in **Nepal** is a clear case where reputation as a picturesque mountain top community with potential as a tourist destination is encouraging investment. There are strong sustained linkages between the people in the town and those who have moved to Kathmandu and even further afield.

In **Madagascar**, the financing of infrastructure can be a major barrier to the development of small town services. However, one dynamic mayor has managed to circumnavigate this challenge by creating links with over 15 different donors, including 'twinning arrangements' with other towns and cities, to get projects sited in his locality.

WaterAid

3.2.2 Unpacking the linkages within small towns

Unpacking the demographics, economic drivers and autonomy and decision-making processes within a small town raises some issues that might normally be overlooked when designing water and sanitation projects or interventions.

Beginning with the drivers of inward migration, understanding these dynamics at a town level can ensure that the planning and design of water and sanitation services more effectively meet the changing needs of the town. In all towns visited and in all examples looked at during this work, we did not find much evidence of decision-makers going beyond predictions of basic numbers of users. In-migration disproportionately impacts small towns compared to the absorptive capacity of large cities. Understanding these dynamics should lead to different discussions around investment strategies.

Similarly, as other changes occur in the town, these may have additional impacts. For example, improved services may cause land prices to rise, encouraging people to sell their land. The impact of this on poor households may be significant. On the one hand, this might provide significant cash injections for poor people with land title, enabling them to be able to start a business. On the other hand, it causes populations to be displaced, moving from serviced areas to un-serviced areas. The scale of land valuation increases proved to be dramatic for the small towns visited, particularly those in South Asia. In both Bangladesh and Nepal, land prices in several small towns has risen by 500-1000% in just five years. At the town level, this potentially makes land unaffordable for infrastructure investments, and urban planning for infrastructure and other services more problematic. The internal displacement process that occurs is similar to what happens in larger urban areas, but the ability of small towns to respond adequately to these rapid shifts is much more limited. Again, current planning and design processes simply do not take this factor into account.

Additionally, understanding the local economic drivers and the economic cycles or seasons is necessary to understand cash flow in the town, what water is or may be required, what waste is generated and when, whether the needs change at different times of the year or other factors. Water and sanitation professionals have a tendency to over-design. To draw a parallel from solar lighting, we tend to design as if people immediately require three lights rather than understanding that they need light (at different times) in three rooms. As noted above, we may need to understand the actual needs and requirements better. Understanding economic activities in the town may also help to identify who else might be able to invest in water and sanitation services or the potential to tap other economic activity revenue streams to cross-subsidise for basic service development. The longer term effects of such a strategy might well foster an increase in local economic development overall which in turn may increase the user revenues to be able to pay for improved services.

Finally, a detailed understanding is required of what decisions small towns are allowed to make around issues such as land use, financing for investment priorities and staffing. Equally important is an understanding of the interplay between the roles of national ministries and departments, elected officials, public servants, local elites (business, traditional or otherwise), poor people and citizens more generally. In all the countries visited, we heard about the exceptions of towns or projects that have done something different and got it right. In almost all such cases the key to their success appeared to revolve around the fact that they were implemented at a time when the 'rules' were not yet in place or that an individual or organisation took creative leadership within or around the 'rules'.

The sector often cites the lack of proper local governance and capacity as a key barrier for development at small town level. The IDS work (IDS, 2010) provides some insight into how more informal governance processes (including mixing the traditional and new bureaucratic) may allow for a re-shaping of the incentives and influences towards more comprehensive development benefits rather than those that are skewed mostly in favour of elites. In other words, understanding which households or individuals have influence over local decision-making and what incentives they may or may not have to take decisions that meet the needs of the entire town's population, is as important as developing mechanisms for the poor to participate in decision-making. In most places we visited, the local government or municipal structures were by and large influenced or directly managed by the local business elite. Water and sanitation service investments through existing channels appeared to be clearly skewed towards this group's own needs. Where other external agents such as NGOs were involved, efforts focused on the poor as a means to redressing the balance. However, such efforts will have little effect unless they include attempts to work within or even change the decision-making processes.

Understanding existing cultures of solidarity or social cohesion might help to unlock discussions with decision-makers around issues of ensuring equitable and inclusive service provision. Small towns may still offer traditional support and solidarity structures, though significant growth may undermine these aspects. Although limited, some evidence was found of communal funds being invested in social services. Examples include community forestry income being invested in schools and clinics and in one case, water connection charge subsidies for poorer families. Examples exist from other countries of communal savings schemes for house improvements or even charitable assistance for funeral costs. Whilst these practices may very well shift as a town gets bigger, this kind of social capital could have a bearing on, for example, whether community labour would work for construction of water services.

