WSUP
Water & Sanitation for the Urban Poor

DISCUSSION PAPER

Defining and identifying low-income communities in the context of urban WASH programmes

For any donor, international agency or WASH-implementing organisation, the question of where—in what country, city or community—to focus resource is central to fulfilling their mandate. Organisations dedicated to poverty alleviation and the provision of basic services are likely to focus on what are judged to be the poorest urban and rural areas, choosing to invest their time and resources in low-income communities (LICs) regarded as having a high incidence of poverty. But how are these judgements made? How is poverty defined and measured, and what other factors must be considered before deciding where to intervene?

This Discussion Paper, authored by Partnerships in Practice, explores the many factors involved in determining where WASH organisations focus their interventions. It outlines how such decisions will inevitably be influenced by the organisation's understanding of poverty, their overarching mandate and the priorities of their local partners. The Paper begins with a theoretical analysis of the definition of urban poverty, before detailing poverty assessment tools and the various ways in which poverty is currently measured. The Paper then examines how organisations such as WSUP choose specific LICs in which to work, and how that process could be improved.

Partnerships in Practice

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Acronyms

AF	Alkire Foster method
BPL	Below poverty line
CBM	Community-based management
CBO	Community-based organisation
CLTS	Community-led total sanitation
CLUES	Community-led Urban Environmental Sanitation planning
DFID	Department for International Development (UK)
DWASA	Dhaka Water Supply & Sewerage Authority
DTF	Devolution Trust Fund
GIS	Geographic information system
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPS	Global positioning system
IIED	International Institute for Environment and Development
IMD	Index of Multiple Deprivations
INGO	International NGO
IWA	International Water Association
LGA	Local government authority
LIC	Low-income community
MPI	Multidimensional Poverty Index
MRA	Multivariate regression analysis
NGO	Non-governmental organisation

NWASCO	National Water Supply & Sanitation Council (Zambia)
PAT	Poverty assessment tool
PCA	Principal component analysis
PPI	Progress out of Poverty Index (Grameen Foundation)
PWR	Participatory wealth ranking
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UPPR	Urban Partnerships for Poverty Reduction (Bangladesh)
USAID	United States Agency for International Development
WASH	Water, sanitation and hygiene
WHO	World Health Organisation
WSB	Water Services Board
WSP	Water and Sanitation Program (World Bank)
WSS	Water supply and sanitation
WSTF	Water Services Trust Fund (Kenya)
WSUP	Water & Sanitation for the Urban Poor
WTP	Willingness to pay

Executive Summary

Defining poverty

Urban development projects (designed to improve the lives of the poor, and/or to reduce poverty), often operate on the unspoken assumption that poverty is a quantitative, definable entity. 'Poverty lines' are a prevalent criterion applied to communities around the world. For example, the World Bank defines extreme poverty as living on less than $1.25 a day.

Poverty lines provide a straightforward method for interpreting data that is reasonably easy to obtain: how many people live on a certain amount of money per day. The simplicity of the method is advantageous, but it also masks the nuances of living in poverty. A household's income might push it above the poverty line, but household health and ability to earn a stable income are threatened by multiple shocks and stresses (including issues related to poor water and sanitation): common situations for many urban households that traditional definitions of poverty would not capture.

Recent scholarship seeks to assess the structures barring access to basic services, taking into account factors other than income such as education and security. These approaches posit that poverty is fluid: households can slip in and out of poverty because of shocks such as the death of the primary earner. Many households exist on a knife-edge: earning enough to not be officially classed as living in poverty, but without the capital to absorb disruptions. Poverty is a multidimensional and dynamic phenomenon that cannot be defined by income level alone.

Measuring poverty

Urban poverty analyses seek to assess a given city's level of poverty, the accessibility of its public services and the availability of economic opportunities. Data collected should be comparable across different cities and include spatial mapping. Most organisations will attempt to minimise poverty analyses' impact on budgets and timelines by limiting data collection to specific project objectives.

International organisations assess poverty using a variety of methods and tools:

- Income/consumption-based approaches: assessment of a household's income and/or consumption of goods and services, often in relation to the affordability of a basket of goods.
- Asset-based approaches, wherein poverty is measured on the basis of household assets. Examples of such approaches include:
  - USAID's Demographic and Health Surveys (DHS)
  - USAID's Poverty Assessment Tools (PATs)
  - The Grameen Foundation's Progress out of Poverty Index (PPI)
- Welfare indices, or the Unsatisfied Basic Needs Index: based on indices such as literacy, enrolment and access to services.
- Vulnerability assessment: survey of indicators such as assets, capital and income diversification.
- Integrated/composite approaches that include both quantitative and qualitative tools.
- Participatory approaches (cross-cutting): includes the subjective perception of the poor themselves and a qualitative analysis of causes of poverty.
- Mapping: spatial analysis of poverty achieved by overlaying geo-referenced, poverty-related measurements to selected sets of indicators on a map.

How organisations select low-income communities in practice

Implementing organisations must decide where exactly to invest their time and resources. Standard screening procedures and tools for assessing a potential project's eligibility can help this process, such as the Devolution Trust Fund's screening process in Zambia. However, this report finds that most organisations tend not to use such tools and that the sector lacks a standardised approach to project eligibility assessment. Instead, decisions on where to intervene will reflect the organisation's own mandate and working methods. Common criteria for LIC selection in the WASH context include:

1. Acuteness of need for WASH infrastructure and the potential health impacts of an intervention;
2. Land ownership and tenancy issues within the community;
3. Population density: high-density areas can contribute to 'numbers reached' targets;
4. Level of demand for services, as well as willingness-to-pay for a market-based solution;
5. Technical and financial feasibility, given the expense of water and/or sanitation hardware. This could favour intervening in, for example, a LIC close to a pre-connected neighbourhood or rule out a neighbourhood with low water pressure.
6. Tacit local understanding and consensus on suitable areas of intervention: 'well-known' LICs or areas with easily identifiable boundaries are attractive prospects in the absence of an official definition of urban poverty.

International agencies will typically work with local actors to identify intervention areas and to implement the project itself. Those local actors will have their own agendas and priorities. Utilities will focus on commerciality, donor support and an area's amenability, whereas local government bodies could be more concerned with partisan politics and long-term city planning. International stakeholders such as donors will apply their own concerns, such as the likely health impacts of the intervention, measurability, and equity.

Regardless of how an organisation chooses to define the concept, poverty is rarely the sole factor considered by organisations when deciding where to intervene. Considerations such as the willingness or ability of a community to pay for services can actually be antithetical to a purely poverty-driven intervention.

Recommendations

To accurately measure poverty, the concept must be more clearly defined. Household and personal wealth is important, but an organisation's understanding of poverty should aspire to be holistic. Urban poverty in particular is multi-dimensional and will depend on key features of the city itself and on intra-household heterogeneities. Poverty is dynamic rather than static, with households moving across boundaries depending on their ability to absorb shocks.

Complex approaches to measuring poverty are recommended where baseline studies are used to inform strategy and support negotiations on the ground. However, agencies will often need relatively simple and low-cost methods for measuring urban poverty.

Organisations such as WSUP should:

- Clearly articulate the rationale behind where they choose to work and acknowledge the complexity of the process of identifying and prioritising low-income communities;
- Communicate the intangible nature of 'poverty' and how organisational mandates will inform which definition is adopted;
- Design an internal poverty assessment 'toolbox' to meet organisational objectives and respond to constraints.

Introduction

Aims and objectives

This paper originates from WSUP's ongoing efforts to enhance the selection and prioritisation of areas of intervention for its urban WASH programmes. Given the complexity of the topic, the paper is divided into three sub-questions:

- What exactly is urban poverty?

- How can urban poverty be measured and low-income communities (LICs) defined?

- In practice, how do organisations decide in which LICs to work?

Study methods

The first and most theoretical question was addressed through a comprehensive literature review of concepts and issues relating to urban poverty. The second and third questions were approached through interviews and an online survey. The questions in the semi-structured interviews and the survey questionnaire were developed jointly by the authors and WSUP.

Ten interviews were conducted to gain insights into how organisations in the sector identify and prioritise LICs for interventions. These conversations provided information from organisations playing distinct roles in the provision of WASH services, such as utilities, aid agencies, NGOs, regulators and public pro-poor WASH investment funding organisations. Key insights were derived concerning the tools and processes used at time of writing in various parts of the world to identify and prioritise LICs.

The online survey - which was widely advertised[1] - was hosted for a month on the SurveyMonkey portal. This data collection tool was used to gather additional experiences and insights from WASH professionals[2] with a particular interest in the topic.

[1] SHARE and Rural Water Supply Network newsletters, Urban Sanitation LinkedIn groups (IWA Urban Sanitation Initiative; Community of Practice of Sanitation and Hygiene in Developing Countries).

[2] 15 respondents undertook the survey and were offered hard copies of WSUP's The Urban Programming Guide and The Urban Water Supply Guide as incentive.

1 Defining poverty

1.1 Context

More than half of the world's population now live in urban areas (Heilig 2012). Cities of the south have been growing exponentially with Africa and Asia urbanising faster than any other region (Heilig 2012; DFID 2011). This rapid growth creates unprecedented challenges, including the need to ensure that people have access to basic services. While cities form important economic centres and provide opportunities for increased economic and social well-being, many of the urban poor are unable to harness such opportunities. This is in part due to discriminatory structures and policies of governments, civil society and private sector organisations, which in turn create inequalities and socio-economic differences (DFID 2011). Poverty levels in urban areas are rising overall and increasing at a faster rate than in rural areas (Haddad et al. 1999 in DFID 2011).

Strategies to reduce urban poverty include interventions specifically 'targeting'[3] the poor and helping them meet basic needs. This is the case for 'pro-poor' and 'poor-inclusive' urban WASH programmes—as implemented by WSUP and by other international and national agencies—which focus on improving access to water, sanitation and hygiene, paying particular attention to the needs of the most deprived members of the population.

The success of these programmes partly depends on the effectiveness of the identification of the LICs in which to intervene. The sustainability and scalability of programmes will also hinge on the extent to which they are designed and implemented in partnership with key local stakeholders. The identification of LICs in which to intervene is often a joint decision-making process which involves some degree of negotiation. This is made much easier if partners have a mutual understanding of their respective agendas and if discussions can build on an accurate, thorough analysis of poverty. Such an analysis requires a poverty assessment, the quality of which depends on the resources mobilised for its execution and on the actual definition of poverty or the analytical framework informing the understanding of this complex issue.

Being able to define poverty is therefore a fundamental step preceding a poverty assessment, the findings of which will contribute to the decision-making process concerning where to work or invest. However, as discussed in Section 3, poverty is not the only criterion governing such choices. This first section of the paper begins by describing the level at which poverty is analysed. It then examines the definitions and notions framing the understanding of poverty, from the most basic and familiar to the most complex.

1.2 Units of analysis

Poverty is concerned with the individual's ability to sustain him- or herself and is determined by the individual's ability to command resources for this subsistence (Sen 1981 in Amis & Rakdodki 1994). 'Poverty lines' are therefore defined on a per capita basis. However, the unit of analysis for planning basic services and infrastructure is usually the household, and consequently poverty assessment surveys are carried out at the household level. Numerous experts warn of the risk of ignoring the heterogeneity of households in poverty assessment, signalling the limitations of poverty assessment

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[3] The word 'targeting' is widely used in the context of urban LIC interventions, with diverse and potentially confusing meanings. For example, authors may refer to targeting an investment at low-income people or low-income communities; in some contexts this is understood to refer to direct delivery of subsidies to low-income households, but in other contexts it might refer to indirect benefits. Authors may also refer to targeting low-income communities, meaning identifying communities in which to work. For clarity, we do not use the term 'targeting' in the present document.

approaches—such as income-based or consumption-based approaches—which tend to overlook several important factors:

- Households vary in size, and larger households benefit from economies of scale (e.g. housing costs);

- Male heads of households may not report income from women and children's labour (Rakodi 1995);

- Households can include members with low entitlement (e.g. in relation to gender, age, social status, etc.) (Wratten 1995). Household surveys often fail to consider dependent people and their influence on poverty at the household level (Baud et al. 2008). Analysing internal power structures and resource allocation dynamics is critical to identifying disadvantaged household members (Rakodi 1995);[4]

- Measuring household income is complicated when only part of the consumption is budgeted through a monetised wage. Households may consume their own produce (Rakodi 1995).

The above points stress the need to consider the inherent complexity of the household setting.[5] Poverty assessment conducted at the household level should consider the household in the context of the community. Insights can then be gathered into possible discrimination against households (e.g. based on economic, cultural or ethnic factors) and against individuals (e.g. lower caste, people living with HIV) that constrain their ability to access resources (Alkire & Sarwar 2009). Expanding the boundaries of the household unit to encompass its community dimensions is also advocated by Amartya Sen (1981), who emphasises the collective and community dimensions of wellbeing.

1.3 Defining poverty on the basis of wealth

Urban poverty is usually defined as A) an absolute standard based on a minimum amount of income needed to sustain a healthy life of basic comfort, and B) a relative standard based on the average standard of living in a nation (McDonald & McMillen 2008). The most basic definitions of poverty are based on measures of income and/or consumption. Beegle et al (2010) describe household consumption as the 'core concept at the centre of any attempt to measure living standards, inequality and poverty in the developing world' and note that statistics offices in the majority of developing countries use consumption expenditures as their welfare measure, either in isolation or in combination with income.

Such measures of income and/or consumption are often interpreted in relation to cut-off values known as 'poverty lines'. The poverty line developed by the World Bank—used in many countries—defines extreme poverty as living on less than $1.25 a day,[6] which constitutes the lower poverty line. The World Bank's upper poverty line is set at $2 a day. Most countries set their own poverty lines taking into consideration national census data and standards of living. Their calculations involve costing a basket of basic food items needed to meet minimum nutritional requirements, and adding to this food poverty line an allowance for non-food items, usually including shelter, medical care

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[4] According to Zeller (2004) 'amount of income with decision authority' is perhaps the best index of individual poverty status for taking into consideration WASH intra-household variations.

