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LINKING URBAN SANITATION AGENCIES WITH POOR COMMUNITY NEEDS IN SOUTHERN AFRICA: A STUDY OF ZAMBIA, ZIMBABWE AND SOUTH AFRICA

DRAFT GUIDELINES

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Acronyms and Abbreviations

BOTT:	Build, Operate, Train and Transfer
CBO:	Community Based Organisation
CRF:	Central Rates Fund (Zimbabwe)
CU:	Commercial Utility
CWSS:	Community Water Supply and Sanitation
DCD:	Department of Constitutional Development (now called Department of Provincial and Local Government) (South Africa)
DEAT:	Department of Environmental Affairs and Tourism (South Africa)
DFID:	Department for International Development (United Kingdom)
DRA:	Demand-Responsive Approach
DWAF:	Department of Water Affairs and Forestry (South Africa)
EIA:	Environmental Impact Assessment
GHK International:	UK-based consulting company that has carried out extensive research into sanitation in collaboration with WEDC (qv)
GRZ:	Government of The Republic of Zambia
GTZ:	German Agency for Technical Co-operation
IDWSS:	International Drinking Water Supply and Sanitation Decade (1981-1990)
IPA:	Inter-country People's Aid
JICA:	Japan International Cooperation Agency
LCC:	Lusaka City Council
LWSC:	Lusaka Water and Sewerage Company
MLGH:	Ministry of Local Government and Housing (Zambia)
MLGPWNH:	Ministry of Local Government, Public Works, and National Housing (Zimbabwe)
MOHCW:	Ministry of Health and Child Welfare (Zimbabwe)
MRRWD:	Ministry of Rural Resources and Water Development (Zimbabwe)

NaSCO:	National Sanitation Co-ordination Office (South Africa – part of DWAF)
NGO:	Non-governmental organisation
NWASCO:	National Water Supply and Sanitation Council (Zambia)
PHAST:	Participatory Hygiene and Sanitation Transformation
PPPs:	Public Private Partnerships
PRA:	Participatory Rural Appraisal
PROSPECT:	Programme of Support for Poverty Elimination and Community Transformation (a development programme in Lusaka funded by DFID and implemented by CARE-Zambia).
PUSH:	Peri-Urban Self Help (a predecessor programme of PROSPECT)
RDC:	Residents' Development Committee (Zambia)
RDC:	Rural Development Council (Zimbabwe)
RDP:	Reconstruction and Development Programme (South Africa)
SSA:	Strategic Sanitation Approach (promoted by the World Bank)
SWM:	Solid waste management
UNDP:	United Nations Development Programme
UNICEF:	United Nations Children's Fund
US$:	United States Dollar
VIP:	Ventilated Improved Pit (latrine)
WASHE:	Water, Sanitation and Health Education
WEDC:	Water, Engineering and Development Centre, Loughborough University, United Kingdom
WHO:	World Health Organisation
WSP:	Water and Sanitation Program – a global programme administered by the World Bank
WSS:	Water Supply and Sanitation
ZESCO:	Zambia Electricity Supply Corporation

Glossary

Informal housing: Housing of a temporary nature, often built from a range of materials such as plastic, iron sheets, mud blocks and plywood. This includes backyard shacks and housing in freestanding informal settlements (also see informal settlements).

Informal settlements: Poor urban settlements such as slums, shanty-towns and peri-urban areas. These areas are characterised by high population densities, poor housing, sewerage and drainage facilities, few or no paved streets, irregular clearance, low income and professional diversity, mainly unskilled in nature (UNICEF, 1994).

Institutional: Administrative and decision-making structures, systems and bodies.

Migration (internal):   The number of people relocating from one part of a country to another.

Peri-urban areas: Areas inhabited by the urban poor which are located either in the heart of the urban areas or on the fringes of the formal urban areas. These areas are characterised by high population density, poor housing, inadequate water supply, poor sewerage and drainage facilities, and irregular clearance of garbage. (In this book peri-urban areas have also been referred to as squatter areas, slums or informal settlements.)

Sanitation agencies: All organizations involved in the provision of sanitation services. These include local authorities, central government ministries and departments, private sanitation companies, donor agencies (also known as external support agencies), non-governmental organisations, and community-based organisations.

Sanitation: The principles and practice relating to the collection, removal, and disposal of human excreta, refuse and wastewater, as they impact upon users, operators and the environment.

Sustainability: The ongoing successful functioning and growth of any development effort or project in an area.

Tenure: A bundle of rights which regulate access, use and ownership over land and other resources (for example water, trees and crops). Land tenure refers to arrangements and rights under which the holder uses or owns land.

Urban areas: Places classified as "urban" by the Central Statistics office of a country (unless otherwise specified, in which case other criteria are used or should be given to distinguish urban from "rural" areas). Urban areas are usually characterised by a concentration of people who depend predominantly on incomes derived from non-

agricultural pursuits, and they usually contain certain services associated with towns and/or cities (as distinct from farms and other non-urban localities (Kok and Gelderblom, 1994).

Urban poor: People who live in informal settlements of the urban and peri-urban areas.

Urbanisation: The process of becoming urban; a process by which an increasing proportion of an area's population becomes concentrated in urban areas.

INTRODUCTION

Despite huge investments in sanitation during the United Nations International Drinking Water Supply and Sanitation Decade (IDWSSD), which ran from 1981 to 1990, over 2.4 billion people still lack access to adequate sanitation services. It is estimated that 3 million children die each year of dehydration related to diarrhoea caused mostly by unsanitary environmental conditions (UNICEF, 2000). Although the sanitation coverage in rural areas is far lower than that in urban areas in developing countries, it is the urban poor areas that face a greater risk to health, due to the much higher population densities there (Black, 1994). The tremendous growth of the third world's urban centres during the last two decades of the twentieth century has overwhelmed the capacity of sanitation agencies[1] to provide the services for which they are responsible. For instance, even though investment programmes brought sanitation to 70 million city dwellers between 1990 and 1994, urban populations increased by 200 million during the same period (WHO, 1996).

The situation is expected to get worse as rapid urbanisation outpaces employment creation, resulting in high levels of urban poverty. Currently, more than 50% of the global population lives in urban areas and a phenomenally higher figure of about 77% is projected by the year 2025 in developing countries (half of them in informal[2] areas) (Potter and Lloyd-Evans, 1998; WHO, 2000). The need to develop means to address urban environmental sanitation problems, therefore, looms with increasing urgency.

Over the years, countless meetings have been held throughout the world in an effort to improve the lives and well-being of many millions of people who do not enjoy even the most basic environmental health services. During this time a great many lessons have been learnt in the water and sanitation sector, new ideas have been tried and there is certainly a better understanding of the problems now than even five or ten years ago (Abrams, 1999). Unsatisfactory results during the IDWSSD forced professionals in the sector to come up with

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[1] In this book, the term sanitation refers to the principles and practices relating to the collection, removal and disposal of human excreta, refuse and wastewater, as they impact upon users, operators and the environment.
  Agencies considered in this book include international policy-makers and donors, national ministries and departments responsible for policies and programmes, and local government departments, non-governmental organisations (NGOs) and community-based organisations (CBOs) working for and with local communities.

[2] The term informal settlements is used to refer to poor urban settlements, such as slums, shantytowns and peri-urban areas. These areas are characterised by high population densities, poor housing, sewerage and drainage

new approaches to help solve sanitation problems. In 1992, the International Conference on Water and the Environment was held in Dublin and four key principles emerged from this conference as follows:

1. Water management requires an integrated, holistic approach;
2. Water is an economic good and its value should be respected;
3. Stakeholder involvement is essential to sustainability of services;
4. Women play a central role in domestic water management, which needs to be taken into account.

The Dublin Principles, as they have since been known, have provided the basis for all water-related policy discussion and development cooperation during the 1990s (Black, 1998). However, it is notable that the term "sanitation" is not explicitly included in the wording of these principles, but there seems to be an implicit understanding that this sector should also be governed by them.

The Demand Responsive Approach (DRA) was developed based on these principles and from experience that showed that 'the success or failure of low-cost water and sanitation programmes was principally determined by consumer demand' (Black, 1998), and has assumed considerable importance in both debates and practice in the water and sanitation sector. The DRA has been tried with some success across the world, showing that there is a link between sustainability and demand-responsiveness, though as reported by ?? (????) "very few projects worldwide are yet managing to implement an approach which fully met demand-responsiveness criteria". The past failures to demonstrate the effectiveness of non-conventional, flexible and demand-led approaches prompted the United Nations Development Programme (UNDP)-World Bank Water and Sanitation Program (WSP) to develop the Strategic Sanitation Approach (SSA) (Wright, 1997). The SSA is intended to provide a framework for the delivery of sustainable sanitation services and infrastructure (Tayler and Parkinson, 2000). The two key principles of the SSA are that it is demand-based and incentive-driven. A demand-based approach, according to this strategy, requires that implementing agencies should find out what potential users want and what resources they have to finance and manage any system that is installed. Then sanitation systems, financing mechanisms, and support structures should be designed that are best suited to their needs

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facilities, few or no paved streets, the threat of clearance, and low incomes and diverse employment, mainly unskilled in nature (UNICEF, 1994).

(Wright, 1997). Concurrently, incentives should be governed by clear rules and should reward good practice, suggesting that policy makers and regulatory agencies are required to act as referees, in order to ensure that incentives are applied in practice (Tayler and Parkinson, 2000). One effective incentive, according to GHK International, might be for national governments and international donor agencies to make at least part of the available funding conditional on the production of a realistic and practicable municipal sanitation plan. Research has shown that "incentives that currently exist do not favour a demand-based approach and do little to encourage links between stakeholders" (Tayler, 2000).

However, there is still debate on the practical application of the principles of the DRA and the SSA (Saywell and Cotton, 1998), especially in informal urban areas, and there is need therefore to study the challenges that are faced by those trying to apply these approaches. One of the concerns about the DRA is that "there is a real danger that the poor will be asked to pay the full cost of services because they are the ones who are the target of the externally-funded programmes that insist on cost recovery; meanwhile the better off will continue to receive subsidised services" (Tayler, 2000).

GHK-International, the Water, Engineering and Development Centre (WEDC) at Loughborough University, UK, and the World Bank Water and Sanitation Program-South Asia (WSP-SA) have jointly produced a 'Guide to Strategic Planning for Municipal Sanitation' based on practical experience in India and on literature review. The purpose of this work was to develop practical guidelines for the implementation of strategic sanitation concepts. Putting into practice the principles of the SSA in informal urban areas requires a clear understanding of both the sanitation agencies and the poor communities with whom they should be working. There is a need, therefore, to critically analyse the way sanitation agencies operate and their perceptions, on the one hand, and the needs, perceptions and practices of the urban poor on the other hand. In this way, the operations of sanitation agencies (that is central and local governments, non-governmental organisations (NGOs), and external support agencies (ESAs)) could be better linked with the needs of the urban poor. The guidelines presented in Chapter 3, based on an analysis of the situation in three southern African countries, aim to complement the work of GHK-I, WEDC and the Water and Sanitation Program and others in Asia, to recommend appropriate strategies to achieve sustainable sanitation services.

With between 40 and 50% of the urban population in developing countries already living in informal settlements (World Bank, 1998), urgent action is required from governments of those countries to avoid the pending sanitation crisis. Yet in Africa, some governments still ignore informal settlements and consider them to be illegal or temporary. However, where governments have attempted to assist the urban poor, their activities have been hampered by lack of accurate statistics for planning, and by lack of understanding of the needs, perceptions, and coping strategies of the urban poor. This has resulted in the services provided not meeting the needs of the urban poor (Gilbert and Gugler, 1997).

The study on which this book is based was undertaken in three southern African countries, namely Zambia, Zimbabwe and South Africa, in an attempt to develop ideas that could help to bridge the gap in understanding that is perceived between sanitation agencies and poor urban communities. The countries were chosen to represent a variety of socio-political and socio-economic contexts. The general goal of this work is to make a contribution towards the improvement of environmental sanitation conditions in poor urban areas through encouraging effective linkages between sanitation agencies and the urban poor. This book aims to provide some practical suggestions for improved planning and practice in the sanitation sector in poor urban areas of developing countries. Whilst the study on which the book is based took place in Southern Africa, it is hoped that the guidelines will be of value in a wider context.

In order to achieve a good understanding of the context in Zambia, Zimbabwe and South Africa, the study has involved an assessment of existing levels and the quality of sanitation services, and the knowledge, attitudes and practices of both sanitation agencies and the urban poor in several selected urban areas in each country. Institutional policies, approaches, strategies and cost recovery mechanisms of the agencies, and the links between the communities and these agencies were also analysed. In Zambia the surveys were undertaken in selected areas of Ndola and Lusaka; in Zimbabwe parts of Harare, Epworth, and Gutu and Gokwe Growth Points were chosen; and poor locations in Pretoria and Durban were studied in the Republic of South Africa. Table 1 below summarises the details of the study sites in the three countries. An in-depth review of literature from sources such as books, newspapers, journals, unpublished manuscripts and articles on the Internet has also been carried out in order to fully understand the wider context of this work. The

literature was invaluable and helped in the identification of some of the key constraints which both the urban poor and the sanitation agencies face in sanitation provision.

Table 1: Study sites in Zambia, Zimbabwe and South Africa

Country	Study site	Locality	Legal status and authority	Population[+]
ZAMBIA	Nkwazi	Ndola (Copperbelt)	Legal (Ndola City Council)	45,000
	McKenzie		Legal (Ndola City Council)	10,000
	Kalingalinga	Lusaka	Legal (Lusaka City Council)	30,000
	Kanyama		Legal (Lusaka City Council)	90,000
ZIMBABWE[*]	Newlines	Mbare (Inner Harare)	Legal (Harare City Council)	10,000
	Shawasha		Legal (Harare City Council	8,000
	Zinyengere	Epworth (near Harare)	Legal (Local Board)	100,000
	Overspill		Legal (Local Board)	
	Gada		Illegal	
	Old Location	Gutu (growth point)	Legal (Central Rates Fund)	22,000
	Hwiru		Legal (Rural District Council)	
	Farmagrida		Illegal	
	Cheziya	Gokwe (growth point)	Legal (Town board)	60,000
	Mafungautsi		Legal (Town board)	
	Nyaradza		Legal (Town Board)	
SOUTH AFRICA[**]	Phase 1 (Mamelodi)	Pretoria (on the outer limits of the city)	Illegal (Tshwane Metropolitan Council)	10,000
	Jeffsville (Atteridgeville)		Illegal (Tshwane Metropolitan Council)	20,000
	Cato Crest	Durban	Legal (Durban Metropolitan Council)	20,000
	Bester		Legal (Durban Metropolitan Council)	5,000

Note: + All population figures are approximate, in part because of the relatively mobile nature of the populations of such areas.
1. Population figures in Zimbabwe are local authority estimates. The population figures given for Epworth, Gutu and Gokwe are for the whole area, rather than for the selected study sites.
** Population figures given for the survey areas in South Africa are not very reliable; they are based on estimates by community leaders which could not be confirmed by the local authorities.

Study sites were chosen which meet the following conditions:

1. There are sanitation problems in each of the selected sites.

2. The various sites represent the different ways in which urban areas have developed in the three countries and the different administrative structures that manage such urban areas.

3. Responsibility for sanitation in these areas is representative of the different situations in the three countries.

4. The legal status and land tenure of informal settlements varies between the selected sites and is representative of informal settlements in the three countries.

5. Authorities and the targeted communities in these areas accepted and cooperated with the study.

A brief summary of the key features of each of the study sites (eg location in relation to the relevant city, population density, very brief social history, etc) will be added here, in order to assist readers to relate this to their own experience.

The study, which was carried out in 1999-2000, used both qualitative and quantitative methods in gathering data. Purposive sampling was used to select study sites within the chosen countries, and to select key informants in sanitation agencies working in those sites, while random sampling was used to select households for surveying in the selected study sites. For primary data collection, in-depth structured and semi-structured interviews, and focus group meetings were undertaken at both household and sanitation agency levels.   A total of 3,323 respondents at household level were interviewed (1,154 in Zambia, 1,429 in Zimbabwe and 740 in South Africa). In Zambia, representatives of 20 sanitation agencies were interviewed, whilst 15 were interviewed in Zimbabwe and 18 in South Africa. Representatives of several international organisations were also interviewed in the United Kingdom, and dialogue was maintained with them and others throughout the study period. In addition to interviews, observation was also used to determine hygiene behaviour and to assess general environmental sanitation conditions in the study sites.

The remainder of the book is organised in three chapters, as follows:

Chapter 1 presents the summarised results of the surveys of the communities studied in the three countries and of the context in which sanitation services and facilities are planned, provided and operate.

Chapter 2 gives an analysis of the data from the surveys presented in Chapter 1, which identifies the key causes of poor sanitation in informal urban areas.

Chapter 3 concludes the book by presenting some recommended guidelines for improved planning and practice in the sanitation sector in informal urban areas of developing countries. These guidelines are based on the underlying principle that agencies need to be more responsive to the needs, demands and interests of the poor communities that they should be serving, and that, to achieve this, links between the agencies and the communities need to be greatly improved.

It is not intended that readers should have to read all three chapters in order to understand the guidelines, but the rationale behind those guidelines will hopefully be clearer if the preceding chapters are also read.

CHAPTER 1 :   THE PRESENT SANITATION SITUATION IN ZAMBIA ZIMBABWE & SOUTH AFRICA

This part of the book presents a summary of the data collected in the surveys and investigations carried out in 12 informal urban settlements in Zambia, Zimbabwe and South Africa. A large amount of information was collected; here we summarise the key data in an attempt to illustrate the sanitation situation and the most important issues, giving evidence for the discussion that follows in Chapter 2 and the guidelines that are presented in Chapter 3.