As this relates to in-migration, in some places there appeared to be a clear welcoming attitude towards in-migrants. In other places, for a host of reasons, be they ethnic or religious, economic or political, in-migrants were not welcomed and their increasing numbers provide a source of fear that they will tip the political balance in a town. The key elements here are around whether there is a culture of cross-subsidising or internal solidarity and what limits households already residing in the town think are reasonable as a cost to bear for a growing town.

When speaking to national level actors, bilateral and other international organisations, much was said about the lack of capacity at local level to plan adequately. What seems to be most important for small town planning is getting the overall analysis right, establishing the development vision and clearly defining the main planning principles, time horizons and mechanisms for monitoring and updating. All of this relies on understanding the interconnections among demographic, economic and political processes and the impacts that these have on service delivery.

As noted in the previous discussion around stakeholder interests, incentives across the board encourage large one-off infrastructure investments. Either the sector needs to think harder about how to overcome the challenges that this approach may heap on small towns, or we need to think more carefully about how staged or phased investments might more sustainably meet the needs of small towns.

Demographics	Economic drivers	Autonomy and decision-making
Town/Internal • How do higher levels of service delivery impact on in-migration? • Is there a culture of cross-subsidising or internal solidarity? (How does this impact on financial flows?) • What influences social capital and social cohesion? Is participation consistent or issues-based? • Are 'communities' (spatial or by group) able to hold providers and decision-makers to account? What is the influence of (changing) demographics on decision-making?	• Is there scope for cross-subsidising within the town from one sector to another (or from one season to another) to allow for sufficient cash flow for the provider? • What is the dominant industry? • Who, beyond local government, is investing or would invest in water supply or wastewater treatment and why? • Is in-migration or economic investment influencing land availability and cost? • Are economic activities seasonal or constant? • Is there scope for re-use?	• What decisions are taken at the local level (on municipal finance, on investment priorities, on town planning and zoning)? How is budgeting done? • What is the interplay among elected officials, public officials, elites (business, traditional etc)? • What is the town's capacity for managing (including borrowing)? • How does the town regulate service provision?

Table 4: Town tier analysis – guiding questions at the town level

Learning from country visits

Towns in **Nepal** were attempting to use population projections over a 20 year period but not necessarily with any degree of analysis of what demographic was moving in to the town and what their expectations and requirements might be around service delivery.

The town of Hai Bomang'ombe in **Tanzania** noted an extremely rapid level of growth and in-migration as a result of investments in water supply that made water available 24 hours a day, seven days a week.

As noted previously, in the town of Paikgacha in **Bangladesh**, a private water vendor was providing services to neighbourhoods adjacent to his house. The authorities were happy to allow him to provide the service but the provider was reluctant to expand the business too much lest the authorities begin to take another approach to his investments.

As is common in many small towns, the town of Kibibi in **Uganda** only has electricity three days a week. This seems to be the primary determinant for water services.

In an attempt to bypass unreliable formal service providers, poultry farmers in one small town in **Uganda** were investing in the construction of their own wells. The presumption is that the huge financial outlay involved will be more than recovered by the additional growth in business made possible from a reliable and plentiful source of water.

The town of Bandipur in the mountains of **Nepal** was re-fashioning itself as a tourist town and subsequently trying to understand how to meet the seasonal fluctuations in demand for water supply. The town of Mwapwa in **Tanzania** sees casual labourers living in the town during the dry season, also creating significant seasonal fluctuations in the demand for water.

In one town in **Nigeria,** economic activity was severely hampered by lack of water availability in the dry season. The collection of rainwater in the rainy season though, made investments, cash flow and financial planning difficult.

3.2.3   Looking at the small town household level

The bulk of our thesis on wider connections and inter-linkages takes place at the upper two levels – looking at influences that affect the town from beyond the boundaries and at the town level. Many of the factors at the household level are similar to what one would look for across different densities of settlement, such as income and affordability, consumption patterns etc. For small towns though, some specific questions may need to be asked at the household level around the demographics of who is moving into the town, what they expect the town to provide, where they came from and how long they intend to stay, or what skills or investments they might bring with them.