[5] The Urban Poverty Research Source Book (Moser et al. 1996a) advises that household analyses should include the following indicators: the socio-economic profile of households; access and reliability of employment and income; work patterns of household members; the balancing of gender roles; access and reliability of facilities; and reliability of physical and social services.

[6] Based on purchasing power parity (PPP).

and clothing (Montgomery 2009).[7] Poverty lines provide a basic definition of poverty and allow a simple means of measurement. They represent a useful starting point for analysis and allow comparisons among and within countries.

The simplicity of poverty lines is clearly a limitation. Satterthwaite (2003) notes that in most countries, poverty lines fail to reflect the true monetary cost that individuals or households incur in meeting their needs. They also fail to account for key non-food essentials and to reflect the real cost of these essentials (e.g. the cost of WASH services), and to factor inter-regional variations in prices of goods and services. This is especially true for analyses of urban locations where access to goods and services is highly monetised.

Satterthwaite challenges the capacity of income/consumption-based poverty lines to accurately define and measure urban poverty. Asset ownership is a common proxy indicator of poverty (see Box 1). As further explained in Section 2.3, the ownership of items such as a TV, refrigerator or scooter is used to construct an indicator reflecting the socio-economic status of households (Montgomery et al 2000; Falkingham & Namazie 2002).

1.4 Multidimensional definitions of poverty

Bourguignon et al (2010) stress that levels and trends of income poverty are not highly correlated with trends in other basic variables such as child mortality, primary school completion rates or malnourishment. A person or household can be income poor but multidimensionally non-poor, or income-rich but in multidimensional poverty (Oxford Poverty & Human Development Initiative (OPHI) 2014).

Shortcomings related to the framing and assessment of poverty through income- and consumption-based approaches have led experts to advocate for a systems approach to poverty, acknowledging the 'structures of constraint' within which poverty is caused and embedded (Wratten 1995; Satterthwaite 2003). These collective structures of constraint (referred to as structural dimensions of poverty in this report) influence the ability of households to access services to meet their basic needs (Baud et al 2008).

There is no standard definition of the structural dimensions of urban poverty. Baharoglu & Kessides (2002) identify five such dimensions: income, health, education, security and empowerment. Montgomery (2009) proposes a broader list, notably including health-related public services such as water, sanitation, drainage and solid waste disposal. Bhutan's Gross National Happiness (GNH) Index is another commonly cited multidimensional poverty framework.[8] Different organisations are likely to embrace different sets of dimensions reflecting their mandate, priorities and focus. Figure 1 provides an overview of the most significant dimensions identified from the literature. Annex 2 presents a detailed description of each dimension and provides examples of indicators allowing quantitative assessments.

The structural dimensions and manifestations of urban poverty are influenced by distinctive urban patterns:

- The monetisation of urban life increases the vulnerability of the urban poor to economic shocks;

- Competition for land and access to services fosters the expansion of informal settlements;

[7] In the USA the poverty line is established by tripling the cost of a minimally sufficient food basket with additional adjustments for differences in family size/composition (Montgomery 2009).

[8] The GNH Index comprises 72 indicators spread across the following nine dimensions: psychological well-being, time use, living standards, culture, health, education, ecology, good governance and community vitality. For each indicator, a 'sufficiency' line is set (Alkire & Sarwar 2009).

Figure 1. Key structural dimensions of urban poverty

• Spatial concentration leads to developments on land unfit for building, lacking basic services and presenting environmental hazards;

• Social diversity and fragmentation are generally associated with low social cohesion, low mutual support and high rates of criminality (Moser et al 1996 a, 1996 b; Montgomery 2009; Wratten 1995; DFID 2011).

The dynamics of urban poverty

Poverty is not a static phenomenon (Baker & Schuler 2004; Rakodi 1995; Amis 2003). Households can be thrown abruptly into chronic poverty as a result of the illness or death of a primary income earner (DFID 2011; Amis 2003), and whole communities can suffer from external shocks such as floods, evictions and natural disasters. Conversely, households may be able to employ coping strategies to deal with such shocks and build their assets over time to gradually climb out of poverty. Two concepts — vulnerability and capital — are generally used to acknowledge the dynamic nature of poverty and explain poverty changes in relation to its various structural dimensions.

Vulnerability is defined as defencelessness, insecurity and exposure to risk, shocks and stress (Wratten 1995; Chambers 1989).[9] Households lacking capital are more vulnerable and likely to be forced deeper into poverty. The most vulnerable households are those that can neither rely on wage income nor diversify their livelihood strategies (Rakodi 1995). Pushpa Arabindoo from UCL's Urban Laboratory stresses the importance of tenure and migration status, noting that new migrants and people sub-renting from sub-renters may be more vulnerable. Households draw upon their capital and assets to reduce their vulnerabilities by helping them cope during times of shock and stress.

Assets can be defined as investments (in health, education and physical items such as housing), stores (food, money, valuables) and claims (on other community members, government or the international aid community) (Swift 1989). Assets are the constitutive elements of capital, which the livelihoods approach[10] breaks down into five types or forms: human capital (e.g. education, health); natural capital (e.g. land); financial capital (e.g. access to credit); social capital (e.g. community networks); and physical capital (e.g. infrastructure such as markets and roads). As Baud et al (2008) observe, the capacity of households to create their wellbeing depends on the diversity of their capital as much as on its extent. Examining households' vulnerability and capital — by drawing on typologies such as those presented in Annex 6 — significantly enhances our understanding of urban poverty.

Integrating concepts

Poverty is a complex, multidimensional life experience which is variable, not static, in time. In addition to its most common manifestation in terms of low income, poverty is also characterised by low levels of capital (Baker & Schuler 2004). Capital and its constitutive assets are the coping mechanisms by which households deal with stresses, risks and shocks. Building household capital (in all its forms as noted in Table 2) is central to poverty alleviation strategies.

Understanding the relationship between the accumulation of capital and the decline in vulnerabilities helps us to understand the shifting nature of poverty. It also helps to

[9] Shocks denote sudden events whereas stress refers to day-to-day challenges.
[10] Moser is credited with the 'assets/vulnerability' framework. The 'livelihoods' approach is the more commonly used terminology and is used widely, mainly in analyses of rural poverty.

explain how increasing financial capital may not suffice to address certain structural causes of poverty. Bapat et al (1990) show that higher incomes will not necessarily offset the effect of living in an unsafe physical environment, and Montgomery (2009) notes how 'non-poor households in urban neighbourhoods lacking drinking water and sanitation face a daily assault and health threats that income alone cannot always fend off'. Households with contrasting levels of income may coexist spatially, experiencing similar environmental and socio-political constraints, unable to offset deprivations associated with their common circumstances.

Vulnerability and capital are key notions that a thorough definition of poverty needs to integrate to prevent a static understanding of the issue. As illustrated in Figure 2, combining these key concepts with the structural dimensions of poverty leads to a comprehensive framework for poverty. Depending on the purpose of this analysis, the structural dimensions of poverty can be adjusted to reflect particular emphases.

Framing poverty as a dynamic and multidimensional phenomenon is beneficial in the context of urban WASH programming and enhances strategic planning. For example, strategies to put in place new WASH services can reflect insights into the specific vulnerabilities of a community and the forms of capital available to them. However, as the following section demonstrates, important aspects of programme implementation (for example, evaluation surveys to assess whether a programme's benefits have reached the very poor) often require simple proxy indicators of poverty rather than complex definitions.

Figure 2. A systemic assessment of (urban) poverty.
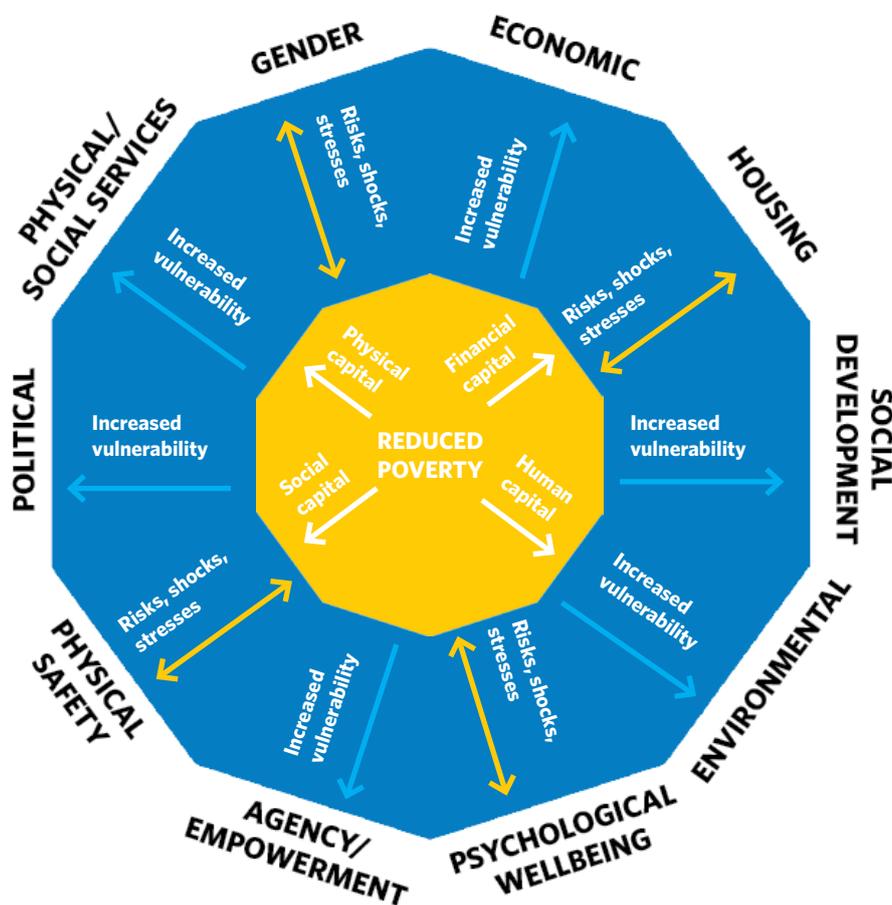
Source: Shinjini Mehta, unpublished.

2 Measuring urban poverty

2.1 From poverty analysis to poverty assessment tools

The process of gathering, analysing and presenting information on the extent, location and conditions of poverty in a given city has been labelled 'urban poverty analysis' (Baker & Schuler 2004). Such an analysis should allow for the description of:

- the extent, location, conditions and dynamics of poverty (Wratten 1995);

- accessibility and access to public facilities and services contributing to livelihoods;[11]

- access to economic opportunities and assets such as labour and human capital;

- the dynamic nature of poverty.[12]

An urban poverty analysis should ideally allow comparability of data across cities (Baker & Schuler 2004) and ensure data are disaggregated at intra-city level to allow comparisons between areas (ibid). It should also integrate spatial mapping of poverty and access to services by geo-referencing data (Baker & Schuler 2004; Baud et al 2008). A large catalogue of tools and approaches have been developed to support poverty analyses, from relatively simple indicators to more complex indices reflecting measurement of numerous variables related to distinct dimensions of poverty.

In practice however, poverty measurement tools designed by or for donors and practitioners are often geared towards specific operational objectives rather than providing comprehensive analyses of urban poverty. For example, an end-of-programme evaluation survey might aim simply to measure poverty levels among programme beneficiaries, without any wider ambition. In all cases, organisations generally seek to design or adopt poverty assessment tools allowing them to reduce the costs, time and complexity entailed in the data collection and analysis of poverty (Zeller 2004).

2.2 A basic typology of poverty assessment tools

A review of poverty assessment tools conducted by Zeller (2004) for the United States Agency for International Development (USAID)[13] proposes a basic typology of poverty assessment tools based on their operational objectives and weighting system (Table 1). Typically, such tools are developed for one of three purposes:

- Poverty assessment: the tool supports an internal or external evaluation and helps to assess the extent to which the programme has reached the poor.

- Poverty 'targeting': the aim is to support the identification of poorer households to ensure they benefit from the planned programme. In such cases, the tools need to factor in the risk of respondent misstatements.[14]

- Impact assessment: the tool is designed to measure the impact of interventions on poverty.

[11] Mapping out information will help to identify areas of low coverage within cities where lack of services increases the exposure of the population to social exclusion (Baker & Schuler 2004).

[12] Distinguishing between transient and permanent poverty and delving into processes of impoverishment against various deprivations.

[13] USAID AMAP (Accelerated Microenterprise Advancement Project).

[14] The two first categories of tools (most relevant to this study) ideally require indicators that are verifiable by other investigators, visible, and obtainable at low cost (Zeller 2004).

- Weighting systems are another differentiating feature of poverty assessment tools. Table 1 details four broad types of weighting system as identified by Zeller (2004).

Table 1. Weighting systems in poverty assessment tools.

Type	Key characteristics
1. No weighting	Direct enumeration of income and expenditures. Data is obtained through simple questions such as "What were your food expenditures in the past month?" or "What was the household's income?". Extremely simple, quick and low cost, but very inaccurate.
2. Externally set and fixed weighting for indicators	Data on indicators measured as nominal, ordinal or ratio variables is gathered through a survey. A weighting system attributes a score to each answer (see Annex 7 and Section 2.3). Most practitioner tools belong to this category. **Pros:** Weights are disclosed; indicators and weights can be made context specific; a quick rating of the intensity of household's poverty can be obtained at low cost; indicators are generally verifiable. **Cons:** Weights are fixed for a specific region; weights are arbitrarily chosen as the classification between poor and non-poor (though it can be informed by participatory appraisals and studies); indicators often relate to housing. **Conclusion:** Drawbacks can be addressed by testing and calibrating such tools to determine the cut-off points indicated by the national poverty line.
3. Internally set adjustable weighting and indicators (participatory wealth ranking (PWR))	Participants jointly identify indicators and discuss their relative importance. PWR is extensively used in development practice. The maximum group size is 100 households. **Pros:** PWR can arrive at a ranking of community members by poverty status; the cost of ranking is relatively low; PWR methods are well-received and widely applied to identify poverty within the boundaries of a given community/urban ward. **Cons:** Risks of sampling and respondent biases; difficult to ensure the involvement of vulnerable groups and those with high opportunity cost of time; comparability with other areas is limited as each community uses its own indicators and cut-off definitions for ranking themselves; calibrating indicators against the benchmark/poverty line theoretically requires a calibration for each community/urban ward. **Conclusion:** PWR requires staff with greater skills than those needed by enumerators in quantitative approaches. Systematic calibration is required unless indicators do not vary much between communities.

| 4. Flexible, statistically derived weights | Multivariate regression analysis (MRA) and principal component analysis (PCA) are used to identify statistically significant indicators of poverty and to determine their weights for aggregation. PCA identifies important indicators, calculates appropriate weights and creates a household-specific poverty score or index.