1.1   AN OVERVIEW OF THE SANITATION SECTOR IN ZAMBIA, ZIMBABWE AND SOUTH AFRICA

Sanitation services in Zambia, Zimbabwe and South Africa are provided by various governmental and non-governmental agencies, and controlled by a number of government ministries and departments. In formal urban areas, sanitation services are provided by local authorities (municipalities and local governments). One of the key responsibilities of local authorities is to provide safe drinking water and sanitation services. At the national level, the ministries of finance, health and provincial and local government provide funds, technical assistance and co-ordination of sanitation activities, respectively. In Zambia, water supply and sanitation activities in urban areas are regulated by the National Water Supply and Sanitation Council (Nwasco). Major functions of Nwasco are to provide advice to government and local authorities, to license providers, to set standards and to initiate by-laws. In Zimbabwe there is no single authority with responsibility for urban sanitation and institutional arrangements for growth points are particularly unclear. The Central Rates Fund (CRF), the Rural District Council (RDC) and the Department of Public Works are all parts of the Ministry of Local Government, Public Works, and National Housing (MLGPWNH) and perform the same, sometimes overlapping functions in growth points[3]. In South Africa, sanitation is regulated by the National Sanitation Coordination Office (NaSCO) which is a division of the Department of Water Affairs and Forestry (DWAF).

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[3] Growth points were set up in rural areas of Zimbabwe in the 1980s to act as a focus for services and economic development.

The approach used by municipalities and local government is predominantly supply-led. The provision of sanitation services is seen as solely the responsibility of local authorities. There is little room for community participation in the provision of those services and most of the agencies do not have specific departments which deal with community complaints or assess community needs. The practices and codes of conduct of urban local authorities are aimed at meeting standards, which are set at higher levels of government (and in most cases are based on western, industrialised countries' standards) and should follow whatever legislation has been developed by central government; all too often this is in opposition to the needs of the urban poor.

The provision of sanitation services in towns and cities of the three southern African countries studied is governed by a number of laws, which are formulated and enforced by various government ministries and departments. This dispersion of responsibilities results in several significant gaps in provision and enforcement, and in some overlapping responsibilities which result in confusion. In Zambia, the relevant legislation includes the Local Government Act, 1991, the Water Supply and Sanitation Act, 1997, the Town and Country Planning Act (Cap 283) and the Public Health Act (Cap 295). In Zimbabwe urban sanitation standards are set and controlled through legislative mechanisms such as the Town Planning Act, *year?,* and the Housing Standards Act, *year?,* which are set by the MLGPWNH, the Public Health Act, *year?,* enforced by the Ministry of Health and Child Welfare (MOHCW), and the Water Act, *year?,* which is enforced by the Ministry of Rural Resources and Water Development (MRRWD) (Mudege and Taylor, 1997). In South Africa the water and sanitation policy, which was developed by the new democratic government after the 1994 elections, outlines the roles and responsibilities of all involved agencies. In addition, the Water Services Act, 1997, and the Environmental Health Act, *year?,* also legislate for sanitation.

Unfortunately the legislative formulation process does not allow the urban poor to effectively influence the legislation so that the set policies and standards meet their needs. For example, regulations state that sanitation services provided to urban populations in the three countries should be based on the water-flush toilet, yet most of the urban poor cannot afford this high cost technology, which requires both a reliable and ample water supply and expensive sewers. In Zambia, the local authorities have allowed the construction of pit latrines in some cases. For example, in Buchi Compound in Kitwe, a formal area with formal

housing, pit latrines have been built by the local authority. However, as in other areas, there is, unfortunately, no facility for pit emptying, so, as latrines fill up, new ones are built. Legalised informal settlements are also allowed to construct and use pit latrines. In contrast, in Zimbabwe, the bucket system, which used to be allowed in urban areas, was phased out in accordance with the Housing Standards Act of 1977 on the grounds of hygiene and public health.   Households in towns and cities are not allowed to make use of lower cost technologies such as Ventilated Improved Pit (VIP) latrines, which are only allowed in public areas where there is no water, such as for the use of vendors in market places. Unimproved pit latrines of any description are not allowed in urban areas, but they are common in growth points and service centres, mainly due to the unavailability of water. In smaller urban centres, the septic tank system is often used. The South African Water Services Act of 1997, states that local authorities that lack the means to provide a high level of sanitation service to all are permitted to pursue other, alternative options, which will enable all South Africans to enjoy a healthy environment. However, despite this provision, many urban local authorities still prefer to provide waterborne flush toilets rather than VIP latrines, and in cases where VIP latrines are provided, they are considered to be a temporary measure.

The responsibility for sanitation in informal areas does not fall clearly upon any single government agency in Zimbabwe, whereas in Zambia and South Africa, local authorities are meant to provide sanitation services in the legalised informal areas, under the national authority of the Ministry of Local Government and Housing and the Department of Local Government respectively.   In Zimbabwe, all informal settlements are illegal.   No local government in any of the three countries has made any large-scale investment in illegal settlements, leaving the burden on non-governmental organisations (NGOs). Most of the sanitation services in illegal settlements in the three countries are provided by NGOs and by the communities themselves. NGOs are allowed to invest in informal areas in the three countries, although in Zimbabwe, because of the illegal status of the settlements, investment is limited to 'temporary' structures. The roles and responsibilities of NGOs working in informal settlements are not as clearly outlined in Zimbabwe as they are in Zambia and South Africa. The South African Sanitation Policy of 1994 states that NGOs have the following roles:

- training and capacity building;

- using their flexibility to assist communities with the planning and implementation of projects;
- providing health and hygiene education and sanitation promotion; and
- preparing communication materials and financing projects.

The discussion above shows that the structure of local authorities, their codes of conduct, and the legislative context within which they work is, to a large extent, still set in a 'supply-led' framework aimed at serving only formal, planned urban areas. As a result, local authorities face problems when it comes to setting standards and providing services which meet the needs of the urban poor. As shown by the surveys which are discussed in the next section, local authorities provide only limited services, if any, in poor urban areas.

1.2   RESULTS OF THE HOUSEHOLD INTERVIEWS

The following sections summarise the data collected in all 12 settlements surveyed, by interviewing over 3,300 households. More details are presented in Appendix A.

a.   Socio-Economic Profiles of the Study Areas

Sixty per cent of the respondents interviewed in Zambia were female, whereas the samples in Zimbabwe and South Africa were 65% and 53% female respectively. The majority of the respondents in all the study areas had originated from formal urban areas and other peri-urban areas except for those in Durban, South Africa, where most households had migrated from the rural areas. On average, the respondents in Zambia had lived in the informal settlements for at least 9 years, and the settlements had been in existence for 37 years. In Zimbabwe respondents had been in the study areas for an average of 5 years, though three-quarters had moved to the urban areas at least 15 years ago. In South Africa the average residency in the settlements, which had existed for about 11 years, is 5 years. Reasons cited for migrating to the informal areas included the need to send children to better schools in urban areas, seeking employment, high costs of transport and the consequent need to be close to work places, shortage and high cost of formal accommodation, availability of cheap stands in informal areas, retrenchment, retirement, death of parents or spouse, divorce,

privacy, and eviction or relocation from other homes by government. The majority in all these areas felt that they were much better off than where they had lived before, even though many were living there illegally, especially in Zimbabwe and South Africa.

Twelve per cent of the household-heads in the three countries had had no formal education, although the figures range from only 3.8% in Gutu to over 27% in Epworth (both in Zimbabwe). The average number of people per household is 5.6 in Zambia, 4.2 in Zimbabwe and 4.3 in South Africa. A considerable proportion of the households in all the study areas were headed by women, with the South African settlements having the most at 28%.

The level of unemployment of the household heads was quite high in all three countries; in Jeffsville, Pretoria it was as much as 60%. In Zambia the average monthly household income reported to the survey was only US$55, in Zimbabwe it was US$68 per month, and in South Africa it was rather higher at US$105. However, the higher cost of living in South Africa erodes residents' spending power and reduces their ability to save. The informal sector plays an important role in the livelihoods of the urban poor. Less than forty seven percent of the working household heads were employed in the formal sector, while the rest worked in the informal sector. In Zimbabwe, average households spent 14.6% of their income on rent, water, and sanitation and many could reportedly afford to save part of their income. Over 80% of the Zimbabwean respondents had bank accounts. In addition, 35% of the respondents owned their homes, while over 70% of the households had a radio, television, or refrigerator, except in Epworth, where there is no electricity. In Zambia and South Africa the situation was slightly different, because the majority were unable to make any savings, due to relatively low incomes, though some did own household possessions such as radios or television sets, especially in areas such as Jeffsville and Bester that have access to electricity.

Although households in the study areas in Zimbabwe spend only a small fraction of their income on rent, water and sanitation, other commitments such as school and health fees, transport and food consume much of the balance. This suggests that the urban poor may not be able to afford the high, up-front costs of investments needed for improvements in household sanitation. However, since householders in this situation have reasonably

constant income, as well as savings and assets, sanitation agencies should consider making credit facilities available.

These socio-economic characteristics affect both the quality and appropriateness of existing sanitation facilities and services, and the effectiveness of health and hygiene education. For example, large family sizes increase the number of people sharing a latrine, while illiteracy affects the effectiveness of conventional approaches to health and hygiene promotion. Sanitation agencies should study and aim to understand these conditions, and take them into account in planning both their strategies and their future activities.

b.   Water Supplies

Poor urban communities use different sources of water for different purposes; demand assessment studies should note this. In most cases, tap water, from either communal or household taps, is used for drinking and cooking, whilst water from wells and rivers is often used for washing. Communal taps tend to be located a long way from people's homes, whereas the alternative sources are nearby and are either free or cost only a small fee, compared to the safer water from piped supplies. This drives some to use contaminated water for drinking.

Tables 2 and 3 below summarise the various water sources that were used by households in the different areas studied. However, these overall statistics mask many differences between residential areas. In Farmagrida, in Gutu growth-point, 80% of the respondents used water from unprotected sources, while the rest used water from an unreliable borehole that was stained red by heavy contamination with iron. Although the tables show that most areas had a high proportion of households with access to piped water supplies, through household or communal taps, there were critical water problems in these areas. Water was rationed, there were long queues at communal taps, and in Gokwe, McKenzie and Nkwazi, households sometimes experienced water cuts of up to three weeks. The communal taps in all three countries were also in most cases located at great distances from many households and this resulted in water collection being very time-consuming and exhausting for the women and children whose responsibility it is. Some households travelled up to 2km to collect water in Kanyama and Jeffsville.

Table 2: Different sources of water used by the urban poor in Zimbabwe

Study site	Locality	Water source					Expenditure on water per month (US$[3])
		Tap within household (%)	Communal tap (%)	Borehole (%)	Private vendors (%)	Others[1] (%)	
Newlines	Mbare		100				3.8
Shawasha			100				3.0
Zinyengere	Epworth		83	6		33	1.5
Overspill		90			5.6	11	5.6
Gada					3	98	0.05
Old Location	Gutu	100					3.1
Hwiru		100					2.7
Farmagrida				50[2]		80	4.0
Cheziya	Gokwe	100					3.3
Mafungautsi		39			61		3.9
Nyaradza		92			7	1	2.8

1. These include shallow wells and all unprotected sources, such as streams, rivers, dams etc.
2. In Farmagrida households make monthly contributions towards the maintenance of the borehole.
3. At the time of the surveys (June 1999) the exchange rate was US$1=Z$37.4.

Households who buy water from water vendors pay more for limited and inefficient water supply. As shown in Table 2 above, residents in Farmagrida and Mafungautsi who buy water from private dealers pay about US$4 per month, compared to US$2.7 which is paid by Hwiru residents with household connections. In Gokwe, vendors and households with taps sell 20 litres of water for between US$0.08 and US$0.24.

Table 3: Sources of water used by the urban poor in Zambia and South Africa

Study site	Locality	Water source (% of households)							
		Household tap		Communal tap	House-hold well	Communal well	Stream or river	Communal borehole	Other
		Indoor	Outdoor						
Zambia									
Nkwazi	Ndola		3	93	1	2		1	
McKenzie			2	10	9	77	2		
Kalingalinga	Lusaka	3	18	75	4				
Kanyama		2	7	80	10	9			2
South Africa									
Mamelodi	Pretoria	2	19	79					
Jeffsville		2	27	71					
Cato Crest	Durban		82	17			1		
Bester			25	75					

The local authorities do not charge the communities for the use of communal taps in the study areas of Zambia and South Africa. However, in Kanyama, Lusaka, the Residents Development Committee collects money from households for water drawn from the single borehole in the settlement; the households pay US$1.15 a month or US$0.04 per day for a maximum of six 20 litre containers. It could not be established how much households paid to water vendors in South Africa, at the time of the study, as such cases are very isolated.

These data show that the urban poor use a significant proportion of their income for the purchase of water. However, this willingness to pay is not captured by local authorities, resulting in loss of revenue and consequent poor service.

c.   Latrine Coverage

Tables 4 and 5 below show the latrine types and coverage in the areas studied in Zimbabwe, Zambia and South Africa. With a few exceptions in Zimbabwe and South Africa, residents in all areas used unimproved pit latrines as their principal means of human waste disposal. While the majority had some form of latrine, 7 out of 10 households in Farmagrida were without latrines, as compared to less than 19% in the other areas.

Table 4:   Excreta Disposal in Zimbabwe

		Facility used (%)					
		Flush toilet	Pour-flush latrine	Blair latrine	Simple pit latrine	Both flush toilet & Blair latrine	None
Study site	**Locality**						
Newlines	**Mbare**	100					
Shawasha		100					
Zinyengere	**Epworth**		3	53	37		7
Overspill		36		6	54	1	3
Gada			35	2	61		2
Old Location	**Gutu**	100					
Hwiru		100					
Farmagrida					30		70
Cheziya	**Gokwe**	100					
Mafungautsi		6	1	26	48	1	18
Nyaradza		24		22	43	3	8

Table 5: Excreta Disposal in Zambia and South Africa

Study site	Locality	Facility used (%)					
		Flush toilet	Bucket / pan latrine	VIP latrine	Simple pit latrine	Other	None
Zambia **Nkwazi**	**Ndola**			0.3	93		6.7
McKenzie			0.4	1.7	97.6		0.3
Kalingalinga	**Lusaka**	0.7	0.3	2.3	87	0.3	9.4
Kanyama		0.3			83	0.7	16
South Africa **Mamelodi**	**Pretoria**	6			81		13
Jeffsville		5	1	2	84		8
Cato Crest	**Durban**			1	96		3
Bester				100			

Reasons given by various households for not having latrines are as follows:

- the latrine was either full or collapsed and the household could not afford to construct another one;
- uncertain or illegal land tenure;
- no space in the yard;
- rocky terrain;
- no manpower, especially in female-headed households;
- services not provided by local authorities;
- households waiting for the promised water-borne systems;
- landlords not interested in providing a latrine;
- lodgers not prepared to invest in sanitation for fear of rents increasing.

Most of the latrines in the informal settlements are simple pit latrines, with no lining and superstructures built from assorted materials that generally are not durable. Many latrines do not have slabs, which contributes, with the lack of lining, to the frequency of collapse.

An analysis of the reasons given above for the shortage of latrines shows how lack of cooperation between sanitation agencies and the urban poor results in poor sanitation. Whereas many of the urban poor invest significant resources in the construction of Blair or other VIP latrines, they are forced to construct new ones when they fill up. Yet this could be

avoided if the local authorities were able to support community initiatives, by providing services, for example to assist in pit emptying. Where local authorities consider informal settlements to be illegal, households fear eviction at short notice; thus they do not invest in improved sanitation. In some areas, households are waiting for the water-borne sanitation system they were promised by their local authorities. Meanwhile they use unsanitary facilities or the bush to relieve themselves.

In Gutu, Mbare, and some parts of Epworth, many households use flush toilets. All of the flush toilets in Zimbabwe are connected to the sewers except those in Mafungautsi, which are connected to septic tanks. Pour-flush latrines in Mafungautsi, Zinyengere, and Gada are connected to simple pits.

In most cases, sanitation services do not satisfy the needs of the urban poor. A significant number of people in all three countries are dissatisfied with their sanitation facilities, which range from unimproved pit-latrines to communal facilities provided by the local authorities. Although the figures in Table 4 above show 100% access to flush toilets in Newlines and Shawasha, these data mask problems of gross overcrowding of communal toilets (see Box 1). Many households who depend on communal facilities say that they would prefer private household latrines.

In the case of people using various forms of pit latrines the following were noted as being the major problems which they face:
- bad smells and poor cleanliness;
- presence of rodents and insects;
- poor latrine construction materials;
- no lighting at night;
- inappropriateness of the designs or layout for women and children;
- shallowness of pits;
- lack of affordable pit emptying facilities;
- poor location of the latrine;
- lack of privacy (especially for adolescent girls during menstruation).

Over 75% of the respondents are worried about lack of support services such as pit emptying, which forces them to construct new Blair or VIP latrines and unimproved pit-

latrines, whenever they fill up. This is not only expensive, but the latrines also take up scarce space, which is a premium in urban areas. In cases where facilities for pit-emptying exist, the cost is too high for the urban poor. The Project Manager of the Bester Community Development Trust puts the cost of having a VIP emptied at a staggering US$123. The subsidised service by the Durban Metropolitan Council costs only US$4.5, but such a service could only be extended to the illegal, informal settlements in the city in times of crisis, such as during the cholera outbreak in 2000-01.

In addition to poor excreta disposal the urban poor in Zambia, Zimbabwe and South Africa also face solid waste management problems.