As in other settings, most people's living status has a direct bearing on whether they will invest themselves in either water or sanitation and what they expect the state to provide. Whether householders see themselves as permanent or transient and whether they have land tenure or are untenured are two factors. If they are renting, the onus to invest is probably on landlords who may be on-site and sharing the same facilities or managing the property from a distance. If the latter, landlords' primary incentives are around economic return which could suggest that the availability of local water supply commands a higher rent but toilet facilities may take away space from other rooms that can be rented out. A further consideration is whether the provision of higher levels of service will impact adversely on the poor by increasing rents or encouraging them to sell their land. Again, these are issues that are relevant certainly to urban, peri-urban and small town settings, though perhaps to a lesser degree in rural settings.

For small towns, a heavier emphasis may need to be placed on the issue of transience or permanence. In many places in Nepal, for example, informal interviews suggested that many families wanted to move back to their rural areas of origin after the Maoist conflict subsided. The usual assumption that, having become part of the urban landscape families will want to remain there, may not prove true. Even if families do end up staying in small towns or urban areas, their own perception that they will stay there for a short period of time will influence

the demands they make on service providers, the levels of investment they would be willing to make more directly or the level of participation they might seek in the town's development processes. Understanding users' investments in other areas (land, materials, education) should help explain their attitudes towards whether they intend to stay or not (or whether they intend to 'return home' or move to a bigger urban centre). Understanding the underlying dynamics in a small town's demographics (at household level) will provide more accurate projections and appropriate decisions for services provision.

From a household economics perspective, whether people work outside the home or are home-based makes a difference to demand, as obviously does the issue of whether they are using water for uses beyond those inside the home such as urban agriculture or small cottage industries. Understanding how much of household economics is based on a cashless economy is important in order to gauge what money is available in the system to pay connection charges or tariffs more generally. Again, these are generic to many settlement patterns.

An exacerbating problem for small towns is the fact that, in many places we visited, a large proportion of poor households seemed to be predominantly female-headed while men were off working elsewhere and sending back remittances. A closer understanding of these dynamics from an economic perspective would be helpful. Are remittances seasonal? Under these circumstances, how are funds likely to be apportioned?

Similarly, understanding the political voice of these generally poorer households and whether they can make any demands on the system in small towns needs to be juxtaposed against the decision-making roles of business and other elites. Are communities of people (be they determined spatially or as a group of people with common interests) able to hold providers and decision-makers to account?

In order to hold providers and decision-makers to account, households and communities need information about what the town is meant to provide, how tariffs are set, mechanisms of re-dress when services are promised and/or paid for but are not provided, and other aspects. Small towns are where traditional forms of decision-making begin to 'break down' or create power vacuums as they bump into local government and their administrative and technocratic rules and restrictions.

Demographics	Economic drivers	Autonomy and decision-making
Household/Micro • Do households consider themselves to be permanent or transient residents? (Do they rent or own their house/ property?) How does this impact on investment (by household, landlord, town, other)? • What are the influences on household demographics? How do these influences shape expectations for and demand on service delivery?	• Are there seasonal or other influences on household economics that could affect service delivery? • Do people work outside the home or are they home-based? How do higher levels of service impact on the poor (raises rent, encourages them to sell etc)? • How much of household economics is based on a cashless economy?	• What are in-migrant expectations around services? How are in-migrant user preferences incorporated into decision-making? • How are users made aware of options available? How are they expecting to be involved?

Table 5: Household tier analysis – guiding questions at the household level

As noted throughout this document, the ideas that have led to the framework are still very much in a gestation phase. Given that successful models for and approaches towards small town water and sanitation provision are not readily apparent, policymakers and practitioners need to understand more about the various dynamics that influence these settlements. Again, we are not suggesting that traditional lines of inquiry be sidelined or ignored but rather that small towns need to be seen through a more systemic lens.

Learning from country visits

In one town in **Nepal**, poor in-migrants were not looked on kindly as they were stretching the resources of the town. Difficult decisions had to be taken as to whether to provide everyone with the same level of service. Initial and foreseeable investments were primarily focused on central areas. In other towns, in-migrants were seen to be boosting the potential of the town, bringing new skills, cash and increasing the population in such a way that it pushed the town into a different administrative category that brought more funding from the central government.