MRA requires access to information both on expenditures per capita (as the dependent variable) and on the various independent variables to be tested as indicators of poverty. PCA does not require information on the dependent variable. The result of PCA is a normally distributed new poverty index variable that only measures relative poverty and not absolute poverty, whereas MRA identifies the statistically significant poverty indicators and their weights in predicting expenditures as the poverty benchmark.

Conclusion: If expenditure data is available, MRA appears the more useful testing approach. |

Source: adapted from Zeller (2004)

2.3 Tools and approaches

Poverty assessment methods can also be organised into the five categories presented in Table 2. The following subsections provide examples of their practical use and highlight their respective strengths and limitations. Special emphasis is put on income/consumption-based, asset-based and composite approaches as well as on the relevance of poverty mapping and participatory processes.

Table 2. Poverty assessment approaches

Approaches	Key features
1. Income/consumption-based	Approaches based on assessment of a household's income and/or consumption of goods and services, often in relation to affordability of a basket of goods (food, housing, clothing, transport, etc.) (see Section 1.3).
2. Asset-based	Assess the socio-economic status of households through a set of asset indicators.
3. Welfare indices	Also known as the Unsatisfied Basic Needs Index. Welfare indices factor in indicators such as literacy, enrolment, access to services (e.g. WASH), housing and dietary sufficiency. The Human Development Index is one example.
4. Vulnerability assessment	Assess households' vulnerability as a function of their assets and capital through surveys of indicators such as physical assets, capital, income diversification, links to networks, participation in the formal safety net and access to credit markets.
5. Integrated/composite	Assess the nature, causes and thorough spatial distribution of poverty using quantitative and qualitative tools based on social, income-based and consumption indicators.

Cross-cutting features	
Participatory processes	Incorporate the subjective perception of the poor themselves. Include a qualitative analysis of the causes of poverty, acknowledge heterogeneities between sub-community groups and within household types, and allow for identification of the most vulnerable individuals. Tools include focus group discussions, life histories, wealth ranking and interactive mapping.
Mapping	Allows a spatial analysis of poverty by overlaying geo-referenced, poverty-related measurements to selected sets of indicators on a map (Baud et al 2008). Assists the identification of the most deprived areas and facilitates the sharing of findings.

Source: based on Wratten (1995), Baker & Schuler (2004), Falkingham & Namazie (2002) and Montgomery et al (2000).

2.3.1 Income/consumption-based approaches

Assessing income levels is often a starting point for organisations seeking to identify LICs. The data available are often based on the application of poverty lines (standard World Bank or official definition) to target the poorest quintiles of the population (see Box 2). Lack of such data and inaccurate reporting of income in surveys can lead organisations to rely on definitions of urban poverty and designations of LICs and slums developed by local government authorities (LGAs).

An income analysis of the community is particularly useful for organisations supporting local business to develop and market WASH services and products. In such cases, information that allows different sources of income to be distinguished typically needs to be complemented by data about ability and willingness to pay, prices for alternative services in the LICs and employment levels. Additional information on tenancy may be needed to gain insights into disincentives and legal constraints for people to pay for a particular service. This extra information is typically collected through community transects and interviews.

Monetary measures of poverty can take into account the subjective perception of individuals, by including in household surveys questions about their perceived situation, minimum standards and poverty rankings in the community (World Bank 2014).[15] Poverty lines can be derived from answers to such questions. However, self-reported measures have clear limitations and may reproduce existing discrimination or exclusion patterns perceived as 'normal' (World Bank 2014).

The ACCION[16] Poverty Assessment Tool uses household-level income and expenditure data to assess the poverty level of microfinance clients in comparison with national and international poverty lines. It does not use indicators of poverty nor a weighting system but rather seeks directly to measure income and expenditures. The tool consists of a six-page questionnaire with simple and direct questions on respondent incomes (Horn-Welch 2002).

Box 2. City poverty profiles

The Nepalese Central Bureau of Statistics has established its own income-based categories within zoned urban areas, divided into five living standards ranging from the extremely poor to the wealthiest.

[15] Example questions: "do you consider your income to be very low, rather low, sufficient, rather high, or high?"; "what is the minimum amount necessary for a family of two adults and three children to get by?"

[16] Accion International is a global non-profit organisation supporting microfinance institutions in their work to provide financial services to low-income clients.

Most practitioners and social scientists recognise the inherent difficulty of getting a reliable income estimate within a short time in a developing or transitioning country, especially for poor people who have multiple sources of income, much of it derived from the informal sector (Zeller 2004). In addition, as explained in Section 1.4, assessing poverty through household surveys focused on income fails to consider key dimensions of poverty including health, education, rights, nutrition and housing, and ignores gender and intra-household distribution.[17]

While consumption expenditure has long been the preferred measure of household living standards (see Box 3), consumption-based approaches also face methodological shortcomings and measurement accuracy remains a challenge. In a World Bank study conducted in Tanzania, Beegle et al (2010) tested eight alternative methods of household consumption measurement through surveys and found significant discrepancies. Notable variations related to the type of diary and recall format used: recall modules were found to measure lower consumption than a personal diary, with larger gaps among poorer households and households with more adult members. Under-reporting prevailed in illiterate households and amongst urban respondents. Among other recommendations, the World Bank study called for the design of household surveys to be adapted to the local context, notably referring to Boozer et al (2009), who showed that in parts of West Africa, wives and husbands manage separate budgets for some expenditure items. This results in a yet higher level of incomplete information about expenditure than was observed in Tanzania.

Box 3. Measuring poverty: income-based vs. consumption-based approaches

Measuring poverty in monetary terms leaves the choice between using income or consumption as the indicator of wellbeing. Most analysts consider that provided the consumption data garnered through a household survey is detailed enough, consumption is a better indicator than income for three main reasons:

- **Consumption is a better outcome indicator than income:** Actual consumption is more closely related to a person's well-being in the sense of having enough to meet current basic needs. Income is only one of the elements which will allow consumption of goods (others include questions of access, availability, etc.).

- **Consumption may be better measured than income:** In poor agrarian economies and in urban economies with large informal sectors, income flows may be erratic and fluctuate during the year. Farmers' incomes may be difficult to estimate because the costs of purchased agricultural inputs must be subtracted from their revenues. Finally, large shares of income are not monetised if households consume their own produce or exchange it for other goods which it may be difficult to price. Estimating consumption will be more reliable if the related module in the household survey has been well designed.

- **Consumption may better reflect a household's ability to meet basic needs:** Consumption expenditures reflect not only the goods and services that a household can command based on its current income, but also whether that household can access credit markets or savings at times when current income is low or even negative, due perhaps to seasonal variation or harvest failure. Consumption can therefore provide a better picture of actual standards of living than current income, especially when income fluctuates significantly.

Source: Defining Welfare Measures (World Bank 2014)

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[17] Zeller (2004) notes that despite major advances in analysing intra-household distribution issues, there has not been a breakthrough in measuring disposable income of individual household members, or in disentangling individual from household income. Zeller adds that accurately determining individual wealth by quantifying intra-household distribution issues significantly increases the cost of the assessment.

2.3.2 Asset-based approaches

Where income- and consumption-related data is not available or is too difficult to obtain, LICs can be identified through the asset ownership indicator method. In asset-based approaches, poverty levels are measured on the basis of assets owned by households.

Demographic and Health Surveys, DHS (USAID)

Demographic and Health Surveys (DHS) are nationally representative household surveys, funded by USAID, which have been undertaken in over 90 countries since 1984 to provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health and nutrition. The household component of the DHS is an example of asset-based poverty assessment. Fine-tuned to the context of each country, it assesses key characteristics of the households, including:

- Drinking water supply (type, access, means of disinfection);
- Sanitation (type of toilet, whether it is shared and by how many households);
- Availability of: electricity, radio, mobile and non-mobile phones, refrigerator;
- Cooking (type of fuel used, availability and location of kitchen);
- Materials of the floor/roof/walls (options of natural/rudimentary/finished material);
- Rooms (number of rooms in the house);
- Ownership of: watch, bicycle, motorcycle, animal-drawn cart, car, truck, motor boat;
- Ownership of: agricultural land, livestock, herds, animals and poultry;
- Ownership of a bank account (ICF International 2011).

Grameen Progress out of Poverty Index (PPI)

The Progress out of Poverty Index® (PPI®) is a simple poverty assessment tool developed by the Grameen Foundation. The PPI tool consists of a survey assessing ten household characteristics or indicators, selected using a statistical model identifying the best predictors of poverty in the most recent nationally representative household income and expenditure survey. The answers to ten questions about a household's characteristics and asset ownership are scored to compute the likelihood that the household is living below the poverty line. PPI's developer has created a transparent and simple algorithm that converts indicator values into predicted poverty probabilities. The simplicity and transparency of the tool, as well as the quality and availability of the related documentation, have contributed to its increasing adoption and effective use in Latin America (FOMIN 2014).

PPI tools (*Poverty Scorecard* and *Look-up Table*) are available online for 55 countries including Bangladesh, Kenya, Mozambique and Zambia. Table 3 shows the questionnaire for Bangladesh. By entering the sum of the scores obtained for each of the ten questions into the Bangladesh look-up table (see Annex 8), the level of poverty of the household can be estimated. For example, a household scoring a total of 37 would have probabilities of 50.3% and 90.7% respectively of being under the $1.25 and $2.00 international poverty lines (2005 Intl PPP), and probabilities of 13.8% and 15% respectively of being under USAID's extreme poverty line and the lower national poverty line.

Table 3. PPI poverty scorecard for Bangladesh

Question	Response (points)
1. How many household members are 12 years old or younger?	>3 (0); 2 (10); 1 (16); none (29)
2. Do all household members aged 6–12 currently attend a school/educational institution?	No (0); No one aged 6–12 (3); Yes (6)
3. In the past year did any household member ever do work for which he/she was paid on a daily basis?	Yes (0); No (8)
4. How many rooms does your household occupy (excluding the rooms used for business)?	One (0); Two (3); Three or more (5)
5. What is the main construction material of the walls of the main room?	Hemp/hay/bamboo or other (0); Mud brick or CI sheet/wood (2); Brick/cement (9)
6. Does the household own any televisions?	No (0); Yes (7)
7. How many fans does the household own?	None (0); One (8); Two or more (7)
8. How many mobile phones does the household own?	None (0); One (8); Two or more (15)
9. Does the household own any bicycles, motorcycle/scooter, or motor cars etc.?	No (0); Yes (4)
10. Does the household own (or rent/ sharecrop/mortgage in or out) 51 or more decimals of cultivable agricultural land (excluding uncultivable land and dwelling-house/homestead land)?	No (0); Yes (7)

USAID Poverty Assessment Tools (PATs)

Similarly to PPIs, USAID Poverty Assessment Tools (PATs) are free, simple and easy to use, allowing development practitioners to assess their success at reaching out to poor and very poor people, to compare poverty levels, or track changes in poverty level over time. Each PAT consists of a country-specific household survey of 10–25 questions, which can be administered in 20 minutes, as well as a data entry template to analyse the answers (USAID 2014). At the time of writing, PATs have been developed for 35 countries including Bangladesh, Madagascar, Kenya and Ghana (see the survey for Madagascar in Annex 9). According to the developer of the PPI, PPI and PAT are both simple, low-cost ways to measure household poverty. For estimating a group's poverty rate, both tools are unbiased, and the PPI shows smaller standard errors. PAT appears marginally better at targeting individual households. PPI appears to have an edge in availability, recentness and transparency (Schreiner 2014).

Limitations of asset-based approaches

Asset-based approaches are commonly used to quickly ascertain via surveys the standard of living within a community. However, their validity and accuracy are often questioned. Arabindoo (UCL's Urban Laboratory) notes that households' spending prioritisation is based on value judgements: as a result, households may favour purchasing a TV or electrical appliance for the increase in status it provides at the expense of saving, which would increase their resilience to economic stresses and shocks. An informant from Dhaka Water Supply & Sewerage Authority (DWASA) observes that despite the appalling conditions — notably in terms of WASH services

— poor households living in the slums where the utility intervenes frequently own assets like TVs, refrigerators and water purifiers. Hence, asset-based approaches may inaccurately reflect household poverty levels. Montgomery (2009) notes further limitations of the sole use of an asset ownership-based approach to assess poverty:

- Many of the counted assets are electrical appliances, which will often fail to reflect contrasts in poverty in non-electrified areas.

- Many households may avoid purchasing such products because of local environmental or crime-related risks (floods, thefts, etc.). In such cases, asset indicator approaches will provide an inaccurate measure of household consumption/income/living standards.

- Some households may not purchase such items because they are short-term migrants and/or prioritise sending remittances to family elsewhere.

- Such proxy measures are usually unable to capture the variation in household expenditures (and hence well-being) over a period of time.