Box 1: Congested toilets in Mbare, Harare

Picture will be added.

Although figures in Table 3 show that 100% of the residents of Mbare, in the centre of Zimbabwe's capital city, have "access" to flush toilets, this masks the serious problems faced in this area. Toilets in Mbare are overcrowded and most of them do not flush. Up to 1,300 people share one communal toilet with six squatting holes in Newlines. The situation is further aggravated by the absence of electric lighting in the toilets and the high crime rate. As a result, toilets are not used at night, and therefore people use plastic bags or buckets. Unfortunately, some of the plastic bags with human excreta are dumped in the communal waste skips. Those who use buckets mix the excreta with water and poor it in the open drains. The toilets, which do not flush, are also used to dump domestic solid waste, resulting in blockages. Toilets block as many as 20 times per month. Since there are no drainage facilities, raw sewage flows in the streets. Sanitation problems are critical in Mbare, ironically an area with 100% flush toilet coverage.

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d.   Solid Waste Management

As is the case in most developing country cities, solid waste management (SWM) is given low priority in poor and peri-urban settlements in Zambia, Zimbabwe and even South Africa. SWM is a very expensive service, consuming up to 60% of municipal council budgets in India (Tayler, 1997). Most local authorities in developing country towns and cities are unable to establish and maintain an efficient SWM system. This has resulted in solid waste problems,

particularly in poor urban areas. There is virtually no household refuse collection in any of the study areas in Zambia, in Gokwe and Epworth in Zimbabwe, and in Mamelodi and Jeffsville in South Africa. Residents in these areas use refuse pits or dump waste indiscriminately. Although most of the households not served by the authorities use individual or collective refuse pits, these also cause problems. The high concentration of refuse pits in these overcrowded settlements leads to mosquito and fly breeding, and foul smells. In Gokwe, children who defecate in refuse pits further aggravate the situation.

Research in Epworth has shown that water in shallow wells is contaminated by pollutants from refuse pits, which are dug close to shallow, unprotected wells (Blair Research Institute, 1998). In some cases, the local authorities in South Africa position skips on the outskirts of the illegal informal settlements on welfare grounds. However, these skips are a long distance from the centre of the settlements; very few households bother to walk all the way to these facilities. To illustrate this point even further, only 4% and 26% of the households in Mamelodi and Jeffsville respectively claim to use the skips near their settlements. The local authorities in Zambia only service market places in the informal areas; they only serve the settlements when there are outbreaks of sanitation-related diseases such as cholera.

Even in those areas such as Gutu and Mbare in Zimbabwe, where local authorities provide solid waste management services, refuse is sometimes not collected for two weeks or more. This is mainly due to tractor breakdown and fuel shortages. When bins are not collected, residents dump solid waste in drains, along road-sides, on undeveloped stands, and in nearby bushes, all of which threaten the health of residents. Burning is the most common form of solid waste management in poor urban areas. However, since the waste includes chemical containers, tyres and batteries, the smoke that is produced threatens the health of the residents.

Solid waste management is a significant challenge facing all local authorities in the study areas. Disposal of solid waste is a major concern to the residents in some informal settlements. Domestic, industrial and, in some cases, hospital waste is just dumped on unprotected space and is accessible to animals and children. Lack of bins in poor, urban communities exacerbates the solid waste problem and leads to indiscriminate dumping and pollution problems.

Urban Council by-laws give local authorities the sole responsibility to provide solid waste management services in all the three countries, though they have been allowed to subcontract their work in Zambia and South Africa for several years and this has also recently been permitted in Zimbabwe. There are no significant informal or community-based refuse collection initiatives in most of the areas, though a few enterprising people are running recycling businesses. Bottles, steel components, cardboard boxes and paper are collected and later sold to recycling companies. Although households in some of the areas have taken initiatives such as sweeping the streets and drains, the local authorities do not seem to support these initiatives.

Some factors that have contributed to the current, poor state of solid waste management (SWM) include the following:

- lack of awareness in communities about the environmental, social and economic implications of solid waste;
- lack of funds in local authorities to provide an adequate service;
- excluding communities from the design, planning and implementation of SWM services;
- lack of research and development in solid waste management techniques;
- application of inappropriate technologies;
- community attitudes towards waste;
- institutional arrangements of people and organisations responsible for SWM.

Improved communication and collaboration between sanitation agencies and the poor communities living in informal settlements could play a major part in improving solid waste services. An example of how informal settlements can be effectively serviced, through partnership, is given in Box 2 below.

Box 2:   Solid waste management in Durban – *(Noma and Dombi Cleaning & Catering Services)*

In South Africa, the Durban Metropolitan Council has sub-contracted local solid waste collection to small entrepreneurs in informal settlements. Noma and Dombi Cleaning and Catering Services is a small company, wholly owned by two local women in Bester. The firm has been contracted by the Durban Metropolitan Council, since 1998, to collect household

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waste from around the settlement for a fee. The company employs 17 women who help in the weekly distribution of black plastic bags and who also collect the waste, dumped by households in selected locations around the settlement, and carry it to skips. The Durban Solid Waste trucks make weekly collections of the refuse from the skips.

The responsibility of the households in this exercise is to make sure that their domestic waste is packed in the plastic bags and that these bags are taken to the selected dumping points closest to their homes. Waste collection is carried out on different days in the various areas of Bester. When the service began, many households did not stick to the waste collection timetable; dogs and cats would tear the plastic bags, resulting in refuse spreading around. This was resolved by intensive civic education in the area and now people know that even when their plastic bags fill up prematurely, they have to keep them in their yards until their collection day comes. In cases where residents' plastic bags are torn on the way to the dumping points in their areas, the residents are encouraged to leave the plastic bags along the footpaths, where the workers can pick them up in wheelbarrows and take the rubbish to the skips.

This method of providing services to the urban poor has proved successful in Durban. Other South African local authorities are believed to be planning similar programmes. There are plans in Zambia by some agencies to try out similar approaches; already Care Zambia, a local, internationally-supported NGO, has managed to do so successfully in two settlements. In Kanyama, the Lusaka City Council occasionally employs local women to collect solid waste in the area, as well as to clear the wastewater drains. There is no data yet to show how effective this project has been, though some residents claim that the City Council prefers to employ women because they can be more easily manipulated than more experienced male labour.

e.   Wastewater Management

In addition to poor latrines and ineffective or non-existent solid waste management, the urban poor also face serious drainage problems. Storm and wastewater drains are non-existent in almost all the study areas. Where they exist they have been neglected and are blocked; in some areas, such as Nkwazi, they have become much wider and deeper than normal due to

unchecked erosion (See picture below). In McKenzie, new storm and wastewater drains were constructed at the end of 1999 by local community members, as part of a 'Food For Work Programme' sponsored by PUSH, a local NGO sponsored by the World Food Programme. This project was successful, according to the residents, because of the incentive given in the form of food. (See picture below) In Zimbabwe, there are no drainage facilities in any of the study sites, except in Gutu growth-point. During the rainy season people have problems walking to work since the areas are flooded. Due to the absence of storm water drains, the heavy rains caused by cyclone Eline in 199? resulted in immense damage at Gokwe growth-point. Sewer pipes were broken as the supporting ground was washed away. Deep gullies now threaten the whole area. The council estimates that road and sewer repairs will cost US$300,000 and US$7,000 respectively (see picture below).

Households in the study areas dispose of water used for bathing, in the kitchen and for other household purposes, in the following places:

- open drains, where they exist;
- alongside the road;
- around the household yard;
- in the garden;
- in pit latrines.

Consequently, this indiscriminate dumping of wastewater and the absence of storm and wastewater drains in most of the informal settlements leaves pools of water and causes flooding in the rainy season, making the roads impassable (see picture below). The wastewater that collects in ditches provides ideal conditions for the breeding of mosquitoes and flies, which are responsible for some of the diseases highlighted in the next section. The spread of cholera in Kanyama in 2000 was attributed by local people to the poor wastewater drainage system in the area.

Wastewater facilities could easily be constructed in the informal settlements by involving residents in carrying out the work. The project discussed above, in McKenzie, in which the residents improved their own roads and wastewater drains under the PUSH-Food For Work Programme is a good example. Local authorities need to review how they can make better use of local people to contribute to improvements in their own local environment.

a.   Sanitation-related Diseases

One of the major consequences of poor sanitation in urban informal settlements is the serious threat of outbreaks of diseases such as cholera, which have far-reaching implications in terms of disease control and the management of public health. In the study areas, the common diseases that can be linked to poor sanitation include serious incidences of diarrhoea, malaria, hookworms, and bilharzia at a minimal level.   Diarrhoea is the commonest disease suffered by the residents of the informal areas studied in all three countries, followed by malaria in Zambia and Zimbabwe. Hookworms are common in children in all the three countries and in Kanyama the infection rate is as high as 29%. 767 cases of diarrhoea and 2938 cases of malaria were recorded at Gokwe growth point in 1999, while 2,301 cases of diarrhoea were recorded in Epworth.   Annually, diarrhoea causes approximately 43,000 deaths and 3 million illnesses in South Africa, and, alone, costs the country half a billion dollars in lost productivity (Environmental Health Policy, 1999). Zimbabwe recorded a national incidence rate of 42 cases of diarrhoea per 1,000 of population, in 1998, and a comparable rate of 9 per 1,000 for dysentery.

Absence of health care facilities in poor urban areas makes the control of sanitation related diseases extremely difficult. The situation is further aggravated by discriminatory health fee policies. For example, patients without formal house cards are charged higher fees. In Epworth, Zimbabwe, "squatters" rarely seek treatment since they are charged twice as much as other residents, since they do not have house cards. This exacerbates the continuing spread of disease.

Environmental Officers from the Public Health Departments and other related organisations rarely visit informal settlements, and are only heard of in times of serious disease outbreaks. In South Africa, the Department of Constitutional Development (DCD) has so far invested huge amounts of money on the construction of latrines throughout the country but of this only a meagre 3% is set aside for health and hygiene promotion[4]. Despite the lack of formal health education and hygiene promotion in the study areas, the majority of the households are very knowledgeable about the negative impacts of not having decent sanitation facilities and of inadequate services, though independent observations show that they rarely practise what they claim to know and understand.

South Africa was fighting cholera, whilst this study was taking place. The disease broke out in August 2000 and by April 2001 the country had reported over 81,000 infections and 171 people had lost their lives in the scourge. It started in the rural areas of KwaZulu-Natal where the majority draw water from rivers, which had become contaminated by the cholera bacteria. The disease spread to other parts of the country due to movement of people from the affected areas, aggravated by the migrant labour system, which is still in existence in the country. In most of the rural areas affected by the disease community water supply facilities were provided by the government, but many people were unable to afford the monthly charge of US$2.62. The Department of Water Affairs, which is responsible for sanitation, claimed that funds were available for latrines; they were waiting for households to express their "demand" for sanitation and to make a contribution equivalent to US$23 for the construction of VIP latrines. There have also been cholera outbreaks in Zambia, including in one of the study areas, Kanyama, in the same period. Experience with the current outbreaks shows that health and hygiene promotion would have helped to reduce the number of infections. For example, if the local communities had been advised how to disinfect river water cheaply, and to avoid making journeys outside the infected areas, the severity and spread of the epidemic could have been reduced.

g. Community Priorities and Willingness-to-Pay

For sanitation agencies to provide appropriate, efficient and sustainable services they have to understand the needs and priorities of the urban poor and to design programmes accordingly. The urban poor face a wide range of problems, which they prioritise differently, according to the various socio-economic environments in which they live. However, despite the conditions described in the previous sections, and as shown in Tables 6 and 7 below, sanitation is not the issue of the highest priority amongst most of the urban poor in the three countries studied.

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[4] Information from Makheta Development Consultants, Johannesburg.

Table 6: Summary of household priorities in Zimbabwe

Priority	Gutu	Gokwe	Epworth	Mbare
1	Other	Water	Other	Sanitation
2	Water	Other	Water	Other
3	Sanitation	Sanitation	Sanitation	Accommodation
4	Accommodation	Accommodation	Accommodation	Employment
5	Employment	Employment	Employment	Water

Other issues include: high cost of living, roads, electricity, theft, clinics, prostitution, diseases, land tenure and title deeds, and postal services.

Table 6 above shows that issues of high cost of living, roads, electricity, etc are important issues among poor urban communities in Zimbabwe. Although sanitation coverage is low, and health and hygiene awareness is high, in Gokwe and Epworth sanitation is only classified as the third priority, below improved water supplies and a wide range of other issues. Only 24% of the respondents to the survey in Gokwe, and less than 14% in Epworth, mentioned sanitation among their top five priority issues.   However, improvement of sanitation is a high priority to the people living in Mbare, because of the appalling conditions prevailing there, as described in Box 1.

In Zambia and in South Africa (Table 7), the situation does not markedly differ from that prevailing in Zimbabwe; sanitation is a relatively low priority. Water is the most sought after commodity in these countries with two exceptions, Mamelodi and Cato Crest, where sanitation and housing are classified as their highest priorities respectively. In Cato Crest, water is no longer a high priority as most households have access to tap water within their yards provided free of charge by the Durban Metro Council. In Mamelodi however, water is also a problem, as in most of the informal settlements studied, but it is not very surprising that sanitation is cited as a high priority, because of the rocky terrain which makes latrine construction difficult in the area.

Table 7: Summary of household priorities in Zambia and South Africa

Priority	Nkwazi	McKenzie	Kalinga-linga	Kanyama	Mamelodi	Jeffsville	Bester	Cato Crest
1	Water	Water	Water	Water	Sanitation	Water	Water & Sanitation	Housing
2	Clinic	Clinic	Clinic	Clinic	Phones	Phones	Housing	Schools
3	Electricity	Electricity	Sanitation	Sanitation	Water	Sanitation	Clinic	Clinic
4	Sanitation	Sanitation	Electricity	Electricity	Electricity	Other (Housing)	Schools	Water & Sanitation
5	Roads	Phones	Phones	Roads	Clinic	Clinic	Electricity	Electricity
6	Other	Roads	Roads	Phones	Roads	Roads	Transport	Transport
7	Phones	Other	Other	Other	Other	Electricity	Other	Other

The low importance attached to sanitation in the urban poor communities complicates the quest for feasible solutions to increase coverage. The complex problems faced by the urban poor and their consequent priorities call for a holistic approach that tackles sanitation in the context of poverty alleviation. This calls for a coordinated approach involving government, all NGOs involved in education, health, food security, employment creation, etc, and external support agencies (ESAs), to work together in order to tackle sanitation as one of the first steps in alleviating poverty among the urban poor. Sanitation agencies should also note that although the urban poor may not highlight sanitation as a very high priority issue, nevertheless they do value it and, as shown below, they are willing to pay for improved sanitation.

Household willingness to pay[5] (WTP) was determined during the surveys using contingent valuation methods. Households were asked how much they would be prepared to pay per month for an improvement in sanitation services. The results presented in Table 8 below show that although sanitation is not the top priority issue, people know that it is important and they are prepared to pay for sanitation improvements.

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[5] Willingness to pay (WTP) here includes an assessment of ability to pay; economists consider that willingness without ability to pay is not 'real' and should therefore be adjusted in the light of ability to pay.

Table 8: Summary of Willingness-to-Pay (WTP) for improved sanitation in Zimbabwe

	Mean WTP (US$ per month)			
	Gutu	**Gokwe**	**Epworth**	**Mbare**
Latrine	2.73	4.14	8.31	13.81
Solid waste	1.26	1.36	0.47	0.42
Drainage	0.18	0.65	0.28	0.28

Exchange rate in 1999 U$1=Z$37.4

Mbare residents were willing to pay a considerable amount, US$13.81 per month, higher than respondents in any other area, for improved excreta disposal and personal sanitation. This is a reflection of the fact, as already noted, that Mbare residents faced a critical shortage of toilets, with only five communal toilets for an estimated 10,000 people; they were therefore prepared to pay for the construction of household toilets.

WTP bids for solid waste management (SWM) range from US$0.42 per month in Mbare to US$1.36 in Gokwe. The maximum individual bid, of US$16.05 per month, was also recorded in Gokwe. There were critical solid waste problems in Gokwe, where there were no solid waste management services. Therefore, people were prepared to pay for the introduction of household collection. The high WTP is also related to relatively high incomes in Gokwe, where over 75% of the people earned more than US$134 per month. Bids for SWM are higher than what residents are currently paying in all areas except Mbare. Low WTP for SWM in Mbare could be linked to the poor services currently provided by the local authority. Although residents are paying monthly for SWM, refuse often goes uncollected for three weeks or more.

Bids for willingness to pay (WTP) for drainage were generally lower than for improved solid waste management and latrines. This may imply that residents gave low priority to drainage or that they were willing to pay less for communal facilities, without direct, tangible benefits to their own household. The highest mean bid for maintenance and cleaning of drainage facilities of US$0.65 per month was recorded in Gokwe, where residents face critical drainage problems. However, bids were also high in Epworth and Mbare where poor drainage is a recognisable threat to the health of the residents. Epworth is a swampy area, prone to seasonal flooding; drainage is therefore critical. Mbare is overcrowded and the

provision of water without drainage results in wastewater, and at times raw sewage, flowing in the streets, especially when the toilets are blocked.

These data show that demand and willingness to pay for improvements in various sanitation components is high where there are clearly related problems, and that WTP to an agency, usually a local government department, is lower where existing services are poor and therefore trust in the provider is low. Factors that affect WTP include perceived benefits from improved sanitation, tenure, trust of local authorities, extent of current sanitation problems and income. People are willing to pay more for facilities for their own household, as opposed to communal facilities. WTP for improved sanitation is also low where tenure is uncertain or illegal. Where communities face critical sanitation problems, for example with toilets in Mbare and refuse disposal in Gokwe, they are willing to pay more for those facilities and services. WTP is also low where residents feel sanitation improvement is solely the responsibility of local authorities.