In some countries we visited, water scarcity has led to rules being put in place regarding urban agriculture. In Hai Bomangombe, **Tanzania**, households within the town's boundaries are permitted to use household connections or public water points to water only small subsistence gardens at the household level. Water for large-scale agricultural purposes must be found elsewhere.

In both **Bangladesh** and **Nepal**, massive increases in land prices in small towns were seen to be pushing poor people to the margins and reducing available land for infrastructure.

4 Defining sustainability in small towns and working at scale

> *"Think simple as my old master used to say – meaning reduce the whole of its parts into the simplest terms, getting back to first principles."*
>
> Frank Lloyd Wright, *Architect*

Throughout the process of unpacking small towns, the team tried to understand those factors that influence not only the design of service provision but also its sustainability. Coming back to first principles suggests several things. Firstly, sustainability of the service probably has less to do with the technology than it has to do with wider circumstances in the town. Secondly, all towns cannot be treated the same. Whilst there will be generic issues about national rules and regulations (which can in fact be re-assessed and modified), each town brings its own particular circumstances that may have a bearing on the success or failure of an approach. The drivers of demographic change, the function of the town and the resulting economy, and the nature of the relationships between who influences or sets the rules and those who receive the services, are all important elements. Sustainability can only be created by understanding and weaving in these factors.

Much of our analysis suggests that sustainability has not been helped by the 'golden opportunity'. Several policymakers and practitioners along the way suggested there is a danger that offering (relatively) big money to small towns to sort out their water and sanitation service provision creates perverse incentives on all sides to put in infrastructure that will not be affordable or manageable, in many cases, even after a few years. The team saw this first-hand in several places. Consultants and construction companies make more money from designing bigger projects; politicians make a bigger name for themselves by bringing in bigger projects; donors get more money granted, contracted or lent to meet more macro targets; populations get quick fixes.

A clear message came from several corners that more modularised or staged approaches to both technology and finance were needed. This would allow for the gradual build up and expansion of a service provision system that is more affordable and more adaptable. One colleague suggested that such evolutions could see land procured and primary underground infrastructure invested in earlier on. The above ground infrastructure would then be gradually built up over time but allowing for changing circumstances and boundaries. Such modularity may also allow for easier reduction of services should the town be in decline.

Clearly, for a variety of reasons, small towns require a flexible approach to planning, implementing and operation. Policymakers and practitioners should not be relying on a single technical or management model. Instead we should make use of a dynamic and flexible mix in which different supply options are provided for different consumer groups and stages of town development (Mugabi, December 2006).

Throughout the research process, the team struggled somewhat with the need to tailor approaches to specific towns versus the sheer number of towns that need support. It has been agreed all along that working solely on a case by case basis is impractical. Working at scale thereby came to mean ensuring that policies worked in favour of small towns and that they recognised and supported different kinds of towns. It also means that different policies or approaches may very well be required for towns of 20,000 inhabitants versus towns of 200,000. The design of NGO programmes should be based on supporting this policy development, unearthing the differences between small towns and identifying a menu of options that respond to the findings of wider contextual and stakeholder analysis. In time, this work may generate a quicker assessment methodology that would allow for some short cuts to be taken.

WaterAid

5   Learning from other sectors

A key component of this planning grant was to see if water and sanitation professionals could learn from how other sectors work in small towns. This was for two purposes:

- To understand if there were ways that the health, education, telecommunications, energy or other sectors reach poor people in small towns that could be instructive for the water and sanitation sectors.

- To determine if there were features of other sectors' approaches on which the water and sanitation sector could piggyback – combining forces to allow for economies of scale, greater efficiencies, innovations or otherwise.

In each country we visited we held conversations with practitioners and policymakers from other sectors that were initially identified as the most relevant to our work. Admittedly, time was short but for the most part these discussions were not as helpful as we would have liked or expected. A few key explanations began to emerge. In many instances, it appears that small towns as a classification seem to only exist in the water and sanitation sector. Emerging towns, market towns and other classifications seem to focus more on the function of the town than on meeting the service needs of the town. This requires further thought and discussion, perhaps starting with the academic community. Indeed, even the literature review at the beginning of our process did not yield much on this angle of inquiry.

A further explanation may lie in the nature of the sectors explored. For example, the energy sector tends to be highly centralised with decisions taken far away from the remit of local decision-makers. The health sector provides services like the water and sanitation sectors but in such a way that the consumer usually travels to the provider rather than the more localised or household approach. The telecommunications sector also operates on a 'pay as you go' system but without the, often unrecoverable, capital costs of the water sector.