2.3.3 Integrated and composite approaches

Integrated and composite approaches seek to go beyond the assessment of individual or household poverty levels through measurement of income, consumption/expenditure or asset ownership. Such approaches aim to assess the nature, causes and spatial distribution of poverty. They use a mix of quantitative and qualitative techniques to collect and analyse a wider range of data related to social, economic and environmental indicators. These approaches are increasingly characterised by geo-referencing and the display on digital maps of various information (e.g. on housing, access to public services and socio-economic conditions), helping to make the needs and demands of low-income consumers more evident to urban planners (Welle 2006).

The spread of such composite approaches in recent years has been favoured by the increasing implementation of multi-topic household surveys at national level. These surveys provide the required inputs for the construction of multidimensional poverty assessments.[18] The category of composite or integrated poverty assessment approaches presented in this subsection is broadly defined. It can be regarded as a continuum ranging from the simplest approaches allowing a superficial assessment of poverty to the most complex approaches allowing thorough poverty analyses. At one end of the spectrum, income/expenditure and asset-based surveys are enhanced with geographic information system (GIS) features and/or components including social, public services and environmental indicators. At the other end, sophisticated approaches incorporate multiple quantitative and qualitative data sets to assess the structural dimensions of poverty, integrate GIS and participatory features and explore intra-household and household–community relationships, as well as poverty dynamics. A few examples of such approaches used by organisations in the WASH sector and beyond are presented below and a summary of the strengths and limitations of the composite approach can be found in Table 4.

Composite poverty assessment: WSP Indonesia, DFID

A conversation with a representative of the Water and Sanitation Program (WSP) suggests that the organisation does not use a standard approach to assess poverty. In

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[18] OPHI (2014) notes that the greater availability of these multi-topic data sets (now available in around 130 developing countries), combined with advances in techniques and a greater need to understand poverty and social policies, generate a unique framework for the implementation of multidimensional tools.

Indonesia, WSP has used government statistics as a basis to identify the LICs in which household surveys were conducted. The survey was designed to assess different assets (e.g. housing types) and forms of capital (e.g. level of education), yet focused on WASH needs and the willingness to pay for improved WASH services.

Likewise, exchanges with a representative from DFID suggest that the poverty assessment tools used by the development agency vary across countries. DFID uses countries' standards and definitions of LICs (which includes definitions of urban and poor) and collaborates with in-country social development advisers to locate the poor and determine local barriers to aid. DFID-supported interventions are often preceded by detailed multidimensional appraisals, which include various components such as wealth-ranking across and within communities, assessments of land tenure, asset ownership and social development indicators. Such assessments help the organisation to ascertain the percentage of households living in absolute poverty and characterise poverty across various dimensions.

Urban Poverty Mapping: experiences from Delhi and Kathmandu

Baud et al (2008) spatially mapped poverty in Delhi using a composite set of indicators reflecting multiple deprivations against four types of capital (see Figure 3 and Box 4). The geo-referenced findings and census data disaggregated at ward level were superimposed on maps, displaying the index of multiple deprivations for each ward. The analysis allowed the researchers to capture the spatial distribution of various aspects of poverty. For instance, wards with similar Index of Multiple Deprivations (IMD) scores presented contrasting scores on the four respective categories of capital, and certain types of capital were more significantly correlated with the overall IMD, which indicates the independence of their contribution to the overall level of poverty. Overlaying the contour of informal settlements onto this map revealed that the most acute levels of multiple deprivations were not experienced in slums.

To support local planning and as a preliminary step of project implementation, WaterAid Nepal conducted an urban poverty analysis in Kathmandu. As part of the analysis and mapping of poverty, slums were characterised (including the type of housing) and water points were identified and their functionality reviewed. The mapping allowed some aspects of poverty to be visualised. Three categories of poor households were identified, each with specific WASH needs. The mapping of this composite poverty analysis using socio-economic and WASH criteria was instrumental in delivering services that were responsive to community needs and ability to pay.

Box 4. Poverty mapping

Poverty mapping often follows two types of approach, propagated by the World Bank and UNDP. The first—based on small area estimation—is an expenditure-based econometric approach and combines local household surveys and national household-level data. The second is a value-focused approach relying on a composite human development index (which can be based on non-expenditure related data) reflecting 'unsatisfied needs'. Such composite indexes can include socio-economic deprivations, lack of physical habitat and infrastructure. A third approach uses individual GIS-based indicators for monitoring intra-urban inequalities rather than producing a composite index. Source: Baud et al (2009).

Figure 3. Criteria model for mapping multiple deprivations.
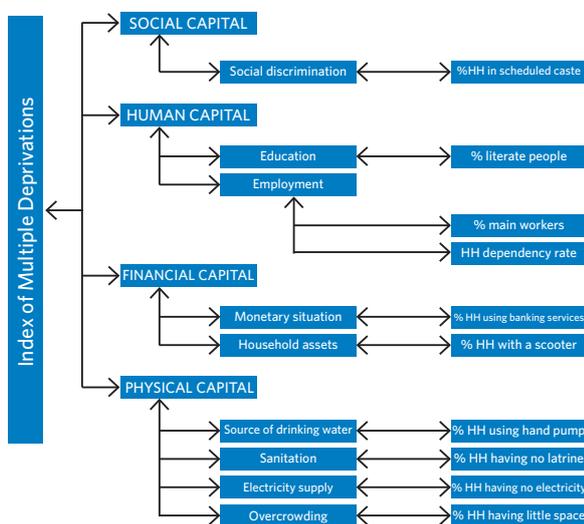
Source: Baud et al (2009)

Multidimensional Poverty Index (MPI): the Alkire Foster (AF) method

The Alkire Foster (AF) method of multidimensional measurement was developed in 2007 at OPHI (Oxford Poverty & Human Development Initiative). The method incorporates multiple dimensions of poverty to create measures that complement income poverty indices. It identifies 'who is poor' by considering the range of deprivations they suffer. This aggregated information can be broken down (e.g. by indicator, geographic area, ethnicity, gender and other social groups) to reveal in what ways people are poor. Interconnections among deprivations can be identified and used to inform policy design. The approach captures the incidence of poverty and its intensity, is flexible and can incorporate a wide range of dimensions, indicators, cut-offs and weights (OPHI 2014) (see Annex 10 for extra information on conducting AF and commonalities with other multidimensional poverty assessment approaches).

The Urban Partnerships for Poverty Reduction (UPPR) initiative—funded by DFID, the Local Government Engineering Department and the United Nations Development Programme (UNDP)—seeks to reduce urban poverty in 23 towns and cities in Bangladesh by improving education, livelihoods, water and sanitation. It follows the Alkire Foster approach and is based on a definition of poverty acknowledging multiple deprivations across three dimensions. Ten indicators are used: two for health; two for education; and six for living standards (see Figure 4). Each dimension and each indicator within a dimension is equally weighted.[19]

Figure 4. UPPR and the Multidimensional Poverty Index.

Source: UPPR (2014)

UN Habitat's City Profiles

UN Habitat's World's City Profiles aim to draw attention to major issues facing cities, the solutions adopted and best practices. Each profile comprises six key dimensions:[20]

- **Shelter:** focusing on security of tenure, right to adequate housing, access to land, access to credit and access to basic services.

- **Social development:** with particular emphasis on health and safety, social integration, support to disadvantaged groups and gender equality.

[19] WSUP noted that the water utility of Dhaka and other local stakeholders do not use the UPPR data and assessment to prioritise their interventions in LICs.

[20] See Annex 11 for the full description of the indicators used.

- **Environmental management:** with a focus on population, geographical balance, water supply and demand, urban pollution (air, waste, water), disaster management, transport and local environmental planning.

- **Economic development:** with particular emphasis on small and micro-enterprises, the informal sector, productivity, employment and public–private sector partnerships.

- **Governance:** with an emphasis on decentralisation/strengthening of local authorities, participation and civic engagement, transparency, accountability and efficiency.

- **International cooperation:** providing an overview of the city's position internationally.

Table 4. Strengths and limitations of composite approaches

Strengths
• Can constitute a useful baseline to monitor the impact of interventions over time,
• Allow for the analysis of specific aspects of poverty and their correlations,
• Effectively help assess variation in needs (e.g. WASH) across LICs,
• Help provide evidence of why poverty is not systematically associated with slums,
• Deliver rich findings useful to support dialogue between communities and LGAs [interview with David Satterthwaite, International Institute for Environment and Development (IIED)].
Limitations
• The more complex the approach the more time- and resource intensive.

2.3.4 Participatory approaches (cross-cutting)

Participatory approaches complement or replace top-down, expert-led analyses by incorporating the subjective perception that the poor themselves have of the poverty they experience. Such approaches can be instrumental not only for learning about income levels, ability and WTP for given WASH services, but also to better assess the type of deprivations and particular needs of LICs. For example, participatory approaches can help describe and quantify the extent to which lack of accessible and safe WASH services contributes to keeping people in a poverty trap, e.g. through the daily loss of time for fetching water, the prohibitive cost of water and the health-related cost associated with waterborne diseases (see example in Box 5).

By engaging organised and trained community-based teams in the process, it becomes possible to gain precise information on who are the most vulnerable individuals and households and their barriers to WASH services. David Satterthwaite (IIED) emphasises the generally high quality of the participatory surveys and other censuses conducted by slum/shack dwellers' federations and underlines their importance in paving the way for the participatory implementation of programmes. By taking a lead on this task, organisations truly representative of the urban poor get a chance to engage proactively in the multi-sector partnerships tasked with delivering programmes, with a view to improving their relationship with the LGAs and thereby catalysing socio-economic changes.

Box 5. Eawag's Community-Led Urban Environmental Sanitation planning (CLUES)

CLUES is a seven-step process supporting the participatory planning and implementation of sanitation infrastructure in 'disenfranchised urban and peri-urban communities'. CLUES was conducted by Eawag in two slums of Raipur, India, involving the community (notably through focus group discussions) in a broad survey, including topographic and poverty mapping.

Box 6. Political biases, statistical inaccuracies and other flawed assumptions

Defining poverty is often a politically loaded exercise. Results of poverty assessments depend upon who is defining poverty, for what purpose and through which indicators and methods. For example, the criteria to define poverty and slums in India frequently change, resulting in a purely artificial fluctuation of the number of families living below the poverty line (Arabindoo 2011). Baud et al (2008) warn that the use of comprehensive mapping approaches does not guarantee the validity of findings. There, too, criteria may be politically biased, based on interests attached to the financing of programmes or specific investments.

A representative of WSP thus stresses how running different statistical analyses on the same data set can lead to very different conclusions: "The official stats can give very dubious representations of the data." NWASCO representative Chola Mbilima underlines the difficulties arising from relying on outdated statistics: "What used to be rural is now peri-urban and what was peri-urban has now been absorbed in the city. We have issues with the official administrative boundaries and the definitions we use. There is also the fact that upgrading is occurring and needs to be reflected in the categorization". Furthermore, the abundance of statistics on poverty, which are frequently inaccurate and biased, tends to exclude from discussions on poverty the findings from the relatively few ethnographic case studies (Auyero 2000).

According to Satterthwaite (2003), official statistics often fail to reflect the actual incidence of urban poverty and deprivation, which they tend to severely underestimate. Such flawed statistics result from flawed definitions or assumptions. Satterthwaite points out that statistics report only 1.2% of Kenya's urban population as poor (World Development and WHO/UNICEF statistics in 2000), while 150 out of every 1000 children die before the age of five in Nairobi's urban informal settlements. Noting the gross mismatch between these statistics and findings of independent city studies, he warns of the risks of relying on mere statistics and poverty lines to identify poverty: "Set an income based poverty line too low and poverty will disappear" (Satterthwaite 2003).

3 How do organisations select their areas of intervention in practice?

For an organisation charged with improving services for the urban poor (e.g. a donor, an NGO or a domestic government agency), deciding exactly where to work and how to invest available funds is a complex process within which poverty of the intended beneficiaries is a key criterion, but rarely the only one. Deciding where to work is based on a more or less detailed understanding of poverty in the area of action (e.g. a given city), but the depth of understanding is typically constrained by resources, time and other factors, including the mandate and values of lead organisations and their preferred working methodologies. Furthermore, deciding where to work is generally the product of a negotiation with partner organisations—such as the LGAs and the utility— whose respective policy goals must weigh in the discussion. Identifying where to work on the sole basis of poverty assessments is therefore an unrealistic aim in the context of at-scale urban services improvements.

Section 3.1 below lists some of the criteria that determine organisations' choices of where to work in practice. Section 3.2 provides examples of more structured procedures systematically used by certain organisations to identify where to work and/ or invest. Section 3.3 acknowledges and explores the influence of partners and partner negotiation.

3.1 Key principles and criteria guiding the prioritisation of LICs

National or international authorities tasked with screening and selecting project proposals often rely on relatively sophisticated tools to support their decision-making, as discussed in Section 3.2. However, this study suggests that many organisations do not use such tools and do not follow a standard procedure to select their areas of intervention.

For many, the process of prioritising LICs begins by accessing basic data from the utility or the LGA, such as a list of LICs or an assessment of income levels. From this starting point, and regardless of external influences, the decisions of most organisations are influenced by own criteria reflecting their mandate, values and preferred approaches. For example, as noted by a representative of WaterAid, the mandate of some organisations leads to special emphasis on equity and inclusion as a criterion to prioritise their area of intervention; although as other informants noted, situations frequently impose other, more 'pragmatic' criteria, which override the equity/inclusion criterion. In summary, organisations often start by procuring a list of LICs from which the intervention areas will be selected, based on a variable combination of own and external criteria.

The paragraphs below provide examples of the criteria that guide the prioritisation of LICs emerging from the interviews and online survey.

3.1.1 Needs and potential health impacts

An important criterion for many NGOs working on urban WASH is the acuteness of needs for WASH services. Of course this is often related to poverty, but there may not be a direct correlation. A focus on needs will lead organisations such as WaterAid to prioritise LICs facing the greatest deficit in terms of WASH infrastructure (e.g. stand posts, community toilets, household water connections) and LICs excluded from current WASH interventions. The presumed potential for significant health benefits in districts with poor levels of WASH services—usually of prime importance for WASH

oversight bodies (e.g. Devolution Trust Fund [DTF], Zambia) and donors—is another key criterion influencing the prioritisation of LICs. An informant from WaterAid also highlighted that needs and vulnerabilities are often high in LICs located in peri-urban areas with high concentrations of recent migrants, who often represent a more vulnerable population.