These results generally show that there is demand for improved sanitation. However, there are no institutional means through which the urban poor can express this demand. Sanitation agencies should assess willingness to pay for services and map out cost recovery mechanisms with the urban poor.

h. Conclusion

Results of the studies carried out in 12 informal settlements in 3 countries, presented in the preceding sections, clearly show the poor sanitation conditions that residents of those settlements live in. Their problems are numerous. While sanitation issues are usually not at the top of their lists of priorities, they would like these conditions to improve and they are prepared to make a significant contribution. But it is unclear, for most such communities, how they can work effectively with the local authorities and other agencies to bring about worthwhile changes in the situation. For example, reasons that were given by the urban poor for not having latrines highlight how poor communication between them and the sanitation agencies can adversely affect investments. In some areas, communities have been waiting for years for the promised flush toilets. Yet local authorities clearly know that they do not have the resources to construct the necessary sewers in all informal settlements, even in the

next ten years. However, this fact is not communicated to the local people. In other situations, poor urban settlements are treated as being illegal or temporary; as a result the residents use the bush or construct temporary structures for their most basic sanitation needs. This is not effective in controlling transmission of diseases, and dangerous epidemics break out, requiring urgent and expensive action.

In areas where communities have taken the initiative to invest in improved sanitation, by constructing Blair latrines or other forms of VIP latrines, their efforts are frustrated by lack of local authority support to provide complementary services such as technical advice during construction or pit emptying. Local authorities have also failed to support community initiatives in solid waste management. The urban poor clean their yards and even sweep streets and drains near their houses (See picture below of residents clearing the stormwater drain, in George Compound, Lusaka), but the wider environment remains polluted and potentially dangerous. Where there are no refuse bins some households use plastic bags, but disposal facilities are limited. For example, in Mbare, only the bins provided by the local authority are collected, forcing households who use their own plastic bags to dispose of them in whatever way they can.

Due to the poor sanitation conditions in poor urban areas the incidence of water- and sanitation-related diseases is high. Unfortunately health services are not easily accessible to the urban poor due to poor roads and discriminatory user fees. As a result, the urban poor are forced to delay seeking health care until, in some cases, it is too late.

The provision of sanitation services in poor urban areas is complicated by the complex community needs and their consequent priorities. The urban poor face many problems, which they prioritise according to the resources at their disposal. Though sanitation is not always a top priority issue, communities value improved sanitation and are prepared to invest time and financial resources to improve sanitation conditions in their areas. There is need therefore, for sanitation agencies to clearly understand community needs and priorities. Causes of poor sanitation in the selected study sites are discussed in more detail in Chapter 2.

The study clearly shows that there are numerous reasons that affect the poor provision of sanitation to impoverished urban communities. The most notable ones include: the absence

of focused responsibility at national level for planning, development and financing of sanitation in informal settlements; limited capacity for community support within the councils at local government level; and lack of clarity concerning roles and responsibilities of the various stakeholders. The illegal status of many informal settlements is a major constraint to sanitation provision for poor urban communities. Lack of tenure or title deeds not only discourages sanitation agencies from providing services but also discourages households from investing in good sanitation facilities, because of their fear of being moved out. Lack of tenure or recognition leads to breakdown in communication between poor urban communities and sanitation agencies. The absence of communication makes the poor communities vulnerable, as they are not involved in service provision, not exposed to health and hygiene promotion and not involved in making decisions on matters that affect them. In Zambia, though most of the informal settlements are legal very little infrastructural investment has been carried out, as local authorities lack capital and manpower and limited data is available to them with which they can make meaningful planning decisions. Some authorities in Zambia also believe that households may not be able to afford the necessary payments for improved services; their emphasis is still on conventional, expensive, Western technologies, rather than on cheaper alternatives.

There is therefore a clear need to develop guidelines that can help to bring together the ever-increasing millions of poor people living in informal areas with the sanitation agencies so that they can work together to improve sanitation facilities and services. Chapter 2 of this book is a discussion, based on the data summarised in the preceding sections, which attempts to highlight the key causes of poor sanitation in the informal urban areas of Zambia, Zimbabwe and South Africa.

CHAPTER 2 :   THE CAUSES OF POOR SANITATION

2.1 SOCIAL ASPECTS

Sanitation agencies work in ways that are largely defined and controlled by the regulations that are laid down, by the local bylaws, by codes of conduct, and by staff job descriptions. Unfortunately these formulae do not often take account of nor conform to the traditions and culture of the poor communities living in informal settlements. As a result, communities and local authorities find it difficult to work effectively together.   For example, in the three countries studied, government workers hold their supervisors and managers in considerable respect. On the other hand, local communities respect church leaders and other leaders of their own community more than the managers of government departments.   This affects community mobilisation and participation in sanitation projects, thus impacting upon the effectiveness of these projects and the sustainability of their outcomes. Sanitation agencies need to understand the organisation and dynamics of local communities and to work with their community leaders.

In their endeavour to promote sanitation, agencies often use scientific evidence to explain the link between sanitation and health. However, to local communities, sanitation is a major part of their way of life, which is influenced more by cultural beliefs and their attitude towards risk than by their scientific understanding.   Whittington (1990) found that poor communities accord high discount rates to any improvements in their living standards; that is, they are more concerned about immediate benefits rather than those that might occur in the future. This may explain why the urban poor value curative as opposed to preventive health care. This study found, in all three countries, that clinics and hospitals are given more priority than improvements in sanitation, even though local people have a good understanding of the links between poor sanitation and hygiene, and their health.

The way people live also affects the quality of sanitation services.   Rapid urbanisation, coupled with high population growth, has resulted in large numbers of lodgers in many informal settlements, who put great pressure on existing sanitation facilities. The situation is further aggravated by extended families, poor hygiene practices and a shortage of facilities.

For health education and hygiene promotion to be effective, community health workers should understand the socio-cultural and economic characteristics and practices of the urban poor, and design their messages accordingly. Promotion processes should be systematic and continuous, rather than sporadic, and education sessions should be carried out at times and in locations that are convenient to the different groups of the urban poor. Eighty percent of the respondents in the surveys had received no health or hygiene messages in the six months before the interview. Of those who had received any health or hygiene education, 60% felt that the messages did not suit their situation or socio-economic environment. For example, they were encouraged to put solid waste in containers, yet these do not exist in poor urban areas. Where households use their own containers these are not collected, forcing households to dump waste indiscriminately. Messages must be linked to realistic and achievable actions.

Government policy and attitudes towards the urban poor should note the reasons why people move to informal settlements. Most people move to such areas for social and economic reasons. Many of them work in urban areas and have been living in these informal settlements for over five years. Therefore, destroying their shacks only displaces and does not solve the problem. Finding lasting solutions to problems in poor urban areas, including those related to sanitation, requires a coordinated approach involving the government, NGOs communities and households themselves.

Diagnostic studies can be used to develop an understanding of the socio-cultural characteristics of the urban poor. Participatory approaches and, in particular, the use of approaches such as Participatory Hygiene and Sanitation Transformation (PHAST) can also help to improve sanitation in poor urban areas. (See Box 6 in section 2.5 for some successful case studies where the PHAST techniques were used to promote sanitation). Participatory approaches encourage the involvement of individuals in a group process, irrespective of their age, sex, social class or educational background. Participatory approaches also help in building self-esteem and a sense of responsibility and simplify the decision making process (WHO, 1998).

2.2 INSTITUTIONAL ISSUES

Institutional arrangements affect the nature of the relationship between sanitation agencies and poor urban communities, which in turn affects the provision of sanitation services. The structure and way of working of sanitation agencies, especially those within government structures, is very different from the way poor urban communities are organised in the three countries studied. Whereas local authorities have formal and clear structures and reporting systems based on Acts or by-laws, community structures are informal and based on a wide range of factors that include religion, culture, tradition and politics. In most cases, local authority employees work according to the laid down procedures and upward reporting systems, which do not include explicit responsibility to their 'customers'. This makes it difficult for them to communicate with poor urban communities. Reporting systems and chains of command within local authorities are vertical and allow limited community participation. Whereas communities want local authorities to be accountable to them, the institutional structure makes local authority workers accountable to their higher officers.

The urban poor are also unaware or ill informed about local authority development plans and programmes. 85% of the respondents in the survey carried out in Zimbabwe were unaware of local authority developmental programmes and projects; in South Africa and Zambia, at least 50% of respondents claimed such lack of awareness and less than 40% were aware of which ministry was responsible for sanitation services in their settlements. It is difficult for communities to make local authorities accountable to them when they know so little about their work and plans. There is an urgent need to change such structures, attitudes and ways of working.

There are also differences, in terms of levels of sanitation services to be provided, between what the urban poor want and what legislators and local authority staff consider to be of an appropriate standard. Governmental authorities judge the quality of services by western standards, which, in many cases, do not reflect the needs and demands of the urban poor in Southern Africa. For example, the Urban Councils Act of 1996 in Zimbabwe requires all urban local authorities to provide a water-borne, sewered system. The use of Blair latrines is permitted in only limited situations, such as at markets, in urban areas, and unimproved pit latrines of any description are not allowed in urban areas. In South Africa, the Sanitation and Water Policy of 1996 identifies the VIP latrine as the minimum acceptable standard, but use

of this technology is only encouraged in rural areas; when it is provided in urban areas it is considered to be a temporary measure, whilst awaiting provision of sewered sanitation. Households in some informal settlements that have been serviced under the South African Reconstruction and Development Programme, have been provided with water-flushed, sewered toilets, regardless of the inability of many residents to pay for this advanced service.

Some donors also restrict the choice of technology, making it impossible for implementing agencies to provide appropriate technological options. Lack of documentation on existing and effective alternatives for peri-urban sanitation, and of guidelines for technology selection, are problems encountered in many areas. Furthermore, the lack of innovation and inadequate research and promotion of low cost appropriate technological options also forces sanitation agencies, too often, to provide the urban poor with unaffordable levels of service.

Legal and regulatory frameworks are, in most cases, aimed at enforcing the set standards rather than ensuring satisfaction of the needs of the urban poor. Acts such as the Town Planning Act, the Public Health Act, and the Housing Standards Act *(years to be added)* in Zimbabwe are aimed at ensuring systematic development of urban areas and construction of standard structures. Yet communities are more concerned about affordability of housing and services, and about living close to their work place. As a result, informal settlements are constructed on land considered unsuitable by local authorities. In February 2001, the Johannesburg Metropolitan Council fought running battles with the residents of Alexandra, living on the banks of the cholera-infected Juskei River. Despite the dangers of being infected with cholera, the residents claim that they were not happy at the way the evictions were handled. They were not consulted at all and were being relocated to places that were very far from their workplaces and from schools for their children.

In order to improve accountability, local authorities have developed tender procedures which are supposedly designed to encourage transparency and reduce corruption. However, local communities are more concerned with rapid procurement of materials and their ability to participate in sanitation projects. For example, in Zimbabwe, contracts with a value of more than US$1,335 are supposed to go to tender. Only enlisted (pre-selected) contractors are allowed to tender, based on their capacity in terms of levels of finance and capital equipment, which rules out participation by the local community or the informal sector. Although material procurement rules are aimed at reducing fraud, they also thwart personal innovation by local

authority employees, who are more concerned about following the laid down procedures. As a result, communities are excluded from participating in government sanitation programmes. None of the urban poor communities in any of the study sites have taken part in planning or implementing any government sanitation programme. As a result, services provided by governmental sanitation agencies do not meet the needs of the urban poor.

Communication between local authorities and the urban poor suffers from the absence of efficient and effective institutional structures to link the two parties. The urban poor are supposedly represented by their elected councillors, by Members of Parliament (MPs), and by Community Based Organisations (CBOs) in debates about their development needs. However, in all three countries studied, elected representatives tend to represent political parties and to serve the wishes of a few influential people, rather than the needs of the mass of their constituents; criticism of their positions and actions is taken as political opposition. CBOs in poor urban areas, such as residents associations, are weak in most cases, lacking legal recognition. For example, in Zimbabwe, such CBOs are not recognised by the structures of the Ministry of Local Government, Public Works and National Housing. They therefore have difficulty representing and promoting the needs and wishes of their members.

Generally the urban poor have lost faith in Community Based Organisations and try to seek their own solutions to sanitation problems. Only a very small number of people attempt to communicate their problems through their councillors or MPs, or even through CBOs, to the authorities. The rest do not communicate at all with local authorities and, because of this lack of communication, sanitation agencies are ignorant of the concerns and needs of the urban poor. Without alternative, effective channels, residents are forced to air their grievances through demonstrations, anonymous letters and through the media.

In Zambia and South Africa, major misunderstandings exist between Councillors and CBOs. The Councillors want to be in charge of the CBOs but the community members fear that this will lead to political interference by Councillors who are from particular parties, whilst the CBO may have members with different political affiliations. Zambian Residents Development Committees RDCs) have the mandate to encourage local development and therefore often act as the entry point for donor funding and as the controllers of development projects. Councillors then feel that their authority as elected leaders is undermined.

In Zimbabwe, all informal settlements are still considered to be illegal and can be destroyed at any time, even though they are home to a significant proportion of the urban poor. Therefore, the nature of the relationship between local authorities and the urban poor is that of policeman and criminal. Illegal or uncertain tenure mean that there are no incentives for households or NGOs to make meaningful investments in these areas.

In Zambia, all the sites that were surveyed have been legalised, though they are yet to start receiving any service from the government or local authorities. The reason for the failure to extend services to the legalised urban poor settlements has been attributed to lack of funds and the local authorities have started soliciting funds from the donor community to ease this problem. Box 3 describes how NWASCO, the national water and sanitation regulator, will attempt to give support, through subsidies, to agencies which work in poor settlements. The Bester and Cato Crest settlements have been legally recognised by the Durban Metropolitan Council in South Africa and already, due to their legal status some development is taking place. However, the existence of sanitation legislation in both Zambia and South Africa has not yet been fully utilised and implementation of the new framework provided by this legislation is still facing some teething problems.

Box 3: **"The extension of sanitation services to the urban poor is unlikely to be a priority"**

"In Zambia, NWASCO, the water and sanitation regulator, in regulating water supply and sanitation agencies, will require them to extend their services to the low-income areas. However, given that the quality of service even in the formal settlements has been very poor, and given the current economic realities, the extension of sanitation services to the urban poor is unlikely to be a priority to most service providers. In addition, the unique challenges of the informal settlements discourage most providers. To that end, NWASCO will be developing guidelines for service provision to the low-income areas. It is also in the process of establishing a 'Devolution Trust Fund' which service providers could access to extend services to the urban poor. The DTF will be used as a regulatory tool accessible to deserving providers only."

Information given to this study by Mr Rees Lusajo Mwasambili an Inspector at NWASCO (National Water Supply and Sanitation Council) in Lusaka.

In addition to limited information about the development plans of local authorities, the urban poor are not clear about the roles and responsibilities of the different agencies, particularly the local authorities and NGOs. This has resulted in the urban poor considering local authorities as the suppliers of services and themselves as ratepayers. However local authorities do not have the necessary financial resources and, due to restrictive regulations and misconceptions about roles, communities do not undertake meaningful initiatives to mitigate their circumstances. As a result, no services are provided in poor urban areas. The situation is further aggravated by the fact that in some cases communities actually pay for services which are not provided. Civic education is needed to clarify the roles and responsibilities of all agencies working in poor urban areas (local authorities, NGOs and external support agencies) and those of the urban poor themselves, their own organisations and representatives.

There is no sanitation policy in Zimbabwe which clearly states the roles and responsibilities of the different government ministries and departments, or of the NGOs working in informal settlements, as there is in both Zambia and South Africa. At growth points, the roles and responsibilities of the Central Rates Fund (CRF), the Department of Public Works, and the Rural District Council (RDC) are unclear, resulting in overlaps (three organisations providing the same service) and gaps (no services provided at all). The government also plays the three potentially conflicting roles of financier, implementer and regulator. This not only makes it difficult for the government to provide efficient, decentralised services but it also makes it almost impossible for the government to enforce pollution control regulations, since this entails one government department suing another. The urban poor have no legal grounds to sue local authorities for pollution.

This contrasts with the situation in the Zimbabwean rural water and sanitation sector, as described in Box 4, in which an effective National Action Committee, with a National Coordination Unit, operates to plan and coordinate activities in the sector.

<table>
<tr><td>Box 4 : Management and Coordination of Rural Water Supply and Sanitation in Zimbabwe .</td></tr>
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During the United Nations International Drinking Water Supply and Sanitation Decade (1981-90) the Zimbabwean authorities realised that rural water supply and sanitation are adjuncts to an interdisciplinary sector requiring the involvement of several different agencies. The following agencies were involved in the provision of water and sanitation services:

1. The Ministry of Local Government, Rural and Urban Development (MLGRUD)
2. The District Development Fund (DDF)
3. The Ministry of Energy, Water Resources and Development (MEWRD)
4. The Ministry of Health (MoH)
5. The Ministry of Community Development and Women's Affairs (MCDWA)
6. The Ministry of Lands, Agriculture and Rural Resettlement (MLARR)
7. The Ministry of Finance, Economic Planning and Development (MFEPD)
8. Local Authorities
9. Local Communities, and
10. NGOs and international donors

As a first stage of a process aimed at effective coordination, the different agencies mentioned above were given clear roles and responsibilities. The MLGRUD was given overall responsibility for the national coordination of the sector and to chair the National Action Committee (NAC). In order to ensure effective coordination the National Coordination Unit (NCU) was created as the secretariat of the NAC. The DDF was given the technical responsibility for drilling boreholes, construction of small dams, and maintenance of all rural water supplies. The MEWRD offered technical and engineering services such as designing dams. The MoH was the lead agent for health and hygiene promotion and rural sanitation. The MoH was also responsible for shallow well development and protection of springs. The MFEPD coordinated government and donor finance. The MCDWA motivated and mobilised communities, while local communities provided locally available materials, financed operation and maintenance, and participated in the siting of water points. Given the number of agencies which were involved and the large-scale nature of the programme, efficient coordination and management of the sector was critical to ensure that set objectives were met. The NAC and the NCU were created to plan and coordinate activities at the national level. At the Provincial and District levels Water and Sanitation Sub-Committees were created, including representatives of all involved agencies. At the Ward and Village levels Ward and Village Development Committees were created. A water point committee was also formed for each water point. The success of rural water supply and sanitation programmes

in Zimbabwe was to a large extent due to the effective coordination of the activities of all involved agencies (IWSD, 2000).