Whilst we are not giving up on the learning and piggybacking aspects, perhaps going forward the conversation should start by exploring how what happens in other sectors impacts on the water and sanitation sectors and vice versa. Does the availability of energy or microcredit, for example, create a greater demand for water for cottage industries? Is the availability of water a necessary catalyst for certain types of small-scale industries that increase the viability of investment in energy supply?

6   Taking the work forward

"The key is not to plan everything in advance, but to put in place a process of strategic learning that will allow for corrections, shifts and even wholesale changes in approach."

Ben Ramalingam, *Aid on the Edge*,
www.aidontheedge.info

Throughout this document, we have noted that our work has been very exploratory with a necessarily wide scope and iterative approach. We have probed a vast number of issues, looking for answers or at least clues to answer the five questions we initially posed (see Annex one – *Our approach to the task: a unique opportunity*). The task has been particularly challenging due to the little data that exists on the subject. We also knew that we were in fairly uncharted territory.

Our initial research identified a more contextualised way of looking at small towns, suggesting in more detail how they are different from rural or large urban settings. We intend to test our approach with the ultimate goal of improving the way that WaterAid as an organisation, and the WASH sector at large, addresses small town issues. Specifically, after using demographics, economic drivers and autonomy and decision-making as a guide to determining a typology of small towns, we seek to identify the implications, particularly for sanitation service delivery options, in each type.

We recognise that the kind of analysis advocated for in this document is not usually within the normal Terms of Reference of consultants and other development professionals when designing a water or sanitation system for a small town, or perhaps anywhere for that matter. As expected from the start, our questions require further refinements and testing to see whether the influences these factors have on water and sanitation demand and supply are as significant as we currently suspect. Breaking the issue of small towns down to these levels suggests that the work itself could also usefully dovetail with, for example, the work of the International Water Association's *Sanitation 21: Simple approaches to complex sanitation* (IWA, 2009) which shows more clearly the investment options for sanitation.

Whilst much of the analysis in the document could be aimed at either water or sanitation, WaterAid sees the inherent complexity of the sanitation sector as a unique challenge that requires particular focus, for two reasons. First, due to the existence of multiple service providers, planning is critical and offers an opportunity to unbundle the various service streams.

Second, we suspect that the fragmentation in the sanitation sector allows more space for innovation, particularly if our wider analysis is done properly. Our research and experience has shown that systems tend to be over-designed from inception and thus are too expensive both in capital and recurrent costs for a small town to bear. Similarly, systems that do not plan for expansion are liable to be overwhelmed by demand and quickly become inefficient as well as ineffective. Our key questions are: How can small towns use a simplified planning process, in tune with their technical capacity, to provide for future service growth? What are the building blocks of service delivery that can be incrementally implemented and managed by small towns? Just as technological solutions will need to be calibrated for a particular demography and growth rate, appropriate financing arrangements for iterative development must also be discovered. Traditional one-off funding poses a challenge for sustainable and graduated service provision.

Both WaterAid's planning grant research and the experience of our country programmes have underscored that over-centralised services are often inappropriate in a small town context. At the same time, we recognise that the administration is unlikely to be able to directly provide a comprehensive service that has taken all aspects of planning, delivery and control into account. Service provision, especially for the poorer sections of the community, generally involves multiple small-scale providers – often from the private sector or from civil society. Given this reality, it is important to develop appropriate business models for 'unbundled' services in small towns.

In conclusion, WaterAid and BPD are confident that this work has brought us significantly further in our understanding of the approaches necessary to tackle the issues of water and sanitation services in small towns. This work is by no means complete, but we suspect that we now have the basis to begin exploring in more depth some of the issues suggested above. We believe that this emerging analytical framework could be used to positive effect to guide processes of creating (at scale within a national or state context) small towns support programmes that include town-wide planning, support for improved local governance and the provision of menus of context-specific tailored technical solutions.

One of our tasks was to define a number of areas for 'action research' to be taken forward and tested within WaterAid's programme of work at country level. Other readers may be drawn to different elements within the document. We can only hope that this will catalyse and influence further thinking. The authors and their organisations are certainly open to sharing and collaborating on the issues and would welcome constructive feedback on the analysis set forth in this document. In conjunction with this publication, we have launched a website which we intend to be a repository of knowledge on small town development and service delivery. We encourage other development actors to make use of this as a means to share their own work on small towns.

www.small-towns.org

Bibliography

Over the course of this work, BPD and WaterAid have read and re-read an extremely wide and wide-ranging set of materials that helped to influence our thinking and move us forward. Many of these will be listed on the website. For the purposes of drafting this particular document, the following sources have been directly quoted or used.