3.1.2 Land ownership and terrain

For many organisations, land ownership is a key criterion determining the selection of LICs. For example, DWASA's LIC interventions are restricted to communities settled on government-owned land, while other organisations can be reluctant to intervene in such illegal settlements. LICs may also be settled on land that is basically unfit for human habitation in the long term:[21] WSUP stresses that intervening in such areas entails a high risk of losing investment as a result of major damages to the infrastructure. As a result, some organisations avoid working in LICs at risk of resettlement, demolition or at the mercy of adverse weather events.

3.1.3 Coverage and cost-effectiveness

Number of people reached is a criterion of primary importance for organisations with set quantitative targets, meaning that utilities and NGOs frequently prioritise LICs with high population density. Donors' policies frequently contribute to the prominence of this criterion: a study in rural Bangladesh by Fruttero & Gauri (2005) revealed the tendency of the NGO sector to select their areas of intervention based on prospects for maximising number of people reached, notably because this is a key performance indicator for donors. The study found that NGOs tended to favour areas of intervention concentrating a large pool of potential beneficiaries, over and above indicators of community need and poverty.

In Zambia, NWASCO's strategy in the context of DTF-supported programmes has favoured high-density LICs where the greatest number of beneficiaries could be reached at a lower investment cost per capita. Prioritising such communities allows the organisation to reach numerous beneficiaries, enhancing the cost-effectiveness of programmes. Difficulties are now arising as the LICs that remain unserved have much lower population densities: this is pushing the DTF to revise the design of its decision-making support tool.

3.1.4 Demand and willingness to pay

Utilities, service providers and WASH implementing organisations generally regard willingness and ability to pay for services as essential criteria in the selection of areas of intervention. According to a representative of DWASA, the demand for services is a more important criterion than the assessed level of poverty in the prioritising of LICs. WTP surveys and sometimes small pilots are conducted to assess the demand for services as a basis for selecting LICs.

Low risk of subsidy dependence was deemed to be a critical criterion by survey respondents. Organisations promoting market-based approaches must effectively balance population needs and WTP in prioritising their areas of intervention. A tension is often perceptible among NGOs and service providers, stemming from the difficulty of fulfilling their commitment towards the poor while adhering to sound business principles (see Box 7 on p.28).

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[21] For example, land bounding drainage and sewerage trunks or land prone to flooding and landslides.

3.1.5 Technical and financial feasibility of infrastructure provision

The technical and economic feasibility of expanding existing infrastructure in LICs (such as a water or a sewer network) is cited as a central consideration and an often decisive criterion. According to a representative of WSUP, challenging technical issues such as insufficient water pressure may rule out some LICs as areas of intervention in the short to medium term. Technical and financial feasibility criteria may favour selection of contiguous LICs, particularly in the case of networked infrastructure interventions.

It is important to note that some of the above criteria (notably WTP and financial feasibility) will often be in direct conflict with poverty criteria: willingness and ability to pay for a given WASH product or service will by definition be lower in very poor communities, as will the financial feasibility of an intervention (assessed for example in terms of likely user contributions to ongoing maintenance). As discussed in Box 7, this is a fundamental challenge for organisations like WSUP which aim to support service improvements that are pro-poor but also commercially viable, sustainable and scalable.

3.1.6 Shared understandings and absence of specific criteria

Many organisations working for the benefit of the urban poor will use income-based classifications of settlements as a starting point for assessing which LICs to prioritise. However, several informants further explained that in the absence of an official definition of urban poverty at the city level, the LICs where they intervene will consist of 'well known' and spatially 'well-defined' areas (usually peri-urban districts). In the case of such communities, the attribution of low-income status stems as much from a tacit consensus and shared perception among the LGAs and other stakeholders as from the rational application of a given definition.

3.2 Structured decision support tools and procedures

As noted, public organisations mandated to finance pro-poor WASH programmes generally use standard screening procedures and tools (sometimes developed with partners such as bilateral and multilateral development agencies) to assess the eligibility of projects. These are intended to support a rational and systematic decision-making process. Examples of these tools and procedures are detailed below.

3.2.1 Majidata Quality of Life, WSTF, Kenya

In Kenya, the Water Services Trust Fund (WSTF) recently launched the Majidata Quality of Life Indicator Database (see Annex 4).[22] This tool, which provides a vast array of information[23] on urban LICs countrywide, was designed to assist water service providers and water services boards (WSB) in developing tailored and eligible water supply and sanitation (WSS) proposals for LICs located in their service areas.

Majidata allows for the comparison of settlements according to their Quality of Life score.[24] This indicator is assessed by aggregating a number of WSS-related criteria including: access to WSS services, environmental conditions, perceived public health

[22] The tool was developed by WSTF and the Ministry of Water and Irrigation, and supported by UN-Habitat, the German Development Bank, GIZ and Google.org.

[23] Data collection was carried out with the support of WSBs and WSPs, provincial authorities, local authorities and residents. Data was collected at all levels: WSB, WSP, councils, local administration, area level and plot level. The programme consisted of: counting of plots/dwellings, plot/dwelling interviews, focus group discussions, GPS-based mapping, geo-referencing of area characterisations and WSS infrastructure, and data cleaning and quality checks. The total population of an area was estimated by multiplying the number of (e.g.) plots by the average number of people residing on a plot. This figure was obtained by interviewing a representative sample of dwellings and by calculating the number of dwellings/plots.

[24] Majidata's GPS functionalities allow geo-referenced data to link to pictures illustrating the state of existing infrastructure, housing patterns, environmental risk factors, etc.

Box 7. Balancing pro-poorness and commercial viability/sustainability: WSUP's experience

One of the most challenging aspects of focusing interventions is targeting the poorest while ensuring services are placed on a sustainable footing. In WSUP's view, creating services which are financially viable must be the priority to ensure benefits exist in the long term, however difficult that is to achieve. In the case of urban water supply, this tension is not always as pronounced as utilities believe. Most people living in LICs without access to a formal water supply will already be paying high prices to informal suppliers for poor-quality water: in many cases they pay more per unit volume than the resident of a neighbouring high-income community with a piped utility supply. Because most of these potential customers would pay for a cheaper, formal supply if given the opportunity, extending utility-managed services into poor communities can still be 'win-win': good for low-income customers, and good for the utility's business.

While low-income customers can typically pay viable rates for water, the prohibitive capital costs of extending the water network to previously unserved LICs may play a decisive role in focusing interventions. In the absence of funding for such improvements, many interventions are restricted to improving supply to LICs with an existing network. To ensure the poorest, unserved LICs are not neglected, WSUP encourages governments and development partners to provide targeted capital investment, as is generally going to be necessary to cover full lifecycle costs of water services provision. Providing services to the very poorest may also require some form of cross-subsidy from other customers, though the amount of subsidy needed may be less than is often assumed.

Striking the balance in the provision of sanitation services is yet more complex. Access to piped sewerage is very limited in most developing cities and will remain so for decades to come; where sewerage does exist it is typically concentrated in the business and high-income districts. Low-income residents generally depend on on-site sanitation and often have to meet the costs of latrine construction themselves, in addition to the cost of pit-emptying services where these exist. There is no one-size-fits-all solution in focusing sanitation interventions: WSUP works closely with LSPs to assess the existing sanitation situation in the city, identify priority communities for investment, and propose a menu of sanitation solutions appropriate to the local context. Where toilet construction or pit-emptying services are being supported, WSUP may focus on engaging private sector actors to help provide and finance these services. Willingness to pay surveys will be conducted to assess demand, and recourse to micro-finance, loans, staged payments and revolving funds may be provided to promote affordability.

risks and security of tenure. WSTF systematically scores the submitted projects against the Quality of Life assessment framework, which assigns distinct weight/importance to each criterion (see Annex 4). The eligibility of projects directly depends on this score. However, as a representative of WSTF noted, more sensitive issues are also taken into account in the prioritisation process, such as the community's ability to self-organise and/or the presence of cartels, which may compromise implementation.

3.2.2 DTF project screening process, Zambia

In Zambia, the Devolution Trust Fund (DTF) has been operating as a basket fund[25] for improved pro-poor WSS projects for almost a decade. Part of the fund is administered in the form of grants to commercial water utilities to support the expansion of their WSS services to the urban poor.

Interventions in peri-urban areas are prioritised and receive 80% of the funds. The infrastructure-related capital costs are fully subsidised to ensure that pressure to achieve cost recovery does not result in prohibitive tariffs. A lifeline subsidised tariff is also applied at the water kiosks. The DTF assesses utilities' proposals using a tool to ensure that interventions are pro-poor; this tool also aims to ensure that the selection of the areas of intervention leads to significant health impacts, financial viability and sustainable management (see Figure 5 and Box 8). Projects fostering community and women's participation throughout have a competitive advantage.

According to a representative of NWASCO, and DTF, DTF's equation to support the prioritisation of LICs comprises two key components: i) sustainability and risks, and ii) conditions in the area. Each component consists of several sub-components including numerous indicators. Sustainability and risks principally focus on assessing the financial viability of the submitted project and the joint capacity of the utility and community-based organisations (CBOs) to manage the WSS services. The second component assesses the existing service levels and potential health impact of the intervention. The latter (health impact) is heavily weighted in the overall equation. Eligible projects and utilities are further subjected to a detailed socio-economic analysis following successful screening.

Figure 5. DTF project selection process.

- Addressed to all CUs (exceptions possible)
- Scope/content of eligible projects
- Thresholds for project value
- Application forms

- Eligibility
- Completeness

- Review of proposed measures
- Review of implementation concepts
- Review of BoQs and cost estimates

- Cost per beneficiary
- Current WSS situation
- Potential to reduce health risks
- Sustainability Risks

- Recommendation by DTF Management
- Decision taken by DTF Committee

[25] The DTF is financed through government and donor grants (German Development Cooperation, DANIDA and EU).

Box 8. Assessing the effectiveness of pro-poor 'targeting' approaches.

In a multi-country study of publicly co-financed rural and urban sanitation programmes, Trémolet et al (2010) assessed the extent to which the poor were reached and analysed related errors of inclusion (when the non-poor get a subsidy) and exclusion (when the poor do not receive the subsidy). Most programmes aimed to create demand for sanitation and encourage self-financed sanitation solutions, while providing subsidies or loans to the poorest households. In most countries, eligibility for subsidies was determined through econometric approaches.

A narrowly defined set of criteria to assess below poverty line households led to significant errors of exclusion in the India programme. In Ecuador, Bangladesh and Senegal, the programmes used geographical data to select areas known for their high incidence of poverty. In Bangladesh, the participatory poverty assessment used to direct the subsidies resulted in very few exclusion/inclusion errors. In Ecuador, communities where the entire population was below the World Bank-defined upper poverty line were provided a universal subsidy. Likewise in Senegal, all households in selected areas benefitted from the same subsidies but errors of exclusion occurred.

In Vietnam, beneficiary households all belonged to the bottom income quintile. Errors of inclusion were kept low thanks to the engagement of local savings and credit group leaders in the monitoring process. However, the poorest households (below the locally defined poverty line) were not granted access to the loans because of their perceived inability to pay them back. Interestingly, vulnerability was emphasised through various criteria in the prioritisation process of the Mozambique programme.

The study also stressed that because they cannot afford to participate in such processes, the poorest households (based on income definitions) are sometimes excluded from market-based interventions such as the provision of soft loans (see details in Annex 5).

3.3 Different organisations, different motivations

The urban WASH space is complex and sometimes chaotic. A number of informants consider that the difficult and "jungle"-like nature of this working environment resulted in the relative absence of WASH NGOs focusing on urban areas. Working in urban areas implies an understanding of the official rules of the game and stakeholders' formal agendas, as well as often competing hidden rules that reflect different sets of informal incentives and constraints.

Carrying out successful WASH interventions in LICs generally entails working in close partnership with key local actors who will have their own priorities and constraints. Furthermore, their positions with regard to prioritising areas of intervention may even vary internally across departments. Understanding these positions and uncovering their underlying drivers is essential. Developing this understanding is generally time-consuming, as it is often acquired through close collaboration and building trust with local players. It implies a long-term engagement in the same cities, spanning far beyond the timeframe of most programmes. Building this understanding of key local actors is a prerequisite for effective negotiation leading to appropriate selection of LICs; any decision to implement a WASH programme in a particular LIC over another will have significant political and economic consequences for a number of stakeholders.

This section outlines generic criteria and principles generally found to influence the position of different types of organisations with regard to the prioritisation of LICs. These findings, presented in Table 5, reflect inputs from informants during the semi-structured interviews and responses to the online survey and provide interesting insights into the prioritisation process.

Table 5. Generic drivers guiding the prioritisation of LICs.

Type of organisation	Key drivers, criteria and principles guiding the prioritisation of LICs
Approval bodies/ organisations	Acuteness of needs; potential health impact. Financial viability of intervention: implies good business model of utility, an enabling environment at community level in terms of demand, WTP, potential for sustainable community-based management (CBM).
Regulators	Appropriate systems, system viability, above-cited principles.
Utilities (*also apply to commercially oriented service providers)	Commercial relevance* (e.g. expanding coverage towards profitable or at least commercially viable areas, or towards areas where informal interests of utility staff are not threatened). Enabling environment at community level (e.g. ability of community to organise, potential for effective CBM, absence of cartels*). Donor support (e.g. funding to set up a LIC unit and trial BoP approaches). Official mandate (especially when responding to a public health crisis). Political pressures.
Local government	Political/partisan interests and pressures. Financial viability (avoiding further drain on insufficient resources). Informal interests of utility staff are not threatened. Long-term vision of city (planning) and responsibility towards citizens.
International donors and partners (wide variation in approach)	Potential health impact. Selection efficiency: greatest number of people reached per dollar spent on aid. Require tangible and measurable results. Coverage expansion: high-density areas, potential for scaling-up (includes stakeholders' buy-in as an important criterion). Equity and rights-based approaches.
NGOs	Needs and vulnerability; potential health impact; equity and inclusiveness. Coverage as a function of investment (efficiency of interventions). Stakeholder buy-in (LGA, utility) to promote sustainability and scale up. Relative ease of implementation as a function of funding timescales.