The lack of understanding, communication and coordination in relation to sanitation facilities and services in informal settlements can be reduced by more community participation and civic education, by clear sanitation policies and by decentralisation. NGOs and CBOs can act as effective mediators between the urban poor communities and local authorities if local political interference can be avoided. A simple organisational structure, together with capable and competent management, is also necessary to ensure effective service delivery and transparent budgeting and cost recovery, among other essential functions.

2.3 FINANCIAL CONSTRAINTS

Include the following box somewhere here (and possibly expand the information):

Box 5: Loan schemes in urban settlements in Zambia

CARE Zambia and the African Housing Fund are two NGOs which both lend money to poor households in Zambia's informal settlements. CARE lends money to people to help them start their own businesses in Kanyama, Lusaka, and the African Housing Fund offers loans to communities in terms of building materials in Linda another informal settlement in Lusaka. The loan repayments are quite encouraging, according to officials, and CARE even claims a repayment record of over 95%. Agencies should give credit to households rather than to communities and should also provide management, technical support, and supervision to ensure quality buildings.

As is the case with institutional arrangements, sanitation agencies and the urban poor have different views about financial issues. Whereas the agencies are concerned about cost recovery and economic efficiency the urban poor are more worried about affordability and their own poverty. Government policy, in cases where it is concerned with poor urban areas, usually aims to reach as many poor households as possible. Therefore, in areas where the government provides services directly, those services tend to be heavily subsidised.

There are three main sources of funds for sanitation investment in poor urban areas in Zambia, Zimbabwe and South Africa. These are firstly external support agencies (ESAs), including multilateral and bilateral governmental agencies and international non-governmental organisations (NGOs), including those working through local NGOs, secondly central or local governments, and thirdly households. The way in which sanitation projects are funded affects the nature of the relationship between local authorities and the urban poor to a great extent. Where services are subsidised, local authorities do not generate meaningful revenue from the urban poor and thus they are treated as mere beneficiaries and not customers or clients. Community participation is a condition for funding for some NGO and ESA supported programmes. Therefore communities participate in such programmes, although their roles may be limited to the provision of labour and collection of locally available materials. However, where community participation achieves a more significant level, local people play a more meaningful role in planning, construction and management of the facilities and this can have a major impact on both sustainability and cost recovery.

There are few examples of effective community participation in the three countries studied. In areas where some form of service is provided the role of the urban poor is limited to paying monthly charges on time, irrespective of the quality of those services. In Zimbabwe, the central government subsidises the sanitation services provided in growth points by keeping tariffs unrealistically low. Tariffs are set through a political process; as a result, they neither cover the cost nor reflect the willingness to pay of the urban poor. For example, householders pay monthly rates equivalent to US$2.14, which are supposed to cover road maintenance, sewer repairs, rent, and refuse removal. Yet willingness to pay survey results show that on average people are willing to pay US$4 per month for improved sanitation. The central government gazettes rates charged by the Central Rates Fund (CRF); the rates are uniform throughout the country irrespective of differences in the cost of providing sanitation services. Rural District Council (RDC) tariffs are different from those charged by the Central Rates Fund for similar services, although they are also controlled by the central government.

The revenue which is generated by local authorities is not used to improve sanitation conditions in poor urban areas. In Zimbabwe, the small amount of money that is generated by the CRF are not used to improve services at the source of that revenue, but go to the central government. The CRF has to then apply for grants from the central government even for minor repairs such as replacement light-bulbs for public toilets! A similar situation used to

prevail in Zambia, until 1993, when reforms in the water and sanitation sector began. Although revenue generated by the Zimbabwean RDCs is used to improve services at growth points, it is also used for developmental activities in the whole district, including rural areas. On the other hand, local authorities also face the problem of "free-riders". In Newlines, Mbare for example, only 800 legal households pay for water and sanitation services, yet these services are used by about 10,000 people. The harsh economic environment has forced the urban poor to sublet their house and shacks to supplement household income. Cases of illegal connections to the council water mains are also common in both South Africa and Zambia.

Primarily due to the illegal status of most of the settlements surveyed in both Zambia and South Africa, which was the case until quite recently, the central governments, through their Ministries of Local Government, did not fund any major capital works for improving water supplies or sanitation (GRZ, 1999). The areas that are still legally unrecognised are not yet eligible for any funding. Local authorities in Zambia are legally authorised to borrow money to finance development projects, including those concerned with sanitation, in their areas of jurisdiction. In spite of this, there have been no plans for capital investments in sanitation in informal settlements, even where demand has been expressed by local communities, and where proposals have been properly prepared and forwarded by them to the councils for consideration. Commercial utilities, such as the Lusaka Water and Sewerage Company (LWSC), have also not shown any interest in funding projects in peri-urban areas, primarily due to lack of a system that would ensure cost recovery.

However, some form of *ad hoc*, governmental funding of water and sanitation schemes has taken place in recent years in some informal settlements in both Zambia and South Africa. This has usually been either in response to a social obligation, on the initiative of political leaders in the respective informal settlement, or for public health reasons, to combat sanitation related diseases such as cholera.

The governments, as already mentioned above, provide very few or no services in informal settlements and the burden of providing services is left to NGOs and the local communities themselves. The NGOs working in Zimbabwean informal settlements and assisting in sanitation provision include Plan International, the Institute of Water and Sanitation Development, Inter-Country People's Aid (IPA), and the Mvuramanzi Trust. In Zambia the

active NGOs dealing with sanitation in informal settlements are Care-Zambia and PUSH, working alongside several bilateral programmes such as Irish-Aid, GTZ and JICA. NGO policies for cost recovery and community financial participation in construction vary from contributions of cash or labour, to the contribution of building materials. In Epworth, Zimbabwe, Plan International asked people to dig latrine pits and procure bricks, before they would receive free cement, a vent pipe, reinforcement bars and a fly screen, for the construction of Blair latrines. On the other hand, households in nearby Hartcliff were required to cover the full capital and recurrent costs of their latrines in a project promoted by the Mvuramanzi Trust, whose support was limited to facilitation and promotion of appropriate designs.

The cost of technology that government standards require is much higher than that which both local authorities and local communities can afford. In Zimbabwe, the Urban Councils Act of 1996 compels local authorities to provide water borne sewerage in urban areas; low-cost technologies such as Blair latrines are only allowed in market places without a water supply. Simple pit latrines of any description are not allowed in urban areas. These high standards are neither functional nor beneficial to the urban poor, and tend to stifle rather than to promote development, by raising the cost of facilities beyond the reach of either communities or local authorities. In South Africa, VIP latrines are allowed but conventional water-borne sewerage appears to be the default technology choice among most urban local authorities.

In order to reconcile the different financial situations of sanitation agencies and the urban poor there is need to base tariffs on the cost of providing services and the community's willingness to pay. Ideally, local communities should pay the full cost of services, including both capital and recurrent costs. But, given the level of poverty, some subsidies are inevitable, especially for capital investment. However, subsidies should be clearly targeted and administered in a transparent way that involves the local community in agreeing the targets. Subsidies are best provided in the form of subsidised credit for sanitation projects. Sanitation projects should also aim to help in poverty alleviation, by generating income for the urban poor. This can be achieved by employment during construction and by incorporating local entrepreneurs and technicians into the provision of services for operation and maintenance.

2.4 TECHNOLOGICAL AND ENVIRONMENTAL ISSUES

Alongside their differences over institutional issues and financial matters, sanitation agencies and the urban poor also have different views about sanitation technologies. Whereas sanitation agencies and the authorities to whom they are responsible are more concerned about the effectiveness of the technology in blocking disease transmission routes, and about the safety implications of the facilities provided, the urban poor are interested in privacy, convenience, status, aesthetics and affordability. This has resulted in sanitation agencies putting in place standards to ensure that technologies are safe and that they serve their intended health-related purposes. Unfortunately, this standardisation limits community choice and tends to push the cost beyond the reach of the poor. In addition, communities often use technologies for purposes other than those for which they are designed. For example, a Blair latrine may not only be used for excreta disposal but is often also used for bathing and inappropriate and sometimes dangerous disposal of refuse and hazardous waste.

Sanitation technologies should meet the needs of the different social groups in poor urban areas. For example, adolescent girls are not comfortable with Blair latrines and communal toilets during menstruation. In many cases, children are sent to dispose of solid waste either into household bins or communal skips. These facilities should therefore be practical for use by children, for example by being of an appropriate height. The same applies to toilet bowls in communal toilets, which are normally too high for children less than six years old.

Community members are concerned about the removal of waste from their household environment, yet sanitation agencies are worried about the whole community, the city and the larger environment. Therefore sanitation agencies may promote the adoption of a single technical solution to connect the whole city, for example by sewers or an integrated solid waste management system. Such requirements need to be explained to local people and discussed with them, in order to try to gain their support for the broader aims of the urban authorities.

Whereas standards are necessary to ensure that facilities are safe and serve the intended purpose during their lifetime, standardisation of technologies may push the cost of even low

cost technologies beyond the reach of the urban poor. For example, the cost of a standard Blair latrine in Zimbabwe is about US$80, yet on average the urban poor earn only US$68 per month. In Zambia, it has been calculated that the total cost of a well-constructed VIP latrine is as much as US$900[6], which is clearly well beyond the capacity of virtually everyone living in informal settlements.

Linkages are needed to ensure that technologies meet the needs and capacity of the urban poor. This can be achieved through community participation not just in choosing, but also in designing technologies. Community participation may also help agencies to come up with more durable technologies, that could help alleviate the problem of vandalism that is so rampant in poor urban settlements. Sanitation agencies should also ensure that cost-effective back-up services are available, such as for latrine pit-emptying, since communities are worried about operation and maintenance.

Sanitation technologies should also aim to minimise environmental pollution. Poor urban areas are usually located in environmentally sensitive areas, such as on steep hills, in low-lying, swampy areas, and in flood-prone areas close to rivers. In such environments inappropriate technologies may result in underground water pollution. The provision of improved water supplies without drainage can worsen flooding. Latrine pit emptying can pollute the environment if excreta is disposed of in gullies, streams or on empty space at the edge of the neighbourhood. The same applies with the final disposal of industrial, hospital, and domestic refuse. Activities associated with sanitation projects such as brick making for latrines, can lead to extensive erosion and deforestation in poor urban areas. Care is needed in planning facilities, through careful discussion with all parties, in order to avoid these problems.

2.5 APPROACHES TO THE DEVELOPMENT OF SANITATION

[Insert this para somewhere:

An example of this (participatory hygiene promotion) is the project being undertaken by Care Prospect in Kanyama, Lusaka where a number of community members are taught as

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[6] The total cost of a well-built VIP was approximated by the engineers of CARE PROSPECT in Lusaka, including programme support costs and overheads, which are too often not accounted for in quoted costs.

health promoters who later share the knowledge with others in their respective zones. These health promoters were particularly helpful in conscientising the people during the recent outbreak of cholera in Kanyama.]

The approach used by local authorities, donors and NGOs in poor urban areas is often cited (eg by Wright, 1997) as a major problem in the provision of sanitation. Local authorities still use the traditional supply-led approach, which involves top-down decision-making, based on a master plan, to tackle infrastructure problems in both informal settlements and other parts of the town or city under their jurisdiction. However, experience worldwide has shown that this approach does not achieve success in informal settlements, especially not when attempting to tackle sanitation, which requires consideration of delicate socio-cultural issues. It is widely recommended that more flexible, demand-responsive approaches need to be adopted in these situations. The demand however, needs to be well-informed, otherwise a situation may occur, like that mentioned earlier concerning the cholera outbreak in South Africa, in which the authorities waited for the communities to express their demand even though the resources had already been made available. Intensive civic education programmes may be needed in poor urban communities to introduce them to the demand responsive approach, their role in it, and its benefits. At the same time, very substantial retraining of local authority staff will almost certainly also be necessary, in order to reorient them into this new way of thinking and acting.

Local authorities still use supply-led approaches because staff are trained to work in such environments. Workers follow laid down standard procedures in line with their job descriptions. Unfortunately, in most cases, the relation between workers and the communities that they should be serving is not mentioned in either their job description or the code of conduct of their department. Even though local authorities have failed to service many of the areas, and large parts of the population, in their town or city, they adhere to the traditional view that it is their responsibility to do so. They have, as a result, missed out on opportunities of using other organisations, such as CBOs, to assist them.

The planning and budgeting processes of local authorities are designed as part of a supply-led approach. Sanitation investments are based on a Master Plan, which is prepared by professionals with little or no local involvement. Complicated and expensive technologies, such as waterborne sewerage systems, are normally recommended in urban areas. In order

to ensure that these technologies are safe and function well, standards are set. Standard procedures are then laid down to ensure that technologies meet the set standards. Since the professional planners and designers assume that local community members do not have the necessary technical knowledge, they involve the end-users in only a minimal role in the planning, design and construction of such investment projects. As a result, local skills and knowledge, related to the pre-existing sanitation situation and the community's needs, wishes and capacities, are not utilised. Unskilled labour is sometimes recruited from the local community, to assist in construction, but the much larger local knowledge resource is unused.

With top-down planning, communities are not given the chance to choose the type and level of service which they want and are willing and able to pay for. "Professionals" make decisions with little or no understanding of community needs, perceptions, practices and demands. As a result, many programmes do not meet the needs of the urban poor. For example, in normal situations refuse-bins are collected twice a week in Mbare, Harare, yet 86% of the bins fill up in a day forcing residents to dump their waste inappropriately. Communal toilets are cleaned at times that are determined by local authority staff, but which are inconvenient to the residents. In Zambia, the electricity supplier Zesco was forced, by political pressure, to extend electricity services to a number of informal settlements at a great cost. Quite soon, over half of the households in these areas had their power cut off due to non-payment. The residents claim that if they had been consulted they could have made clear that electricity was not a high priority for them. In South Africa, a high cost technology such as waterborne sanitation is being provided through the Reconstruction and Development Programme (RDP), even to poor households who cannot afford to pay for the operation of such services, let alone for the capital cost of installation. Due to the use of poor materials and inadequate construction, many households have complained that the toilets leak after flushing, wasting water for which they have to pay; at the same time, the households are expected to pay for any repairs that are carried out to the system on the household side of the water-meter.

Reform of structures and ways of working is necessary before local authorities can adopt demand-responsive and participatory approaches. A large investment of time, energy, commitment and funding will be necessary to develop and introduce new approaches and to retrain staff to understand and implement these approaches. This cannot be done quickly –

old practices are deeply engrained and an imaginative approach will be needed to bring about real change.

Although many NGOs now use participatory approaches, they have different and at times conflicting cost recovery mechanisms. For example, some NGOs subsidise latrine construction by giving free cement, vent pipes and fly screens. On the other hand, other NGOs ask communities to cover the full cost of latrine construction. Others also promote dependency by giving away free food and clothes or by paying school fees for some children. Since all these different approaches have been applied to the same community, most households will naturally resist projects that expect them to contribute something. Governments need a clear policy on the roles and responsibilities of different players and should act to coordinate the activities of all agencies working in the development of sanitation in poor urban areas.

Sanitation agencies take a project approach, where activities are aimed at achieving project targets. For example, one organisation may be focusing on increasing sanitation coverage while others focus on health, education etc. Yet communities face all these problems at once and prioritise them differently. Therefore it is important to understand community needs and priorities and to involve local people in the planning and implementation of both sanitation and other projects in their areas. There is also a need to link and co-ordinate developmental projects in poor urban areas since they are all trying to improve the welfare of the same households. Common and complementary strategies and approaches are needed, rather than the competitive, conflicting and secretive ways of working which still prevail too often at present; the authorities need to take charge of this coordination of both governmental and NGO activities in informal settlements.

Local authorities make long-term plans aimed at providing services to the whole city or town. In order to achieve their objectives they embark on large-scale projects. On the other hand community members are more worried about localised removal of waste from their households, which requires small-scale projects. The large-scale nature of government projects also makes it difficult for communities to be involved in the management of such projects. In addition, most of the construction work, which must meet the set standards, can only be done by large, formal, private companies. As a result the local informal sector is not involved, resulting in loss of income.

Adoption of demand-responsive and participatory approaches, and techniques such as PHAST can improve community participation in sanitation projects in poor urban areas and hence enhance their effectiveness. (See Box 6 below showing some successful examples of the application of PHAST in sanitation provision). Since communities face a wide range of problems whose root cause is poverty, sanitation projects should also be used to create employment for the urban poor as a way of alleviating poverty.