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Annex – Our approach to the task: a unique opportunity

"Systems... behave in nonlinear and unpredictable ways. It isn't just a case of pulling a lever and ignoring noise and fluctuations. Instead, the key is to embrace uncertainty, tension, noise – to work with these factors as givens rather than as aberrations."

Ben Ramalingam, *Aid on the Edge*,
www.aidontheedge.info

Our approach to the task: a unique opportunity

Recognising the urgency to understand how best to meet the water and sanitation needs of burgeoning small towns, WaterAid, in partnership with BPD and supported through a planning grant from the Bill and Melinda Gates Foundation, proposed to synthesise existing knowledge and identify promising approaches that could support sustainable impact in small towns. Combining insights from a multi-disciplinary Expert Advisory Panel (EAP) with the experiences of local communities, governments and development actors, the project then sought to determine action research initiatives that can be implemented and documented in a future phase in a number of WaterAid country programmes.

Specifically, the planning grant sought to address the following initial questions:

- What is different about the challenges and potential solutions for the delivery of water and sanitation services in small towns as opposed to large urban environments or rural contexts?

- Are there lessons to be drawn from other sectors that deliver infrastructure or public health services in small towns that could inform the design of 'business' models for water and sanitation?

- In the context of small towns, is it best to address water and sanitation services through a combined approach or are distinctive approaches needed for sanitation?

- Are there opportunities and entry points for creating impact that are sustainable and scalable in small towns throughout Asia and Africa?

- Emerging from the above, are there specific targeted questions that can guide further action research to test/pilot development models, technologies, financing mechanisms and/or other promising adaptations?

While this report endeavours to provide some answers to the questions above, it is important to note that these were only intended to guide the enquiry process with scope to expand the enquiry further if warranted.

As a point of departure and to inform the rest of the project, BPD undertook a literature review (as yet unpublished) to assist the research team in clearly defining a research framework and stakeholder consultation plan. The first task was thus to document what is already known about small town water and sanitation service delivery and synthesise the findings that relate specifically to the first and second questions above.

Analysis of primarily the first and second questions (above) sought to unpack the principal causes of both success and challenges for small town service delivery. For example, a small town's distance from the primary urban centre(s) can result in greater independence for the municipality, but also pose difficulties in attracting qualified staff. Several issues, some within the control of water and sanitation professionals, but many not, became central to our analysis, including:

- Spatial considerations (as a function of geographic distance or terrain).

- Relationship (economic, political or otherwise) with major primary cities.

- Public policy and government investment priorities and approaches.

- Decentralisation policy and practices.

- Technical biases from the centre.

- Governance structures and accountability mechanisms.

- Issues of social capital within small towns.

Throughout the work, WaterAid and BPD were keen to make (and map) the linkages between these different aspects, more clearly understanding the impacts and implications of certain features of small towns. The ultimate goal of the work was to compare and contrast different small town contexts in order to arrive at an analytical tool or framework that allows for decisions to be made about approaches and 'investments' in a more holistic manner. The insights from the EAP were invaluable throughout this process in giving contextual advice. The EAP was made up of seven internationally recognised experts who, though somewhat familiar, with one or two exceptions, would not necessarily consider themselves significantly knowledgeable about the water and sanitation sectors. They brought a range of disciplines to the table including urban planning, decentralisation, appropriate technologies, micro-finance, education and health, and social development expertise. The Terms of Reference of the EAP was to support the critical analysis through peer review and recommendations throughout each phase of the work. In addition, three further specialists more directly familiar with the water and sanitation sector and some solid programming and research experience in small town service delivery were called upon to provide input throughout the process.

To consolidate the learning from the literature review into a research framework, a two and a half day workshop was held with the entire team. Challenged by the non-water and sanitation professionals, the 'outside the box' design of the discussions provided a huge amount of material for the team to consider before embarking on six country visits to Bangladesh, Madagascar, Nepal, Nigeria, Tanzania and Uganda. Literature reviews at country level were drafted as background material for these nine to 12 day visits (carried out between September 2009 and January 2010). Small teams led by a staff member of BPD included colleagues from

WaterAid in the UK and the country programmes. A videographer joined the team in each of the six country visits to capture the learning. The research methodology was based around key informant interviews at the national level and in three to four small towns in each country.