Local politics and vested interests

Local politics frequently impinge on the selection of LICs, as politicians seek to influence utilities to prioritise certain LICs in their constituencies. The opposite is also possible, whereby local politicians with vested interests place barriers on the implementation of WASH projects in their constituencies in order to maintain the status quo.

The presence of local cartels and vested interests represent major challenges in the implementation of urban WASH programmes in LICs and can interfere in the negotiation process. For example, although the pro-poor department of a utility may

support working in a given slum, the commercial branch may disrupt this plan because of the benefit that some of its staff derive from controlling the illegal connections to the network serving the slum. Partners may also be discouraged to further invest in given LICs with negative track records. In some cases, beneficiaries are known to repeatedly lose access to safe and affordable WASH services shortly after programme completion because the CBO initially put in place to manage the service is commandeered by a small group of self-interested individuals.

Politicians and influential individuals working for the utility or the local government sometimes have stakes in WASH businesses operating in eligible LICs. For example, they can be shareowners of a tanker truck company emptying pit latrines or engaged in highly lucrative illegal business with water cartels. Implementing a WASH project often means introducing a new offer of services, and thus often new competitors, which may threaten some interests.

Mitigating risks

Informants stress the need to integrate the type of information cited above. This will help put the organisation in the best position to negotiate the selection of LICs based on a full understanding of the related political and economic interests of stakeholders. Carrying out an in-depth stakeholder analysis prior to engaging in a LIC intervention is therefore recommended. In India, stakeholder consultations are mandatory for the preparation of City Sanitation Plans. These identify hotspots for priority interventions based on indicators such as open defecation and number of poor families receiving government hand-outs. WaterAid collaboratively prepare their country strategies and annual plans in consultation with local partners, helping to negotiate the local politics. In Kenya, the WSTF sensibly recommends involving local politicians early in the process to ensure political buy-in.

4 A vision to work towards: negotiated poverty mapping

4.1 Selecting LICs: a joint decision-making process

To be successful and scalable, urban WASH programmes must be designed and implemented in partnership with key local players, including the LGAs, the utility and other service providers, the regulator and community stakeholders. Selecting LICs is therefore a decision-making process involving some level of negotiation, the scope of which partly depends on the extent partners are required to apply formal selection criteria, procedures or tools. As noted, this negotiation is shaped by incentives and interests related to official and sometimes hidden agendas of partner organisations and stakeholders.

A successful negotiation builds on a good understanding of partners' official mandates, priorities, incentives, risks and constraints. It is also critical to recognise the formal and informal political and economic drivers that influence how stakeholders prioritise certain LICs, community groups or even households. Partners are likely to express their interest in tackling particular expressions of poverty and in prioritising efforts to address some of its structural dimensions. Some might indicate their preferred strategy, focused on given vulnerabilities and a chosen approach, requiring specific forms of capital. For example, organisations pushing for community-based management or business approaches may seek to ensure that social and financial capital are present at the required level in the selected areas.

An effective negotiation therefore requires a shared understanding of urban poverty. This generally entails building upon the existing official data where available (e.g. measures of income or consumption/expenditure at household level) and carrying out a more comprehensive analysis of poverty. Such analyses will vary in quality and depth depending on available resource: in-depth analyses will help to shed light on the heterogeneity of poverty at community and household levels and on its key local structural dimensions and dynamics.

4.2 A tailored approach to urban poverty assessment

A tailored analysis of poverty that acknowledges partners' interests can be carried out using selected poverty assessment tools and approaches. The choice of the approach will have significant implications in terms of time and resource requirements.

Complex multidimensional approaches may include participatory features, leading to a more genuine and accurate comprehension of the circumstances and dynamics of poverty in the community and within households. Such participatory processes are a useful first step in the mobilisation and engagement of the community in a prospective programme, offering an opportunity for well-organised groups that are representative of the community to establish constructive relationships between LICs and key WASH players.

The integration of GIS mapping techniques in complex poverty assessment approaches is usually highly relevant. GIS mapping enables a more nuanced analysis of localised poverty and provides user-friendly visuals to support discussions with partners. However, regardless of the approach, poverty assessments carry an inherent risk of bias related to the organisation leading the process and its objectives, and political bias frequently impacts on the results.

Framing poverty analyses as more than a programmatic requirement

The choice of poverty assessment approach and tools ultimately depends on how poverty is conceptually framed and the resources available. Arguably, more resources can be mobilised by contextualising poverty analysis as a powerful advocacy tool. Such analyses can inform public advocacy campaigns and can be used as tools in performing 'advocacy from inside' to support local partners through capacity building. For example, a participatory analysis involving the community and jointly led by the LGA and the utility can provide an opportunity to strengthen the skills and roles of urban planners. Such an exercise can be carried out citywide in partnership with all key players (including LICs) through a coalition/federation of CBOs (e.g. slum dwellers' federation). In this way, organisations such as WSUP can build momentum amongst local stakeholders and pave the way for guided WASH investments in LICs on a citywide scale.

While this vision of a rich, negotiated poverty mapping may resonate deeply with WASH sector agencies, those same agencies tend to have more immediate and specific questions about deciding where to work. In particular, they generally need workable methods for assessing household poverty levels with reasonable levels of speed and accuracy. The following section provides practical recommendations to this end.

5 Recommendations

Defining urban poverty

A sound definition of urban poverty builds on a generic definition of poverty, for example: 'a function of the ability of the individual to sustain himself or herself and dependents, or to command resource for this subsistence' (Sen 1981).[26] Acknowledging the significance of wealth[27] as one of its key expressions, such a definition must transcend the limitations of wealth-based considerations by encompassing the multiple dimensions in which urban poverty is embedded.[28] The definition will be enhanced by contextual elements referring to key features of the urban environment and to intra-household and community-level heterogeneities. Finally, poverty needs to be defined as a dynamic phenomenon, whereby individuals and households rely on assets and various types of capital to reduce their vulnerabilities to stresses and shocks.

Defining an urban low-income community

One shortcoming of using the term 'Low-Income Community' is that it implies an exclusive focus on income as a measure of poverty. Taken literally, an urban LIC needs to be defined as an urban (or peri-urban) community where a substantial percentage of the population lives below the established poverty line. However, if the term LIC is really intended to denote a community with high poverty incidence, then it is meaningful to complement the former definition to reflect a broader understanding of poverty. An urban LIC is then defined as a community with high poverty incidence or where the population experiences deprivations of varied intensity, thereby increasing the vulnerabilities of individuals and households to stresses and shocks and the corresponding likelihood that they could suddenly fall below the poverty line.

Measuring poverty in a way that is fast and reliable

Measures of poverty can be carried out for various purposes including baseline poverty assessments, the prioritisation of areas of intervention, and impact assessments. Relatively complex approaches are advocated in contexts where thorough baseline studies can usefully inform programme strategies and support negotiation with local players in areas of intervention. In reality, however, WASH sector agencies will often need relatively simple and low-cost methods to measure urban poverty rapidly and reliably.

Such a method could consist of a composite approach combining an asset-based tool with compact modules assessing poverty in selected dimensions, including GIS mapping and participatory features. The level of sophistication of these added modules and features would depend on the purpose of the tool and the financial and time resources available.

Organisations such as WSUP could complement a PPI or PAT type of poverty scorecard with additional questions addressing WASH services (access, type, WTP), public health, environmental or tenure and tenancy issues. Geo-referencing the location of water points, networks and other public and communal WASH facilities would

[26] Consider also: 'Urban poverty defined as an absolute standard based on a minimum amount of income needed to sustain a healthy and minimally comfortable life, and as a relative standard that is set based on the average standard of living in a nation' (McDonald & McMillen 2008).

[27] As measured by income or consumption levels.

[28] A definition designed for WSUP or for the WASH sector may refer here to the many structural dimensions of poverty affected by the lack of improved WASH services.

be particularly advantageous. Focus group conversations could be included to gain further insights into issues of particular relevance to the purpose of the assessment, such as the identification of vulnerable groups, intra-household and community level heterogeneities, livelihoods, assets and vulnerabilities, service levels and WTP.

Communicating the complexity of the urban WASH sector

This study suggests that most NGOs in the WASH sector have not yet adopted standard and structured approaches to assess urban poverty in order to identify and prioritise where to work.[29] This partly reflects the limited efforts to date to explore, pilot and learn from practical examples of assessment approaches. It is also indicative of the time and resource constraints hindering the implementation of such processes. Presumably, this further reflects the limited demand from stakeholders (including donors, LGAs and utilities) for the transparent use of such tools, the output of which may eventually only partly influence a negotiation process in which a number of other incentives will inevitably feature.

Urban WASH programmes are increasingly focused on achieving citywide, poor-inclusive service provision. It is therefore becoming critical for implementing organisations such as WSUP to develop policies establishing the rationale underlying the selection of areas of interventions and informing the application of dedicated tools and processes on the ground. Urban development is frequently chaotic and urban WASH achievements generally result from sustained engagement in tough, 'jungle'-like contexts. According to various informants, including World Bank representatives, this complexity and adversity account for the still limited engagement of NGOs in urban WASH.

It is therefore in the interest of WASH-implementing organisations and the broader WASH sector to share the analysis of the complexity inherent in the process of identifying and prioritising LICs. It is also in the interest of the sector to shed light on the inevitable trade-offs inherent in the prioritisation process, which may relate both to competing criteria internally (in the implementing organisation) and to diverging interests among local partners and stakeholders.

Developing a poverty assessment toolbox

It is important for WASH-implementing organisations to recognise that there is not one single definition of urban poverty but many, and that the one it adopts reflects both the organisational mandate and an appropriate level of complexity to frame its activities. It is arguably in the interest of such organisations to opt for a relatively thorough definition of urban poverty (as suggested above) referring to the influences of inadequate WASH services or complete lack of services on urban poverty. Such a complex definition does not preclude using simple methods to assess poverty.

Organisations with an interest in strengthening their definitions could initially focus on developing, piloting and learning from relatively quick and easy-to-apply poverty assessment approaches. A further option is to consider gradually developing a poverty assessment toolbox (or a customisable tool with sufficient optional modules and features) to meet distinct programmatic objectives and respond to various constraints

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[29] Due to limitations inherent in the size and composition of the samples of interviewees and survey respondents, the authors warn about the risks of generalising the findings of this report. However, the conversations had and the literature review suggests that such practices are still rare.

and opportunities. In favourable contexts (e.g. with sufficient funding and timeframes), more sophisticated tools could be developed to support the negotiated poverty mapping process described in Section 4, which would be highly valuable in the context of a citywide approach.

Here again, it would be useful for WASH-implementing organisations to communicate that there is no widely used approach to assessing urban poverty amongst WASH NGOs, and that a great variety of approaches are potentially relevant. The approaches and tools used must be explicitly linked to the chosen definition of urban poverty, and their application to the organisation's mandate clearly articulated, notably by describing how embedded criteria and indicators support the objectives and principles of the organisation. In WSUP's specific case, it is important to share the implications of strengthening the capacity of utilities and other service providers on the prioritisation of areas of intervention. This calls for explicit reference to the tensions between certain criteria (e.g. ensuring interventions are both pro-poor and commercially viable) and the organisation's strategy to reconcile them.

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Annexes

Annex 1: Advantages and disadvantages of poverty lines

Advantages
• A useful starting point for analysis (especially in ascertaining the numbers of the poor)
• Provide comparison over a range of socio-economic variables, adjustable to account for differences between households
• Internationally defined and accepted poverty lines (e.g. from the World Bank) enable comparisons across the board
• Internationally defined poverty lines can be used where national/local governments lack locally defined poverty ascertaining criteria

Disadvantages
• Do not reflect the impact of fluctuating incomes as a result of the market (Wratten 1995)
• Do not capture discrimination in labour markets that have a direct impact on the earnings of the urban poor (Satterthwaite 2003)
• Do not reflect poor environmental and hygienic conditions impacting the health of the poor
• Do not reflect the capacity to achieve access to livelihoods, services etc. (Wratten 1995)
• Despite their adjustability to purchasing power parity, such standardised measures can hardly be valid for all the cities globally (Satterthwaite 2003), especially as urban conditions cannot be generalised across types of urban areas with varying living costs (Baharoglu & Kessides 2002; Wratten 1995)
• Often fail to account for governance failures while giving little to no attention to non-income aspects like living conditions, access to secure housing, water and sanitation, undemocratic unrepresentative political systems, lack of voice, etc. (Satterthwaite 2003)
• Seldom attach a monetary value to the consumption of health-related public services like water and sanitation
• Fail to account for crime and violence risks (Montgomery 2009)
• Issues over how these poverty lines are defined (see prior text box). Survey designs also vary between countries making comparisons difficult (Baker & Schuler 2004)
• Once a poverty line established, assessing which households and individuals fall below the line remains difficult (while making an intervention)
• Household income is seldom reported accurately. It may be difficult for households to assess their monthly/yearly income from the informal sector or fluctuating sources of employment (Rakodi 1995). Also, assessing the share of the income available for household consumption is difficult (Rakodi 1995)
• Knowing the number of people below the poverty line fails to provide indications on the intensity, circumstances and nature of urban poverty (Rakodi 1995)
• Do not describe the nature of poverty and its evolution (e.g. continuation, reduction, deepening) (Rakodi 1995)

Annex 2: Structural dimensions of poverty

1. **Economic:** The economic structural dimension of poverty can be measured through income/consumption and asset indicators (see sections 2.3.1 and 2.3.2): access to employment and nature of this employment (secure, informal, etc.); actual cost of living including factors such as transport, housing costs, access to savings and credit, access to land, price variability exposure (Montgomery 2009) and access to informal labour markets (Amis 1995). Lack of sufficient income to meet basic needs is a major cause of poverty and can be determined through the above indicators.