Box 6: The PHAST Initiative in Action

'One of the major issues to come to light during the Water Decade (1981-90) was that the anticipated health impacts of water and sanitation projects - in many minds their raison d'etre - could be very elusive. Participatory activity with communities became an important means of translating the accessibility to services into positive health gains, especially for women and children. In 1993, the Water and Sanitation Programme of the World Bank-UNDP joined with WHO to launch the PHAST -- Participatory Hygiene and Sanitation Transformation -- Initiative' (Black, 1998).

The PHAST methodology has been found to be successful in most of the areas where it has been implemented and below are some examples from the Republic of South Africa:

Using PHAST methodology there are four villages that are now demanding sanitation improvements without waiting for the subsidy money. These villages are Tshaneng, Matlong, Magubue and Dipudi.   Most importantly, these communities are now asking relevant questions about their own sanitation situation. Some of these questions are:

1. What happens when my pit fills up?
2. What do I do in hard ground conditions?
3. What about high ground water table?

The Dipudi Sanitation Project was a successful pilot project, funded by DANIDA, in which no money was allocated for subsidies. Only health and hygiene promotion and institutional training were facilitated to bring about household sanitation. The result is that the whole village came together and contributed towards building of toilets at the cemetery.

It should however, be noted that not all PHAST projects end up in success. If they are not handled well there is a big possibility of failure.

(The above South African examples are taken from a paper presented by Thabo Ramokgoba of Kgolabolokwe Sanitation, at the Appropriate Practice Conference on Rural and Peri-Urban Water and Sanitation in South Africa hosted by DWAF in East London, 14-17 March 1999.)

2.6   CONCLUSION

The causes of poor sanitation in informal settlements, which have been discussed in the preceding sections, highlight how the institutional, legal and financial arrangements, and the technologies and approaches adopted by sanitation agencies can fail to meet the needs of the urban poor. The formal structure and training of most local authority staff is designed to serve the formal, planned urban areas, not informal settlements. The standards, acts and by-laws do not reflect community needs nor their willingness to pay for services and facilities. The institutional arrangements do not allow for effective community participation nor do they make local authorities accountable to the urban poor. Where policies have been drawn up in recent years, and new structures established, which attempt to take into account some of the issues raised here, for example in South Africa and Zambia, their effect is, as yet, very limited, in part because of the wide range of issues that need attention.

This study shows that a gap exists between sanitation agencies and the urban poor. If sanitation agencies are to meet the needs of the urban poor they should adopt participatory approaches that allow community input in policy formulation and at all stages of the project cycle. Key to effective linkages between sanitation agencies and the needs of the urban poor is the adoption of demand responsive principles, participatory processes, and flexible financial, and legal and regulatory frameworks. The need for significant reform is pressing; too many poor urban communities lack effective sanitation, and the problem is growing rapidly. Although the list of issues that needs to be tackled may appear daunting, a start must be made now. Guidelines, which aim to assist in bringing about the necessary changes in policies and practices for cost-effective, appropriate and sustainable improvements in sanitation conditions in poor urban areas, are discussed in the final part of this book.

PART 3:   GUIDELINES FOR MORE EFFECTIVE, SUSTAINABLE SANITATION

The following recommended guidelines are based on the data collected in a study undertaken in South Africa, Zambia and Zimbabwe in 1999 and 2000. The findings of this study are summarised in the earlier parts of this book. The resulting guidelines attempt to indicate many of the key issues that need to be addressed in order to bring about more effective and sustainable sanitation for the poor communities living in informal urban settlements. These guidelines should not be treated as standards, but should help in the process of reflection and in the development of better programmes, based on partnership between the agencies involved in sanitation and the communities and families that they strive to serve. They should be applied with due regard to the prevailing local conditions.

Causes of poor sanitation that were identified in Part 2 can be classified into the following general groups and the guidelines use this classification :

1. Social, political and socio-economic issues
2. Health and hygiene promotion
3. Institutional issues
4. The legal and regulatory framework
5. Financial arrangements
6. Technological and environmental issues
7. Approaches to the development of sanitation.

The guidelines end with some general conclusions and broad recommendations.

3.1   SOCIAL, POLITICAL and SOCIO-ECONOMIC ISSUES

The success of sanitation projects is to a great extent affected by socio-cultural and political factors in poor urban areas. Sanitation agencies need to consider the following points:

- **Assess the needs, perceptions and practices of the urban poor through diagnostic studies as the first stage of solving the sanitation crisis.**

Baseline information on socio-cultural and economic characteristics and the socio-political organisation of the local community is important in designing appropriate sanitation projects in poor urban areas with those same local people. The diagnostic study should also be used to understand why people move to poor urban areas and to identify causes of poor sanitation and possible solutions. However, previous surveys should be checked before administering new surveys.

- **Develop efficient communication strategies that link sanitation agencies with the urban poor.**

Ensure that the different segment of the community (men, women, lodgers, rich, poor, children etc), their leaders and their organisations are identified and that their views are collected. Ensure participation of all the different social groups. Note that there are some marginalised groups who cannot say what they want at public meetings. For example, there is a significant proportion of female-headed households in poor urban areas. Yet in most traditional cultures women do not make public or community decisions. Decision-making should be carried out at street and neighbourhood levels to encourage more participation by traditionally marginalised groups.

- **Ensure that socio-cultural factors that affect housing and sharing of sanitation facilities are taken into account. Sanitation facilities should meet the needs of local household characteristics, such as large families, lodgers and disposal of children's excreta.**

Cultural beliefs in Zimbabwe, for example, where faeces are treated as dirty and contact should be avoided, though having positive impacts on health, have affected adoption of ecological sanitation technologies which promote the reuse of human excreta. This has also negatively affected emptying of pits. No latrines were empted in any of the study sites. There is also need to understand cultural practices such as those for the disposal of children's excreta. Children aged less than six defecate on the open ground or on paper, which is then collected and disposed of in latrines. Such activities should be targeted in health and hygiene promotion.

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- **Note that although the urban poor may not express sanitation as a high priority issue, as they have many livelihood struggles, they do value sanitation and are usually prepared to participate in the improvement of sanitation conditions in their area.**

Results of this study show that in Zimbabwe people are willing to pay US$4 monthly for improved environmental sanitation, even though this is not their top priority concern.

- **Understand the community's definition of health and their health seeking behaviour.**

Communities have different definitions of health and health seeking behaviour. For example, diarrhoea among children may be treated as normal and households may only seek medical treatment when the children are seriously ill.

3.2   HEALTH AND HYGIENE PROMOTION

The effectiveness and sustainability of sanitation programmes depends on a healthy balance between the engineering components (the hardware) and the socio-economic and institutional issues (the software). Most agencies now accept the importance of health and hygiene promotion, but such programme components have still not been given the emphasis, careful design (including objectives, indicators and monitoring and evaluation procedures) and budget that are required to be effective. The approaches which have been applied have generally not been effective in changing behaviour. Approaches which are limited to the timescale of a particular project are usually ineffective as health and hygiene promotion needs to become an ongoing part of the life of the community. There is a need to link health and hygiene messages very closely with the local, traditional cultural beliefs and practices of the urban poor, and with their traditional methods of dealing with perceived problems, in order to blend them into the planning process for sanitation and hygiene improvements.

The following points may assist in linking awareness and behaviour change:

- **Use existing, local organisations to stimulate health and hygiene promotion.**

Support health clubs, household visits, guided tours, women's church clubs, household cleanliness competitions, school sanitation programmes as locally-based promotion activities.

- **Use Participatory Hygiene and Sanitation Transformation (PHAST) (WHO, 1998) and other social-marketing approaches to build self-esteem and encourage communities to take the initiative to improve sanitation in their areas.**

Participatory hygiene activities, in which communities identify their own sanitation problems and their causes, and plan to solve them, are more effective in bringing about real behaviour change than externally dominated programmes. Programmes should be continuous and systematic, including refresher training for animators recruited from the poor urban communities themselves. Programmes should have strong links with the necessary infrastructural improvements – more hand-washing cannot take place without access to water and safe excreta disposal cannot occur without appropriate facilities. Messages and methods of communication should be appropriate to the conditions faced by the urban poor. See the UNICEF Manual of Hygiene Promotion (UNICEF, 2000) for more details of appropriate techniques.

- **Health and hygiene promotion sessions can also be used to promote civic education.**

- **Sanitation should be part of the curriculum in primary schools.**

Health and hygiene education is more effective if learnt at an early stage. School children can also take health and hygiene education messages home to their parents and siblings.

- **Women should be deliberately targeted for health and hygiene promotion, but messages and methods of communication must also consider how men can also be involved and targeted in order to bring about essential changes in attitudes and behaviour.**

3.3 THE INSTITUTIONAL CONTEXT

Institutional arrangements affect the relationships among sanitation agencies and between sanitation agencies and communities. In turn these relationships affect the effectiveness and sustainability of sanitation programmes in poor urban areas. The following are some of the key points that need to be considered in sanitation programmes in poor urban areas.

- **Ensure that there is political will for change at the highest levels.**

This can be achieved through advocacy and involvement of appropriate decision-makers at all stages of sanitation projects. Ministers, deputy ministers, permanent secretaries and directors of relevant ministries and departments should be involved in both research and sanitation improvement programmes, or at least made aware that research and programmes are going on, at the outset. Results, both positive and negative, must also be shared with them. Ways should be found to give sanitation the attention it deserves, so that it is not overshadowed by issues around water supply. Creative and striking messages are needed to help the decision-makers to understand the importance of sanitation, particularly in poor urban areas, and to encourage action.

- **Sanitation policies are needed for poor urban areas.**

The existence of a comprehensive sanitation policy, clearly targeted at poor urban areas, is pivotal to the success of sanitation programmes in those areas. The policy should clearly specify the roles and responsibilities of all agencies including the poor urban communities themselves, identify appropriate strategies, and outline the resources needed and sources of those resources. Such policies should be drawn up with the active participation of the poor urban communities themselves.

- **Local authorities should develop a database including the demographic and socio-economic characteristics of poor urban settlements, and the health and sanitation conditions of communities in those areas. They should then draw up strategic plans that include extension of sanitation services to the communities living in those settlements.**

The urban poor should participate in the collection of information for the database and in the development of the strategic plan. This should be used to plan investments.

- **Effective communication links are needed between poor communities and local authorities.**

Lack of effective communication channels between local authorities and communities has forced poor people to air their grievances through the media or demonstrations. Effective links can be established by strengthening or establishing development committees in poor urban areas, including, but not dominated by, local authority representatives. It is necessary to ensure that such committees are legally recognised by the local authorities and that the capacity of these committees is built by leadership training and other forms of training appropriate to any needs identified. Two practical examples of such structures, which demonstrate both strengths and weaknesses, are the Residents' Development Committees (RDCs) that have been established in the legalised informal urban settlements in Zambia and the Development Forums in South Africa. The Zambian RDCs are registered as NGOs under the Societies Act. In some cases they are recognised and treated as partners by the local authorities, but in others they are perceived as rivals and are not allowed to represent their communities to the local authority. Although RDCs are supposed to be apolitical, they are frequently manipulated by politicians and thus lose their legitimacy. The South African Development Forums are not only legal community based organisations but are also part of the structure of local government.

- **CBOs and NGOs should be encouraged to act as intermediaries between the urban poor and local authorities, and should attempt to improve both the relationship and the flow of information between local authorities and the urban poor.**

CBOs and NGOs should act as a neutral link between communities and local authorities. They should facilitate the establishment and operation of local committees, as recommended in the previous point, consisting of representatives of all stakeholders, to co-ordinate developmental projects in poor urban areas.

- **Although various stakeholders may have different short-term goals, attempts should be made to ensure that all agencies share the same long-term goal and broad strategies, ie by adhering to a national policy.**

Sanitation projects in poor urban areas are usually *ad hoc* and short-term. The sanitation policy should clearly state the overall goal of sanitation projects and programmes in poor urban areas, so that all agencies work towards achieving one goal by implementing strategies that are not in conflict.

- **Encourage transparency and accountability by giving CBOs more 'say' in local authority programmes.**

There is often no trust between local authorities and the urban poor, particularly those living in informal, illegal settlements. This is mainly due to lack of regular and open communication and meetings between local authorities and communities. Trust is further damaged by reported cases of corruption and political clashes. If CBOs, such as residents or ratepayers associations and housing cooperatives, are strengthened and given legal recognition, then they can help to make local authorities accountable to the communities they serve. However, mechanisms are also needed to ensure that CBOs are impartial and represent marginalised groups within the community. Civic education is vital if communities are to ensure that sanitation agencies are accountable to them.

- **Local authorities should be involved in programmes run by NGOs and those funded by external support agencies (ESAs) in poor urban areas.**

Some NGOs work directly with poor urban communities without involving local authorities. This is normally done where informal settlements are considered to be illegal or to avoid local authority bureaucracy or corruption. In some instances, NGOs only contact local authorities when seeking permission to work in informal settlements. Whereas this approach may speed up project implementation and help to ensure that local communities benefit, this does not improve the relationship between local authorities and communities and can increase the lack of mutual understanding between the two parties. For example, local authorities may still treat informal settlements as illegal, thereby limiting investment in these areas to temporary facilities. NGOs and ESAs should involve and build the capacity of local

authorities, so that they work effectively with communities, and can provide a coordination function between different programmes.

- **Local authority and NGO activities should build upon and collaborate with existing, informal sanitation activities, such as waste recycling, and not over-ride them.**

Durban Metropolitan Council provides a good example of how such collaboration can be achieved in solid waste management (see Box 2, page ?).

- **Civic education should be promoted concerning sanitation policies and the roles and responsibilities of different players, including the local community themselves.**

Civic education, leading to better understanding, is key in ensuring sustainable improvements in sanitation services and in ensuring effective community participation and accountability. Civic education is also pivotal in ensuring effective linkages between sanitation agencies and the urban poor. Local NGOs are probably in the best position to promote and carry out civic education, and find ways to make this effective, through carefully monitored and evaluated programmes, the lessons from which are shared widely.

- **Governing bodies of sanitation agencies should be selected democratically and on the basis of professional competence, and not appointed by politicians.**

Research in Bharatpur in India has shown that 'Government officials working at the municipal level are very much driven by the demands made on them by government systems rather than the needs and demands of the population as a whole' (Tayler, 2000).

- **Sanitation projects should not just aim at providing facilities but should also attempt to address the legal status of the urban poor.**

The scale and effectiveness of sanitation projects in poor urban areas largely depends on the legal status of these settlements. Where tenure is illegal or uncertain, sanitation agencies can only provide temporary facilities, which may not significantly improve the welfare of the urban poor. In addition to meeting the practical needs of the urban poor, sanitation agencies should also work with other agencies to address strategic needs including recognition,

empowerment, and secure land tenure. Without such issues being addressed any sanitation improvements are inherently unsustainable.

- **Information and communication strategies should be developed that address all segments of the urban poor communities.**

Formal and informal flow of information should be encouraged through networks connecting NGOs, CBOs and other social groups such as women's clubs. Informal groups are more effective in spreading information about sanitation projects and hygiene messages than larger, more rigid and bureaucratic structures.

- **Where the 'sanitation agency' is not able to undertake the installation of improved facilities immediately, its core responsibilities should still be:**
  1. To promote health, hygiene and sanitation.
  2. To monitor health impacts and carry out periodic evaluation of the effectiveness of any ongoing sanitation programme.
  3. To monitor desludging of on-site facilities, and/or relocation of on-site latrines when pits fill, to ensure that this happens in a timely fashion.
  4. To create an enabling environment for the construction of household and public facilities, which meet at least the minimum level of service; for example by identifying suitably-trained local builders and ensuring quality controls, and possibly providing design guidelines, construction kits, or supervision services, and so on.
  5. To create an enabling environment for the safe removal, treatment and disposal of human excreta: for example by identifying local waste disposal contractors and ensuring that public health regulations for safe waste disposal are observed. This will include ensuring that appropriate mechanisms are in place to collect tariffs or fees for the service. (Adapted from DWAF/NaSCO, 1997[7].)

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[7] Department of Water Affairs and Forestry/NaSCO (South Africa), 1997: Water Services Act Interpretative Guide for Sanitation: Discussion Document.

3.4 THE LEGAL AND REGULATORY FRAMEWORK

The legal and regulatory framework should facilitate appropriate and sustainable improvements in sanitation services in poor urban areas. The following are some guidance points, which should assist sanitation agencies working in poor urban areas:

- **Ways should be sought to ensure de-facto security of tenure where formal, legal recognition cannot easily be obtained.**

In cases where all informal settlements are considered to be illegal, as is the case in Zimbabwe, sanitation agencies in these areas should attempt to find ways of ensuring that communities will not be evicted, as any instability makes investment in sanitation, by agencies, communities or households, very unlikely. This can be achieved by persuading the government to guarantee that settlements will not be destroyed for five or ten years and that settlements can only be destroyed if residents are resettled to better locations. This principle has been applied successfully in squatter upgrading programmes in Latin America and South Asia, where governments have guaranteed that houses of people participating in upgrading programmes will not be destroyed [Refs??]

- **Building and procurement regulations should be made as flexible as possible, and any other legal impediments that prevent service provision or participation of the informal sector in illegal areas should be relaxed.**

Building standards for informal settlements should be flexible and appropriate. Communities have often done a lot of work in terms of constructing their own houses, latrines and waste disposal facilities; government departments and local authorities should build upon this initiative by introducing flexible standards and advise or train community members so that they construct safe and effective structures.

- **Civic education should be used to raise awareness about the regulations and by-laws that govern the provision of services in poor urban areas and to clarify the roles and responsibilities of sanitation agencies and the local communities themselves.**

Lack of knowledge and understanding is one of the major factors limiting effective community participation. As long as communities are not clear about the roles and responsibilities of sanitation agencies and about their own rights, problems of poor quality services, corruption, misrepresentation and unaccountability will continue. Civic education should also clarify the role of local communities themselves in improving sanitation services, so that they play their very important part. NGOs should integrate civic education on broader issues into health and hygiene promotion programmes.