The initial frameworks created were based on understanding the service delivery challenges in small towns as juxtaposed against the wider context of a town. The wider context was initially broken down into questions around four themes, as represented in the following table.

Demographics	Function	Autonomy	Connectedness
Looking at demographic shifts to understand the current/future nature of demand for water and production of wastewater.	The function of the town was agreed to be important as, for example, an industrial town's needs would be different from a tourism-based economy or those of an administrative centre.	Reviewing how much freedom or power a town has to determine its own solutions should guide external interventions.	Looking at external influences that impact on demand and supply ultimately linked the other three elements.

Table 6: Initial analytical framework themes

The process in each town visited was to interview key stakeholders about the water and sanitation context in that town and identify the key challenges facing it and its residents. The interviews attempted to get the respondents to not only identify how these challenges have evolved over the last five to 15 years, but also to suggest key interventions that could have been taken in order to forestall the existing challenges. The interviews were also designed to focus on positive aspects, ie what was done that has proven to be of lasting benefit. The discussions were aimed not just at issues in the water and sanitation sectors but also at deriving lessons from other sectors (such as urban planning, health, education, energy and IT).

The goal of the country visits was not to document all aspects of water and sanitation in small towns in the six countries. Instead, the work in the countries was aimed at cumulatively and iteratively building up a way of understanding the different factors that affect the design and delivery of water and sanitation services in small towns.

The final phase of the planning grant brought together the EAP, the WaterAid country programme and international staff, BPD and the Gates Foundation in a workshop to finalise and confirm the emerging analytical framework and a number of action research hypotheses to be tested in WaterAid's follow on work in small towns.

Using a 'slimmed down' systems approach

Throughout the process, we were mindful that a systems thinking approach would provide a good way to get water and sanitation professionals thinking out of the box. Simply stated, a systems approach forces us to reveal our causal thinking, ie what we believe are the underlying causes and ultimate effects that influence an issue. Without understanding these causes, our solutions will lead to further problems. The intention of using systems thinking in this small towns analysis was to determine a wide range of variables and processes that influence the design and delivery of a water and/or sanitation service. Our goal has been to shift the emphasis away from reactive responses to more adaptive, creative, reflective approaches that more clearly anticipate how things might evolve. In order to understand this evolution, systems approaches attempt to anticipate delays, lag times (where an effect might not be seen until some time later) and feedback loops. In the short term, these can probably be ignored. In the long term though, without an understanding of these elements, a water or sanitation service may very well end up inappropriately and unsustainably structured. It also helps to see two-way or multiple, potentially never ending linkages, rather than purely linear linkages. As a simple 'chicken and egg' example, putting in a water system may encourage more migration into a town. More migration into a town will encourage the expansion of a water system.

A systems approach will reveal many elements (as noted in the discussions throughout this document) that are certainly beyond the control of water and sanitation sector professionals. Those using a systems approach will not always agree on the 'answers', but the approach is designed to elicit different pieces of information that can be debated. Again, whilst we did not apply a systems thinking approach systematically to the work, the ideas in this document reflect the general spirit in which we engaged in the exercise.

Notes

Notes

WaterAid

WaterAid enables the world's poorest people to gain access to safe water and sanitation. Together with improved hygiene, these basic human rights underpin health, education and livelihoods, forming the first essential step in overcoming poverty. We work with local partners, who understand local issues, and provide them with the skills and support to help communities set up and manage practical and sustainable projects that meet their real needs. We also work locally and internationally to change policy and practice and ensure that water, hygiene and sanitation's vital role in reducing poverty is recognised.

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Building Partnerships for Development in Water and Sanitation (BPD)'s goal is to strengthen the partnerships that underpin water and sanitation service provision in poor communities. Recognising that challenges around water and sanitation service delivery in developing countries are not primarily rooted in gaps in technology or finance, BPD provides guidance and support that enable multi-stakeholder partnerships across the public, private and civil society sectors to work more efficiently and effectively. Active since 1998, BPD is the sector leader in providing a non-profit, neutral and independent platform that challenges policymakers and practitioners on how they work together through action research, partnership support and shared learning activities.

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