2. **Social development:** This is a broad umbrella for health and education indicators such as life expectancy, infant mortality, nutrition, proportion of household budget spent on food, literacy, enrolment rates and access to health services (Wratten 1995; Moser et al. 1996a).

3. **Housing:** This structural dimension of poverty can be assessed through indicators such as housing quality, per capita space, tenure security (particularly relevant to the identification of LICs in informal settlements).

4. **Environmental:** Indicators include air pollution, proximity to heavy industry, environmental degradation (due to lack of water, sanitation, solid waste management and drainage), presence of vectors and rodents, poor indoor air quality due to usage of fuels for cooking, and backflow of sewage during floods and rains. Poor environmental indicators negatively impact health, well-being and productivity and hence cause and reinforce poverty.

5. **Gender:** Indicators include the triple roles of productive, reproductive and household enterprise borne by women, gender division of labour (Moser et al. 1996a), women's access to land rights and employment and barriers to same, maternal health indicators, barriers to access to employment and social services, domestic violence, women's decision-making power in the household, threat of sexual assault, violence, burden of unpaid labour, time spent on household chores such as water and sanitation, access to childcare support.

6. **Access and reliability of physical and social services (Moser et al. 1996a):** This includes indicators such as access to water and sanitation, electricity, schools, healthcare, community services and transport infrastructure.

7. **Political dimension:** This includes indicators such as the ability to participate in decision-making, representation by CBOs, ability to interact with the state to secure entitlements, political and institutional accountability. Claims on other members of the community, government and the aid community. Collective efficacy and political voice determinants such as social exclusion, participatory planning (Montgomery 2009), discriminatory structures and marginalisation of certain individuals/groups (within the community as well as the city), e.g. people living with HIV. The urban poor's inability to secure these political rights may also impact their ability to secure their basic entitlements from the state.

8. **Physical safety:** At both household and community level. Indicators include safety from violence and crime, access to judicial and police systems (Montgomery 2009). Domestic violence and sexual assault have been accounted for in the gender indicators.

9. **Psychological well-being dimension:** Indicators include days lost to disease, and prevalence of mental illnesses such as depression or anxiety (Alkire & Sarwar 2009).

10. **Empowerment/agency:** Social networks and capital, self-perceptions and interpretations of urban inequality (Montgomery 2009; Baharoglu et al. 2008).

Hence, poverty is not just a construct of a lack of income but is also determined by the 'structures of constraint' or factors that 'make it difficult for households to meet their needs and gain access to collective services from which they are excluded' (Baud et al. 2008). Urban poverty analysis thus involves examining the structural dimensions that perpetrate these constraints, in order to assess the deprivations experienced as a result. These multiple deprivations have a cumulative effect on households with deprivation in one area making it difficult to meet the needs in other areas, thus deepening poverty and making it difficult for households to find a way out of poverty (Baud et al. 2008).

Annex 3: Understanding the household in urban poverty analysis

Issues	Random sample survey	Sub-sample survey	Community survey	Social policy survey	Macroeconomic paper
Socio-economic profile of the household	Demographic and socio-economic status of household memebers; household age structure; household size; household structure; dependency ratio	In-depth qualitative information on changes in structure and reasons over 10-year period; intra-household decision-making about fertility	Main employers in the community; social and political organisations	Poverty profile describes demographics at the urban level (for representativeness analysis); population and family planning policy and its relationship to family size; health policy	Levels of poverty and welfare; changes in macro policies, for example, shifts in employment can have an effect on household structure such as men as men away from the home
Access and reliability of household employment and income	Sources of income (main and supplementary - income in kind, household enterprise), remittances, credit, income earners, type of occupation, social security benefits	Income transfers, sources of credit, intra-household decision-making on expenditures, household budget	Main employers and occupations of people community-level projects with income-generating component	State of urban poverty, migration and growth of informal sector	Movement of labour towards low-productivity jobs; employment and unemployment trends, trends in real wages; labour force participation rates; changes in informal sector employment; overseas employment
Work patterns of households members and balancing of gender roles	Information on the triple role - productive, reproductive and community managing tasks, gender division of labour; sons/daughters	Typical 24-hour household activity; changes in household composition and structure over time; implications for gender division of labour; domestic violence	Community projects/ organisations and the relative involvement of men and women	Changes in services; women in the informal sector; social action programmes; child care support programmes	Cuts in social spending; women's increased labour force pariticipation, shift from non-tradable to tradable
Access and reliability of facilities	Physical attributes of housing; tenure patterns and perceptions; length of stay; migration history; credit on housing; density (nesting); household expenditure on housing	Perception on changes in cost and availability of goods/services	Patterns of land tenure; pattern of housing, spatial distribution; threats of eviction; history of growth of the community	Housing policy provision and budgetary allocations; nature of housing and land markets	Cuts in public expenditure on housing and facilities
Access and reliability of physical and social services	Education level of members - type of institution; health facilities used; expenditures on tuition fees and related costs; type of services used and expenditure on transport, water and household energy	Qualitative data on drop-outs; problems in payment of school expenses; changes in cost of goods and services; perception of reliability of services	Level of service provision; who provides, funds and maintains reliability of service; initiatives in response to unreliable services	Trends in expenditure cuts; user fees and link to household expenditure patterns	Trends in expenditure

Source: Moser et al. (1996a)

Annex 4: Majidata Quality of Life indicators for low-income areas

Data collection tools and questions used	Water supply situation	Answer considered	Scores
Tool 4; Q 1	Main sources of drinking water used by dwellings:	Improved sources (*)	0-20% = 0; 21-40% = 2; 41-60% = 3; 61-80% = 4 81-100% = 5
Tool 4; Q 5	Residents views of the quality of their drinking water:	Good	81-100% = 5
Tool 4; Q 10	How residents describe their water situation:	Good	81-100% = 5
Tool 4; Q 8	Time it takes to fetch water (one trip):	Less than 30 min.	81-100% = 5
Tool 5; Q 8.1	Is area linked to the WSP distribution network:	Yes	Yes = 3 No = 0
Tool 5; Q 8.2	Technical state of the water supply infrastructure:	Good	Good = 3 Fair = 3
Tool 5; Q 8.6	What residents see as the major water supply problem:	No major problems	No problems = 5
Tool 5; Q 8.13	Daily hours of water supply:	More than 6	More than 6 = 4
Tool 5; Q 8.15	No of days the area receives water per week:	More than 5	More than 5 = 4
Tool 5; Q 8.16	How residents perceive the water pressure in the area:	Good	Good = 3
Subtotal:	**Maximum score:**		**42**
Sanitation situation			
Tool 4; Q 21	Dwellings have their own sanitation facilities:	Yes	0-20% = ?; 21-40% = ?; 41-60% = 3; 61-80% = 4; 81-100% = 6

Data collection tools and questions used		Answer considered	Scores
Tool 4; Q 22			
Tool 4; Q 28			
Tool 4; Q 31			
Subtotal:	**Maximum score:**		**22**
Area characteristics			
Tool 5; Q 2.5	Security of tenure:	Legal	Being legalised = 2 Partly legalised = 1 Legal = 3
Tool 5; Q 3.2	Is the area subject to flooding:	No	No = 5
Tool 5; Q 3.5	Location of the area:	No answer	No answer = 4
Tool 5; Q 4.5	Population density:	Low, medium	Medium = 2 Low = 4
Tool 5; Q 6.4	Main housing materials:		Concrete bricks = 2
Tool 5; Q 10.1	How residents assess the public health situation in the area:	Good, Fair	Good = 5 Fair = 3
Tool 5; Q 11.1	How residents assess the solid waste situation in the area:	Good, Fair	Good = 4 Fair = 3
Tool 5; Q 12.2	Technical condition of the roads within the area:	Good, Fair	Good = 3 Fair = 2
Tool 5; Q 12.4	Technical condition of the drainage network in the area:	Good, Fair	Good = 4 Fair = 3
Tool 5; Q 13.4	Levels of vandalism in the area are high?	No	No = 2
Subtotal:	**Maximum score:**		**36**
	Total max. score:		100
	Total min. score:		0

Annex 5: Poverty targeting evaluation of six publicly co-financed on-site sanitation programmes

Country - Approach - Context	Type of intervention	Level of public funding	How poor communities/households were selected as targets	How pro-poor was this targeting
Vietnam - SRF - urban	Software support, credit via SRF, stabilised interest rates for hardware construction	Public funds = 7% of total cost of sanitation adoption	The revolving fund targeted poor households living in areas not connected to sewers. Women's Unions kept information on recipients' household income. However, the definition of low-income households was fluid and varied from city to city depending on relative wealth. The majority of LI households were defined based on city-level definitions of poverty, and a smaller percentage of loans went to the poor defined as such based on provincial definitions.	All beneficiary households were in the lowest income quintile based on local definitions. Errors of inclusion were close to nil as the programme targeted comparatively richer towns where households would already have had sanitation facilities and the % of people BPL was quite small (2.41-7.97%). Also, errors of inclusion were limited owing to the control of local savings and credit group leaders. Very poor households (with income below the nationally defined poverty line) did not get loans as they did not have the ability to pay them back.
India – CLTS* – rural	Software support, outcome-based hardware subsidies, access to credit in some districts	Public funds = 9% of total cost of sanitation adoption	Targeted at poor households with annual incomes of less than US$ 400 and some other criteria; households below the poverty line (according to surveys conducted every 5 yrs) received a hardware subsidy.	Exclusion errors of around 10–20% with possible inclusion error of similar proportion. Exclusion errors could be due to the possible wrong categorisation of some BPL households as APL households. Targeting of BPL households was more aggressive in certain districts with high inclusion errors in some districts. BPL households were defined based on a narrow set of criteria.
Bangladesh - CLTS - rural	Software support, upfront hardware subsidies targeted at poorest	Public funds = 31% of total cost of sanitation adoption	Selection of 5 districts where average monthly income is far below national average. The Dishari project targets all people in the project area, including the poor. 7% of households identified as the poorest have received specific assistance of in-kind hardware subsidies.	In order to reduce the risk of hardware subsidy capture by the non-poor, communities were deeply engaged in the process and identified the poorest families eligible for subsidy themselves, submitting a list to the district administrations. The poor were free to choose which technologies would best suit their budget.
Mozambique – PLM – urban	Software support, output-based subsidies for sanitation providers	Public funds = 58% of total cost of sanitation adoption	Poor and vulnerable households were identified by GAPVU in collaboration with local leaders based on established criteria (e.g. single mothers with at least five children, chronically disabled people over 18 years old, elderly people over age 60 more than two years unemployed, etc.). These households received 100% subsidy for a complete latrine. After decentralisation, these subsidies were discontinued. The PLM workshops (which received subsidies) don't particularly target poor customers.	Households received comparatively high level of subsidy (75–85%) because sales prices were not updated.
Ecuador –rural and small towns	Software support, up-front fixed hardware subsidies	Public funds = 85% of total cost of sanitation adoption	Eligibility criteria: rural inhabitants living in municipalities with a population of up to 10,000. 152 municipalities (out of 219 eligible villages) were selected. The project gave preference to areas close to the southern and eastern borders, which are known to have high incidence of poverty, and also to areas with high number of indigenous people. The municipalities were selected based on low service coverage, high poverty indicators and interest of communities in improving services (i.e. demand).	Universal subsidy of $210 per sanitation solution built. The income of the entire community was below the World Bank's higher poverty line of US$ 2.13 per capita/day, with average family income estimated to be US$ 1.43 per day. An ex-post evaluation of the project showed that a large majority of beneficiaries were indeed poor.

| Senegal –urban | Software support, output-based hardware subsidies to local sanitation providers for each sanitation solution built, limited schemes to facilitate access to credit | Public funds = 89% of total cost of sanitation adoption | Targeted at low-income populations in peri-urban areas of Dakar. It targeted the most poverty-stricken areas in Dakar region, particularly areas deemed poor and without appropriate sanitation systems. 66% of the population in targeted areas lived below the poverty line. **A design stage study deemed this kind of geographical targeting as the cheapest targeting method.** A subsidy for hardware costs (70–75%) was paid in kind after household contributions were received. | Anecdotal evidence shows some level of subsidy capture by richer households. No proper study was carried out to assess errors in inclusion and exclusion. The same level of subsidy was given to all households in the target area for all sanitation solutions. |

*CLTS, community-led total sanitation

Source: Developed from Trémolet et al (2010)

Annex 6: Vulnerabilities and forms of capital - suggested typologies

Table 6. Types of vulnerabilities

Vulnerability arising in relation to:	Common characteristics
Public health and environmental hazards	Health-related risks resulting from the accumulation of: high population density, industrial pollution and lack of appropriate health or WASH services. Hazards related to flooding or landslides.
Commercial exchange	Commoditisation of living essentials increases the vulnerability to spells of unemployment, irregular employment, lack of savings or saleable assets, inflation and dependencies with land owner.
Social diversity, social fragmentation and crime	Socio-economic stratification and inequality can trigger crime. Rampant criminality at night. Weak community and intra-household mutual support and social security mechanisms (Moser et al. 1996).
State and police intervention	Corrupt police officers demanding bribes from informal street vendors, rising food and commodity prices due to removal of state subsidies.
Insecure tenure	Insecure land tenure due to illegal occupation of land makes LICs vulnerable to eviction (Chambers 1989; Arabindoo 2011).