- **In order to facilitate community management and ownership of sanitation assets there is a need to make it possible for Community Based Organisations (CBOs) to register as legal entities.**

CBOs should be legally recognised so that they can construct and own sanitation assets. Although there is often talk about community ownership, this is usually not legally binding and arguments erupt between local authorities and communities when NGOs or other external supporters pull out. This is particularly serious in projects where communities contribute to the construction of infrastructure. Communities may refuse to pay local authority charges for use of such infrastructure. Clear ownership and financial and managerial responsibilities are essential from the outset, but this is complicated by the high turnover of residents in informal areas.

- **One national committee should coordinate the activities of all sanitation agencies working in poor urban areas (including government ministries and departments, NGOs, ESAs, CBOs, the formal and informal private sector etc) and should design, promote and enforce pro-poor regulations.**

[eg ZINISA in Zimbabwe, but acting as a lobby group.]

- **Local Governments should coordinate activities in informal settlements.**

One major weakness with sanitation projects in poor urban areas is that they are implemented by a number of loosely coordinated agencies. Not only does this result in duplication of effort and inefficient allocation of scarce resources, but it also tends not to produce any significant improvements in the welfare of the urban poor. In addition, local

communities are confused by different and often conflicting agency policies and methodologies, for example in relation to contributions and financing. Improved coordination should produce clarity, more effective collaboration and sharing of lessons learned.

- **Local authorities should develop and maintain up-to-date, centralised databases containing essential socio-economic statistics.**

Data that is most significant includes the potential growth sectors, population trends, household incomes, the rate of unemployment, distribution of utility services, details of schools, and health care facilities, and housing characteristics. This data is vital for use in strategic planning and budgeting by local governments and can help save public resources that might have been allocated to non-priority areas. The urban poor are tired of being asked the same questions over and over again, especially when they see no material results coming from these investigations, and some are no longer ready to participate in surveys. A centralised database, which is accessible to all interested agencies, can reduce surveys, thus allowing the urban poor to use their time more productively. Likewise, it should ensure that all agencies start their work from a common information base. A good example, is the National Coordination Unit (NCU) (an inter-ministerial committee) which coordinates the activities of all government ministries and departments, ESAs and NGOs involved in the Integrated Rural Water Supply and Sanitation Programme in Zimbabwe (see Box 4). This has achieved tremendous improvements in sanitation in rural areas in Zimbabwe (IWSD, 2000) and should be replicable at both national and local levels in urban sanitation.

- **A regulatory framework should be promoted that stimulates private sector operators or public-private partnership to provide services.**

The provision of sanitation services should not be solely the responsibility of the government. ESAs and NGOs should work with governments and communities to draft a flexible legal and regulatory framework, which allows participation of the formal and informal private sector. In most of the poor urban communities an informal sector already exists, which is involved in solid waste collection and recycling. The regulatory framework should allow and facilitate the development and improvement of such activities and encourage the carefully regulated involvement of private companies.

- **Regulations and monitoring mechanisms should be put in place to ensure that private sector operators deliver services in accordance with local authority policies and plans.**

The profit motive which drives private operators can result in poor services for those who are less able to pay. Regulations must be established, used and monitored to guard against this.

- **Bylaws should be drawn up in consultation with the local communities who are affected by them, and the roles of implementers and regulators should be separated.**

Communities are more likely to comply with bylaws which they feel they participated in formulating, as opposed to those which are imposed on them. In some cases, for example in Zimbabwe before the new Water Act, the government played the roles of financer, implementer and regulator of the sanitation sector. This compromised both the quality of services in growth points and the enforcement of pollution control measures. The Central Rates Fund still acts as the financer and implementer at growth points.

- **Political influence in service provision should be avoided.**

The existence, location and status of informal settlements are often hot political issues. Sanitation projects can therefore be hijacked and used in campaigns for votes. To reduce this influence, community leaders should be elected by their communities and not appointed by politicians. If development committees in poor urban areas become politicised, clashes arise and complaints are taken as opposition. Sanitation agencies should therefore strive to understand the political organisation of the community with whom they are working.

- **An interpretative guide should accompany any form of sanitation legislation, in order to improve comprehension of the key issues.**

An example of this is the 'Water Services Act Interpretative Guide for Sanitation' in South Africa, which was prepared by the National Sanitation Co-ordination Office (NaSCO) under the auspices of the Department of Water Affairs and Forestry.

- **Supervision of both conventional and alternative sanitation technologies should be administered under one department.**

Whereas supervision of 'conventional' sanitation technologies, such as water borne sewerage systems, usually falls under one clear department, and technical support exists for such services, the same cannot be said about on-plot sanitation technologies. In Zambia for example, water and sewerage departments in large urban local authorities administer the sewers, and on-site technologies are supposedly provided by Public Health Departments (PHD), or by Departments of Housing or Departments of Environmental Health. The same situation applies in Zimbabwe, where there is no single organisation which communities can easily approach for technical assistance concerning on-plot technologies.

- **Clear and comprehensive regulations should be put in place for the management of hospital waste and other hazardous waste.**

The urban poor are often located near dumpsites or industrial areas and can be easily and seriously affected by poor management of hazardous waste. Children and scavengers from poor urban areas visit dumpsites. In 1999, in an informal settlement of Cape Town, children pricked themselves with used hospital needles, and some even consumed tablets that had been disposed of on the outskirts of the settlement. Such situations must be avoided.

3.5 THE FINANCIAL CONTEXT

Financing sanitation services and cost recovery are among the key issues that affect project sustainability. The following points summarise some of the key financial issues which should be considered when designing sanitation programmes to ensure that financing mechanisms meet the needs of the urban poor.

- **Tariffs should be clearly based on the cost of providing sanitation services and on the willingness of communities to pay for those services.**

Whereas sanitation agencies are worried about cost and cost recovery, the urban poor face all sorts of problems associated with poverty. Willingness-to-pay (WTP) surveys and full cost

accounting should be used to set tariffs which are affordable to the communities and cover at least the costs of operation and maintenance.

- **Credit facilities should be made available for poor households to pay for their own facilities.**

Given their low incomes, the urban poor may not be able to afford the high, upfront capital costs of household sanitation facilities, making credit or subsidies necessary. Credit facilities should be designed with the communities and complement existing mechanisms for mobilising community resources, such as informal lenders and housing cooperatives. Two organisations in Zambia have shown that micro-lending programmes at the community level can succeed as long as they are well administered (see Box 5). Agencies should give credit to households, rather than to communities and should provide management, technical support, and supervision to ensure the quality of construction.

- **Communities should be involved in setting tariffs and in preparing annual budgets.**

Make sure that the community is involved in setting the tariffs and explain clearly how these charges are arrived at. This requires a good understanding of real operating costs. Communities should know why they have to pay and what they are paying for. Tariff levels should be decentralised so that they are appropriate to the local context, but subsidies from central government should be incorporated where appropriate.

- **Financial controls should be decentralised so that revenue is used to improve services at source.**

Communities are prepared to pay for services as long as the charge is related to the quality of the services they receive and use. Unfortunately rates are often increased on a yearly basis when there is no improvement in services or when services are actually deteriorating. Payments inevitably suffer in such circumstances.

- **Given the low incomes in poor urban areas, subsidies may be necessary, to improve access to sanitation services by the poor.**

However, the following questions should be addressed before subsidising services: who to subsidise, what to subsidise and how to subsidise? In sanitation, the main objective of subsidies is to increase consumption of services by the urban poor. In this case, good indicators are required to identify the target group, and the subsidies should be adequate to increase the consumption of the good. Subsidies can be delivered either directly to consumers, or through suppliers. In the first case, which is generally the most effective, consumers are given funds or discounts to purchase services. This makes the service-provider accountable to all users and empowers even the poorest as a service consumer. The alternative is to subsidise the production/supply costs, but this reduces accountability to the service-user and hence tends to reduce effectiveness and reliability.

- **Subsidies should not introduce market distortions (in either demand or competition) by sending the wrong signals to either consumers or suppliers.**

Keeping tariffs low sends the wrong signals to both consumers and suppliers, resulting in poor quality services and misuse by local communities. To avoid this, either production or supply should be subsidised. Subsidies should be transparent and should be abandoned in the long run. Experience from Lesotho, India and Latin America shows that subsidies are better if they are in the form of subsidised credit and not low tariffs (Price, 2000).

- **Procurement of materials, and construction procedures such as tendering, should allow participation by both the user community and the local informal sector. Tender procedures should allow communities to bid.**

- **Public-private partnerships and financing by the local community should both be encouraged.**

Participation of the private sector in the provision of sanitation services in peri-urban areas in Southern Africa is still limited, due to institutional constraints. Institutional reforms that allow concessions or Build Operate and Transfer (BOT) systems should be encouraged. Community partnering, in which communities contribute towards investment in sanitation, can help to make projects successful and sustainable. When households share the cost of building their own latrines, overall building costs drop, latrine usage rises and facilities are

better maintained; but it is also important, by use of credit or subsidies, to make sure that the poor can also participate.

- **Programmes should take note of the various economic activities of different social groups and why people are located where they are.**

Sanitation programme managers working in poor urban areas should fully understand the various economic activities going on in poor urban areas. Failure to understand these activities may result in programmes destroying the local informal sector, resulting in losses in income for the urban poor. Sanitation projects should be linked to income generating activities in the community. In Hartcliff, Zimbabwe, for example, wooden superstructures for latrines were encouraged, rather than those made of brick masonry. There is a well established carpentry industry in the area; timber superstructures can be moved and reused when the pits fill up.

- **Approaches should be developed that help communities to select a system and level of service that they want and can pay for.**

- **Cost recovery mechanisms that are adopted by government agencies or NGOs working in the same area should be harmonised.**

- **Government should extend funding for sanitation services to poor urban areas, to prevent outbreaks of disease that can affect the whole population.**

It is estimated that 77% of the population in developing countries will live in urban areas by the year 2025. Unfortunately half of the urban population will live in informal settlements. Given this scenario, the need for governments to allocate more resources for infrastructure development in poor urban areas, in order to protect the health of the whole population, cannot be over-emphasised.

- **Accounts for revenue from sanitation and water services should be kept separate and revenue collection mechanisms should be improved.**

Combined charges, in which rates for water, sanitation and rent are combined, is one factor causing poor sanitation in poor urban areas. Combined charges result in low sanitation tariffs, which do not cover the cost of providing services. Even where tariffs cover the costs, revenue generated from sanitation services is often used for purposes other than improving or extending sanitation services.

3.6 TECHNICAL AND ENVIRONMENTAL ISSUES

Sanitation technologies and services should meet the needs and interests of the community and should be designed so that they complement existing practices. In order to achieve this the following points should be considered:

- **Communities should be offered the widest possible range of technical options and encouraged to choose technologies and service levels which they understand, want and can afford.**

Technologies should be selected to suit the physical characteristic of poor urban areas and the culture of the community, and to meet the various needs of the different social groups – for example the needs of the girl child, for bathing and solid waste disposal. In Zimbabwe, the Blair latrine was adopted as the standard household sanitation technology during the International Drinking Water Supply and Sanitation Decade. Since the construction of Blair latrines was highly subsidised, the technology was widely adopted and rural sanitation improved in the 1980s. However, sanitation coverage started to decline in the early 1990s, mainly because households could not afford to construct new Blair latrines to replace the full ones. In Mamelodi, South Africa, the government is constructing free flush toilets for the urban poor without assessing community needs and willingness to pay for such facilities.

- **Technologies should be offered which are simple and cost effective, so that communities can manage them.**

Communities should be enabled to select technologies which they can manage. Training should be provided to community members concerning the hygienic use, maintenance and operation of those technologies, and backup services should be made available.

- **Local engineers and technicians should be trained in alternative and low cost technologies.**

- **Where possible, communal facilities should be avoided, as operation and maintenance of a hygienic environment is inevitably difficult.**

Where communal facilities cannot be avoided, responsibility for operation and maintenance should be clearly allocated. Communal latrines should be used by a clearly defined number of households, who have the right to control use of that facility.

- **Technologies should be chosen which are friendly to the environment.**

Poor urban areas are often situated in environmentally sensitive locations, such as on steep slopes, in low-lying, swampy areas, and in river-beds. For example, some parts of Epworth and Divarasekwa Extension, in Zimbabwe, are low-lying, with a high water- table. In these areas, the provision of improved water supplies without adequate drainage can worsen environmental conditions. Sanitation technologies which have negative impacts on the environment, such as those which encourage mosquito breeding or contamination of shallow groundwater, should be avoided.

- **Where appropriate, ensure that pit latrines are separated from bathrooms.**

This study shows that where latrines were provided without bathrooms, the latrine was also used as a bathroom, resulting in smell, insects, and other inconvenience.

- **Coordination mechanisms should be established between the sectoral departments that work in low-income areas, in order to ensure consideration of wider environmental issues.**

The activities of all agencies working in poor urban areas should be well coordinated by a central committee with the necessary legal framework and powers. Water supply without sanitation or the introduction of solid waste bins without proper access for collection can lead to environmental degradation.

- **Sanitation projects should follow the Environmental Impact Assessment (EIA) process (such as that promoted by the Zimbabwe Ministry of Environment and Tourism, (1997)) to assess environmental problems which are linked to the provision or non-supply of sanitation services. Technologies should be chosen that have the least negative impact on the human and natural environment.**

Poor sanitation leads to surface water pollution, which increases the cost of water treatment and the chances of disease outbreaks. On the other hand, the provision of on-plot sanitation facilities in areas where the water table is high may lead to groundwater pollution. Activities associated with latrine construction such as brick making may lead to soil erosion and deforestation. Sanitation agencies need to understand the potential positive and negative effects of potential projects, explain them to the local community, and assist that community to choose a technology that does the least harm to their environment.

- **Technologies chosen by a household or community should not have negative effects on other households or the city.**

Families are generally more worried about removal of waste from their own household, than about the surrounding environment. Sanitation agencies have a responsibility to ensure that environment-friendly technologies are used, that excreta emptied from pit latrines is disposed of safely, and that solid waste is managed with care.

- **Any activities that are already being undertaken by the community, or other stakeholders, to ameliorate environmental problems, should be built upon.**

Formal service providers do not generally operate in poor urban areas, but the informal sector thrives. However, the informal activities tend to concentrate on removing waste from the households and dumping it on the edge of the settlement, thus polluting the local environment. Sanitation agencies should build upon and improve such informal activities, by providing facilities for effective disposal of solid waste collected from households.

- **Any environmental laws, such as those concerning ground water pollution, should be taken into consideration in situations where on-site sanitation is proposed as the appropriate solution for sanitation in urban poor community.**

- **Civic education should be carried out in informal settlements, to improve local people's understanding of better environmental management.**

- **Transfer sites should be encouraged so that waste from informal settlements can be easily disposed of nearby.**

- **Disposal of hazardous waste should be discouraged in places that are very close to settlements.**

In South Africa, in 2000, there were a number of cases in which clinical wastes were dumped close to settlements and children were found to have ingested the discarded medicines and even pricked themselves with used syringes.

- **There is a need for sanitation agencies to provide appropriate storage facilities and to use suitable equipment for transport of solid waste.**

Skips should be easily accessed by residents, including children, so that waste is not discarded on the ground. In Zambia, for example, open trucks are often used to carry solid waste. This results in the waste being blown everywhere.

- **National organisations in charge of monitoring of environmental issues should become more proactive in encouraging good practice, rather than reacting to disasters, as they tend to do at present.**

3.7   APPROACHES TO THE DEVELOPMENT OF SANITATION

The approach that is adopted in the provision of sanitation services in poor urban areas should ensure that the services meet community needs, and correspond with existing socio-cultural characteristics and practices. The following guidelines should help to ensure this:

- **Historical mapping can be used to help a community to rediscover itself.**

Historical mapping (IPA, 1999) can be used to trace where people came from, how they were organised, which sanitation facilities they used, and how they solved problems. This helps the community to find its roots and to rediscover itself, and to instil a sense of belonging among the people.

- **Demand Responsive Approaches (DRA) should be adopted and local resources and skills should be used as fully as possible.**

DRA and participatory approaches (including the use of PRA and PLA methods) improve the sustainability of sanitation projects. However, as part of these processes, it is necessary to make sure that efficient communication channels are in place, through which different social groups within the community can convey their demands.

- **Solve sanitation problems as part of and in the context of poverty alleviation.**

Poor sanitation should be treated not just as a health issue but as a first step towards poverty alleviation and as an essential precondition for economic and social development. Sanitation projects are more attractive to communities if they create employment or training opportunities for local people. Therefore agencies should try to have a holistic approach to development, as opposed to a limited, project approach. Sanitation projects should be linked with improvements in health, education and income-generation, since all these problems are faced by the same household.

- **Approaches adopted by sanitation agencies should be acceptable to the culture and traditions of the urban poor communities.**

Involve communities throughout the project cycle. However, community mobilisation in poor urban areas may be difficult due to differences in socio-economic characteristics between different groups, and lack of social cohesion. Community mobilisation in poor urban areas therefore requires patience, good understanding of community organisation and building upon such organisation as already exists.

- **Make sure that all the stakeholders and policy makers are involved at all stages of the project cycle.**

A deliberate attempt should be made to target the marginalised groups of society (such as the women, children and the poorest) with information and for discussion. This can be facilitated by conducting focused group discussions at the lane and neighbourhood levels.

- **Sanitation agencies should conduct regular meetings with communities and other stakeholders where problems can be discussed and immediate corrective action can be taken.**

According to DFID (1998) sanitation projects are more likely to succeed if they follow the process rather than the blue print approach. With the process approach agencies and communities formulate goals and means of achieving them together. The process approach is flexible and future activities are based on an assessment of past activities and problems encountered. Instead of setting outputs at the beginning, the process approach allows communities and agencies to redefine outputs as the project proceeds. Therefore regular, open and meaningful communication between agencies and communities is essential.

- **All sanitation agencies working in poor urban areas should share the same overall goal and use compatible approaches to solve problems faced by the urban poor.**

As outlined in the Guidelines on the institutional context, a sanitation policy and regulatory framework is needed for this work, to regulate the activities of the various agencies, and a committee is required to oversee the implementation of such a framework. With such a system in place, uniform goals and approaches should become widespread even if a flexible, inclusive and holistic, poverty-focused and process-based approach is advocated.

4. CONCLUSION AND RECOMMENDATIONS

Water and, particularly, sanitation facilities are woefully inadequate in poor urban areas. The major cause of poor sanitation is the serious lack of mutual understanding and lack of

communication that exists between sanitation agencies and the urban poor. Local authorities make investment plans with little or no understanding of the needs or interests of the urban poor. As a result, services do not meet the needs of the local community. On the other hand, poor urban communities assume that the provision of sanitation services is solely the responsibility of local authorities. In order to achieve sustainable and cost-effective improvements in sanitation conditions there is a need to greatly improve the links between sanitation agencies and poor urban communities. This can be facilitated by taking account of, and implementing the guideline points raised here. In particular, strategies for enhancing the delivery of sanitation services should consider the needs, characteristics, and existing practices of the urban poor. Given the sanitation problems and household characteristics that have been discussed here, it is recommended that:

1. Sanitation agencies should conduct surveys to fully understand the needs, priorities, practices, and socio-economic characteristics of the urban poor, record such information on a national database, and design and implement projects in ways which take this information into account.

2. Sanitation agencies working in informal settlements should find ways to ensure *de-facto* security of tenure in areas that are considered to be illegal and where title deeds are difficult to obtain.

3. The government should adjust building standards in poor urban areas so that low-cost technologies can be constructed in these areas.

4. Sanitation agencies working in poor urban areas should take into account the political structures in the settlement and the different political interests.

5. The appropriate ministry should formulate a sanitation policy clearly targeted at informal settlements. The policy should clearly state the government's stance and plans for informal settlements and the roles and responsibilities of the different sanitation agencies active in informal settlements. There is need to establish coordination mechanisms between sectoral departments that work in poor urban areas to avoid duplication of effort and inefficient allocation of scarce resources.

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APPENDIX A: SUMMARY OF SURVEY DATA

A.1   Household Characteristics

	Sex of household head		Average age of the household head (years)	Education of the household head		Migration		
	Male	Female		No formal education	Formal education	From rural areas	From formal urban areas	From peri-urban areas
Zimbabwe (n=1,429)	78.7	21.3	36	13.2	86.8	17.8	82.2	0
Zambia (1,154)	78.4	21.6	40	11	89	15	43	42
South Africa (740)	72.5	27.5	38	13.3	86.7	42	46	12

List of reasons for moving to informal settlements

1. The need to send children to better schools
2. Seeking employment
3. The need to be close to the workplace thus cut transport cost
4. Shortage and high cost of formal accommodation
5. Availability of cheap stands in informal areas
6. Retirement or retrenchment
7. Eviction or relocation by the government

A.2   Housing

(Status of survey respondent?)

	Owner	Tenant	Employer's house	Lodgers
Zimbabwe	35.9	25.2	1.7	33.9
Zambia	71	23	0	6
South Africa	91	4	0	5

A.3   Quality of Accommodation

	Very good	Good	Poor	Very poor
Zimbabwe	2.1	50.6	40.6	6.7
Zambia	0	64	34	2
South Africa	0	39	60	1

A.4   Employment Type

	Formal	Informal
Zimbabwe	52.9	47.1
Zambia	35	31.3
South Africa	38.4	27.5

A.5   Solid Waste Management

	Bin/refuse bags	Refuse pit	None	Other
Zimbabwe	38.6%	54.8%	6.6%	0
Zambia	9.3	61	4.7	25
South Africa	33	18	1	48

A.6   Incidence of Water- and Sanitation-Related Diseases

	Zimbabwe		*Zambia				*South Africa			
	Gutu[a]	Gokwe[a]	Nkwazi	McKenzie	Kalinga-linga	Kanyama	Mamelodi	Jeffsville	Bester	Cato Crest
Diarrhoea	1676	333	32%	15%	41%	47%	5%	3%	24%	51.3%
Malaria	1180	2087	57.4	53.5	53	55.6	1.2	0	4	13.3
Hookworm	0	0	20	3	22	29	4	2	19.3	26.7
Bilharzia	557	0	3	9	1	1	0	0	4	12
Eye diseases	0	3	24	20	15	22	1	14	4	7.3

[a]These are clinic statistic for the areas for 1998

*Data for Zambia and South Africa is based on the responses from households in the survey and shows the sanitation-related diseases suffered by any household member in the three months prior to the study. The figures shown are percentages of the total sample in each study location.

A.7   Community Based Organisation

	Aware of CBO	Not aware of CBO	Not sure
Zimbabwe	51%	49%	0
Zambia	11	87	2
South Africa	21	78	1

A.8   Communication Channels (with Sanitation Agencies/Local Authorities?)

	Direct to local authority	Through CBO	Through councillors	Through house owner	No communication
Zimbabwe	16.7%	5.9%	1.2%	1.4%	36.8%
Zambia					
South Africa					

List of constraints to effective communication between local authorities and communities:

1. Communities are not recognised and are considered to be illegal

2. Time constraints

3. Do not trust local authorities, they are corrupt, and ineffective

4. Lodgers not recognised

5. Not reconsulted

A.9   Willingness To Pay

Average WTP (US$ per month)	Solid waste management	Household construction	Drainage	Sanitation in general
Zimbabwe	0.68	10.38	0.35	N/A
Zambia	N/A	N/A	N/A	1.90
South Africa	N/A	N/A	N/A	11.73

APPENDIX B: SANITATION ISSUES IN ZAMBIA

Summary of Major National Level Institutional Arrangements

Institution	Main Responsibility	Influence on Peri-Urban WSS
Ministry of Local Government & Housing	a) Control of Local Authorities b) Policy, Standards, Guidelines c) Funding- Local &External d) Facilitate service provision e) Confer legal status on Peri-Urban areas	Powers to control the development of water and sanitation facilities in peri-urban areas. Currently no dept. with institutional mandate for peri-urban areas at MLGH.
Ministry of Finance and Economic Development	a) Capital funds thru MLGH b) Investment priorities	Access to development funds
Ministry of Energy and Water Development	a) Water resources development & management b) License surface and groundwater use	Licensing boreholes in peri-urban areas
Ministry of Environment and Natural Resources	a) Environmental protection b) Control of water pollution	Control development of latrines if considered likely to pollute groundwater
Ministry of Health thru Central Board of Health	Promotion of environment conducive to good health	Direct councils regarding the use of shallow wells, and improvement of sanitation

Source: Peri-Urban Water Supply and Sanitation Strategy Draft Report 1999

Issues in Water Supply and Sanitation Service Delivery in Peri-Urban Areas

Policy:	i. **Inadequate Policy Framework.** There is no clear and comprehensive national policy and strategies for service provision in peri-urban areas. However, only Lusaka Water and Sewerage Company as a utility has an operational policy to this effect. ii. **Low Policy Priority of sanitation** and lack of integrated development of water supply and sanitation as well as solid waste disposal has serious consequences for public health and environmental quality.
Legal:	i. **Legality of Peri-Urban Settlements** hampers the development of water and sanitation and weakens the commitment of residents towards long-term infrastructural developments. ii. **Ownership of Community Schemes** is not clearly defined within the existing legal framework. It is also not well understood among decision makers in the sector. iii. **Apparent Conflict Between Statutes**, more especially the Town and Country Planning Act and the Water Supply and Sanitation Act will deter the flow of funding of peri-urban WSS out of regular government funds.
Institutional:	i. **Lack of National Level Institutional Responsibility** for peri-urban

	WSS has tended to marginalise service provision, in spite of the importance of these areas from a socio-economic, demographic, and public health point of view. ii. **Poor Coordination of Peri-Urban WSS at Local Authority Level** contributes to poor design and implementation of integrated programmes. iii. **Weak Management Capacity at Community Level** may lead to lack of effectiveness, and to poor operation and maintenance of WSS facilities.
Technology:	i. **Lack of Comprehensive Technology and Service Guidelines** provides inadequate technical support in selection of technology and service levels. ii. Prevalence of unsafe but convenient **Alternative Water Sources** tends to reduce commitment to improved water supplies, and willingness to pay for safe water supplies in peri-urban areas. iii. **Lack of Systematic Planning Data** leads to poor design and monitoring of WSS in Peri-Urban Areas.
Financial & Economic	i. **Low Income Levels and Cost Recovery** hamper the sustainability of water supply and sanitation services in Peri-Urban Areas. ii. **High Levels of Government Indebtedness** to local authorities for water and sanitation charges reduces the capacity of local authorities to extend and maintain a satisfactory service to the Peri-Urban Areas.
Social:	i. **Urban Poverty** is an important factor to be taken into account in formulating cost recovery systems in Peri-Urban Areas. ii. **WSS Service Provision is Highly Politicised**; therefore political interests will influence the provision of water and sanitation services in not only the Peri-Urban Areas but even in the conventional urban areas. It is foreseen that political influence may also have a bearing on the performance of commercial utilities. iii. **High Housing and Population Density**, and haphazard lay out of most Peri-Urban Areas will present technical and social Challenges to improving water and sanitation in these areas.

Source: Development of National Strategy fro Peri-Urban Water Supply and Sanitation in Zambia: Situational Analysis - Final Report, March 1999.

Legal Framework

The main legislation pertaining to provision of water supply and sanitation in Zambia by local authorities is as follows:

1. **Local Government Act No. 22 of 1991**: This act gives the Local Authorities responsibility to provide Water Supply and Sanitation services to all areas within their area of jurisdiction. Local Authorities are also empowered to make by-laws and set standards and guidelines for provision of services. This act also gives the Minister of Local Government and Housing the over authority over the Local Authorities.
2. **Water Supply and Sanitation Act No. 28 of 1997**: The act specifies how Local Authorities may provide Water Supply and Sanitation services and establishes the National Water Supply and Sanitation Council (NWASCO) as the regulator for the WSS sector. Local Authorities may provide services by themselves or through Commercial Utilities licensed and regulated by NWASCO.

3. **Town and Country planning Act, Cap**. **283** regulates physical planning and development throughout the country. Under this Act the Local Authorities have delegated powers as planning authorities with power to enforce planning control on any development in their respective Local Authority area. Another legislation related to the control of urban development is the **Housing (Statutory and Improvement Areas) Act**. This provides the legal framework for the regularization of unplanned settlements not covered by the regular planning process as set out in the Town and Country Planning Act.

Other statutes that have an effect on the provision of Water and Sanitation include the **Water Act, Cap. 312,** which controls the development and management of water resources in the country, including water sources for peri-urban areas; the **Environmental Protection and Pollution Control Act of 1990**, which deals with the protection of environment and control of pollution; the **Public Health Act, Cap. 295** and the **National Health Services Act of 1995** both of which have provisions for the regulation and management of public health in the country.

The above legislation defines powers and responsibilities for control of various aspects of the Water and Sanitation sector. There are however, a number of problems still being faced in the sector and are discussed in the main body of this book.

(Source of material: Peri-Urban Water Supply and Sanitation Strategy Draft Report for Zambia, 1999).

APPENDIX C: WATER AND SANITATION IN SOUTH AFRICA

To improve Water and Sanitation related health conditions in South African homes, the **Department of Water Affairs and Forestry** (DWAF) has several RDP programmes to supply water and sanitation and infrastructure. Many of these are done in public-private partnerships through BoTT (built, operate, train and transfer) consortia. Since 1994 over three million South Africans have benefited from improved water supply. The ambitious Community Water Supply and Sanitation Programme (CWSS) provides not only services, but also education on sanitation health and hygiene and promote healthy practices.

However, there are concerns about the viability and sustainability of these projects. Problems with implementation, lack of capacity, lack of community participation and confusion about institutional arrangements and responsibilities have affected the majority of the water and sanitation supply programmes. In an evaluation of CWSS by DWAF it was found that despite the vision of these programmes, **environmental health and sanitation issues** have been largely ignored in the housing projects (CSIR, 1999).

Legislation and Policy Framework that affects Water and Sanitation Provision in South Africa

National Constitution

1.   Sets out the rights and obligations of the individual and the government with regard to basic water supply and sanitation and it sets out the broad institutional framework for service provision.
2.   The Constitution's Bill of Rights provides for the rights of everyone to a healthy environment (sanitation). It specifically guarantees the right of all people to access "sufficient water and food".
3.   The Constitution allows for the division of functions and responsibilities for the three spheres of government. Local Government is clearly responsible for the provision of local services to consumers. National government is responsible for establishing norms and standards for service provision and for support of provincial and local government.
4.   The Constitution creates the structural conditions for inter-governmental relations. Continuous and sustained interaction between different components of government is now constitutional and practical necessity.
5.   The constitution makes allowance for the funding of municipal functions through a national Equitable Share Fund. Local government will be able to use the Equitable Share to pay for running costs of municipal services. Funds will be **targeted at low-income families** (Mvula, 1999).

White Paper on Water Supply and Sanitation (November, 1994), formulated by DWAF to build competent local and provincial agencies capable of providing adequate water supply and sanitation services. It also developed a **Framework for Water Services**, 1997 targeted at the new democratic local government structures.

The **Water Services Act**, (1997) provides a regulatory framework for the provision of water supply by defining the roles and responsibilities of the different spheres of government. It reinforces the constitutional right of every citizen to basic water supply and sanitation and places

a duty on all water institutions to take reasonable measures to realize these rights. The Act also requires that every Water Services Authority prepares a Water Services Development Plan (as an output of the integrated development planning process) for its area in consultation with the community (Dept. Of Housing, 2000).

The **National Water Act**, (1998) aims to regulate water use to ensure equitable and sustainable use of available resources. It aims to ensure that the nation's water resources are protected, used, developed conserved, managed and controlled. Further it will ensure that there is appropriate community, racial and gender representation in the implementation of the Act (Mvula, 1999).

White Paper on Local Government (1998) promotes the capacity and long term-term sustainability of local sphere of government. The following issues characterize this white paper:
➢   A maximization of social development and economic growth;
➢   Integration and co-ordination;
➢   Democratisation of development, empowerment and redistribution;
➢   A leading and learning approach.

The **Local Government Municipal Systems Bill** (1999) elaborates the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of communities and ensure universal access to quality services, which are affordable to all (Dept. of Housing, 2000).

Relevant Departments with some Water and Sanitation Responsibilities

Department of Water Affairs and Forestry (DWAF)
The Department of Water Affairs and Forestry was tasked with the responsibility of building agencies capable of providing adequate water supply and sanitation services. DWAF has had four main programmes since 1994, the first being phases of the implementation of the RDP. The first programme was RDP1 whose aim was to provide basic water supply to RDP standards, which is 20-30 litres per person per day, within 200 metres by means of an integrated people-driven programme. The second programme was the RDP2 whose aim was to initiate a process to ensure access to adequate domestic sanitation although communities put more emphasis on water than sanitation. The third programme was the RDP3 which recognized that the first two programmes had neglected sanitation and therefore focused more on the issue of sanitation. The fourth was the Community Water Supply and sanitation Programme (CWSS) which was directed towards the monitoring and evaluation of sanitation methods, the co-ordination and training of Local Authorities and the co-ordination of lessons learnt through the RDP process.

Department of Environmental Affairs and Tourism (DEAT)
The Department of Environmental Affairs and Tourism is committed to promoting the sustainable development and utilization of natural resources, thus calling for harmony between the processes of nature and activities of mankind. South African Environmental Policy is expressed in the **White Paper on Environmental Management Policy** published in 1998. While the White paper recognizes the need for people-centred development that promotes social justice and equity, the Paper cautions against growth and development that ignores environmental issues. It argues that while this approach may lead to short term improvements in standards, it will further degrade living environments and degrade the resource base upon which we depend for survival. It therefore places sustainable development as a national priority for government. DEAT also recently gazetted a **White Paper on Integrated Pollution and Waste Management** for South

Africa. The White Paper aims at pollution prevention and minimization at source, managing the impact of pollution and waste on the receiving environment and rehabilitating damaged environments.

Department of Housing
The Department of Housing is committed to establishing and facilitating a sustainable process that provides equitable access to adequate housing for everyone. The main Programme through which the department is attaining this vision of the provision of a permanent structure to all, is through the subsidy programme. The subsidy programme covers a wide range of housing and tenure options and is directed towards the lower-income brackets that are unable to provide themselves with adequate housing.

Department of Health
The Department of Health is committed to providing quality healthcare to all people in South Africa, achieving a unified National Health System and implementing policies that reflect its mission, goal and objectives. **Environmental Health** and **Health Promotion Programmes** are specific in interfacing with other stakeholders in government and privately in the promotion of healthy sustainable developments. These programmes have projects that improve accessibility to **potable water** and **sanitation** to schools and clinics.

Department of Provincial and Local Government
The underlying policy of this department is to promote decentralization through democratic local authorities and work to strengthen their financial and institutional capacities, while ensuring their transparency, accountability and responsiveness to the needs of the people.

(Source: CSIR: The State of Human Settlements: South Africa 1994-1998).