Table 7. Types of capital

Type of capital	Key elements
Social	Social ties. Reciprocity within communities and between households based on trust.
Human	Health, which conditions capacity to work; skills and education influencing the return to work.
Financial	The 'productive capital', notably including housing. Financial resources including savings, credit, remittances and pensions. This capital reflects the ways in which Households build up financial reserves.
Physical	Basic infrastructure (transport, shelter, water, energy, communications) and the productive equipment supporting livelihoods. Swift's (1989) 'stores' assets and 'investments' assets (physical items) are constitutive of this form of capital.
Natural	Clean air and access to green spaces and parks (water and land are already included in physical capital).

Annex 7: Weighting systems in poverty assessment tools

PA with externally set weights (Example with four indicators)

Education of client (Ordinal variable):

1 = never gone to school (0 points)

2 = primary school not completed (1 point)

3 = primary school completed (2 points)

4 = more than primary school (3 points)

Type of Roof (Ordinal variable):

1 = straw, others, leaking roof etc. (0 points)

2 = plastic (1 point)

3 = wood (5 points)

4 = tiles, metal or similar robustness (7 points)

Did you and your household members eat meat during the last seven days? (Nominal variable):

1 = no (0 points)

2 = yes (2 points)

What is the total value of your electric appliances? (Ratio variable)

Answer: 4,000 currency units (Point system: For each thousand units, one point)

Classification:

below 10 points - the individual/household is categorised as poor

10 points or more - not poor/less poor

      Ranking by point system with respect to relative poverty is feasible

Annex 8: PPI look-up table for Bangladesh

Look-up table for converting scores to poverty likelihoods

Poverty likelihood (%)

| Score | Natl. Lower | National Upper | | | USAID | Intl. 2005 PPP | | | | |
		100%	150%	200%	'Extreme'	$1.25	$1.75	$2.00	$2.50
0-4	76.2	87.3	98.4	100.0	65.8	97.9	98.8	100.0	100.0
5-9	70.6	84.6	97.7	99.5	65.6	89.3	98.2	98.7	99.7
10-14	63.6	82.1	97.6	99.5	57.2	88.8	98.2	98.7	99.7
15-19	46.4	68.0	96.2	99.5	42.5	81.6	96.9	98.6	99.7
20-24	37.1	62.7	96.1	99.5	32.7	78.0	96.3	98.4	99.7
25-29	26.6	50.4	88.7	97.9	22.9	65.8	91.6	95.3	98.7
30-34	19,1	40.9	84.3	96.0	16.9	57.0	87.9	93.5	98.2
35-39	15.0	36.0	80.8	93.6	13.8	50.3	83.6	90.7	96.9
40-44	12.7	26.7	76.1	91.9	11.1	40.8	79.6	87.4	94.9
45-49	6.6	19.6	65.8	86.6	5.4	33.5	68.8	79.6	91.5
50-54	3.9	14.7	55.0	81.3	4.5	24.2	60.3	74.2	87.9
55-59	1.5	7.1	42.6	75.6	1.8	14.5	50.4	65.2	84.3
60-64	0.9	5.3	34.8	64.9	1.0	10.9	40.4	54.6	73.2
65-69	0.4	4.4	28.6	52.5	0.1	8.7	32.2	44.5	63.3
70-74	0.2	2.3	24.6	51.0	0.0	5.6	31.5	42.9	60.4
75-79	0.0	1.2	21.4	40.3	0.0	4.3	25.8	34.0	50.7
80-84	0.0	0.5	17.0	32.0	0.0	2.7	19.7	26.7	40.9
85-89	0.0	0.0	8.3	24.9	0.0	0.0	10.7	14.6	33.3
90-94	0.0	0.0	3.9	9.9	0.0	0.0	5.1	6.6	12.3
95-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Annex 9: PAT survey for Madagascar

Client Assessment Survey - Madagascar

Interviewer: Text in bold should be read aloud. Text in italics are instructions and should not be read aloud.

You should use probing questions (if necessary) to elicit responses to all questions. If, however, a response is still not forthcoming, the following codes should be used: 99 - not applicable; 98 - no response given.

Fill out the information below before the survey begins. Do not ask the respondent for this information.

Date of interview (dd-mm-yyyy)	
Interviewer (initials)	
Branch (code)	
Province	1 = Antananarivo
	2 = Fianarantsoa
	3 = Toamasina
	4 = Mahajanga
	5 = Toliara
	6 = Antsiranana
Client Location	0 = Urban
	1 = Rural
Months in Program	
Client or ID #	

Quality Control Checks

Field Supervisor	Initials
Date	
Headquarters	Initials
Date	
Data Processor	Initials
Date	

Hello. My name is ___. I work for the organization ___. We are conducting a survey to learn a little bit more about the clients we work with. My records indicate that [name] is the main point of contact between [organization] and your household. May I please speak to [name]?

If person is desired respondent, read only the instructions marked 2.

If person is NOT desired respondent, read both 1 and 2 when desired respondent is located.

1. Hello. My name is ___. I work for the organization ___. We are conducting a survey to learn a little bit more about the clients we work with. My records indicate that you are the point of contact between [organization] and your household.

2. The interview should only take about 20 minutes and your answers will be put together with answers from other households. All of your answers are completely confidential and your name will not be given with your answers. Are you willing to answer these questions today?

After he/she agrees, proceed with the text below.

First, I would like to ask you about your household. Let me tell you what we mean by "household." For our purposes today, members of a household are those that usually live and eat together in this dwelling. It should include anyone who has lived in your house for 6 or more of the last 12 months, as well as the person you identify as the head of household if he or she has been absent for more than 6 of the last 12 months and infants under 6 months of age who normally live and eat here. Do you have any questions about that?

Answer any questions the respondent has before proceeding.

Now I would like you to identify each person in your household and answer some basic questions about each person. Let's start with the names of each person in your household. Shall I identify you as [name]?

If the respondent is reluctant to provide his or her name or those of others in the household, record relationships instead (ex: Respondent, Husband, etc).

Use row 1 for respondent.

Are you the head of the household or is someone else?

If not the respondent, record the Head of Household's name next, then continue filling in column A with each household member before asking questions in the remaining columns.

A. Household Member's Name	B. Is [name] female or male?	C. What is the relationship of [name] to household head?	D. How old is [name]?	E. only ask if age 4 and older. What was the last level of school completed by [NAME]?
1.	Female = 0 Male = 1	Head of household ---- 1; Spouse ---- 2; Child ---- 3; Parent ---- 4; Sibling ---- 5; Grandchild ---- 6; Sibling ---- 7; Cousin ---- 8; Niece/Nephew ---- 9; Step-child ---- 10; Step-parent ---- 11; Other parent or spouse of family ---- 12; Unrelated to family ---- 13	(record years)	Under age 4 = 98; None = 0; Preschool or OP0; T1 or OP1; T2 or OP2; T3 or OP3; T4 or OP4; T5 or OP5; T6 or subtine; T7 or mustine; T8 or quattine; T9 or Proxime; T10 or seconde; T11 or premiere; T12 or terminale; 5 US BA; 6 MA; US or more
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				
11)				
12)				
13)				
14)				
15)				

Interviewer: Skip this section and return to fill in the answers after the interview. Do not ask the respondent these questions; fill in the answers from the information in the table on the preceding page.

2. Number of people living in household (Record number of members from Column A):

3. Age of household head (record age from Column D for person who has "1" in Column C):

4. Is the household head female? (Does the person who has "1" in column C have a "0" in Column B?) no=0, yes=1

5. Last level of school completed by head of household (record education level from column E for person who has "1" in column C) no=0, yes=1

Now, I would like to ask you a few questions about your home.

6. How many rooms does your household occupy?
   (Do not include kitchens, bathrooms, balconies, and corridors.)

   [enter number]

7. What is the main construction material used for the roof of your dwelling?

   1 ☐ Bark, leaves, twigs
   2 ☐ Clay loam, cob
   3 ☐ Wood (boards, plywood, hardboard)
   4 ☐ Cement/concrete
   5 ☐ Mat
   6 ☐ No Roof
   7 ☐ Other

8. What is the main source of cooking fuel used by your household?

   1 ☐ Wood picked
   2 ☐ Purchased wood
   3 ☐ Charcoal
   4 ☐ Gas
   5 ☐ Electricity
   6 ☐ Oil
   7 ☐ Other

9. What is the primary source of drinking water for your household?

   1 ☐ Interior plumbing
   2 ☐ Indoor tap/spigot
   3 ☐ Water merchant
   4 ☐ Water truck
   5 ☐ Rainwater
   6 ☐ Neighbor's tap/spigot
   7 ☐ Neighbor's well
   8 ☐ Private outside tap/spigot
   9 ☐ Public tap
   10 ☐ Well with pump
   11 ☐ Well without pump (artesian well)
   12 ☐ River, lake, spring, pond
   13 ☐ Bottled water
   14 ☐ Other

Next, I would like to ask you about a few items that members of your household may own.

10. Does your household own a bicycle?
    0 ☐ No
    1 ☐ Yes

11. Does your household own a stereo?
    0 ☐ No
    1 ☐ Yes

12. Does your household own a TV?
    0 ☐ No
    1 ☐ Yes

13. Does your household own a car?
    0 ☐ No
    1 ☐ Yes

14. Does your household own a table?
    0 ☐ No
    1 ☐ Yes

15. Does your household own a stove?
    0 ☐ No
    1 ☐ Yes

Look over the survey to see if you have missed any questions, then end the interview.

Those are all the questions I need to ask you today. Thank you for your time and effort in completing this survey.

To download the data entry template: http://www.povertytools.org/countries/Madagascar/Madagascar.html

Annex 10: Using the AF method and commonalities with other multidimensional poverty assessment approaches

Using the Alkire Foster method

An AF M_0 measure can be intuitively constructed in 12 steps. The first 6 steps are common to many multidimensional poverty measures; the remainder are specific to the AF counting method.

Step 1

Choose the purpose of the measure, and identify the institutional framework

↓

Step 2

Choose a unit of analysis (e.g. a person, household, or community)

↓

Step 3

Choose dimensions (e.g. education, health, living standards)

↓

Step 4

Choose indicators for each dimension (e.g. years of schooling, body mass index)

↓

Step 5

Set deprivation cutoffs for each indicator

↓

Step 6

Set and apply weights for each indicator

↓

Step 7

Sum the share of weighted deprivations for each person (or other unit of analysis)

↓

Step 8

Set and apply the poverty cutoff (i.e. the percentage of weighted indicators a person must be deprived in to be considered poor)

↓

Step 9

Calculate the percentage of people identified as poor (the headcount ratio) (i.e. divide the number of poor people by the total number of people)

↓

Step 10

Calculate the intensity of poverty (i.e. add up all poor people's share of weighted deprivations and divide by the number of poor people)

↓

Step 11

Calculate the adjusted headcount ratio (M_0 or the MPI = H x A)

↓

Step 12

Calculate the consistent indices: censored headcount ratios for each indicator, percentage contributions of each indicator to overall poverty, standard errors, etc.

Annex 11: UN World's City Profiles – List of Habitat Agenda Indicators

Table 1. List of Habitat Agenda Indicators

Chapter/Habitat Agenda goals	Indicators	Cluster
1. Shelter		
Promote the right to adequate housing	Key indicator 1: durable structures	A
	Key indicator 2: overcrowding	A
	check-list 1: right to adequate housing	B
	extensive indicator 1: housing price and rent-to-income	B
Provide security of tenure	Key indicator 3: secure tenure	B
	extensive indicator 2: authorized housing	B
	extensive indicator 3: evictions	B
Provide equal access to credit	check-list 2: housing finance	B
Provide equal access to land	extensive indicator 4: land price-to-income	B
Promote access to basic services	Key indicator 4: access to safe water	A
	Key indicator 5: access to improved sanitation	A
	Key indicator 6: connection to services	A
2. Social development and eradication of poverty		
Provide equal opportunities for a safe and healthy life	Key indicator 7: under-five mortality	A
	Key indicator 8: homicides	B
	check-list 3: urban violence	B
	extensive indicator 5: HIV prevalence	A-B
Promote social integration and support disadvantaged groups	Key indicator 9: poor households	A
Promote gender equality in human settlements development	Key indicator 10: literacy rates	A
	check-list 4: gender inclusion	B
	extensive indicator 6: school enrolment	A
	extensive indicator 7: women councillors	B
3. Environmental Management		
Promote geographically-balanced settlement structures	Key indicator 11: urban population growth	A
	Key indicator 12: planned settlements	B
Manage supply and demand for water in an effective manner	Key indicator 13: price of water	B
	extensive indicator 8: water consumption	B
Reduce urban pollution	Key indicator 14: wastewater treated	B
	Key indicator 15: solid waste disposal	B
	extensive indicator 9: regular solid waste collection	B
Prevent disasters and rebuild settlements	check-list 5: disaster prevention and mitigation instruments	B
	extensive indicator 10: houses in hazardous locations	B
Promote effective and environmentally sound transportation systems	Key indicator 16: travel time	B
	extensive indicator 11: transport modes	B
Support mechanisms to prepare and implement local environmental plans and local Agenda 21 initiatives	check-list 6: local environmental plans	B
4. Economic Development		
Strengthen small and micro-enterprises, particularly those developed by women	Key indicator 17: informal employment	A-B
Encourage public-private sector partnership and stimulate productive employment	Key indicator 18: city product	B
	Key indicator 19: unemployment	A-B
5. Governance		
Promote decentralisation and strengthen local authorities	Key indicator 20: local government revenue	B
	Check-list 7: decentralization	B
Encourage and support participation and civic engagement	Check-list 8: citizens participation	B
	extensive indicator 12: voters participation	B
	extensive indicator 13: civic associations	B
Ensure transparent, accountable and efficient governance of towns, cities and metropolitan areas	Check-list 9: transparency and accountability	B

CLUSTER A: Indicators to be obtained from Censuses and national households surveys[3], including Demographic and Health Surveys and Multiple Indicators Cluster Surveys.

CLUSTER B: Indicators to be obtained from other sources such as official record and published studies of Government institutions, housing boards and agencies, service parastatals, finance institutions, police, NGOs as well as using informed estimates made by small groups of experts on specific issues.

Source: UN-Habitat 2004